

# Installation Manual

NORITZ AMERICA CORPORATION

## PVC COMMON VENT SYSTEM

Model: PP4XPVC4-ADAPT(4"PP to 4" PVC Adapter)

[Applicable Model]

- EZ98DV (GQ-C2859WX-FF US)
- EZ111DV (GQ-C3259WX-FF US)
- NCC199CDV (GQ-C3259WZ-FF US)

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



### DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



### WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



### CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

**WARNING:** If the information in this manual is not followed exactly, a fire, explosion or carbon monoxide poisoning may result causing property damage, personal injury or death.



Prohibited



Disconnect Power



Ground



Be sure to do

Refer to the unit Installation Manual for information regarding proper installation of the units. In order for the unit to be covered by the Noritz America Limited Warranty, the Non-Return Valve and the Common Vent System must be installed in compliance with these installation manual instructions.



### CAUTION

#### Requests to Installers

##### Licensed Professional Installers Only

Only licensed professionals may install Noritz tankless water heaters ("unit" or "water heater"), the Non-Return Valve and the Common Vent System. The licensed professional installer must have the following skills, knowledge and experience:

- Connecting water lines, gas lines, electricity and valves;
- Knowledge of applicable local, state and national codes.

Installation must conform with local codes, or in the absence of local codes, the National Fuel Gas Code, ANSI Z223.1/NFPA 54 - latest edition and/or the Natural Gas and Propane Installation Code CSA B149.1 - latest edition.

Noritz America reserves the right to discontinue, or change at any time, the designs and/or specifications of its products without notice.



This System has been Independently Tested and Approved by CSA.

SBB813N-1  
Rev. 05/18



\*SBB813N\*



## CAUTION

### Requests to Installers

#### Important Information for Installers

- Ensure that the unit is properly installed according to the Installation Manual and Owner's Guide for the unit, as well as applicable codes.
- Read this Installation Manual completely prior to installation of the Non-Return Valve and Common Vent System and carefully follow the instructions.
- Upon completion of installation, check and confirm that installation of the Non-Return Valve and Common Vent System was done properly in accordance with this Installation Manual. A Final Installation Checklist at the end of this Installation Manual is provided.
- Noritz does not manufacture or provide any warranty for the Common Vent System and Noritz assumes no liability or obligation for warranty or other claims for personal injury or death, damage or destruction of the Common Vent System, property damage or loss, or claims for any other damages, losses, contribution, or indemnification whatsoever with respect to the Common Vent System.
- Further, Noritz assumes no liability or obligation for warranty or other claims for personal injury or death, damage or destruction of the Noritz unit, the Non-Return Valve or the Common Vent System, property damage or loss, or claims for any other damages, losses, contribution, or indemnification whatsoever, all of which are excluded if the instructions in this Installation Manual are not completely and carefully followed.
- After completing installation, please either place this Installation Manual in a plastic pouch and attach it to the side of the unit (or the inside of the pipe cover 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 Registration and hand the Warranty and Warranty Registration to the customer, along with the Owner's Guide.

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# 2. General Information

## 2.1 Warranty and Liability Exclusions

- Noritz does not manufacture or provide any warranty for the Common Vent System and Noritz assumes no liability or obligation for warranty or other claims for personal injury or death, damage or destruction of the Common Vent System, property damage or loss, or claims for any other damages, losses, contribution, or indemnification whatsoever with respect to the Common Vent System.
- Noritz provides a Limited Warranty for the unit as included with the unit's packaging or as available on-line at [www.noritz.com/about-noritz/warranty](http://www.noritz.com/about-noritz/warranty). Noritz assumes no liability or obligation for warranty or other claims for personal injury or death, damage or destruction of the Noritz unit or the Non-Return Valve, property damage or loss, or claims for any other damages, losses, contribution, or indemnification whatsoever, all of which are excluded if such claims are due to any of the following:
  - Failure to comply with the instructions contained in this Installation Manual.
  - Failure to install to applicable code regulations.
  - Modifications to any portion of the unit, Non-Return Valve or Common Vent System not expressly provided for in this Installation Manual.
  - Failure to use approved materials as specified in this Installation Manual.
  - Use or installation of components other than those expressly specified in this Installation Manual.
  - Improper operation or maintenance.
  - Deliberate damage.
- Damage occurring subsequent to becoming aware of defects in the unit, Non-Return Valve or Common Vent System due to continued use of the defective unit, Non-Return Valve or Common Vent System.
- Force Majeure or acts of God, including but not limited to, earthquake, flood, energy failure or utility spikes, war, acts of terrorism, etc.

THE LIMITED WARRANTY TO THE PURCHASER FOR THE NORITZ TANKLESS WATER HEATER UNIT IS AS PROVIDED IN THE NORITZ AMERICA CORPORATION LIMITED WARRANTY FOR TANKLESS HOT WATER HEATERS. THIS INSTALLATION MANUAL DOES NOT EXTEND, ENLARGE OR OTHERWISE MODIFY SUCH LIMITED WARRANTY.

NOTWITHSTANDING ANYTHING TO THE CONTRARY, NORITZ DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES REGARDING THE COMMON VENT SYSTEM, ANY COMPONENT THEREOF, OR ADDITIONAL PARTS THERETO (TOGETHER, THE "**SYSTEM**"), ITS FUNCTIONALITY, PERFORMANCE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY; WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE. NORITZ DISCLAIMS ALL OTHER OBLIGATIONS OR LIABILITIES ON ITS PART AND NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON OR ENTITY TO AGREE TO OR ASSUME FOR NORITZ ANY OTHER OBLIGATIONS OR LIABILITIES IN CONNECTION WITH THE SYSTEM.



NORITZ SHALL NOT BE LIABLE FOR ANY CLAIM OR DEMAND BY ANY PERSON OR ENTITY FOR DAMAGES OF ANY KIND, INCLUDING, BUT NOT LIMITED TO SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES, ARISING OUT OF THE SYSTEM, INCLUDING BUT NOT LIMITED TO THE INSTALLATION.

## 2.2 Noritz Common Vent Specifications

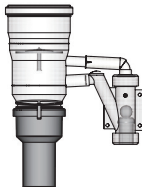
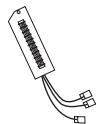

Applicable Model		NCC199CDV (GQ-C3259WZ-FF US) EZ111DV (GQ-C3259WX-FF US) EZ98DV (GQ-C2859WX-FF US)
Venting		Direct vent / Non-Direct Vent (SV)
Termination		Horizontal / Vertical / Horizontal and Vertical
Vent Material	Exhaust	<ul style="list-style-type: none"> <li>• Polypropylene manufactured by Centrotherm Eco System</li> <li>• PVC or CPVC Schedule 40 pipe (See in 9.2 Venting With PVC, CPVC or PP)</li> </ul>
	Intake	<ul style="list-style-type: none"> <li>• Polypropylene manufactured by Centrotherm Eco System</li> <li>• PVC or CPVC Schedule 40 pipe (See in 9.2 Venting With PVC, CPVC or PP)</li> </ul>
Maximum allowable number of units for 1 Common Vent System		NCC199CDV (GQ-C3259WZ-FF US).....6 units EZ111DV (GQ-C3259WX-FF US) .....2 units EZ98DV (GQ-C2859WX-FF US).....2 units <b>"All Common Vent System units must be same model"</b>

## 3. Included Accessories

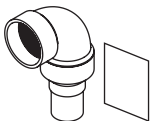
4"PP to 4"PVC Adapter includes the following items.

Part	Part #	Shape	Q'ty	Part	Part #	Shape	Q'ty
4"PP to 4"PVC Adapter	PP4XPVC4-ADAPT		1	Installation Manual (this document)	SBB813N		1

## 4. Required Accessories

Vent parts (only indoor use)							
Part	Part #	Shape	Q'ty	Part	Part #	Shape	Q'ty
Non-Return Valve kit	CDVNRVK		1	System Controller	SC-401-6M		1
Quick Connect Cord	QC-2		1				

## 5. Optional Accessories

Part	Part #	Shape	Q'ty
2" SV Conversion Kit	SV-CK-2		1 each (SV vent)



## 6. Common Venting Guidelines

To ensure the safe and correct installation of the Common Vent System, carefully follow the instructions and guidelines.



### DANGER

#### Checkup

Check the vent pipe yearly for damage or wear. Replace if necessary.



Prohibited

- Do not use cellular core PVC (ASTM F891), cellular core CPVC, or Radel® (polyphenylsulfone) in non-metallic venting system.
- Do not connect the Common Vent System to existing vent (e.g. B-vent or chimney)



Be sure to do

- **Install a Non-Return Valve (check valve) onto each unit.** Use only Non-Return Valve specified in this manual. Do not use any parts not specified in this manual.
- Make sure the vent system is gas-tight and will not leak.



### WARNING



Be sure to do

#### 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, in the U.S. to the National Fuel Gas Code ANSI Z223.1/NFPA 54 – latest edition, and in Canada, in accordance with the Natural Gas and Propane Installation Code CSA B149.1 – latest edition.

#### Preventing Damage from Freezing

Do not install the unit in a place where the inside temperature is below 32°F (0°C).

The Non-Return Valve or Ball-Check Siphon will be frozen and break.

Exhaust may leak into the room.

#### Snow Precaution

If this product will be installed in an area where snow is known to accumulate, protect the vent termination from blockage by snow drifts or damage from snow falling off of roofs.

#### Vent Material

- Centrotherm PP Vent parts or PVC, CPVC material can be used on Air Intake and exhaust.
- For Canadian installation, all materials must be ULC-S636 approved.



Prohibited

- Do not apply the weight of the venting directly to the unit.
- Do not connect vent components to other manufacturer's unit.
- Do not use vent parts if there are signs of damage or dents.
- Do not store hazardous or flammable substances near the vent termination and check that the air intake and termination is not blocked in any way.



Be sure to do

- You must use vent components that are certified and listed in this Installation Manual.
- The exhaust vent system must vent directly to the outside of the building.
- Avoid places in the room where sunlight is directed to the Common Vent System. The Non-Return Valve and Ball-Check Siphon may be damaged by UV light.
- Avoid places where fires are common, such as those where gasoline, benzene and adhesives are handled, or places in which corrosive gases (ammonia, chlorine, sulfur, ethylene compounds, acids) are present.
- Using the incorrect voltage may result in fire or cracking.

## CAUTION



Prohibited

- Vent diameter must not be reduced except for 3" Diameter Common Vent System.
- All Common Vent System units must be same model (e.g. NCC199CDV (GQ-C3259WZ-FF US) and EZ98DV(GQ-C2859WX-FF US) installed with same vent system)



Be sure to do

- The unit dip switch setting must always be set to Common Vent setting (SW1 in dip switches should be set to ON position).
- Steam or condensed water may come out from the vent termination.  
Select the location for the termination so as to prevent injury or property damage.
- When using a horizontal section, slope the horizontal exhaust vent 1/4" upwards for every 12" (300mm) toward the termination to drain condensate by installing supports.
- Support all horizontal and vertical vent runs a minimum of 1 every 3 feet. Support the vent pipe with hangers at regular intervals or as required by local codes.
- Position the units as close as possible to the vent termination.
- Install a 2" SV Conversion Kit (SV-CK-2) onto each unit in Non-Direct Vent configuration.
- Check and clean the Non-Return Valve every 12 months according to the Maintenance instructions in this manual.
- Quick Connect Cord(QC-2) or System Controller (SC-401-6M) must be installed per 1 Common Vent System.
- Install a new Common Vent System with unit. If an existing Common Vent System is reused, thoroughly inspect it for punctures, cracks, or blockages prior to connecting it to the unit.
- To avoid significant rain into the unit, place the Elbow or Termination Tee on the end of the termination vent pipe.
- Insert Bird Screen in the end of termination.
- Ensure that the vent termination is at least 12" (305mm) above ground, 12" (305mm) above the highest anticipated snow level, or as required by local codes, whichever is greater.

### Recommendation

- Noritz recommends replacing the Non-Return Valve when replacing the unit.
- Install the Common Vent System length as short as possible.

# 7. Installation 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.

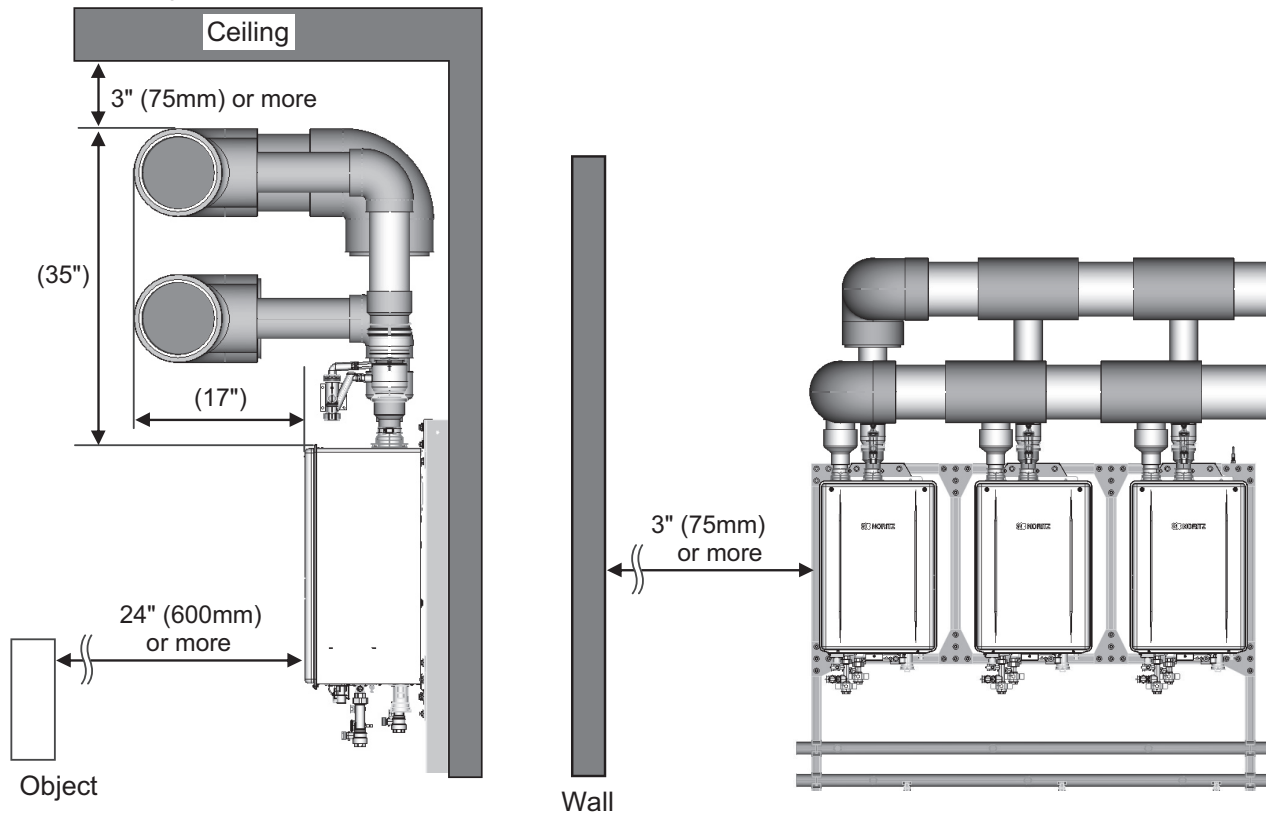
## Water Heater Clearances

Item	Check	Illustration
Distance from combustibles	<ul style="list-style-type: none"> <li>Maintain the following clearances from both combustible and non-combustible materials.</li> </ul>	
Cooking Equipment	<p>&lt;When the indoor air supply&gt;</p> <ul style="list-style-type: none"> <li>If the unit will be installed in the vicinity of a permanent kitchen range or stove that has the possibility of generating steam that contains fats or oils, use a dividing plate or other measure to ensure that the unit is not exposed to air containing such impurities.</li> <li>* The dividing plate should be of non-combustible material of a width greater than the water heater.</li> </ul>	

## Clearances for installation / repair / inspection

Exhaust vent parts (Refer to 9.2) can be installed at zero clearance to combustible materials. In order to facilitate inspection and repair it is recommended to leave minimum clearances as below:

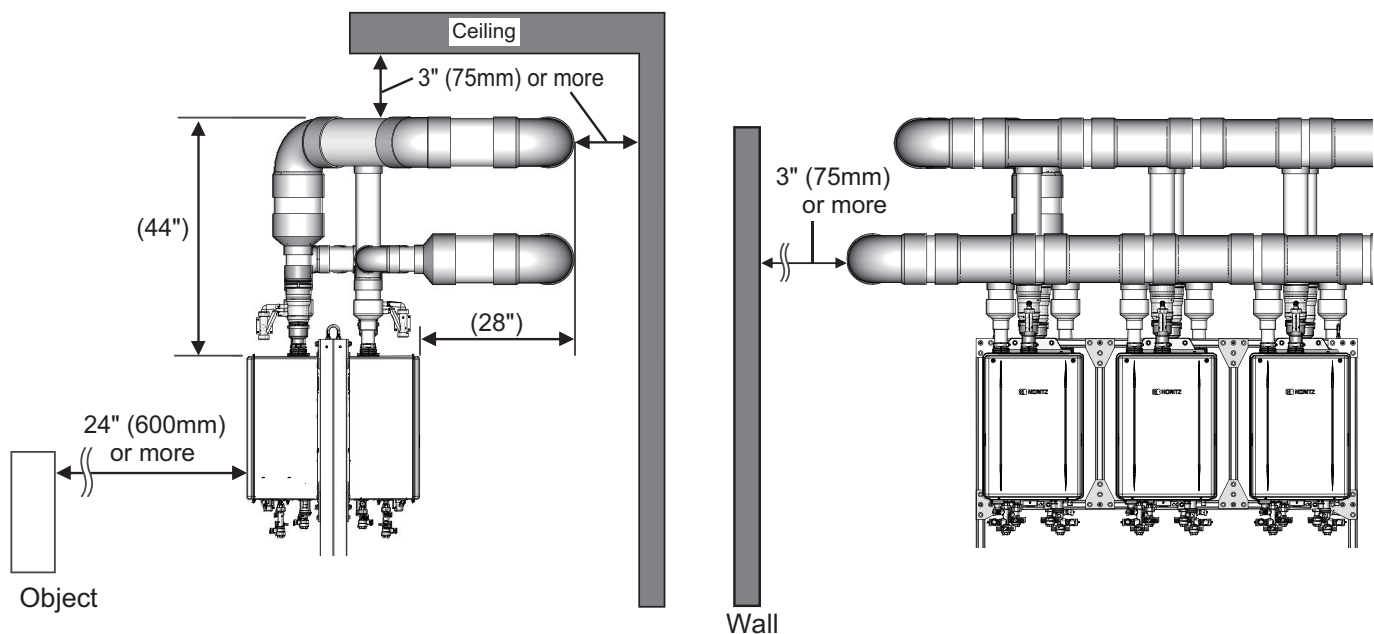
### <In Line Configuration>



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

### <Back to Back Configuration>

- If a back to back configuration utilizing the Noritz Commercial Water Heating System (CWHs) is needed.

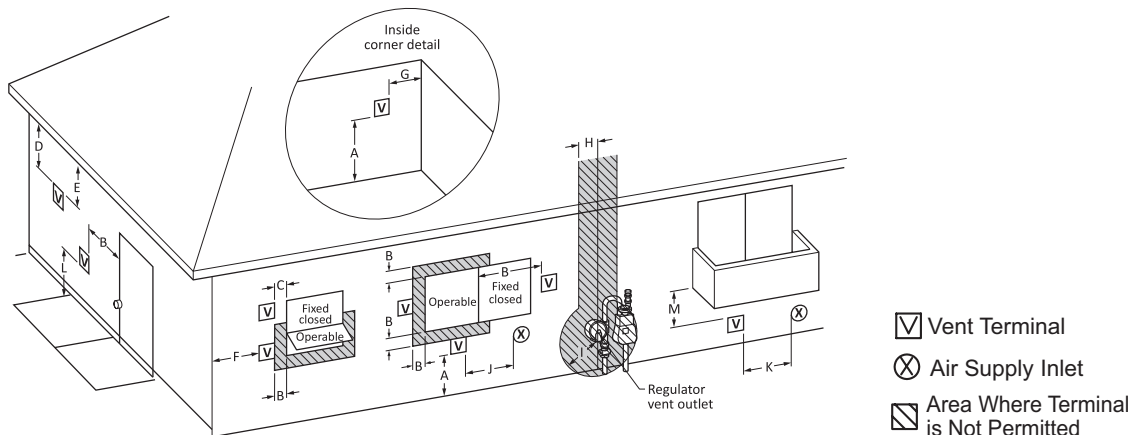


e.g. 8" Vent Diameter - Back to Back Configuration

## 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 <sup>1</sup>	US Direct Vent Installations <sup>2</sup>
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)‡	*

<sup>1</sup> In accordance with the current CSA B149.1 Natural Gas and Propane Installation Code

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

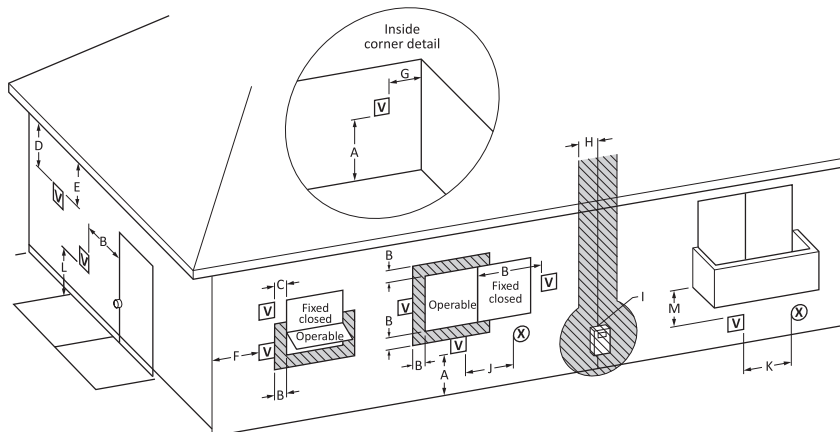
† A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.

‡ 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.



- ☑ Vent Terminal
- ⊗ Air Supply Inlet
- ▧ Area Where Terminal is Not Permitted

Ref	Description	Canadian Non-Direct Vent Installation <sup>1</sup>	US Non-Direct Vent Installation <sup>2</sup>
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)‡	*

<sup>1</sup> In accordance with the current CSA B149.1 Natural Gas and Propane Installation Code

<sup>2</sup> 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).

# 8. Unit Installation and Settings

## 8.1 Unit Installation

- Install the units in accordance with unit's installation manual.

## 8.2 Unit Settings

Adjust the dip switches as follows. **These dip switches settings must be done on all units.** Disconnect power to the unit before changing the dip switches.

Failure to perform this step will result in a "73" code displayed on the remote controller and a cease in operation.

If this occurs, disconnect, then reconnect power to the unit to reset the system.



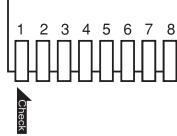
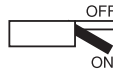
The power must be unplugged when adjusting the dip switches to switch the airflow amount.

\*Do not change any other dip switches.

Common Vent setting

Dip Switch # 1

ON



Note : Refer to the unit's installation manual for the location of the dip switch bank.

When using a "Non-Direct Vent" configuration

Adjust the dip switches to Non-Direct Vent setting if you install Non-Direct Vent system.

Refer to unit's installation manual.

Elevation Adjustment Above 2,000ft

Adjust the dip switches in accordance with the unit's installation manual if units are installed at an altitude of 2000 ft. (610m) or higher.



# 9. Vent Pipe Installation

## 9.1 Determining the Vent Diameter of Common Vent

Table 1: Vent Diameter and Maximum Equivalent vent Length (PVC or CPVC Schedule 40 Pipe)

Model	Configuration	Number of Units	Vent Diameter(inch) and Maximum Equivalent Vent Length (feet)			
			3"	4"	6"	8"
EZ98DV(GQ-C2859WX-FF US)	Both Direct Vent(DV) and Non-Direct Vent(SV)	2	28*	130*	200	
EZ111DV(GQ-C3259WX-FF US)		2	18*	95*	200	
NCC199CDV(GQ-C3259WZ-FF US)		2	18*	95*	200	
		3	N/A	39*	155*	200
		4	N/A	N/A	90*	200
		5	N/A	N/A	50*	150*
		6	N/A	N/A	35*	130*

\*The BTUH input of the unit will be reduced by up to 9%.

Table 2: Equivalent Length of each Elbow

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

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" w.c.

### How to determine the Vent diameter of Common Vent

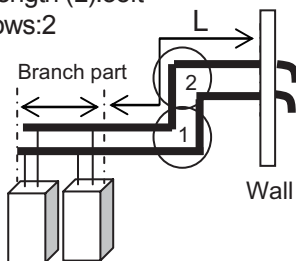
*Total Equivalent Vent Length (TL) = Straight Vent Length (L) + Equivalent Length of Elbows*

- TL shall be less than the value in Table 1.
- Count the number of elbows and multiply equivalent length of each elbow in accordance with Table 2.
- A termination elbow has already been counted and does not need to be added.
- Branch part has already been counted and does not need to be added.

[Calculation example]

<Example. 1>

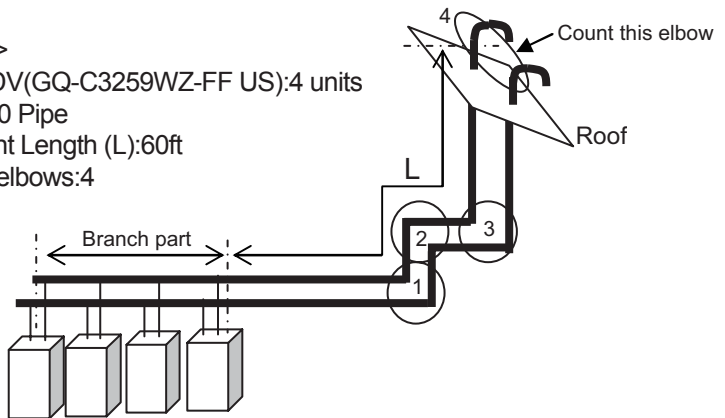
- EZ98DV(GQ-C2859WX-FF US):2 units
- Schedule 40 Pipe
- Straight Vent Length (L):35ft
- Number of elbows:2



Total Equivalent length  
= 35ft + 2 x 18ft (6" Elbow)  
= **71ft** < 200ft (Refer to Table 1)  
> 6" vent system is suitable <

<Example. 2>

- NCC199CDV(GQ-C3259WZ-FF US):4 units
- Schedule 40 Pipe
- Straight Vent Length (L):60ft
- Number of elbows:4



Total Equivalent length  
= 60ft + 4 x 18ft (6" Elbow) = **132ft** > 90ft (Refer to Table 1)  
> 6" vent system is NOT suitable <  
= 60ft + 4 x 20ft (8" Elbow) = **140ft** < 200ft (Refer to Table 1)  
> 8" vent system is suitable <

## 9.2 Venting With PVC, CPVC or PP

### Venting With PVC, CPVC or PP

This appliance can be vented with non cellular core plastic pipe materials as specified in the below table. Vent installations in Canada which utilize plastic vent systems must comply with ULC S636.

Item	Material	United States	Canada
Exhaust Vent / Air Intake	Schedule 40 PVC	ANSI/ASTM D1785	CSA B137.3
	PVC-DWV	ANSI/ASTM D2665	CSA B181.2
	Schedule 40 CPVC	ANSI/ASTM F441	CSA B137.3
	Polypropylene*	Centrotherm-InnoFlue® (certified ULC 636S)	
Pipe Cement / Primer	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 system is prohibited.			

\* Polypropylene : Only listed manufacture specified vent parts may be used for this appliance. Refer to the manufacture's literature for detailed information.

### PVC / CPVC / PP Installation Instructions

- Refer to Installation Manual in Non-Return Valve Kit when installing PP vent pipe.
- 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 CPVC or PP.**
- This PP4XPVC4-ADAPT is made from CPVC. **When using PVC pipe, use Multi-Purpose Cement to adhere PVC pipe and PP4XPVC4-ADAPT.**
- Use only solid PVC / CPVC (schedule 40) or PP pipe. Cellular foam core piping is not allowed
- Covering non-metallic vent pipe and fittings with thermal insulation is prohibited.
- In Canada, plastic vent systems must be certified to ULC S636. The components of the certified vent system must not be interchanged with other vent systems or unlisted pipe/fittings.
- In Canada, specified primers and glues of the ULC S636 certified vent system must be from a single system manufacturer and not intermixed with other system manufacturer's vent system parts.
- Follow all general venting guidelines as outlined on this page.
- PVC, CPVC or PP pipe has been approved for use on this appliance with zero clearance to combustibles.
- The pipe shall be installed so that the first 3' (0.9m) of pipe from the appliance flue outlet is readily accessible for visual inspection.
- When preparing and assembling the pipe, follow instructions as provided by the pipe manufacturer. In general, the following practices must be observed:
  - Squarely cut all pieces of pipe.
  - Remove all burs and debris from joints and fittings.
  - All joints must be properly cleaned, primed, and cemented. Use only cement and primer approved for use with the pipe material as outlined in the above table.



## WARNING

### CARBON MONOXIDE POISONING

Failure to properly seal the vent system could cause flue products to enter the living space.

- All piping must be fully supported. Use pipe hangers at a minimum of 3' (0.9m) intervals. Do not use the water heater to support the vent piping.
- A bird screen must be installed on the vent terminations to prevent debris or animals from entering the piping. These screens are not supplied with the water heater and must be purchased separately.

## 9.3 Vent Installation for Direct Vent Configuration

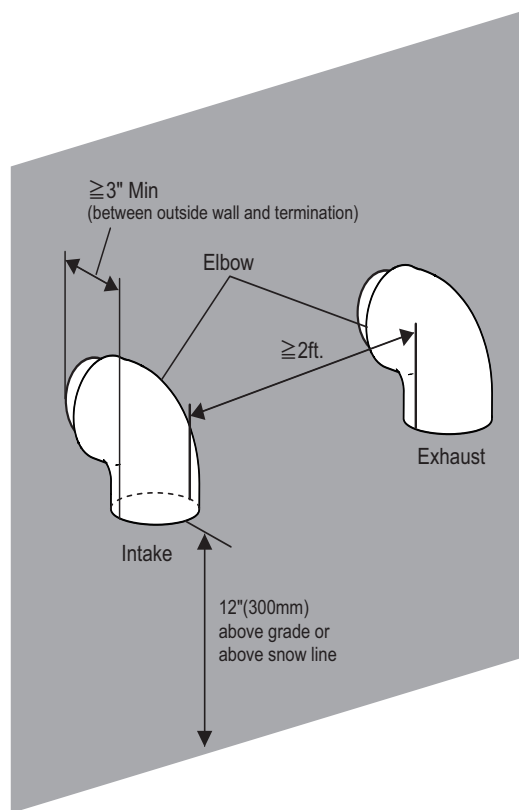
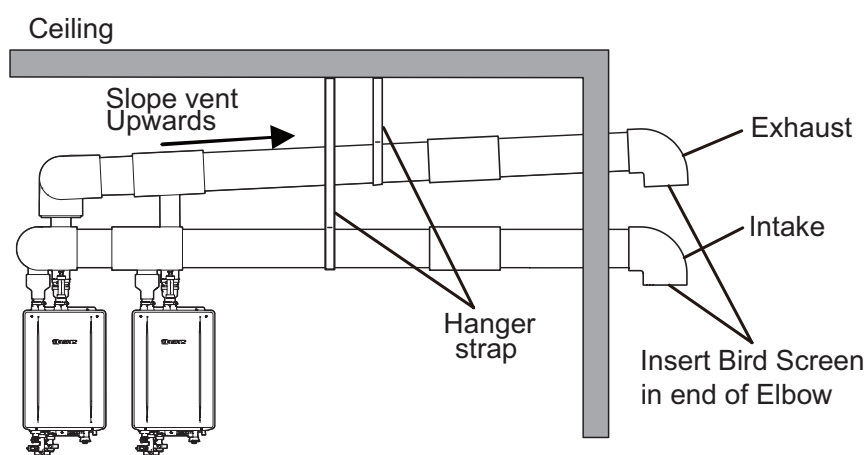
### 9.3.1 Vent termination



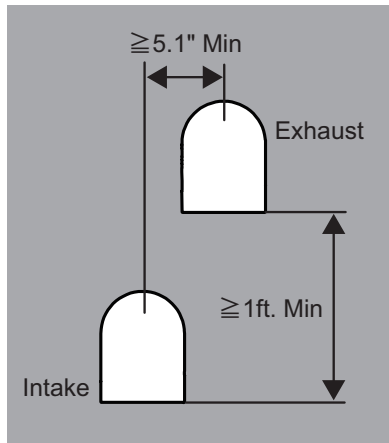
## WARNING

- If the distance between the air inlet and exhaust vent terminations is too short, the unit will draw in the exhaust gases through the intake. There is a risk of inadequate combustion air for the unit, 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.

#### (1) Horizontal Vent Termination



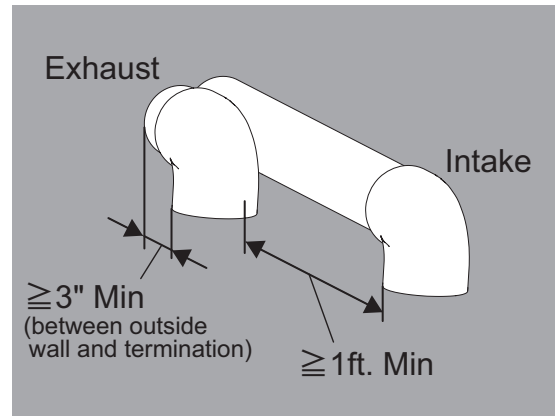
- Make sure to keep a distance of 2 ft (0.6m) or wider between the intake and exhaust when installing the vent piping. The distance is measured at inside of pipe to inner dimension. If 2 ft (0.6m) distance between Intake and Exhaust cannot be ensured, the installation can be carried out only in the installation method shown on the follow page.
- Terminate at least 12" (300mm) above grade or above snow line.
- Slope the horizontal vent 1/4" upwards for every 12" (300mm) toward the termination.
- In the Commonwealth of Massachusetts a carbon monoxide detector is required for all side wall horizontally vented gas fuel equipment. Please refer to Technical Bulletin TB 010606 for full installation instructions.
- Intake and exhaust should face the same direction. Intake and exhaust must be terminated in the same pressure zone (plane).
- Ensure at least 3ft (0.9m) or more distance between the near edge of the air intake pipe or exhaust pipe to the inside corner of a wall.



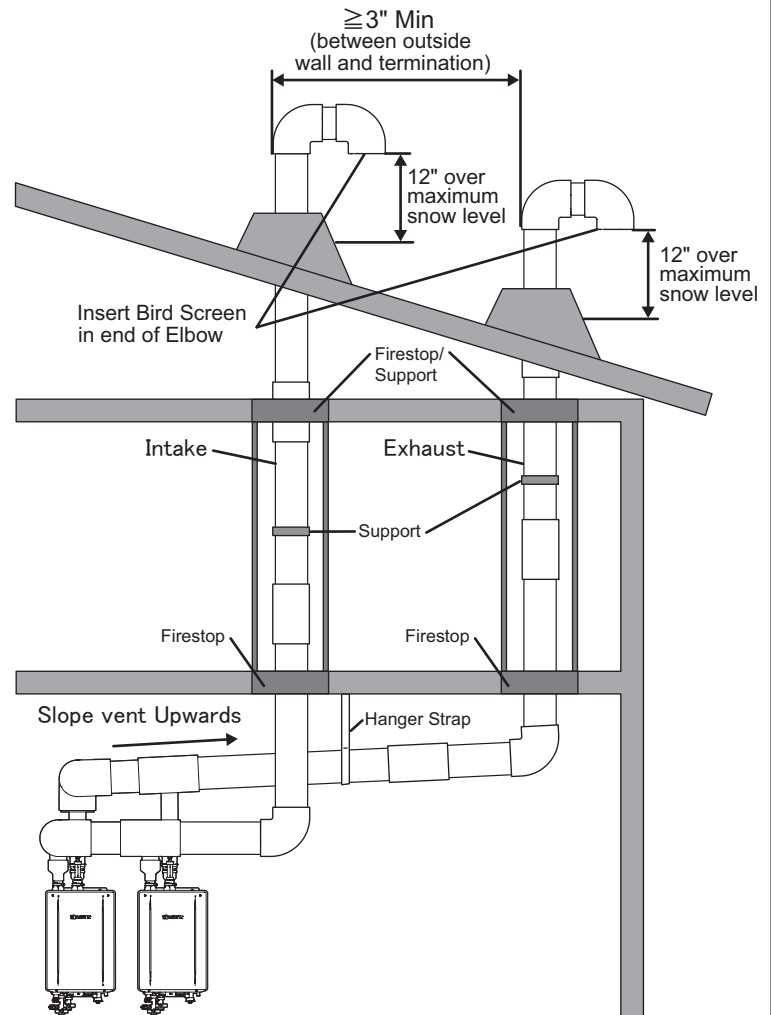
- Upper side is exhaust, lower side is intake. The reverse orientation is not allowed.
- Ensure at least 1ft (0.3m) or more distance between intake pipe and exhaust pipe. The distance is measured at the outlets of intake port (terminal) and exhaust port (terminal).

## (2) Vertical Vent Termination

- As illustrated on the right, make sure to keep a distance of 3 ft (0.9m) or wider between the intake and exhaust when installing the vent piping.
- Terminate at least 3 ft (0.9m) from the combustion air intake of any appliance and any other building opening.
- To prevent excessive condensation formation, only the vent termination should be located on the exterior of the building.
- When the vent penetrates a floor or ceiling and is not running in a fire rated shaft, a firestop and support is required.
- When the vent termination is located not less than 8 ft (2.4m) from a vertical wall or similar obstruction, terminate above the roof at least 2 ft (0.6m), but not more than 6 ft (1.87m), in accordance with the National Fuel Gas Code ANSI Z223.1/NFPA 54 or Natural Gas and Propane Installation Code CSA B149.1.
- Provide vertical support every 3 ft (0.9m) or as required by the vent pipe manufacturer's instructions.
- A short horizontal section is recommended to prevent debris from falling into the unit.
- When using a horizontal section, slope the horizontal exhaust vent 1/4" upwards for every 12" (300mm) toward the termination to drain condensate.

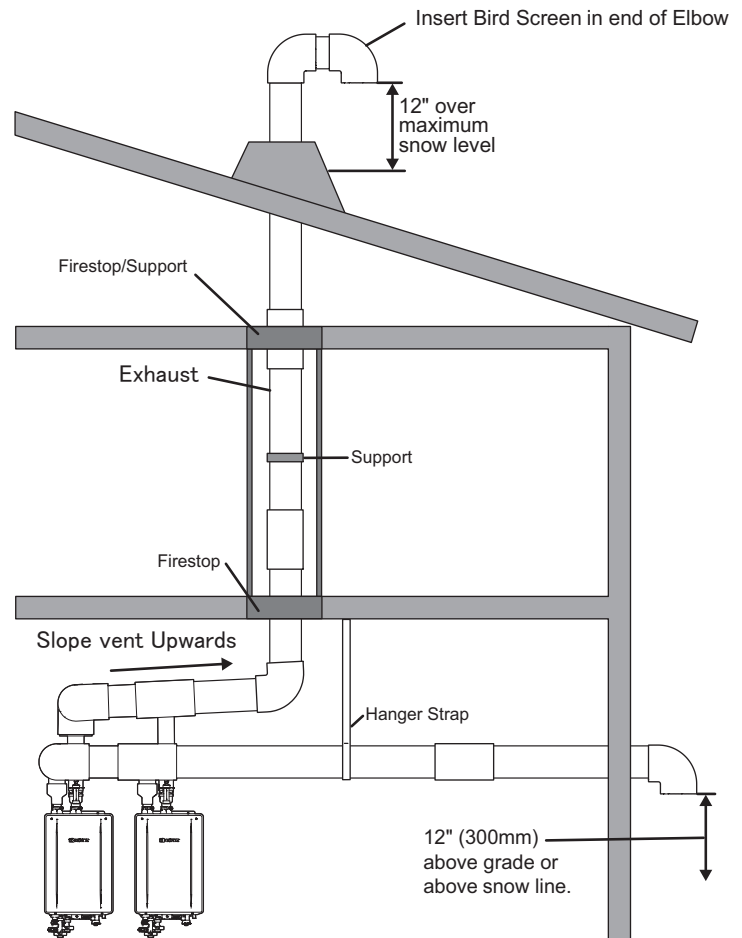


- The side distant from wall is intake, the side near the wall is exhaust. The reverse orientation is not allowed.
- Ensure at least 1ft (0.3m) or more distance between intake pipe and exhaust pipe. The distance is measured at inside of pipe to inner dimension.

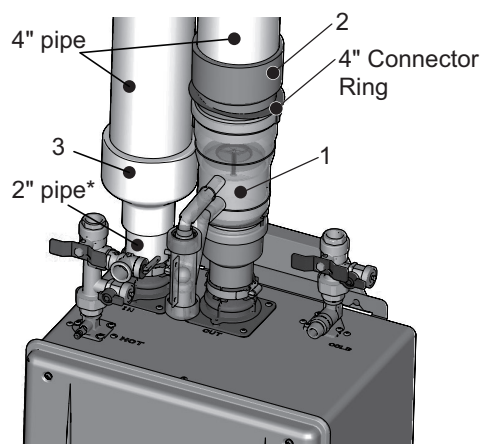


### (3) Vertical Exhaust Vent Termination and Horizontal Air Intake Termination

- Terminate at least 12" (300mm) above grade or above snow line.
- In the Commonwealth of Massachusetts a carbon monoxide detector is required for all side wall horizontally vented gas fuel equipment. Please refer to Technical Bulletin TB 010606 for full installation instructions.
- Terminate at least 3 ft (0.9m) from the combustion air intake of any appliance and any other building opening.
- To prevent excessive condensation formation, only the vent termination should be located on the exterior of the building.
- When the vent penetrates a floor or ceiling and is not running in a fire rated shaft, a firestop and support is required.
- When the vent termination is located not less than 8 ft (2.4m) from a vertical wall or similar obstruction, terminate above the roof at least 2 ft (0.6m), but not more than 6 ft (1.87m), in accordance with the National Fuel Gas Code ANSI Z223.1/NFPA 54 or Natural Gas and Propane Installation Code CSA B149.1.
- Provide vertical support every 3 ft (0.9m) or as required by the vent pipe manufacturer's instructions.
- A short horizontal section is recommended to prevent debris from falling into the unit.
- When using a horizontal section at exhaust line, slope the horizontal exhaust vent 1/4" upwards for every 12" (300mm) toward the termination to drain condensate.



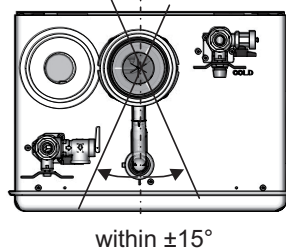
### 9.3.2 Assembling the Common Vent around the units <Common items>



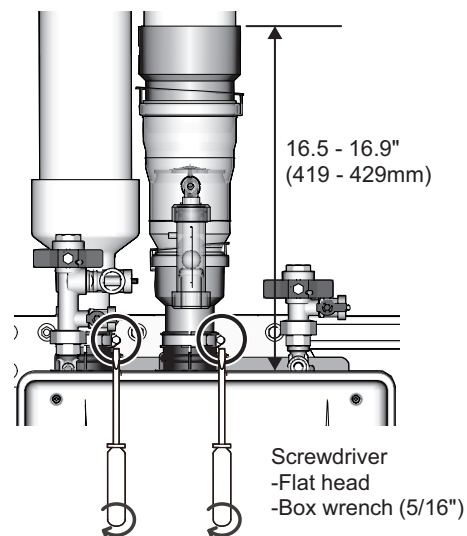
Install 4" Connector Ring included in CDVNRVK between Non-Return Valve and 4"PP to 4"PVC Adapter.  
Continue to insert the male-side of Non-Return Valve until it reaches to the base of the unit Intake and Exhaust Flue. (The vent pipe will be inserted approximately 2.3" (60mm))

**\*Install the 2" pipe length as short as possible.**

**The overall length should be within 6" (150mm).**



Ball-Check Siphon of Non-Return Valve SET should be within  $\pm 15^\circ$ .



Secure the Vent Pipe by tightening the band using a screwdriver. (The tightening torque shall be between 16 and 20 in lb.)

#### <Required vent parts>

No.	Part	Part #	Q'ty
1	Non-Return Valve Kit	CDVNRVK	1 each unit
2	4"PP to 4"PVC-Adapter	PP4XPVC4-ADAPT	1 each unit

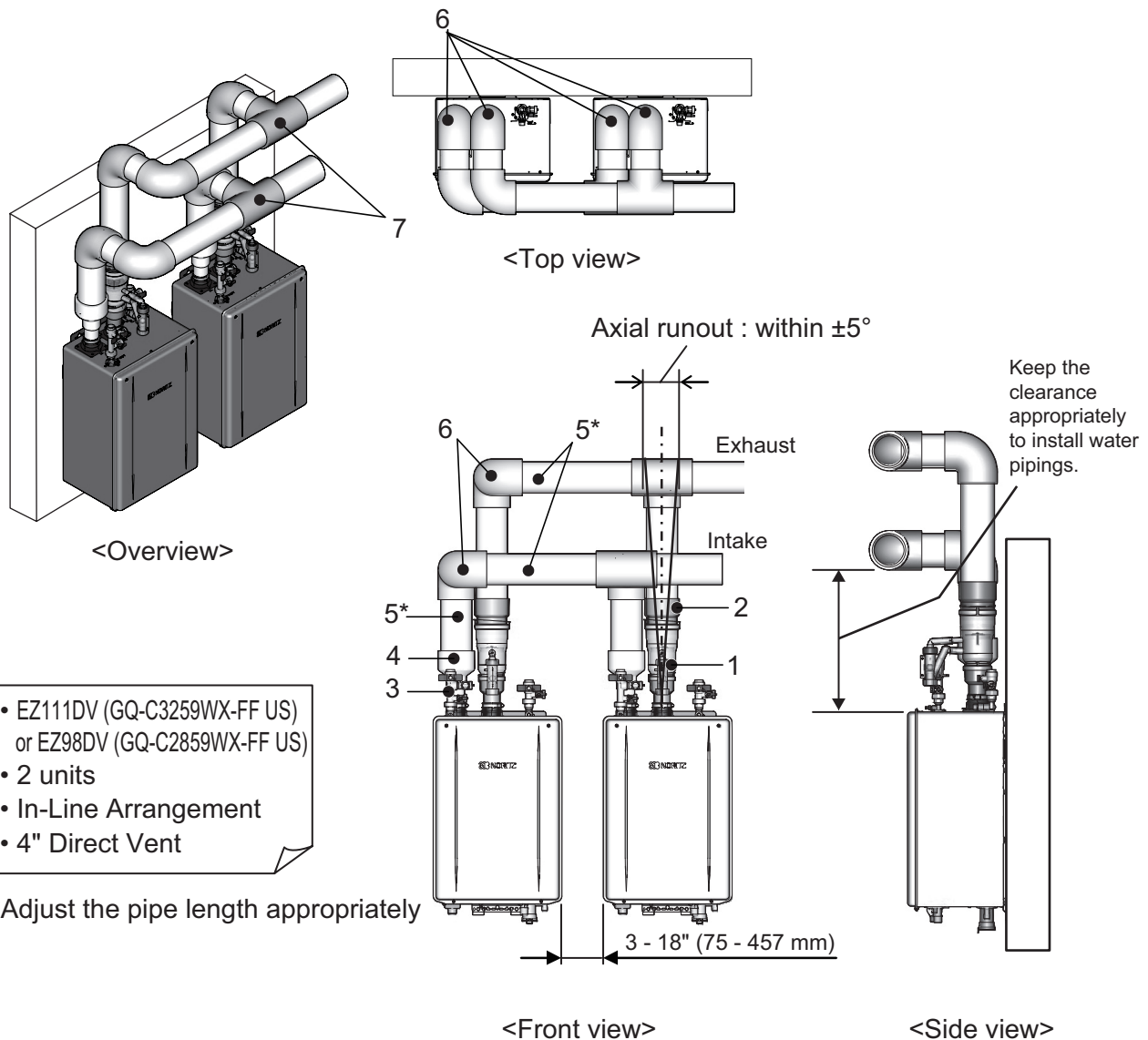
No.	Part	Q'ty
3	4" to 2" Reducer	1 each unit

### 9.3.3 Contents of Sample Installation Case (for Direct Vent)

Case	Model	Number of Units	Diameter	Unit Arrangement	Intake/Exhaust Direction	Page
1	EZ111DV (GQ-C3259WX-FF US) EZ98DV (GQ-C2859WX-FF US)	2	4"	In-line	Right	18
2	EZ111DV (GQ-C3259WX-FF US) EZ98DV (GQ-C2859WX-FF US)	2	3"	In-line	Right	19
3	NCC199CDV (GQ-C3259WZ-FF US)	6	8"	In-line	Right	20
4	NCC199CDV (GQ-C3259WZ-FF US)	6	8"	Back to Back	Right	21
5	NCC199CDV (GQ-C3259WZ-FF US)	6	8"	Back to Back	Left	22

## (DV Case.1) Quick Connect (2 units) system, EZ111 / 98DV

Below is a typical installation case. It's possible to shorten the overall length of No. 5 in accordance with job site ceiling height.



- EZ111DV (GQ-C3259WX-FF US)  
or EZ98DV (GQ-C2859WX-FF US)
- 2 units
- In-Line Arrangement
- 4" Direct Vent

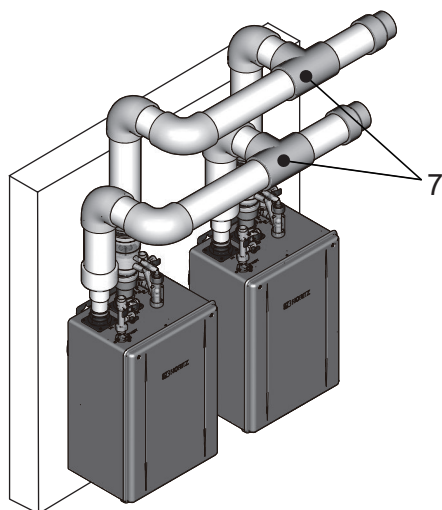
\*Adjust the pipe length appropriately

No.	Part	Part #	Q'ty
1	Non-Return Valve Kit	CDVNRVK	2
2	4"PP to 4"PVC-Adapter	PP4XPVC4-ADAPT	2
3	2" Pipe		2
4	4" to 2" Reducer Coupling		2
5	4" Pipe		12
6	4" Elbow		6
7	4" Tee		2

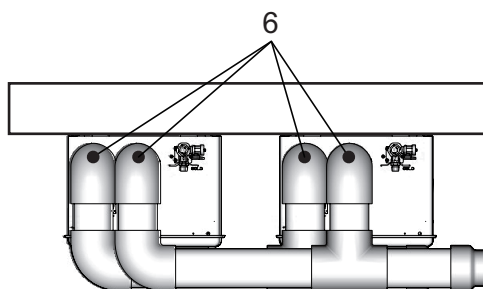


## (DV Case.2) Quick Connect (2 units) system, 3" Vent Diameter

Below is a typical installation case. It's possible to shorten the overall length of No. 5 in accordance with job site ceiling height.



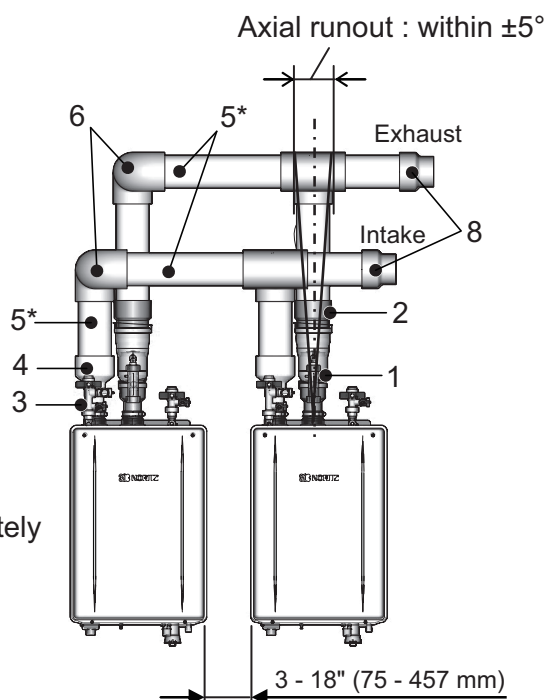
<Overview>



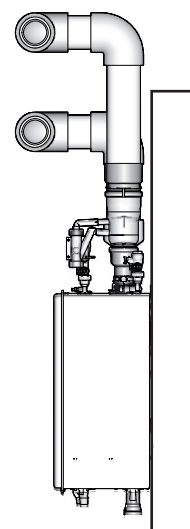
<Top view>

- EZ111DV(GQ-C3259WX-FF US)  
or EZ98DV (GQ-C2859WX-FF US)
- 2 units
- In-Line Arrangement
- 3" Direct Vent

\*Adjust the pipe length appropriately



<Front view>

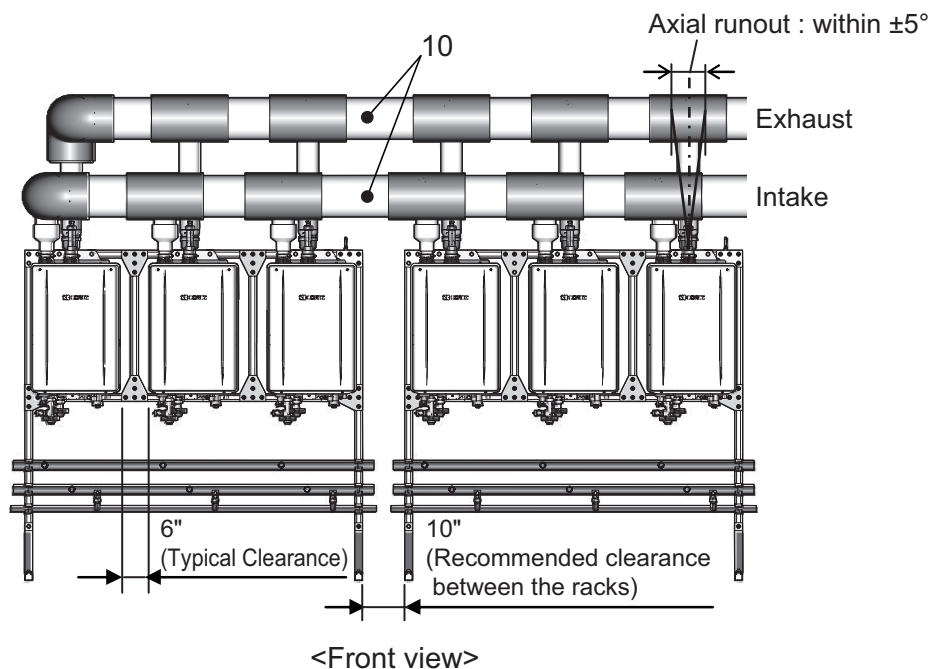


<Side view>

No.	Part	Part #	Q'ty	No.	Part	Part #	Q'ty
1	Non-Return Valve Kit	CDVNRVK	2	5	4" Pipe		12
2	4"PP to 4"PVC-Adapter	PP4XPVC4-ADAPT	2	6	4" Elbow		6
3	2" Pipe		2	7	4" Tee		2
4	4" to 2" Reducer Coupling		2	8	4" to 3" Reducer Coupling		2

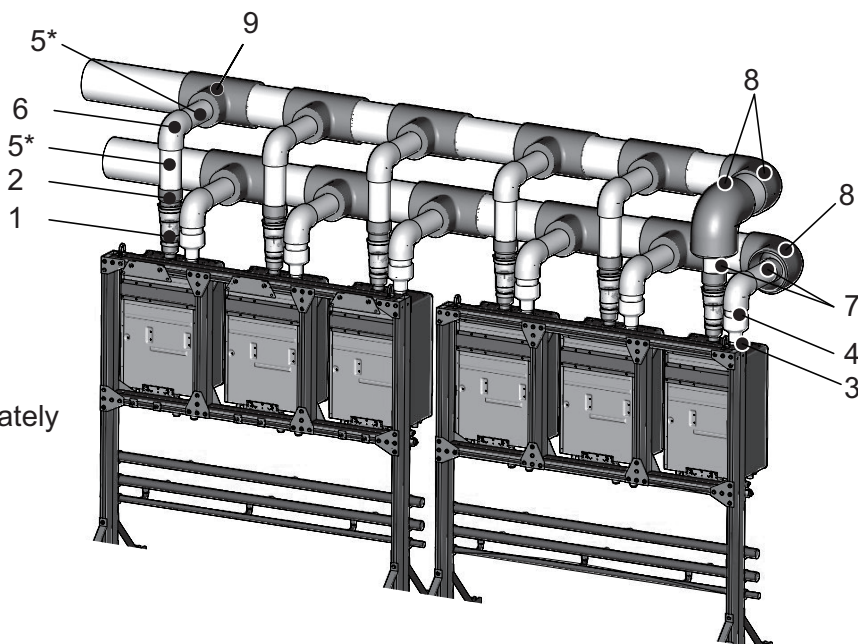
## (DV Case.3) 6units Multi system, In-line Arrangement

Below is a typical installation case. It's possible to shorten the overall length of No. 5 in accordance with job site ceiling height.



- NCC199CDV  
(GQ-C3259WZ-FF US)
- 6 units
- In-Line Arrangement
- 8" Direct Vent

\*Adjust the pipe length appropriately

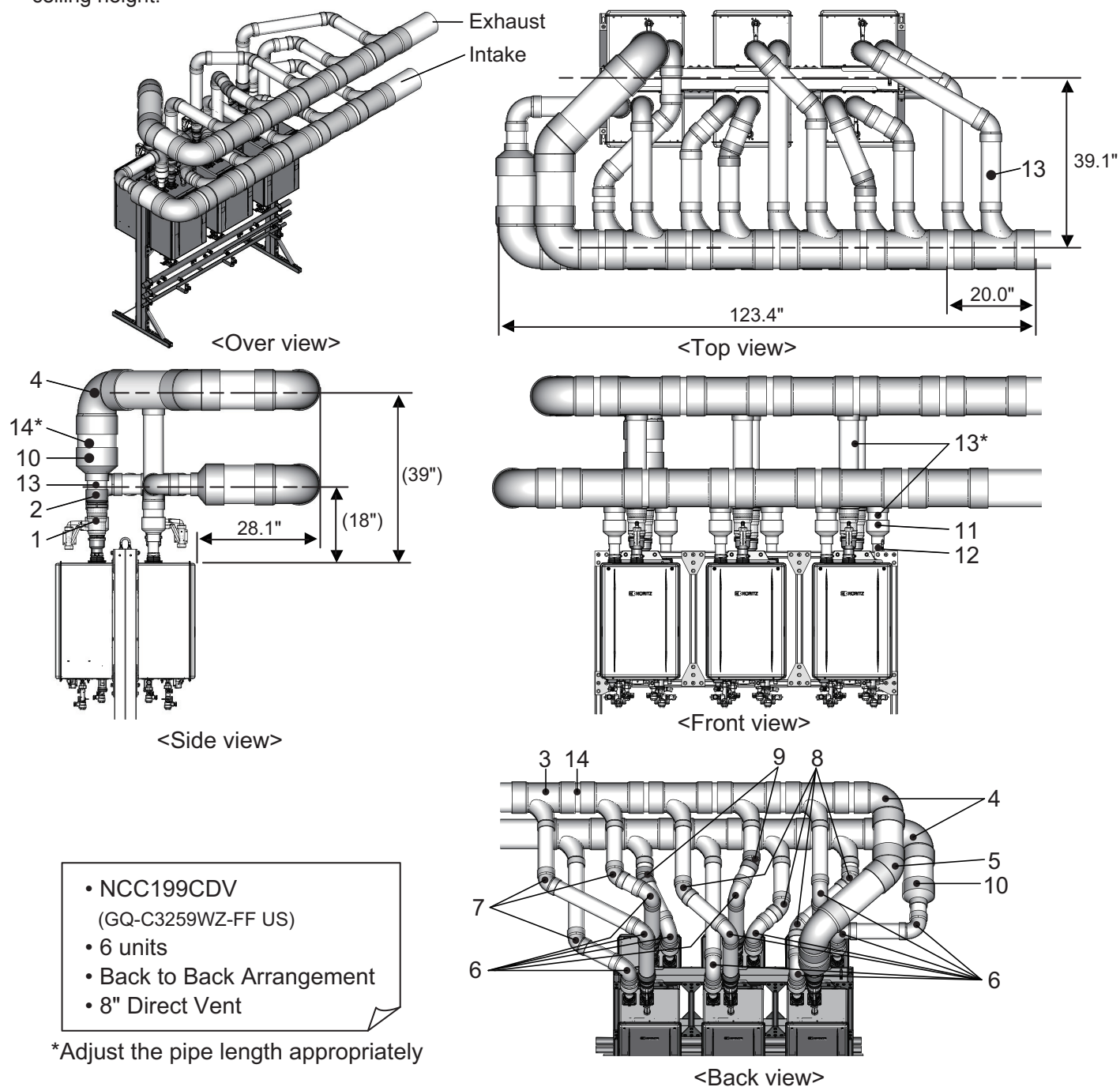


No.	Part	Part #	Q'ty
1	Non-Return Valve Kit	CDVNRVK	6
2	4"PP to 4"PVC-Adapter	PP4XPVC4-ADAPT	6
3	2" Pipe		6
4	4" to 2" Reducer Coupling		6
5	4" Pipe		23

No.	Part	Part #	Q'ty
6	4" Elbow		11
7	8" to 4" Reducer Bushing		2
8	8" Elbow		3
9	8" to 4" Reducing Tee		10
10	8" Pipe		13

## (DV Case.4) 6units Multi system, Back to Back Arrangement, Right Side

Below is a typical installation case. It's possible to shorten the overall length of No. 13 in accordance with job site ceiling height.

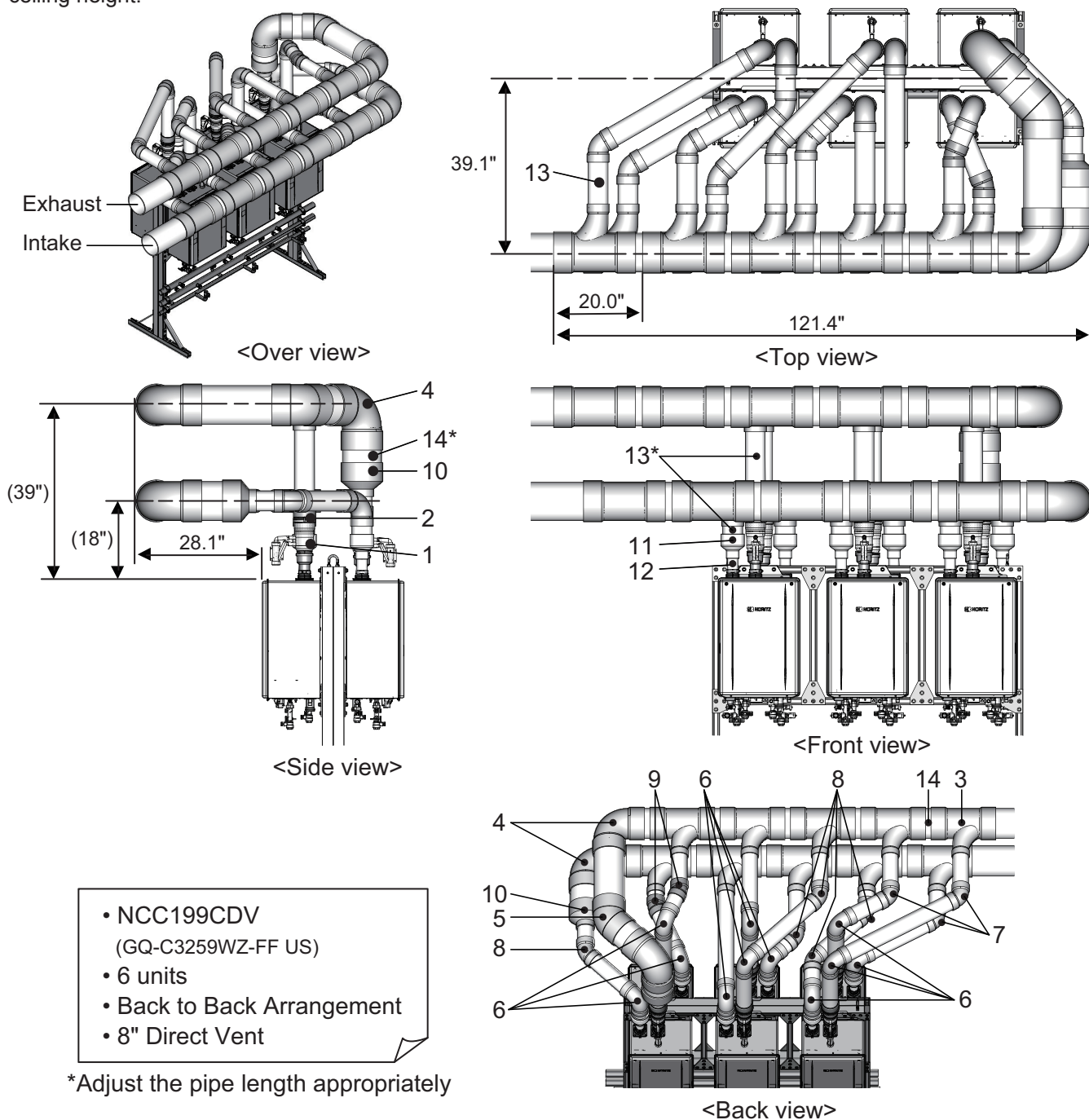


No.	Part	Part #	Q'ty
1	Non-Return Valve Kit	CDVNRVK	6
2	4"PP to 4"PVC-Adapter	PP4XPVC4-ADAPT	6
3	8"x8"x4" Reducing Tee		10
4	8" 90°Elbow		3
5	8" 45°Elbow		1
6	4" 90°Elbow		12
7	4" 60°Elbow		3

No.	Part	Part #	Q'ty
8	4" 45°Elbow		4
9	4" 22.5°Elbow		2
10	4"x8" Increaser		2
11	2"x4" Increaser		6
12	2" Pipe		6
13	4" Pipe		33
14	8" Pipe		14

## (DV Case.5) 6units Multi system, Back to Back Arrangement, Left Side

Below is a typical installation case. It's possible to shorten the overall length of No. 13 in accordance with job site ceiling height.



## 9.4 Vent Installation for Non-Direct Vent configuration

### DANGER

When installing this unit in an area with a large amount of lint such as a commercial Laundromat, direct-vent ("-DV") system must be used. The "-SV" configuration (using an SV conversion kit) is prohibited.

- Adjust the dip switches to Non-Direct Vent (SV) setting. Refer to unit's installation manual.
- SV Conversion kit #SV-CK-2 is required for the air intake.

### WARNING

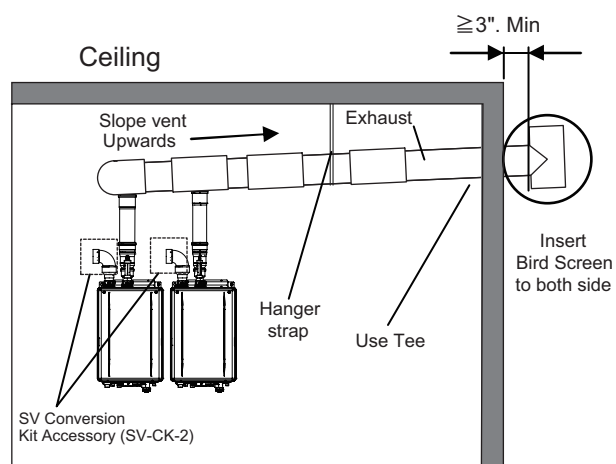
Failure to perform the above 2 steps could result in a fire or explosion causing property damage, personal injury or death. Refer to the instructions provided with the conversion kit for additional details.

- Noritz recommends to install a Carbon Monoxide Alarm in installation site of the unit when supplying combustion air from the indoors.

### 9.4.1 Vent termination

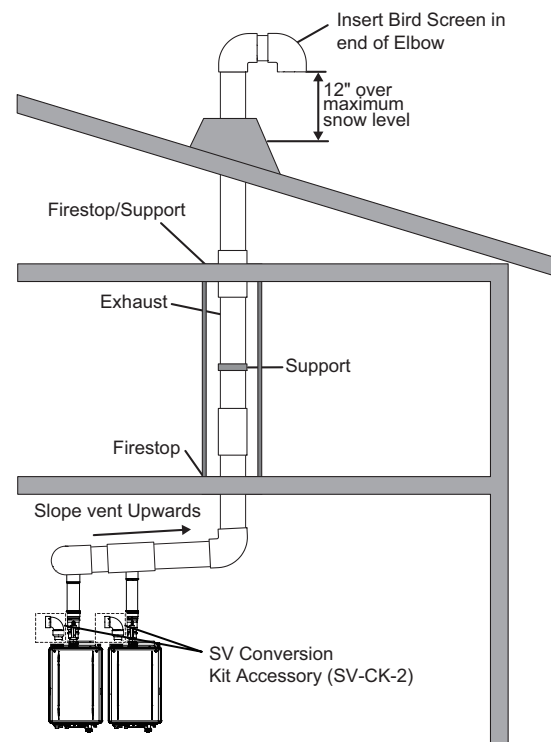
#### (1) Horizontal Vent Termination

- A Termination Tee may be used for the vent termination.
- Terminate at least 12" (300mm) above grade or above snow line.
- Slope the horizontal vent 1/4" upwards for every 12" (300mm) toward the termination.
- In the Commonwealth of Massachusetts a carbon monoxide detector is required for all side wall horizontally vented gas fuel equipment. Please refer to Technical Bulletin TB 010606 for full installation instructions.



## (2) Vertical Vent Termination

- Terminate at least 3 ft (0.9m) from the combustion air intake of any appliance and any other building opening.
- To prevent excessive condensation formation, only the vent termination should be located on the exterior of the building.
- When the vent penetrates a floor or ceiling and is not running in a fire rated shaft, a firestop and support is required.
- When the vent termination is located not less than 8 ft (2.4m) from a vertical wall or similar obstruction, terminate above the roof at least 2 ft (0.6m), but not more than 6 ft (1.87m), in accordance with the National Fuel Gas Code ANSI Z223.1/NFPA 54 or Natural Gas and Propane Installation Code CSA B149.1.
- Provide vertical support every 3 ft (0.9m) or as required by the vent pipe manufacturer's instructions.
- A short horizontal section is recommended to prevent debris from falling into the unit.
- When using a horizontal section, slope the horizontal exhaust vent 1/4" upwards for every 12" (300mm) toward the termination to drain condensate.



## 9.4.2 Combustion Air Supply

Supply combustion air to the units as per the National Fuel Gas Code, ANSI Z223.1- latest edition and in Canada, in accordance with the Natural Gas and Propane Installation Code CSA B149.1-latest edition.

**Provide adequate combustion air so as to not create negative pressure within the building.**

- Provide two permanent openings to allow circulation of combustion air.
- A minimum free area of each openings per unit.

Installation Unit	BTUH	Indoor make up air* is provided	Outdoor make up air is provided	
			Direct or Vertical ducts	Horizontal ducts
NCC199CDV(GQ-C3259WZ-FF US) EZ111DV(GQ-C3259WX-FF US)	199.9 kbtuh	200 in <sup>2</sup> 20" (W) x 10" (H)	50 in <sup>2</sup> 10" (W) x 5" (H)	100 in <sup>2</sup> 20" (W) x 5" (H)
EZ98DV(GQ-C2859WX-FF US)	180 kbtuh	180 in <sup>2</sup> 20" (W) x 9" (H)	45 in <sup>2</sup> 10" (W) x 4 1/2" (H)	90 in <sup>2</sup> 20" (W) x 4 1/2" (H)

\*e.g. 6 units of NCC199CDV(GQ-C3259WZ-FF US) : 6 units x 200 in<sup>2</sup> = 1200 in<sup>2</sup> make up air

- If the unit is installed in a mechanical closet, a minimum of permanent clearance of 4" or more in front of the unit is required. A 24" or more clearance is recommended in order to facilitate maintenance and repair.
- If combustion air will be provided through a duct, size the duct to provide as below.

NCC199CDV(GQ-C3259WZ-FF US) :

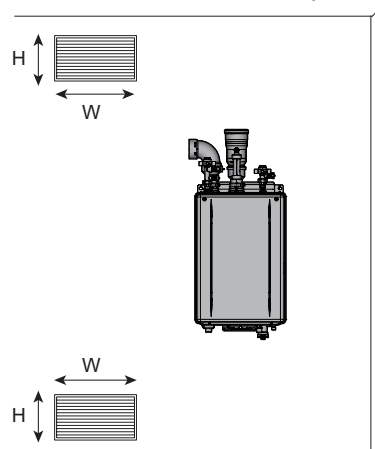
70 cubic feet of fresh air per minute per unit.

EZ111DV(GQ-C3259WX-FF US) :

70 cubic feet of fresh air per minute per unit.

EZ98DV(GQ-C2859WX-FF US) :

63 cubic feet of fresh air per minute per unit.

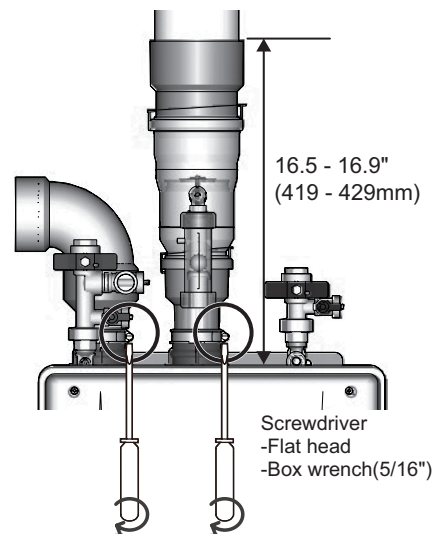
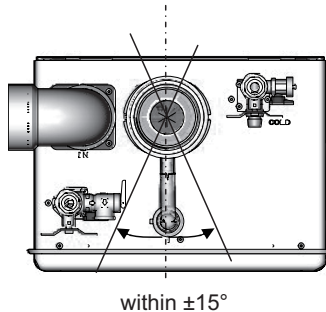
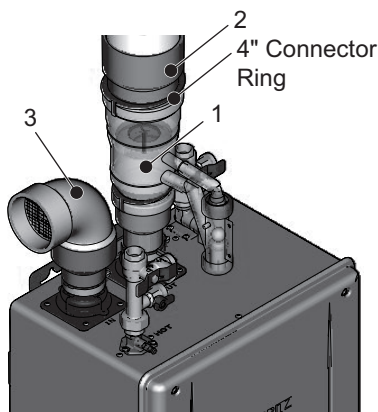


Openings supplying indoor air per 1 unit



### 9.4.3 Assembling the Common Vent around the units (for Non-Direct Vent)

#### <Common items>



Install 4" Connector Ring included in CDVNRVK between Non-Return Valve and 4"PP to 4"PVC Adapter. Continue to insert the male-side of Non-Return Valve until it reaches to the base of the unit Intake and Exhaust Flue. (The vent pipe will be inserted approximately 2.3" (60mm).)

Ball-Check Siphon of Non-Return Valve should be within  $\pm 15^\circ$ .

Secure the Vent Pipe by tightening the band using a screwdriver. (The tightening torque shall be between 16 and 20 in. lb.)

#### <Required vent parts>

No.	Part	Part #	Q'ty
1	Non-Return Valve Kit	CDVNRVK	1 each unit
2	4"PP to 4"PVC-Adapter	PP4XPVC4-ADAPT	1 each unit
3	2" SV Conversion Kit	SV-CK-2	1 each unit

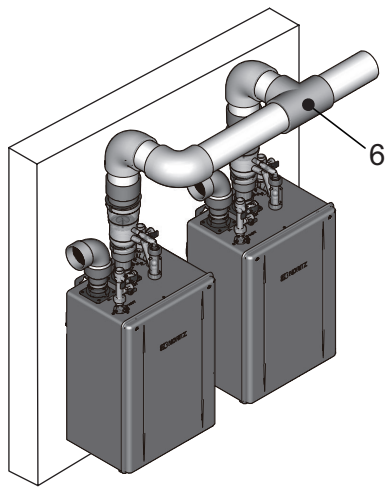
### 9.4.4 Contents of Sample Installation Case (for Non-Direct Vent)

Case	Model	Number of Units	Diameter	Unit Arrangement	Page
1	EZ111DV(GQ-C3259WX-FF US) EZ98DV(GQ-C2859WX-FF US)	2	4"	In-line	26
2	NCC199CDV (GQ-C3259WZ-FF US)	6	8"	In-line	27

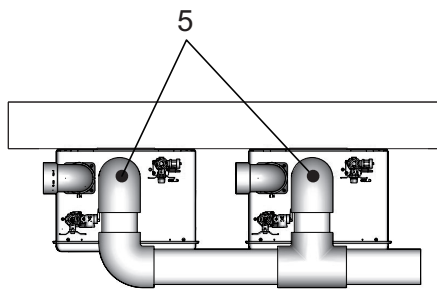


## (SV Case.1) Quick Connect (2 units) system, In-line Arrangement

Below is a typical installation case. It's possible to shorten the overall length of No. 4 in accordance with job site ceiling height.



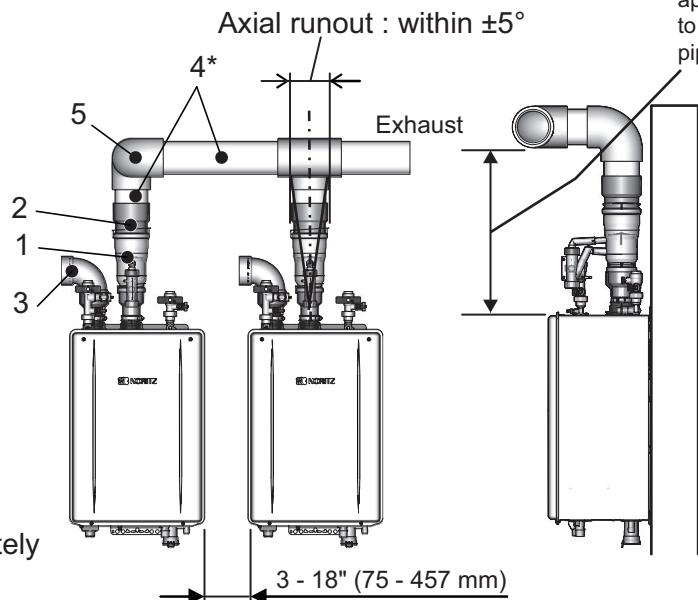
<Overview>



<Top view>

- EZ111DV(GQ-C3259WX-FF US)  
or EZ98DV(GQ-C2859WX-FF US)
- 2 units
- In-Line Arrangement
- 4" Non-Direct Vent

\*Adjust the pipe length appropriately



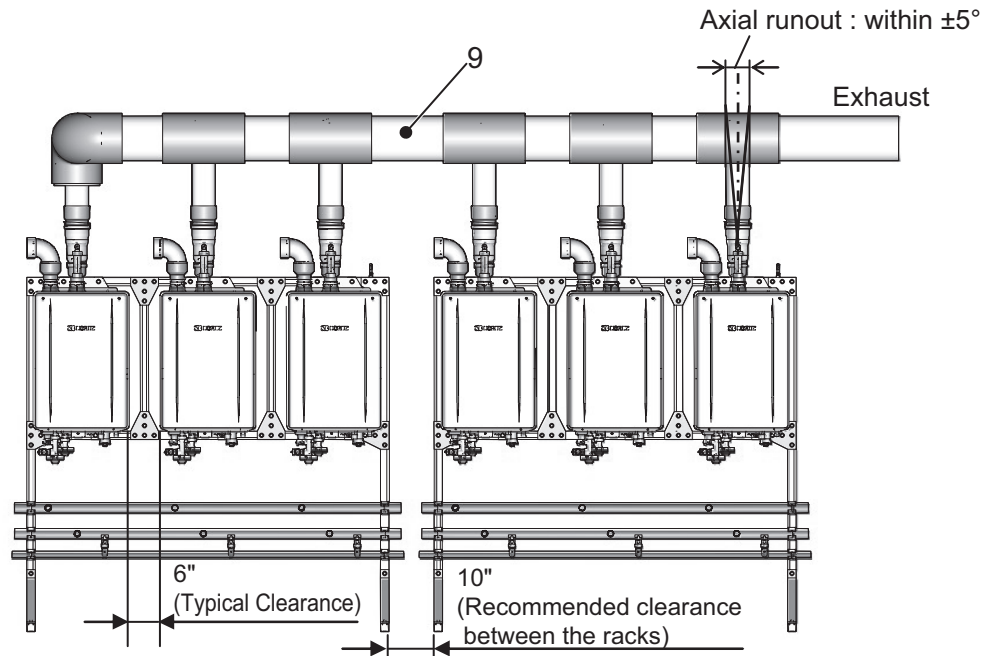
<Side view>

<Front view>

No.	Part	Part #	Q'ty	No.	Part	Part #	Q'ty
1	Non-Return Valve Kit	CDVNRVK	2	4	4" Pipe		6
2	4"PP to 4"PVC-Adapter	PP4XPVC4-ADAPT	2	5	4" Elbow		3
3	2" SV Conversion Kit	SV-CK-2	2	6	4" Tee		1

## (SV Case.2) 6units Multi system, In-line Arrangement

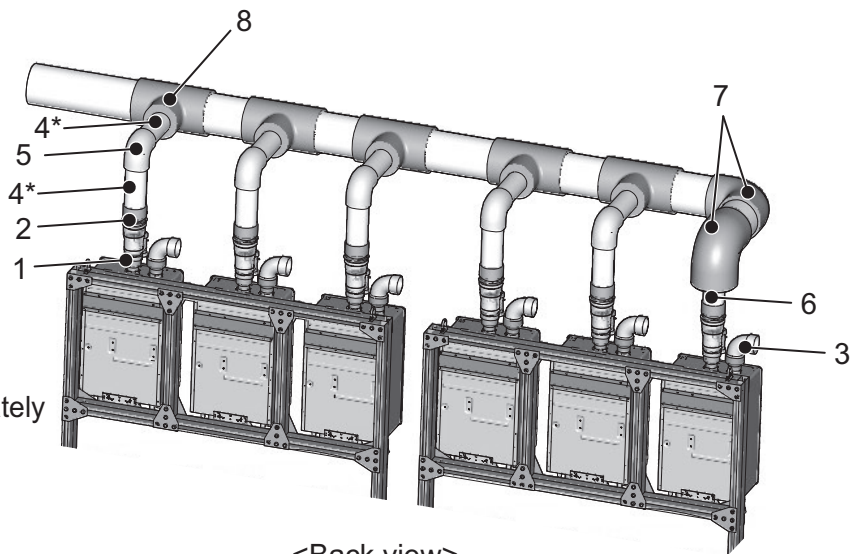
Below is a typical installation case. It's possible to shorten the overall length of No. 4 in accordance with job site ceiling height.



<Front view>

- NCC199CDV (GQ-C3259WZ-FF US)
- 6 units
- In-Line Arrangement
- 6" Non-Direct Vent

\*Adjust the pipe length appropriately



<Back view>

No.	Part	Part #	Q'ty
1	Non-Return Valve Kit	CDVNRVK	6
2	4"PP to 4"PVC-Adapter	PP4XPVC4-ADAPT	6
3	2" SV Conversion Kit	SV-CK-2	6
4	4" Pipe		11
5	4" Elbow		5

No.	Part	Part #	Q'ty
6	8" to 4" Reducer Bushing		1
7	8" Elbow		2
8	8" to 4" Reducing Tee		5
9	8" Pipe		7

# 10. Maintenance

- The venting system must be examined annually by a qualified service technician to check for any leaks or corrosion.
- When changing the unit, replace Non-Return Valve Kit with a new one.

## Annual check of Non-Return Valve and Ball-Check Siphon

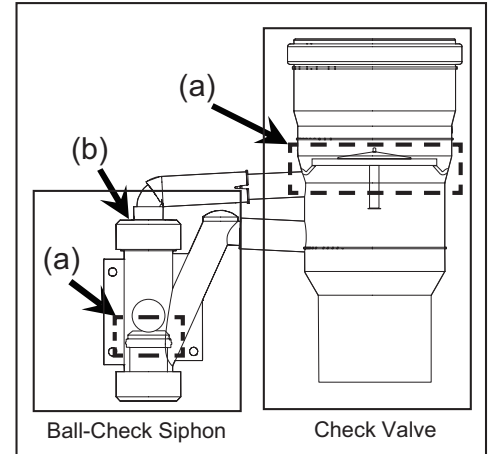
### How to check

Visually inspect the Non-Return Valve to verify that:

- There are no signs of debris(looks like a dark color band) around location (a) when looking from the outside.
- None of the units are out of operation by faults EC 11 or EC 12. If the valve is adhered to the seat, the units can't fire and will send these faults to the remote.
- The ball is floating when the siphon is filled with condensate.

### How to clean

1. Press the POWER button on the Remote to shut off the units.
2. Disconnect power to all units.
3. Remove the Non-Return Valve from the vent system carefully.
4. (Ball-Check Siphon only) Loosen (b), and pull the Ball-Check Siphon carefully.
5. Flush the Non-Return Valve assembly with warm water and a small amount of liquid dish soap.  
**Do not use strong detergents or solvents.** Rinse with clean, luke warm water until all soap is removed.  
Some water may remain in the siphon.
6. Confirm both valves in the Non-Return Valve and the ball in the siphon move smoothly.
7. Re-assemble the components after the cleaning procedure in reverse order.
8. Connect power to all units and let them run for 15 minutes minimum. Check for any leaks.



## WARNING

If you break the Check Valve or Ball-Check Siphon during maintenance, you must replace with a new Non-Return Valve Kit. Otherwise exhaust will leak into the room.

# 11. Final Installation Check List

After Common Vent System installation, confirm the following checklist and confirming proper installation of the units. If you have any additional questions or need assistance with installation, contact Noritz at 1-866-766-7489, or refer to our support website (<http://support.noritz.com/>).

Install a Non-Return Valve (check valve) onto each unit.	
Install 4" Connector Ring between Non-Return Valve and 4"PP to 4"PVC Adapter.	
Carry out trial operation for at least 15 minutes. Confirm each unit operate correctly in accordance with unit's Installation Manual.	
No exhaust or condensate leakage from any joint connection.	
Verify that dip switches have been adjusted to "Common Vent" setting in each unit.	
Verify the appropriate dip switch settings are selected for the DV/SV configuration, Elevation.	
Clearances from the Exhaust termination and the Intake termination are suitable.	
No blockages in either the Intake or Exhaust pipe.	
Confirm the vent system is within allowable maximum equivalent length.	
Ensure you have completely followed this Installation Manual and unit Installation Manual, and that you have used the correct venting products described in this manual.	
Verify that units connected with Common Vent System consist of only the same model as follows : NCC199CDV(GQ-C3259WZ-FF US), EZ111DV(GQ-C3259WX-FF US), or EZ98DV(GQ-C2859WX-FF US)	
Verify that Quick Connect Cord or System Controller is installed correctly.	
Confirm that an adequate amount of combustion air has been provided.	
Explain to the customer that the vent termination or air intake must never be blocked.	
Explain to the customer the operation of the unit, safety guidelines, maintenance, and warranty.	
Installation must conform with local codes, or in the absence of local codes, the National Fuel Gas Code, ANSI Z223.1/NFPA 54 - latest edition and/or the Natural Gas and Propane Installation Code CSA B149.1 - latest edition.	
All horizontal Exhaust vent pipes are sloped 1/4" upwards for every 12" (300mm) toward the termination.	
After completing installation, please either place this Installation Manual in plastic pouch and attach it to the side of the unit or hand it to the customer to retain for future reference.	