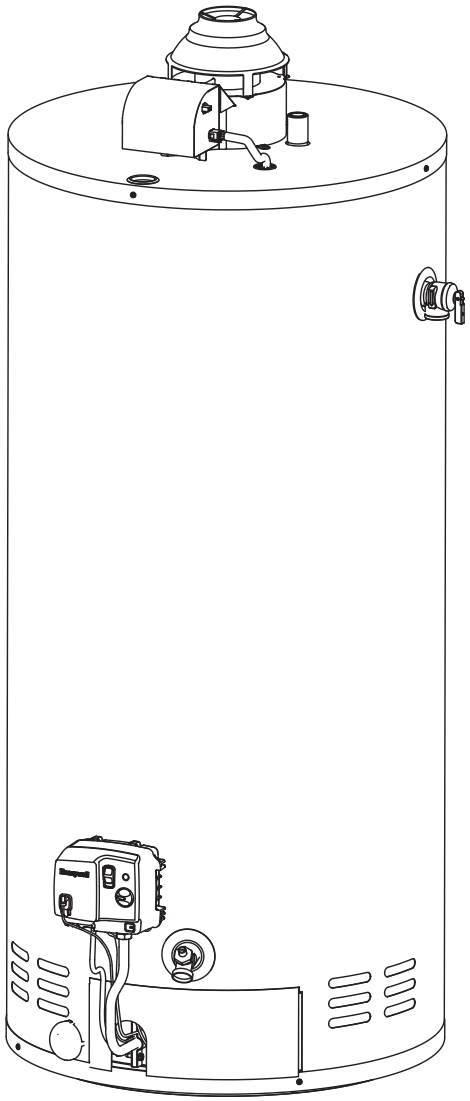
RESIDENTIAL GAS-FIRED WATER HEATERS EQUIPPED WITH 24-VOLT FLUE DAMPER OWNER'S MANUAL INSTALLATION AND OPERATING INSTRUCTIONS



⚠ WARNING

This water heater **IS NOT** design certified for installation in a manufactured (mobile) home or for installation outdoors.

⚠ WARNING

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

DO NOT store or use gasoline or other flammable vapours and liquids in the vicinity of this or any other appliance.

WHAT TO DO IF YOU SMELL GAS

- **DO NOT** try to light any appliance.
- **DO NOT** touch any electrical switch,
- **DO NOT** use any phone in your building.
- **From a neighbour's phone, immediately call your gas supplier.** Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

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

IMPORTANT

READ THESE INSTRUCTIONS CAREFULLY BEFORE BEGINNING THE INSTALLATION. PROPER INSTALLATION WILL PROVIDE SAFE & EFFICIENT SERVICE, AND AVOID NEEDLESS EXPENSE NOT COVERED BY THE WARRANTY. READ THE PRODUCT WARRANTY CONTAINED IN THIS MANUAL AND REMEMBER TO FILL OUT AND RETURN TO THE MANUFACTURER ALL RELEVANT WARRANTY CARDS AND CERTIFICATES. SHOULD YOU HAVE ANY QUESTIONS, PLEASE CONTACT YOUR LOCAL DEALER OR REFER TO THE ***GETTING SERVICE FOR YOUR WATER HEATER*** SECTION OF THIS MANUAL.

SAVE THIS MANUAL FOR FUTURE REFERENCES.

For your records, write the model and serial number here:

Model # _____

Serial # _____

CERTIFIED

DESIGN CERTIFIED

C US LOW LEAD CONTENT

AHRI MEMBER

nqa canada ISO 9001 REGISTRED QUALITY SYSTEM

54000040

TABLE OF CONTENTS

FVIR technology equipped with a flammable vapour sensor and the flame arrestor

⚠ WARNING

Flammable Vapour Sensor

Do not remove the protective cover. Do not spray water or leak detector products on this sensor. Do not expose this sensor to bleach or other liquid cleaning products. Avoid humid environments and freezing temperatures.

If the sensor detects the presence of flammable vapours, the gas control will switch to lock-out mode and the water heater will shut down. Do not try and restart the water heater. Have the water heater inspected immediately by a qualified service technician or the gas supplier.

This water heater is equipped with the FVIR technology. Activation of the FVIR technology occurs when flammable vapours are drawn into the water heater. If the flammable vapour sensor detects the presence of flammable vapours when the water heater is operating, the gas control will switch to lock-out mode and the water heater will shut down. If the water heater is not operating when the flammable vapours are detected, the control will switch to lock-out mode and prevent the water heater from lighting. If the flammable vapours enter the combustion chamber and ignite, the flame arrestor will prevent these combustible vapours from igniting outside of the water heater.

If flammable vapours are detected:
- **DO NOT** try to light any appliance.
- **DO NOT** touch any electrical switch, **DO NOT** use any phone in your building.
- **From a neighbour's phone, immediately call your gas supplier.** Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

After the flammable vapours have been evacuated, contact a qualified service technician or the gas supplier to have the water heater inspected immediately. **Replacement of a FVIR technology equipped water heater due to a flammable vapour shutdown is not covered under the terms of the Standard Basic Limited Warranty.**

SAFETY INFORMATION

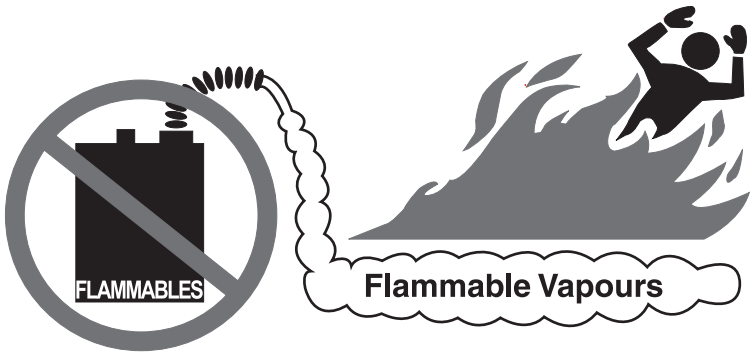
Your safety and the safety of others is extremely important during the installation, operation, and servicing of this water heater. Many safety related messages have been provided in this manual and on your water heater. Always read and abide by all safety messages. These messages will point out the potential hazard, tell you how to reduce the risk of injury, and tell you what will happen if the instructions are not followed.

This is the safety alert symbol. This symbol alerts you to potential hazards that can kill or hurt you and others. All safety messages will follow the safety alert symbol and either the word “DANGER” or “WARNING”.

⚠ DANGER	Serious injury or death can occur if you do not follow the instructions immediately.

⚠ WARNING	Serious injury or death can occur if you do not follow the instructions.

⚠ WARNING



FIRE AND EXPLOSION HAZARD

Can result in serious injury or death

⚠ Do not store or use gasoline or other flammable vapours and liquids in the vicinity of this or any other appliance. Storage of or use of gasoline or other flammable vapours or liquids in the vicinity of this or any other appliance can result in serious injury or death.

⚠ WARNING

DO NOT use this water heater if any part has been under water. Immediately call a qualified service technician to inspect the water heater and to replace any part of the control system and any gas control which has been under water. Failure to follow this instruction can result in property damage, personal injury, or death.

IMPORTANT

These instructions have been written as a guide for the proper installation and operation of your water heater, and the manufacturer of this water heater will not accept any liability where these instructions have not been followed. However, for your safety and to avoid damage caused by improper installation, this water heater must be installed by a Certified Licensed Professional, and meet all local codes or, in the absence of local codes, the latest edition of CSA B149.1 Natural Gas and Propane Gas Installation Code in Canada, and/or the National Fuel Gas Code, ANSI Z223.1/NFPA 54, in the United States.

Before proceeding with the installation instructions:

1) Inspect the water heater and its component parts for possible damage. **DO NOT** install or attempt to repair any damaged component parts. If you detect any damage, contact the dealer where the water heater was purchased or the manufacturer listed on the warranty card.

2) Verify that the type of gas being supplied corresponds to that which is marked on the rating plate and gas control of the water heater.

Location

The water heater should be located as close as possible to the chimney and to the main use of hot water. This location must not be subject to freezing temperatures. The water heater should be positioned so that there is easy access to the burner, gas control, and drain valve. It must be located close to a suitable free-flowing floor drain. Where a floor drain is not adjacent to the water heater, a suitable drain pan must be installed under the water heater **(see Figure 8).** This drain pan should be at least four (4) inches (10.2 cm) larger than the diameter of the water heater, and at least one (1) inch (2.5 cm) deep providing access to the drain valve. This pan must not restrict the flow of ventilation and combustion air. This pan must be piped to a suitable drain to prevent damage to property in the event of a water leak from the piping, the relief valve, or the water heater.

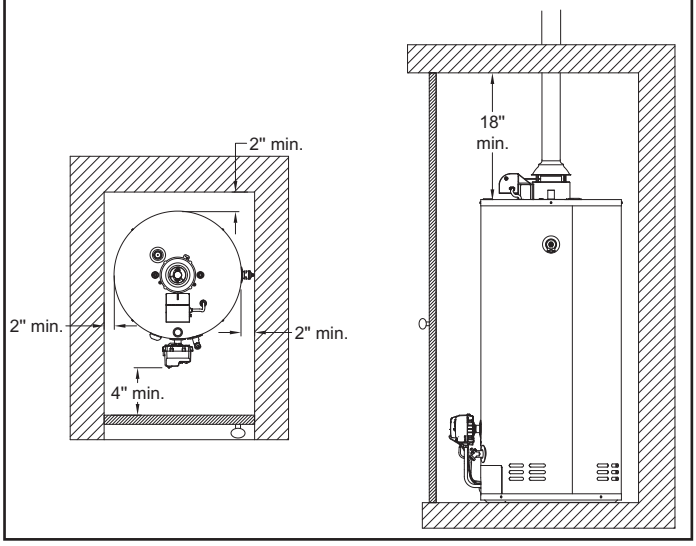
Sooner or later, all water heaters leak. The manufacturer, based on national building codes, has given the necessary instructions to prevent damage to the building. Under no circumstances is the manufacturer to be held liable for any water damage in connection with this water heater.

This water heater is approved for installation on either a combustible or non-combustible floor. However, should this water heater be installed directly on carpeting, such carpeting must be protected by a wood or metal panel beneath the water heater. This panel must extend at least three (3) inches (7.6 cm) beyond the width and depth of the water heater. Should the water heater be installed in an alcove or closet, the entire floor area must be covered by the panel.

Minimum Clearances

The minimum clearances from combustible material for this water heater are two (2) inches (5.1 cm) from the sides and rear, four (4) inches (10.2 cm) from the front, and eighteen (18) inches (45.7 cm) from the top **(see Figure 1).** Those also provide adequate clearances for servicing, access to flue damper and proper operation of the water heater.

Figure 1



Combustion and Ventilation Air Supply

In order for the water heater to operate properly, it must be supplied with an uninterrupted flow of clean combustion and ventilation air. The area around the water heater must always be kept clear and the combustion air intake holes at the bottom of the water heater must never be blocked. An inadequate supply of air to the water heater will produce a bright yellow burner flame causing sooting in the combustion chamber, on the burner, and in the flue tube. This can result in damage to the water heater and serious bodily injury, if not corrected.

Combustion and ventilation air requirements are determined by where the water heater will be located. Water heaters are installed in either open (unconfined) spaces or smaller (confined) spaces, such as closets or small rooms.

Requirements for Unconfined Spaces

An unconfined space is an area with at least fifty (50) cubic feet for each 1,000 Btuh (4.8 m^3/kW) of the total input rating for all gas appliances installed in that space. Water heaters installed in unconfined spaces do not usually require outdoor air to function properly. However, in buildings with tight construction (heavy insulation, vapour barriers, weather stripping, etc.), and particularly in modern buildings, additional fresh air may need to be provided. For instructions on obtaining additional air supply, see the requirements below for confined spaces.

Requirements for Confined Spaces

A confined space is an area where the volume is less than fifty (50) cubic feet for each 1,000 Btuh (4.8 m^3/kW) of the total input rating for all gas appliances installed in that space. Water heaters installed in confined spaces require additional combustion and ventilation air. This can be provided in two ways:

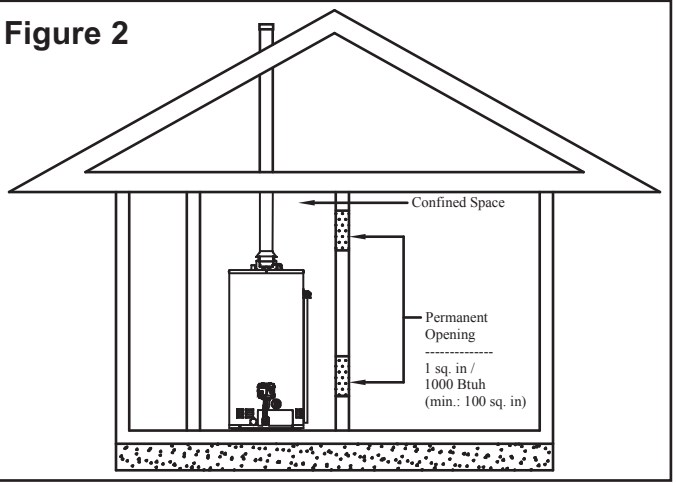
In Canada refer to CSA B149.1 and local codes for detailed information.

1) All air from inside a building **(Figure 2):**

The enclosure in which the water heater is installed shall be provided with two permanent openings of one (1) square inch per 1,000 Btuh (22.0 cm^2/kW) of the total input of all appliances and shall communicate directly with one or more rooms of sufficient volume, so that the combined volume of all spaces meets the criteria for an unconfined space for all the appliances installed in that enclosure. A water heater of 50,000 Btuh or less could, in some cases, not require fresh air from outside. Please refer to the current B149.1 code and local codes for further details.

One opening shall be located not more than eighteen (18) inches (45.7 cm) or less than six (6) inches (15.2 cm) above the floor level. The second shall be located as near the ceiling as practical, but in no case lower than the draft hood.

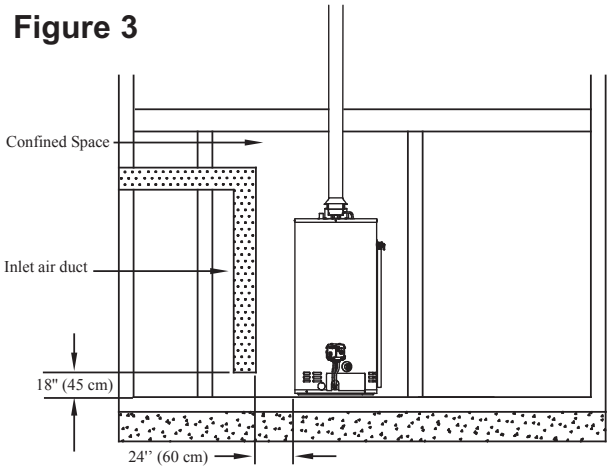
Figure 2



2) All air from outdoors **(see Figure 3):**

An air-supply shall be provided with one opening that communicates directly with the outdoors or by means of a duct. This duct shall be sized according to CSA B149.1 and terminate within one (1) foot (30.5 cm) above, and within two (2) feet (61 cm) horizontally from the burner level of the appliance having the largest input.

Figure 3



In U.S.A. (refer to ANSI Z223.1/NFPA 54 and local codes for detailed information.

1) All air from inside the building **(see Figure 2):**

The confined space shall be provided with two permanent openings communicating directly with one or more rooms of sufficient volume, so that the combined volume of all spaces meets the criteria for an unconfined space. The total input rating of all gas appliances installed in the combined space shall be considered in making this determination.

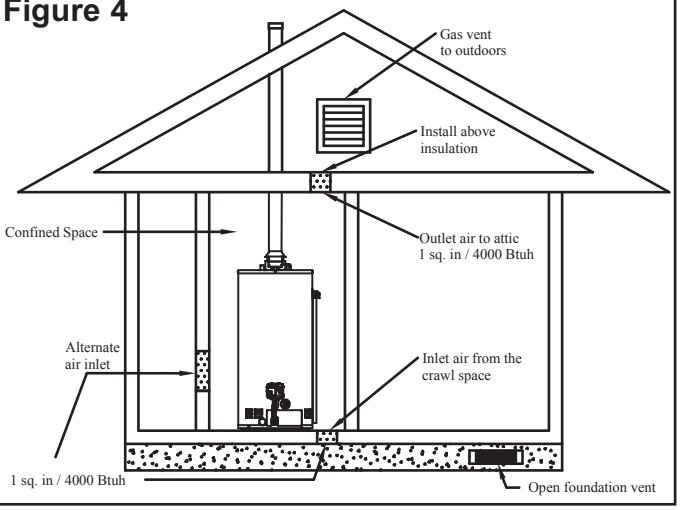
Each opening shall have a minimum free area of one (1) square inch per 1,000 Btuh (22.0 cm^2/kW) of the total input rating of all gas appliances in the confined space, **but not less than** one hundred (100) square inches (645.16 cm^2). One opening shall commence within twelve (12) inches (30.5 cm) of the top and one within twelve (12) inches (30.5 cm) of the bottom of the enclosure.

2) All air from outdoors:

The confined space shall be provided with two permanent openings, one commencing within twelve (12) inches (30.5 cm) of the top and one commencing within twelve (12) inches (30.5 cm) from the bottom of the enclosure. The openings shall communicate directly or by ducts, with the outdoors or spaces (crawl or attic) that freely communicate with the outdoors.

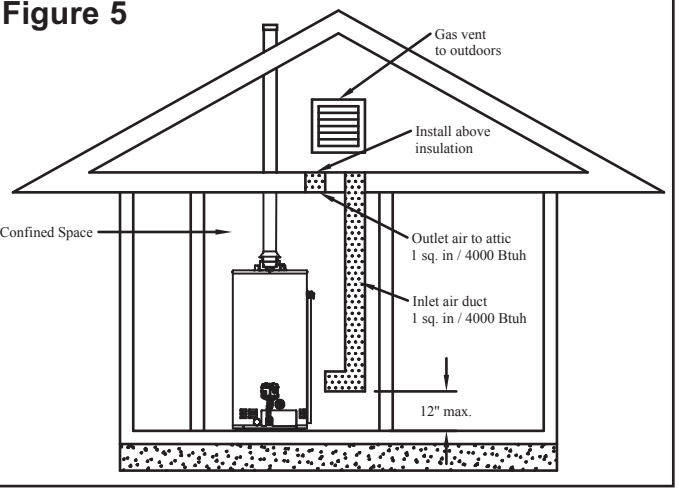
A) When communicating directly with the outdoors, each opening shall have a minimum free area of one (1) square inch per 4,000 Btuh (5.5 cm^2/km) of the total input rating of all gas appliances in the enclosure **(see Figure 4).**

Figure 4



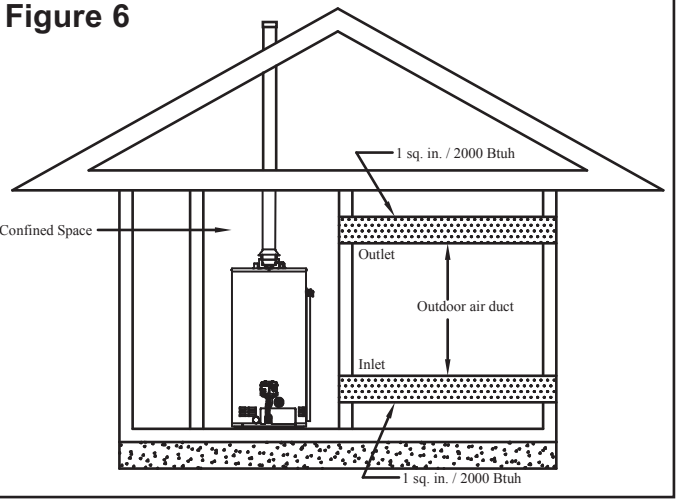
B) When communicating with the outdoors through vertical ducts, each opening shall have a minimum free area of one (1) square inch per 4,000 Btuh (5.5 cm^2/kW) of the total input rating of all gas appliances in the enclosure **(see Figure 5).**

Figure 5



C) When communicating with the outdoors through horizontal ducts, each opening shall have a minimum free area of one (1) square inch per 2,000 Btuh (11.0 cm^2/kW) of the total input rating of all gas appliances in the enclosure **(see Figure 6).**

Figure 6



When ducts are used, they shall be of the same cross-sectional area as the free area of the openings to which they connect. The minimum short side dimension of rectangular air ducts shall not be less than three (3) inches (7.6 cm).

Louvers and Grilles

In calculating free area for ventilation and combustion air supply openings, consideration must be given to the blocking effect of louvers, grilles, or screens protecting the openings. Screens must not be smaller than 1/4 inch (6.4 mm) mesh. If the free area through a particular design of louver or grille is known, it should be used in calculating the size of opening required to provide the free area specified. If the design and free area is not known, it may be assumed that wood louvers and grilles will allow 20 to 25% free area and metal louvers and grilles will allow 60 to 75% free area. Louvers and grilles must be installed in the open position or interconnected with the water heater so that they are opened automatically during water heater operation.

Corrosive Atmospheres

If this water heater will be installed in a beauty shop, barber shop, photo processing lab, dry cleaning establishment, a building with an indoor pool, or near a chemical storage area, it is imperative that the combustion and ventilation air be drawn from outside these areas. These particular environments contain products such as aerosol sprays, detergents, bleaches, cleaning solvents, refrigerants, and other volatile compounds that, in addition to being highly flammable, become highly corrosive acid compounds when burned. Exposure to such compounds can be hazardous and lead to premature product failure. **Should the water heater fail due to exposure to such a corrosive atmosphere, the warranty is void.**

Venting

⚠ DANGER

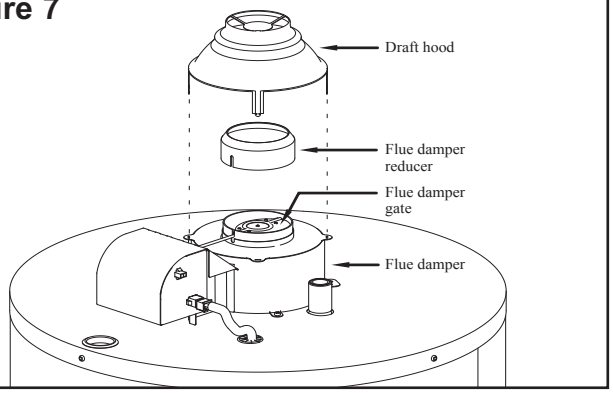
When installing the venting system, make sure to follow all local codes or, in the absence of local codes, CSA B149.1 in Canada and/or the National Fuel Gas Code, ANSI Z223.1/NFPA 54 in the United States. Never ope-rate the water heater unless it is properly ventilated to the outdoors and has adequate air supply for proper operation. Failure to properly install the venting system could result in property damage, personal injury, or death.

Draft hood

The water heater must be vented using the draft hood provided by the manufacturer. When installing the draft hood, **DO NOT** attempt manually opening the flue damper, this will damage the 24-volt motor in damper. Make sure that the flue damper reducer has been installed over the flue damper opening.

To install the draft hood, place it over the flue damper opening on the top of the water heater. Line up the draft hood legs with the holes on the flue damper. Secure the draft hood to the flue damper by snapping into position **(see Figure 7).** When installing the draft hood do not alter it in any way. The flue damper gate must always be visible following the installation of your water heater.

Figure 7



Venting System

The venting system must be attached to the draft hood to connect the water heater to the gas vent or chimney. The vent pipe connecting to the water heater must be of the same size as the draft hood outlet. It is highly recommended to install this water heater on a separate venting system from other appliances. In some installations, proper venting may require the use of a larger diameter vent pipe and/or combined venting with other appliances. Consult the vent tables in the CSA B149.1 in Canada and/or the National Fuel Gas Code, ANSI Z223.1/NFPA 54 in the United States to correctly size the vent pipe.

When connecting the vent pipe to the water heater the following instructions must be followed:

- Install the vent pipe in such a way as to avoid any unnecessary bends that could create resistance to the flow of combustion gases.
- The length of horizontal vent pipe must not exceed 75% of the vertical vent height, in no case exceeding twenty (20) feet (6.1 m).
- All horizontal runs must have a minimum rise of 1/4 inch per foot (21 mm/m) of run **(See Figure 8)**.
- All joints must be securely fastened with sheet metal screws or other approved means.
- All single wall vent piping must maintain a minimum of six (6) inches (15.2 cm) of clearance from combustible materials.
- Venting systems made with single wall piping cannot pass through any attic, inside wall, crawlspace, confined space, or any floor.
- The vent piping must be accessible for inspection, cleaning, and replacement.

⚠ WARNING

When the installation is complete, visually inspect the venting system to make sure that all joints are properly connected and all instructions have been followed. Failure to properly install the venting system could result in property damage, personal injury, or death.

Water Piping

Refer to **Figure 8** for a typical installation. Use of this layout should provide a trouble-free installation for the life of the water heater. Before making the plumbing connections, locate the **COLD** water inlet and the **HOT** water outlet. These fittings are both 3/4" NPT male thread. Make sure that the dip tube is installed in the cold water inlet. Install a shut-off valve close to the water heater in the cold water line. It is recommended that unions be installed in the cold and hot water lines so that the water heater can be easily disconnected if servicing is required.

When assembling the hot and cold water heater pipings, use a Teflon™ good food grade of pipe joint compound, and ensure all fittings are tight. It is imperative that open flame is not applied to the inlet and outlet fittings, as heat will damage or destroy the plastic lined fittings. **This will result in premature failure of the fittings, which is not covered by the warranty.**

Temperature and Pressure-Relief Valve

⚠ WARNING

DO NOT plug the temperature and pressure-relief valve or its discharge line. **DO NOT** remove the relief valve. Make sure the relief valve is properly sized for the water heater. If the relief valve continuously discharges water, call a qualified service technician to correct the problem. Failure to follow these instructions can result in property damage, personal injury, or death.

To protect from excessive pressure and/or temperature, the manufacturer has installed a temperature and pressure-relief valve that meets the requirements of the Standard for Relief Valves and Automatic Gas Shut-Off Devices for Hot Water Supply Systems, CSA 4.4 in Canada and ANSI Z21.22 in the United States. This relief valve has a maximum set pressure that does not exceed the hydrostatic working pressure of the water heater (150 psi = 1,035 kPa) and a Btuh rating equal to or greater than the input rating, as shown on the water heater rating plate. It should never be plugged or removed from the opening marked for it on the water heater.

If this relief valve should need to be replaced, use only a new temperature and pressure-relief valve. Never install an old or existing relief valve as it may be damaged or inadequate for the working requirements of the new water heater. This new relief valve must meet all local codes or, at a minimum, the requirements listed above. Never install any other type of valve between the relief valve and the water heater.

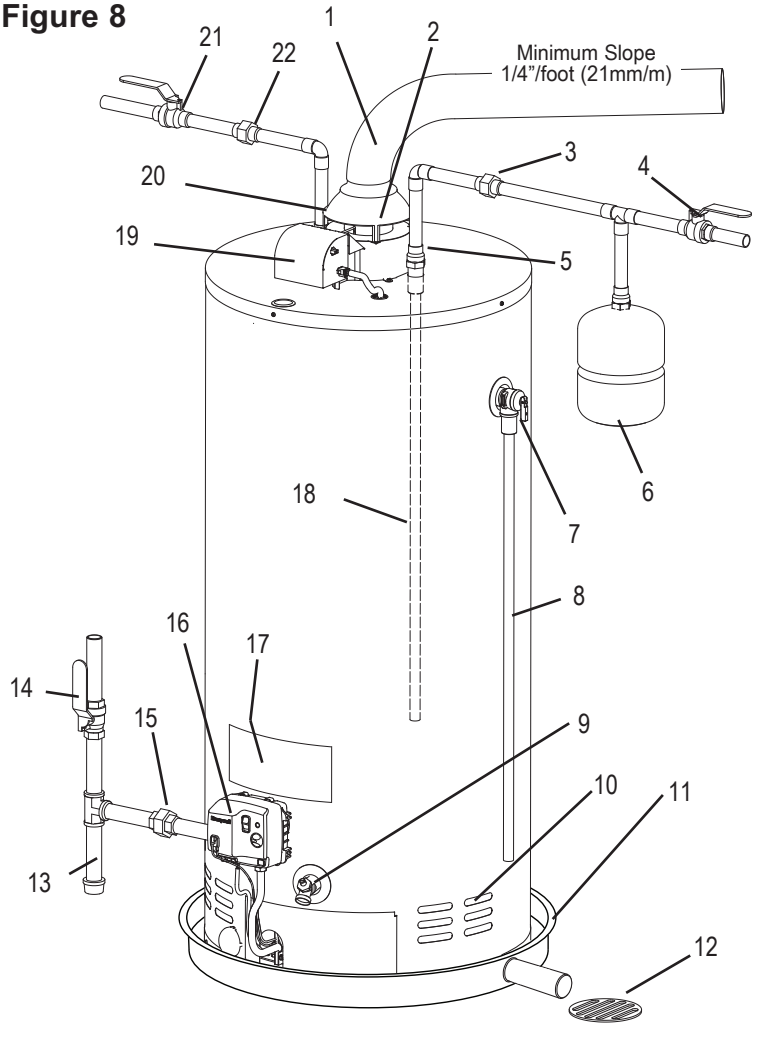
A discharge line must be installed into the relief valve. The discharge line:

- Must not be smaller than the outlet pipe size of the relief valve.
- Must not terminate less than six (6) inches (15.2 cm) and not more than twelve (12) inches (30.5 cm) above a floor drain.
- Must not be restricted in any way. Do not thread, cap, or in any way restrict the end of this outlet.
- Must be of a material capable of withstanding 210˚F (99˚C) without distortion.
- Must be installed to allow complete drainage of the relief valve and discharge line.
- Must terminate at an adequate free-flowing drain.

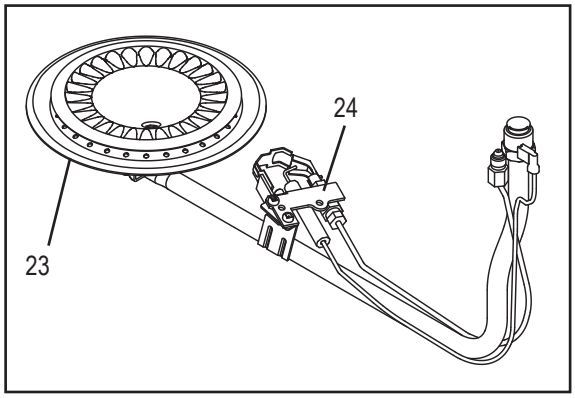
Pressure Build-up in a Water System

When the water heater operates, the heated water expands creating a pressure build-up. This is a natural function and is one of the reasons for installing a temperature and pressure-relief valve. If the cold water supply line has a built-in water meter, check valve, or pressure-reducing valve, a suitable expansion tank must be installed to prevent pressure build-up or water hammer effect, otherwise the warranty is void **(see Figure 8)**. An indication of pressure build-up is frequent discharges of water from the relief valve. If the relief valve discharges water on a continuous basis, it may indicate a malfunction of the relief valve, and a qualified service technician must be called to have the system checked, and the problem corrected.

Figure 8



1) Vent pipe
2) Draft hood
3) Union
4) Cold water manual shut-off valve
5) Cold water inlet
6) Expansion tank
7) Temperature & pressure-relief valve
8) Overflow tube
9) Drain valve
10) Combustion air intake holes
11) Drain pan
12) Free-flowing floor drain
13) Drip leg (Sediment trap)
14) Gas supply manual shut-off valve
15) Union
16) Gas control
17) Rating plate
18) Dip tube
19) Flue damper
20) Hot water outlet
21) Hot water manual shut-off valve
22) Union
23) Burner
24) Pilot assembly



Filling the Water Heater

⚠ WARNING

NEVER operate the water heater unless it is completely filled with water. **Failure to follow this instruction can result in premature failure of the water heater that is not covered by the warranty.**

Check that all of the water piping connections have been made. To fill the water heater:

1) Make sure that the water heater drain valve is closed by inserting a flat-head screwdriver into the slot on the head of the drain valve and turning the knob clockwise ↷.
2) Open the cold water supply manual shut-off valve. This valve must remain open as long as the water heater is in use. Never operate the water heater with the cold water supply manual shut-off valve closed.
3) To make sure the water heater is completely full, open hot water faucets to let the air out of the water heater and plumbing system. Leave the faucets open until a constant flow of water is obtained.
4) Check all of the plumbing connections to make sure there are no leaks.

Gas Connections

⚠ WARNING

DO NOT attempt to use this water heater with any gas other than the type of gas shown on the water heater rating plate. Failure to follow this instruction can result in property damage, personal injury, or death.

The gas piping must be installed as indicated in **Figure 8.** For the correct size of piping for this water heater, consult CSA B149.1 in Canada and/or the National Fuel Gas Code, ANSI Z223.1/NFPA 54 in the United States. Only new piping with cleanly cut threads may be used, together with a suitable sealing compound that is approved for natural gas and propane. It is mandatory that a readily accessible manual shut-off valve be installed in the gas supply line. The gas supply manual shut-off valve must be close to the water heater. A drip leg (sediment trap) must be installed in the gas line ahead of the gas control to prevent dirt from entering it. A union must be installed between the gas control and the gas supply manual shut-off valve for easy maintenance of the water heater.

⚠ WARNING

NEVER use an open flame to test for gas leaks. A fire or explosion could occur resulting in property damage, personal injury, or death.

The water heater and its gas connection must be leak tested before placing the appliance into operation. To leak test the system:

1) Turn on the manual gas shut-off valve.
2) Use a soapy water solution to test all connections and fittings for leaks. Bubbles indicate a gas leak.
3) Correct all leaks.

Make sure that the inlet pressure to the water heater does not exceed fourteen (14) inches in W.C. (water column) for both natural gas and propane. Pressures in excess of 1/2 pound per square inch (3.5 kPa) can damage the gas control, resulting in a fire or explosion from leaking gas. For purposes of adjustment, the minimum inlet pressure is indicated on the water heater rating plate.

If any pressure testing of the gas line is undertaken at test pressures in excess of 1/2 psig (3.5 kPa), the water heater and its gas supply manual shut-off valve must be disconnected from the gas supply piping system, and the end of the pipe sealed with a female cap. If the testing is to be undertaken at a test pressure less than 1/2 psig (3.5 kPa), the gas supply manual shut-off valve must be closed.

⚠ WARNING

A high altitude orifice **MUST BE** installed for water heaters operating above 2,000 feet (610 m). Failure to follow this instruction can result in property damage, personal injury, or death.

Installation Instructions for Water Heaters Approved for Space Heating & Potable Water Heating.

This water heater is suitable for combination water (potable) heating and space heating and not suitable for space heating application only.

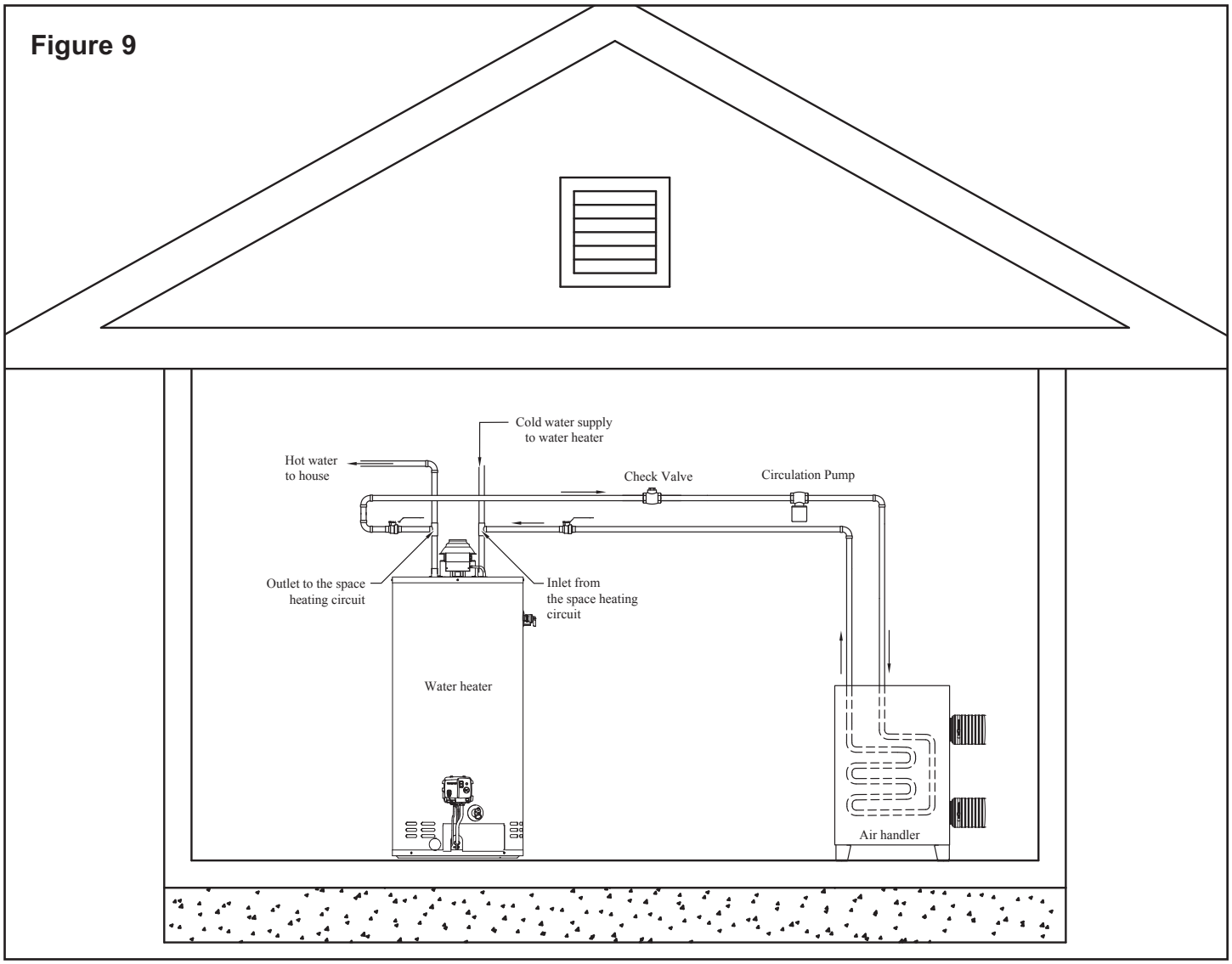
When using a water heater for space and potable water heating, the instructions provided in this manual and with the air-handling unit must be respected and, in particular the following:

1) All piping and components that are used in the system must be of a nonferrous type and suitable for potable water. This also applies to any sealant used.

2) When used as a dual purpose water heater, it must not be connected to any system that has been previously used for non potable water heating. This includes any piping because, in all probability, existing piping would have been, in the past, treated with chemicals for cleaning or sealing the system.
3) If this water heater will be used for space heating, make sure that all safety codes are respected. Pay special attention to temperature and pressure relief valve and expansion tanks.
4) Do not use toxic chemicals to clean the potable water heating system.
5) Where water temperature in excess of 140ºF (60ºC) is required for a space heating application, a mixing valve must be installed in the potable side of the system. This will temper the water and reduce the risk of scalding.
6) If the incoming water line to the heater is equipped with a check valve, water meter, or a pressure-reducing valve, an expansion tank must be installed in the system. This will prevent weeping from the water heater relief valve and premature failure of the heater due to expansion of the water during the heating cycle.
7) Before acquisition of a water heater for space heating application, it is necessary to have the area of intended use sized by a qualified technician. This will ensure that an adequate water heating capacity will be available for both heating and potable water supply, and that the application will meet all local codes and public utility requirements.

Note: It is good practice to oversize the water heater, to ensure that all of the potential hot water requirements are available.

Figure 9



Wiring

⚠ WARNING

This water heater uses an external electrical source for power. It must be electrically grounded in accordance with all local codes or, in the absence of local codes, CSA C22.1 Canadian Electrical Code, in Canada and/or the National Electrical Code, ANSI/NFPA 70 in the United States. Failure to properly ground this water heater can result in property damage, personal injury, or death.

Before lighting your water heater, check that all of the wires have been installed correctly **(see Figure 10 and 11)**. Make sure that none of the wires are grounded, have split, or are broken. Verify that all wiring connections are properly secured, as there is a possibility that they have become loose during transportation. If any of the original wiring needs replacing, use only 18AWG-type or greater wire that is approved to resist temperature of 221˚F (105˚C).

24-Volt Control System

A 24-volt transformer must be plugged in a wall receptacle, while making sure the polarity is correct. Do not use an extension cord. The maximum allowable wire length to the water heater is fifty (50) feet (15.2 m). The wiring harness must be connected to the 2-pin Molex connector on the flue damper.

Figure 10

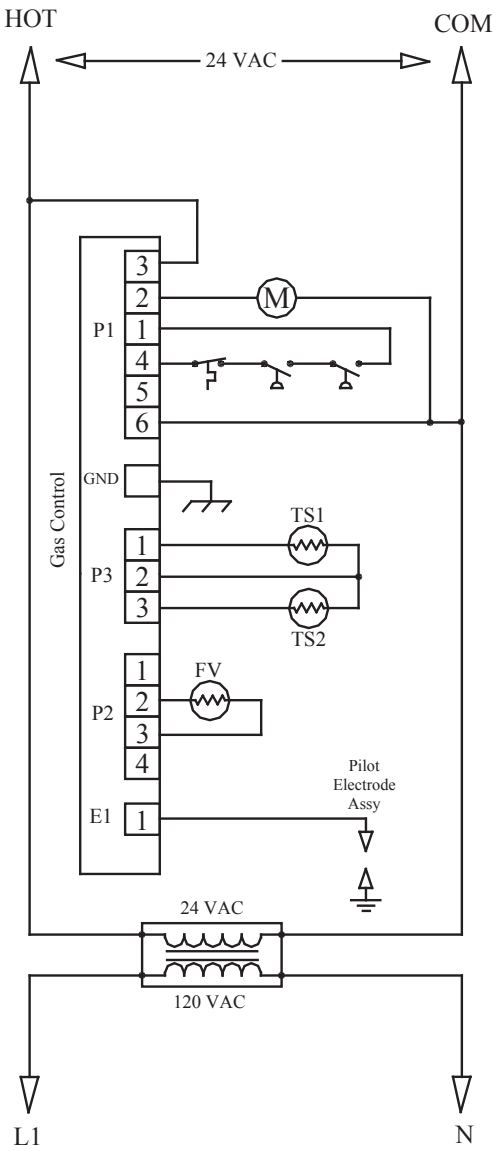
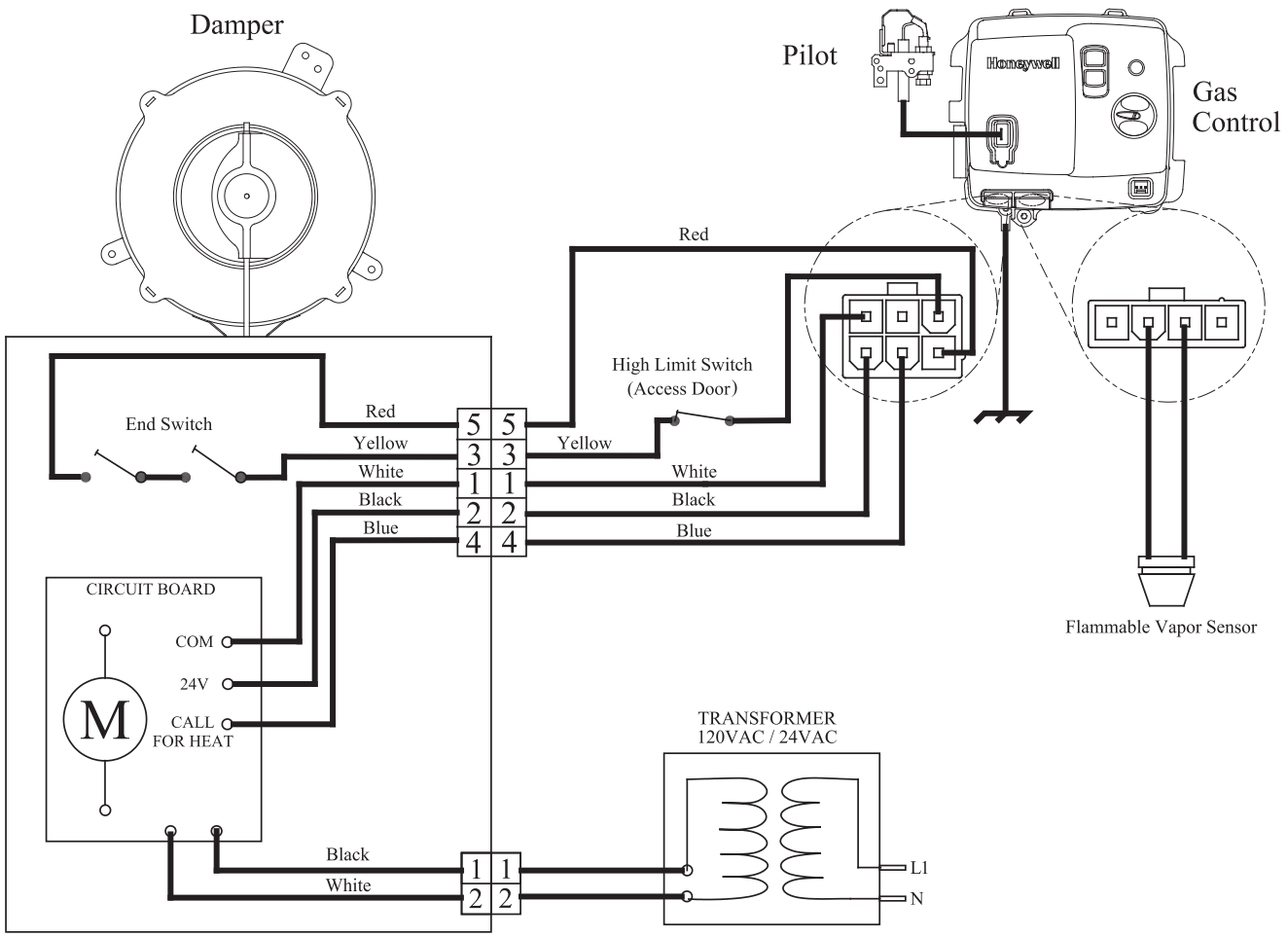


Figure 11

CONNECTION DIAGRAM



Installation Checklist

Location

- Is the water heater located close to the chimney and the main use of hot water? ☐
- Is the water heater protected from freezing temperatures? ☐
- Has a drain pan been installed and piped to a free-flowing drain? ☐
- Is the gas control accessible for servicing? ☐
- Have clearances from combustible materials been observed? ☐

Combustion and Ventilation Air Supply

- Is the area around the water heater clean and properly ventilated? ☐
- Is the fresh air supply free of corrosive elements and flammable vapours? ☐
- Does the water heater have access to enough fresh combustion air? ☐
- Have the fresh air openings been sized correctly and has consideration been given to the blocking effect of louvers and grilles? ☐

Venting

- Is the flue baffle installed in the flue tube? ☐
- Has the manufacturer's supplied draft hood been installed correctly? ☐
- Is the vent piping made of an approved material and sized correctly? ☐
- Has the venting been installed with 1/4 inch rise per foot (21 mm/m) of horizontal run? ☐
- Has all the vent piping been secured with sheet metal screws? ☐

Water Piping

- Is the dip-tube installed in the cold water inlet? ☐
- Has a temperature and pressure-relief valve been installed? ☐
- Does this valve have a discharge line installed and is it piped to a free-flowing drain? ☐
- Have all the plumbing connections been properly installed and are they leak free? ☐
- Is the water heater completly full of water? ☐

Gas Connections

- Is the gas supplied to the water heater the same type as indicated on the water heater rating plate? ☐
- Has the gas line been installed with a manual shut-off valve, union, and drip leg? ☐
- Is the gas piping large enough and made of an approved material? ☐
- Have all connections been made with an approved joint compound? ☐
- Has the gas piping been tested for leaks with a soap and water solution? ☐

Wiring

- Has the wiring been properly installed? ☐
- Have the electrical connections been checked and are they secure? ☐
- Is the water heater electrically grounded? ☐
- Does the 120V wall receptacle have the proper polarity? ☐

OPERATING INSTRUCTIONS

Lighting the Water Heater

Before lighting or re-lighting your water heater, make sure that you have read and understood all of the instructions and warnings in this manual and on your water heater. If you have any questions about lighting your water heater, immediately contact a qualified installer, service agency, or the gas supplier.

⚠ WARNING

DO NOT light this water heater if:

- It is not full of water.
- The gas supplied does not match the type listed on the rating plate.
- The sight glass or burner access door gasket has been damaged or broken.
- Gasoline or other flammable vapours and liquids have been stored in the vicinity of the water heater.

Failure to follow these instructions can result in property damage, personal injury, or death.

FOR YOUR SAFETY, READ BEFORE LIGHTING

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

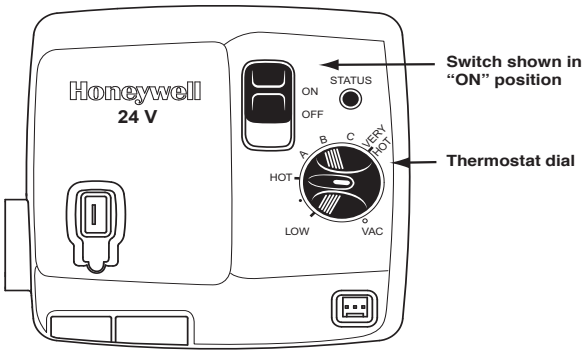
A. This appliance is equipped with an ignition device which automatically lights the pilot. DO NOT try to light the pilot by hand.

B. BEFORE operating, 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.**
- **From a neighbour's phone, immediately call your gas supplier. Follow the gas supplier's instructions.**
- **If you cannot reach your gas supplier, call the fire department.**

C. 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 INSTRUCTIONS

1. **STOP! Read the safety information above on this label.**
2. **Slide the "ON/OFF" switch located on the gas valve to the "OFF" position.**
3. **Turn OFF all electric power to the appliance.**
4. **Set the thermostat dial to "LOW"**



5. **This appliance is equipped with an ignition device which automatically lights the pilot. DO NOT try to light the pilot by hand.**
6. **Wait five (5) minutes to clear out any gas. If you then smell gas, STOP! Follow step "B" in the safety information above on this label. If you do not smell gas, go to the next step.**
7. **Turn ON all electric power to the appliance.**
8. **Slide the "ON/OFF" switch located on the gas valve to the "ON" position**
9. **Set the thermostat to the desired setting.**
10. **If the appliance will not operate, follow the instructions "*To Turn Off Gas To Appliance*" and call a qualified service technician or the gas supplier.**

TO TURN OFF GAS TO APPLIANCE

1. **Turn OFF all electric power to the appliance.**
2. **Turn OFF the gas supply to the appliance.**

Draft Hood Operation

It is important to check that the ventilation system is working properly once the water heater main burner has been lit. Flue damper must be in open position when appliance main burner is operating. Wait ten (10) minutes after lighting the burner. Then, introduce a match or candle around the opening of the draft hood. If the flame is drawn towards the opening, this indicates proper ventilation. If the flame flutters or is blown out, combustion gases are escaping from the draft hood opening. If this occurs, shut the water heater off immediately and locate the problem. **Do not try and operate the water heater again until you are satisfied that the problem has been corrected.**

Water Temperature Regulation

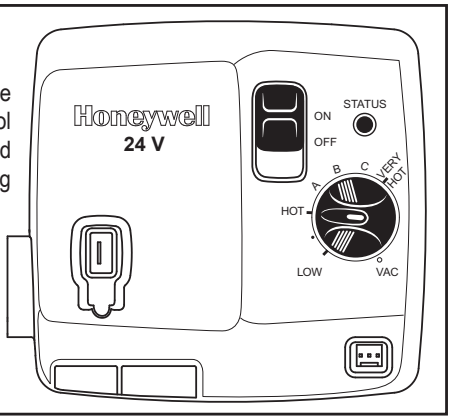
⚠ WARNING

The higher the setting, the greater the risk of scalding. Hot water can cause third degree burns under one (1) second at 160˚F (71˚C), in five (5) seconds at 140˚F (60˚C), and in thirty (30) seconds at 130˚F (54˚C). In households where there are children, physically challenged individuals, or elderly persons, mixing valves for point of use are necessary as means of reducing the scalding potential of hot water.

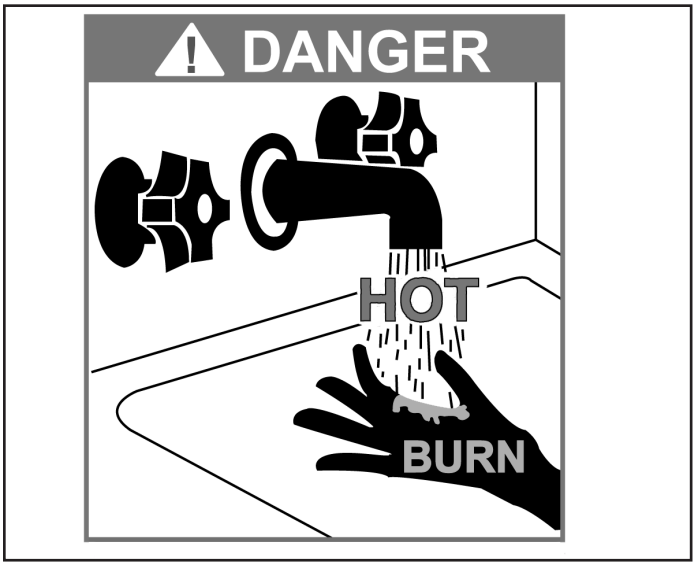
The gas control is factory-adjusted to its lowest temperature. The desired water temperature can be selected by rotating the temperature dial on the front of the gas control **(see Figure 12)**. Turn the temperature dial counterclockwise ↶ to decrease the temperature, or clockwise ↷ to increase the temperature. Refer to **Table 1** for temperature setting.

Figure 12

The "HOT" temperature setting on the gas control dial is the preferred starting point for setting the gas control.



When hot water is drawn from the tank in frequent short bursts, a condition known as "stacking" is created. "Stacking" is the result of increased cycling of the burner and can produce very hot water temperatures at the hot water outlet. Always remember to check the hot water coming out of any faucet with your hand before use. This will reduce the risk of scalding related injuries.



The gas control is equipped with a high limit switch (H.L.S.). Should the temperature of the water exceed 189˚F (87˚C), the H.L.S. will shut off the gas to the water heater. If the H.L.S. has tripped, the gas control requires a manual reset. This reset occurs by turning the set point knob to lowest setting for a minimum of ten (10) seconds and then returning it to the desired temperature. Control will not reset after three (3) occurrences.

⚠ WARNING

Should overheating occur or the gas supply fail to shut off, close the gas supply manual shut-off valve. Failure to follow this instruction can result in property damage, personal injury, or death.

If the water heater has been subjected to fire, flood, or been damaged in any way, close the gas supply manual shut-off valve. Do not operate the water heater again until it has been inspected by a qualified service technician.

Out of Fuel

If your water heater should run out of gas, proceed as follows:

1) Close the gas supply manual shut-off valve.
2) Slide the "ON/OFF" switch located on the gas valve to the "OFF" position.
3) Once the gas supply has been re-established, proceed to the ***Lighting Instructions.***

Table 1

SET POINT (approximate temperature)						
VACATION	**LOW**	**HOT**	**A**	**B**	**C**	**VERY HOT**
70°F (21°C)	110°F (43°C)	120°F (49°C)	130°F (54°C)	140°F (60°C)	150°F (65°C)	160°F (71°C)

Housekeeping

⚠ WARNING

DO NOT store or use gasoline or other flammable vapours and liquids around the water heater.
DO NOT block or, in any way, restrict the flow of fresh air through the combustion air intake holes at the bottom of the water heater.
DO NOT put or store any objects on the top of the water heater.
Failure to follow these instructions can result in property damage, personal injury, or death.

Keep the area around the water heater clean and free of dust, lint, and dirt. Verify the combustion air intake holes, at the bottom of the water heater, at least once every six (6) months and vacuum up any dirt, as required. For the installation, make sure that all of the minimum clearances to combustible materials are being maintained.

Condensation

As moisture from the products of combustion comes into contact with the cold surface of the inner tank, it may condense. This situation will usually occur:

1) When the water heater is filled for the first time.
2) If the water heater has been undersized.
3) When large amounts of hot water are drawn from the water heater in a short period of time and the refill water is very cold.

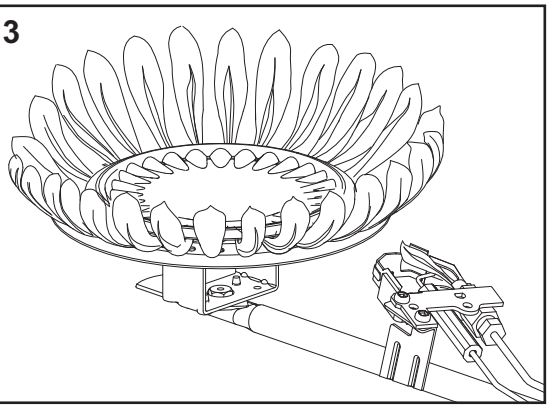
Due to the high-efficiency rating of this gas-fired water heater, it may produce more condensation than older models. Condensation forming on the flue tube will drop on the burner making a “sizzling” sound. In extreme cases, the condensate may even extinguish the pilot flame. This condition is not uncommon and must never be misinterpreted as a leaking tank. It will disappear once the water becomes heated.

Because of the large amounts of water that can condense, it is very important that a drain pan be installed under the water heater **(refer to “Location”). Under no circumstances is the manufacturer to be held liable for any water damage, in connection with this water heater.** If the problem does not go away and water continues to drip after the water heater has heated up, check all of the plumbing connections to make sure they are not leaking.

Main Burner & Pilot

Every three (3) months, check the main burner and pilot flame. Remove the outer access door and look through the sight glass to examine the flames. A soft blue flame indicates proper gas combustion. A yellow tipped flame indicates poor combustion. Refer to **Figure 13** for proper burner and pilot burner pattern. With a vacuum cleaner, remove any dust, lint, and dirt accumulation on or around the combustion chamber and in the combustion air intake holes.

Figure 13



⚠ WARNING

DO NOT remove the inner access door at any time. If the combustion chamber must be accessed to clean the burner assembly or flame arrestor grill, a qualified service technician must be called. Failure to follow these instructions can result in property damage, personal injury, or death.

Water Heater Inner Tank

Drain a pail of water through the drain valve at least once a year. This will remove excess sediment from the bottom of the tank. This sediment, if allowed to accumulate, will reduce the efficiency and the life of the tank.

Temperature and Pressure-Relief Valve

Manually operate the temperature and pressure-relief valve at least once a year, standing clear of the outlet to avoid being burned. Lift and release the operating lever on the valve to make it operate freely. If, after manually operating the valve, it fails to completely reset itself and continues to discharge water, replace it with a new one.

Venting System Inspection

The venting system must be thoroughly inspected once a year. Check the area where the water heater is located to make sure that there is enough clean combustion and ventilation air. Remove any possible obstructions that would prevent proper air circulation and venting. Check the venting system to make sure that all of the connections are securely fastened, and that all of the joints are properly sealed. If any part of the venting system is damaged, it must be replaced by a qualified service technician. Test the ventilation system to make sure that it is venting properly **(refer to “Draft hood Operation”).**

Anode

This water heater is equipped with an anode that is designed to prolong the life of the glass-lined tank. The anode is slowly consumed, protecting the glass-lined tank from corrosion. The anode should be checked every two (2) years. If more than half of the anode has been consumed it should be replaced. Instructions on how to change the anode can be obtained from the manufacturer.

The life expectancy of the water heater is reduced where a water softener is introduced to fight hard water, because the sodium salts added by a softener make this water extremely conductive. In these conditions, the anode is consumed more rapidly and should be verified every year.

In certain water conditions, the anode will react with the water, producing discoloured or smelly water. The most common complaint is hot water that smells like rotten eggs. This phenomenon is the result of the reaction between the anode and hydrogen sulfide gas dissolved in the water which occurs frequently in well systems. This problem can usually be eliminated or reduced by changing the anode to a type more suitable for these conditions (aluminum anode) and by chlorinating the water heater and plumbing system. If the problem persists, special filtration equipment may be required. Under no circumstances is the anode to be removed from the water heater on a permanent basis. **Removal of the anode will lead to premature failure of the water heater and void the warranty.**

⚠ WARNING

Hydrogen gas can be produced in a hot water system that has not been used for a long period of time (generally two (2) weeks or more). **HYDROGEN GAS IS EXTREMELY FLAMMABLE.** It is highly recommended to open the hot water faucet in the kitchen for several minutes before you use any electrical appliances connected to the hot water system, such as a dishwasher or a washing machine. If hydrogen gas is present, there will be an unusual sound, such as air escaping through the pipe, as the hot water faucet is opened. **DO NOT** smoke or introduce an open flame near the faucet when it is opened.

Draining the Water Heater

To completely drain the water heater:

1) Turn the temperature dial counterclockwise ↶ to the “Vacation” position.
2) Slide the “ON/OFF” switch located on the gas valve to the “OFF” position.
3) Close the gas supply manual shut-off valve.
4) Close the cold water supply manual shut-off valve.
5) Connect one end of a garden hose to the water heater drain valve and put the other next to a free-flowing drain.
6) Open the drain valve by inserting a flat-head screwdriver into the slot on the head of the drain valve and turning the knob counterclockwise ↶.
7) Open a hot water faucet to allow air into the system.

Vacation

If you are planning a vacation or other prolonged absence, it is highly recommended to shut off the electric supply, the gas supply and the cold water supply to the water heater. This will save energy, protect against property damage in the event the water heater leaks, and prevent the build-up of hydrogen gas. If the water heater and piping are exposed to freezing temperatures, they should both be drained.

Remember to check the water heater thoroughly after it has been shut off for an extended period of time before putting it back in operation. Make sure that the water heater is completely full of water and that the cold water supply manual shut-off valve is open before turning on the power.

Service Procedure

If you are having problems with your water heater, follow these three easy steps:

1) Consult the troubleshooting guide below. It lists the most common problems experienced with your gas-fired water heater. The solutions you find listed may provide a quick and simple solution to your problem and save you time and money.

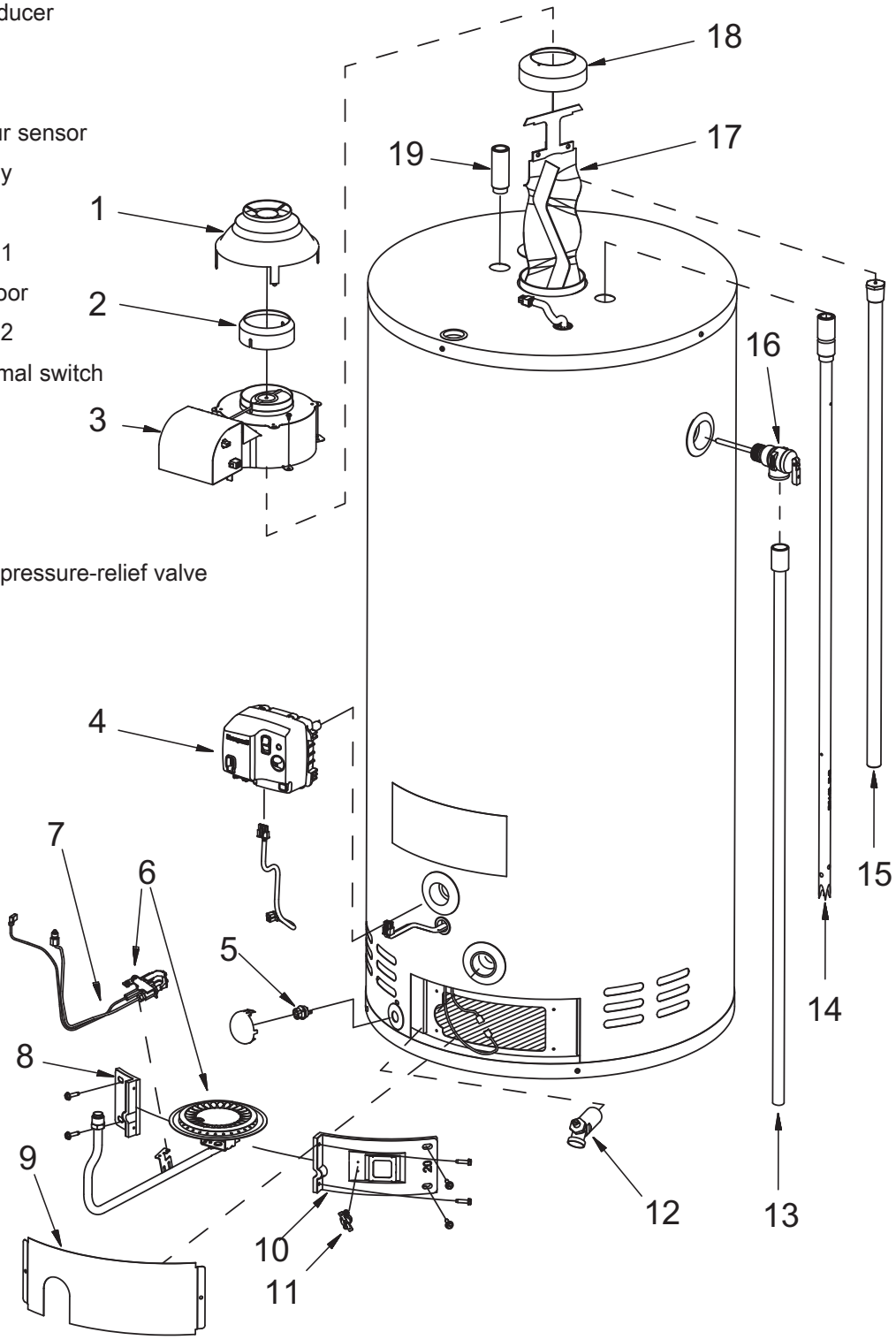
2) If the solution listed in the troubleshooting guide does not solve the problem or if your particular problem is not listed in the guide, contact the installer of the water heater, or the local gas utility.

3) If you still cannot solve the problem, contact the manufacturer’s Customer Service Department by e-mail at **service@giantinc.com** or by telephone at 1-800-363-9354 option 1. To help serve you in a quick and efficient manner, **always have the following information ready:**

   A) Model number.
   B) Serial number.
   C) Date of installation.
   D) Name of the supplier.
   E) Complete address where the water heater is installed.
   F) A description of the problem.

Water Heater Assembly

1) Draft hood
2) Flue damper reducer
3) Flue Damper
4) Gas control
5) Flamable vapour sensor
6) Burner assembly
7) Pilot assembly
8) Inner door Part 1
9) Outer access door
10) Inner door Part 2
11) Resettable thermal switch
12) Drain valve
13) Overflow tube
14) Dip tube
15) Anode
16) Temperature & pressure-relief valve
17) Baffle
18) Flue reducer
19) Outlet nipple



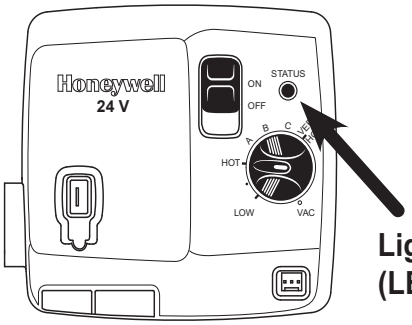
TROUBLESHOOTING GUIDE

CONDITION	CAUSE	REMEDY
The burner will not ignite.	No gas.	Check with gas utility company.
	Dirt in gas line.	Notify utility. Install drip leg in gas line.
	Pilot line clogged.	Clean. Check for source of trouble and correct.
	Combustion air intake holes blocked.	With a vacuum cleaner, remove dirt, dust, and lint.
	Flame arrestor openings blocked.	With a vacuum cleaner, remove dirt, dust, and lint.
	Main burner line clogged.	Clean. Check for source of trouble and correct.
	Defective pilot assembly.	Replace with new assembly.
	Defective gas control.	Replace with new gas control.
	Gas control set too low.	Turn temperature dial to desired temperature.
	Heater installed in a confined area.	Provide fresh air ventilation.
	No electricity	Correct problem or call Utility
The burner flame floats and lifts off ports.	High gas pressure.	Check with gas utility company.
	Orifice too large.	Replace with correct orifice.
	Flue clogged.	Clean. Check for source of trouble and correct.
	Combustion air intake holes blocked.	With a vacuum cleaner, remove dirt, dust, and lint.
	Flame arrestor openings blocked.	With a vacuum cleaner, remove dirt, dust, and lint.
	Heater installed in a confined area.	Provide fresh air ventilation.
	Cold drafts (downdraft).	Locate source and correct.
The burner flame is yellow and lazy.	Insufficient secondary air.	Provide fresh air ventilation.
	Flue clogged.	Clean. Check for source of trouble and correct.
	Combustion air intake holes blocked.	With a vacuum cleaner, remove dirt, dust, and lint.
	Flame arrestor openings blocked.	With a vacuum cleaner, remove dirt, dust, and lint.
	Main burner line clogged.	Clean. Check for source of trouble and correct.
	Heater installed in a confined area.	Provide fresh air ventilation.
The burner flame is too high.	Insufficient secondary air.	Provide fresh air ventilation.
	Orifice too large.	Replace with correct orifice.
	Defective gas control.	Replace with new gas control.
The flame burns at the orifice.	Low gas pressure.	Check with gas utility company.
	Defective gas control.	Replace with new gas control.
The pilot will not light or remain lit.	No gas.	Check with gas utility company.
	Dirt in gas line.	Notify utility. Install drip leg in gas line.
	Pilot line clogged.	Clean. Check for source of trouble and correct.
	Loose pilot connection.	Tighten with pliers.
	Defective pilot assembly.	Reset or replace with new pilot assembly.
	Cold drafts (downdraft).	Check source and correct.
	Combustion air intake holes blocked.	With a vacuum cleaner, remove dirt, dust, and lint.
	Flame arrestor openings blocked.	With a vacuum cleaner, remove dirt, dust, and lint.
	Gas control high limit switch has tripped.	Replace with new gas control.
	Resettable thermal switch on inner access door has tripped.	Reset thermal switch on inner access door and re-light burner.
	Flammable vapours incident.	Contact a qualified service technician or the manufacturer for further instructions.
	No electricity.	Correct problem or call Utility.
The access door temperature high limit switch is tripping.	Not enough draft from the chimney.	Check for any obstruction in the chimney. Ensure that the chimney is sized and installed according to proper installation codes.
	Not enough fresh air for the combustion.	Supply make-up air. Refer to the proper installation codes.
	Ambiant air temperature is too high.	Reduce ambiant air temperature.
	Excessive dirt, dust or other debris accumulation on the flame arrestor.	Clean the flame arrestor in the combustion chamber using a stiff brush, compressed air and/or a vacuum cleaner.
High operating costs.	Gas control set too high.	Turn temperature dial to desired temperature.
	Sediment or lime in tank.	Drain. Check to see if water treatment is necessary.
	Water heater is undersized.	Install size of water heater that meets demand.
	Wrong piping connections.	Correct piping, dip tube must be in cold inlet.
	Leaking faucets.	Repair faucets.
	Gas leaks.	Check with gas utility company. Repair at once.
	Wasted hot water.	Advise consumer.

TROUBLESHOOTING GUIDE

CONDITION	CAUSE	REMEDY
High operating costs (Continued)	Long runs or exposed piping.	Insulate piping.
	Hot water piping on outside wall.	Insulate piping.
Insufficient hot water.	Low gas pressure.	Check with gas utility company.
	Wrong piping connections.	Correct piping, dip tube must be in cold inlet.
	Sediment or lime in tank.	Drain. Check to see if water treatment is necessary.
	Water heater is undersized.	Install the size of water heater that meets the demand.
	Gas control set too low.	Turn temperature knob to desired temperature.
	Leaking faucets.	Repair faucets.
	Wasted hot water.	Advise consumer.
	Long runs or exposed piping.	Insulate piping.
	Hot water piping on outside wall.	Insulate piping.
Slow hot water recovery.	Insufficient secondary air.	Provide fresh air ventilation.
	Low gas pressure.	Check with gas utility company.
	Gas control set too low.	Turn temperature dial to desired temperature.
	Improper calibration.	Replace gas control.
	Flue clogged.	Clean. Check for source of trouble and correct.
	Water heater is undersized.	Install size of water heater that meets demand.
	Wrong piping connection.	Correct piping, dip tube must be in cold inlet.
	Wasted hot water.	Advise consumer.
Leaking water.	Poorly sealed, hot or cold water connections, gas control threads, relief valve, or drain valve.	Tighten threaded connections.
	Leakage from plumbing system or other appliances.	Inspect plumbing system and other appliances.
	Condensation.	Refer to ***Condensation.***
Water drips from the relief valve.	Heater stacking.	Lower gas control setting.
	Excessive water pressure.	Install a pressure-reducing valve.
	Thermal expansion in a closed water system.	Install an expansion tank.
	Improperly seated valve.	Check relief valve works properly and replace if necessary.
The gas control fails to shut-off.	Defective gas control.	Replace with new gas control.
	Improper calibration.	Replace gas control.
Condensation.	Water heater filled for first time.	Let water heater warm up. Problem should go away. If it persists, check all plumbing connections for leaks.
	Heavy draws of hot water with very cold refill water.	Let water heater warm up. Problem should go away. If it persists, check all plumbing connections for leaks.
	Water heater is undersized.	Install size of water heater that meets demand.
Combustion odours.	Insufficient secondary air.	Provide fresh air ventilation.
	Heater installed in a confined area.	Provide fresh air ventilation.
	Flue clogged.	Clean. Check for source of trouble and correct.
Smoking and carbon	Insufficient secondary air.	Provide fresh air ventilation.
	Low gas pressure.	Check with gas utility company.
	Burner flame yellow, lazy.	Refer to ***The burner flame is yellow and lazy.***
	Flue clogged.	Clean. Check for source of trouble and correct.
	Defective gas control.	Replace with new gas control.
	Heater installed in a confined area.	Provide fresh air ventilation.
The pilot flame is too small.	Low gas pressure.	Check with utility.
	Pilot line or orifice clogged.	Clean. Check for source of trouble and correct.
Smelly water.	High sulfate or mineral content in water.	Change magnesium anode to an aluminum anode and bleach tank.

LED Status Codes



Light-emitting diode (LED)

FAULT	PROBABLE CAUSE
Resettable thermal switch tripped (open)	• Insufficient combustion air • Presence of flammable vapors

LED FLASH SEQUENCE	CONTROL STATUS	PROBABLE CAUSE	REMEDY
Short flash once every four seconds	Stand-by mode (no call for heat, no fault conditions)	• Water temperature set point has been achieved	None
"Heartbeat", alternates bright/dim	Call For Heat (no fault conditions)	• Water temperature is below set point	None
One Flash, three second pause	Low Flame Signal (control continues to operate)	• Carbon build-up on pilot electrode • Pilot tube restricted or damaged • Pilot igniter wire damaged • Incorrect wiring and/or connections • Gas supply problems	• Clean or replace pilot assembly • Inspect wiring and connections • Correct gas supply
Two Flash, three second pause	Flue Damper Switch Failed Closed	• Flue damper gate stuck open • Flue damper switch stuck closed • Faulty flue damper motor • Obstruction or debris in flue damper opening • Incorrect wiring and/or connections	• Inspect flue damper opening • Inspect wiring and connection • Replace flue damper assembly
Three Flash, three second pause	TCO or Flue Damper End Switch Failed Open	• Flue damper gate not reaching full open position • Flue damper switch stuck open • Faulty flue damper motor • Obstruction or debris in flue damper opening • Resettable thermal switch fault	• Inspect flue damper opening • Inspect wiring and connection • Replace flue damper assembly • Resettable thermal switch open
Four Flash, three second pause	Thermal Cutoff Device Tripped – System in Lockout	• Thermal well fault in gas control – Excessive water temperature • Faulty gas control	• Reset gas control • Replace gas control
Five Flash, three second pause	Flame Out Of Sequence	• Pilot and/or main burner valve malfunctioning	• Replace gas control
Six-One Flash, three second pause	Unit failed to light – System in Soft Lockout	• Pilot flame unstable • Carbon build-up on pilot electrode • Pilot tube restricted or damaged • Pilot igniter wire damaged • Gas supply problems	• Clean or replace pilot assembly • Correct gas supply
Six-Two Flash, three second pause	Flue Damper Switch Opened – System in Soft Lockout	• Faulty flue damper switch • Incorrect wiring and/or connections • Damper gate jostled during operation	• Inspect wiring and connections • Replace flue damper assembly
Six-Three Flash, three second pause	Flame Lost - System in Soft Lockout	• Pilot flame unstable • Carbon build-up on pilot electrode • Pilot tube restricted or damaged • Pilot igniter wire damaged • Insufficient combustion air • Gas supply problems	• Ensure combustion air supply is not blocked or restricted • Clean or replace pilot assembly • Correct gas supply
Six-Four Flash, three second pause	Flame sense out of Sequence - System in Soft Lockout	• Gas control stuck open	• Replace gas control
Seven Flash, three second pause	Flammable Vapor Detected - System in Lockout	• Presence of gasoline or other flammable vapors • Excessive moisture on flammable vapor sensor • Faulty flammable vapor sensor • Faulty gas control	• Ensure that no flammable vapors are present • Reset the gas control • Replace flammable vapor sensor • Replace gas control
Eight-One Flash, three second pause	Flammable Vapor Sensor Fault Detected	• Flammable vapor sensor out of specification • Incorrect wiring and/or connections • Faulty flammable vapor sensor • Faulty gas control	• Inspect flammable vapor sensor wiring and connections • Replace flammable vapor sensor • Replace gas control
Eight-Two Flash, three second pause	Temperature Sensor Fault Detected	• Thermal well fault in gas control	• Inspect thermal well wiring and connections • Replace thermal well
Eight-Three Flash, three second pause	Electronics Fault Detected	• Thermal well fault in gas control • Faulty gas control	• Replace thermal well • Replace gas control
Eight-Four Flash, three second pause	Gas control Fault Detected	• Gas control needs to be reset • Gas control has been damaged	• Reset gas control ON/OFF switch • Replace gas control

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STANDARD BASIC LIMITED WARRANTY

ON RESIDENTIAL ELECTRIC, GAS-FIRED WATER HEATERS AND STORAGE TANKS

(Hereunder referred to as "Unit" or "Equipment")

GENERAL

The manufacturer warrants that, subject to verification of your warranty claim within the warranty period described below, the necessary corrective actions will be taken to either repair or replace the defective unit or component part subject to the terms and conditions outlined in this document. Furthermore, any replacement unit or component part supplied under warranty will carry only the warranty remaining portion, based on the original unit installation date. However, the warranty is limited to one (1) replacement unit. If due to some unusual circumstance, a replacement unit or component part is found to be defective by our inspection department, another unit or component part will be provided in order to fulfill the obligation of the original warranty. This warranty applies only to the original owner that purchased the unit, to the unit original installation location, and it is not transferable. In order to benefit from this warranty, the warranty reply card must be completed and sent back to GIANT within forty-five (45) days of the unit purchase date, otherwise the warranty will be as follows: SIX (6) years (for a residential water heater in a family dwelling), FIVE (5) years (for a storage tank in a family dwelling) and ONE (1) year (for any installation other than a family dwelling) from the manufacturing date, without exception.

THE INNER TANK

If the warranty card is returned within the applicable time frame and the inner tank leaks within the shorter of the two following periods: SIX (6)[1] years after the original installation date or NINETY (90)[2] months after the manufacturing date, whichever comes first, a replacement unit will be provided to the original unit owner. Use of the equipment for purposes other than for a family dwelling limits the warranty to ONE (1) year.

Exceptions:

[1] : Or FIVE (5) years for storage tanks

[2] : Or SEVENTY-EIGHT (78) months for storage tanks

COMPONENT PARTS

If any component part is found to be defective within ONE (1) year from the original installation date, provided said defective part is an in-house factory made piece or an original factory approved OEM piece, the manufacturer will provide a replacement part after the receipt and testing of such part.

THIS WARRANTY DOES NOT APPLY IN THE FOLLOWING CASES:

1) To defects or malfunctions resulting from failure to properly install, operate, or maintain the unit in accordance with the Owner's Manual.
2) If the installation does not comply with CSA Standards, in particular, but not limited to, the existing CSA-C652 Standard *(Installation of Electric Storage Tank and Heat Pump Water Heaters for Residential Use)*, CSA-B149.1 *(Natural gas and propane installation code)* as well as any other existing codes or standards, local regulations CSA-C22.1 *(Canadian Electrical Code)*, and good practices.
3) To any damage or failure caused by abuse, fire, floods, freezing, or other acts of God.
4) To any damage or failure caused by operating the unit without an approved temperature & pressure-relief valve having been installed.
5) To any damage or failure caused by powering any energy source while the equipment is empty or partially empty or contains sediment build-up resulting in dry firing of the heating elements.
6) To any damage or failure caused by connecting the unit to any other source of energy not approved by GIANT or by operating the equipment for other use than with potable water without any additives such as salt, chlorine, or chemicals other than those added for the purpose of rendering the water fit to drink.
7) To any damage or failure caused by the removal of the anode and/or by not assuring that there is a working anode in the unit at all times. **"All anodes must be checked at least once every two (2) years & replaced, if necessary"**. The installation of an anode that does not comply with the requirements of the existing CSA-C309 Standard *(Performance Requirements for Glass-Lined Storage Tanks for Household Hot Water Service),* particularly in regards to the manufacturing, installation, and composition of the replacement anode, will instantly void the warranty. The same applies, but is not limited to, the non-compliance of the CSA-C191, CSA-C22.2, and CSA-B149.1 Standards.
8) To any damage or failure caused by the use of the unit with a water softener if the magnesium anode has not been replaced by an aluminum anode approved by GIANT, as well as the addition of zinc pellets.
9) To any damage or failure caused by having affixed to the unit any non-factory made or factory approved replacement part(s), such as elements, controls, dip-tubes, anode, induced-current anode, relief valves, etc.
10) To any damage caused by not having the unit installed adjacent to a free-flowing drain or in a pan or basin connected to such free-flowing drain.
11) For all equipment operated at water temperatures exceeding the maximum operating setting of the thermostat and/or the high limit control, at a pressure exceeding the one listed on the rating plate, for equipment subject to a water-hammer effect that reverses the bottom of the tank, units that are installed in a closed-looped system without any adequate expansion tank[3] being installed as well as equipment installed in a system equipped with a backflow preventer, a pressure-reducing valve, or any other device, such as a check valve, without an adequate expansion tank[3] being installed.
    [3] : Or any other method accepted by the competent authority.
12) To any unit drained for wintering purposes.
13) To any performance issue caused by the poor selection of equipment, power supply, wiring, or fuse / breaker.
14) To any unit from which the rating plate has been removed or altered.
15) To any break or damage caused by a water-hammer effect coming from, but not limited to, a quick-closing valve, a solenoid valve, or any other valves without an adequate pre-fabricated expansion tank being installed in compliance with existing codes, standards, and good practices.
16) To any issue caused by the installation of water connections not compatible with the equipment inlet and outlet "NPT" connections.
17) To any unit installed outside of Canada or the United States.

SERVICE LABOUR RESPONSIBILITY

This warranty does not cover any labour expense for diagnostic, service, removal, or re-installation of a replacement unit. All such expenses are the responsibility of the unit owner.

SHIPPING COSTS

If a unit or component part is deemed to be replaced, the manufacturer will pay the transportation costs to ship said replacement unit or part to a convenient authorized distributor or retailer of our choice. The unit owner must pay for any local cartage including the cost of returning the replaced unit or component part to the authorized distributor or retailer.

CLAIM PROCEDURE

Any claim covered by the warranty must be made to GIANT within a maximum of thirty (30) days from the date the defect is first discovered. Failure to provide a written notice for such defect to the manufacturer within the allocated time frame will void the warranty. Any claim for warranty service should be made with your contractor, wholesaler, or retailer from whom the unit was purchased. In turn, said contractor, wholesaler, or retailer will contact the manufacturer. If this procedure cannot be followed, please contact a local contractor, wholesaler, or retailer distributing our products. For further warranty information, please call our customer service department at (514) 645-8893 or 1-800-363-9354, option 1. In order to answer your call promptly, prior to calling the factory, please make sure to have handy the unit model and serial number that is found on the rating plate, on the side of the unit. Proof of purchase showing the date and name of the business from whom the unit was purchased is mandatory if the manufacturing date goes beyond the warranty period offered by the manufacturer.

If an exact replacement unit is unavailable for whatever reason such as, but not limited to, changes in government standards, the manufacturer agrees to provide a unit or component part with comparable features. If government regulations or industry standards require the replacement unit or component part to have features not found on the defective unit or component part, the unit owner will be charged the difference in price associated with these required features. If such owner pays the difference in price for these required features, they will benefit from a complete new Standard Basic Limited Warranty for the replacement unit.

MISCELLANEOUS

No one is authorized to modify any conditions of this actual warranty. The manufacturer will not honour any other warranty of any kind other than what is offered. No claims for incidental or consequential damage (including damage from leakage) will be accepted. If the warranty card is not returned to us, a proof of purchase showing the name, date, and location of the original point of purchase is mandatory to process any warranty claim. Failure to provide such documentation will result in the lesser of the warranty periods being offered, as stated in the "GENERAL" section. **In order to avoid any confusion and/or disputes, we suggest that the warranty card be completed and returned to us no later than forty-five (45) days after installation.**

EXTENDED WARRANTY

For information concerning options for additional warranties on our residential electric, gas-fired water heaters and storage tanks, contact your local licensed plumber, an authorized retailer, or GIANT.

40, Lesage Avenue, Montréal-East (Québec), Canada H1B 5H3

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STANDARD BASIC LIMITED WARRANTY FOR U.S. INSTALLATIONS

ON RESIDENTIAL ELECTRIC, GAS-FIRED WATER HEATERS AND STORAGE TANKS

(Hereunder referred to as "Unit" or "Equipment")

GENERAL

The manufacturer warrants that, subject to verification of your warranty claim within the warranty period described below, the necessary corrective actions will be taken to either repair or replace the defective unit or component part subject to the terms and conditions outlined in this document. Furthermore, any replacement unit or component part supplied under warranty will carry only the warranty remaining portion, based on the original unit installation date. However, the warranty is limited to one (1) replacement unit. If due to some unusual circumstance, a replacement unit or component part is found to be defective by our inspection department, another unit or component part will be provided in order to fulfill the obligation of the original warranty. This warranty applies only to the original owner that purchased the unit, to the unit original installation location, and it is not transferable. In order to benefit from this warranty, the warranty reply card must be completed and sent back to GIANT within forty-five (45) days of the unit purchase date, otherwise the warranty will be as follows: SIX (6) years (for a residential water heater in a family dwelling), FIVE (5) years (for a storage tank in a family dwelling) and ONE (1) year (for any installation other than a family dwelling) from the manufacturing date, without exception.

THE INNER TANK

If the warranty card is returned within the applicable time frame and the inner tank leaks within the shorter of the two following periods: SIX (6)[1] years after the original installation date or NINETY (90)[2] months after the manufacturing date, whichever comes first, a replacement unit will be provided to the original unit owner. Use of the equipment for purposes other than for a family dwelling limits the warranty to ONE (1) year.

Exceptions:

[1] : Or FIVE (5) years for storage tanks

[2] : Or SEVENTY-EIGHT (78) months for storage tanks

COMPONENT PARTS

If any component part is found to be defective within SIX (6)[4] years from the original installation date, provided said defective part is an in-house factory made piece or an original factory approved OEM piece, the manufacturer will provide a replacement part after the receipt and testing of such part.

[4] : Or ONE (1) year for storage tanks

THIS WARRANTY DOES NOT APPLY IN THE FOLLOWING CASES:

1) To defects or malfunctions resulting from failure to properly install, operate, or maintain the unit in accordance with the Owner's Manual.
2) If the installation does not comply with existing Standards, in particular, but not limited to, the National Fuel Gas Code (ANSI Z223.1/NFPA 54), National Electrical Code (NFPA 70), National Standard Plumbing Code (NSPC), as well as any other existing codes or standards, local regulations, and good practices.
3) To any damage or failure caused by abuse, fire, floods, freezing, or other acts of God.
4) To any damage or failure caused by operating the unit without an approved temperature & pressure-relief valve having been installed.
5) To any damage or failure caused by powering any energy source while the equipment is empty or partially empty or contains sediment build-up resulting in dry firing of the heating elements.
6) To any damage or failure caused by connecting the unit to any other source of energy not approved by GIANT or by operating the equipment for other use than with potable water without any additives such as salt, chlorine, or chemicals other than those added for the purpose of rendering the water fit to drink.
7) To any damage or failure caused by the removal of the anode and/or by not assuring that there is a working anode in the unit at all times. **"All anodes must be checked at least once every two (2) years & replaced, if necessary"**.
8) To any damage or failure caused by the use of the unit with a water softener if the magnesium anode has not been replaced by an aluminum anode approved by GIANT, as well as the addition of zinc pellets.
9) To any damage or failure caused by having affixed to the unit any non-factory made or factory approved replacement part(s), such as elements, controls, dip-tubes, anode, induced-current anode, relief valves, etc.
10) To any damage caused by not having the unit installed adjacent to a free-flowing drain or in a pan or basin connected to such free-flowing drain.
11) For all equipment operated at water temperatures exceeding the maximum operating setting of the thermostat and/or the high limit control, at a pressure exceeding the one listed on the rating plate, for equipment subject to a water-hammer effect that reverses the bottom of the tank, units that are installed in a closed-looped system without any adequate expansion tank[3] being installed as well as equipment installed in a system equipped with a backflow preventer, a pressure-reducing valve, or any other device, such as a check valve, without an adequate expansion tank[3] being installed.

    [3] : Or any other method accepted by the competent authority.
12) To any unit drained for wintering purposes.
13) To any performance issue caused by the poor selection of equipment, power supply, wiring, or fuse / breaker.
14) To any unit from which the rating plate has been removed or altered.
15) To any break or damage caused by a water-hammer effect coming from, but not limited to, a quick-closing valve, a solenoid valve, or any other valves without an adequate pre-fabricated expansion tank being installed in compliance with existing codes, standards, and good practices.
16) To any issue caused by the installation of water connections not compatible with the equipment inlet and outlet "NPT" connections.
17) To any unit installed outside of the United States.

SERVICE LABOUR RESPONSIBILITY

This warranty does not cover any labour expense for diagnostic, service, removal, or re-installation of a replacement unit. All such expenses are the responsibility of the unit owner.

SHIPPING COSTS

If a unit or component part is deemed to be replaced, the manufacturer will pay the transportation costs to ship said replacement unit or part to a convenient authorized distributor or retailer of our choice. The unit owner must pay for any local cartage including the cost of returning the replaced unit or component part to the authorized distributor or retailer.

CLAIM PROCEDURE

Any claim covered by the warranty must be made to GIANT within a maximum of thirty (30) days from the date the defect is first discovered. Failure to provide a written notice for such defect to the manufacturer within the allocated time frame will void the warranty. Any claim for warranty service should be made with your contractor, wholesaler, or retailer from whom the unit was purchased. In turn, said contractor, wholesaler, or retailer will contact the manufacturer. If this procedure cannot be followed, please contact a local contractor, wholesaler, or retailer distributing our products. For further warranty information, please call our customer service department at (514) 645-8893 or 1-800-363-9354, option 1. In order to answer your call promptly, prior to calling the factory, please make sure to have handy the unit model and serial number that is found on the rating plate, on the side of the unit. Proof of purchase showing the date and name of the business from whom the unit was purchased is mandatory if the manufacturing date goes beyond the warranty period offered by the manufacturer.

If an exact replacement unit is unavailable for whatever reason such as, but not limited to, changes in government standards, the manufacturer agrees to provide a unit or component part with comparable features. If government regulations or industry standards require the replacement unit or component part to have features not found on the defective unit or component part, the unit owner will be charged the difference in price associated with these required features. If such owner pays the difference in price for these required features, they will benefit from a complete new Standard Basic Limited Warranty for the replacement unit.

MISCELLANEOUS

No one is authorized to modify any conditions of this actual warranty. The manufacturer will not honour any other warranty of any kind other than what is offered. No claims for incidental or consequential damage (including damage from leakage) will be accepted. If the warranty card is not returned to us, a proof of purchase showing the name, date, and location of the original point of purchase is mandatory to process any warranty claim. Failure to provide such documentation will result in the lesser of the warranty periods being offered, as stated in the "GENERAL" section. **In order to avoid any confusion and/or disputes, we suggest that the warranty card be completed and returned to us no later than forty-five (45) days after installation.**

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Notes :