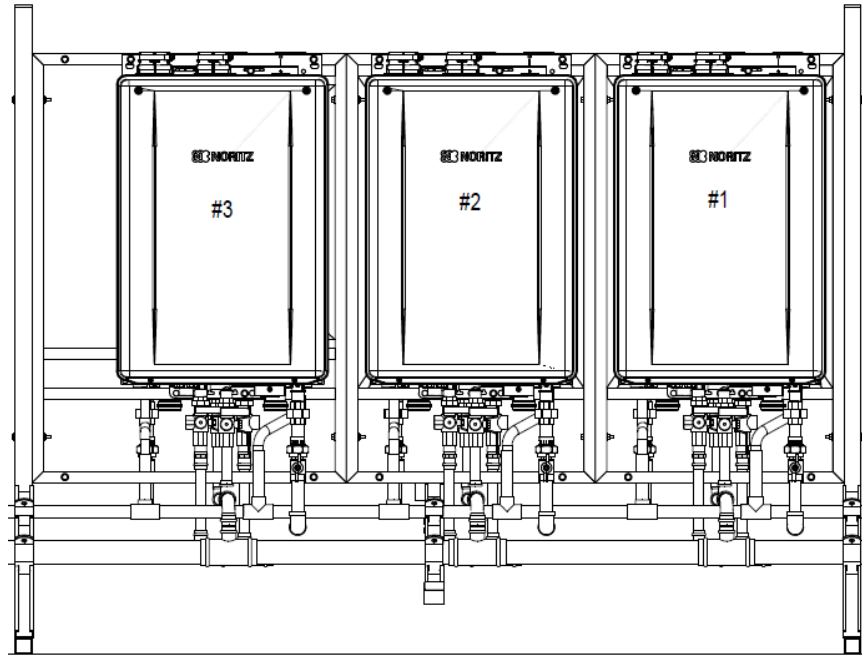




NCC199CDV Commercial Water Heating System (CR60) Installation Manual

Additional information can be obtained from the appliance manual.



Floor Standing Rack (CDV Units)
6 Water Heaters

CAUTION

Requests to Installers

- In order to use the water heater safely, read this installation manual carefully, and follow the installation instructions.
- Failures and damage caused by erroneous work or work not as instructed in this manual are not covered by the warranty.
- Check that the installation was done properly in accordance with this Installation Manual upon completion.
- After completing installation, please either place this Installation Manual in a plastic pouch and attach it to the side of the water heater (or the inside of the pipe cover or recess box if applicable), or hand it to the customer to retain for future reference. Also, be sure to fill in all of the required items on the warranty and to hand the warranty to the customer along with the Owner's Guide.

Table of Contents

Description.....	3
Before Installation	4
Venting the CR60 Commercial Rack System.....	10
Clearances.....	21
Commercial Water Heating System Parts Number & Main Components	26
CR60-WH-2 Specifications	28
2 Unit Drawing Illustration / Dimensions	29
CR60-WH-3 Specifications	30
3 Unit Drawing Illustration / Dimensions	31
CR60-FS-4 Specifications	32
4 Unit Drawing Illustration / Dimensions	33
CR60-FS-5 Specifications	34
5 Unit Drawing Illustration / Dimensions	35
CR60-FS-6 Specifications	36
6 Unit Drawing Illustration / Dimensions	37
Hoisting and Lifting Lugs	38
Securing Floor Standing CR60 Models	39
Securing Commercial Water Heating System Wall Mount	40
Freeze Prevention / Insulation	46
Rack Parallel Piping System	47
Making Piping Connections.....	48
Condensate Drain to Floor or with Pump.....	49
Water Treatment.....	51
Installation of Gas Supply	52
Electrical wiring	53
Remote Controller	54
Multi System Controller	56
Final checklist	59
Trial Operation	61
Warranty for Tankless Units & Commercial Water Heater System Components.....	63

Description

The Noritz Commercial Water Heating System (CR60) is a pre-fabricated racking solution that can be used in flat rooftop, mechanical room, or outdoor applications. For the wall mounted configurations, Commercial Water Heating Systems are available in 2 or 3 Noritz tankless water heater configurations. The floor standing Commercial Water Heating Systems are available with 4 , 5 or 6 unit Noritz tankless water heater configurations. For outdoor installation, vent caps (VC-6) must be ordered for each individual unit.

The CR60 provides a time and labor saving solution when installing multiple Noritz tankless water heaters.

- Manufactured with highly corrosion-resistant aluminum that can withstand extreme environments.
- Both wall and floor standing designs are available for labor saving installations for indoor and outdoor unit types.
- All gas and water supplies are properly pre-sized for optimum performance.
- Pre-wired system controller for controlling up to 6 units.
- Included remote controller for adjusting temperature and monitoring system operation.
- Ability to connect multiple racks side by side to increase system output

Note: Electrical wiring (pg. 53) is not included and must be field supplied.

Before Installation

- A licensed professional must install the Commercial Water Heating System (CR60)
- Installer should have skills such as connecting gas line, water line, electricity, and knowledge of applicable national state and local codes.
- Stop if you lack the skills above. Contact a licensed professional.

Potential dangers from accidents during installation and use are divided into the following four categories. Closely observe these warnings, they are critical to your safety.

⚠ DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
NOTICE	Indicates a potentially hazardous situation which, if not avoided, may result in property damage.

⚠ WARNING

Precautions on Vent Pipe Replacement

The vent system will almost certainly need to be replaced when this appliance is being installed. Only use vent materials that are specified in this Installation Manual for use on this appliance. Refer to the “Venting the Water Heater” section for details. If PVC, CPVC, or Category IV listed pipe is already installed, check for punctures, cracks, or blockages and consult with the vent pipe manufacturer before reusing. Improper venting may result in fires, property damage or exposure to Carbon Monoxide.

Check the Power

The power supply required is 120 VAC, at 60 Hz. Using the incorrect voltage may result in fire or electric shock.

⚠ CAUTION

Do Not Use Appliance for Purposes Other Than Those Specified

Do not use for other than increasing the temperature of the water supply, as unexpected accidents may occur as a result.

Check Water Supply Quality

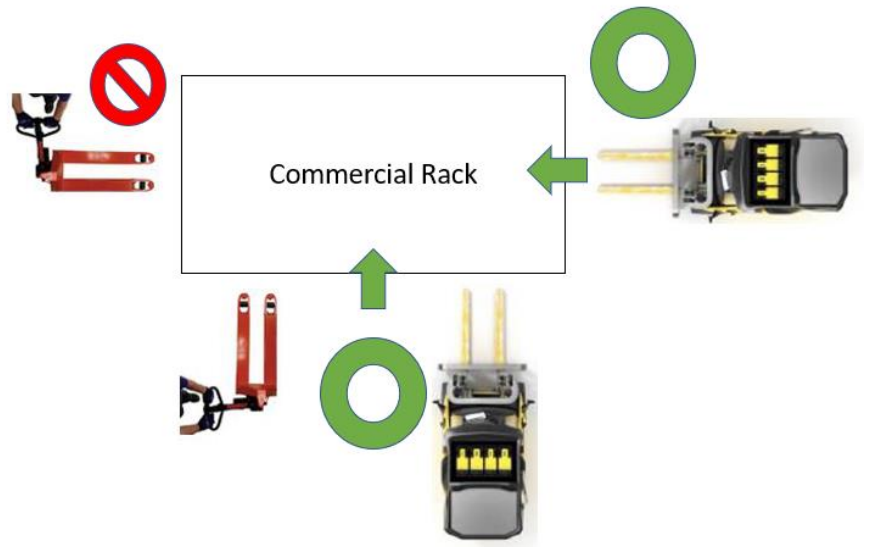
If the water supply is in excess of 12 grains per gallon (200 mg/L) of hardness, acidic or otherwise impure, treat the water with approved methods in order to ensure full warranty coverage.

Unpacking the Commercial Rack System

[Moving the CR60 Racks]

The rack is designed to be accessible from either of 2 directions. Refer to the following diagram for accessibility options for moving the rack system.

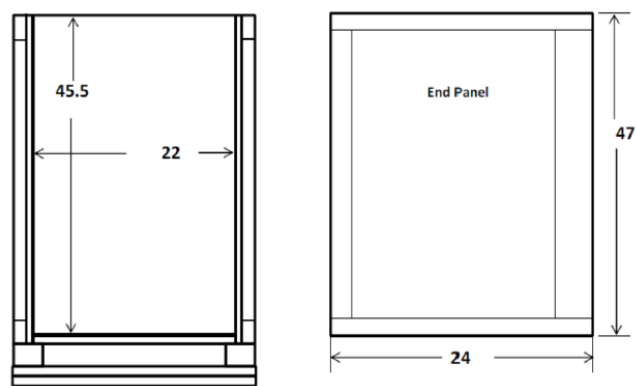
Orientation	Pallet Jack	Forklift
Front/Back	Accessible	Accessible
Sides	Not Accessible	Accessible



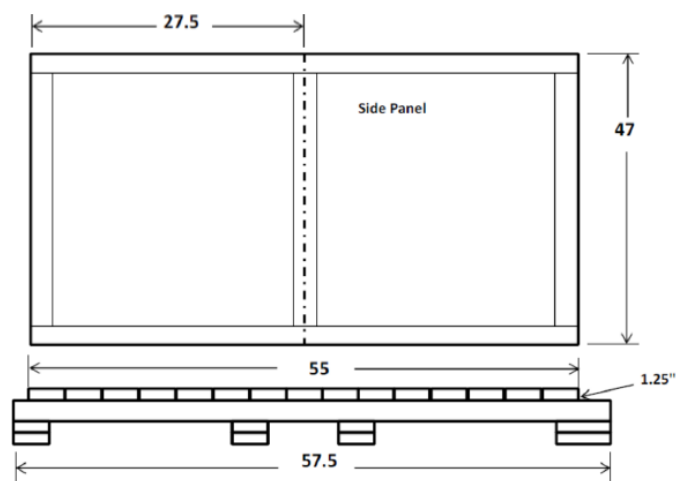
Note Before unpacking the rack, verify that the product is physically free of damage

[Wall Hanging Rack Crate Side Dimensions]

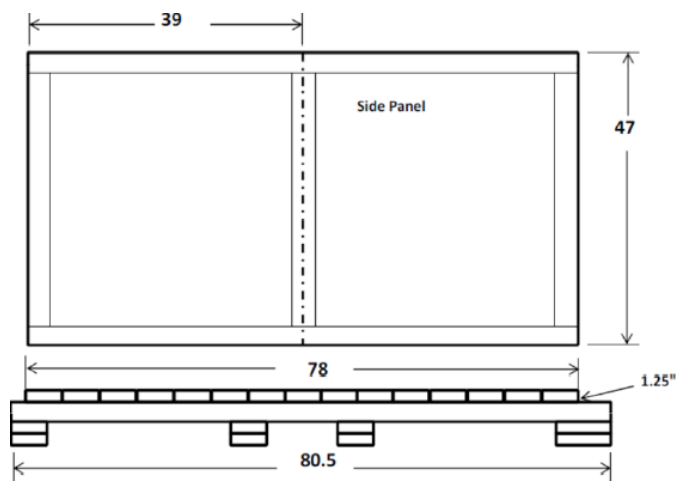
CR60-WH-2, CR60-WH-3



CR60-WH-2 Crate Front Dimensions

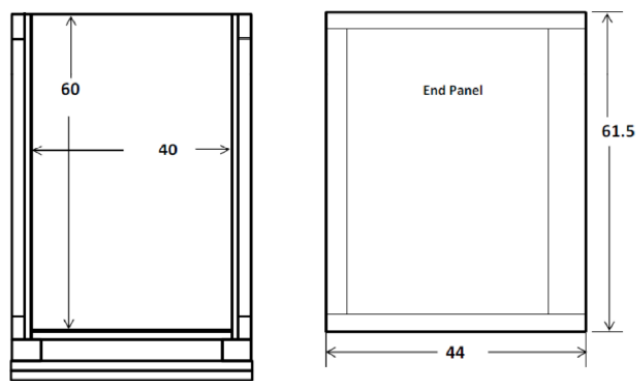


CR60-WH-3 Crate Front Dimension

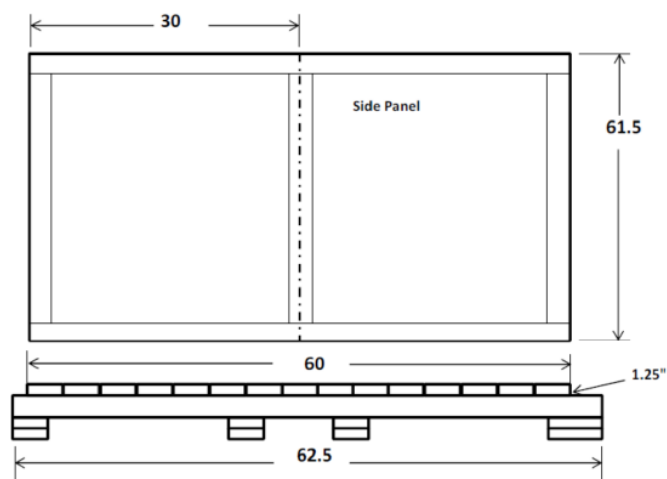


[Floor Standing Rack Crate Side Dimensions]

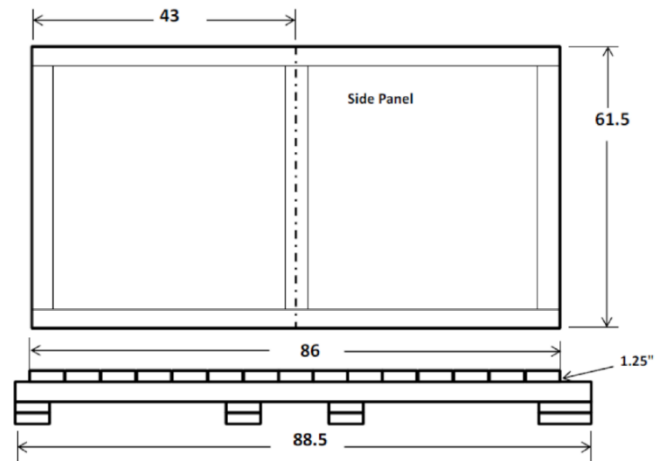
CR60-FS-4, CR60-FS-5, CR60-FS-6



CR60-FS-4 Crate Front Dimension

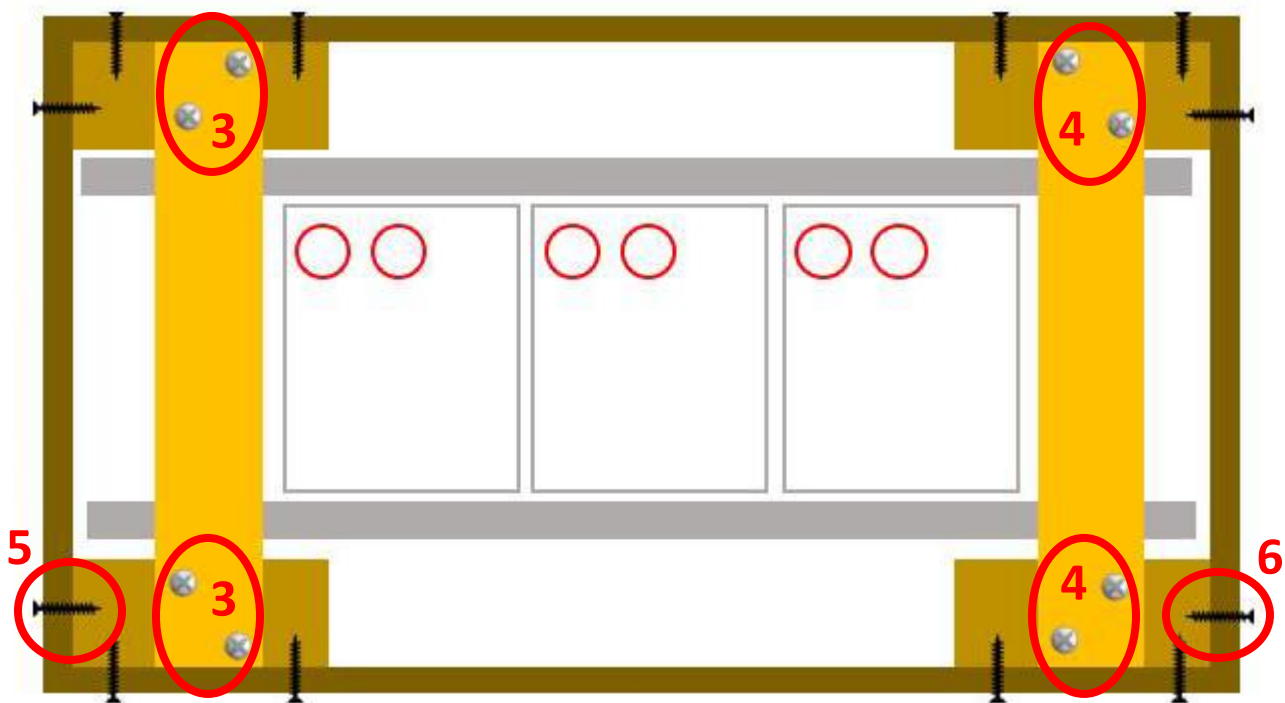


CR60-FS-5, CR60-FS-6 Crate Front Dimension



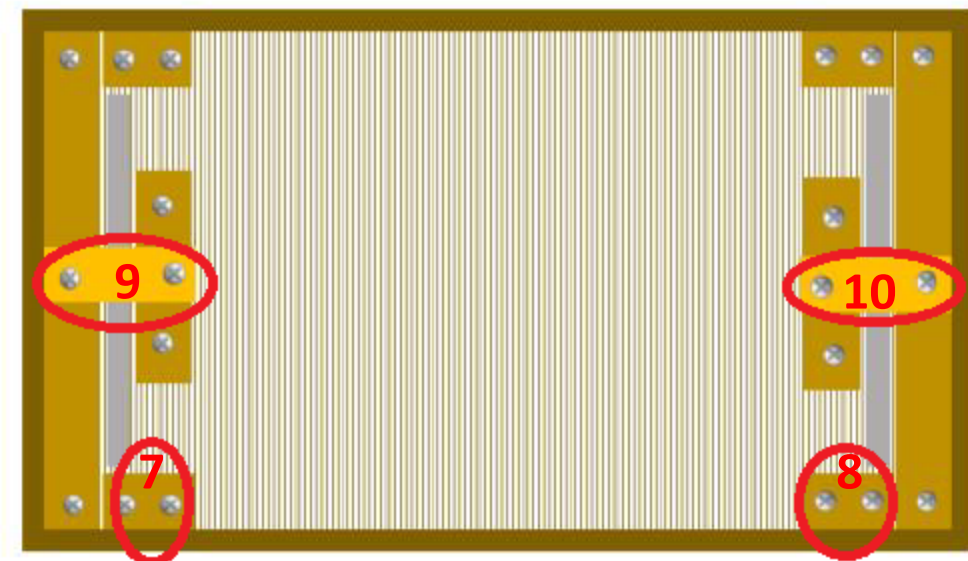
[Unpacking the CR60 Rack]

1. Remove six (6) screws to remove the top panel of the CR60 rack
2. Remove six (6) screws to remove the front panel
3. Remove four (4) screws to remove the left top retaining blocks
4. Remove four (4) screws to remove the left top retaining blocks
5. Remove one (1) screw from the top of the left side panel
6. Remove one (1) screw from the top of the right side panel



(View from Top)

7. Remove two (2) screws from the left bottom holding block
8. Remove two (2) screws from the right bottom holding block
9. Remove two (2) screws from the left cross block
10. Remove two (2) screws from the right cross block



(View from Top)

11. Slide the CR60 rack forward to remove from crate

12. Remove inserts from each flue and intake before connecting any venting material

Venting the CR60 Commercial Rack System

WARNING

CARBON MONOXIDE POISONING

Follow all vent system requirements in accordance with relevant local or state regulation, or, in the absence of local or state code, if in the U.S., refer to the National Fuel Gas Code ANSI Z223.1 / NFPA 54- latest edition, and if in Canada, in accordance with the Natural Gas and Propane Installation Code CSA B149.1- latest edition.

- Only vent materials approved for use with Category IV appliances shall be used.
- Under normal conditions, this water heating system will not produce exhaust flue temperatures in excess of 149 °F (65 °C) and schedule 40 PVC pipe may be used as the vent material. **If the system set temperature is 160 °F (70 °C) or higher and there is a return line to the system from either a recirculation pump or a storage tank, schedule 40/80 CPVC or PP must be used.**
- This water heater must be vented with plastic pipe materials as specified in the table below. Vent Installations in Canada which utilize plastic vent systems must comply with ULC S636.

[Exhaust Vent / Air Intake]

Material	United States		Canada	
	Exhaust	Air Intake	Exhaust	Air Intake
Schedule 40 PVC	ANSI/ASTM D1785		ULC S636 Certified Materials Only	CSA B137.3
PVC-DWV	ANSI/ASTM D2665			CSA B181.2
Schedule 40 CPVC	ANSI/ASTM F441			CSA B137.3
Polypropylene (PP)*	Centrotherm- InnoFlue® (certified ULC S636)			
System 1738™ PVC Fuel Gas Venting	IPEX Management Inc. (certified UL 1738)			

*Only listed manufacture specified vent parts may be used for this Water Heater.

Refer to the manufacture's literature for detailed information.

[Pipe Cement / Primer]

Material	United States	Canada
PVC	ANSI/ASTM D2564	ULC S636 Certified Materials Only
CPVC	ANSI/ASTM F493	

Note: Use of cellular core PVC (ASTM F891), cellular core CPVC, or Radel® (polyphenylsulfone) in non-metallic venting systems is prohibited.

- Under normal conditions, this appliance will not produce an exhaust flue temperature in excess of 149°F (65°C) and schedule 40 PVC pipe may be used as the vent material. If the water heater set temperature is 160°F (70°C) or higher and there is a return line to the water heater from either a recirculation pump or a combination space heating system, use schedule 40/80 CPVC or PP
- Maximum vent length adjustment dipswitches may need to be adjusted to accommodate vent runs. Refer to the Water Heater Installation Manual Page 9 for additional details.
- All piping must be fully supported. Use pipe hangers at a minimum of 3 ft. (0.9m) or at the instructions of the vent manufacturer. Do not use the Water Heater to support the venting.
- For additional installation procedures, refer to the Water Heater Installation Manual or contact Noritz technical support (866) 766-7489.

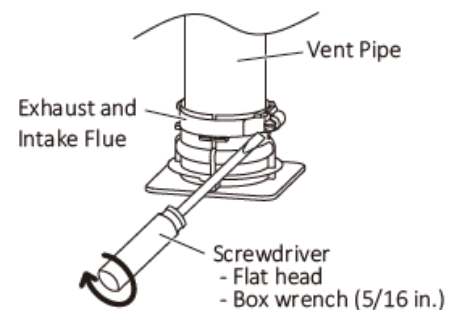
[How to tighten the vent pipe to the water heater]

1. Continue to insert the Vent Pipe until it touches the base of the Water Heater Exhaust (or Intake) Flue. The vent pipe will be inserted approximately 2.3 in. (60mm).
2. Secure the Vent Pipe by tightening the band using a screwdriver.

The tightening torque shall be the following:

PVC: 16-20 in-lb

PP: 12-15 in-lb



When Venting Each Water Heater Individually

- These commercial water heating systems are designed to vented either individually or common vented (up to 6 units per manifold).
- Follow all general venting guidelines as outlined in this manual and the appliance Installation Manual.
- The total vent length including horizontal and vertical vent runs should be no less than 3 ft (0.9m).
- The Water Heater can be adjusted to accommodate longer vent runs; refer to the Water Heater Installation Manual (pg. 19) for additional details.

Maximum Vent Lengths (Individual Vent)

- The maximum vent length when using 2 in. (50 mm) pipe is 65 ft.
- The maximum vent length when using 3 in. (75mm) pipe is 150 ft.
- The maximum lengths are reduced by the number elbows used, as shown in the following table:

Vent Diameter	Maximum Equivalent Vent Length* ¹ V (Vertical) + H (Horizontal)	Maximum # of Elbows* ²	Equivalent Length
2 in.	65 ft (20 m)	6	90° elbow: 5 ft (1.5 m)
3 in.	150 ft (46 m)	15	45° elbow: 3 ft (0.9 m)

*1 The maximum vent length includes elbows.

*2 Not including the termination.

Acceptable Termination Types

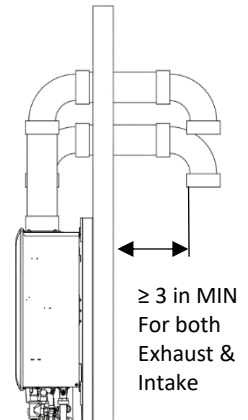
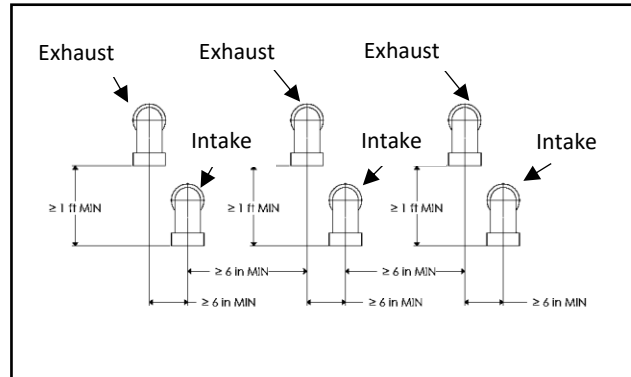
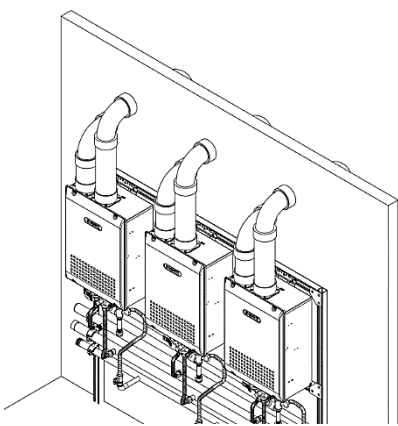
The vent for each water heater may be terminated with any of the specialty terminations listed in the table below. For full vent termination requirements, refer to the appliance Installation Manual.

Manufacturer	Part Number	Vent Diameter	Material
Noritz	PVT-HL	3"	PVC
Noritz	PVC-2CT	2"	PVC
Noritz	PVC-3CT	3"	PVC
Noritz	PVC-UCVK	2 or 3"	PVC
Noritz	PVC-2LPT	2"	PVC
Noritz	PVC-3LPT	3"	PVC
IPEX	196984	2"	PVC
IPEX	196985	3"	PVC
IPEX	196256	2" or 3"	PVC

Clearance Requirements Between Terminations (Horizontal)

When using 90 Elbows or Tee Fittings

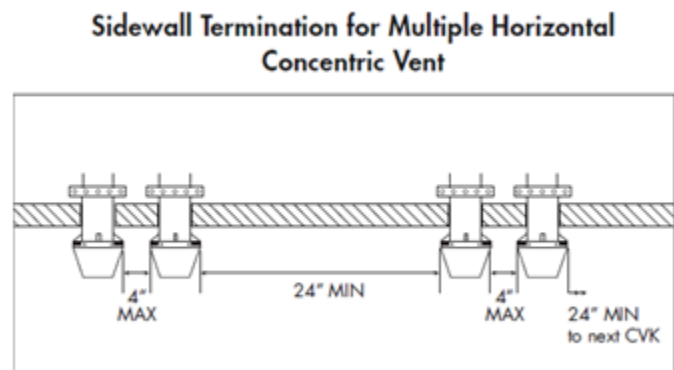
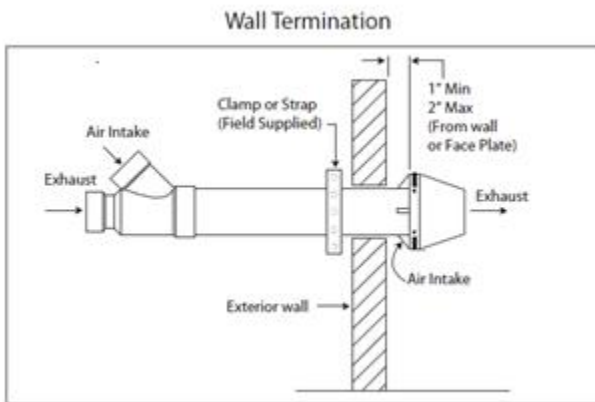
- When venting individual units out the side of the building with separate intake and exhaust pipes, maintain the exhaust pipes must be at least 1 ft (0.3m) above the intake pipes.
- Avoid locating the intake pipes directly below the exhaust pipe.
- The exhaust and intake must extend at least 3 in (75 mm) beyond the exterior of the building



When using Concentric Terminations

Using the PVC-2CT or PVC-3CT

- Multiple concentric terminations clearances should be grouped in pairs. One set shall be terminated a maximum 4 in (100 mm) apart, with the next pair maintaining a minimum of 24 in (0.6 m) spacing from the next pair.
- Refer to the Vent Termination Installation Manual for full clearance requirements.

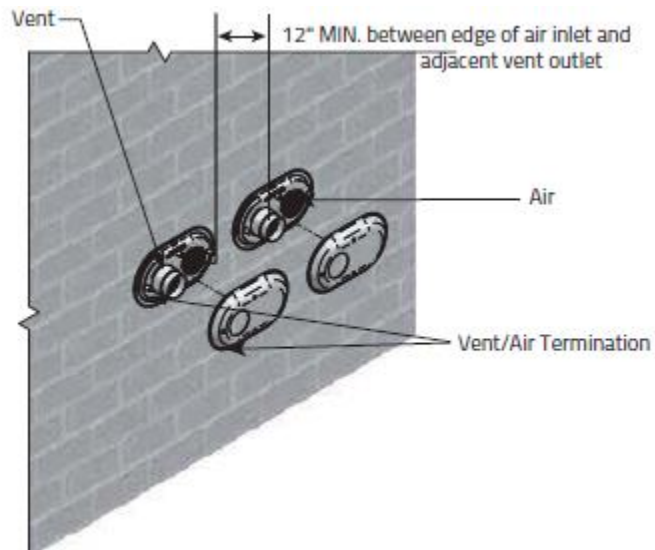


Illustrations shown with PVC-3CT as a representative example

When using Concentric Terminations

Using the PVC-2LPT, PVC-3LPT, or PVC-UCVK

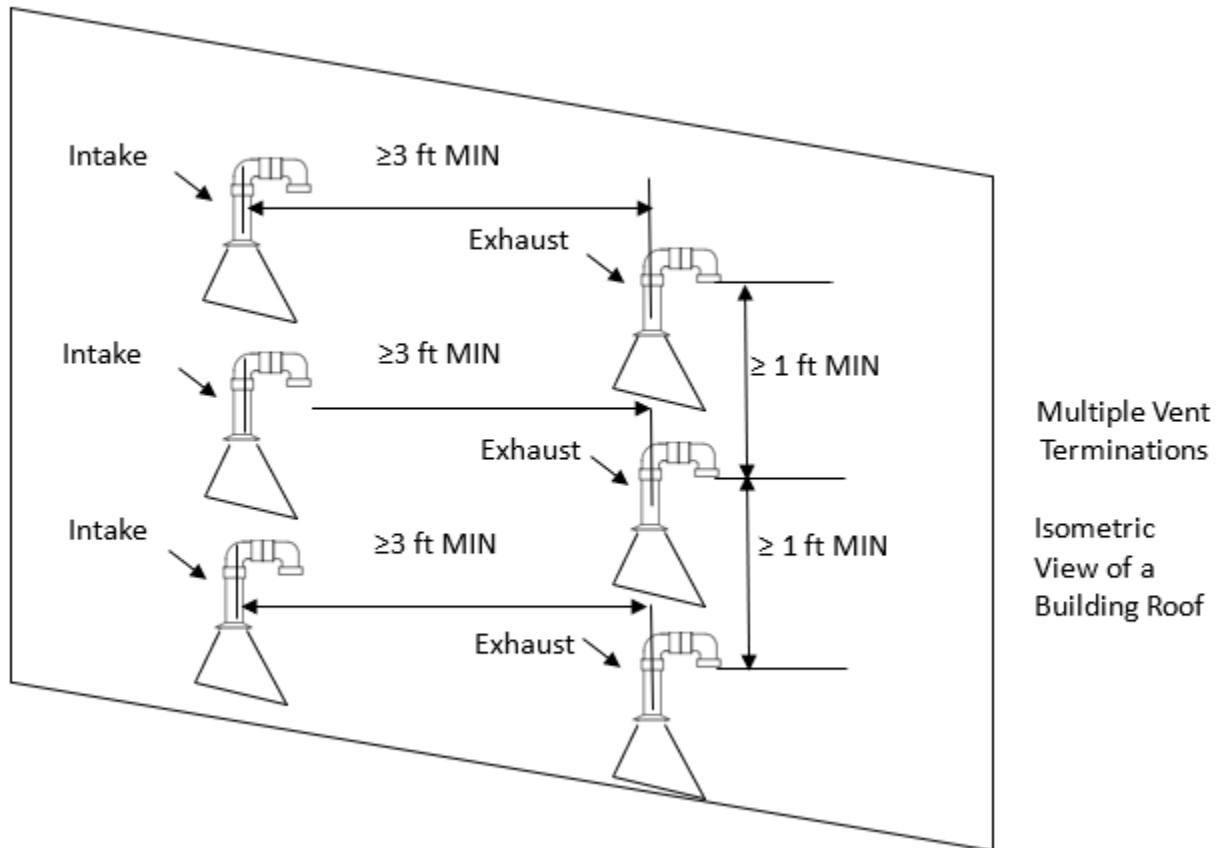
- Multiple concentric terminations must be a minimum of 12" (0.3m) between terminations
- Do not vertically align multiple terminations.



Clearance Requirements Between Multiple Terminations (Vertical)

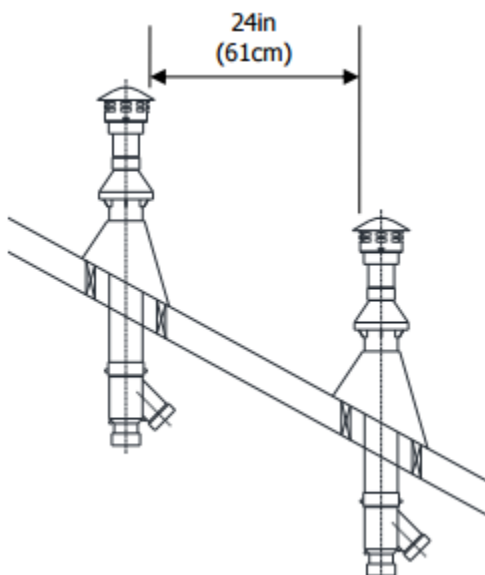
When Using 90 Elbows or Tee Fittings

- Maintain at least 3 ft (0.9m) distance between the intake and exhaust of the appliance
- Maintain at least 1 ft (0.3m) distance between the exhausts of multiple units.

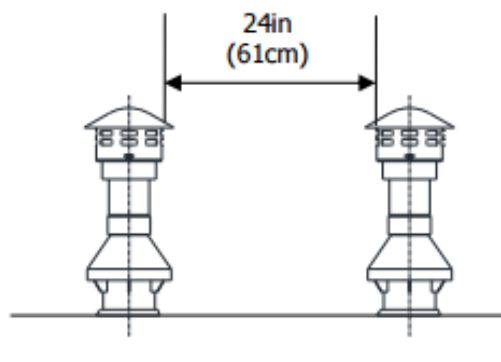


When Using Concentric Terminations

- For terminations at un-equal heights, maintain 24" (600 mm) minimum clearance.



- For terminations at equal heights, maintain a 24" (600 mm) minimum clearance.



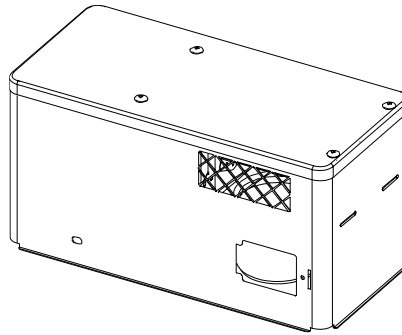
Note: Drawings shown with optional PRC-1 accessory

WARNING

- If the distance between the air inlet and exhaust vent terminations is too short, the water heater will draw in the exhaust gases through the intake. There is a risk of inadequate combustion air for the water heater, increasing Carbon Monoxide (CO) emissions and noise due to vibration.
- Termination elbows must be oriented vertically, pointing directly downward. Attempts to prevent exhaust air from entering the air inlet by angling termination elbows in directions other than directly downward will increase the risk of freezing.
- Reversing the air intake and exhaust pipes is not allowed.
Carbon Monoxide (CO) emissions and noise due to vibration will increase.

Outdoor Installations

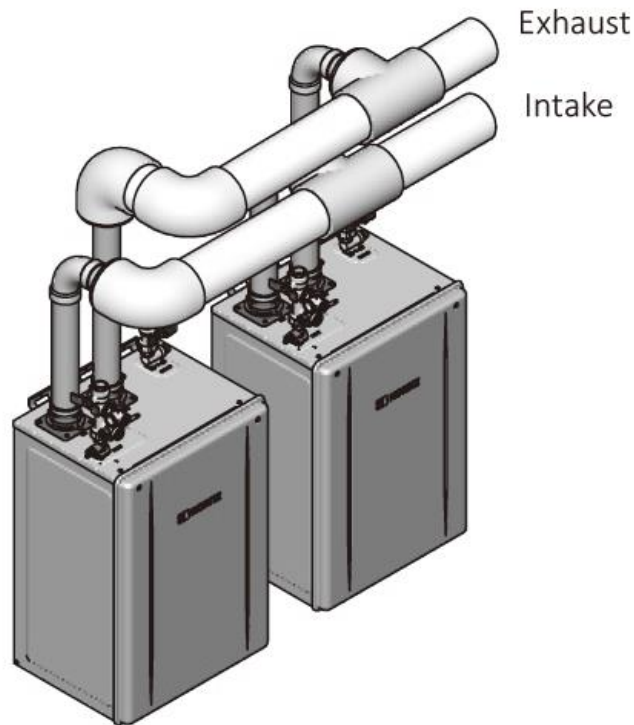
- To utilize the CR60 outdoors, each unit must be installed with the outdoor vent cap (VC-6, purchased separately).
- Refer to the Outdoor Vent Cap (VC-6) Installation Manual for detailed installation instructions.



VC-6 Outdoor Vent Cap

Common Venting the NCC199CDV

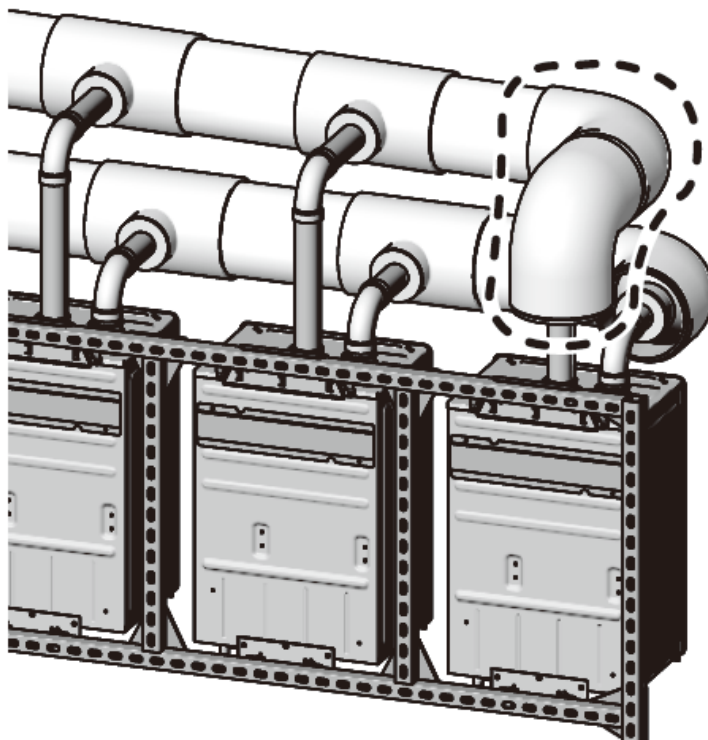
The NCC199CDV is tested and approved to be common vented up to a maximum of 6 units on a single exhaust system. For full installation instruction on common venting the CR60, refer to the Common Vent Installation Manual.



Guidelines for Common Venting

- Do not reduce the vent diameter.
- Common vent must be installed with approved venting materials. Materials not specified in the Manual are not acceptable.
- The unit Dip Switch Setting must be changed for each unit. (SW1 must be set to the ON position).
- Do not change Dip Switch 7 and 8 when Dip Switch 1 is ON (Common Vent Installation).
- For Canadian Installations, only vent material approved to ULC-S636 may be utilized.
- When utilizing room air configurations, a room air conversion kit (SV-CK-2) must be installed on each unit.
- Slope the horizontal vent $\frac{1}{4}$ in. (or $\frac{5}{8}$ in when using PP pipe) upwards for every 12 in. toward the termination
- Provide vertical support every 3' (0.9m) or as required by the vent pipe manufacturer's instructions.
- Ensure that the vent termination is at least 12 in. above ground, 12 in. above the highest anticipated snow level, or as required by local codes, whichever is the greatest.
- [PVC /CPVC/PP 3"]

Do not reduce the trunk vent diameter for any unit connected to the Common Vent System. Reducing the vent diameter may lead excessive condensation draining directly into the appliance.



Determining the Size of the Common Vent

- The minimum equivalent vent length is 3 ft.
- Follow the table below for determining the maximum vent length and diameter of the common vent installation.
- For complete instructions on determining the appropriate sizing of the common vent installation, refer to the Common Vent Installation Manual or contact Noritz technical support at (866) 766-7489.

Model	Configuration	No. of Units	Table 1: Vent Diameter (in) and Maximum Equivalent Vent Length (ft)							
			PVC or CPVC Schedule 40 pipe				PP Pipe			
			3"	4"	6"	8"	3"	4"	6"	8"
NCC199CDV (GQ-C3260WZ- FF US)	Both Direct Vent (DV) and Non- Direct Vent (SV)	2	18*	95*	200		18*	110*	200	
		3	N/A	39*	155*	200	N/A	45*	155*	200
		4	N/A	N/A	90*	200	N/A	N/A	90*	200
		5	N/A	N/A	50*	150*	N/A	N/A	50*	150*
		6	N/A	N/A	35*	130*	N/A	N/A	35*	130*

*The BTU/h input of the unit may be reduced by up to 9%.

Note The sizing method shown in Table 1 is provided for the convenience of the installer. Maximum acceptable vent system static pressure drop is 0.6 in. w.c.

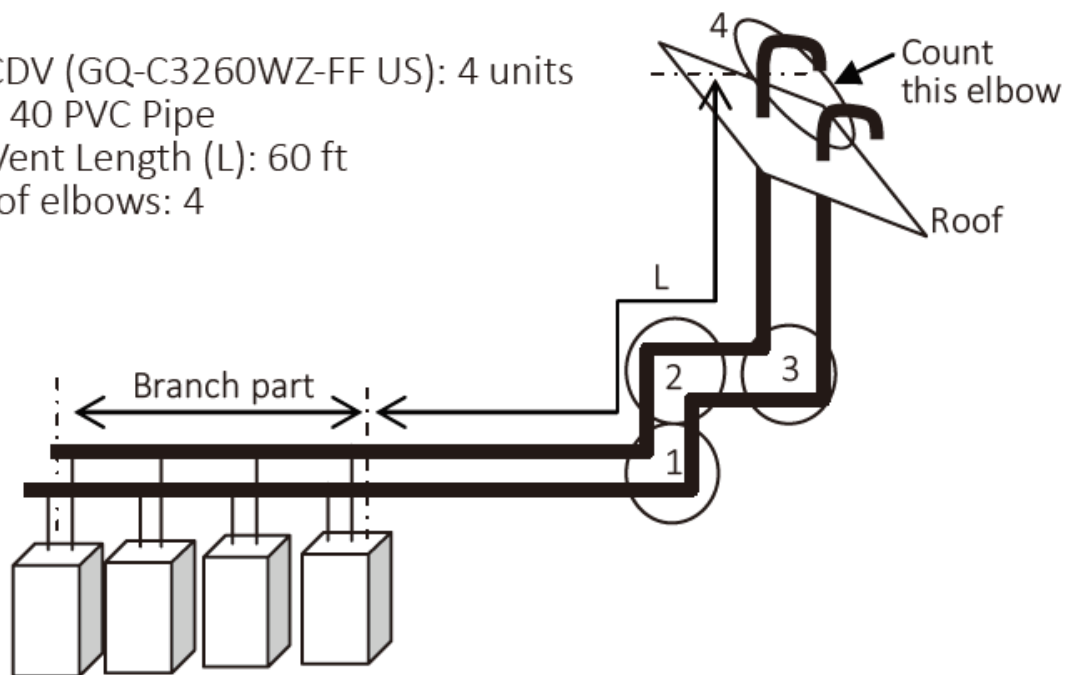
	Table 2: Equivalent Length of each Elbow (ft)			
Diameter of Elbow	3"	4"	6"	8"
Length	5	12	18	20

Total Equivalent Vent Length (TL) = Straight Vent Length (L) + Equivalent Length of Elbows

- TL shall be less than the values listed in the Table 1 above.
- Count the number of elbows and multiply by the equivalent length of each elbow in accordance with Table 2.
- Termination fitting (elbow or tee) is already accounted for and does not need to be counted.
- Entire branch section is already accounted for and does not need to be counted.

[Calculation Example]

- NCC199CDV (GQ-C3260WZ-FF US): 4 units
- Schedule 40 PVC Pipe
- Straight Vent Length (L): 60 ft
- Number of elbows: 4



Total Equivalent length
= 60 ft + 4 × 18 ft (6" Elbow) = **132 ft** > 90 ft (Refer to Table 1)

6" vent system is NOT suitable

= 60 ft + 4 × 20 ft (8" Elbow) = **140 ft** < 200 ft (Refer to Table 1)

8" vent system is suitable

Clearances



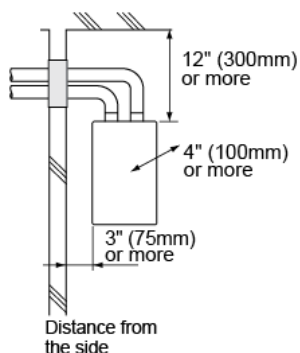
WARNING

Before installing, check for the following:

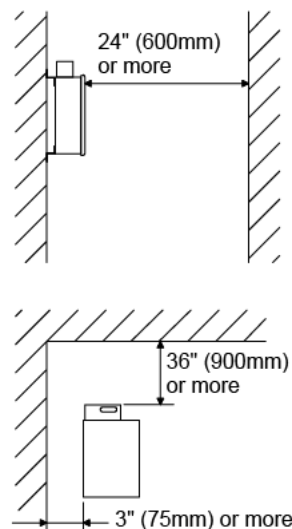
Install in accordance with relevant building and mechanical codes, as well as any local, state or national regulations, or in the absence of local and state codes, to the National Fuel Gas Code ANSI Z223.1/NFPA 54 – latest edition. In Canada, see the Natural Gas and Propane Installation Code CSA B149.1 - latest edition for detailed requirements.

Install the rack system so that the clearances shown below are followed.

Clearance Requirements for Both Combustibles and Non-Combustibles		
	Indoor	Outdoor (with vent cap)
Top of Heater	12" (300mm)	36" (900mm)
Left Side of Rack	3" (75mm)	3" (75mm)
Right Side of Rack	3" (75mm)	3" (75mm)
Front of Heater	4" (100mm)	24" (600mm)
Vent Pipe	0" (0mm)	N/A



Minimum Indoor Clearance Requirements

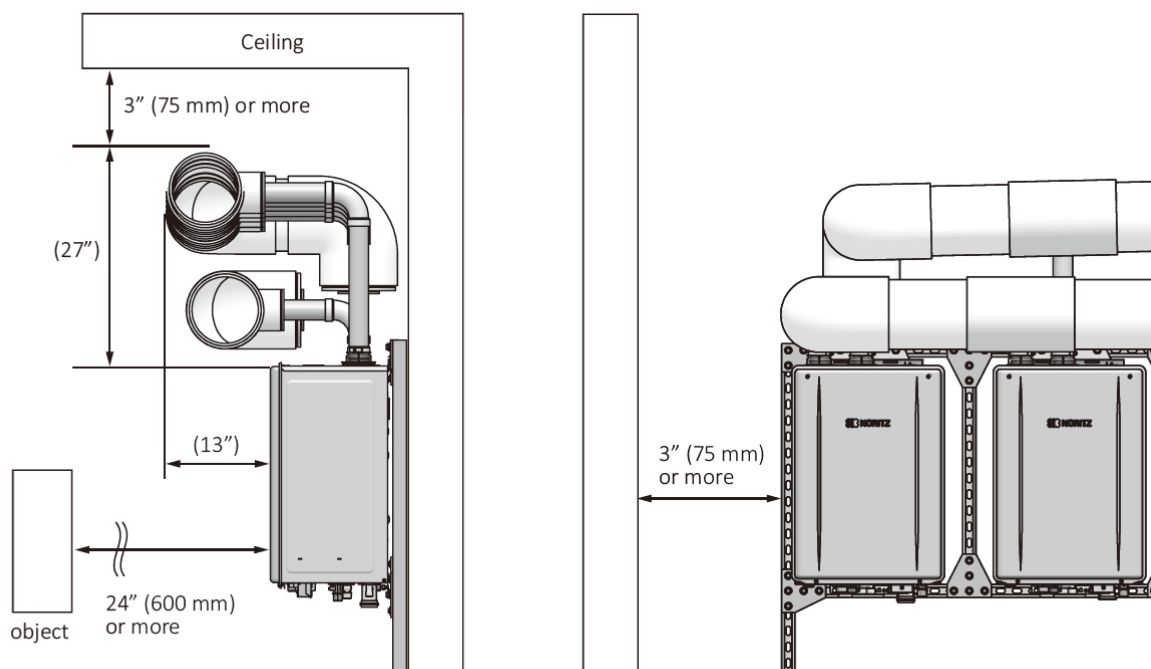


Minimum Outdoor Clearance Requirements

Recommended Clearance for Service and Maintenance when Common Venting

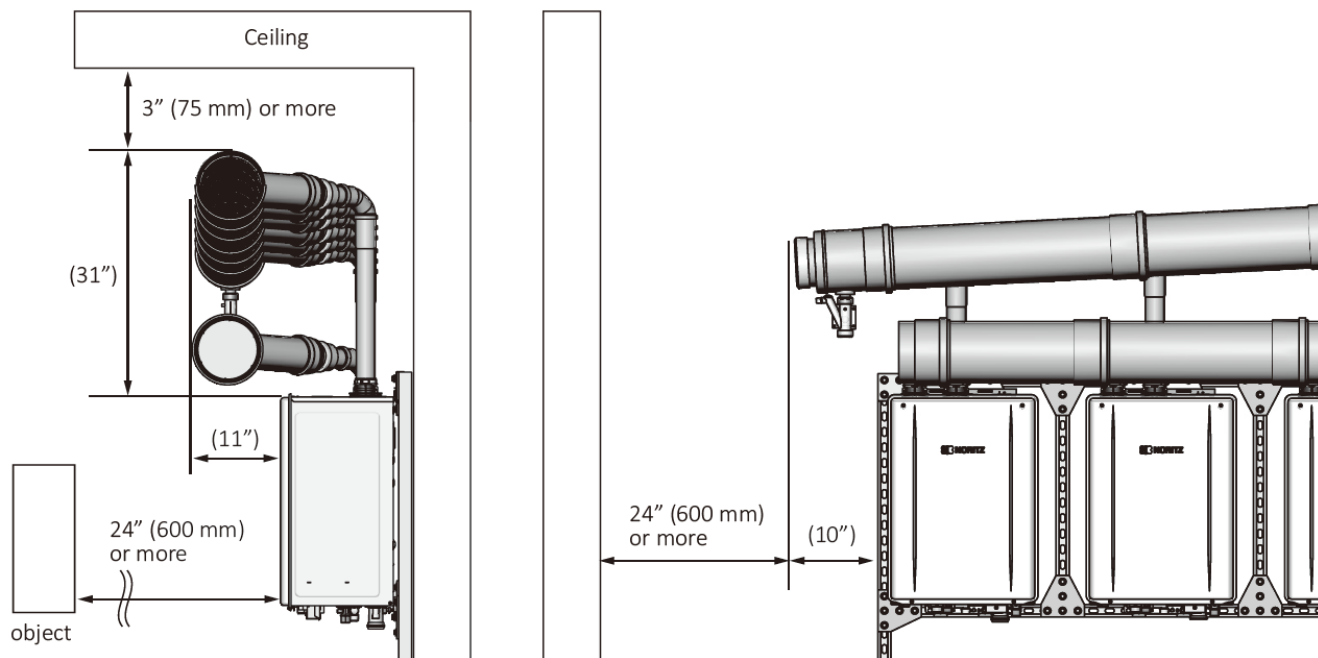
When common venting the CR60 system, the following clearances are recommended in order to facilitate service and repair of the CR60 system.

[Inline Configurations – CR60-WH-2 / CR60-WH-3 using PVC or CPVC]



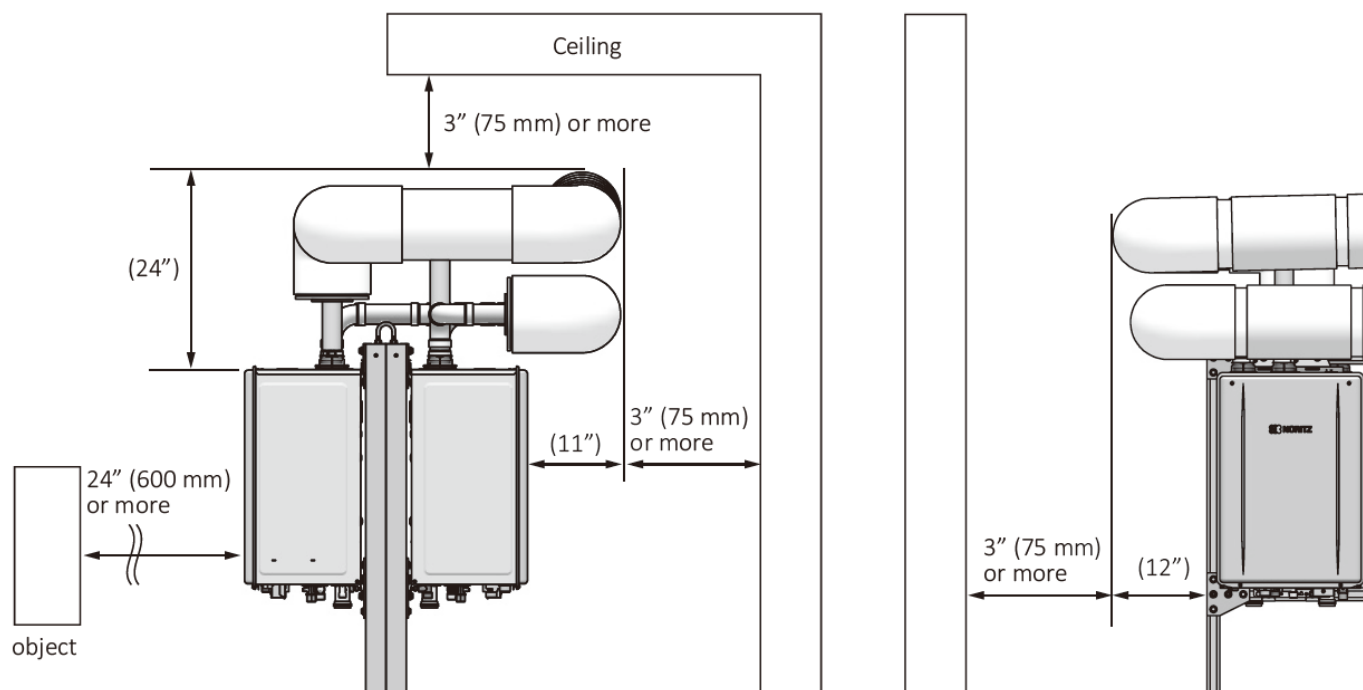
e.g. 8" Vent Diameter- In Line Configuration

[Inline Configurations – CR60-WH-2 / CR60-WH-3 using PP]



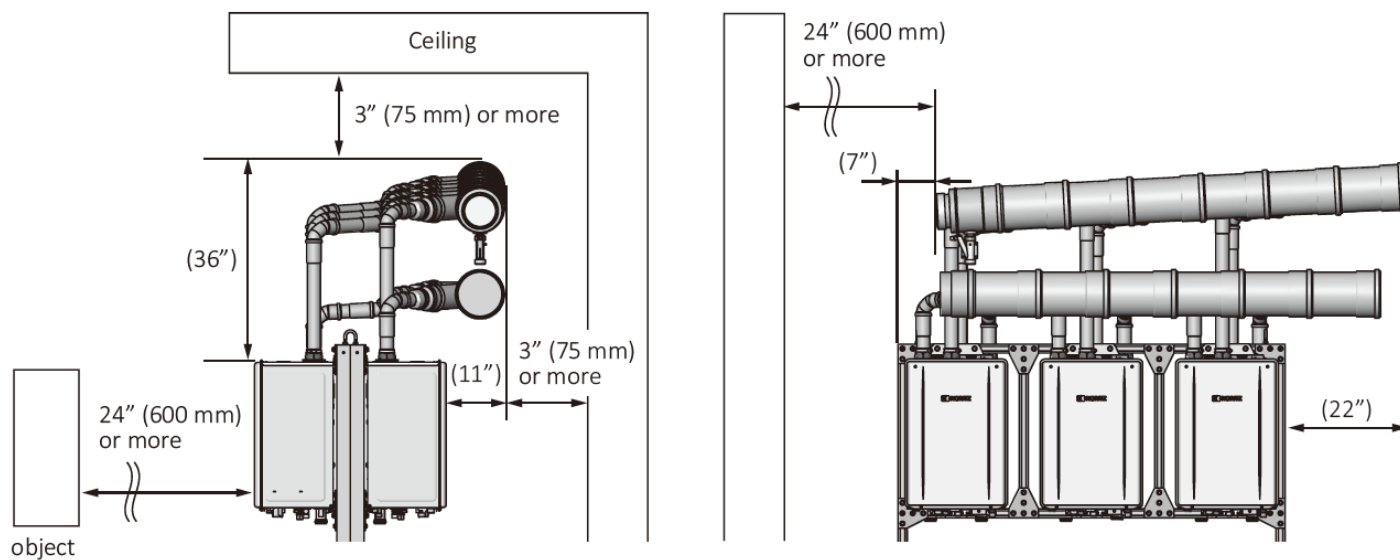
e.g. In Line Configuration (e.g. 6 units)

[Back to Back Configuration CR60-FS-4 / CR60-FS-5 / CR60-FS-6 using PVC or CPVC]



e.g. 8" Vent Diameter- Back to Back Configuration

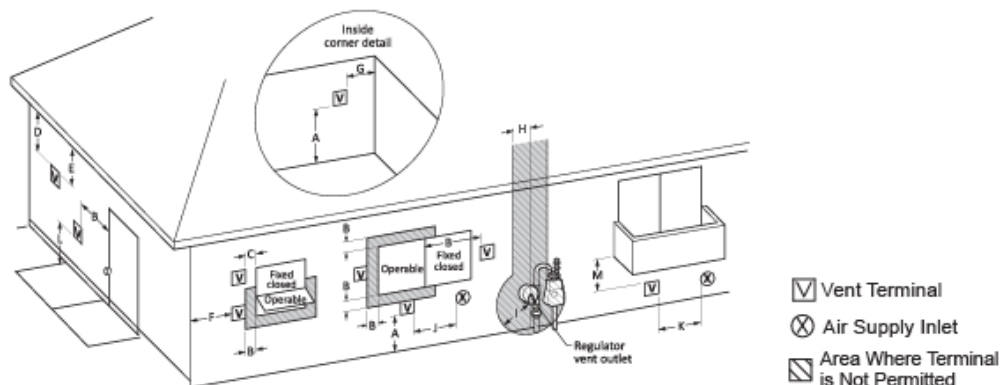
[Back to Back Configuration CR60-FS-4 / CR60-FS-5 / CR60-FS-6 using PP]



e.g. Back to Back Configuration (e.g. 6 units)

Clearance Requirements from Vent Terminations to Building Openings <When supplying combustion air from the outdoors (Direct Vent)>

* All clearance requirements are in accordance with ANSI Z21.10.3 and the National Fuel Gas Code, ANSI Z223.1 and in Canada, in accordance with the Natural Gas and Propane Installation Code CSA B149.1.



Ref	Description	Canadian Direct Vent Installations ¹	US Direct Vent Installations ²
A=	Clearance above grade, veranda, porch, deck, or balcony	12 in (30 cm)	12 in (30 cm)
B=	Clearance to window or door that may be opened	6 in (15 cm) for appliances ≤ 10,000 Btuh (3kW), 12 in (30 cm) for appliances > 10,000 Btuh (3kW) and ≤ 100,000 Btuh (30 kW), 36 in (91 cm) for appliances > 100,000 Btuh (30 kW)	6 in (15 cm) for appliances ≤ 10,000 Btuh (3kW), 9 in (23 cm) for appliances > 10,000 Btuh (3kW) and ≤ 50,000 Btuh (15 kW), 12 in (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 above meter/regulator assembly	*	*
I=	Clearance to service regulator vent outlet	Above a regulator within 3 ft (91 cm) horizontally of the vertical center line of the regulator vent outlet to a maximum vertical distance of 15 ft (4.5 m)	*
J=	Clearance to nonmechanical air supply inlet to building or the combustion air inlet to any other appliance	6 in (15 cm) for appliances ≤ 10,000 Btuh (3kW), 12 in (30 cm) for appliances > 10,000 Btuh (3kW) and ≤ 100,000 Btuh (30 kW), 36 in (91 cm) for appliances > 100,000 Btuh (30 kW)	6 in (15 cm) for appliances ≤ 10,000 Btuh (3kW), 9 in (23 cm) for appliances > 10,000 Btuh (3kW) and ≤ 50,000 Btuh (15 kW), 12 in (30 cm) for appliances > 50,000 Btuh (15 kW)
K=	Clearance to a mechanical air supply inlet	6 ft (1.83 m)	3 ft (91 cm) above if within 10 ft (3 m) horizontally
L=	Clearance above paved sidewalk or paved driveway located on public property	7 ft (2.13 m)†	*
M=	Clearance under veranda, porch, deck, or balcony	12 in (30 cm)‡	*

¹ In accordance with the current CSA B149.1 Natural Gas and Propane Installation Code

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

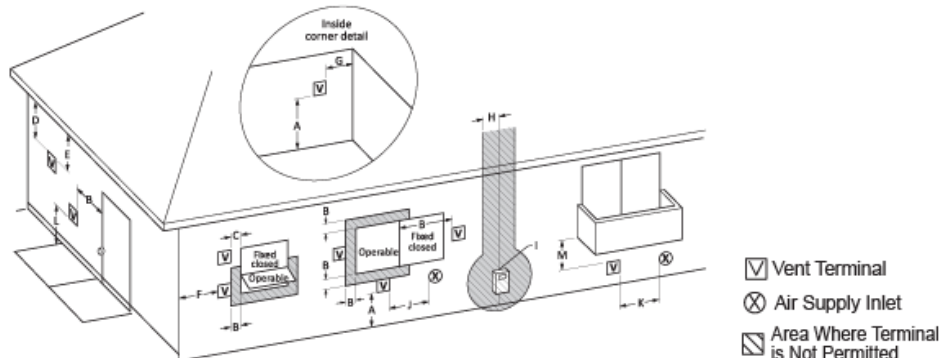
† A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.

‡ Permitted only if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.

* Clearance in accordance with local installation codes and the requirements of the gas supplier.
Clearance to opposite wall is 24 inches (60 cm).

Clearance Requirements from Vent Terminations to Building Openings <Other than Direct Vent>

* All clearance requirements are in accordance with ANSI Z21.10.3 and the National Fuel Gas Code, ANSI Z223.1 and in Canada, in accordance with the Natural Gas and Propane Installation Code CSA B149.1.



Ref	Description	Canadian Non-Direct Vent Installation ¹	US Non-Direct Vent Installation ²
A=	Clearance above grade, veranda, porch, deck, or balcony	12 in (30 cm)	12 in (30 cm)
B=	Clearance to window or door that may be opened	6 in (15 cm) for appliances ≤ 10,000 Btuh (3kW), 12 in (30 cm) for appliances > 10,000 Btuh (3kW) and ≤ 100,000 Btuh (30 kW), 36 in (91 cm) for appliances > 100,000 Btuh (30 kW)	4 ft (1.2 m) below or to side of opening; 1 ft (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 above meter/regulator assembly	*	*
I=	Clearance to service regulator vent outlet	Above a regulator within 3 ft (91 cm) horizontally of the vertical center line of the regulator vent outlet to a maximum vertical distance of 15 ft (4.5 m)	*
J=	Clearance to nonmechanical air supply inlet to building or the combustion air inlet to any other appliance	6 in (15 cm) for appliances ≤ 10,000 Btuh (3kW), 12 in (30 cm) for appliances > 10,000 Btuh (3kW) and ≤ 100,000 Btuh (30 kW), 36 in (91 cm) for appliances > 100,000 Btuh (30 kW)	4 ft (1.2 m) below or to side of opening; 1 ft (300 mm) above opening
K=	Clearance to a mechanical air supply inlet	6 ft (1.83 m)	3 ft (91 cm) above if within 10 ft (3 m) horizontally
L=	Clearance above paved sidewalk or paved driveway located on public property	7 ft (2.13 m)†	*
M=	Clearance under veranda, porch, deck, or balcony	12 in (30 cm)‡	*

¹ In accordance with the current CSA B149.1 Natural Gas and Propane Installation Code

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

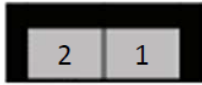
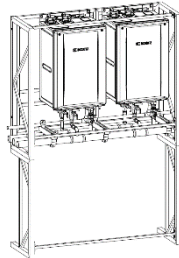

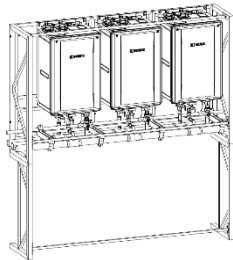
† A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.

‡ Permitted only if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.

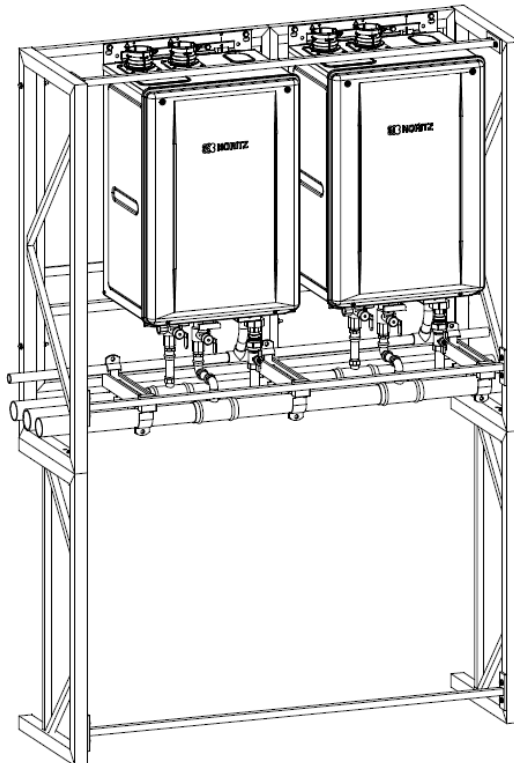
* Clearance in accordance with local installation codes and the requirements of the gas supplier.
Clearance to opposite wall is 24 inches (60 cm).

* The clearance requirements from vent terminations to building openings chart above apply to OD and SV converted units.

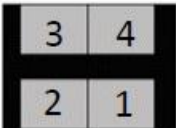
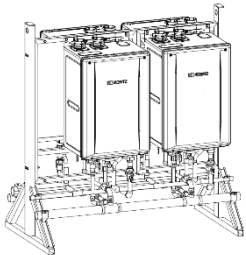

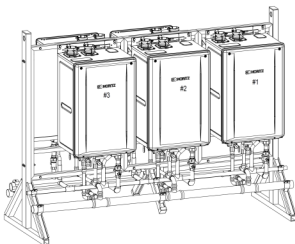
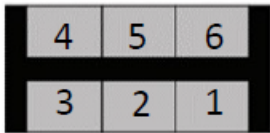
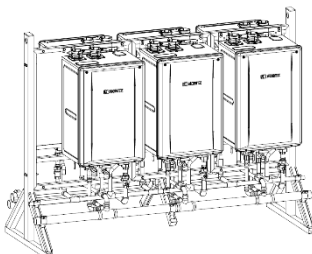
Commercial Water Heating System Parts Number & Main Components

Commercial Water Heating System Wall Hanging			
Model Number	Rack Type	Configuration	Illustration
CR60-WH-2-NG	2 Unit, Wall Hanging Rack, NG		
CR60-WH-2-LP	2 Unit, Wall Hanging Rack, LP		
CR60-WH-3-NG	3 Unit, Wall Hanging Rack, NG		
CR60-WH-3-LP	3 Unit, Wall Hanging Rack, LP		

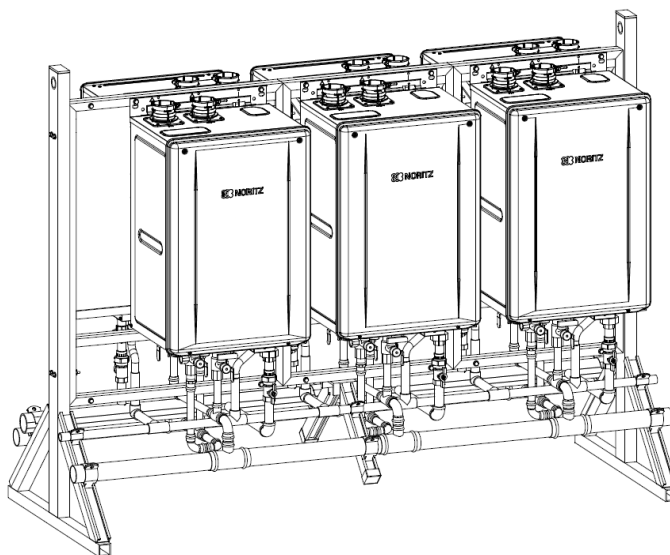
Illustrated: CR60-WH-2 (shown with optional floor support)



Commercial Water Heating System Floor Standing

Model Number	Rack Type	Configuration	Illustration
CR60-FS-4-NG	4 Unit DV Floor Standing, NG		
CR60-FS-4-LP	4 Unit DV Floor Standing, LP		
CR60-FS-5-NG	5 Unit DV Floor Standing, NG		
CR60-FS-5-LP	5 Unit DV Floor Standing, LP		
CR60-FS-6-NG	6 Unit DV Floor Standing, NG		
CR60-FS-6-LP	6 Unit DV Floor Standing, LP		

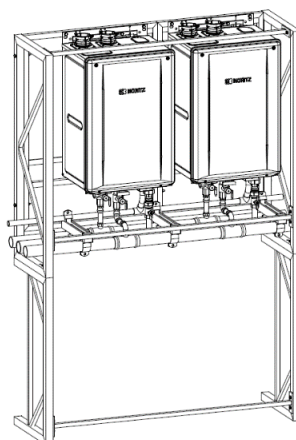
Illustrated: CR60-FS-6



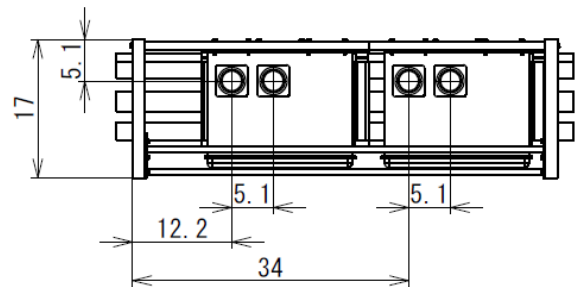
CR60-WH-2 Specifications

BTU and Flow Rates for NCC199CDV (GQ-C3260WZ-FF US)	
Number of Tankless Water Heaters	2
Max. Hot Water Capacity @ 30°F rise (GPM)	22.2
Max. Hot Water Capacity @ 70°F rise (GPM)	11.2
Minimum (Btuh)	18,000
Maximum (Btuh)	399,800

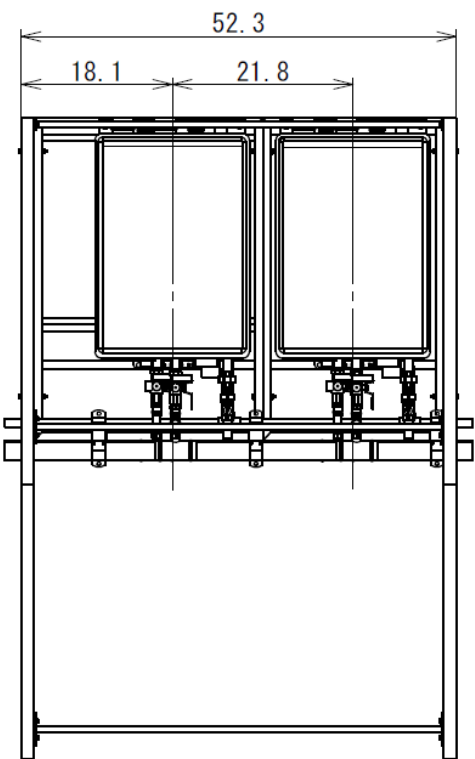
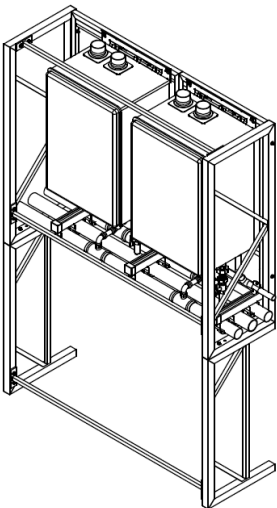
Model and Rack Specifications	
Model Number	CR60-WH-2
Tankless Water Heater Model	NCC199CDV
Frame Dimensions (in)	52.25 (L) x 17.0 (D) x 44.0 (H) [H: 77 with optional floor support]
Weight -Fully Assembled (lbs)	259
Shipping Weight -Fully Assembled (lbs)	429
Frame Material	Aluminum
Frame Color	Aluminum
Water & Gas Pipe Connections	
Hot Water Manifold Pipe Material	Copper
Cold Water Manifold Pipe Material	Copper
Gas Manifold Pipe Material	Black Iron
Condensate Drain Manifold Pipe Material	Schedule 40 PVC
Hot Water Manifold Pipe Diameter (in)	2
Cold Water Manifold Pipe Diameter (in)	2
Gas Manifold Pipe Diameter (in)	2
Condensate Drain Manifold Pipe Diameter (in)	3/4
Electrical Requirements	
Voltage	120VAC (60 Hz)
Maximum Current (Amps)	8



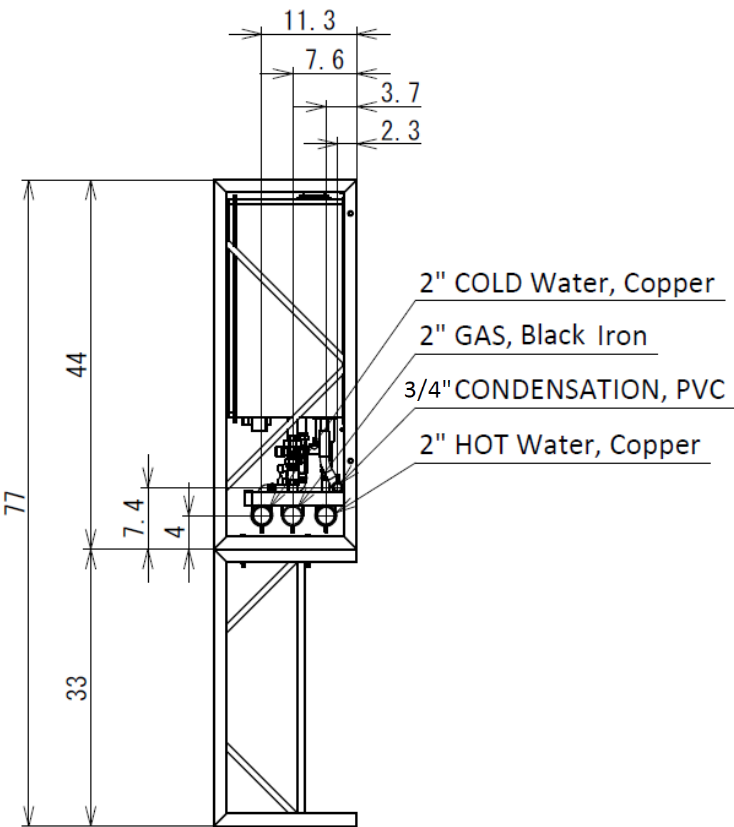
2 Unit Drawing Illustration / Dimensions



<< Top >>



<< Front >>



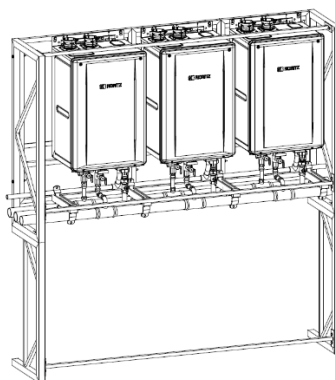
<< Right >>

**All Units are in inches*

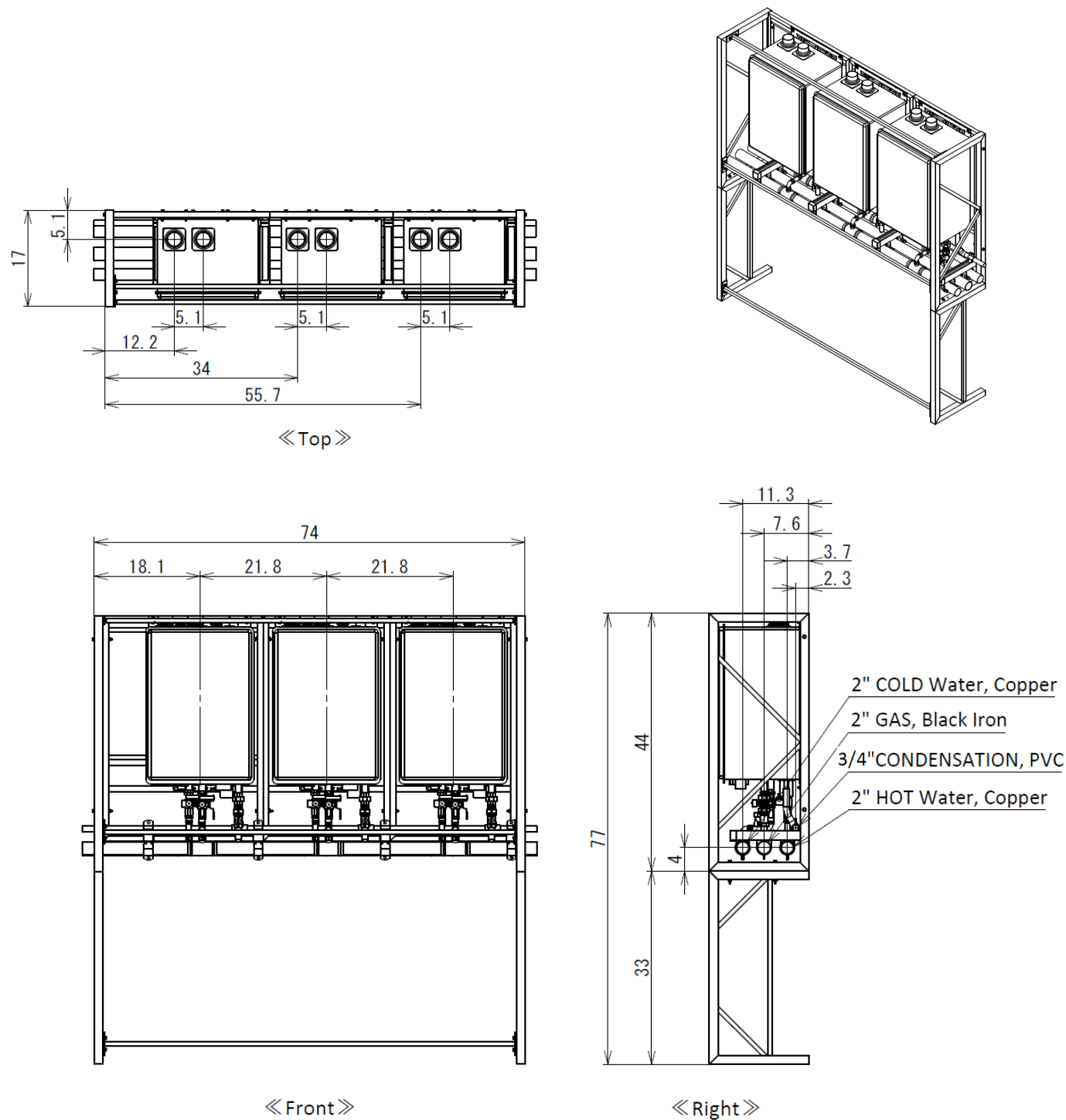
CR60-WH-3 Specifications

BTU and Flow Rates for NCC199CDV (GQ-C3260WZ-FF US)	
Number of Tankless Water Heaters	3
Max. Hot Water Capacity @ 30°F rise (GPM)	33.3
Max. Hot Water Capacity @ 70°F rise (GPM)	16.8
Minimum (Btuh)	18,000
Maximum (Btuh)	599,700

Model and Rack Specifications	
Model Number	CR60-WH-3
Tankless Water Heater Model	NCC199CDV
Rack Frame Dimensions (in)	74.0 (L) x 17.0 (D) x 44.0 (H) [H: 77 with optional floor support]
Weight -Fully Assembled (lbs)	386
Shipping Weight -Fully Assembled	616
Frame Material	Aluminum
Frame Color	Aluminum
Water & Gas Pipe Connections	
Hot Water Manifold Pipe Material	Copper
Cold Water Manifold Pipe Material	Copper
Gas Manifold Pipe Material	Black Iron
Condensate Drain Manifold Pipe Material	Schedule 40 PVC
Hot Water Manifold Pipe Diameter (in)	2
Cold Water Manifold Pipe Diameter (in)	2
Gas Manifold Pipe Diameter (in)	2
Condensate Drain Manifold Pipe Diameter (in)	3/4
Electrical Requirements	
Voltage	120VAC (60 Hz)
Maximum Current (Amps)	12



3 Unit Drawing Illustration / Dimensions

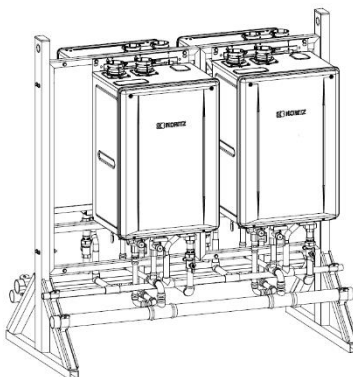


**All Units are in inches*

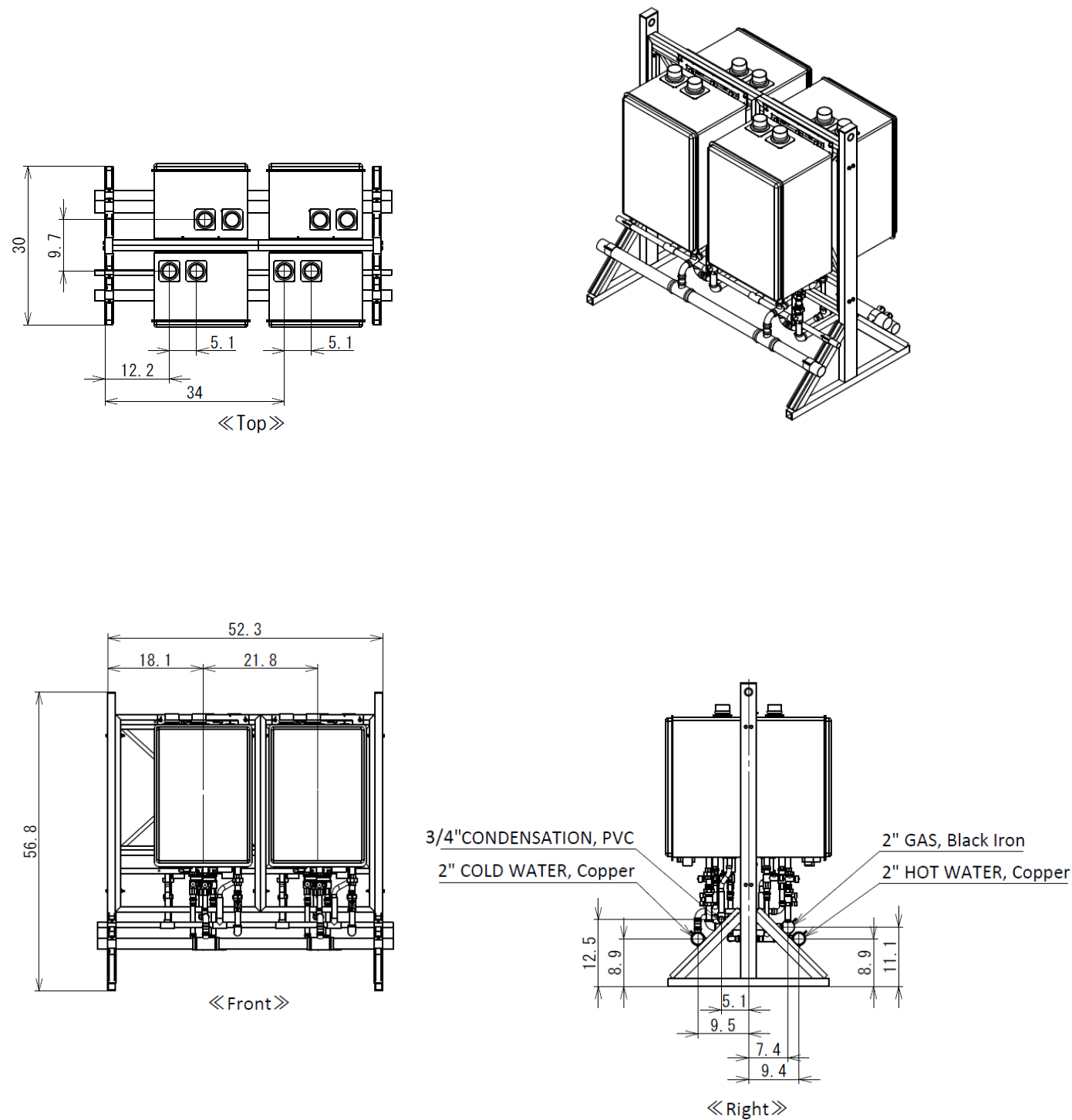
CR60-FS-4 Specifications

BTU and Flow Rates for NCC199CDV (GQ-C3260WZ-FF US)	
Number of Tankless Water Heaters	4
Max. Hot Water Capacity @ 30°F rise (GPM)	44.4
Max. Hot Water Capacity @ 70°F rise (GPM)	22.4
Minimum (Btuh)	18,000
Maximum (Btuh)	799,600

Model and Rack Specifications	
Model Number	CR60-FS-4
Tankless Water Heater Model	NCC199CDV
Rack Frame Dimensions (in)	52.25 (L) x 30.0(D) x 56.75 (H)
Weight -Fully Assembled (lbs)	444
Shipping Weight -Fully Assembled (lbs)	904
Frame Material	Aluminum
Frame Color	Aluminum
Water & Gas Pipe Connections	
Hot Water Manifold Pipe Material	Copper
Cold Water Manifold Pipe Material	Copper
Gas Manifold Pipe Material	Black Iron
Condensate Drain Manifold Pipe Material	Schedule 40 PVC
Hot Water Manifold Pipe Diameter (in)	2
Cold Water Manifold Pipe Diameter (in)	2
Gas Manifold Pipe Diameter (in)	2
Condensate Drain Manifold Pipe Diameter (in)	3/4
Electrical Requirements	
Voltage	120VAC (60 Hz)
Maximum Current (Amps)	16



4 Unit Drawing Illustration / Dimensions

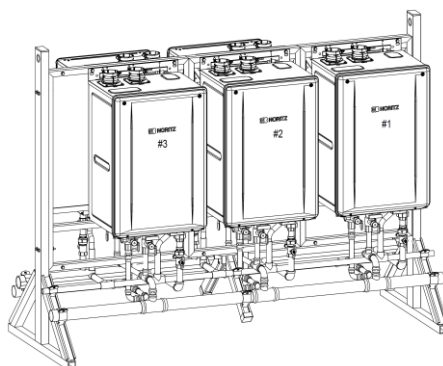


**All Units are in inches*

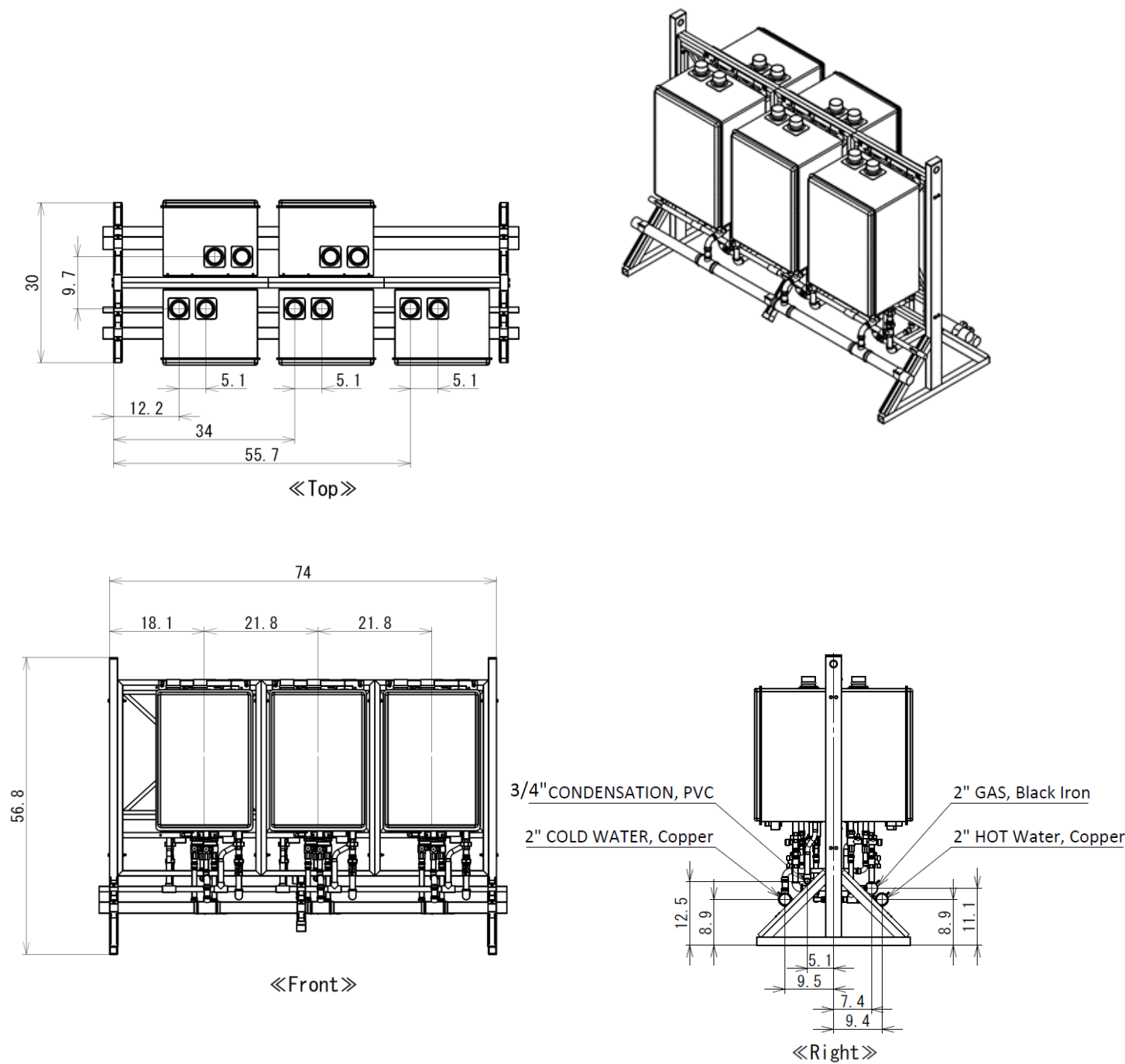
CR60-FS-5 Specifications

BTU and Flow Rates for NCC199CDV (GQ-C3260WZ-FF US)	
Number of Tankless Water Heaters	5
Max. Hot Water Capacity @ 30°F rise (GPM)	55.5
Max. Hot Water Capacity @ 70°F rise (GPM)	28.0
Minimum (Btuh)	18,000
Maximum (Btuh)	999,500

Model and Rack Specifications	
Model Number	CR60-FS-5
Tankless Water Heater Model	NCC199CDV
Rack Frame Dimensions (in)	74.0 (L) x 30.0(D) x 56.75 (H)
Weight -Fully Assembled (lbs)	560
Shipping Weight -Fully Assembled (lbs)	1160
Frame Material	Aluminum
Frame Color	Aluminum
Water & Gas Pipe Connections	
Hot Water Manifold Pipe Material	Copper
Cold Water Manifold Pipe Material	Copper
Gas Manifold Pipe Material	Black Iron
Condensate Drain Manifold Pipe Material	Schedule 40 PVC
Hot Water Manifold Pipe Diameter (in)	2
Cold Water Manifold Pipe Diameter (in)	2
Gas Manifold Pipe Diameter (in)	2
Condensate Drain Manifold Pipe Diameter (in)	3/4
Electrical Requirements	
Voltage	120VAC (60 Hz)
Maximum Current (Amps)	20



5 Unit Drawing Illustration / Dimensions

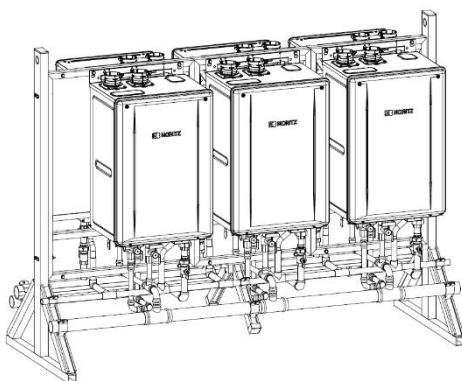


*All Units are in inches

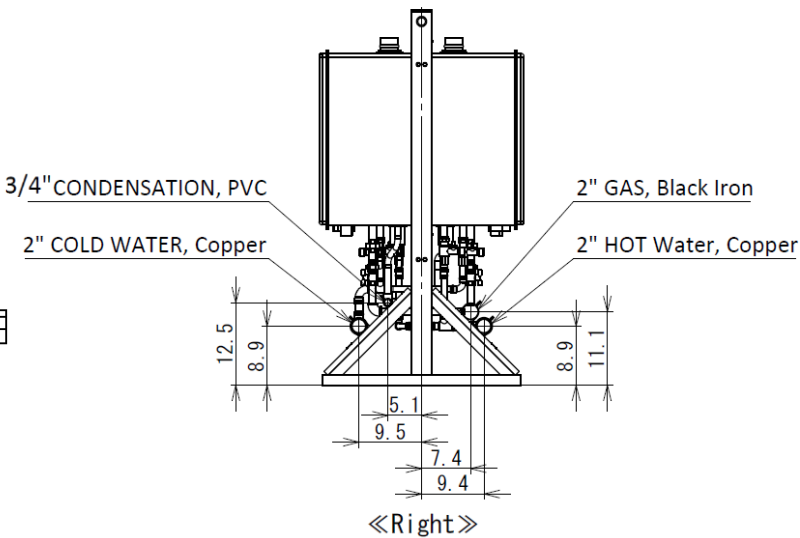
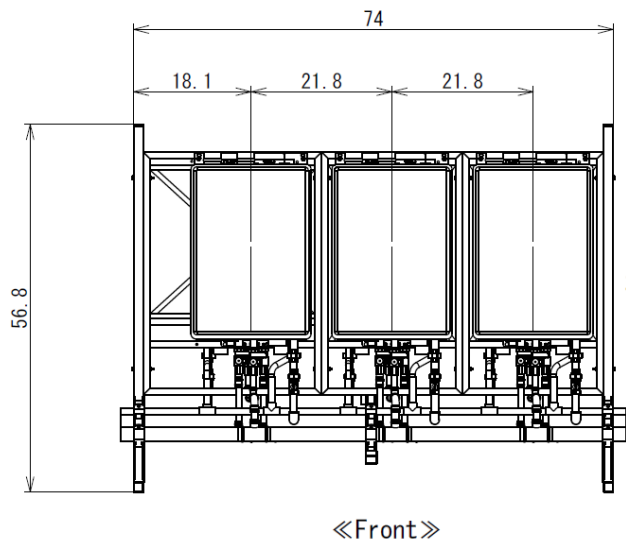
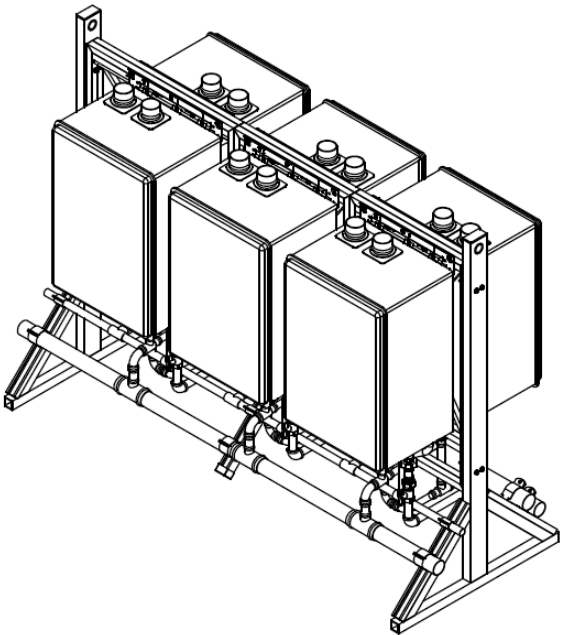
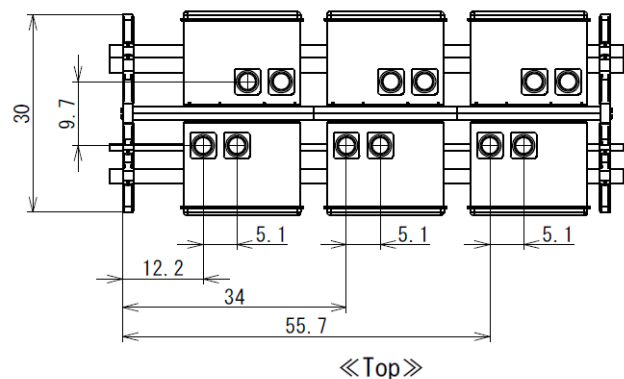
CR60-FS-6 Specifications

BTU and Flow Rates for NCC199CDV (GQ-C3260WZ-FF US)	
Number of Tankless Water Heaters	6
Max. Hot Water Capacity @ 30°F rise (GPM)	66.6
Max. Hot Water Capacity @ 70°F rise (GPM)	33.6
Minimum (Btuh)	18,000
Maximum (Btuh)	1,199,400

Model and Rack Specifications	
Model Number	CR60-FS-6
Tankless Water Heater Model	NCC199CDV
Rack Frame Dimensions (in)	74.0 (L) x 30.0(D) x 56.75 (H)
Weight -Fully Assembled (lbs)	641
Shipping Weight -Fully Assembled (lbs)	1241
Frame Material	Aluminum
Frame Color	Aluminum
Water & Gas Pipe Connections	
Hot Water Manifold Pipe Material	Copper
Cold Water Manifold Pipe Material	Copper
Gas Manifold Pipe Material	Black Iron
Condensate Drain Manifold Pipe Material	Schedule 40 PVC
Hot Water Manifold Pipe Diameter (in)	2
Cold Water Manifold Pipe Diameter (in)	2
Gas Manifold Pipe Diameter (in)	2
Condensate Drain Manifold Pipe Diameter (in)	3/4
Electrical Requirements	
Voltage	120VAC (60 Hz)
Maximum Current (Amps)	24



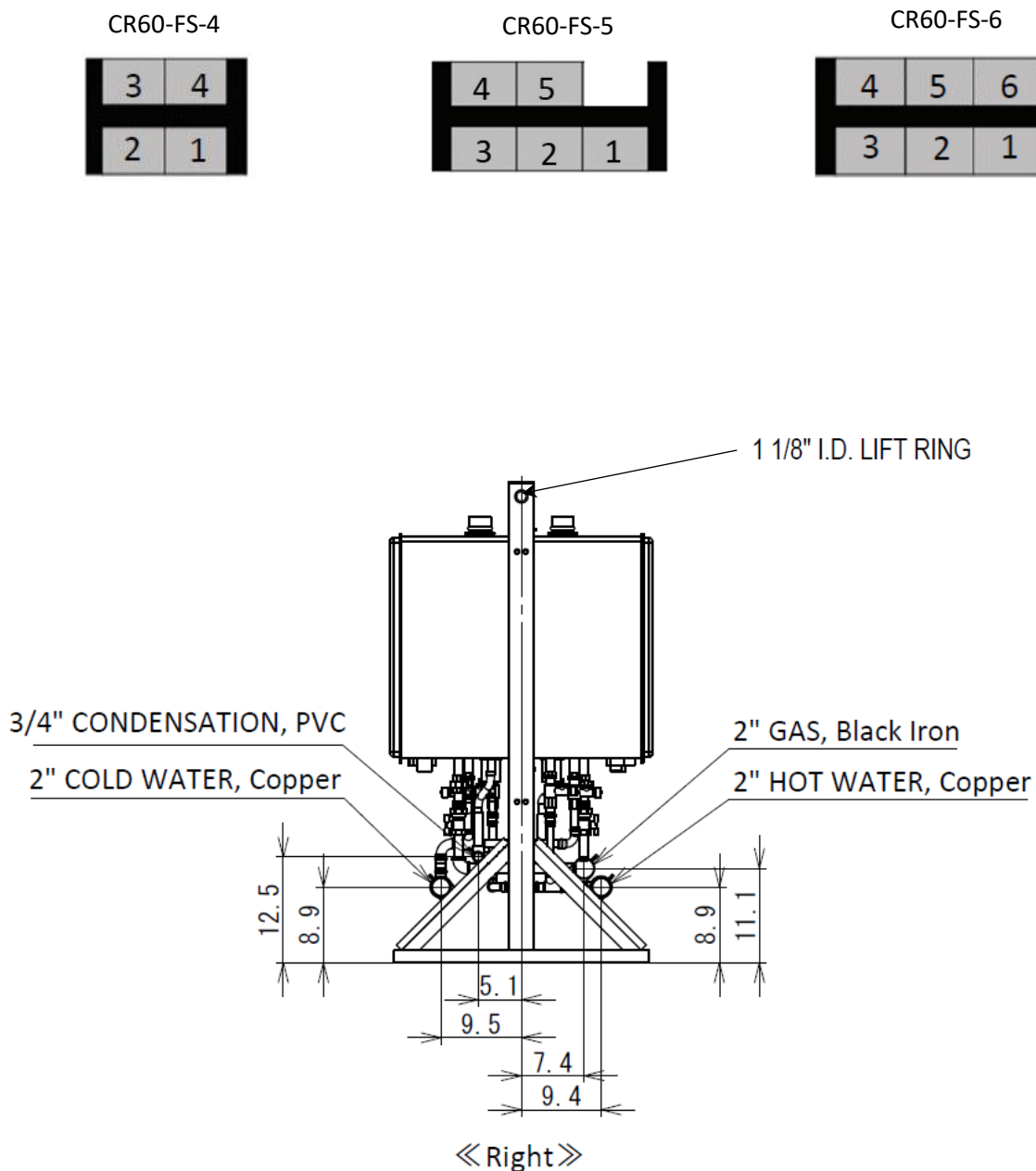
6 Unit Drawing Illustration / Dimensions



*All Units are in inches

Hoisting and Lifting Lugs

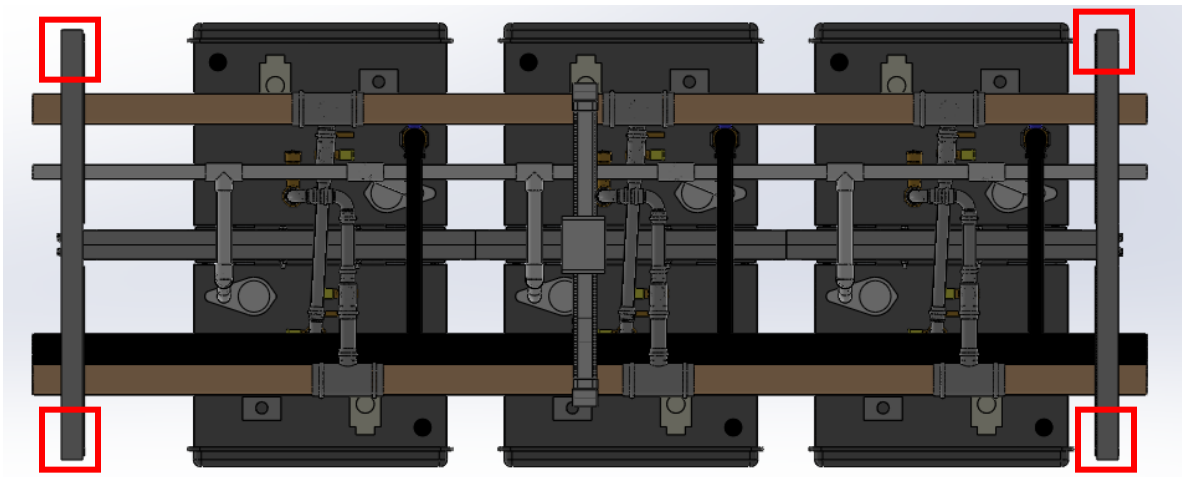
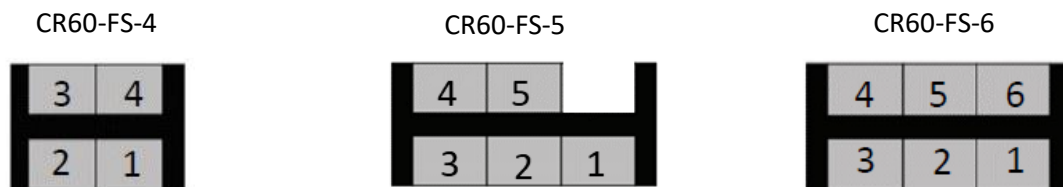
- The Floor Standing models come equipped with rings for hoisting, lifting, and moving. The hoisting cable lines to the lugs should be perpendicular at a 90° angle. It is recommended to use a spreader lifting bar for safety precaution. For total weight of the CR60, refer to the specification section of this manual.
- Caution: Do not hoist the pallet or crate.
- Refer to the diagram below for all the possible hoisting models.



Securing Floor Standing CR60 Models

- All mechanical components shall be anchored and installed in accordance with national and local codes including anchorage to building structures.
- To secure all floor standing models, 7/16" diameter holes are pre-drilled in the base rail. Refer to the figure below for location of these holes.
- For minimum concrete thickness, refer to local codes or consult with a licensed structural engineer regarding the use of appropriate expansion anchors capable of supporting the CR60 weight. The fully assembled weight is available in the specifications section of this manual.
- For outdoor installations, anchors shall be capable of supporting both the weight of the CR60 as well as wind shear loads.

Applicable Models



Bottom View: Marked locations for installing floor anchors

Securing Commercial Water Heating System Wall Mount

WARNING

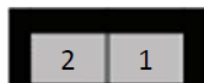
- Before mounting the CR60 to the wall, make sure the wall is capable of supporting the fully assembled weight of the CR60.
- Consult a structural engineer for appropriate methods or structural analysis before attempting to wall mount the fully assembled CR60.
- Failure to comply with the above requirements could result in substantial property damage, personal injuries or death.

General Instructions for Mounting All CR60 Wall Hanging Racks

- Identify the installation location and confirm that the installation will meet all required clearances.
- There are no pre-drilled holes in the CR60 frame. Refer to the below for proper fastening instructions:
 1. Identify fastening points (i.e. stud) at a maximum 18 in. apart.
 2. Drill 5/16" clearance holes through the top frame of the CR60 rack corresponding to each fastening location
 3. Use ¼" x 2 ½" Wood Lag Bolts along with a ¼" flat washer (Field Supplied)
 4. Tighten lag bolts

Commercial Water Heating System Wall Mount Models

CR60-WH-2



CR60-WH-3



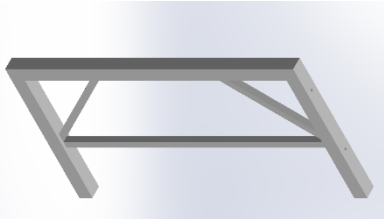

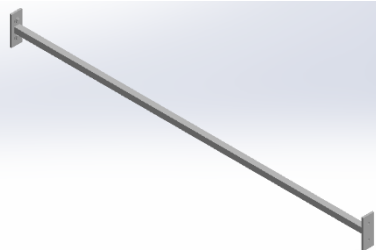




- The minimum number of fastening points shall be:

Model	Number of Fasteners Required
CR60-WH-2	8
CR60-WH-3	12

Installing the CR60 with Optional Floor Support to Wall Mount Racks

Each Noritz wall mounted rack comes with an optional floor support included with each purchase. The Noritz CR60 racks are designed to be installed with or without this bottom support. The optional floor support is supplied to ease the installation of the CR60 rack.

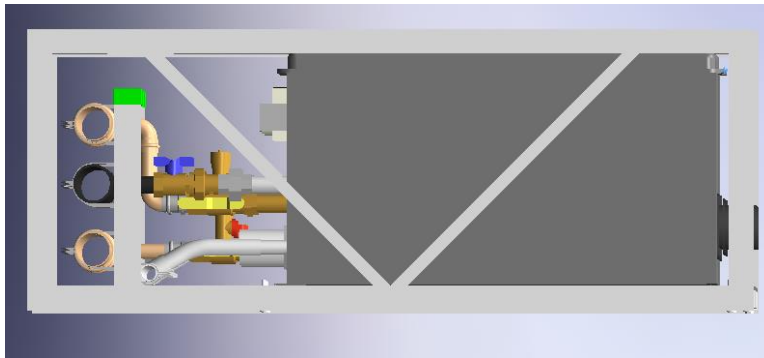
Included items for optional floor support:

Part name	Quantity		Part Name	Quantity	
End Panel	2		$\frac{1}{4}$ " x 20 x $3\frac{1}{2}$ " Hex Bolt	4	
1" Support bar	1		$\frac{1}{4}$ " x 20 x 1" Hex Bolt	4	
Flat Washer	12		Lock Washer	4	
Nut	4				

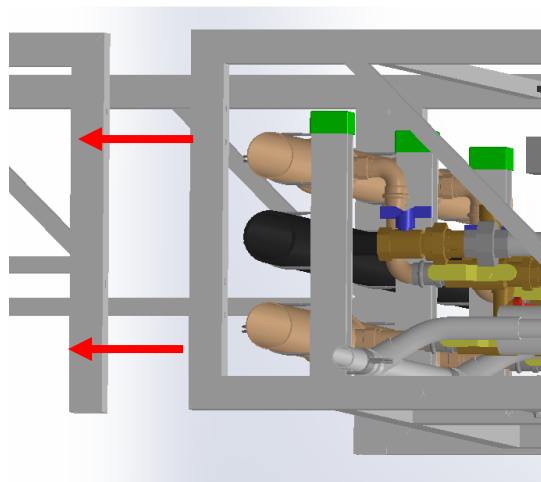
WARNING

Do not use the CR60-WH as a free-standing system. The system must be properly anchored to a vertical wall as outlined in this section. Failure to do so may lead to serious injury or death.

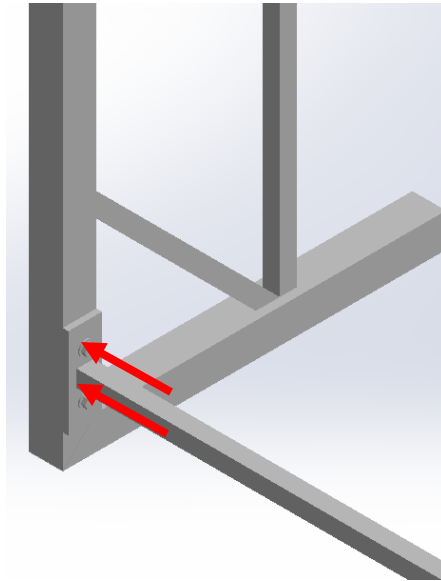
1. Lay the CR60 flat on a level surface with the water heaters facing up



2. Align end rails with side marked with "TOP" facing toward the wall hanging rack. Insert $3\frac{1}{2}$ " bolt with flat washer through clearance hole at bottom of wall hanging rack at locations and direction shown in the figure below. Attach nut, flat and lock washer, then tighten.



3. Repeat step 2 with the opposite end rail.
4. Insert the support beam and fasten using 1" screws with flat washer at each end of the support bar.

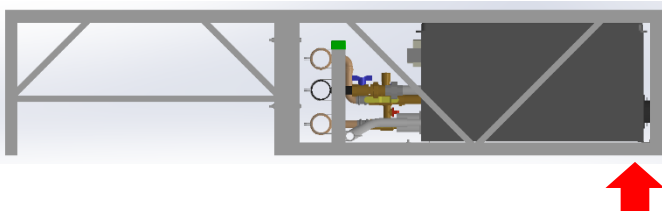


5. Raise rack to upright position by lifting from the back. Do not attempt to lift by pulling the front.



CAUTION Rack is heavy. Recommended 2 person lift

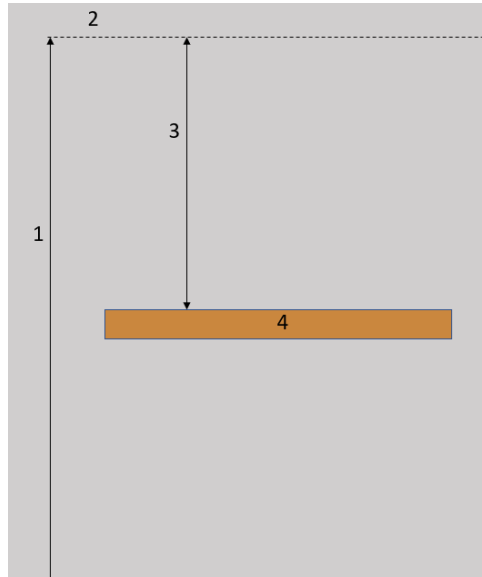
Rack may slide on legs while lifting. Take precaution to prevent the rack from sliding while attempting to raise the rack to the upright position.



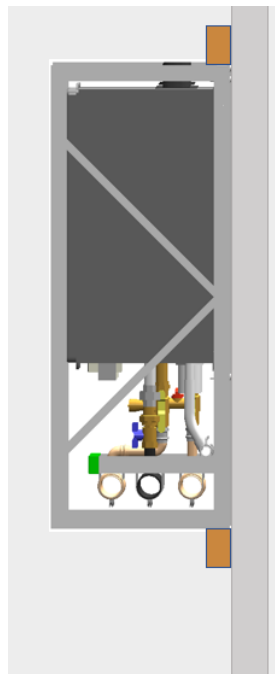
6. Once upright, align the CR60 rack along the wall and secure to the wall utilizing the general fastening instructions listed on pg. 40 of this manual.

Installing Wall Mounted Rack without Optional Floor Support

1. Determine the desired position of the top of the rack
2. Mark this dimension along the wall
3. Measure down 44.0 in. and install a 2x4 wood piece of length to match the CR60 rack. This 2x4 must be anchored at a maximum of every 18 in. This beam is used to help support the weight of the CR60 rack while fastening.
4. Lift the CR60 rack and place on top the 2x4 bottom support

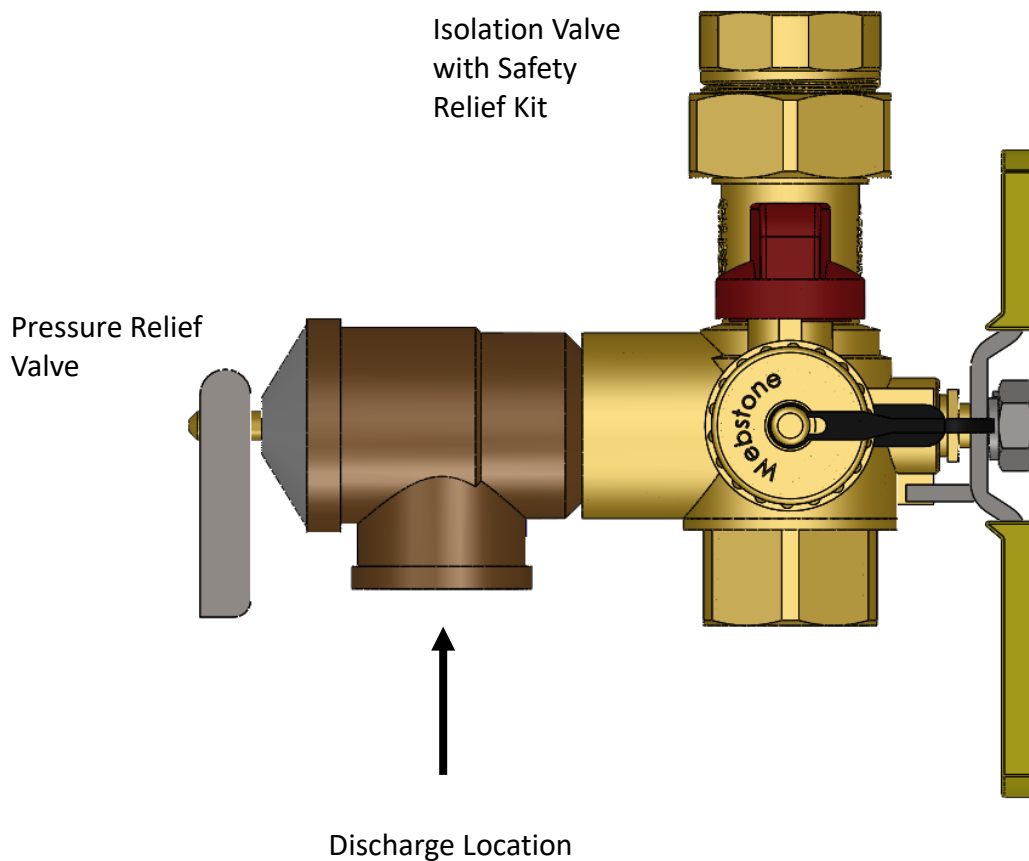


5. Anchor the CR60 rack to the wall using the general fastening instructions listed on pg. 40 of this manual.
6. Install another 2x4 wood support located at the top of the CR60 rack as shown below.



Relief Valve Piping

- Each Noritz tankless water heater on the CR60 comes installed with an isolation valve and a pressure relief valve on the hot water outlet side.
- The pressure relief valve shall be operated once a year to ensure that it is functioning properly and there is no obstruction. Turn the power off to the unit before opening the relief valve, and make sure that water draining out of the valve will not cause any damage.
- If the relief valve discharges periodically, it may be due to thermal expansion in a closed water system. Contact the water supplier or a local plumbing inspector on how to correct this situation. Do not plug the relief valve.
- The relief valve must be installed such that the discharge will be conducted to a suitable place for disposal when relief occurs.
- Refer to the Water Heater installation manual for more information and proper piping for the relief valve drain.



Freeze Prevention / Insulation

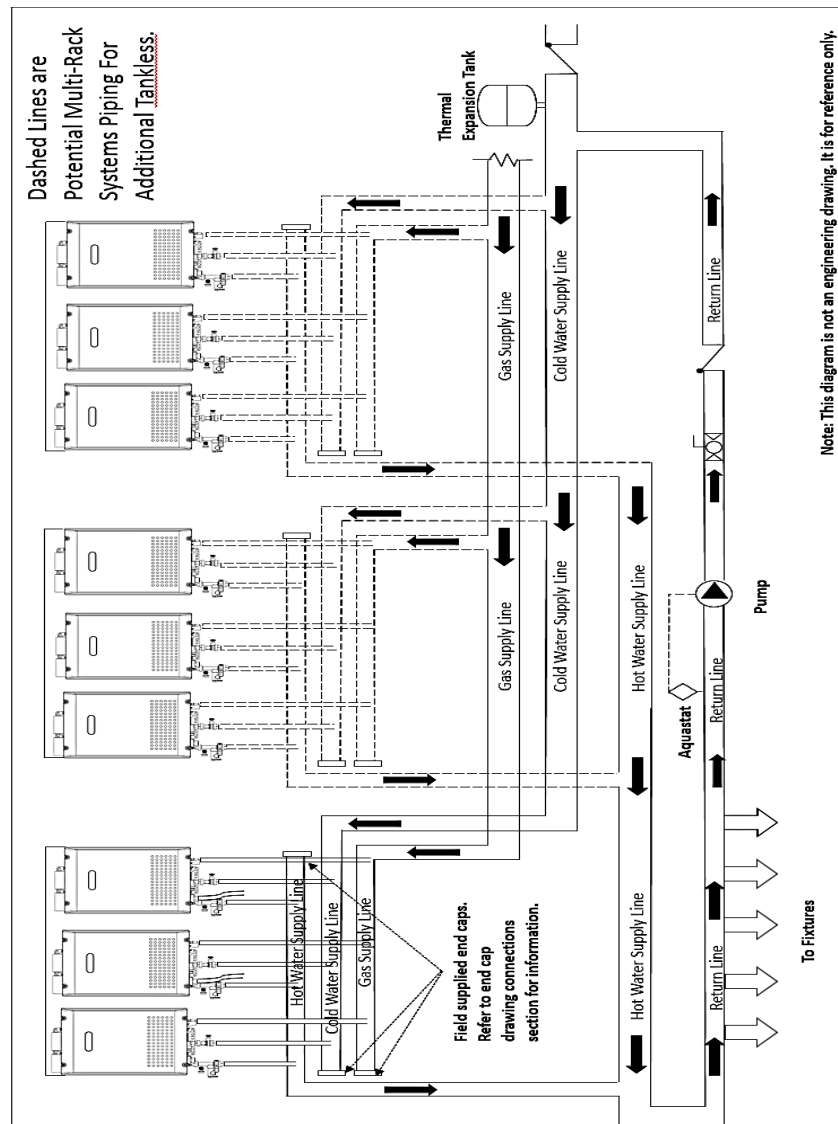
- In normal operation, freezing is prevented within the device automatically unless the outside temperature without wind is below -30°F (-35°C) for indoor installation or -4°F (-20°C) for outdoor installations.
- For models installed in an area where the outside temperature can approach freezing conditions of -30°F (-35°C) or outdoor -4°F (-20°C) or below, then additional protection measures must be used. For temporary freeze protection measures, refer to the Water Heater Owner's Guide.
- The built-in freeze prevention on the water heaters require power to function.
- When supplying combustion air from the indoors, the room temperature must be greater than 32°F (0°C) to prevent freezing and the room inside must not have negative pressure.
- The freeze prevention heaters will not prevent the plumbing external to the unit from freezing. Insulate or apply heating materials to both the cold water and the hot water supply piping to prevent freezing during cold weather and to prevent heat loss through the piping.

Rack Parallel Piping System

- Multiple Noritz CR60 can be installed series. Refer to the following table for the maximum number of racks that can connected together.

Rack Name	Max Racks	Total Quantity of Heaters
CR60-WH-2	5	10
CR60-WH-3	3	9
CR60-FS-4	3	12
CR60-FS-5	2	10
CR60-FS-6	2	12

- A low pressure gas regulator must be installed upstream of the CR60 gas supply such that the gas supply pressure is within the acceptable gas supply pressure range. The total input of all CR60 shall be used when sizing the gas regulator.
- Use common plumbing practice and reference all applicable codes when sizing the secondary manifolds and gas regulator.



Making Piping Connections

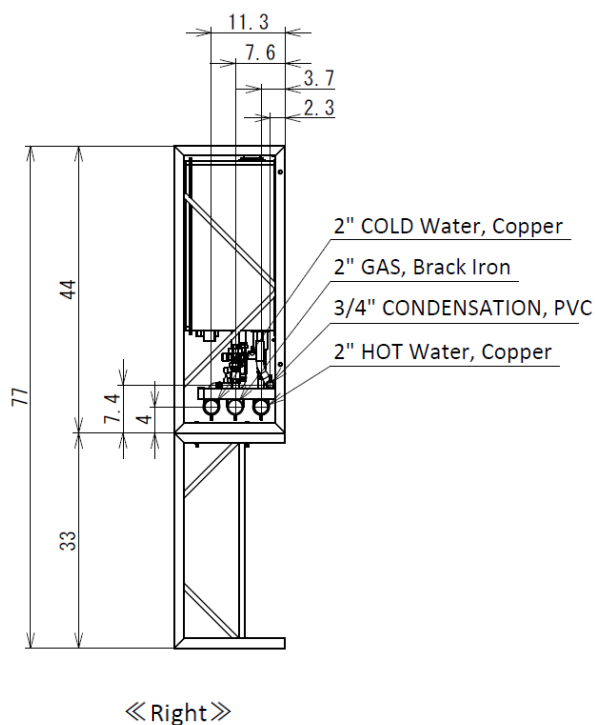
Once water flow and gas supply direction is determined, the opposite end of the supply manifold must be capped and checked for leaks.

End caps shall be field supplied and be of the following materials:

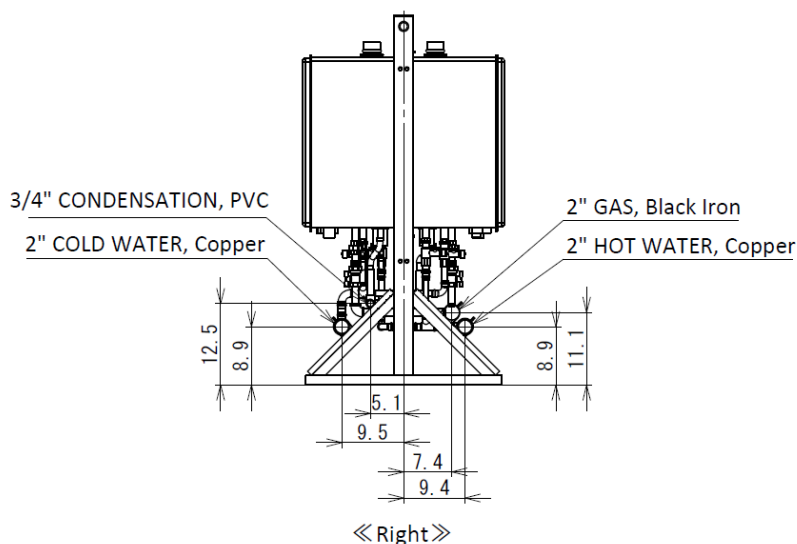
- Cold water line cap - Copper
- Hot water line cap - Copper
- Gas line cap - Black iron
- Condensate line - PVC

IMPORTANT: Cold water connection is located on the front side of the CR60 (for back to back models) designated starting from unit #1. Do not connect the hot water supply line to this side.

Wall Hanging Unit Piping
Connection Orientation



Floor Standing Unit Piping
Connection Orientation



Condensate Drain to Floor or with Pump



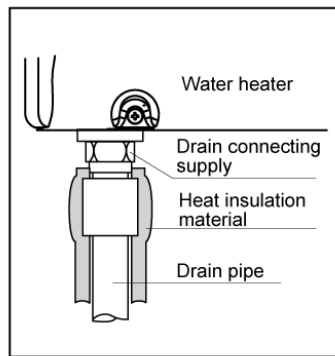
Due to the acidic nature of the condensate, be sure to properly drain and if necessary, treat the condensate prior to disposal. Damage caused by improperly handled condensate is not covered by the warranty.

- Each CR60 rack unit comes with a condensate drain pre-piped which must be properly drained to ensure proper operation of this appliance.
- The pH level of the condensate is approximately 2-3. An external neutralizer must be installed on the drain piping prior to disposal when required by local code or when the condensate could cause damage.
- For condensate piping discharging to a floor drain, an airgap must be maintained. Refer to local plumbing code for minimum requirements.
- For long runs or where the drain is above the CR60, a condensate pump may be required (field supplied). Size the pump to allow for a maximum condensate discharge of 2 GPH/unit (Ex. 6 units = 12GPH) from the water heater.
- NT-20A commercial condensate neutralizer kit accessory (connect up to maximum of fifteen (15) condensing water heaters in a multi system). The NT-20A will need to be discharged to an acceptable location. For long runs or with a drain above the CR60, a condensate pump is needed, followed by piping to a floor drain. Refer to NT-20A Installation Manual for full installation and usage instructions.

* Note: The neutralizer is NOT included in the Commercial Water Heating System package. The optional neutralizer can be purchased separately (Noritz Part# NT-20A).

- The end of the drain pipe must not be submerged in water or blocked in any way. To ensure proper drainage, leave the end of the drain pipe open to the atmosphere. Also, make sure that there are no obstructions blocking the drain line from discharging condensate outlet.
- Be sure to check that condensate is freely flowing from the drain piping after the system has been installed. Condensate will begin flowing out of the CR60 within 15-20 minutes after operation has started.
- If the drain line becomes clogged or frozen, condensate water will flow back into the water heater and a "90" error code will flash on the remote controller, stopping the tankless water heater operation. If this occurs, clear the clog or frozen water so that condensate can freely flow again. Apply freeze prevention measures (when necessary) to prevent the drain line from clogging or freezing.

- Take measures to prevent the condensate drain lines from freezing (insulation, heat tape, electric heaters, etc.) as illustrated below if being installed outdoors or other unconditioned space.



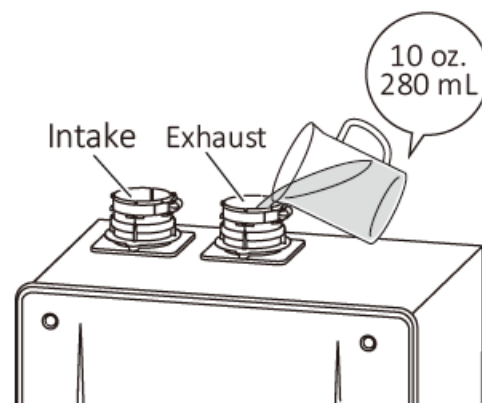
- If the water heater has been out of use for a long period of time, make sure that you fill the condensate trap with water. This is to prevent dangerous exhaust gases from entering the building. Failure to fill the condensate trap could result in severe personal injury or death.

* Do not use the condensate water, discharged from the drain pipe, for drinking purposes.

Filling the Condensate Trap with Water (Indoor Installation)

1) Fill the condensate container by pouring approx. 10 oz.(280ml) of water into the exhaust accessory on the top of the appliance as illustrated below. Or, if the vent pipe has already been installed:

2) After installing the drain pipe, make sure that the area around the appliance is well ventilated; open a window or a door if necessary. Then, operate the unit and verify that condensate is coming out of the drain pipe. (During normal use of the water heater, condensate will begin to discharge from the drain pipe within 15 minutes of use. However, depending on the season and/or installation site conditions, it may take longer.)



*Note: This procedure must be done on each unit installed on the system.

Water Treatment

If the CR60 will be installed in an application where the supply water is hard, the water must be treated with either the Noritz H2Flow or a water softener. Refer to the below tables for suggested treatment and maintenance measures to be taken based on the water hardness level. Damage to the water heater as a result of water in excess of 12 gpg (200 mg/L) of hardness is not covered by the Noritz America Limited Warranty.

Note: Water softeners may be regulated by the local water jurisdiction, consult with the manufacturer for code, sizing, and installation guidelines; the below diagram is for reference only. For more information about H2Flow, contact Noritz America at 866-766-7489.

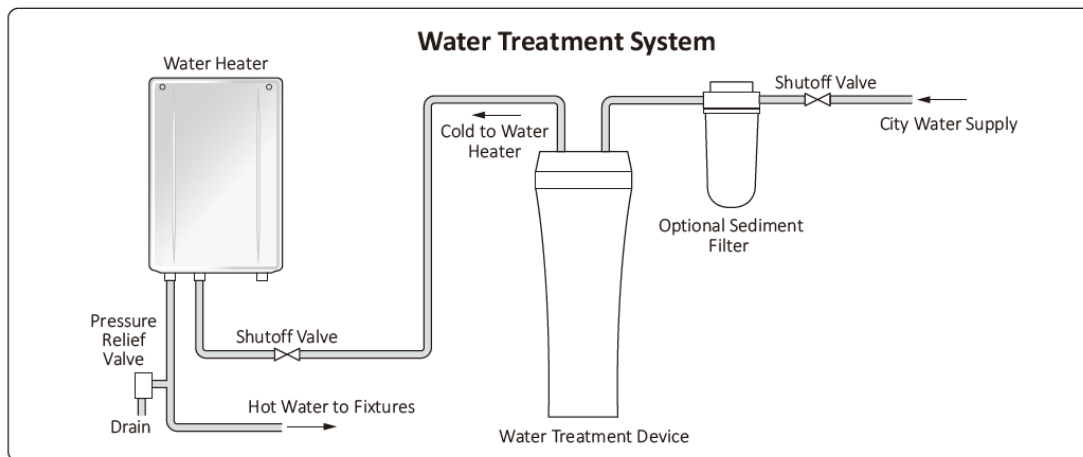
Treatment Guidelines

Type of Water	Hardness Level	Treatment Device*	Flush Frequency**	
			Residential Use	Commercial Use
Soft	0-1 gpg (0-17 mg/L)	None	None	None
Slightly Hard	1-3 gpg (17-51 mg/L)			
Moderately Hard	3-7 gpg (51-120 mg/L)	Scale Shield or Water Softener	Once a Year***	Once a Year***
Hard	7-10 gpg (120-171 mg/L)			Twice a Year***
Very Hard	10-12 gpg (171-200 mg/L)			
Extremely Hard	> 12 gpg (> 200 mg/L)			

* When selecting a treatment device, you must consult with the device's spec sheet and installation manual for guidelines and limitations. Not all water supplies are compatible. A water test may be required.

** Install Noritz Isolation Valves to allow for flushing.

*** Flushing is required if a water treatment device is not installed.



Installation of Gas Supply

⚠ WARNING

1. A licensed professional must install the gas supply.
2. Turn off and unplug the 120v power supply.
3. Turn off the gas and do not smoke or have other ignition sources while working on the gas.
4. Do not turn on Noritz tankless water heater or gas line until all fumes are gone.
5. Check the rating plate for correct gas type and gas inlet pressure before connecting to the water heater.
6. Before operating, all gas piping should be checked and tested by a leak detector or an equivalent nonflammable solution.
7. Purge the gas line of any debris before connecting to the water heater.
8. To check for gas pressure setting and measuring gas pressure of the system please refer to the diagram below.

Gas Pressure Size the gas line according to total btuh demand of the building and length from the meter or regulator so that the following supply pressures are available even at maximum demand: Natural Gas Supply Pressure Min. 3.5"WC Max. 10.5" WC LP Gas Supply Pressure Min. 8" WC Max. 14" WC	Gas Meter Select a gas meter capable of supplying the entire btuh demand of all gas appliances in the building. Gas Connection <ul style="list-style-type: none">• Do not use piping with a diameter smaller than the inlet diameter of the water heater.• Gas flex lines are not recommended unless they are rated for 199,900 btuh.• Install a gas shutoff valve on the supply line.• Use only approved gas piping materials.
---	--

Measuring Gas Pressure

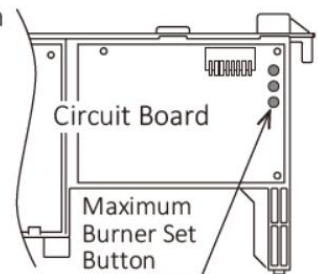
In order to check the gas supply pressure to the Water Heater, a tap is provided on the gas inlet.

1. Remove the **9/32 in. hex head /Philips screw** from the tap.



2. Connect a manometer using a silicon tube.
3. Open up at least two fixtures with hot water side fully.

4. Hold in the "Maximum Burner Set Button" on the circuit board.



Electrical wiring

The units on the CR60 are not pre-wired. Each water heater requires 120VAC, 60Hz power from a properly grounded circuit. For additional information please refer to the Water Heater Installation Manual and consult with a qualified electrician.

- If using a power cord, plug it into a standard 3 prong 120VAC 60Hz properly grounded wall outlet.
- If using a disconnect switch, it must be installed for the incoming 120VAC power. It should be a type suitable for outdoor use. Check your local codes for a proper switch type to use in your area.

Consult a qualified electrician for the electrical work.

This appliance must be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70. In Canada, the latest CSA C22.1 Electrical Code.

⚠ WARNING

Electrical Shock Hazard

Do not connect the electrical power to the appliance until all electrical wiring has been completed. Failure to do so may result in death or serious injury from electrical shock.

⚠ CAUTION

- Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.
- Electrostatic discharge can affect electronic components. Take precautions to prevent electrostatic discharges from personnel or hand tools during the Water Heater installation and servicing to protect product's electronic control.

Power Supply

- The electrical supply required by the Water Heater is 120 VAC at 60 Hz. The power consumption may be up to 210 W or higher if using optional accessories. Use an appropriate circuit.
- Tie the redundant power cord outside the Water Heater. Putting the redundant length of cord inside the Water Heater may cause electrical interference and faulty operation.

- NOTE**
- Do not let the power cord contact the gas piping.
 - Do not disconnect the electrical power when not in use. When the power is off, the freeze prevention in the Water Heater will not activate, resulting in possible freezing damage.

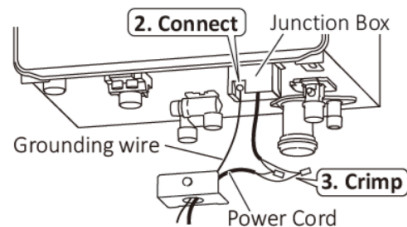
Ground

- To prevent electrical shock, provide a ground with resistance less than 100 Ω . An electrician should do this work.
- A grounding screw is provided on the back in the junction box.

- NOTE**
- Do not connect the ground to the city water or gas piping.
 - Do not tie the ground to a telephone line.

Procedure to connect the ground and the power cord

1. Remove the cover of the junction box (1 screw).
2. Connect the grounding wire to the ground screw in the junction box.
3. Crimp the outdoor power cord to the power cord of the Water Heater.
4. Reattach the cover of the junction box (1 screw).



Breaker Installation

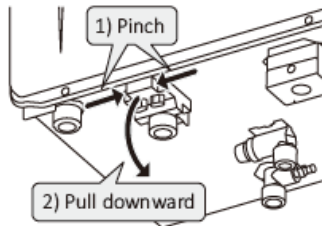
Mount a device which shuts off the electrical path automatically (leakage breaker) to detect electrical leakage.

Remote Controller

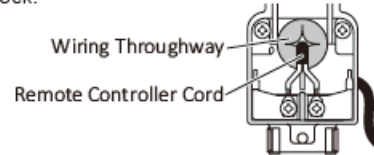
- The CR60 comes with a remote controller (RC-9018M) that must be installed into unit #1. Refer to the schematic on pg. 58 of this manual for instructions on locating unit #1.
- Refer to directions below or pg. 45 of the Water Heater Installation Manual for description on installing the remote controller

Connecting the Remote Controller Cord

1. Check to make sure that the Remote Controller Cord has plenty of slack in order to reach the external connection terminal block.
2. Make sure the electrical power is disconnected from the Water Heater.
3. Open the external remote terminal block.



4. Pass the Remote Controller Cord through the wiring throughway. Connect the Y-shaped terminals at the end of the Remote Controller Cord to the terminal block.



NOTE Tie the redundant cord outside the Water Heater. Do not put the extra length inside the Water Heater.

5. Reattach the terminal block cover.

- The remote controller can be mounted adjacent to the CR60 utilizing the provided cord, or extended utilizing 18 AWG wire up to 300 ft. Refer to the Water Heater Installation Manual for additional mounting instructions.
- Only one remote controller is connected to the Noritz tankless water heater to monitor and control all the units. If two or more remote controllers are connected a malfunction will occur.
- When power is first connected to the m the remote enters an intial setting mode where you will be prompted to choose between a system type (Standard, Recirc., or Tank Recirc.).

List of the Sys settings

Item in the Sys settings	system type			Yes	No
	Standard	Recirc	Tank recirc		
Quick staging	Available	Available	Not Available	Units will stage more rapidly from heater to heater*	Units will stage more slowly
Pump error check	Not Available	Available	Available	System will check for flow when system controller pump terminals are energized. If no flow is present, it will display 63 error code	System will not check for pump operation*
Pump rotation	Not Available	Available	Available	System will rotate pump 1 and 2 operation	Pump 1 and 2 will operate simultaneously*

*Factory Default Settings

- If “Recirc” is selected, properly set the recirculation system operation timer (Ex. 5:00am – 8:00am).
- Refer to the RC -9018M (Remote Controller) Installation Manual for additional information such as system clock button (pg. 8), setting hot water temperature (pg. 10), locking (pg. 14), additional settings (pg. 15), and disabling recirculation operation (pg. 18).

- For additional information, refer to (SC-401-6M) Installation Manual for information such as remote initial setup (pg. 9), recirculation pump timer setup (pg. 13), system check button (pg. 15), maintenance monitors and additional settings (pg. 16).

*The remote controller is not resistant to water, steam, chemicals, or UV rays. Store the remote in a location where it will not be exposed to these conditions.

Multi System Controller

- The CR60 comes pre-installed with a system controller for up to 6 units (SC-401-6M).
- Each Noritz tankless water heater will be electronically connected with the multi system controller.

Basic Operation

The SC-401-6M system controller is used to combine 1 to 6 Noritz heaters into a single "multi-unit system". The system controller stages units on and off based on hot water demand and rotates their operation to ensure even usage. It also has two additional modes which optimize the system for operation with a recirculation line or storage tank.

(Note: for systems of 7-12 units use the SCU-401-12M system controller
for systems of 13-24 units use the SCU-401-24M system controller)

Unit Staging

Staging allows the multi-unit system to track hot water demand from the minimum flow rate of a single unit up to the maximum output of several units. When the primary firing heater reaches ~50% of its maximum output, the system controller activates the next unit in the system. When both these units reach ~50% of their maximum output, a third unit is activated and so on. The SC-401-6M may also be configured to activate two heaters during primary firing to allow for rapid initial hot water demand.

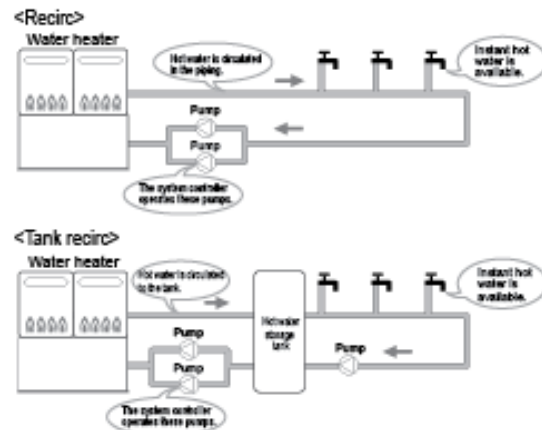
Unit Rotation

The SC-401-6M system controller rotates operation of the primary firing heater every 8 hours of combustion time or up to 24 hours of plug-in time. This helps to ensure even usage of all units.

UNIT1	UNIT2	UNIT3	UNIT4	UNIT5	UNIT6
1st	2nd	3rd	4th	5th	6th
Rotation					
6th	1st	2nd	3rd	4th	5th
Rotation					
5th	6th	1st	2nd	3rd	4th
Rotation					
4th	5th	6th	1st	2nd	3rd

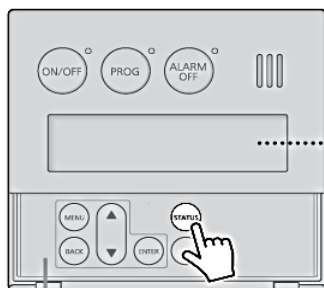
System Selection

The SC-401-6M allows the user to select two additional system types: "Recirc" and "Tank recirc." These settings optimize performance with recirculation and storage tank systems, and allow the system controller to operate one or two pumps.







* These diagrams are for illustration purposes only.

If you press the **STATUS** button, you can check the status of the system



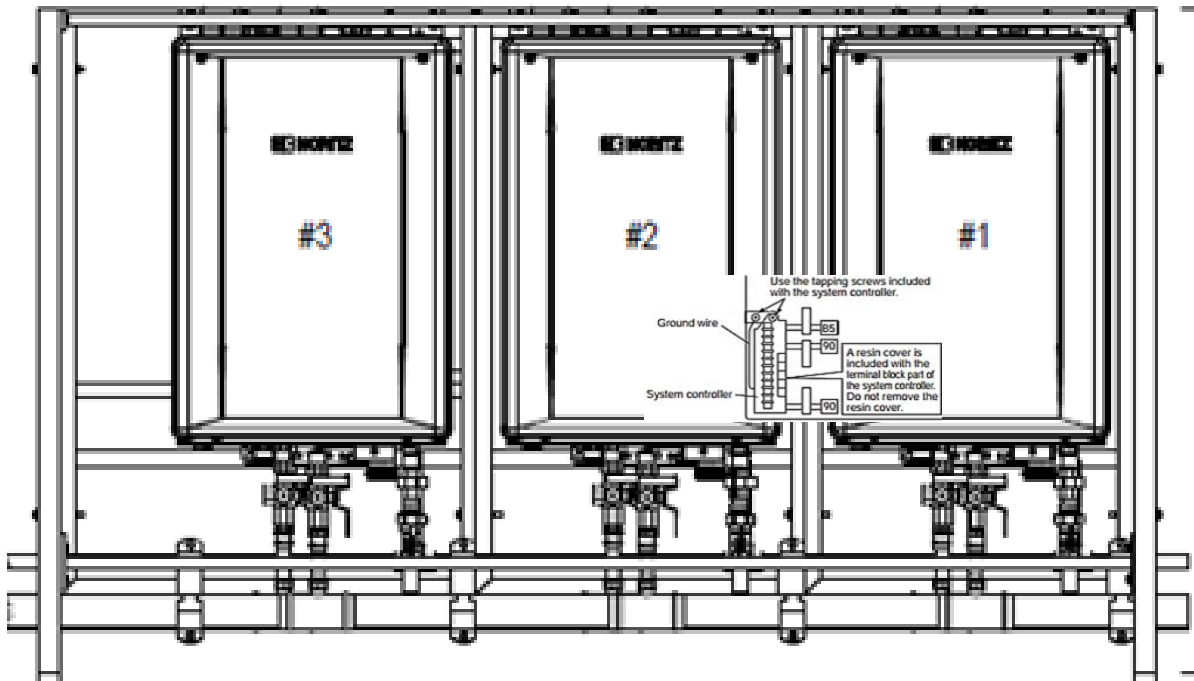
Cover shown in the open position.

System [Rcrc] Active [06]
Units [06] Pump1 [OFF]
Online [06] Pump2 [ON]
(Display Screen Example [System [Rcrc]])

System Displayed on the Remote Controller	System Description
System [Std]	Water heater only operation.
System [Rcrc]	<ul style="list-style-type: none"> * Water heater and recirculation operation. * During recirculation operation, hot water is always circulated in the piping to provide instant hot water when a fixture is opened. <p>[If you set the  button to "ON",  is displayed.]</p>
System [Tank]	<ul style="list-style-type: none"> * Water heater combined with a storage tank operation. * If a recirculation system is also installed, hot water is always circulated in the piping to provide instant hot water when a fixture is opened. <p>[If you set the  button to "ON",  is displayed.]</p>

- The system controller is installed inside the rightmost unit denoted by a #1 sticker located on the front cover of the unit.
- Each unit will have a numbered sticker on the front cover, ordered in a clockwise direction (Refer to diagram below).

4	5	6
3	2	1



● **When two or more multi-unit systems are installed in parallel**

One remote controller is necessary for each multi-unit system (i.e. 3 multi-unit systems will require 3 system controllers and 3 remote controllers). Each system will have separately wired remote controller cords.

- Refer to the system controller installation manual SC-401-6M (6 Unit System Controller) for additional multi system controller features such as warning and operation light pg. 20, circulation pumps pg. 21, exhaust fan, pressure switch pg. 22, and thermostat pg. 23.

Final checklist

Review the following checklist. The answer to each of these questions should be “Yes”. If you answer “No” to any of the items (except items with designated conditional answers), installation is not complete. Review the appropriate sections to complete the installation. If you have any questions or need assistance with the installation, contact Noritz America at 866-766-7489.

Before Installation	Yes	No
Rating Plate indicates the correct gas type (Natural Gas / Propane)		
Water Heaters and frame are free of physical damage		
Installation location is below 2000 ft (610m)		
If the answer above is no: Is dipswitch in each unit set to proper altitude setting? (Refer to the Water Heater Installation manual for instructions on making this adjustment)		
Mounting	Yes	No
For wall type, wall is capable of supporting shear load of the frame and water heaters		
Frame is mounted on a flat, level surface		
Frame is securely fastened to the wall / floor as required by local building code		
Venting	Yes	No
Vent materials used are approved for use with these Category IV appliances (PVC, CPVC, approved Polypropylene)		
Vent length is within requirements		
Clearance from termination meets the clearance requirements		
While operating there is no leakage from any fitting or pipe		
Vent system has a horizontal section		
If the answer above is yes: Horizontal section has a slope of at least ¼” upwards for each 12” toward the termination		
Gas Supply	Yes	No
Gas inlet supply pressure is between 3.5-10.5” w.c. (NG) or 8-14” w.c. (LP)		
There is no leakage from water heater or gas connection		
Gas pipe connection to gas manifold connection is appropriate		
Unused end of the gas manifold is capped		
Water Supply	Yes	No
Water supply pressure is between 15-150 psi (103.4-1034 kPa) (Noritz recommends water pressure between 30-70 psi (207 – 483 kPa) for maximum performance. Installing a pressure regulating valve above 70 psi supply pressure can help to reduce water hammer)		
There is no leakage from the cold water supply pipe, hot water supply pipe, or the water heaters		

Unused end of the cold water and hot water supply pipes are capped		
Pressure relief valves are installed and piped in accordance with local building code		
If water heaters will not be placed into immediate service, water heaters are drained in accordance with procedure located in the appliance installation manual		
Condensate Drain	Yes	No
Condensate drain is discharging condensate (This may require operating water heaters for upwards of 15 minutes)		
Condensate is flowing freely		
Condensate line is free of leaks		
Condensate is disposed of in accordance with local building codes		
Electrical	Yes	No
Electricity supplied is single phase, 120VAC, 60 Hz		
Ground connection supplied to each water heater		
Post Installation	Yes	No
Control module (RC-9018M) is mounted in a clean, dry location (RC-9018M is not waterproof or UV rated)		
Open a water fixture and confirm fire from water heater and that hot water is available		
No error codes are displayed on the water heaters		
Water filter on each unit is free of debris		
Explain to customer the operation of the water heater, safety guidelines, maintenance and warranty		
Manual placed next to water heater or passed directly to the customer		

*This checklist is **not** a replacement for thoroughly reading all the Commercial Water Heater System manual literature.

Trial Operation

The installer should test operate the unit, followed by explaining to the customer how to use the unit, and give the owner this manual before leaving the installation site.

Preparation steps.

1. Confirm the condensate trap is filled with approx. 10 oz. (280 mL) of water inside the exhaust (indoor installations).
2. Open a hot water fixture to confirm that water is available, and then close the fixture.
3. Open the gas supply valve.
4. Turn on the power supply. Using the remote controller, turn on the Power On / Off button (the Operation lamp will turn on).

Operation steps.

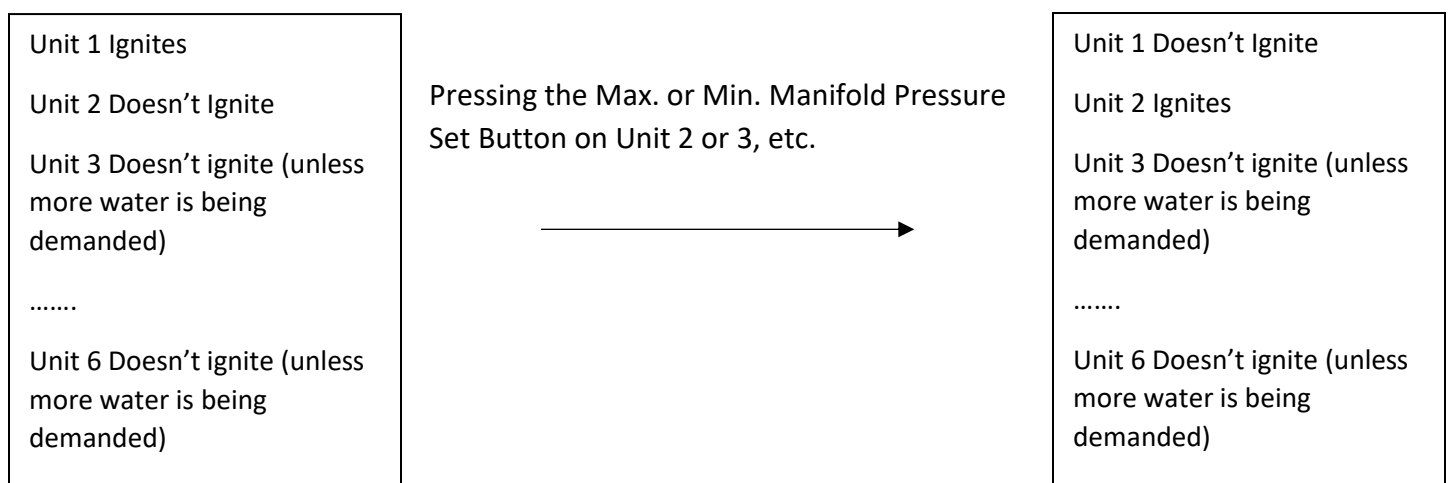
1. Open a hot water fixture and confirm that the Burner On lamp on the remote controller lights on, and that hot water is being produced. (If necessary, repeat until the air in the gas piping is bled out).

* White smoke may produce from the exhaust vent during cold weather. This is not a malfunction of the unit.

* If an “11” error code appears on the remote controller, turn the unit off and then on 2 - 3 times. Followed by opening the hot water fixture again.

2. Change the temperature setting on the remote controller and check whether the water temperature changes.

• Check to see that the hot water temperature is the same as the temperature displayed on the remote controller. If multiple units do not ignite, switch which unit will ignite first by pressing the Max. or Min. Manifold Pressure Set Button on the circuit board.



- If the water heater does not operate normally, refer to “Troubleshooting” in the Operation Manual. After the trial operation, clean the filter in the cold water inlet.
- Use the remote controller to see the status of how many units are igniting.

Shutdown Steps.

1. Stop any water demand
2. Turn off electrical power.
3. Drain the water out of each unit to prevent freezing.
4. Clean the filter in the cold water inlet and instruct client the process.



CAUTION

Handling after trial operation

- If the unit will not be used immediately, close off all gas and water shutoff valves, drain all of the water out of the unit and the plumbing system to prevent the unit and system from freezing, and bleed the gas out of the gas line.
Freezing is not covered by the warranty.

Warranty for Tankless Units & Commercial Water Heater System Components

Warranty Registration Required *

Warranty Period			
Period of Coverage (Date of Installation or 30 Days After Purchase)			
	Labor	Parts	Heat Exchanger
Tankless Water Heater	1 year	5 years	10 years
Commercial Water Heater System Rack	1 year		

Noritz America Corporation LIMITED WARRANTY - TANKLESS WATER HEATERS

1. What is Covered by this Warranty During the applicable Warranty Period (specified below), Noritz America Corporation ("Noritz") warrants to the original purchaser ("Buyer") that the new Noritz gas water heater in the originally installed location ("Product") is free from material defects in material or workmanship (the "Warranty"). There are different Warranty Periods for different components of the Product, as described below. This Warranty is for the benefit of the original Buyer only and terminates upon transfer of the Product from the original Buyer to any other person or entity. For this Warranty to be effective (i) the Product must be installed by a method recognized and authorized by Noritz and in compliance with Noritz published materials specifically indicated in writing to be applicable to the type and model number of the Product and in compliance with instructions in the Installation Manual and Owner's Guide, which are included with the Product ("Proper Installation"); and (ii) Buyer must use the Product in compliance with instructions in the Installation Manual and Owner's Guide, which are included with the Product.

2. Warranty Period This Warranty is provided by Noritz to the Buyer for the duration of the applicable Warranty Period for the particular component of the Product as specified below. This Warranty takes effect ("Warranty Effective Date") on the date of Proper Installation of the Product, or 30 days after the date of purchase of the Product, whichever occurs first, and is effective until the expiration of the "Warranty Period" for the particular Product component as shown below. The date of Proper Installation must be provided to Noritz as well as a copy of the original receipt for the purchase of the Product to establish the Warranty Effective Date. For example, when the Product is installed in new single-family residential construction, the Warranty Effective Date is the date upon which the Buyer takes title to the real property (e.g., the date of recordation of the deed conveying title to Buyer).

■ Warranty Period for Heat Exchanger

Product	Conditions		
	A) Used in a single family dwelling	B) Used in conjunction with a controlled recirculation system[1] installed in accordance with the installation manual in a single family dwelling	C) Used in a commercial capacity; used in other than a single family dwelling; supplied with pre-heated water or used in conjunction with uncontrolled recirculation
EZ98, EZ111, EZTR50 and EZTR75 (excluding EZTR40)	25 years [2]	15 years [3]	8 years [4]
NRCR92 and NRCR111	15 years [3]		8 years [4]
Residential Products with prefix "NR" 180,000 btu and higher	12 years	12 years [5]	3 years [6]
Residential Products with prefix "NR" 157,000 btu and lower, and EZTR40	12 years	3 years [6]	
NCC199CDV	25 years [2] [7]	15 years [3] [7]	10 years [8]
Commercial Products with prefix "NC" except NCC199CDV	12 years [7]	12 years [5] [7]	5 years [9]

■ Warranty Period for Parts and Labor

All Products	Parts other than Heat Exchanger	5 years
	Reasonable labor [10]	1 year

Footnote:

- [1] An aquastat is the minimum pump control requirement in order to maintain the full recirculation warranty. Point of use or "on demand" recirculation systems which are thermally controlled (i.e. aquastat) also classify as controlled systems.
 [2] 25 years or 15,000 operational (burn) hours, whichever occurs first.
 [3] 15 years or 12,000 operational (burn) hours, whichever occurs first.
 [4] 8 years or 12,500 operational (burn) hours, whichever occurs first.
 [5] 12 years or 6,500 operational (burn) hours, whichever occurs first.
 [6] 3 years or 4,000 operational (burn) hours, whichever occurs first.

- [7] Provided that temperature is ≤140°F. If temperature is >140°F, then applicable Warranty Period is the one used for a commercial capacity (Condition C above).
 [8] 10 years or 12,500 operational (burn) hours, whichever occurs first.
 [9] 5 years or 6,500 operational (burn) hours, whichever occurs first.
 [10] A reasonable labor rate will be paid by Noritz to service/repair professional on Noritz-approved Warranty repairs, subject to Noritz's schedule of approved labor allowances.

Register your Warranty online at www.noritz.com/warranty



SBB80RS

Warranty Registration

Register your Noritz product/s at www.noritz.com/warranty or fill out the Warranty card below and return to Noritz America.

Customer Name*:			
Customer Address*:			
City*:	State*:	Zip*:	
Telephone*:			
Email*:			
Installation Company:			
Company Address:			
City:	State:	Zip:	
The model, serial number and gas type can be found on the water heater's rating plate located either on the front cover or side of the product.			
Model No.*:	Gas Type (Circle One)*: Natural Gas / Propane		
<i>Model No. should start with "GQ-". If "GQ-" numbers cannot be found, please write the Model No. with prefix "NR" or "NC".</i>			
Serial No.(12 digits)*: 20	Date of Installation*:		

* These items must be completed to properly register the water heater.

Please keep a copy of this warranty registration card for your records.



Save The Environment! Do it Online!

Register your Warranty online at www.noritz.com/warranty

NORITZ AMERICA CORP.
 11160 Grace Avenue
 Fountain Valley, CA 92708
 Phone: (714) 433-2905
 Fax: (714) 241-1514

3. How do I Use this Warranty? If Buyer discovers, within the applicable Warranty Period, a defect in material or workmanship ("Defect"), Buyer must promptly notify Noritz or its authorized representative. Please notify Noritz by contacting Noritz's Customer Care at info@noritz.com, or by writing to Noritz Customer Care at 11160 Grace Avenue, Fountain Valley, CA 92708, or by calling Noritz Customer Care at 866-766-7489. Buyer must provide evidence of the Warranty Effective Date (See Section 2 above). Within a reasonable time after Noritz receives such notification, Noritz will ship at Noritz's expense, either new or used/refurbished replacement parts to correct a Noritz-confirmed Defect. Buyer is responsible for any other costs, including but not limited to labor for servicing or replacing the part or Product (except to the extent that labor is covered as described in the Warranty Period section above), costs for permits or materials necessary for the repair or replacement, or incidental costs resulting from damage external to the Product resulting from the Defect. The replacement component or Product will be warranted only for the unexpired portion of the original component's applicable Warranty Period. If during the applicable Warranty Period, the Noritz-provided new or used replacement parts, when properly installed, do not correct the Defect, or if Noritz is unable to correct the Defect after a reasonable number of attempts, Noritz will provide, at its option, one of the following: (i) a replacement new or used/refurbished Product (at Noritz's option, either the same, comparable or better model), to be shipped at Noritz's expense, or (ii) a full refund of the purchase price paid for the Product (excluding labor or installation costs). These remedies are the Buyer's only remedies for breach of Warranty.

4. What is Not Covered by this Warranty Please refer to the Installation Manual and Owner's Guide supplied with your new Noritz Product. In addition, this Warranty becomes null and void if any of the following are determined to be contributing factors to failure of the Product under this Warranty:

- Abuse, neglect, misuse or misapplication
- Improper, dangerous, or destructive maintenance procedures
- Use in conjunction with any unapproved device
- Installation in an environment that is corrosive or otherwise destructive to the Product, whether internal or external
- Incorrect gas or water pressure
- Incorrect sizing for the application
- Use with improper gas type
- Damage as a result of freezing within the Product or surrounding piping
- Damage as a result of use with non-potable water, untreated or poorly treated well water, or water with high PH levels or hardness levels in excess of 12 grains per gallon (200 mg/L). (Please refer to the "Water Quality" section of the Owner's Guide for details)
- Damage caused by acts of God including, but not limited to; fire, flood, lightning, or natural disaster
- Damage caused by use of the Product for purposes other than those for which it was designed
- Damage caused by unauthorized attachments or modifications
- Damage resulting from improper installation of the Product
- Damage during shipment

Product purchased from any seller or retailer that is not authorized by Noritz, or any installer that obtained the Product from a distributor or supplier that is not authorized by Noritz (collectively, "Non-Authorized Product") is not covered by this Warranty and the Warranty shall be void as to such Non-Authorized Product.

5. DISCLAIMER OF WARRANTIES THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. NORITZ DISCLAIMS ALL OTHER OBLIGATIONS OR LIABILITIES ON ITS PART AND NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON OR ENTITY TO BIND OR ASSUME FOR NORITZ ANY OTHER LIABILITIES IN CONNECTION WITH THE PERFORMANCE OF THE PRODUCT. THIS WARRANTY ONLY COVERS REPLACEMENT PRODUCT OR PARTS THEREOF, AND EXCEPT AS EXPRESSLY SET FORTH ABOVE, DOES NOT COVER THE COST OF LABOR OR SERVICES UNDER ANY CIRCUMSTANCES. SOME STATES OR PROVINCES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

6. LIMITATION OF REMEDIES NORITZ'S TOTAL LIABILITY FOR ANY CLAIM ARISING HEREUNDER SHALL NOT EXCEED THE PURCHASE PRICE WHICH YOU PAID FOR THE PRODUCT. IN NO EVENT WILL NORITZ BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES BASED ON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL THEORY. DAMAGES THAT NORITZ WILL NOT BE RESPONSIBLE FOR INCLUDE, BUT ARE NOT LIMITED TO: LOSS OF PROFITS; LOSS OF SAVINGS OR REVENUE; LOSS OF USE OF THE PRODUCT OR ANY ASSOCIATED EQUIPMENT; COST OF CAPITAL; COST OF ANY SUBSTITUTE EQUIPMENT, FACILITIES, OR SERVICES; DOWNTIME; THE CLAIMS OF THIRD PARTIES, INCLUDING CUSTOMERS; AND INJURY TO PROPERTY.

7. Time Limit for Bringing Suit Any action for breach of Warranty must be filed and served within 6 months following the expiration of the applicable Warranty Period with respect to the particular Product component.

8. No Other Warranties There are no express warranties other than those contained in this agreement. Unless modified in a writing signed by both parties, this agreement is understood to be the complete and exclusive agreement between the parties, superseding all oral or written prior agreements and all other communications between the parties relating to the subject matter of this agreement, including but not limited to statements made by salespersons. No employee or representative of Noritz, or any other person or entity, is authorized to make any warranty in addition to those made in this agreement, or to modify any warranty made in this agreement. Buyer is warned, therefore, to check this agreement carefully to see that it correctly reflects those terms that are important to the Buyer.

9. Allocation of Risks This agreement allocates the risks of Product failure between Noritz and the Buyer. This allocation is recognized by both parties and is reflected in the price of the goods. Buyer acknowledges that it has read this agreement, understands it, and is bound by its terms. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state or province to province.

NORITZ AMERICA CORP.
11160 Grace Avenue
Fountain Valley, CA 92708

PLACE
STAMP
HERE

MAIL TO: NORITZ AMERICA CORP.
11160 Grace Avenue
Fountain Valley, CA 92708

ATTN: WARRANTY REGISTRATION