

## **⚠️WARNING:**

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

## **⚠️For Your Safety!**

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance. To do so may result in an explosion or fire.
- Installation and service must be performed by a qualified installer, service agency, or the gas supplier.

## **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.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.
- Do not return to your home until authorized by the gas supplier or fire department.

Do not destroy manual. Please read carefully and keep in a safe place for future reference.

## **⚠️WARNING:**

This water heater is not suitable for use in manufactured (mobile) homes.

# COMMON VENTING INSTALLATION INSTRUCTIONS

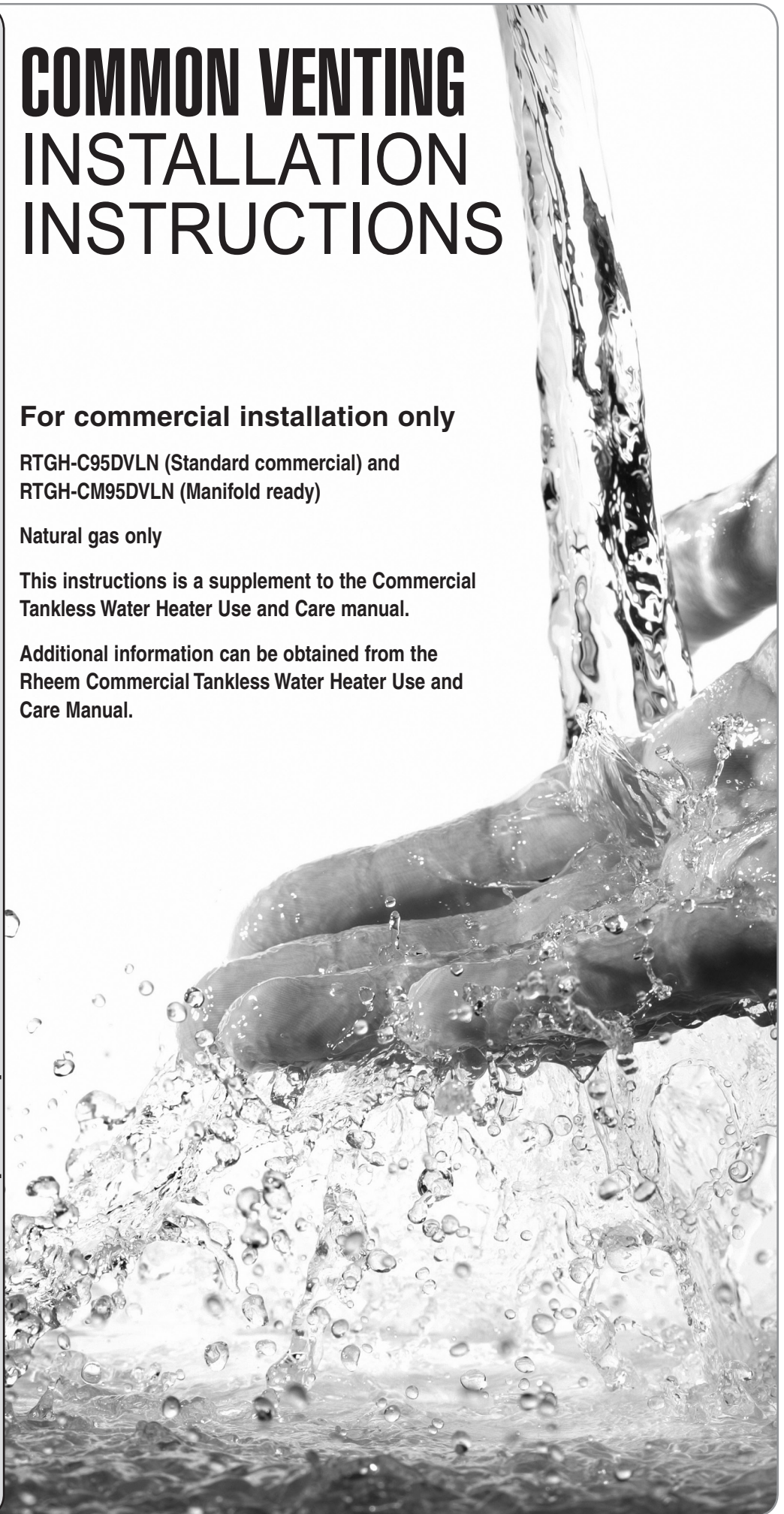
## For commercial installation only

RTGH-C95DVLN (Standard commercial) and  
RTGH-CM95DVLN (Manifold ready)

Natural gas only

This instructions is a supplement to the Commercial Tankless Water Heater Use and Care manual.

Additional information can be obtained from the Rheem Commercial Tankless Water Heater Use and Care Manual.



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## IMPORTANT SAFETY INFORMATION

### READ THE SAFETY INFORMATION

Your safety and the safety of others are very important. There are many important safety messages in this manual and on your appliance. Always read and obey all safety messages.



This is the safety alert symbol. Recognize this symbol as an indication of Important Safety Information! 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,” “WARNING,” “CAUTION,” or “NOTICE.”

These words mean:

**⚠️ DANGER:** An imminently hazardous situation that will result in death or serious injury.

**⚠️ WARNING:** A potentially hazardous situation that can result in death or serious injury and/or damage to property.

**⚠️ CAUTION:** A potentially hazardous situation that may result in minor or moderate injury.

**NOTICE:** Attention is called to observe a specified procedure or maintain a specific condition.

### ⚠️ WARNINGS:

- This water heater is not approved for use in manufactured (mobile) homes!
- Improper installation, adjustment, alteration, service, or maintenance can cause death, personal injury, or property damage. Follow the instructions in this manual.

### READ ALL INSTRUCTIONS BEFORE USING.

Be sure to read and understand the entire Installation Instruction before attempting to install common venting. It may save you time and money. Pay particular attention to the Safety Instructions. Failure to follow these warnings could result in death or serious bodily injury. Should you have problems understanding the instructions in this manual, or have any questions, STOP and get help from a qualified service technician or the local gas utility.

### ⚠️ WARNING: California Proposition 65

This product contains chemicals known to the state of California to cause cancer, birth defects, or other reproductive harm.

# IMPORTANT SAFETY INFORMATION

## Water Heater Venting Safety


### ⚠ DANGER:

- Failure to install and properly vent the water heater to the outdoors as outlined in the “Venting” section of the Installation Instructions in this manual will result in death from fire, explosion, or asphyxiation from carbon monoxide. NEVER operate this water heater unless it is properly vented and has the air supply piping properly installed and terminated to the outdoors.
- Be sure to inspect the vent terminal, the air intake, and the vent system on the water heater for proper installation at initial start-up and at least annually thereafter. Refer to the “Care and Cleaning” section of this manual for more information regarding vent system inspection.

### ⚠ WARNINGS:

- Gasoline and other flammable liquids, materials, and vapors (including paint thinners, solvents, and adhesives) are extremely dangerous. DO NOT handle, use, or store gasoline or other flammable or combustible materials anywhere in the vicinity of a water heater or any other appliance. Be sure to read and follow the labels on the water heater, as well as the warnings printed in this manual. Failure to do so can result in death, bodily injury, or property damage.
- Combustible construction refers to adjacent walls and ceilings and should not be confused with combustible or flammable products and materials. Combustible materials, such as clothing, cleaning materials, or flammable liquids, should never be stored in the vicinity of this or any gas appliance. Fire or explosion can occur causing death, personal injury, and/or property damage. See page 29 for clearances to combustible materials.
- Follow vent manufacturer’s instructions for venting installation, including additional clearances from combustibles, to avoid conditions that can lead to death, personal injury, and/or property damage.
- Use tankless water heater manufacturer-approved InnoFlue® PP common vent material. No other vent material is permitted. For Canada, installations must follow ULC S636 for exhaust venting.
- Moisture in the flue gas will condense as it leaves the vent terminal. In cold weather this condensate can freeze on the exterior wall, under the eaves, and on surrounding objects. Some discoloration to the exterior of the building is to be expected. However, improper location or installation may result in severe damage to the structure or exterior finish of the building.
- For multiple-unit installation, a minimum distance between vent terminations must be maintained to prevent recirculation of vent gases. See page 39 for information on venting and clearances to multiple terminations.

**⚠ DANGER**



**⚠ Vapors from flammable liquids will explode and catch fire causing death or severe burns.**  
Do not use or store flammable products such as gasoline, solvents or adhesives in the same room or area near the water heater.

**Keep flammable products:**

1. far away from heater,
2. in approved containers,
3. tightly closed and
4. out of children’s reach.

**Water heater has a main burner flame.**  
The main burner flame:

1. which can come on at any time and
2. will ignite flammable vapors.

**Vapors:**

1. cannot be seen,
2. are heavier than air,
3. go a long way on the floor and
4. can be carried from other rooms to the main burner flame by air currents.

**Installation:**  
Do not install water heater where flammable products will be stored or used unless the main burner flame is at least 18" above the floor. This will reduce, but not eliminate, the risk of vapors being ignited by the main burner flame.

Read and follow water heater warnings and instructions. If owners manual is missing, contact the retailer or manufacturer.

### ⚠ CAUTIONS:

- Ensure that the appliance vent is securely glued and attached to the vent connection on the top of the water heater. DO NOT USE SCREWS.
- DO NOT operate without the condensate drain connected and routed to a proper drain.

# IMPORTANT SAFETY INFORMATION

## Water Supply Safety

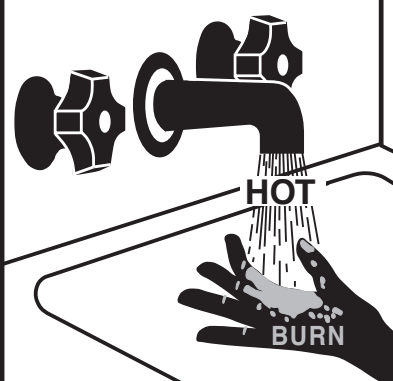
### ⚠️ DANGERS:

- **WATER TEMPERATURE SETTINGS** – Safety and energy conservation are factors to be considered when selecting the water temperature setting of a water heater's remote control. Water temperatures above 125°F (52°C) can cause death or severe burns from scalding. Be sure to read and follow the warnings outlined on the pictured label.
- There is a hot water scald potential if the water temperature is set too high. Households with small children, the disabled, or elderly persons may require a 120°F (49°C) or lower temperature setting to prevent contact with "HOT" water.
- Before manually operating the relief valve, make certain no one will be exposed to the danger of the hot water released by the valve. The water may be hot enough to create a scald hazard. The water should be released into a suitable drain to prevent injury or property damage.
- Failure to perform the recommended Routine Preventive Maintenance can harm the proper operation of this water heater, which can cause carbon monoxide dangers, excessive hot water temperatures, and other potentially hazardous conditions.

### ⚠️ WARNINGS:

- **IMPORTANT: DO NOT** apply heat to the HOT or COLD water connections. If sweat connections are used, sweat tubing to adapter before fitting adapter to the water connections on heater. Any heat applied to the water supply fittings will permanently damage the internal components of the water heater.
- In case the pipe insulation is not rated for the appropriate weather conditions, install electric heat tracing or equivalent to prevent freezing of the pipes. **DO NOT** insulate or block the drain valve on the hot outlet fitting. If the pipes are allowed to freeze, the water heater and the pipes may malfunction or leak due to freezing water.
- Failure to drain the water heater as described on page 20 can cause serious personal injuries from scalding and/or damage the water heater.

**⚠️ DANGER**



Water temperature over 125°F (52°C) 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.

### ⚠️ CAUTIONS:

- This water heater must only be used with the following water supply system conditions:
  - With clean, potable water free of corrosive chemicals, sand, dirt, or other contaminants.
  - With inlet water temperatures above 32°F (0°C), but not exceeding 120°F (49°C).
  - **DO NOT** reverse the hot and cold water connections. The water heater will not operate.
- Even when drained properly, a small amount of water will remain in the water heater. In cold weather conditions, this water can freeze. If this happens, allow the defrost protection on the heater at least 30 minutes to melt the frozen water or the water heater may not work properly.

### NOTICE:

The factory setting allows operating temperatures between 100°F (38°C) and 120°F (49°C). Temperatures of 85°F (29°C) and up to 185°F (85°C) can be achieved with the MAIN (UMC-117) remote control. Temperatures of 85°F (29°C) can be achieved with the Bath (USC-117 or USC2-117) remote control. Only qualified service personnel should perform this

adjustment. Only factory-authorized remote control(s) should be used.

### Time/Temperature Relationship in Scalds

Water Temperature	Time to Produce a Serious Burn
120°F (49°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 second

*Table courtesy of Shriners Burn Institute*

### Temperature Conversion Chart °F/°C

85 100 102 104 106 108 110 112 114 116 118 120 125 130 140 °F  
29 38 39 40 41 42 43 44 46 47 48 49 52 54 60 °C

# IMPORTANT SAFETY INFORMATION

## Natural Gas Safety

### **⚠️ DANGERS:**

- Never attempt to convert the water heater from natural gas to LP or vice versa. The water heater must only use the fuel type in accordance with listing on data plate—natural gas for natural gas units. Any other fuel usage will result in death or serious personal injury from fire and/or explosion. This water heater is not certified for any other fuel type.
- Both natural gas and propane (LP) have an odorant added to aid in detecting a gas leak. Some people may not physically be able to smell or recognize this odorant. If you are unsure or unfamiliar with the smell of natural gas or LP, ask the gas supplier. Other conditions, such as “odorant fade,” which causes the odorant to diminish in intensity, can also hide or camouflage a gas leak.
- Water heaters using LP gas are different from natural gas models. A natural gas water heater will not function safely on LP.
- Before attempting to light the water heater, make sure to look and smell for gas leaks. Use a soapy solution to check all gas fittings and connections. Bubbling at a connection indicates a leak that must be corrected. When smelling to detect a gas leak, be sure to also sniff near the floor.
- Gas detectors are recommended in LP and natural gas applications and their installation should be in accordance with the detector manufacturer’s recommendations and/or local laws, rules, regulations, or customs.
- Combustible materials, such as clothing, solvents, cleaning materials, or flammable liquids, must not be placed in the vicinity of the water heater.
- If a gas leak is present or suspected:
  - DO NOT attempt to find the cause yourself.
  - Never use an open flame to test for gas leaks. The gas can ignite resulting in death, personal injury, or property damage.
  - Follow the steps listed under “What to Do If You Smell Gas” found on the front cover of this manual.

### **⚠️ WARNINGS:**

- The installation of gas piping must comply with local utility company requirements and/or in the absence of local codes, use the latest edition of National Fuel Gas Code (NFGC), ANSI Z223.1/NFPA 54, or CAN/CSA B149.1, Natural Gas and Propane Installation Code.
- If inlet gas pressure is out of allowable range [4.0” w.c. (1.0kPa) – 10.5” w.c. (2.6kPa)] for Natural Gas, a gas pressure regulator must be installed to maintain the allowable inlet gas pressure.
- Should overheating occur or the gas supply fail to shut off, turn off the manual gas control valve to the water heater.

### **⚠️ CAUTIONS:**

- DO NOT attempt repair of electrical wiring, gas piping, remote control, burners, vent connectors, or other safety devices. Refer repairs to qualified service personnel.
- Turn off the manual gas shut-off valve if the water heater has been subjected to overheating, fire, flood, physical damage, or if the gas supply fails to shut off.
- DO NOT turn on the water heater unless the water and gas supplies are completely opened.

# IMPORTANT SAFETY INFORMATION

Before operating this water heater, be sure to read and follow the instructions on the label pictured below and all other labels on the water heater, as well as the warnings printed in this manual.

Failure to do so can result in unsafe operation of the water heater, resulting in death, personal injury, or property damage. Should you have any problems reading or following the instructions in this manual, STOP and get help from a qualified service technician.

## FOR YOUR SAFETY READ BEFORE OPERATING

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

A. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. **DO NOT** try to light the burner 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. ● Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions. ● If you cannot reach your gas supplier, call the fire department.

● **DO NOT** return to your home until authorized by the gas supplier or fire department.

C. Use only your hand to push in or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.

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

## OPERATING INSTRUCTIONS

1. **STOP!** Read the safety information above on this label.

2. Turn off all electric power to the appliance.

3. **DO NOT** attempt to light the burner by hand.

4. Turn the Gas Shutoff Valve located on the outside of the unit clockwise ↻ to the "OFF" position.

5. Wait five (5) minutes to clear out any gas. If you then smell gas, **STOP!** Follow "B" in the safety information above on this label. If you don't smell gas, go to the next step.

6. Turn the Gas Shutoff Valve located on the outside of the unit counterclockwise ↻ to the "ON" position.

7. Turn on all electric power to the appliance.

8. If the appliance will not operate, follow the instructions "To Turn Off Gas To Appliance" and call your service technician or gas supplier.

GAS SHUTOFF  
VALVE



OPEN



CLOSE

## TO TURN OFF GAS TO APPLIANCE

1. Turn off all electric power to the appliance if service is to be performed.

2. Turn the Gas Shutoff Valve located on the outside of the unit clockwise ↻ to the "OFF" position.

# IMPORTANT SAFETY INFORMATION

## Electrical Safety

### **⚠️ DANGER:**

- **Shock Hazard** – Make sure the electrical power to the water heater is off to avoid electric shock that will result in death or serious personal injury.

### **⚠️ WARNINGS:**

- For your safety, the information in this manual must be followed to minimize the risk of fire, explosion, or electric shock that can result in death, personal injury, and/or property damage.
- Field wiring connections and electrical grounding must comply with local codes or, in the absence of local codes, with the latest edition of the National Electrical Code, ANSI/NFPA 70, or in Canada, Canadian Electrical Code, CAN/CSA C22.1, Part 1.

### **⚠️ CAUTIONS:**

- Label all wires prior to disconnecting for service. Wiring errors can cause dangerous and improper operation. Verify correct operation after servicing.
- For your safety, burner inspection and cleaning should be performed only by qualified service personnel.
- Make certain the power to the water heater is OFF before removing the unit cover panel. Exposed electrical components and moving parts can cause personal injuries.
- For your safety, DO NOT attempt repair of electrical wiring, gas piping, remote control, burners, vent connectors, or other safety devices. Refer repairs to qualified service personnel.

## FOR INSTALLATIONS IN THE STATE OF CALIFORNIA

California law requires that water heaters must be braced, anchored, or strapped to resist falling or horizontal displacement due to earthquake motions. For water heaters up to 52-gallon capacity, a brochure with generic earthquake bracing instructions can be obtained from: Office of the State Architect, 1102 Q Street, Suite 5100, Sacramento, CA 95814, or you may call 916-445-8100 or ask a water heater dealer.

However, applicable local codes shall govern installation. For residential water heaters of a capacity greater than 52 gallons or tankless-style, consult the local building jurisdiction code for acceptable bracing procedures.

# IMPORTANT SAFETY INFORMATION

## General Installation and Maintenance Safety

### **⚠️ WARNINGS:**

- **This water heater must be installed in accordance with these instructions, local codes, utility company requirements and/or in the absence of local codes, use the latest edition of the American National Standard/National Fuel Gas Code (NFPA), ANSI Z223.1 and National Fire Protection Association, NFPA 54, or in Canada, CAN/CSA B149.1, Natural Gas and Propane Installation Code, and the latest edition of the National Electrical Code, ANSI/NFPA 70, or in Canada, Canadian Electrical Code, CAN/CSA C22.1, Part 1.**
- **For your safety, DO NOT attempt to disassemble this water heater for any reason. Improper adjustments, alterations, service, or maintenance can cause death, personal injury, or property damage.**

### **SAFETY PRECAUTIONS:**

Read this manual entirely before installing and/or operating the water heater.

Use this water heater only for its intended purpose as described in this Use and Care Manual.

Have the installer show you the location of the gas shut-off valve and how to shut it off if necessary. Turn off the manual shut-off valve if the water heater has been subjected to overheating, fire, flood, physical damage, or if the gas supply fails to shut off.

Be sure your water heater is properly installed in accordance with local codes and the provided installation instructions.

**DO NOT** attempt to repair or replace any part of your water heater unless it is specifically recommended in this manual. All other servicing should be referred to a qualified service technician.

## SAVE THESE INSTRUCTIONS

# PRODUCT INFORMATION

### **For Your Records**

Write down and save the following product information along with the original sales slip and/or cancelled check. The model and serial numbers can be found on the top label on the right side of the water heater.

MODEL NUMBER:

---

SERIAL NUMBER:

---

DATE OF INSTALLATION:

---

INSTALLING COMPANY/PHONE NUMBER:

---

PLUMBING CONTRACTOR/PHONE NUMBER:

---

See page 40 for additional service information.

### **Read This Manual**

Inside you will find many helpful hints on how to use and maintain your water heater properly. A little preventive care on your part can save you time and money over the life of your water heater.



# INSTALLATION INSTRUCTIONS



## Standards Compliance

Water heaters and common vent system must be installed in accordance with these instructions, local codes, and utility company requirements.

In the United States where local codes are not available, use the latest edition of the American National Standard/National Fuel Gas Code. A copy of the Fuel Gas Code can be purchased from either the American Gas Association, 400 North Capitol Street Northwest, Washington, DC 20001, as ANSI standard Z223.1, or National Fire Protection Association, 1

Batterymarch Park, MA 02269 as NFPA 54.

In Canada, use the latest edition of the CAN/CSA B149.1 Natural Gas and Propane Installation Code and the Canadian Electrical Code, CAN/CSA C22.1, Part 1.

A copy can be purchased from; Canadian Standards Association, 5060 Spectrum Way, Mississauga, ON L4W 5N6



## Sizing

The Rheem common vent system can only be used with following Rheem tankless water heaters:

### **RTGH-C95DVLN and RTGH-CM95DVLN**

RTGH-CM95DVLN has a pre-installed manifold control. RTGH-C95DVLN is not shipped with manifold control. This is the only difference between these two models. Both these models can be mixed to use with the Rheem common vent system.

Number of water heaters	Total Input Rate (Btu/h)	Cold Water - Recommended Manifold Header Size (Inches)	Hot Water - Recommended Manifold Header Size (Inches)	Natural Gas - Recommended Manifold Header Size (Inches)
2	399800	1	1	1
3	599700	1	1	1 1/4
4	799600	1 1/4	1 1/4	1 1/4
5	999500	1 1/2	1 1/2	1 1/4
6	1199400	1 1/2	1 1/2	1 1/2
7	1399300	2	2	1 1/2
8	1599200	2	2	2

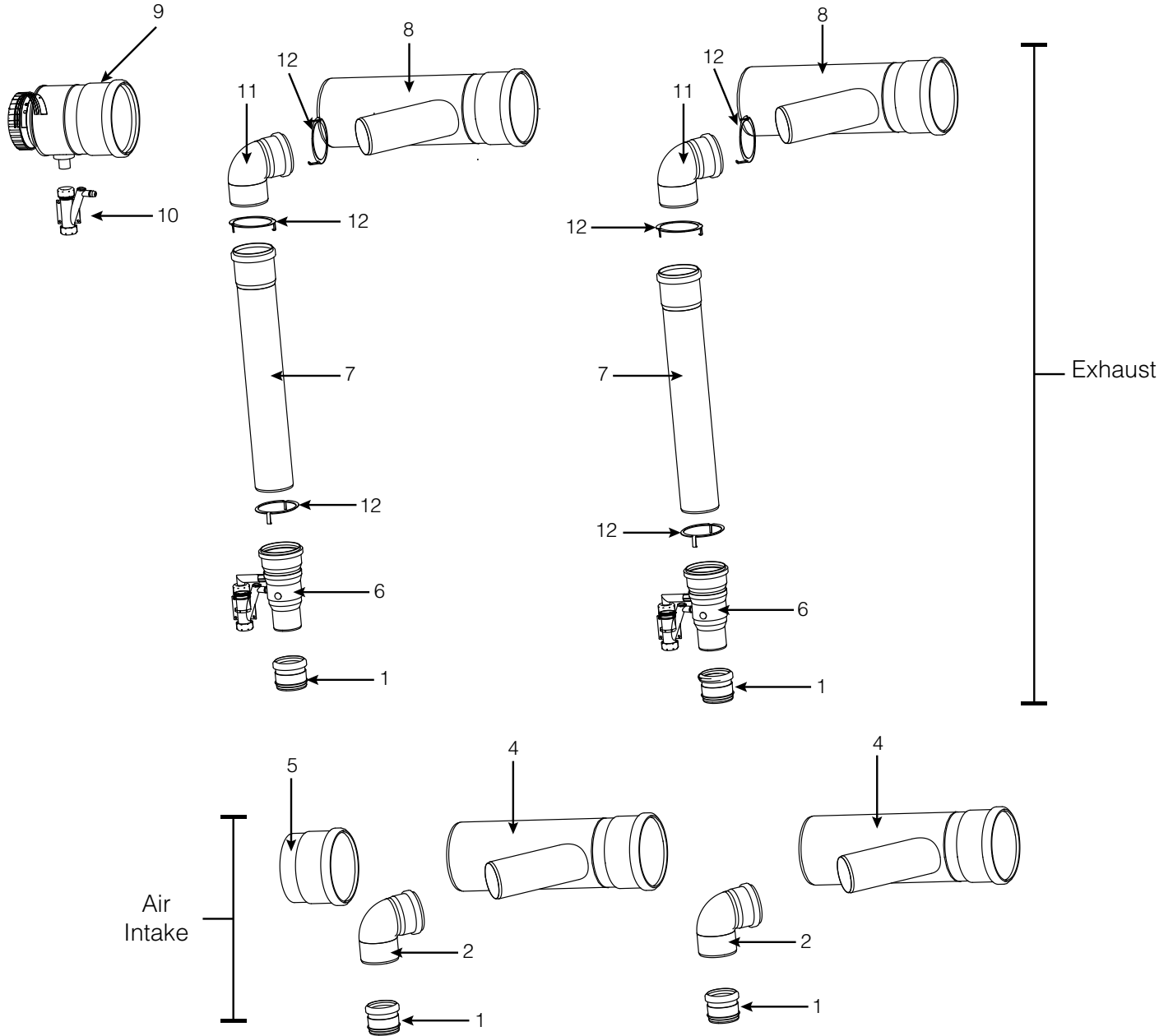
Total input rate will drop naturally as longer vent length is added. Expect 6 to 10% input rate drop with maximum vent length.

Cold water, hot water and natural gas sizes are recommended sizes. The size requirements may change based on water pressure, gas pressure, pressure drop, and other factors at installation site. Adjust accordingly these sizes for each installation.

# PRODUCT INFORMATION

Product Information

## Common Vent Kit Components



	Rheem Part Number	Part Description
1	SP20918A	3" PVC to PP Adaptor
2	SP20918J	3", 87 Degree Elbow
3	SP20918X	3" Connector Ring
4	SP20918L	Air Intake Branch Tee
5	SP20918K	Tee Cap
6	SP20918D	Non-Return Valve (NRV)

	Rheem Part Number	Part Description
7	SP20918G	4" Straight Pipe, 2'
8	SP20918E	Exhaust Branch Tee
9	SP20918F	Horizontal Drain Fitting
10	SP20918C	Universal Ball Valve Siphon
11	SP20918B	4", 87 Degree Elbow
12	SP20918Y	4" Connector Ring

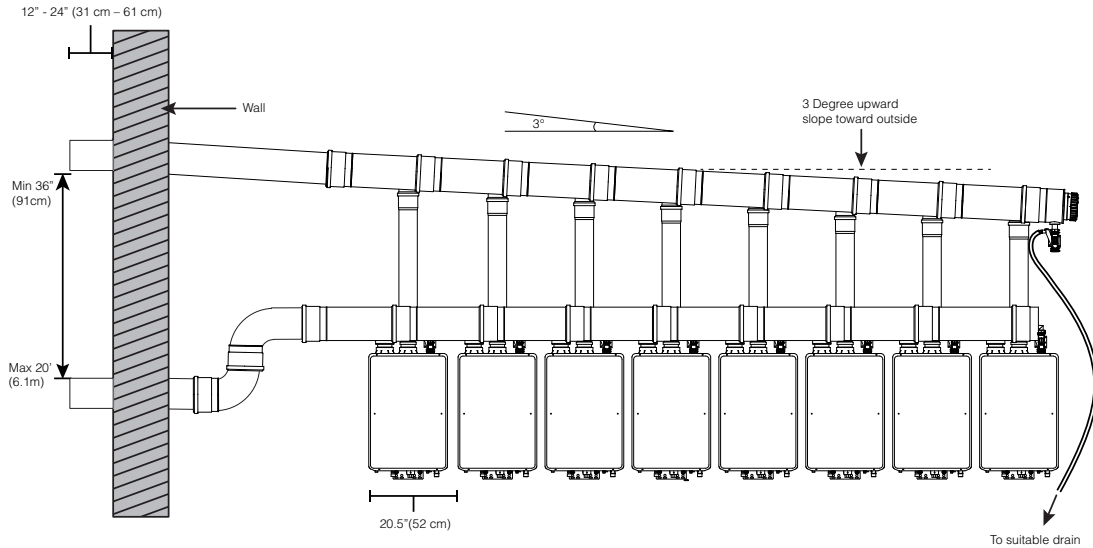
# INSTALLATION INSTRUCTIONS



## Typical Common Vent Installations

### Typical Inline Common Vent Installations

#### Direct Vent

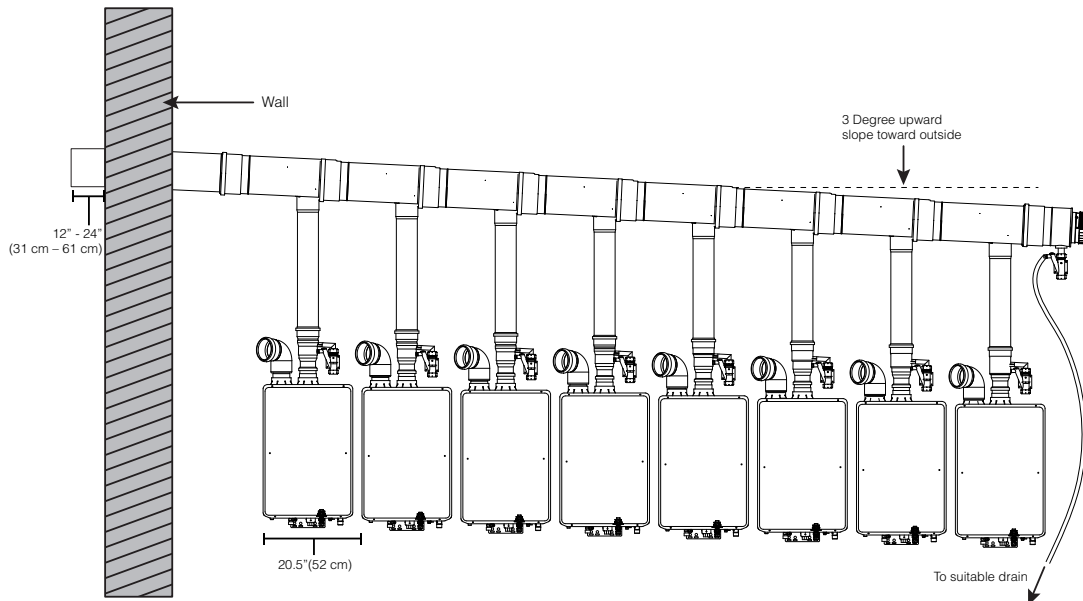


#### Power Vent (Room Air Application)

### FOR YOUR SAFETY

**DO NOT** store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance. To do so may result in an explosion or fire.

This water heater can use room air for combustion and ventilation as long as the installation complies with the National Fuel Gas Code, ANSI Z223.1/NFPA 54, and other applicable standards and local codes. Failure to comply with these standards and other instructions on the Common Vent Installation Instructions and the Tankless Water Heater Use and Care Manual may result in death or serious injury and/or damage to property.



# INSTALLATION INSTRUCTIONS



## Typical Common Vent Installations (cont.)

The following header vent kits can be purchased separately to create common venting system:

Rheem Part Number	Common Vent Kit Description
SP20908A	8" Inline 2 units Direct Vent Header Kit
SP20908B	8" Inline 3 units Direct Vent Header Kit
SP20908C	8" Inline 4 units Direct Vent Header Kit
SP20908D	8" Inline 5 units Direct Vent Header Kit
SP20908E	8" Inline 6 units Direct Vent Header Kit
SP20908F	8" Inline 7 units Direct Vent Header Kit
SP20908G	8" Inline 8 units Direct Vent Header Kit

Rheem Part Number	Common Vent Kit Description
SP20909A	8" Inline 2 units Room Air Header Kit
SP20909B	8" Inline 3 units Room Air Header Kit
SP20909C	8" Inline 4 units Room Air Header Kit
SP20909D	8" Inline 5 units Room Air Header Kit
SP20909E	8" Inline 6 units Room Air Header Kit
SP20909F	8" Inline 7 units Room Air Header Kit
SP20909G	8" Inline 8 units Room Air Header Kit

These kits contain only minimum required vent parts to create a common venting trunk line and a connection from the trunk line to water heaters. Vent parts included in these kits **DO NOT** count for equivalent vent length except a 87 degree elbow for the air intake included in a room air kit. Additional vent parts will be required to complete the common venting system. Refer to "Parts List" of this installation instructions for additional information.

# INSTALLATION INSTRUCTIONS



## Common Venting for Direct-Vent Water Heater

Only commercial tankless water heaters (RTGH-C95DVLN and RTGH-CM95DVLN) with common vent gas chip are allowed to utilize the InnoFlue® common venting system. The common vent gas chip is shipped with these applicable models. These commercial tankless models without the common vent gas chip, or any other tankless models are prohibited to utilize Rheem approved common venting system.

### **⚠ DANGER:**

**Failure to properly vent the water heater to the outdoors as outlined in this Venting section will result in death or serious personal injury. To avoid the risk of fire, explosion, or asphyxiation from carbon monoxide, NEVER operate the water heater unless it is properly vented and has adequate air supply for proper operation as outlined in this Venting section. This water heater must have air supply connected and terminated to the outdoors.**

### **⚠ WARNING:**

**Refer to page 16 for required clearances to combustible materials. Improper clearances can cause explosion or fire resulting in death, personal injury, and/or product damage.**

### **⚠ CAUTIONS:**

- Check to make sure flue gases **DO NOT** recirculate into the air intake terminal when using direct venting. If the water heater is having service issues, flue recirculation may be a contributing factor.
- Even when the minimum vent terminal separation distances are followed, recirculation may still occur depending upon the location outside the building, the distance from other buildings, proximity to corners, weather conditions, wind patterns, and snow depth.
- Periodically check to make sure that flue recirculation is not occurring. Signs of flue gas recirculation include frosted or frozen intake terminals and condensate in the intake terminal and venting system.
- Correction to flue recirculation may involve angling the intake away from the exhaust terminal and increasing the distance between them. Check to be sure the intake and exhaust terminals are not obstructed, especially during periods of below-freezing weather.

### Venting Requirements

The installation of venting must comply with national codes, local codes, and the vent manufacturer's instructions.

The vent exhaust and air intake must terminate outside as described in these instructions. **DO NOT** terminate exhaust pipe or air intake pipe in a chimney. It must be vented separately from all other appliances.

### **NOTICE:**

**The unit with common vent can be vented using only the following approved vent pipe material.**

Use only 8 inch diameter InnoFlue® common vent

pipe. Use 3 or 4 inch diameter InnoFlue® vent pipe to connect a tankless water heater with the common vent trunk. Refer to local codes for restrictions on the use of InnoFlue® PP pipe and fittings. All exhaust venting materials for product installed in Canada must meet ULC-S636.

**The use of cellular core PVC (ASTM F891), cellular core CPVC, or Radel® (polyphenolsulfone) in non-metallic venting systems is prohibited and that covering non-metallic vent pipe and fittings with thermal insulation is prohibited.**

Common venting system shall be in accordance with the National Fuel Gas Code, ANSI Z223.1/NFPA 54 and/or the CSA B149.1, Natural Gas and Propane installation Code (Current Editions), local codes, and the manufacturer's instructions. This Common vent is permitted for commercial installation only.

Acceptable materials:

InnoFlue® PP

The fittings, other than the VENT TERMINAL, should be equivalent to the following:

InnoFlue® PP

**DO NOT USE** any flexible vent.

### Recommended Vent Lengths

Before starting the vent installation, careful planning should be given to the routing and termination of the vent pipes. The length of the vent pipes (air intake and exhaust) should be kept to a minimum. Also, see pages 18-20 and 29-31 for vent terminal placement. Refer to the maximum and minimum vent length charts for the pipe sizes that can be used and the total equivalent length of pipe that can be used. **DO NOT** exceed equivalent length of pipe in maximum vent length chart.

#### Maximum Vent Length (air intake and exhaust) each:

Number of water heaters	8" Common Vent
2	100' (30 m)
3	100' (30 m)
4	100' (30 m)
5	100' (30 m)
6	82' (25 m)
7	55' (17 m)
8	43' (13 m)
9	N/A
10	N/A

#### Equivalent Vent Length:

	8" Common Vent
87 Degree Elbow	5.0' (1.5 m)
45 Degree Elbow	2.5' (0.8 m)

# INSTALLATION INSTRUCTIONS



## Venting for Direct-Vent Water Heater (cont.)

The system will not operate if there is excessive restriction (pressure drop) in the venting system. Use the chart above to calculate the maximum pipe run length with the required number of elbows.

The vent termination does not count as part of the straight pipe equivalent when determining the total vent length.

### Minimum Vent Length:

	8" Common Vent
Exhaust	One 87 Degree Elbow + Termination
Air Intake	One 87 Degree Elbow

All intake and exhaust common venting components must have the same diameter size. **DO NOT** use a different size on the intake and exhaust common venting.

The unit may be vented horizontally through a wall or vertically through the roof. Pipe runs must be adequately supported along both vertical and horizontal runs. Maximum unsupported span is recommended to be no more than 39" (1 m) horizontally or 78" (2 m) vertically. It is imperative that the first hanger be located on the horizontal runs immediately adjacent to the first 87-degree elbow from the vertical rise. Only use support isolation hanging bands. **DO NOT** use wire to support pipe runs.

Stress levels in the pipe and fittings can be significantly increased by improper installation. If rigid pipe clamps are used to hold the pipe in place, or if the pipe cannot move freely through a wall penetration, the pipe may be directly stressed, or high thermal stresses may be formed when the pipe heats up and expands. Install accordingly to minimize such stresses.

### Preexisting Venting Notes:

If the water heater is being installed as a replacement for an existing water heater, a thorough inspection of the existing venting and air intake system must be performed prior to any installation work. Verify that the correct materials, vent lengths, and terminal locations as described in this manual have been met. Carefully inspect the entire venting and air intake system for any signs of cracks or fractures, particularly at the joints between elbows or other fittings and the straight runs of vent pipe. Check the system for signs of sagging or other stresses in the joints as a result of misalignment of any components in the system. If any of these conditions are found, they must be corrected in accordance with the venting instructions in this manual before completing the installation and putting the water heater into service.

### NOTICES:

- It is required that the exhaust common venting pipe have a 5/8" per foot (5.6 cm per meter) upward slope toward the outdoors.
- A clearance of 0 in. (0 cm) is allowed between the exhaust common vent pipe or the air intake common vent pipe and combustible material.
- Use proper support for the exhaust common vent pipe and the air intake common vent pipe.
- It is recommended the support method used isolates the vent pipe from floor joists or other structural members. This helps prevent transmission of noise and vibration.
- **DO NOT** support, pin, or otherwise secure the common venting system in a way that restricts the normal thermal expansion and contraction of the chosen venting material.

# INSTALLATION INSTRUCTIONS



## Venting for Direct-Vent Water Heater (cont.)

### In the Commonwealth of Massachusetts

The Commonwealth of Massachusetts requires compliance with regulation 248 CMR 4.00 and 5.00 for installation of through-the-wall vented gas appliances as follows:

5.08: Modifications to NFPA–54, Chapter 10

(1) Revise NFPA–54 section 10.5.4.2 by adding a second exception as follows:

Existing chimneys shall be permitted to have their use continued when a gas conversion burner is installed, and shall be equipped with a manual reset device that will automatically shut off the gas to the burner in the event of a sustained back-draft.

(2) Revise 10.8.3 by adding the following additional requirements:

(a) For all side-wall, horizontally vented, gas-fueled equipment installed in every dwelling, building, or structure used in whole or part for residential purposes, including those owned or operated by the Commonwealth and where the side-wall exhaust vent termination is less than seven (7) feet above finished grade in the area of the venting, including but not limited to decks and porches, the following requirements shall be satisfied.

**1. INSTALLATION OF CARBON MONOXIDE DETECTORS.** At the time of installation of the side-wall, horizontally vented, gas-fueled equipment, the installing plumber or gas fitter shall observe that a hard-wired carbon monoxide detector with an alarm and battery backup is installed on the floor level where the gas equipment is to be installed. In addition, the installing plumber or gas fitter shall observe that a battery-operated or hard-wired carbon monoxide detector with an alarm is installed on each additional level of the dwelling, building, or structure served by the side-wall, horizontally vented, gas-fueled equipment. It shall be the responsibility of the property owner to secure the services of qualified licensed professionals for the installation of hard-wired carbon monoxide detectors.

a. In the event that the side-wall, horizontally vented, gas-fueled equipment is installed in a crawl space or an attic, the hard-wired carbon monoxide detector with alarm and battery backup may be installed on the next adjacent floor level.

b. In the event that the requirements of this subdivision cannot be met at the time of completion of installation, the owner shall have a period of thirty (30) days to comply with the above requirements, provided, however, that during said thirty (30) day period, a battery-operated carbon monoxide detector with an alarm shall be installed.

2. **APPROVED CARBON MONOXIDE DETECTORS.** Each carbon monoxide detector as required in accordance with the above provisions shall comply with NFPA 720 and be ANSI/UL 2034-listed and IAS-certified.

3. **SIGNAGE.** A metal or plastic identification plate shall be permanently mounted to the exterior of the building at a minimum height of eight (8) feet above grade directly in line with the exhaust vent terminal for the horizontally vented, gas-fueled heating appliance or equipment. The sign shall read, in print size no less than one-half (1/2) inch in size, “GAS VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS.”

4. **INSPECTION.** The state or local gas inspector of the side-wall, horizontally vented, gas-fueled equipment shall not approve the installation unless, upon inspection, the inspector observes carbon monoxide detectors and signage installed in accordance with the provisions of 248 CMR 5.08 (2)(a)(1 through 4).

(b) **EXEMPTIONS:** The following equipment is exempt from 248 CMR 5.08 (2)(a)(1 through 4):

1. The equipment listed in Chapter 10 entitled “Equipment Not Required To Be Vented” in the most current edition of NFPA 54 as adopted by the Board, and

2. Product-approved side-wall, horizontally vented, gas-fueled equipment installed in a room or structure separate from the dwelling, building, or structure used in whole or in part for residential purposes.

(c) **MANUFACTURER REQUIREMENTS – GAS EQUIPMENT VENTING SYSTEM PROVIDED.** When the manufacturer of product-approved side-wall, horizontally vented, gas-fueled equipment provides a venting system design or venting system components with the equipment, the instructions provided by the manufacturer for installation of the equipment and the venting system shall include:

1. Detailed instructions for the installation of the venting system design or the venting system components; and

2. A complete parts list for the venting system design or venting system.

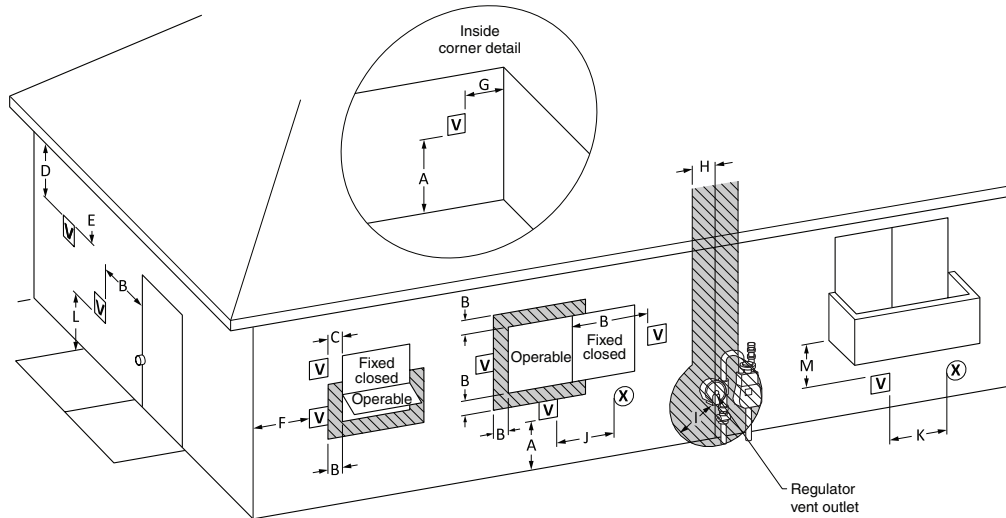
(d) **MANUFACTURER REQUIREMENTS – GAS EQUIPMENT VENTING SYSTEM NOT PROVIDED.** When the manufacturer of product-approved side-wall, horizontally vented, gas-fueled equipment does not provide the parts for venting the flue gases, but identifies “special venting systems,” the following requirements shall be satisfied by the manufacturer:

1. The referenced “special venting systems” instructions shall be included with the appliance or equipment installation instructions, and

2. The “special venting systems” shall be product-approved by the Board, and the instructions for that system shall include a parts list and detailed installation instructions.

(e) A copy of all installation instructions for all product-approved side-wall, horizontally vented, gas-fueled equipment, all venting instructions, all parts lists for venting instructions, and/or all venting design instructions shall remain with the appliance or equipment at the completion of the installation.

# INSTALLATION INSTRUCTIONS



V VENT TERMINAL   
 X AIR SUPPLY INLET   
  AREA WHERE TERMINAL IS NOT PERMITTED

## Horizontal Vent Terminal Location for Direct Vent

The following information should be used for determining the proper location of the vent terminal for direct vent water heaters.

### Canadian Installations <sup>1</sup>

### US Installations <sup>2</sup>

	Canadian Installations <sup>1</sup>	US Installations <sup>2</sup>
A= Clearance above grade, veranda, porch, deck or balcony.	12 inches (30 cm)	12 inches (30 cm)
B= Clearance to window or door that may be opened.	6 inches (15 cm) for appliances ≤ 10,000 Btuh (3 kW), 12 inches (30 cm) for appliances > 10,000 Btuh (3kW) and ≤ 100,000 Btuh (30kW), 36 inches (91 cm) for appliances > 100,000 Btuh (30kW).	6 inches (15 cm) for appliances < 10,000 Btuh (3 kW), 9 inches (23 cm) for appliances > 10,000 Btuh (3 kW) and < 50,000 Btuh (15 kW), 12 inches (30 cm) for appliances > 50,000 Btuh (15 kW)
C= Clearance to permanently closed window.	*	*
D= Vertical Clearance to ventilated soffit located above the terminal within a horizontal distance of 2 feet (61 cm) from the center line of the terminal.	*	*
E= Clearance to unventilated soffit.	*	*
F= Clearance to outside corner.	*	*
G= Clearance to inside corner.	*	*
H = Clearance to each side of center line extended meter/regulator assembly.	*	*
I = Clearance to service regulator vent outlet.	Above a regulator within 3 feet (91 cm) horizontally of the vertical center line of the regulator vent outlet to a maximum vertical distance of 15 feet (4.5 m).	*
J = Clearance to nonmechanical air supply inlet to the building or the combustion air inlet of any other appliance.	6 inches (15 cm) for appliances < 10,000 Btuh (3 kW), 12 inches (30 cm) for appliances > 10,000 Btuh (3kW) and < 100,000 Btuh (30kW), 36 inches (91 cm) for appliances > 100,000 Btuh (30kW).	6 inches (15 cm) for appliances < 10,000 Btuh (3 kW), 9 inches (23 cm) for appliances > 10,000 Btuh (3 kW) and < 50,000 Btuh (15 kW), 12 inches (30 cm) for appliances > 50,000 Btuh (15 kW)
K = Clearance to mechanical air supply inlet.	6 feet (1.83 m)	3 feet (91 cm) above if within 10 feet(3 m) horizontally.
L = Clearance above paved sidewalk or paved driveway located on public property.	7 feet (2.13 m)+	*
M = Clearance under veranda, porch, deck or balcony.	12 inches (30 cm)	*

<sup>1</sup> In accordance with current CAN/CSA-B149.1 Installation Codes.

<sup>2</sup> In accordance with current ANSI Z223.1/ NFPA 54 National Fuel Gas Code.

+ A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.

\*"Clearance in accordance with local installation codes and the requirements of the gas supplier."

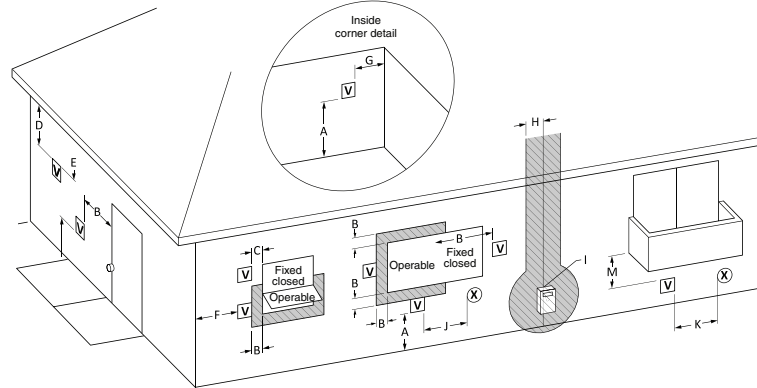


# INSTALLATION INSTRUCTIONS

## FOR YOUR SAFETY

**DO NOT** store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance. To do so may result in an explosion or fire.

This water heater can use room air for combustion and ventilation as long as the installation complies with the National Fuel Gas Code, ANSI Z223.1/NFPA 54, and other applicable standards and local codes. Failure to comply with these standards and other instructions on the Common Vent Installation Instructions and the Tankless Water Heater Use and Care Manual may result in death or serious injury and/or damage to property.



V VENT TERMINAL    X AIR SUPPLY INLET    [Hatched Area] AREA WHERE TERMINAL IS NOT PERMITTED

### Horizontal Vent Terminal Location for Power Vent (Room Air Application)

The following information should be used for determining the proper location of the vent terminal for direct vent water heaters.

#### Canadian Installations <sup>1</sup>

#### US Installations <sup>2</sup>

	Canadian Installations <sup>1</sup>	US Installations <sup>2</sup>
A= Clearance above grade, veranda, porch, deck or balcony.	12 inches (30 cm)	12 inches (30 cm)
B= Clearance to window or door that may be opened.	6 inches (15 cm) for appliances < 10,000 Btuh (3 kW), 12 inches (30 cm) for appliances > 10,000 Btuh (3kW) and < 100,000 Btuh (30kW), 36 inches (91 cm) for appliances > 100,000 Btuh (30kW).	4 feet (1.2 m) below or to side of opening; 1 foot (300 mm) above opening.
C= Clearance to permanently closed window.	*	*
D= Vertical Clearance to ventilated soffit located above the terminal within a horizontal distance of 2 feet (61 cm) from the center line of the terminal.	*	*
E= Clearance to unventilated soffit.	*	*
F= Clearance to outside corner.	*	*
G= Clearance to inside corner.	*	*
H = Clearance to each side of center line extended meter/regulator assembly.	*	*
I = Clearance to service regulator vent outlet.	Above a regulator within 3 feet (91 cm) horizontally of the vertical center line of the regulator vent outlet to a maximum vertical distance of 15 feet (4.5 m).	*
J = Clearance to nonmechanical air supply inlet to building or the combustion air inlet to any other appliance..	6 inches (15 cm) for appliances < 10,000 Btuh (3 kW), 12 inches (30 cm) for appliances > 10,000 Btuh (3kW) and < 100,000 Btuh (30kW), 36 inches (91 cm) for appliances > 100,000 Btuh (30kW).	4 feet (1.2 m) below or to side of opening; 1 foot (300 mm) above opening.
K = Clearance to mechanical air supply inlet.	6 feet (1.83 m)	3 feet (91 cm) above if within 10 feet (3 m) horizontally.
L = Clearance above paved sidewalk or paved driveway located on public property.	7 feet (2.13 m)+	7 feet (2.13 m)+
M = Clearance under veranda, porch, deck or balcony.	12 inches (30 cm)	*

<sup>1</sup> In accordance with current CAN/CSA-B149.1 Installation Codes.

<sup>2</sup> In accordance with current ANSI Z223.1/ NFPA 54 National Fuel Gas Code.

+ A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.

\* "Clearance in accordance with local installation codes and the requirements of the gas supplier."

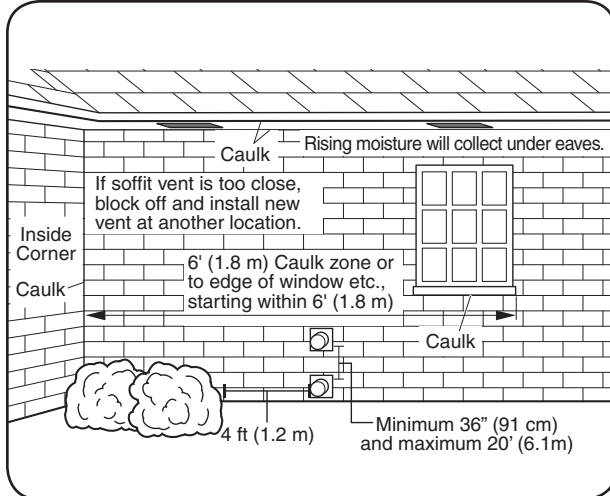
# INSTALLATION INSTRUCTIONS

## Horizontal Vent Considerations

### ⚠️ WARNING:

Moisture in the flue gas will condense as it leaves the vent terminal. In cold weather this condensate can freeze on the exterior wall, under the eaves, and on surrounding objects. Some discoloration to the exterior of the building is to be expected. However, improper location or installation can result in severe damage to the structure or exterior finish of the building.

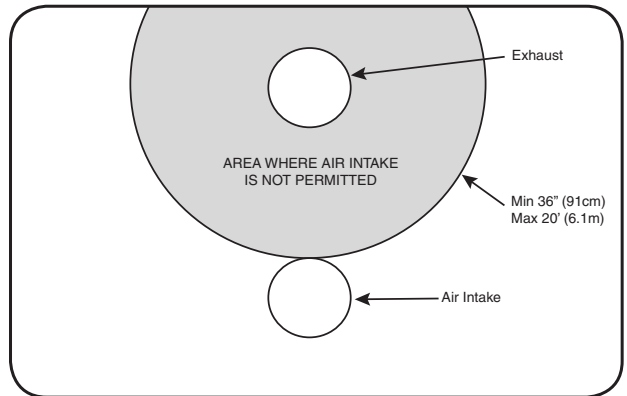
- **DO NOT** locate vent terminal on the side of a building with prevailing winter winds. This will help prevent water lines from freezing and moisture from freezing on walls and under eaves.
- **DO NOT** locate vent terminal too close to shrubbery, as flue gases may damage them. A minimum distance of 4 ft. (1.22 m) is recommended.
- All painted surfaces should be primed to lessen the chance of physical damage. Painted surfaces will require maintenance.
- Guard against accidental contact with people and pets.



### ⚠️ WARNING:

A minimum distance between terminations must be maintained to prevent recirculation of vent gases. Maintain edge to edge distance between an exhaust common vent termination and an air intake common vent termination as listed below:

Minimum 36" (91 cm) and maximum 20' (6.1m)

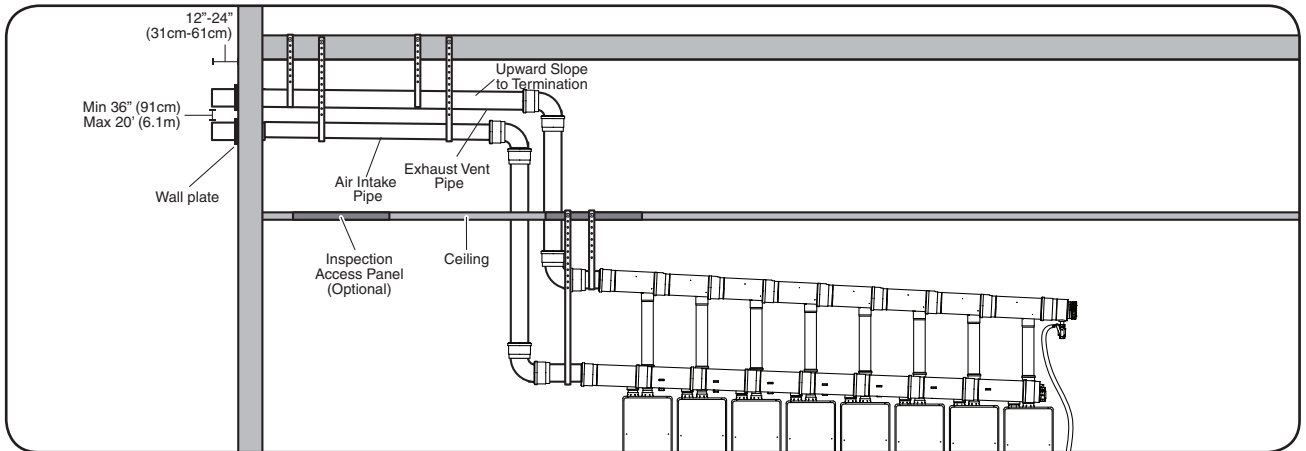


- **DO NOT** terminate vent directly on brick or masonry surfaces. Use rust-resistant, sheet-metal backing plate behind the vent.
- The vent for this appliance shall not terminate
  - Over public walkways; or
  - Near soffit vents or crawl space vents or other area where condensate or vapor could create a nuisance or hazard or cause property damage; or
  - Where condensate or vapor could cause damage or could be detrimental to the operation of regulators, relief valves, or other equipment.
- Caulk all cracks, seams, and joints within 6 ft. (1.8 m) of the vent terminal.
- Caulk around wall faceplate for weather-tight seal.
- **DO NOT** extend exposed vent pipe of indoor water heaters outside of the building.
- This water heater requires its own separate venting system. **DO NOT** connect the exhaust vent to an existing vent pipe or chimney.

# INSTALLATION INSTRUCTIONS



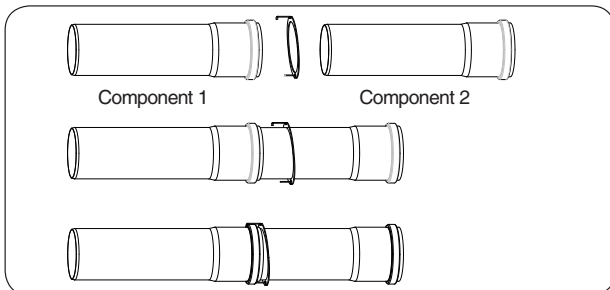
## Venting for Direct-Vent Water Heater (cont.)



Venting

### Joint Connections for 3" and 4" diameters

- Each female-end of every InnoFlue® vent length or component features a factory installed gasket. Before assembly, make sure gaskets are in place correctly.
- Measure the depth of the female socket. Mark\* the male-end of each component just shy of the depth of the female socket from its end.
- Place a thin layer of Centrocerin, a water based lubricant onto the male end of component 2 for ease of assembly.
- Slip a Connector Ring over the male end of component 2 so that it can grip the gasket bead of component 1.
- Push and twist male end until properly seated in component 1, aligning the mark with the top of the female end.
- Clip the Connector Ring onto the gasket bead to secure the two components to each other. Rotate the "hook" to the side or bottom of the joint to facilitate visual checks.

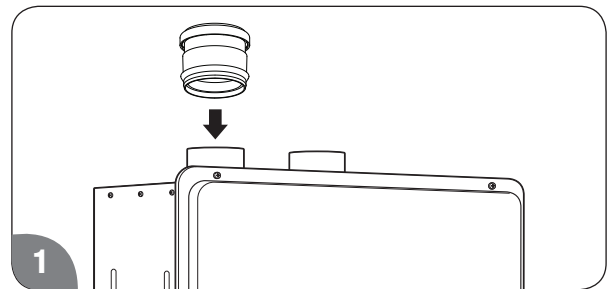


### NOTICE:

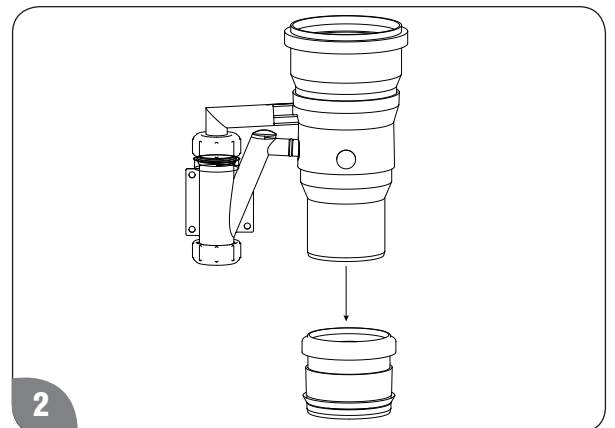
To meet requirements of ULC-S636 & UL-1738, only InnoFlue® Vent Systems of 2", 3", 4" and 5" diameters must utilize Connector Rings.

### Exhaust Vent Installation Instructions

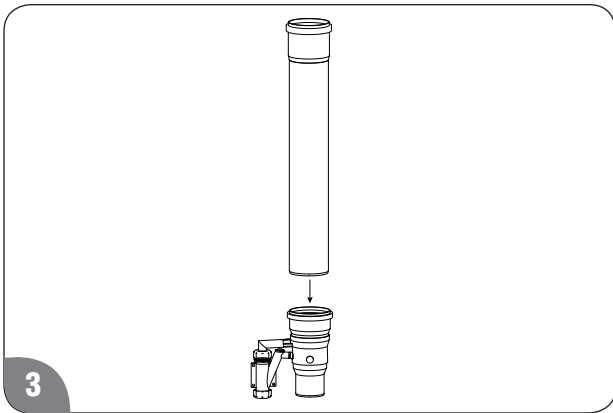
After the water heaters are mounted securely and have 20.5" (52 cm) center to center distance, start assembling the common venting system. Sparingly apply Centrocerin to the gasket or male end of vent pipe for ease of assembly.



Install a 3" PVC to PP adapter on the top of the water heaters.

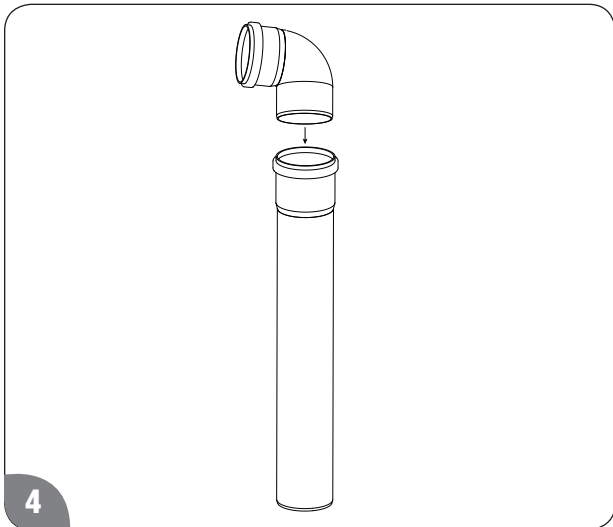


Install a Non-Return Valve (NRV) with siphon to the PVC to PP adapter.



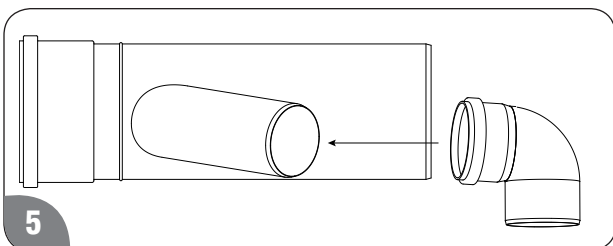
3

Install a 4" straight pipe to the NRV. Exhaust common venting is required to have a 3° rise or a 5/8 per foot (5.6 cm per meter) upward slope toward the outdoors. When the water heaters are mounted with 20.5" (52 cm) center to center distance, 1" (2.5 cm) rise per water heater is required. A 4" straight pipe included with our common vent kit must be cut to an appropriate length to have 1" (2.5 cm) rise per water heater. Cut pipe end square, remove jagged edges and burrs, chamfer end of pipe and clean the sealing gasket.



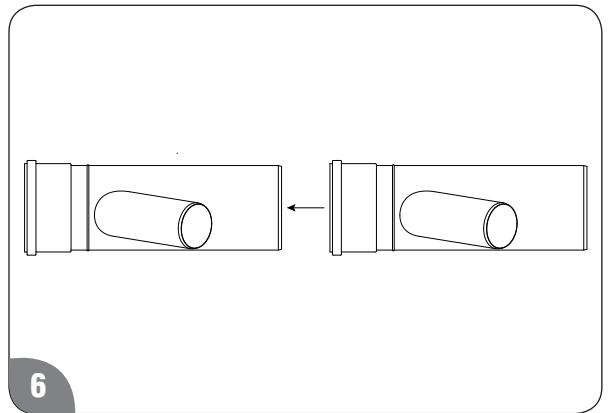
4

Install a 87° elbow to the 4" straight pipe.



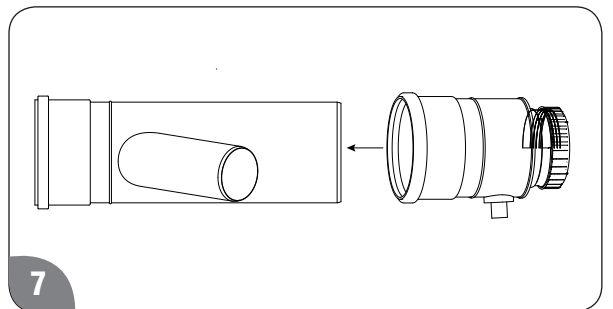
5

Connect a feeder of a branch tee to the open end of the elbow for inline installation.



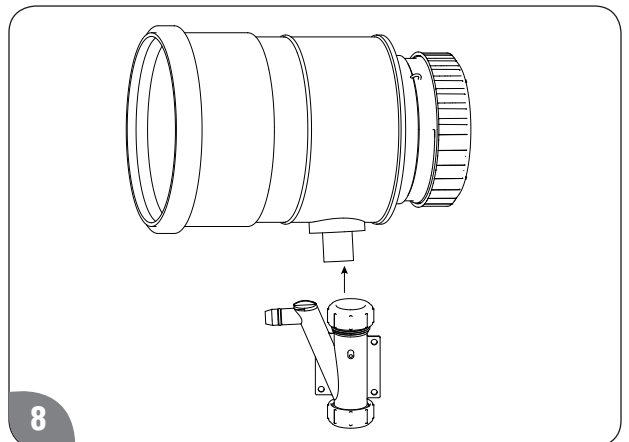
6

Connect the branch tee to another branch tee. Repeat steps 1 to 6 until all exhaust branch tees are connected.



7

Connect a horizontal drain fitting to the end of the exhaust common vent trunk line.

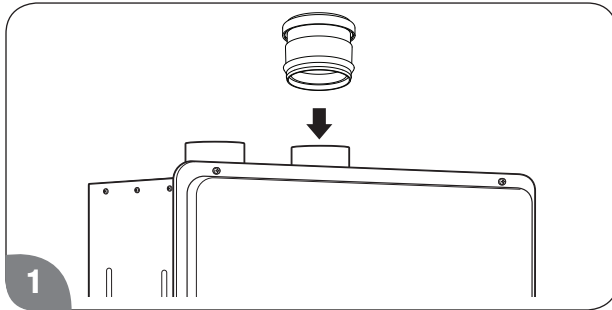


8

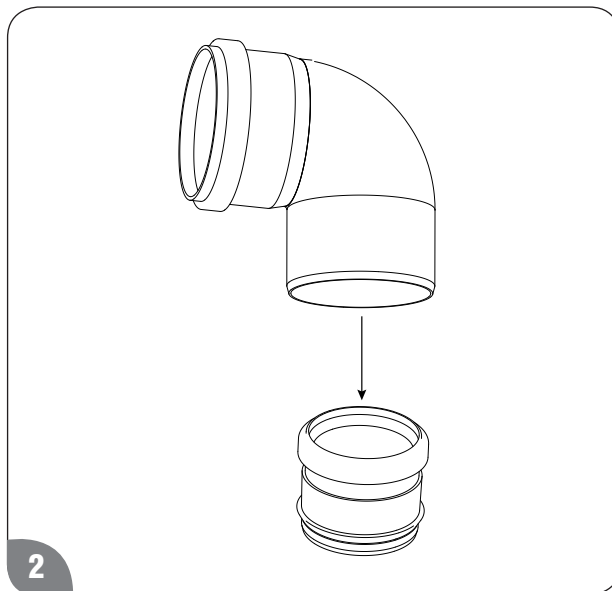
Connect a ball siphon to the horizontal drain fitting.

## Air Intake Installation Instructions

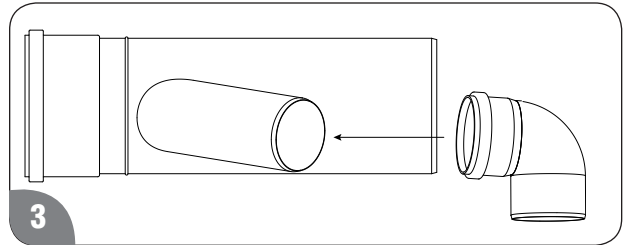
Sparingly apply Centrocelin included in the vent kit to the gasket or male end of vent pipe to assemble the common venting system easily.



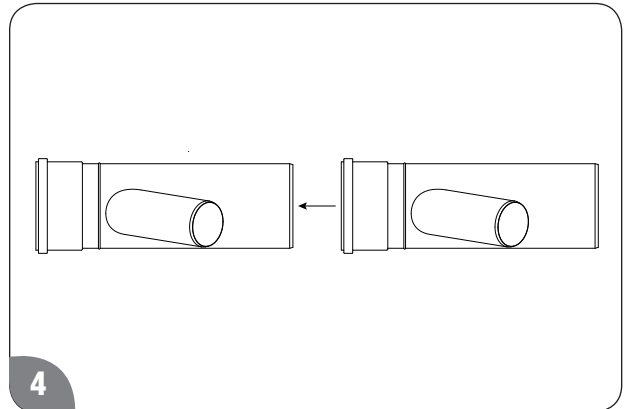
1 Install a 3" PVC to PP adapter on the top of the water heaters.



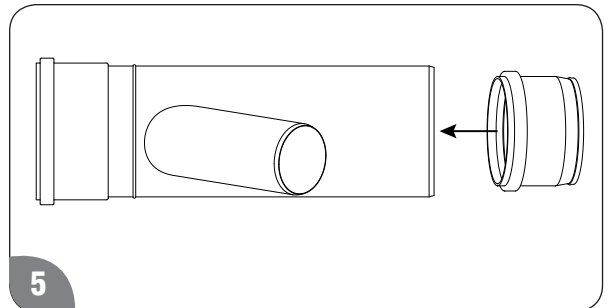
2 Install a 87° elbow to the adapter. For room air intake option, this step completes air intake installation for one water heater.



3 Connect a feeder of a branch tee to the open end of the elbow.



4 Connect the branch tee to another branch. Repeat steps 1 to 2 for room air intake option, or repeat steps 1 to 4 for direct vent until all air intake branch tees are connected.



5 Connect a tee cap to the end of the air intake common vent trunk line.

### **CAUTION:**

Use Rheem approved InnoFlue® PP. No other vent material is permitted for common venting. For Canada, installations must follow ULC-S636 for exhaust venting. Also, all pipe, fittings and procedures must conform to ULC-S636 and vent manufacturer specifications.

### **NOTICE:**

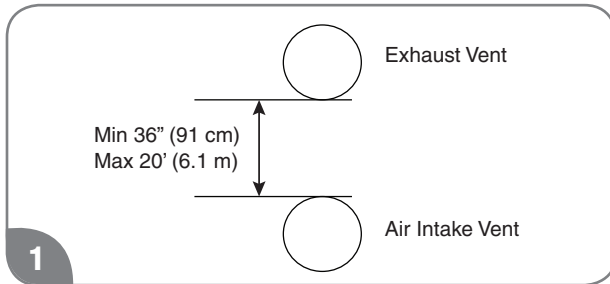
DO NOT use cement for InnoFlue® PP.

# INSTALLATION INSTRUCTIONS

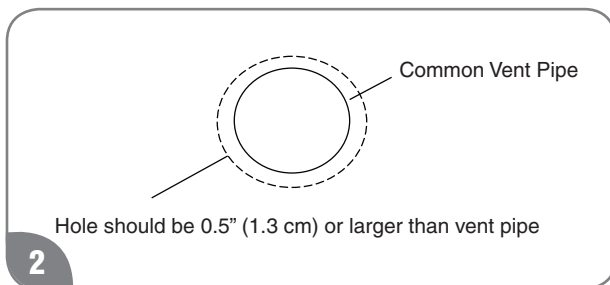
## Horizontal Vent Installation

To extend the exhaust common vent trunk line and the air intake common vent trunk line to outside, additional InnoFlue® PP are required. Refer to "Parts list" for additional information. **No other vent material is permitted for common venting.**

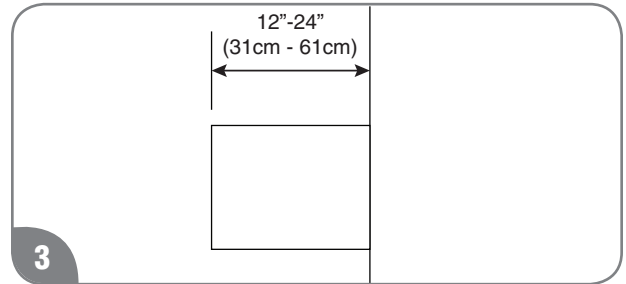
Once the vent terminal location has been determined, make a hole or holes through the exterior wall to accommodate the vent pipes. Vent pipes must exit exterior wall horizontally only. Connect a bird screen or a termination tee to the common venting on the exterior of the building.



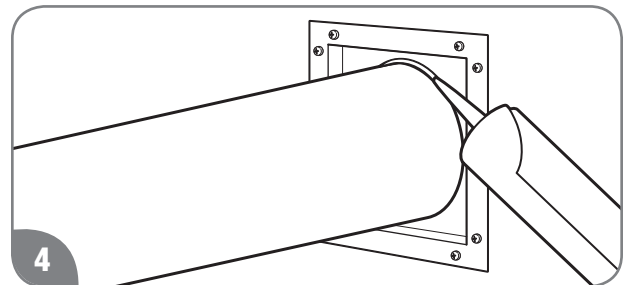
Observe minimum clearances. An exhaust common vent termination and an air intake common vent termination have a minimum 36 inches (91 cm) edge to edge clearance and a maximum 20 feet (6.1 m) edge to edge clearance. Consider other clearances as well. Refer to page Horizontal Vent Termination and Horizontal Vent Considerations Vent for additional information.



Cut one or two holes for the exhaust common vent/air intake common vent. Diameter of the hole(s) should be 0.5" (1.3 cm) or slightly larger than common vent pipe.



Extend the exhaust common vent/air intake common vent and terminate 12"-24" (31cm-61cm) beyond the exterior of the building. Support vertical and horizontal runs as described on page Horizontal Vent Termination and Horizontal Vent Considerations Vent. Vertical supports are required every 78" (2 m).



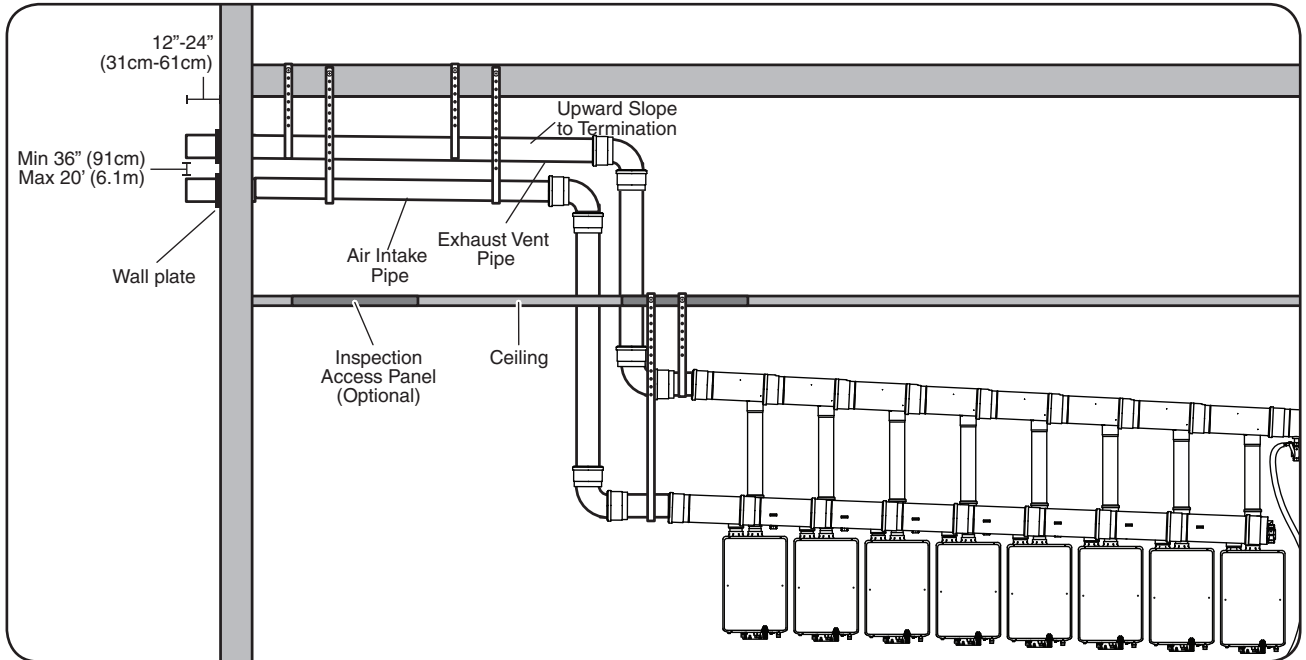
Completely seal where the common vent passes through the wall plate and where it is attached to the structure. **DO NOT** support, pin or otherwise secure the common vent in such a way that restricts the normal thermal expansion and contraction of the common vent.

# INSTALLATION INSTRUCTIONS

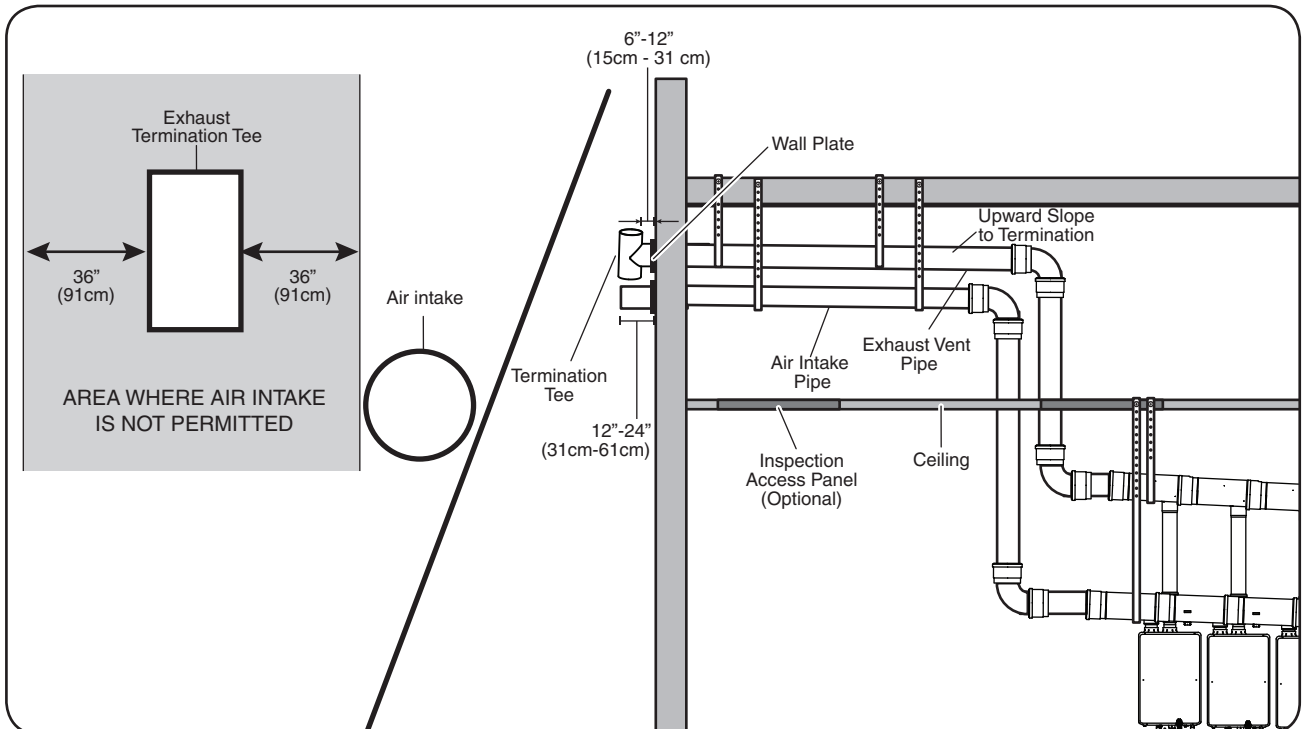


## Venting for Direct-Vent Water Heater (cont.)

### Horizontal Vent Installations



Venting



# INSTALLATION INSTRUCTIONS

## Vertical Vent Installation

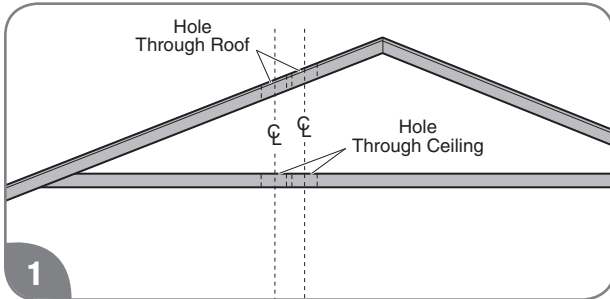
### **⚠ WARNING:**

Improper vent installation can result in death, personal injury, product damage, and/or poor performance.

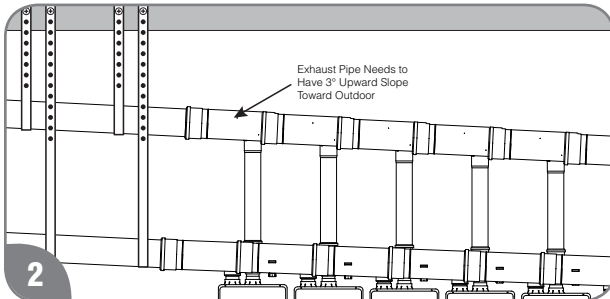
### **NOTICE:**

Only Rheem-approved AND ULC S636 approved termination and parts must be used during installation.

Maintain the recommended air space clearance to combustible materials and building insulation.



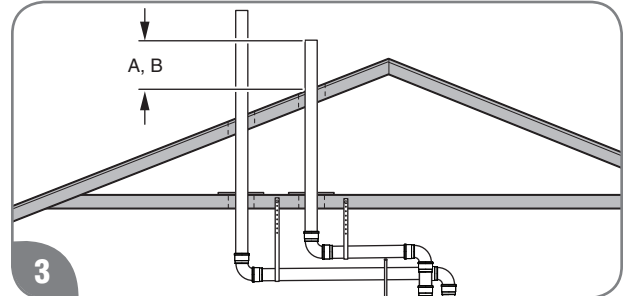
Cut a hole through the roof and interior ceiling to accommodate the vent pipes.



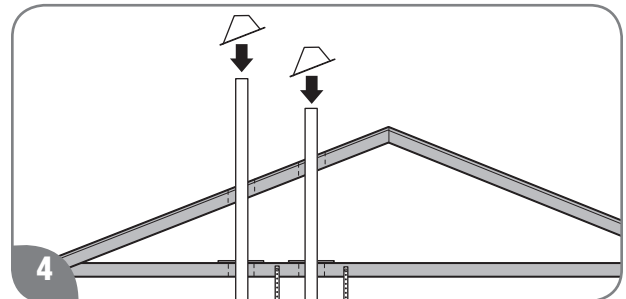
Support vertical and horizontal runs as described in "Common Venting". Vertical supports are required every 4 ft. (1.2 m) along a vertical pipe route, before every transition to vertical, and after every offset elbow.

### **NOTICE:**

Free-standing vent pipe that penetrates a roof/ceiling requires another means of support from a second location.



Determine the vent terminal height and install the vent pipe accordingly. Refer to "Vertical Vent Terminal Location" for clearance requirements.



Install adequate flashing where the vent pipe passes through the roof.

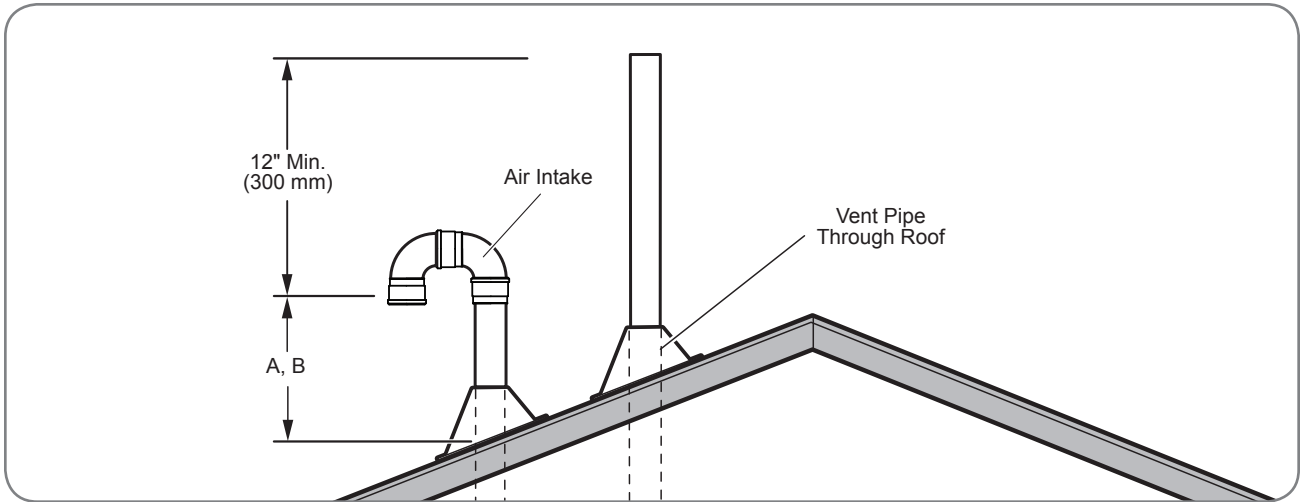


# INSTALLATION INSTRUCTIONS



## Venting for Direct-Vent Water Heater (cont.)

### Vertical Vent Terminal Location



Venting

The following chart with diagrams details the minimum dimensional information needed to determine the proper location of the vertical vent terminal for direct-vent indoor tankless water heaters:

Location	U.S. Installation Requirements <sup>1</sup>	Canadian Installation Requirements <sup>2</sup>
<b>A = Minimum clearance above the roof level.</b>	12 in. (30 cm) above roof level.	18 in. (45.7 cm) above roof level.
<b>B = Maximum clearance above roof level (without additional support for vent pipe).</b>	24 in. (61 cm) above roof level.	24 in. (61 cm) above roof level.
<b>C = Required vent clearance from any gable, dormer, or other roof structure with building interior access (i.e., vent, window).</b>	4 ft. (1.2 m)	4 ft. (1.2 m)
<b>D = Required vent clearance from any forced air inlet, including dryer and furnace air inlets.</b>	10 ft. (3 m)	6 ft. (1.8 m)
<b>E = Minimum/maximum horizontal distance between vent terminals</b>	36 in. (91 cm)/20 ft. (6.1 m)	36 in. (91 cm)/20 ft. (6.1 m)

<sup>1</sup> In accordance with current ANSI Z223.1/NFPA 54 National Fuel Gas Code.

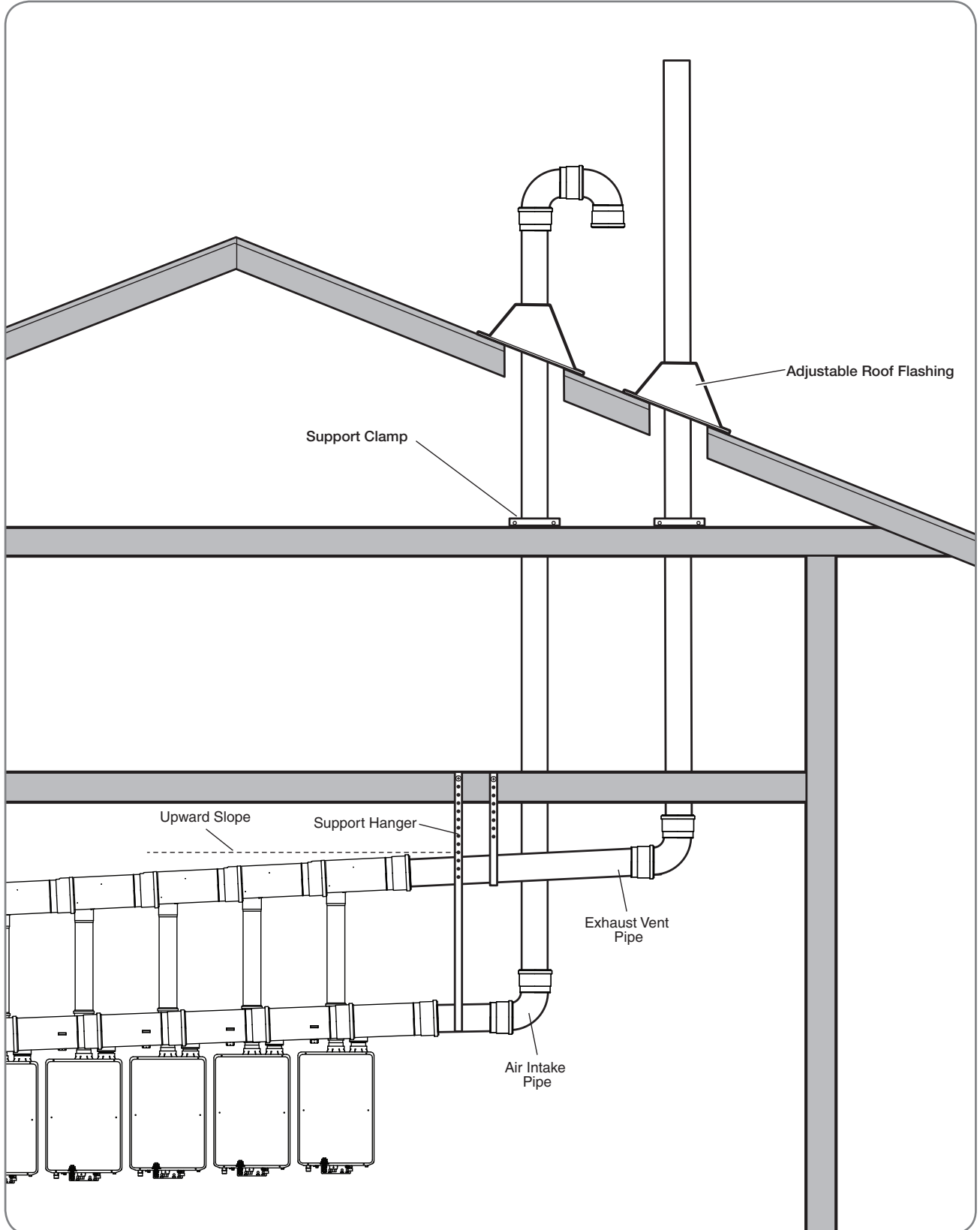
<sup>2</sup> In accordance with current CAN/CSA B149.1 Installation Codes.

The vertical intake air termination requires a return bend or two short or long sweep radius 87° elbows to keep the inlet downward and prevent entry of rain. Refer to figure above for the proper location of the air intake with respect to the exhaust outlet termination.

The vertical exhaust outlet termination terminates at least 12 inches (30 cm) above the air intake termination. The exhaust outlet terminations must be at least 12 inches (30 cm) in US [at least 18 inches (46 cm) in Canada] above the roof line or anticipated snow levels.

# INSTALLATION INSTRUCTIONS

## Standard Vertical Vent Termination

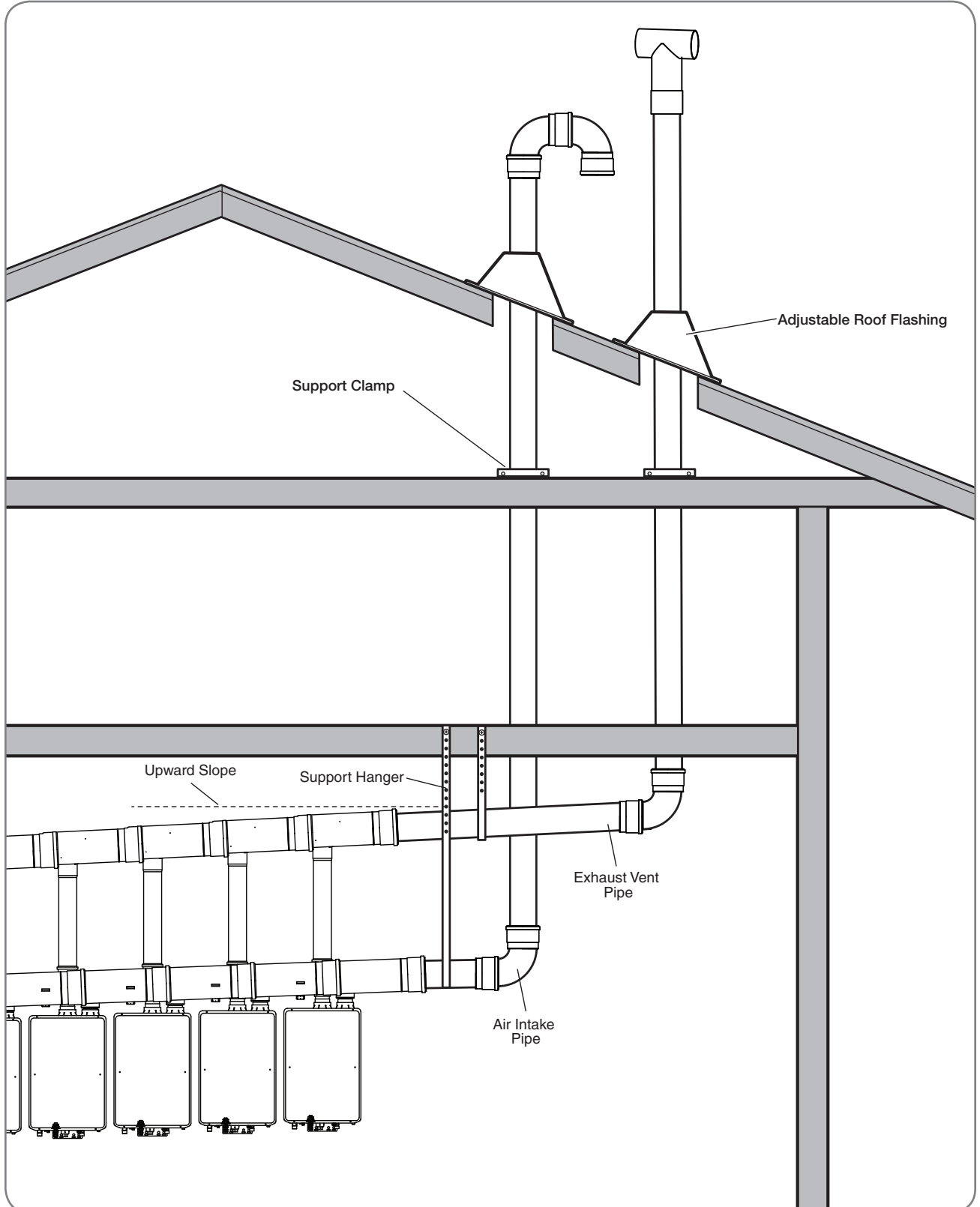


# INSTALLATION INSTRUCTIONS



## Venting for Direct-Vent Water Heater (cont.)

### Alternative Vertical Vent Termination



# INSTALLATION INSTRUCTIONS



## Installation for Power Vent (Room Air Application)

### FOR YOUR SAFETY

**DO NOT** store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance. To do so may result in an explosion or fire.

This water heater can use room air for combustion and ventilation as long as the installation complies with the National Fuel Gas Code, ANSI Z223.1/NFPA 54, and other applicable standards and local codes. Failure to comply with these standards and other instructions on the Common Vent Installation Instructions and the Tankless Water Heater Use and Care Manual may result in death or serious injury and/or damage to property.

### Combustion Air Requirements

Rheem commercial tankless water heater is allowed to utilize room air in commercial applications using Rheem common venting system.

Proper operation of the water heater requires air for combustion and ventilation. Provisions for combustion and ventilation air must comply with referenced codes and standards.

### Air for Combustion and Ventilation

Air for combustion, ventilation, and dilution of flue gases for water heater installed in buildings shall be obtained by indoor combustion air, outdoor combustion air, or combination indoor and outdoor.

### Indoor Combustion Air

The minimum required volume shall be no less than 50 cubic feet per 1000 Btu/hr (4.8 cubic meters per kW) of the aggregate input rating of all appliances within the space.

Openings used to connect indoor spaces shall be sized and located in accordance with the following:

- (1) Combining spaces on the same story. Each opening shall have a minimum free area of 1 square inch per 1000 Btu/hr (2200 square millimeters per kW) of the aggregate input rating of all appliances in the space but not less than 100 square inches (0.06 square meters). One opening shall commence within 12" (30 cm) of the top of the enclosure and one opening shall commence within 12" (30 cm) of the bottom of the enclosure. The minimum dimension of air openings shall not be less than 3" (8 cm).

- (2) Combining spaces in different stories. The volumes of spaces in different stories shall be considered as communicating spaces where such spaces are connected by one or more openings in doors or floors having a total minimum free area of 2 square inches per 1000 Btu/hr (4400 square millimeters per kW) of the aggregate input rating of all appliances.

### Outdoor Combustion Air

Outdoor combustion air shall be provided through opening(s) to the outdoors in accordance with two permanent opening method or one permanent opening method. The minimum dimension of air openings shall not be less than 3" (8 cm).

#### Two Permanent Openings Method

Two permanent openings, one commencing within 12" (30 cm) of the top of the enclosure and one commencing within 12" (30 cm) of the bottom of the enclosure, shall be provided. The openings shall communicate directly, or by ducts, with the outdoors or spaces that freely communicate with the outdoors, as follows:

- (1) Where directly communicating with the outdoors or where communicating to the outdoors through vertical ducts, each opening shall have a minimum free area of 1 square inches per 4000 Btu/hr (550 square millimeters per kW) of aggregate input rating of all appliances in the enclosure.
- (2) Where communicating with the outdoors through horizontal ducts, each opening shall have a minimum free area of 1 square inches per 2000 Btu/hr (1100 square millimeters per kW) of aggregate input rating of all appliances in the enclosure.

#### One Permanent Opening Method

One permanent opening, commencing within 12" (30 cm) of the top of the enclosure, shall be provided. The water heaters shall have clearances of at least 1" (2.5 cm) from the sides and back and 6" (15 cm) from the front of the water heaters. The opening shall directly communicate with the outdoors or shall communicate through a vertical or horizontal duct to the outdoors or spaces that freely communicate with the outdoors and shall have a minimum free area of the following:

- (1) 1 square inches per 3000 Btu/hr (700 square millimeters per kW) of the aggregate input rating of all appliances located in the enclosure
- (2) Not less than the sum of the areas of all vent connectors in the space

## Combination Indoor and Outdoor Combustion Air

The use of a combination of indoor and outdoor combustion air shall be in accordance with the following:

- (1) Indoor openings. Where used, openings connecting the interior spaces shall comply with "Indoor Combustion Air"
- (2) Outdoor opening(s) location. Outdoor opening(s) shall be located in accordance with "Outdoor Combustion Air"
- (3) Outdoor opening(s) size. The outdoor opening(s) size shall be calculated in accordance with the following:
  - (a) The ratio of the interior spaces shall be the available volume of all communicating spaces divided by the required volume.
  - (b) The outdoor size reduction factor shall be 1 minus the ratio of interior spaces.
  - (c) The minimum size of outdoor opening(s) shall be the full size of outdoor opening(s) calculated in accordance with "Outdoor Combustion Air", multiplied by the reduction factor. The minimum dimension of air openings shall not be less than 3" (8 cm).

## Louvers, Grilles, and Screens

The required size of openings for combustion, ventilation, and dilution air shall be based on the net free area of each opening. Where the free area through a design of louver, grille, or screen is known, it shall be used in calculating the size opening required to provide the free area specified. Where the louver and grille design and free area are not known, it shall be assumed that wood louvers have 25 percent free area, and metal louvers and grilles have 75 percent free area. Nonmotorized louvers and grilles shall be fixed in the open position.

## NOTICE:

**Protective screening for the openings MUST NOT be smaller than 1/4" mesh to prevent clogging by lint or other debris.**

Refer to the latest edition of National Fuel Gas Code, ANSI Z223.1/NFPA 54 for additional information for the combustion air requirements.

## Corrosive Atmosphere

The water heater should not be installed near an air supply containing halogenated hydrocarbons where contaminants can enter the combustion air supply.

Avoid installing a water heater in any of the following locations: beauty shops, dry-cleaning establishments, photo processing labs, and storage areas for liquid and powdered bleaches or swimming pool chemicals. These locations often contain such halogenated hydrocarbons.

The air supply containing halogenated hydrocarbons is safe to breathe, but when passed through a gas flame, corrosive elements are released that will shorten the life of any gas-burning appliance.

Propellants from common spray cans or gas leaks from A/C and refrigeration equipment are highly corrosive after passing through a flame.

## NOTICE:

**The water heater warranty is void when the failure is due to operation in corrosive conditions.**

# INSTALLATION INSTRUCTIONS



## Condensate

### Condensate Disposal

Be sure the condensate runs freely to a drain and does not accumulate inside the exhaust common venting pipe. In cold climates, precautions may need to be taken to ensure that the condensate drain does not freeze.

All condensation must be drained and disposed of per local codes and requirements.

Use corrosion resistant pipe or flexible tube for the condensate drain line.

Fill water until the ball is fully covered by water.

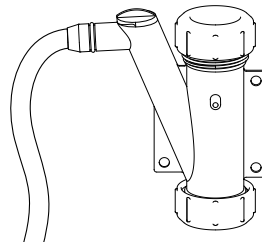
The drain pipe (along its entire length) must be at least the same diameter as the drain line.

The drain line should be as short as possible and have a downward slope toward the end.

The end of the drain pipe should be open to the atmosphere. The end should not be under water or other substances.

**DO NOT** connect the drain pipe directly to the drain sewer.

The drain pipe can be connected to a neutralizer. Follow the neutralizer's instructions.



## Multiple Unit Controls

RTGH-CM95DVLN includes manifold control, and does not require other multiple unit controls. RTGH-C95DVLN requires one of the following optional Multiple Unit controls to manifold two or more water heaters together.

Without the Multiple Unit Control, water heaters operate independently

Multiple Unit Controls	RTGH-C95DVLN	RTGH-CM95DVLN	Maximum Number of Water Heaters
EZ Link	Optional	Not required	2
MIC-6	Optional	Not required	6
MIC-185	Optional	Not required	6
MIC-185 with MICS-180	Optional	Not required	20*
Manifold Control	N/A	Included	20*

\*Maximum number of water heaters per one common vent system is 8.

NO other manufacturer's manifold systems are suitable for use with Rheem's tankless water heaters.

### NOTICE:

**DO NOT use other manufacturer's common vent system with Rheem's tankless water heaters. DO NOT use other manufacturer's water heaters with Rheem's common vent system.**

### IMPORTANT:

**DO NOT connect power until vent installation is complete. Upon initial installation and start up, only connect power to one water heater at a time. Wait ninety (90) seconds between connecting power to the water heaters.**

Refer to the installation instructions of the manifold controls for more information.

# INSTALLATION INSTRUCTIONS

## Initial Power up Sequence

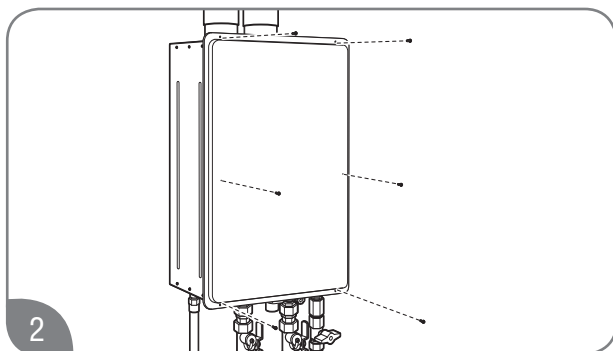
After vent installation is complete, install a common vent gas chip into the control board. A gas chip for common vent is shipped with applicable Rheem tankless water heater.

### **⚠️WARNING:**

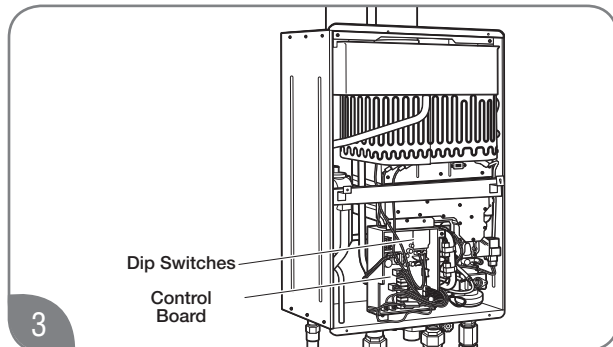
**DO NOT** operate Rheem tankless water heaters for common vent application without the gas chip for common vent.



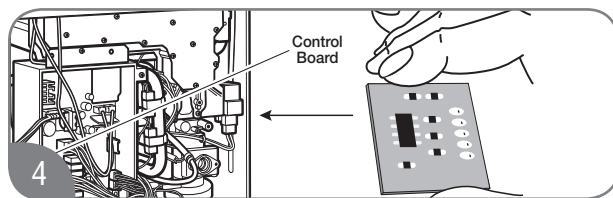
Make sure electrical power is disconnected and turn off gas and water to the water heater.



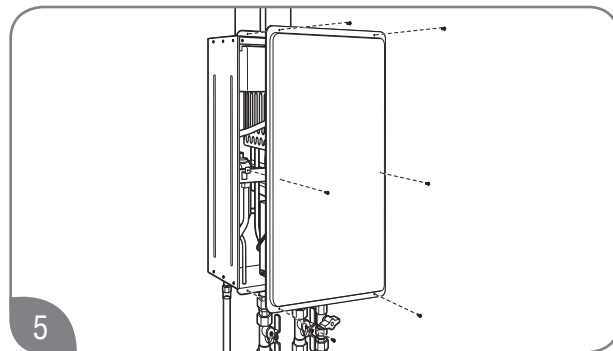
Remove the front panel on the water heater.



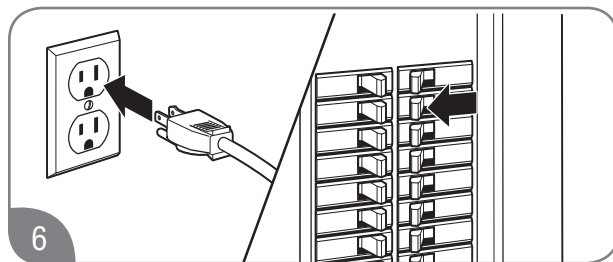
Find a gas chip on the control board. Find a connector for a gas chip located middle right on the control board.



Find a plastic bag located on the back of the front cover. One gas chip is for common vent and the other is for non-common vent. Remove the gas chip for common vent from the plastic bag. Gripping the chip carefully align and insert the chip into the connector for the gas chip on the control board. **DO NOT** force.



Replace the front cover panel.



Only connect power to one water heater at a time. Wait ninety (90) seconds between connecting power to the water heaters. If step 6 cannot be completed properly, contact service department listed on "Call for Assistance" of this use and care manual for assistance.

# INSTALLATION INSTRUCTIONS



## Installation Checklist

### A. Water Heater

- Model is RTGH-C95DVLN or RTGH-CM95DVLN
- Water heaters must be installed indoors
- Sufficient fresh air supply for proper operation of water heater
- Air supply free of corrosive elements and flammable vapors.

### B. Vent

- Vent pipe material is ULC S636 approved and manufacturer-approved InnoFlue® PP
- Exhaust common vent pipe has a 3° rise or a 5/8 per foot (5.6 cm per meter) upward slope toward the vent terminal.
- Vertical venting is installed as described on pages 26-29.
- 3" or 4" vent connection(s) securely fastened together with connector ring.
- All vent runs are properly installed.
- Vent terminal is properly installed.
- Maximum vent length is observed.
- A PVC to PP adapter and 87 degree elbow are installed at air intake for room air option.

### C. Water Supply

- Water supply has sufficient pressure.
- Water supply is properly sized

### D. Gas Supply

- Gas type is Natural gas
- Gas supply pressure is sufficient for the water heaters
- Gas supply is properly sized

### E. Electrical Power

- Power is not connected until vent installation is complete.
- Follow power up sequence described on page 33 after a gas chip for common vent application is installed.

### F. Condensate

- Ball in the ball siphon is completely covered by water.



## High-Altitude DIP Switch Adjustments

This water heater is not allowed to be installed with common vent above 2000 ft (610 m). If this is done the water heater may not function properly.

Verify the altitude that the water heater is installed at less than 2000 ft (610 m).



# CARING FOR YOUR WATER HEATER



## Preventive Maintenance

### **⚠️ WARNING:**

Failure to perform routine preventive maintenance can prevent the water heaters and common venting system from operating properly. Improper operation can cause carbon monoxide dangers, excessive water temperatures, and other potentially hazardous conditions resulting in death, personal injury, and/or product damage.

Properly maintaining your water heaters and common vent system will ensure dependable, trouble-free service.

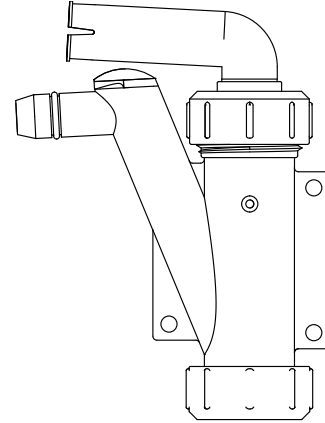
### User Preventive Maintenance

Refer to water heater's U&C manual for preventive maintenance for water heaters. Establish and follow a routine preventive maintenance program. The following suggested items should be included in your program.

### Common venting system

Periodically check all connections of vent pipes if they are properly connected. Carefully inspect the entire common venting system for any signs of cracks or fractures, particularly at the joints between elbows or other fittings and the straight runs of vent pipe. Check the system for signs of sagging or other stresses in the joints as a result of misalignment of any components in the system. If any of these conditions are found, they must be corrected.

### Ball Siphon



The siphon prevents flue gas from flowing into the water heater. Water or condensation should cover a ball in the ball siphon completely. Periodically check if the ball is completely covered by water or condensation. Fill water until the ball is fully covered by water or condensation. Also, periodically check if many bubbles are seen in the siphon during water heaters operate. If many bubbles are seen, stop operating water heaters immediately, and contact a qualified service technician or plumbing contractor.

# PARTS REPLACEMENT



## Parts Ordering

### **⚠ WARNING:**

**For your safety, DO NOT attempt to disassemble, repair, or replace any portion of this common venting system. Refer all repairs, service, and/or adjustments to qualified service personnel.**

Address all parts orders to the distributor or store where the common venting system was purchased. All parts

orders should include:

1. The model and serial number of the water heater from the rating plate.
2. Specify the gas type (natural or LP) as marked on the rating plate.
3. Parts description (as shown below) and number of parts desired.

<b>Rheem Part Number</b>	<b>Part Description</b>
SP20918A	3" PVC to PP Adaptor
SP20918B	4", 87 Degree Elbow
SP20918C	Universal Ball Valve Siphon
SP20918D	Non-Return Valve
SP20918E	8" Exhaust Branch Tee
SP20918F	Horizontal Drain Fitting
SP20918G	4" Straight Pipe, 2'
SP20918H	Centrocelin
SP20918J	3", 87 Degree Elbow
SP20918K	8" Tee Cap
SP20918L	8" Air Intake Branch Tee
SP20918M	8", 87 Degree Elbow
SP20918N	8", 45 Degree Elbow
SP20918P	8" Straight Pipe, 1'
SP20918R	8" Straight Pipe, 2'
SP20918S	8" Straight Pipe, 3'
SP20918T	8" Straight Pipe, 6'
SP20918U	8", 90 Degree Elbow Vertical Support
SP20918V	8" Bird Screen SS
SP20918W	8" Tee Termination
SP20918X	3" Connector Ring
SP20918Y	4" Connector Ring
SP20918Z	4" Straight Pipe, 1'
SP20918AA	8" Support Clamp

# NOTES

A large, vertically oriented rounded rectangle with a thin black border. Inside the rectangle, there are 25 horizontal lines spaced evenly, providing a template for writing notes.

# IF YOU NEED SERVICE



## Call for Assistance

1. All questions, adjustments, repairs, and/or routine maintenance should be directed to your installer, plumbing contractor, or licensed service agent. If your contacts have moved or are not available, please refer to the telephone directory, commercial listings, or local utility company for qualified service assistance.

2. If your problem has not been solved to your satisfaction, contact the Manufacturer National Service Department at the following address:

Manufacturer National Service Department

1241 Carwood Court  
Montgomery, Alabama 36117  
Phone: 1-866-720-2076

When contacting the manufacturer, the following information will be requested:

- A. Model and serial number. (See page 8 or the ratings plate on the side of the water heater.)
- B. Address where the water heater is located.
- C. Name and address of installation contractors (page 8) and all qualified service companies that have worked on the water heater.
- D. Original installation date. (See page 8.)
- E. Dates any service or preventive maintenance was performed.
- F. Details of the persisting problem.
- G. List of businesses that have tried to fix this problem, along with dates of service.