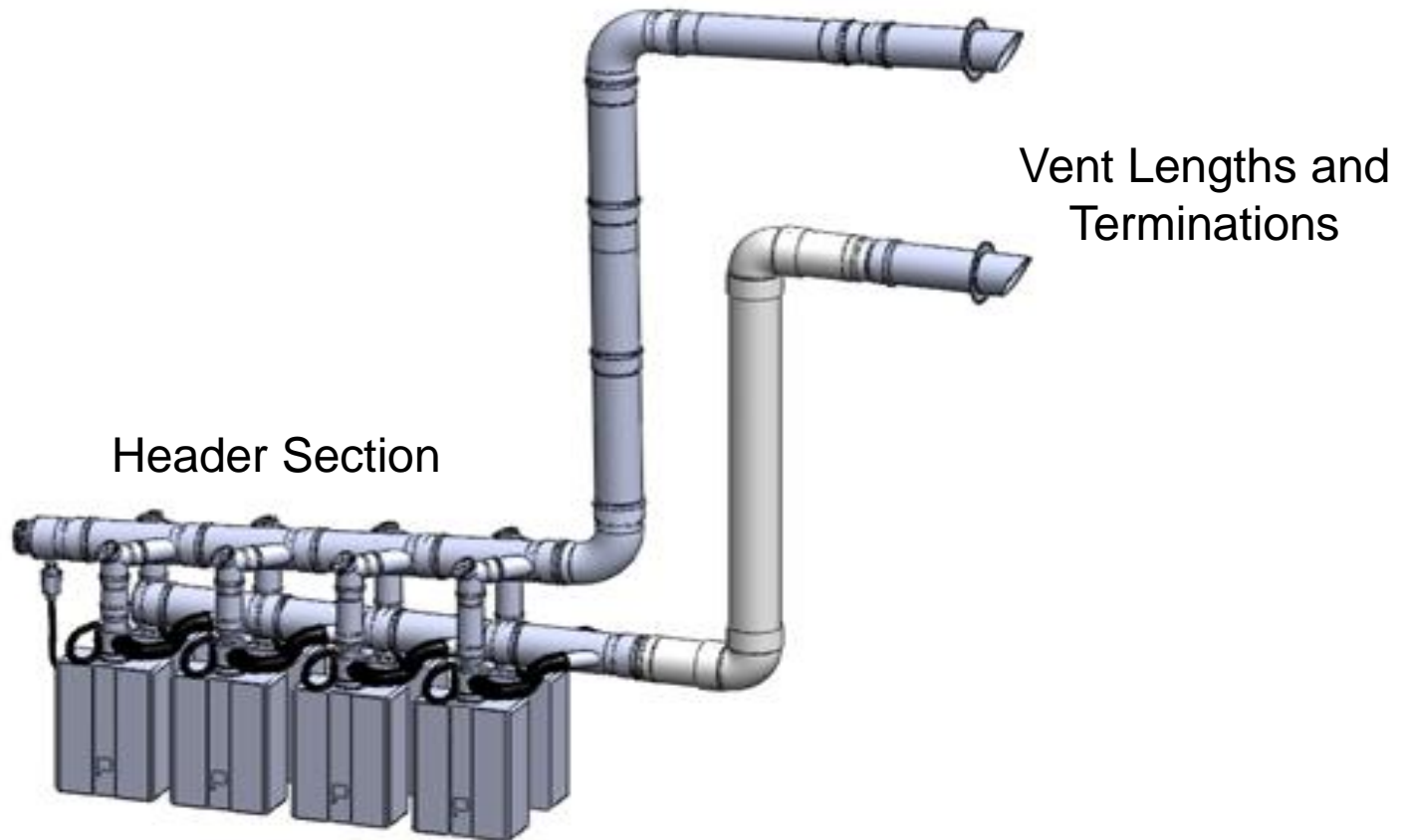


Common Vent System

By Rinnai

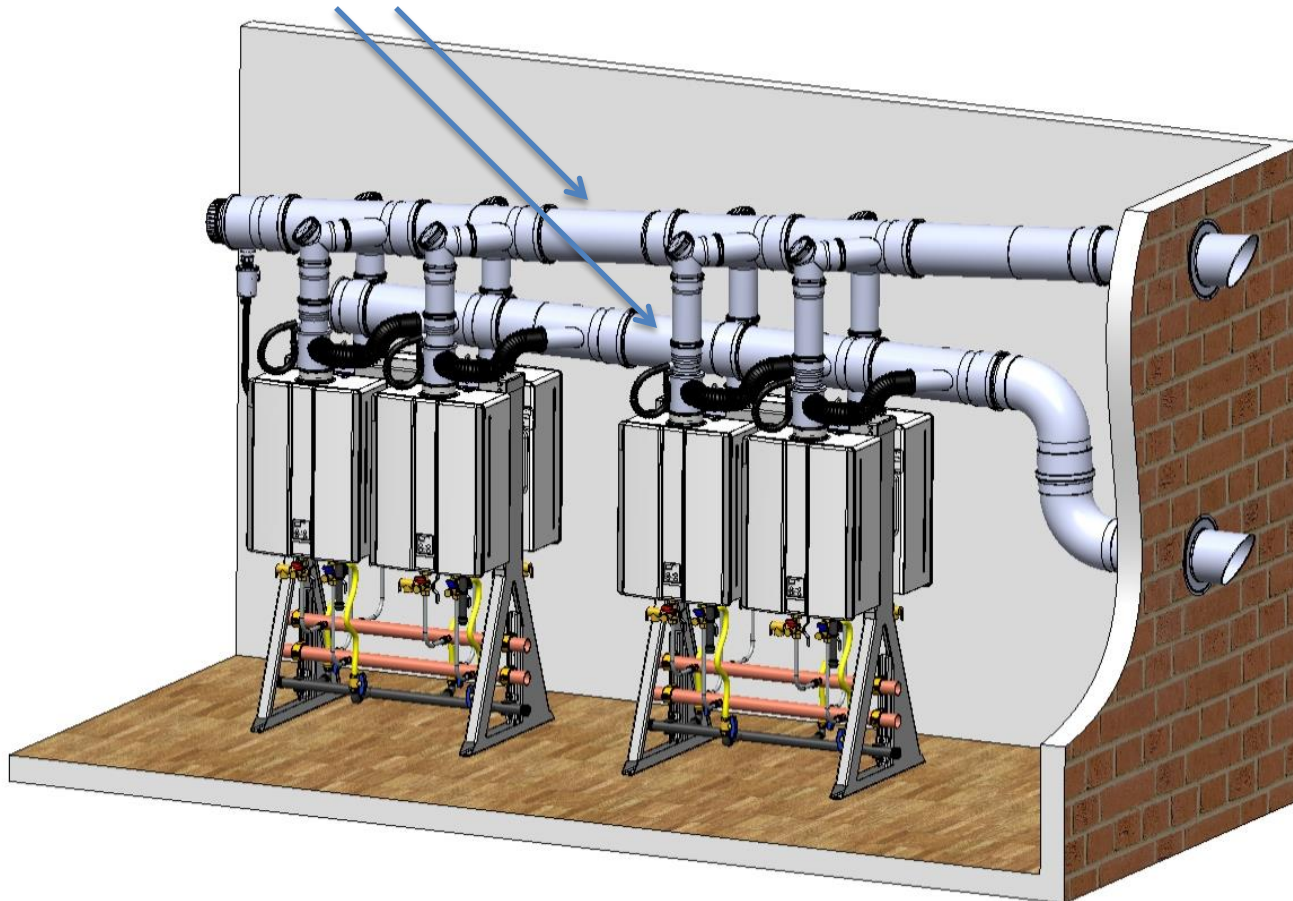
8 Unit Back to Back Installation

Polypropylene (PP) Venting Components



8 Unit Back to Back Installation

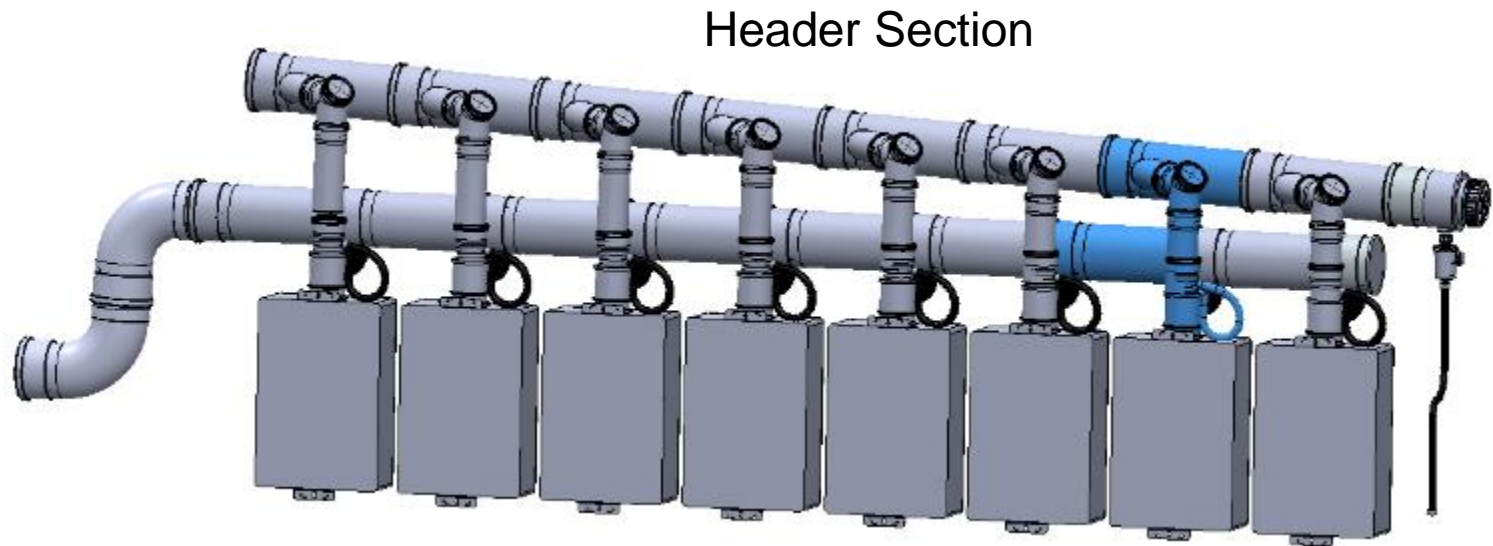
Two four unit back to back systems common vented with an extension between banks of units.



Rinnai®

8 Unit In-Line Installation

This picture depicts units from the back of the product.

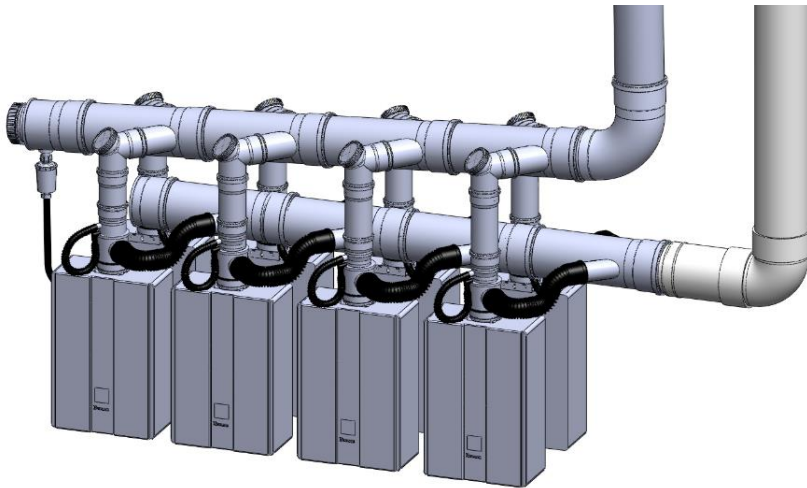


Common Vent System

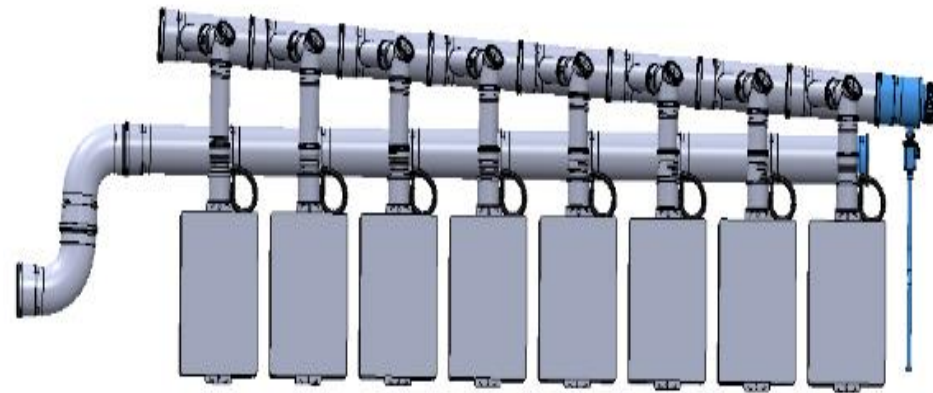
Installer qualifications: **MUST** be a licensed professional contractor to install Rinnai Common Vent systems. **MUST** read the Rinnai/Ubbink common vent installation manual completely before installing this product. This presentation does not serve as the official installation instructions or manual.

The Common Vent System is for use with the Rinnai Condensing Water Heater Model RU98i & REU-KB3237FFUD-US units **ONLY**.

Back to Back Configuration



In-line Configuration



Rinnai®

Common Vent System

Common Vent System Advantages:

- Allows for longer vent runs.
- Reduces the number of roof or wall penetrations
- 100 foot equivalent vent length with up to seven units, forty one foot with eight.
- Polypropylene (PP) vent components, maximum temperatures range 230 °F.
- Available as In-Line or Back to Back configurations
- Capable of horizontal or vertical terminations
- Certified to ANS Z21.10.3 – CSA 4.3 standards
- Approved for U.S. installations up to 10,200 foot in elevation, not approved for Canada.

Common Vent System

Venting Guidelines - DO NOT:

- Do not install in separate distribution systems. All water heaters common vented must be in the same hot/cold plumbing manifolds, not to exceed eight units.
- Do not use PVC, CPVC, ABS or galvanized material for the exhaust vent, only polypropylene (PP) piping is approved.
- Do not combine vent components from different manufacturers.
- The exhaust/intake vent diameter must not be reduced.
- Do not connect the venting system with an existing vent or chimney.
- Do not common vent with the vent pipe of any other type of water heater or appliance.
- Do not install the water heater in an area of negative pressure.
- Do not install the water heater, venting or vent termination(s) in any areas where the air may contain corrosion compounds or gasoline fumes.

Common Vent System

MUST DO:

- The water heater dip switch setting must be set to long vent on each unit (#1 switch in the set of tan dip switches set to the OFF).
- This water heater is a direct vent water heater and therefore is certified and listed with the vent system. You must use vent components that are certified and listed with water heater model.
- The vent system must vent directly to the outside of the building and use outside air for combustion.
- Avoid dips or sags in horizontal vent runs by installing supports per the vent manufacturer's instructions.
- Support horizontal vent runs a minimum of every four foot and all vertical vent runs a minimum of every six foot or in accordance with local codes.

Common Vent System

MUST DO, continue:

- Venting should be as direct as possible with a minimum number of pipe fittings.
- Vent connections must be firmly pressed together so that the gaskets form an airtight seal.
- The air intake appliance adaptor connected to the water heater must be secured with one self-tapping screw.
- Install an appliance adaptor which contains a check valve onto each water heater. Use only the check valve specified for the product. Do not attempt to build your own system. See picture of adaptor to the right.
- Check and clean the header check valve every 12 months according to the maintenance instructions in the venting instruction manual.
- Set the temperature setting on all water heaters being common vented to the same temperature.



Appliance adaptor
with check valve

Common Vent System

GENERAL INFORMATION:

- Unless recovering a large tank, Rinnai recommends installing an MSB controller when common venting and where water heaters are in a manifold system.
- Refer to the Ubbink manual for the vent system assembly instructions.
- Rinnai recommends replacing the check valve when replacing the water heater.
- **IMPORTANT NOTE:** In cold climates the exhaust termination will produce a large vapor cloud. Consideration should be given as to a proper location of this terminal before installation of your exhaust termination. Place vent termination(s) in areas away from windows, doors or locations that a vapor cloud could be a nuisance.
- If you have any questions regarding the installation of this vent system , please contact Rinnai before proceeding.

Common Vent System

Minimum/Maximum Equivalent Vent Lengths & Altitude

In the table below you find the minimum/maximum equivalent pipe length of the exhaust/intake venting.

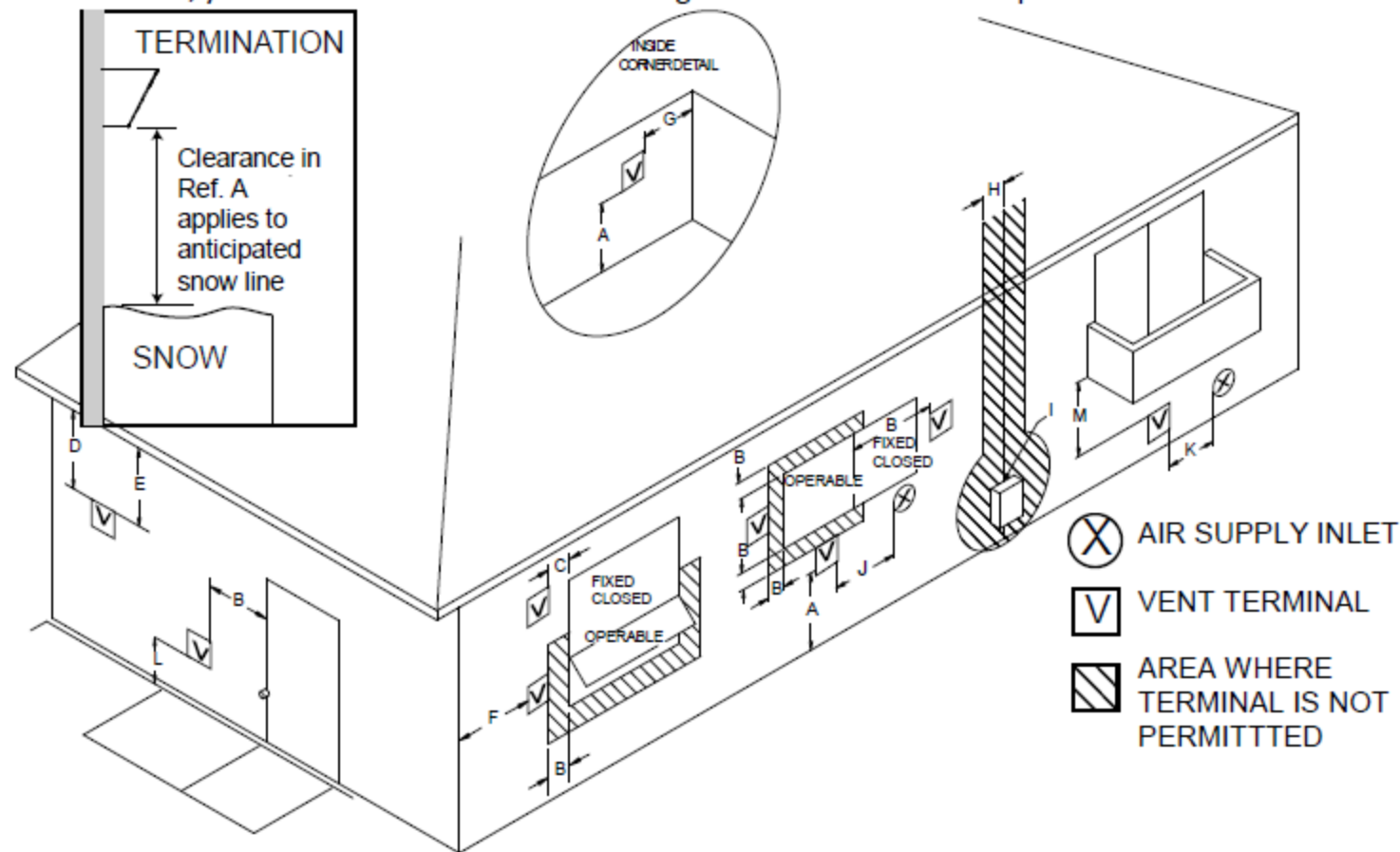
- When determining equivalent exhaust and intake vent lengths add:
 - 6 feet for each 90° elbow
 - 3 feet for each 45° elbow
- Header kits have already been counted and do not need to be added.
- Add any vent extension lengths which are added within the header due to increased spacing between separate racks of water heaters.

Numbers of Water Heaters	Minimum Equivalent Vent Length		Maximum Equivalent Vent Length	
	Exhaust	Intake	Exhaust	Intake
1 to 7	5 ft.	15 ft.	100 ft.	100 ft.
8	5 ft.	15 ft.	41 ft.	41 ft.

Common Vent System

Exhaust Vent Termination Clearances

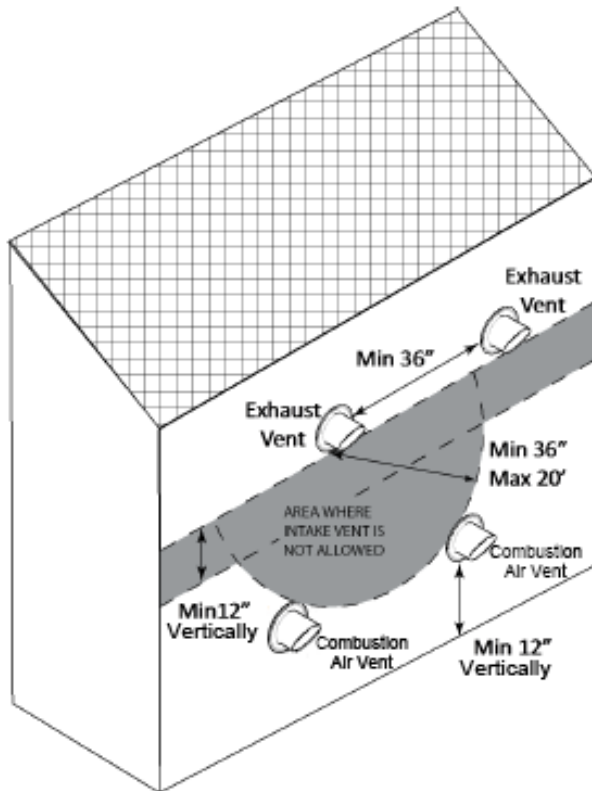
For indoor models, you must install terminations to bring in combustion air and expel exhaust.



Common Vent System

Ref.	Description	Canadian Installations	U.S. Installations
A	Clearance above grade, veranda, porch, deck or balcony	U.S. Installations Only	12 inches (30 cm)
B	Clearance to window or door that may be opened		12 inches (30 cm)
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		*
J	Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance		12 inches (30 cm)
K	Clearance to a mechanical air supply inlet		3 feet (91 cm) above if within 10 feet (3 m) horizontally
L	Clearance above paved sidewalk or paved driveway located on public property		*
M	Clearance under veranda, porch, deck or balcony		*
[1] A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.		* For clearances not specified in ANSI Z223.1/NFPA 54, clearances are in accordance with local installation codes and the requirements of the gas supplier.	
[2] Permitted only if veranda, porch, deck or balcony is fully open on a minimum of three sides beneath the floor		Clearance to opposite wall is 24 inches (61 cm)	

Common Vent System



The exhaust and intake terminations must follow these clearances:

- [1] 36 inch minimum vertically from bottom of exhaust termination to top of intake termination, maximum 20 foot.
- [2] 12 inch minimum vertically from bottom of combustion air termination to ground or highest anticipated snow line.
- [3] There should be a minimum of 36 inches between exhaust terminations in multiple common vent installations.
- [4] The vent (exhaust & combustion air) terminations must be in the same pressure zone and face the same direction.
- [5] The intake termination must be at least 12 inches below and 36 inches away from the exhaust terminations, see shaded area in picture to the left.

NOTE: During colder weather when the exhaust temperature is much hotter than the outside air, the exhaust fumes condense producing water vapor. As a result a plume of water vapor may be seen leaving the exhaust.

Common Vent System

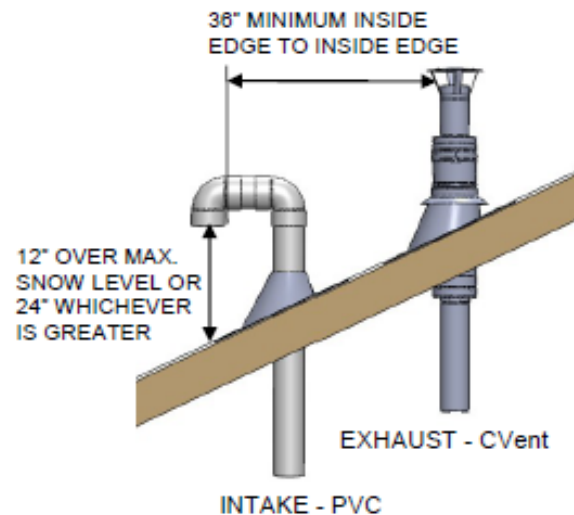
CVent Vertical Termination Clearances

Maintain a minimum of 36 inches between the exhaust and intake terminations in common vent installations.

CVent Termination Clearances

Vertical Termination

There should be a minimum of 36 inches between exhaust terminations in multiple common vent installations.



Clearances of Brackets

All supports such as wall brackets on the external façade or spacer blocks in a shaft must be assembled in a maximum distance of 78 in (2 m). Where there is a bend, additional spacer blocks or wall brackets can be planned before and after the bend, depending on the local situation.

Freestanding Components

Components, which are assembled freestanding vertical (roof termination) with a length of more than 59 in (1.5 m), must, depending on the amount of wind and snow level expected, be additionally secured to the building with guys or braces.

Common Vent System

Additional Clearances:

Local codes supersede all clearances listed, please confirm before proceeding.

- Avoid termination locations near dryer vents
- Avoid terminations near commercial cooking exhaust hoods

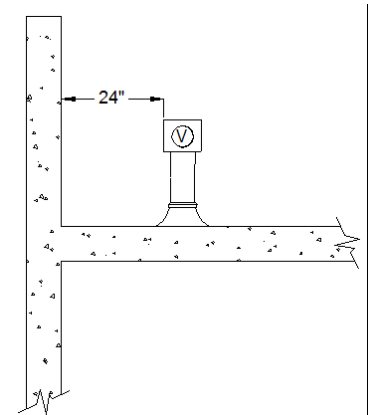
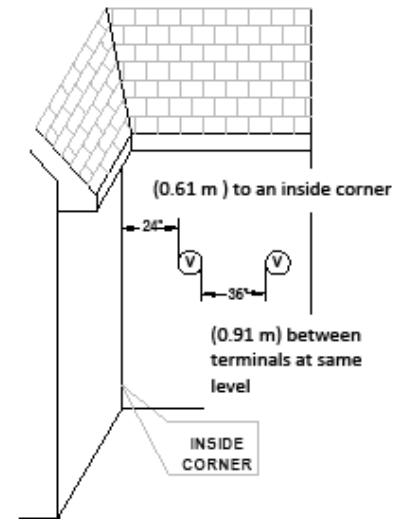
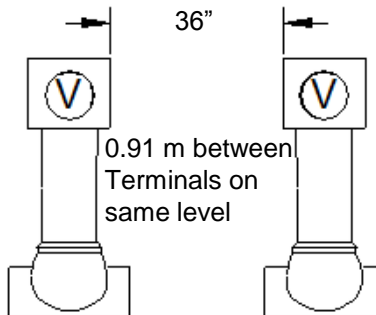
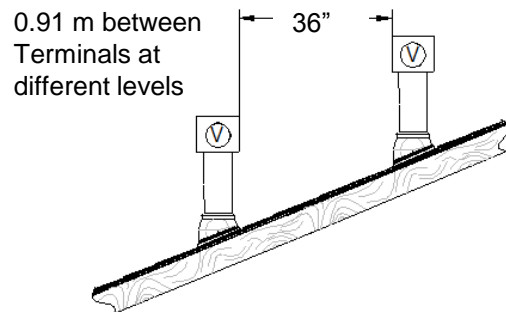
The vent termination for this appliance shall not terminate:

- Over public walkways
- Near soffit vents or crawl space vents or other area where condensate or vapor could create a nuisance or hazard or cause property damage
- Where condensate or vapor could cause damage or could be detrimental to the operation of appliance regulators, relief valves, or other equipment.

Common Vent System

Important considerations, locate vent termination under a soffit (ventilated or unventilated), eave vent, deck or porch.

- Do not install vent termination under a soffit vent such that exhaust can enter the soffit vent.
- Install vent termination such that exhaust and rising moisture will not collect under eaves. Discoloration to the exterior of the building could occur if installed too close.
- Do not install the vent termination too close under the soffit where it could present recirculation of exhaust gases back into the combustion air intake.



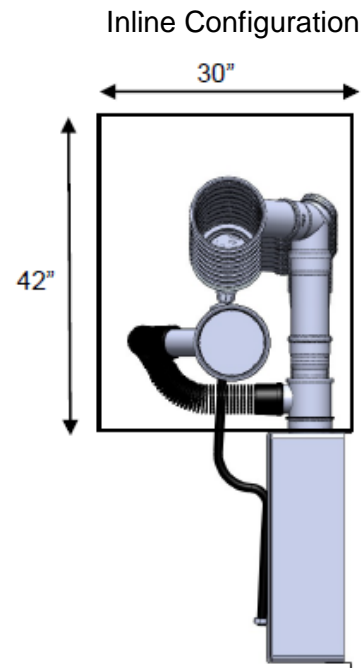
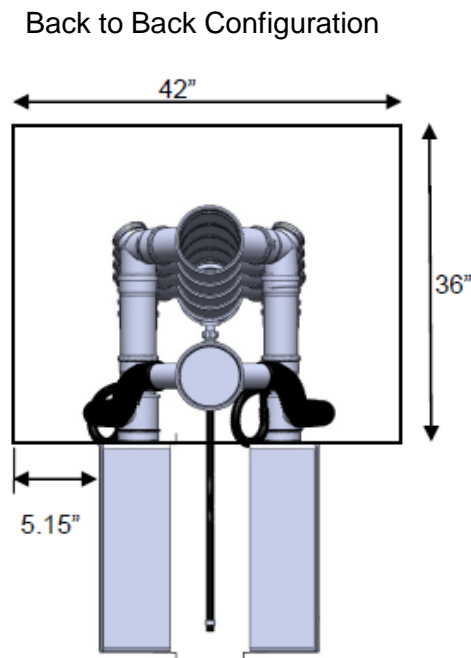
Rinnai

Common Vent System

Maintenance Clearances:

Follow the recommended minimum service clearances below for maintenance access to the header above the water heater.

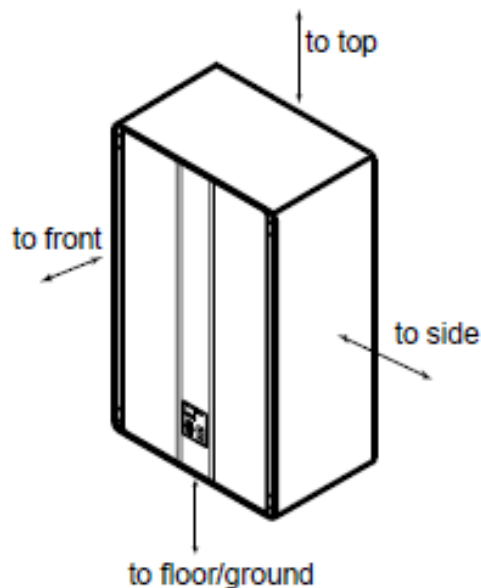
If the vent system is to be enclosed it is suggested that the design of the enclosure shall permit annual inspection of the vent system. The design of such enclosures shall be deemed acceptable by the installer or the local inspector.



Common Vent System

Water Heater Clearances

Follow the minimum clearances from water heater.

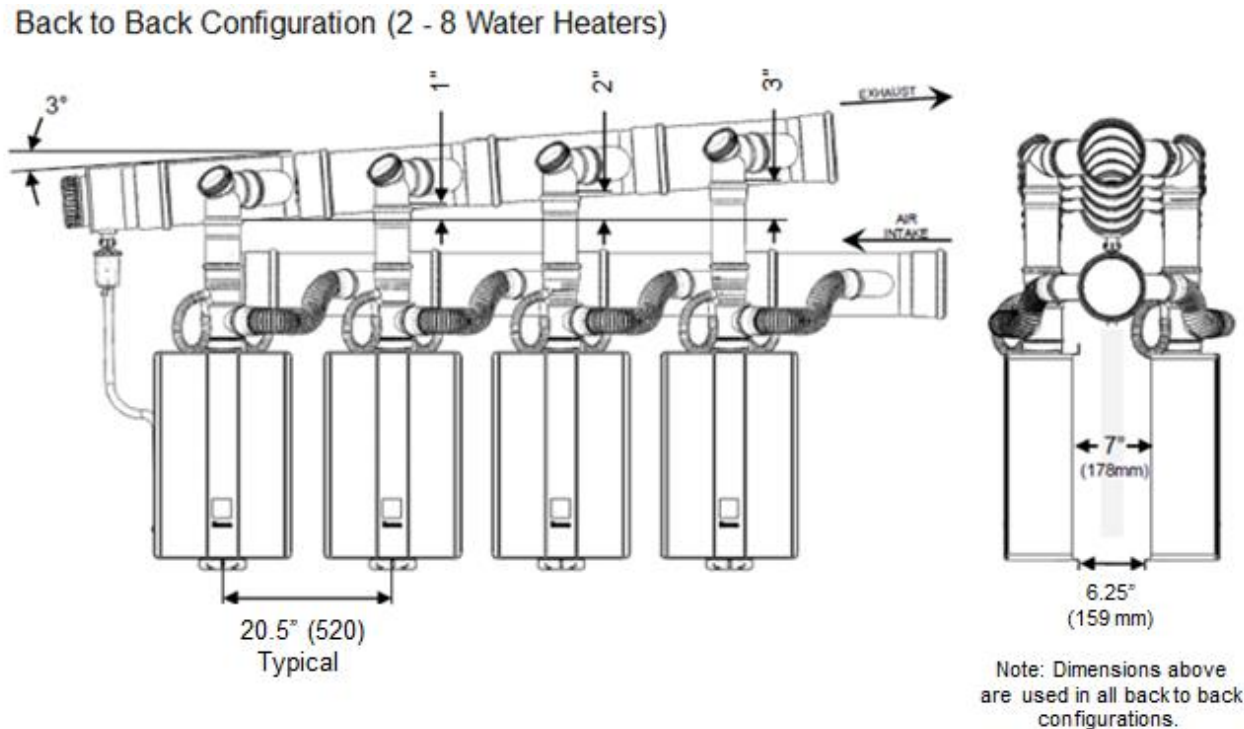


	To combustibles inches (mm)	To Non- combustibles inches (mm)
Indoor model RU89i		
Top of Heater	* 6" (152)	* 2" (51)
Back of Heater	0" (Zero)	0" (Zero)
Front of Heater	6" (152)	6" (152)
Sides of Heater	2" (51)	1/2" (13)
Bottom of Heater	12" (305)	12" (305)
Vent	0" (Zero)	0" (Zero)
* 0 inches from vent components and condensate drain lines. The clearance for servicing is 24" in front of the water heater.		

Common Vent System

Back to Back Illustrations

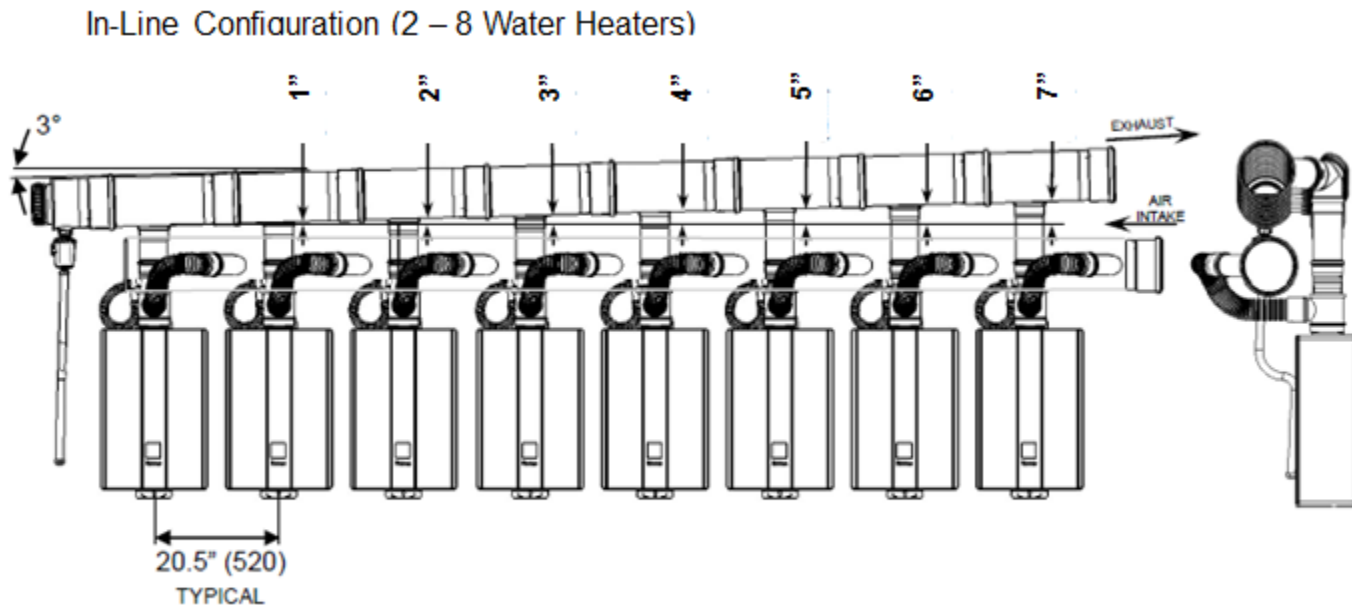
IMPORTANT: Refer to Ubbink vent system instructions for details pertaining to the installation and assembly of this vent system. The CVent system must be mounted directly above the units as shown. The installation area should be measured to make sure that adequate space is available to install the water heaters and venting system before installation.



Common Vent System

In-Line Illustrations

IMPORTANT: Refer to Ubbink vent system instructions for details pertaining to the installation and assembly of this vent system. The CVent system must be mounted directly above the units as shown. The installation area should be measured to make sure that adequate space is available to install the water heaters and venting system before installation



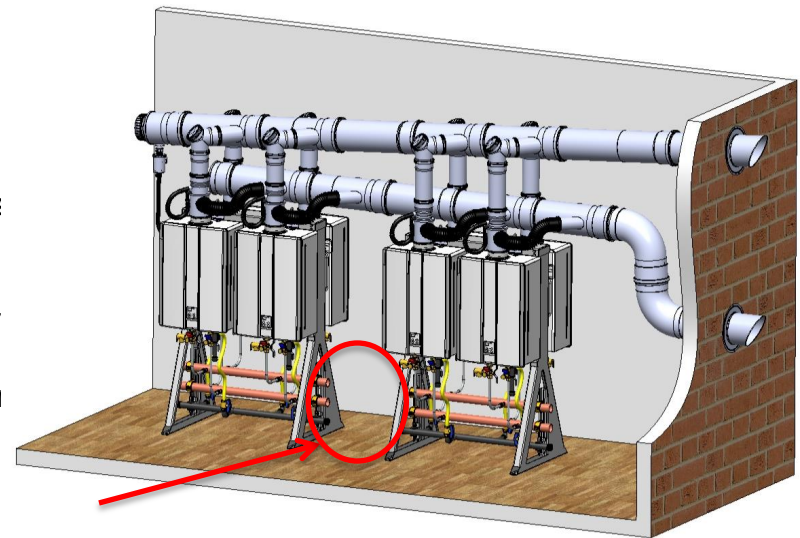
Note: If water heaters are mounted directly on a wall, air intake piping will need to be in front of the appliance adapters. The intake header in the drawing above has been removed for illustration purposes.

Common Vent System

Spacing between banks of Water Heaters:

You will need to determine the distance needed between each bank of units based on several factors, space available for the installation, vent extensions, manifold tees, unions and/or valves the contractor decides to add to the system.

When installing separate banks of units you must pipe the water and gas manifolds in parallel – see red arrow to right for connection points. The manifolds under each set of water heater is designed to handle the flow through that bank of units only.



Common Vent System

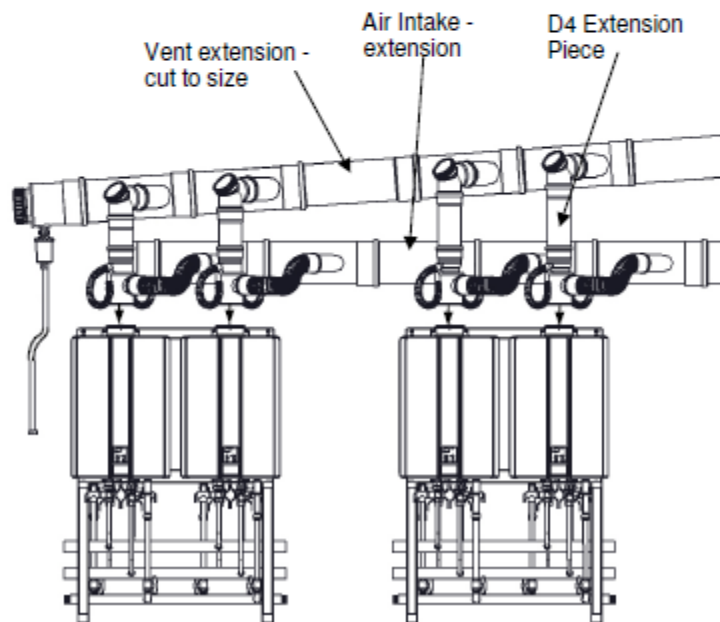
Custom Water Heater Spacing

If common venting with **LESS** than 20.5" between water heaters:

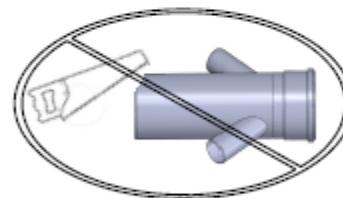
- The installer assumes responsibility of following local codes. Inspectors can reject the installation if the rating plate cannot be seen for all water heaters.
- D4 Extension Pieces must be cut appropriately to maintain the required 3° slope.

If common venting with **GREATER** than 20.5" between water heaters:

- The installer must purchase a vent extension cut to the appropriate length between the collectors.
- The length of each additional vent extension must be considered in the maximum allowable vent length.
- D4 Extension Pieces must be cut appropriately to maintain the required 3° slope.



NOTE: Never attempt to cut or modify the collectors.



To maintain a 3° slope, use the following formula to calculate D4 Extension Piece length (L):

$$(L) = (\text{water heater spacing}) \times 0.05$$

Example: if the adjacent water heater is 20.5" away

$$\text{Length (L)} = 20.5" \times 0.05 = \underline{1.02"}$$

Example: if the adjacent water heater is 26" away

$$\text{Length (L)} = 26.0" \times 0.05 = \underline{1.30"}$$

Rinnai

Common Vent System

Condensate Trap and Drain Pipe

The CVent exhaust header collects condensate. A collector and self-priming trap is included with each starter kit.

Additional condensate trap loop assemblies are provided with each appliance adapter. Condensate loops must be primed before operation per the instruction provided below.

Condensate must be drained to prevent the malfunction, diagnostic code failures, or property damage. Condensate should be disposed according to local codes. Refer to the National Fuel Gas Code, ANSI Z223.1/NFPA 54, or the Natural Gas and Propane Installation Code, CSA B149.1 condensate disposal.

A condensate pump must be used if the condensate outlet is lower than the public sewer system.

Rinnai Recommends installing a condensate neutralizer which allows condensate to flow through neutralizing media to raise the pH of the condensate to a level that will help prevent corrosion of the drain or public sewer system.

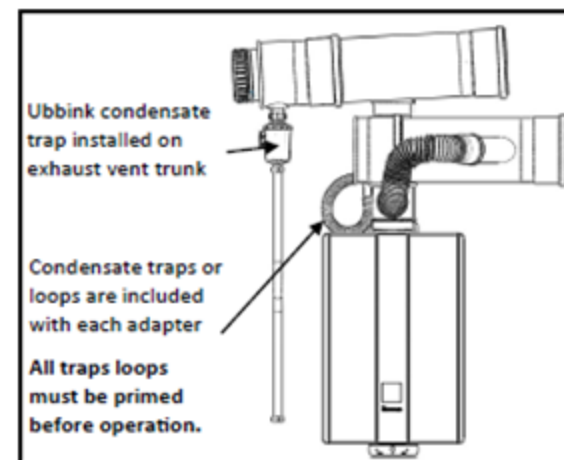
Ensure that the condensate drain/trap does not freeze.

Priming trap loops

Unthread and remove the cap located at the top of the inspection elbow shown to right.

Pour clean water into the inspection elbow until fluid is visible in the drain tube of the adapter or until fluid exits the condensate outlet on the bottom of the tankless water heater.

Thread the cap back onto the inspection elbow.



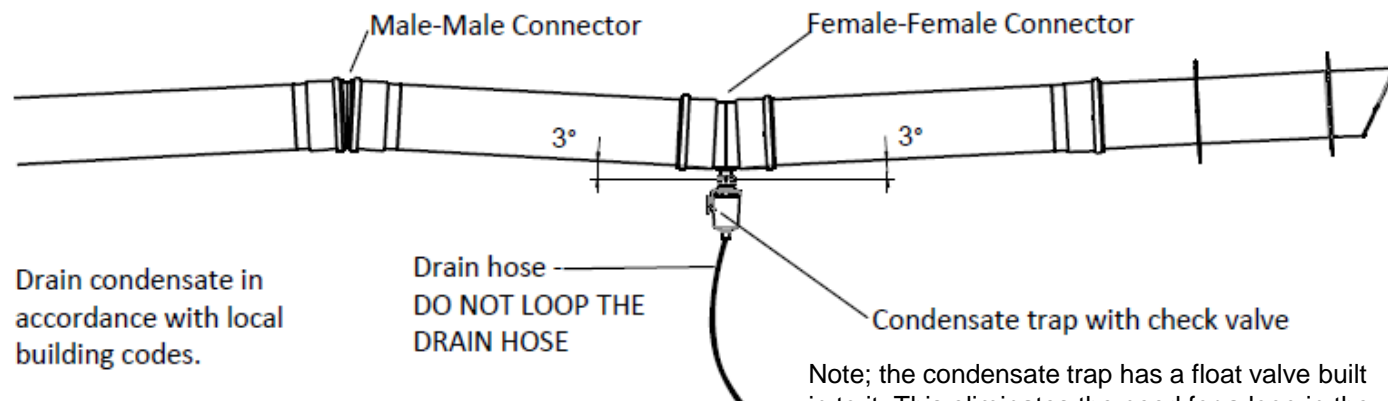
Rinnai

Common Vent System

Long Vent Run or Restricted Rise:

An inverter coupling kit with a condensate trap is available to reduce the rise of the exhaust vent. A diagram of its installation is shown below.

The male to male and female to female connectors must be used so that the venting is oriented correctly (condensate runs down the vent in the correct direction).



Note; the condensate trap has a float valve built in to it. This eliminates the need for a loop in the condensate drain line. The float opens as the condensate begins to fill the trap allowing it to drain.

Altitude De-rate Chart for 0 -2,000 Ft. Elevation

Natural Gas Manifold Gas Pressures and Btu Specification:

Water heaters using CVent will automatically de-rate according to the table below. Use this table for calculating your total Btu for multiple water heaters using CVent. When using CVent set your vent length dip switch to the “Long Vent” setting. Refer to the operation and installation manual that accompanies the water heater for proper installation of the water heater and the Common Vent Installation Manual.

This information covers altitudes up to 2,000 foot						
Number of Water Heaters*	Percent De-Rated	Total Btu Rate	Maximum Rate Inches W.C	Minimum Rate Inches W.C.	Btu at Minimum Rate (without MSB)	Btu at Minimum Rate (with MSB)
1	0%	199,000	3	0.42	15,200	15,200
2	1%	394,000	3.1	0.42	30,400	
3	1.5%	588,000	3.1	0.42	45,600	
4	2%	780,000	3.1	0.42	60,800	
5	2.5%	970,000	3.2	0.45	76,000	
6	3%	1,158,000	3.2	0.45	91,200	
7	3.50%	1,344,000	3.2	0.45	106,400	
8	4%	1,528,000	3.2	0.45	121,600	

Altitude De-rate Chart for 2,001 to 10,200 Ft. Elevation

The charts below provide information pertaining to Natural and Propane gas units installed at altitudes above 2,001 ft. elevation.

Rinnai has certified the CVent Common Vent System to be used at high altitude installations up to 10,200 (3,109m). The common vent system is CSA certified (ANSI Z21.10.3, Gas Water Heaters Standards) for use only with Rinnai tankless condensing water heater RU98i (REU-KB3237FFUD-US).

For CVent installations at altitude you must ensure that the water heaters are properly installed and setup for the altitude that they will be operating at. In addition to the altitude setting the water heater must be set up for “Long Vent” when using the CVent System. Refer to the operation and installation manual that accompanies the water heater for proper installation of the water heater and the Common Vent Installation Manual.

Specifications

Water heaters using CVent at altitude will automatically de-rate according to the table below. Use the tables below for calculating your total Btu for multiple water heaters using CVent at elevation.

High Altitude De-Rate CVent De-Rate Natural Gas			
Number of water heaters	Elevation		
	2,001 - 5,200 Ft.	5,201 - 7,700 Ft.	7,701 - 10,200 Ft
1	175,000	160,000	151,000
2	346,500	316,800	298,980
3	514,500	470,400	443,940
4	679,000	620,800	585,880
5	840,000	768,000	724,800
6	997,500	912,000	860,700
7	1,151,500	1,052,800	993,580
8	1,303,000	1,190,400	1,123,440

High Altitude De-Rate CVent De-Rate LP Gas			
Number of water heaters	Elevation		
	2,001 - 5,200 Ft.	5,201 - 7,700 Ft.	7,701 - 10,200 Ft
1	173,500	159,000	128,000
2	343,530	314,820	253,440
3	510,090	467,460	376,320
4	673,180	616,920	496,640
5	832,800	763,200	614,400
6	988,950	906,300	729,600
7	1,141,630	1,046,220	842,240
8	1,290,840	1,182,960	952,320

Common Venting In-Line

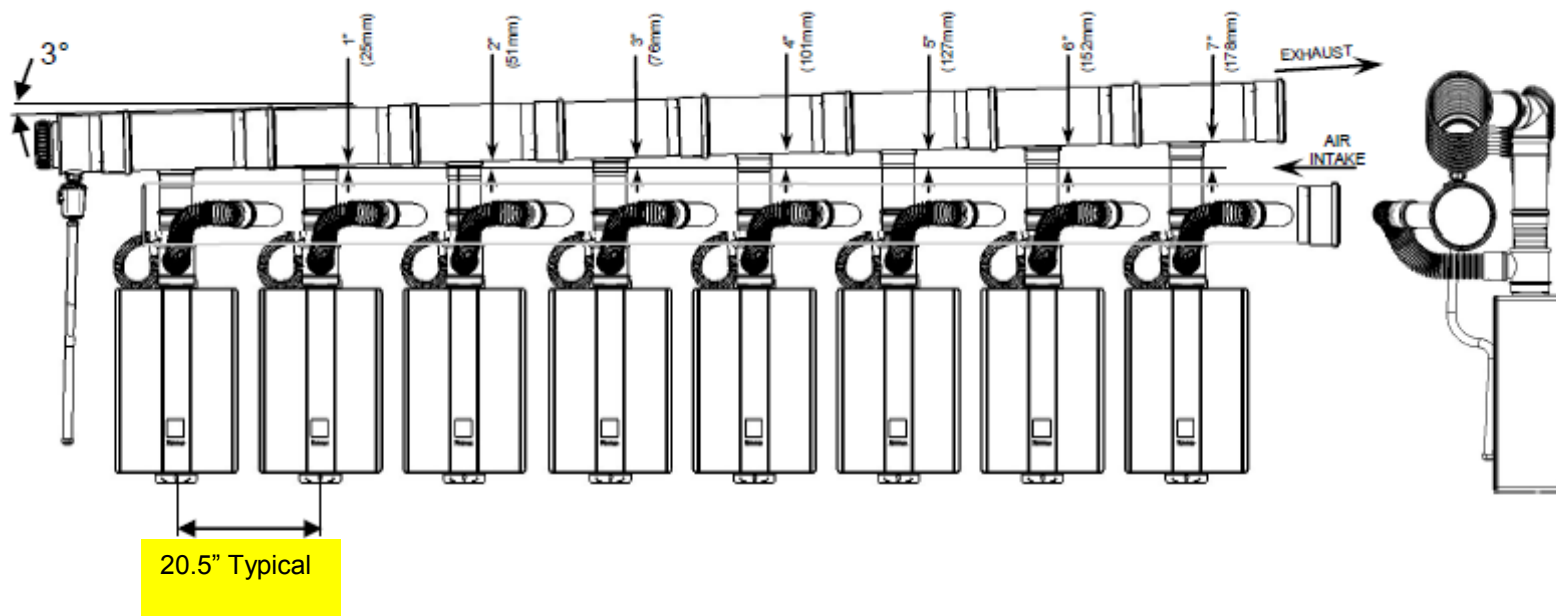
Assembly Instructions

In-Line Venting Installation

IMPORTANT NOTICE:

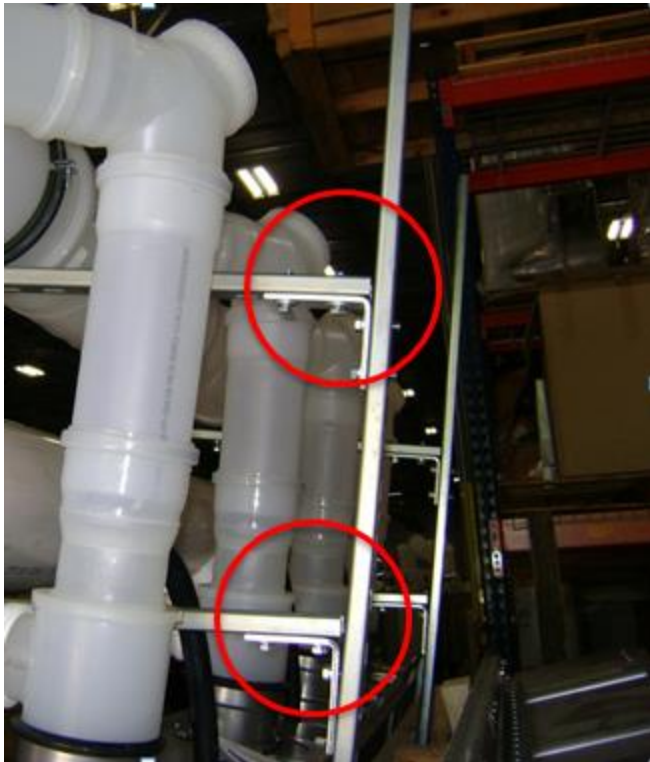
During installation of the water heaters you should maintain 20.5 inch spacing as shown in the drawing below. The spacing mentioned allows all exhaust/intake manifolds to line up properly. Failure to maintain the 20.5" recommendation will lead to additional components and having to calculate the length needed for your riser extensions to maintain a 3 degree rise.

In Line Configuration (2 to 8 water heaters)



Note: If water heaters are mounted directly on a wall, air intake piping will need to be in front of the appliance adapters. The intake header in the drawing above has been removed for illustration purposes.

In-Line Venting Installation



In-line application

Assemble a support system as shown to the left for the intake/exhaust manifolds. The support system should be adjustable. In this example a unistrut frame was built to support the venting components. There are several other methods that can be used, as a hangers, straps, etc.

Actual Components for Starter Kits

Kit Part # 790005 works in both In-line and Back to Back Installations

Cvent Starter Kit
790005
8-Inch For Back-2-Back or InLine
Combustion Air & Exhaust

NO	QTY	DESCRIPTION
1	1	CVENT ENDPEICE (EXHAUST) W/ CLEANOUT & CONDENSATE DRAIN (32mm)
2	1	CVENT INTAKE VENT ENDPEICE (COMBUSTION AIR)
3	1	CVENT CONDENSATE TRAP (32mm Connection)
4	1	CVENT DRAIN HOSE
5	2	CVENT DRAIN HOSE CLAMP
	1	CENTROCERIN LUBRICANT
	1	UBBINK INSTALLATION INSTRUCTION

1 Qty. 1

2 Qty. 1

3 Qty. 1

4 Qty. 1

5 Qty. 2

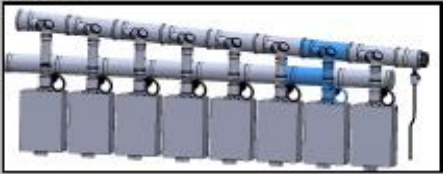
Centrocerin lubricant
#790025

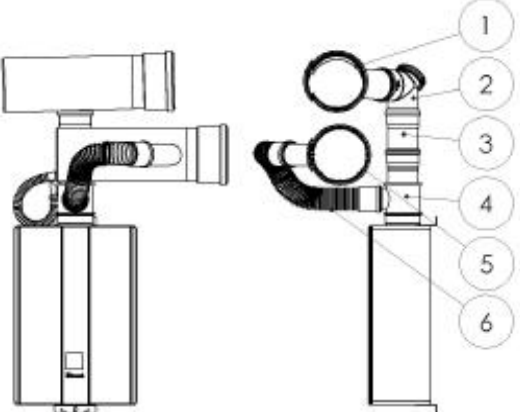


8" In-Line Add-On Kit

CVent In-Line Add On - Kit - Part #790007

CVent InLine Kit
790007
8-Inch Header Kit For InLine
Combustion Air & Exhaust





Qty. 1

Qty. 1

Qty. 1


Qty. 1

Qty. 1

Qty. 1

NO	QTY	DESCRIPTION
1	1	CVent COLLECTOR, 1 CONNECTION, D8 X L20 X D4 (Exhaust)
2	1	CVent ELBOW D4 X 67" WITH CLEANOUT
3	1	CVent EXTENSION, D4 X L18
4	1	CVent APPLIANCE ADAPTER, CHECK VALVE AND HOSE TRAP
5	1	CVent COLLECTOR, 1 CONNECTION, D8 X L20 X D3
6	1	CVent FLEX PIPE D3
	1	CENTROCERIN LUBRICANT

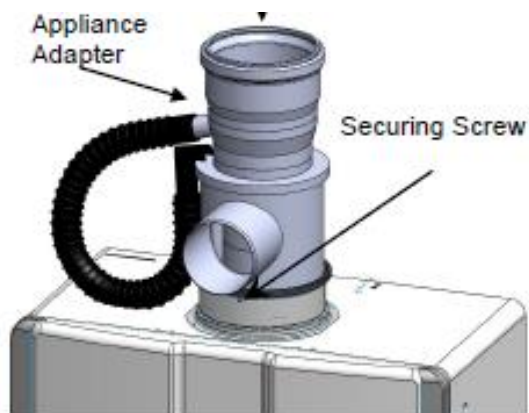
4



Rinnai CVent

In-Line Venting Installation

In-line CVent Installation Instructions:



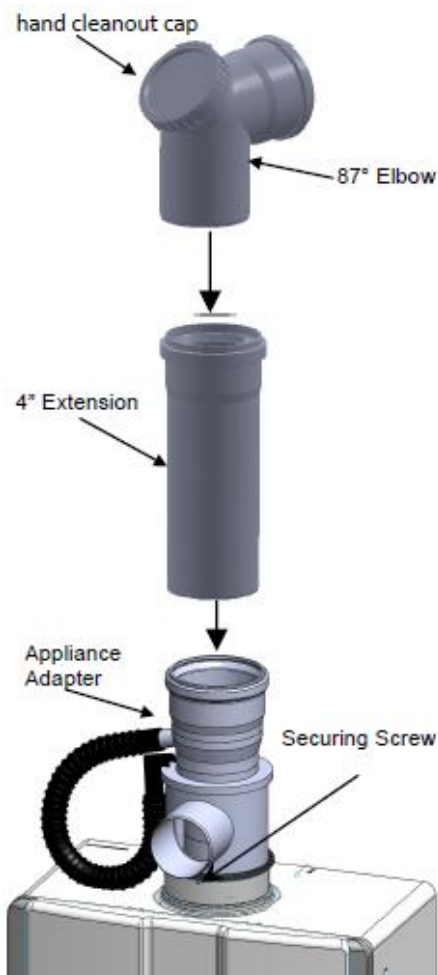
Insert the appliance adaptor w/check valve into top of water heater as shown to left . Item #4 in add-on kit part #790007.



Insert D4 extension into appliance adaptor after cutting to length. D4 extension is item #3 in the add-on kit part #790007. The exhaust extension pipe D4 for the first unit should never be cut shorter than 9" (inches) in length to allow the proper clearances from the intake manifold. On each addition water heater in the manifold you will add one inch to the D4 extension pipe. Example, the first unit will be 9", second 10" third 11", fourth 12" and so forth. All water heaters should be spaced 20.5" from center to center. This is very important as it helps you maintain the required 3° degree drop in your exhaust system for condensate drainage. If you use multiple backs of units and are unable to maintain 20.5" spacing between banks, contact Rinnai engineering for assistance. You **MUST** lubricant all seals using the Centrocerin lubricant supplied with each kit before assembling each component.

In-Line Venting Installation

In-line Venting Installation Instructions:



Insert CVent elbow w/cleanout, item #2 in add-on kit #790007 into the D4 extension pipe you just cut to length. Your assembly should look like the picture to the left at this point.

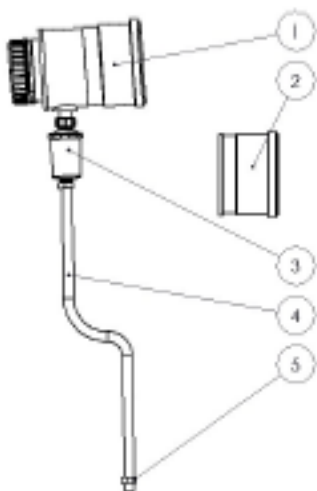
This procedure will be repeated for each additional water heater

Next: install your 8" x 4" exhaust manifolds, item #1 in the add-on kit part #790007 and the intake manifolds 8" x 3", item #5. Once you have these supported and mounted to your hanger or strap system insert the flex pipe D3 item #6 onto the end of the appliance adaptor and the 8' x 3" intake air manifold item #5. Tighten clamps provided to hold the flex pipe D3 to each component mentioned above.

Connect the condensate hoses up as shown in the picture to the left. Install clamps provided to hold these hoses in place.

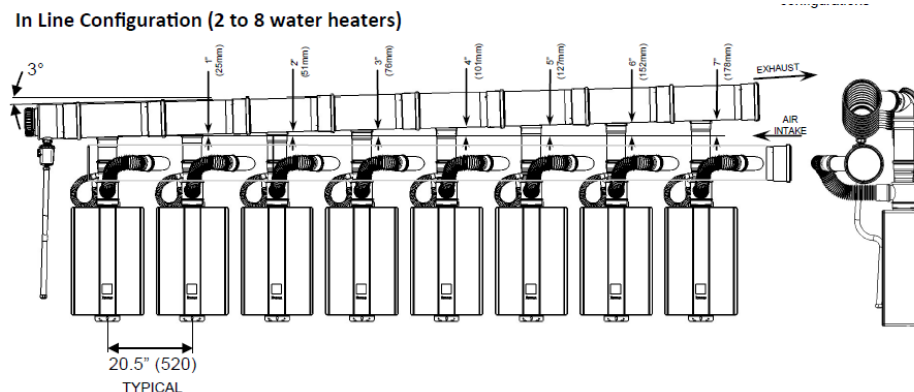
In-Line Venting Installation

In-line CVent Starter Kit - Part # 790005



Once the add-on kits have been installed and mounted, connect the starter kit part #790005 to the exhaust manifold of the first unit, lowest point in the manifold. Then install and secure the condensate trap and drain line onto the starter kit, as shown in picture to the left.

The picture below illustrates a complete In-line common vent system using eight water heaters.



Note: If water heaters are mounted directly on a wall, air intake piping will need to be in front of the appliance adapters. The intake header in the drawing above has been removed for illustration purposes.

Back to Back Intake Venting Installation

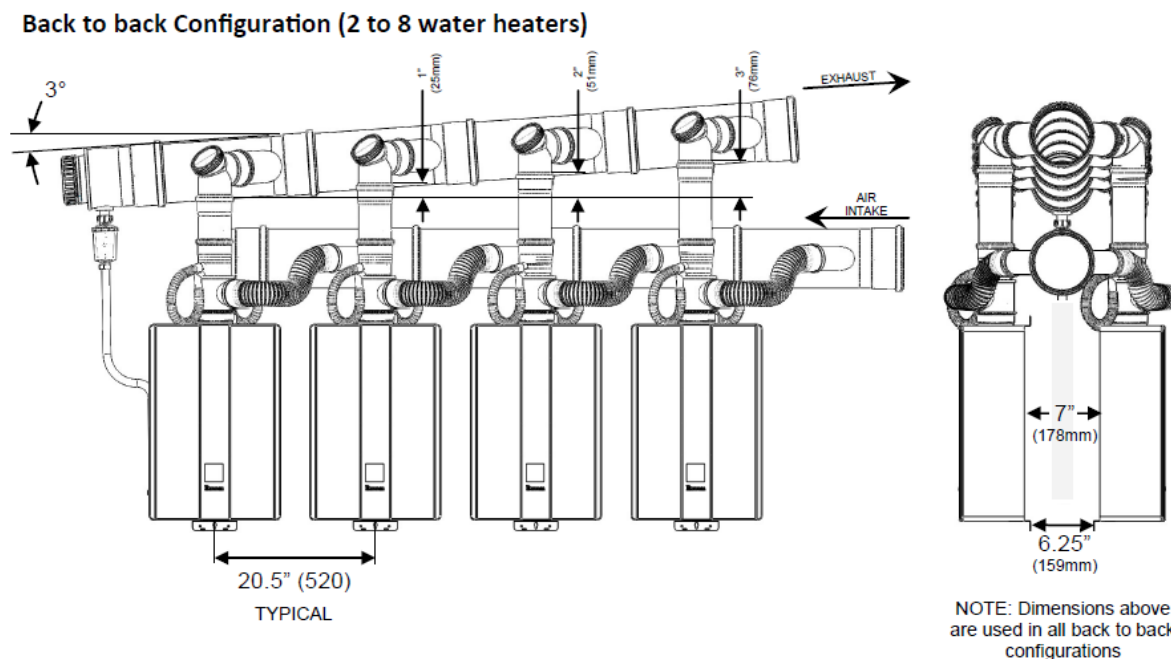
Common Venting Back to Back

Assembly Instructions

Back to Back Venting Installation

IMPORTANT NOTICE:

Maintain 20.5" spacing from the center line of one water heater to the center line of the next unit. In addition, the spacing from the back of one water heater to the back of the other unit when mounted on a rack system other than that supplied by Rinnai, you **MUST** have 6.25" (inches) clearance. If using the Rinnai rack system this clearance is already built into the system. The spacing mentioned above and shown below are **critical**. Those clearances and spacing allow all exhaust/intake manifolds to line up to the units properly. If spacing other than that mentioned above is needed, contact Rinnai engineering before proceeding. Failure to contact Rinnai for assistance will lead to improper installations which will be the responsibility of the contractor to correct at his cost.



Rinnai

Actual Components for Starter Kits

Kit Part # 790005 works in both In-line and Back to Back Installations

Cvent Starter Kit
790005
 8-Inch For Back-2-Back or InLine
 Combustion Air & Exhaust

Qty. 1

Qty. 1

Qty. 1

Qty. 2

Qty. 1

NO	QTY	DESCRIPTION
1	1	CVENT ENDPEICE (EXHAUST) W/ CLEANOUT & CONDENSATE DRAIN (32mm)
2	1	CVENT INTAKE VENT ENDPEICE (COMBUSTION AIR)
3	1	CVENT CONDENSATE TRAP (32mm Connection)
4	1	CVENT DRAIN HOSE
5	2	CVENT DRAIN HOSE CLAMP
	1	CENTROCERIN LUBRICANT
	1	UBBINK INSTALLATION INSTRUCTION

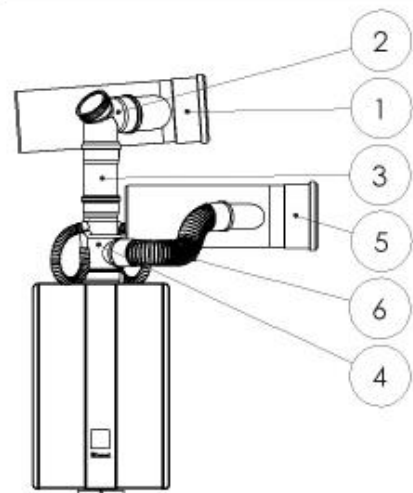
Centrocerin lubricant
 #790025

Back to Back Add On Kit

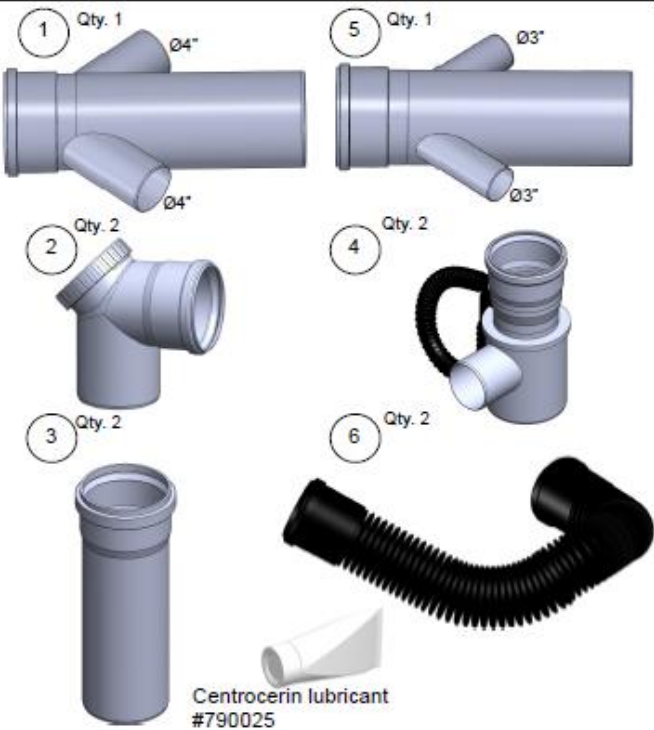
8" CVent Back to Back Add On Kit, Part #790008

**CVent Back-2-Back Kit
790008**

8-Inch Header Kit For Back-2-Back including
Combustion Air & Exhaust

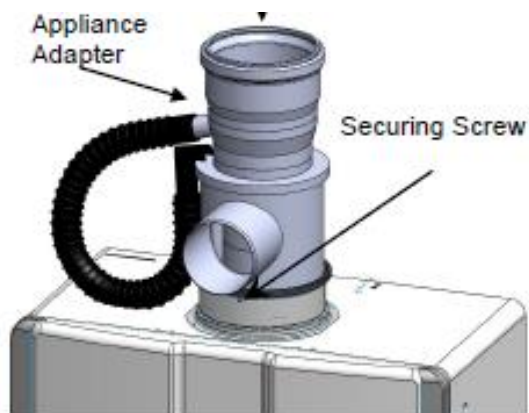


NO	QTY	DESCRIPTION
1	1	CVENT COLLECTOR, 2 CONNECTION, D8 X L20
2	2	CVENT ELBOW D4 X 87" WITH CLEANOUT
3	2	CVENT EXTENSION, D4 X L18
4	2	CVENT APPLIANCE ADAPTER WITH CHECK VALVE AND TRAP
5	1	CVENT COMB. AIR HEADER, 2 CONNECTION, D8 X L20
6	2	CVENT COMB. AIR FLEX FITTING
	1	CENTROCERIN LUBRICANT



Back to Back Venting Installation

Back to Back Installation Instructions:



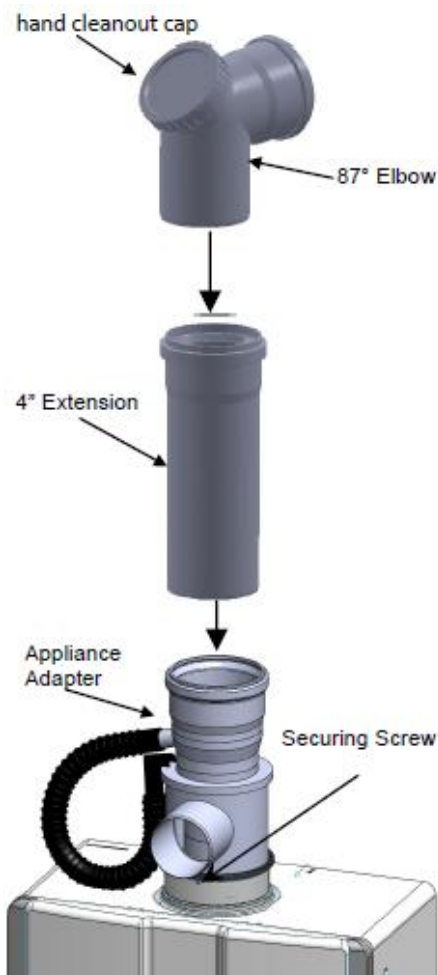
Insert the appliance adaptor w/check valve into top of water heater as shown to left. Item #4 in add-on kit part #790008.



Insert D4 extension into appliance adaptor after cutting to length. D4 extension is item #3 in the add-on kit part #790008. The exhaust extension pipe D4 for the first unit should never be cut shorter than 6" (inches) in length to allow the proper clearances from the intake manifold. On each addition water heater in the manifold you will add one inch to the D4 extension pipe. Example, the first unit will be 6", second 7" third 8", fourth 9" and so forth. All water heaters **MUST** be spaced 20.5" apart from center to center, no exceptions. This is very important as it helps you maintain the required 3° degree drop in your exhaust system for condensate drainage. If you use multiple backs of units and are unable to maintain 20.5" spacing between banks, contact Rinnai engineering for assistance. You **MUST** lubricant all seals using the Centrocerin lubricant supplied with each kit before assembling each component.

Back to Back Venting Installation

Back to Back Installation Instructions:



Insert CVent elbow w/cleanout, item #4 in add-on kit #790008 into the D4 extension pipe you just cut to length. Your assembly should look like the picture to the left at this point.

This procedure will be repeated for each additional water heater

Next: install your 8" x 4" exhaust manifolds, item #1 in the add-on kit part #790008 and the intake manifolds 8" x 3", item #5. Once you have these supported and mounted to your hanger or strap system insert the flex pipe D3 item #6 onto the end of the appliance adaptor and the 8' x 3" intake air manifold item #5. Tighten clamps provided to hold the flex pipe D3 to each component mentioned above.

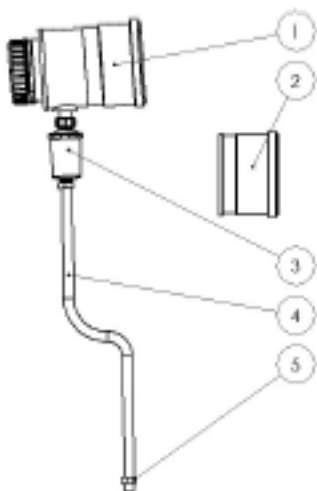
Connect the condensate hoses up as shown in the picture to the left. Install clamps provided to hold these hoses in place.

Back to Back Venting Installation

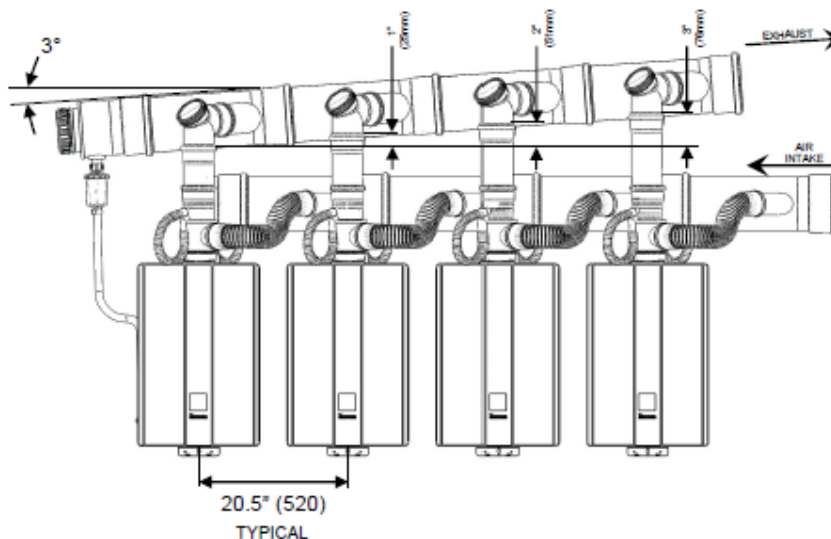
CVent Starter Kit - Part # 790005

Once the add-on kits have been installed and mounted, connect the starter kit part #790005 to the exhaust manifold of the first unit, lowest point in the manifold. Then install and secure the condensate trap and drain line onto the starter kit, as shown in picture to the left.

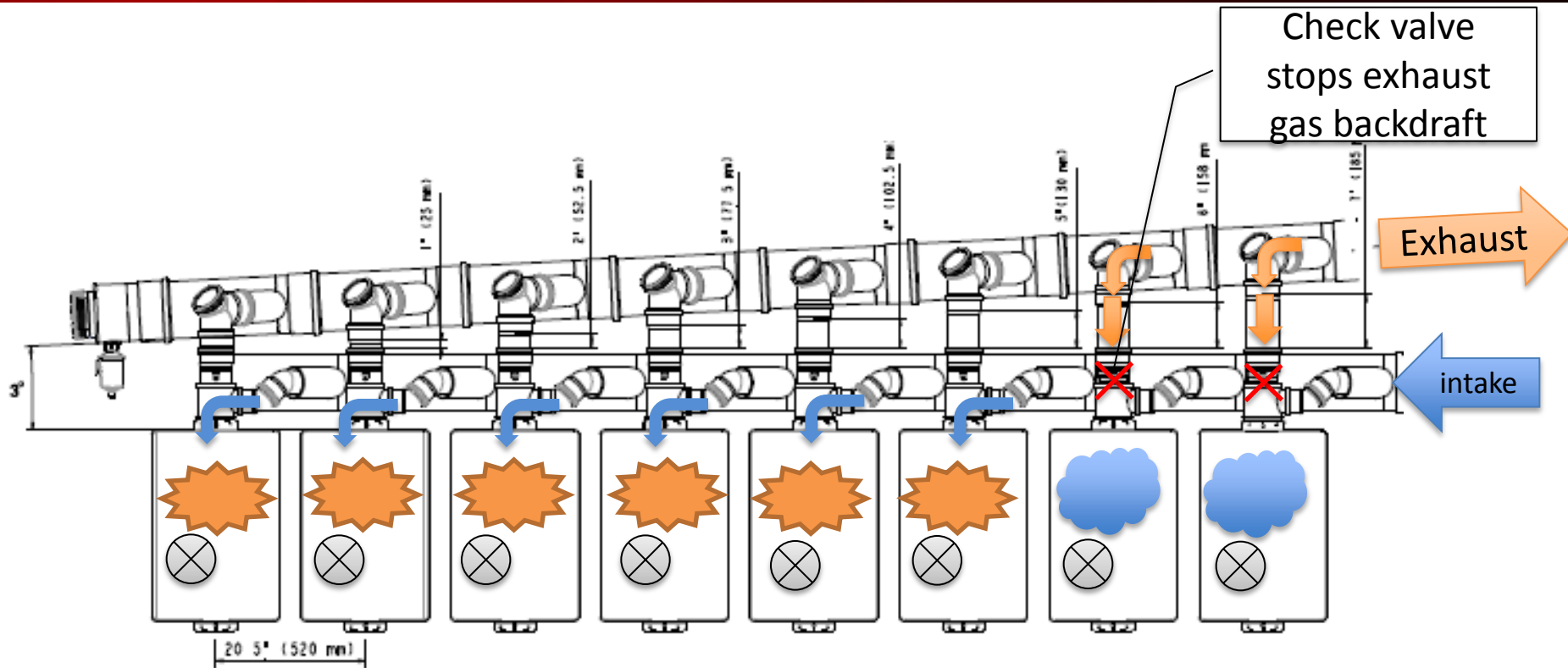
The picture below illustrates a complete back to back common vent system using eight water heaters.



Back to back Configuration (2 to 8 water heaters)



Back-drafting not an issue with Rinnai's System



Non-firing units not creating negative pressure and protected by external check valve = no problems with freezing or exhaust

Vent Components/Kit Part Numbers

Common Vent Exhaust/Intake Components (PPTI) Polypropylene translucent)			
Part #	Description	Part #	Description
790005	8" CVent (In-Line and Back to Back) Starter Kit	790024	8" CVent Brackets
790007	8" CVent In-Line Kit	790025	Centrocerin Lubricant
790008	8" CVent Back to Back Kit	790035	CVent Extension D4 x L18
790001	8" CVent Roof Termination Kit	790028	CVent Extension D4 x L39
790002	8" CVent Flat Roof Flashing	790029	CVent Elbow D8 x 90 degree Vertical Support
790003	8" CVent Pitched Roof Flashing	790030	8" CVent Chase Cover
790004	8" CVent Wall Termination Kit	790031	8" CVent Distancer Stainless Steel
790020	8" CVent Extension D8 x L18	790034	8" CVent Rain Cap
790021	8" CVent Extension D8 x L39	790032	Inverter Coupling Kit w/Condense Trap
790022	8" CVent Elbow D8 x 45 degree (2 in a box)	780037	Combustion Air PVC Adapter Kit
790023	8" CVent Elbow D8 x 90 degree		

Terminations Kits

8" Vertical Exhaust Termination Kit #790001

CVent 8" Vertical Exhaust Roof Termination
Included in kit #790001



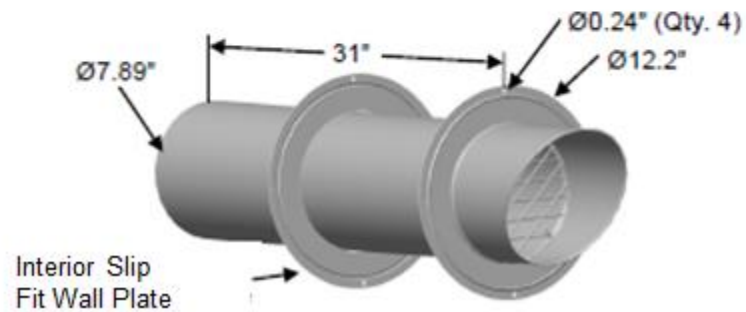
8" CVent PP to PVC Adapter
Included in kit #790001



Centrocein Lubricant
#790025



8" CVent Horizontal Exhaust/Intake Termination Kit #790004 Material: Stainless Steel



Centrocein Lubricant
#790025



8" Vent Components



Elbow D8x90 degree
#790023



Elbow D8x45 degree
#790022



Elbow D8x90 degree
Vertical Support #790029



Inverter Coupling Kit with Condensate Trap
#790032



Extension D8 x 18" #790020
D8 x 39" #790021



PP-PVC Adapter #780037



8" Vent Rain Cap
#790034



8" Bracket
#790024



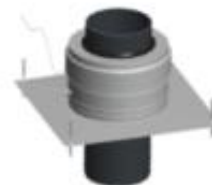
8" Vent Distancer
#790031



Pitched Roof Flashing (Includes Storm Collar)
#790003

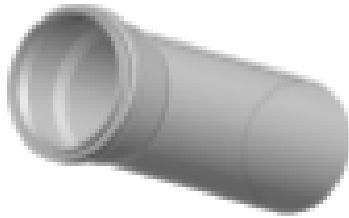


Flat Roof Flashing
#790002



8" Chase Cover
#790030

4" Component & Sample Roof Assembly



CVent Extension
D4 x 18" #790035
D4 x 39" #790028



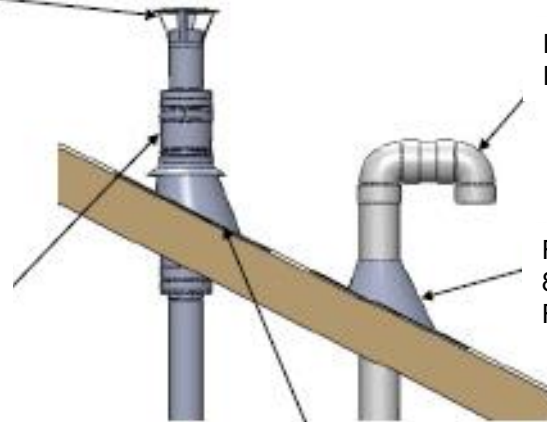
CVent 8" Rain Cap
#790034



*NOTE: Use PVC
adapter (illustrate
above) at the
combustion air
header when
transitioning to
PVC*



8" CVent Roof Termination #790001



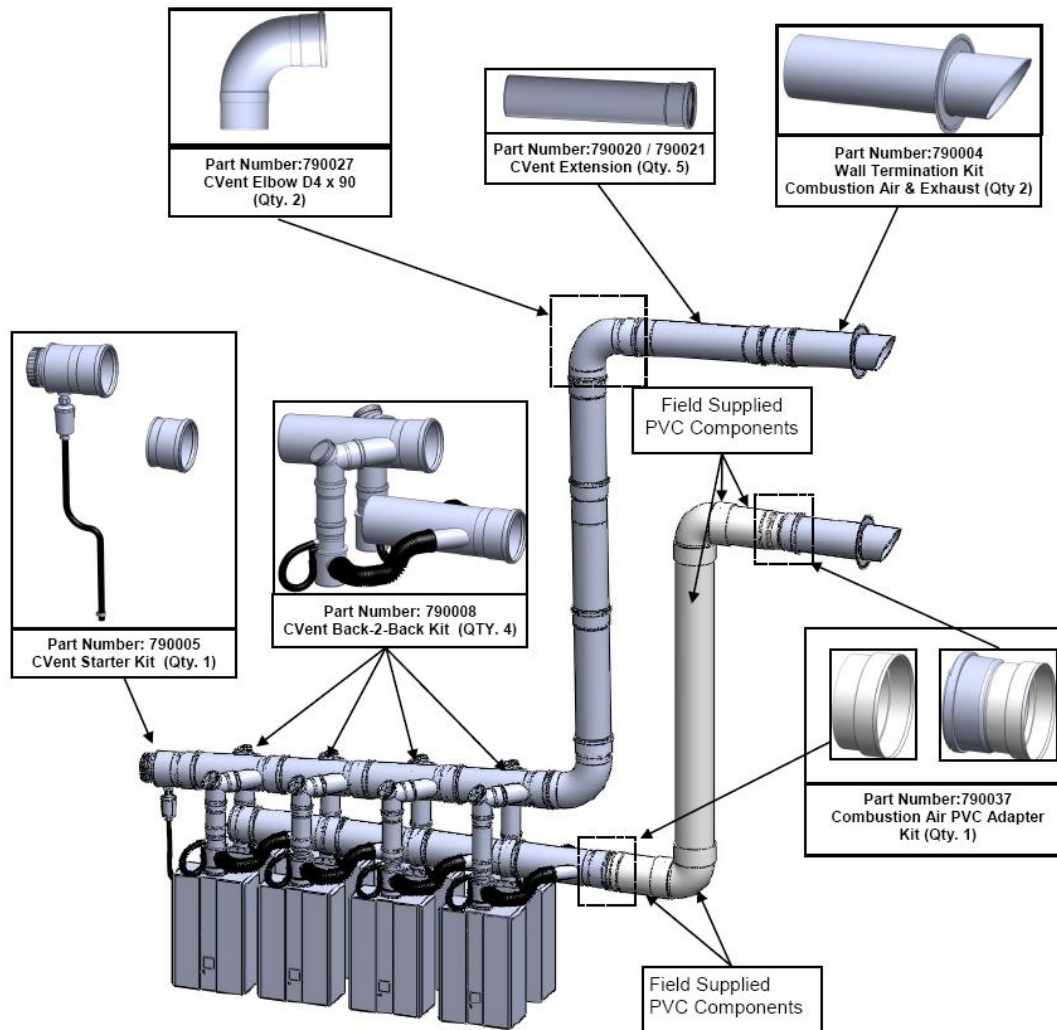
Field Supplied
PVC Components

Field Supplied
8" PVC Pipe
Flashing







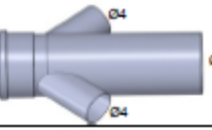


CVent Pitched Roof Moldable
Flashing #790003

Common Venting




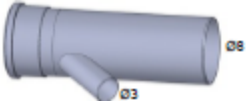
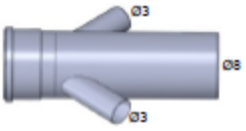


Common Venting

Spare Part/Kit Numbers

Included With Kit No.	Part No.	Description	Image
Exhaust Vent Components			
790005	790042	CVent Endpiece	
790005	790048	Condensate Trap (32mm Connection)	
790005	790049	Hose + 2 Clamps	
790007	790040	Exhaust Collector, 1 connection, D8 x L20, D4 connection	
790008	790041	Exhaust Collector, 2 connections, D8 x L20, D4 connection	
790007 790008	790035	CVent Extension, D4 x L18	
790007 790008	790039	CVent Elbow D4 x 87degree with cleanout	

Common Venting

Spare Part/Kit Numbers

Combustion Air Vent Components			
790005	780046	Intake/Combustion Air Endpiece	
790007	780044	Combustion Air Collector, 1 connection, D8 x L20, D3 connection	
790008	780045	Combustion Air Collector, 2 connection, D8 x L20, D3 connection	
790007 790008	780050	CVent flex Line D3	
Appliance Adapter			
790007, 790008	790038	CVent Appliance and Check Valve & hose (new!)	

Common Vent Examples



Common Vent Examples



Common Vent Examples



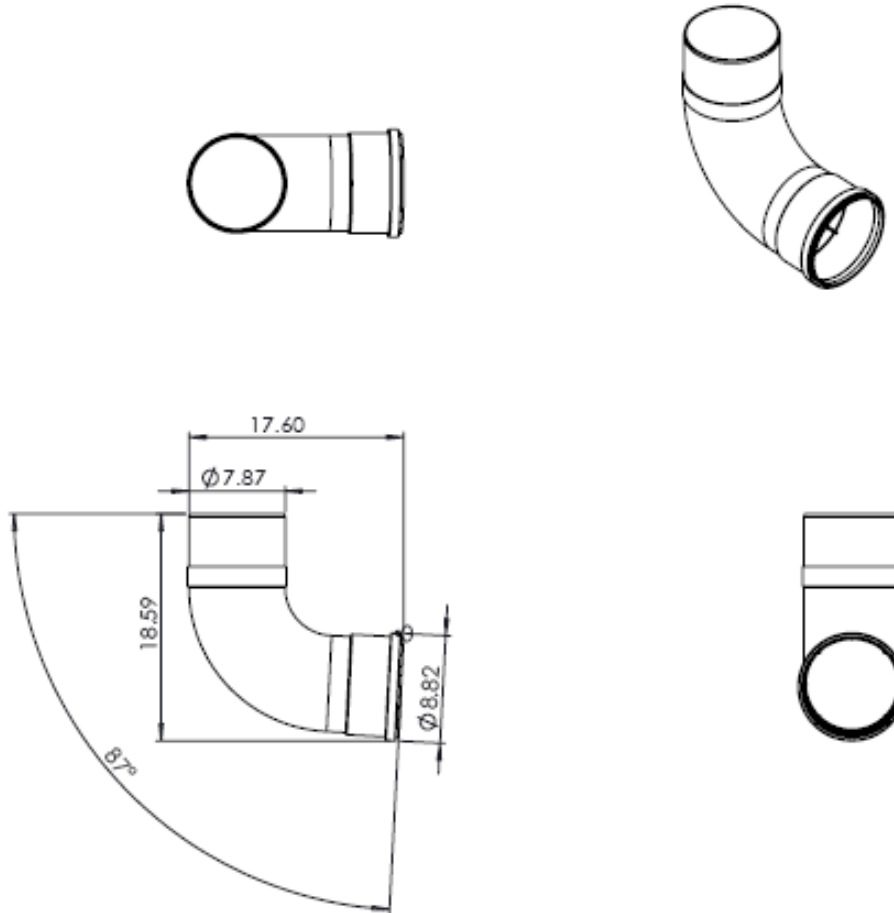
Common Vent Examples



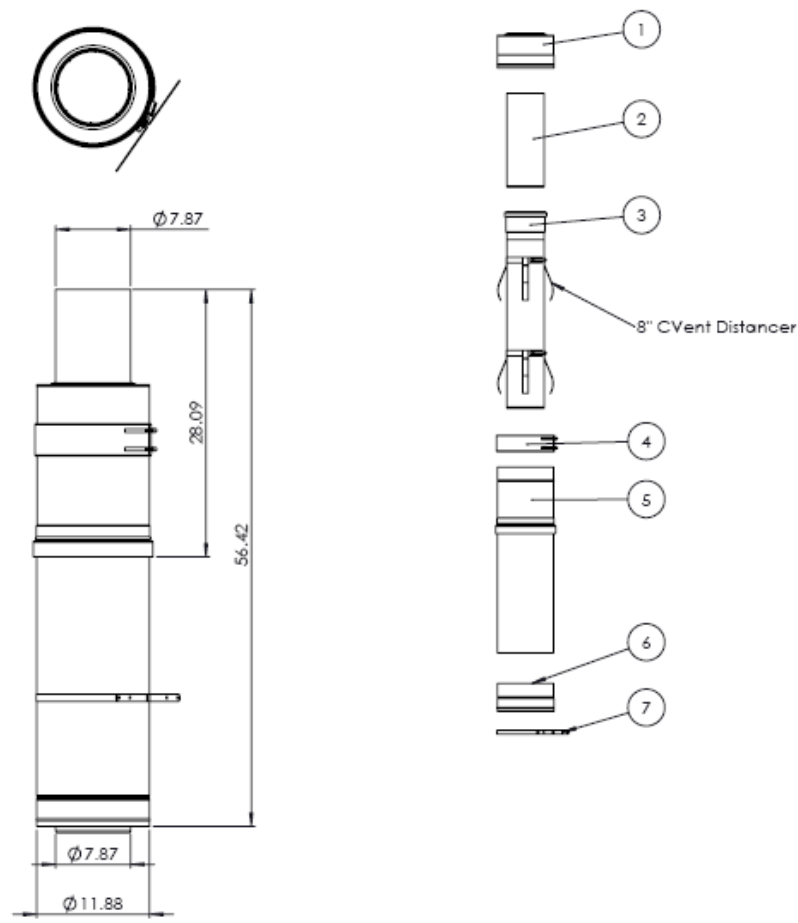
Common Vent Examples



Dimensions of 8" 90° Elbow



Dimensions of Roof Termination Assy. 790001

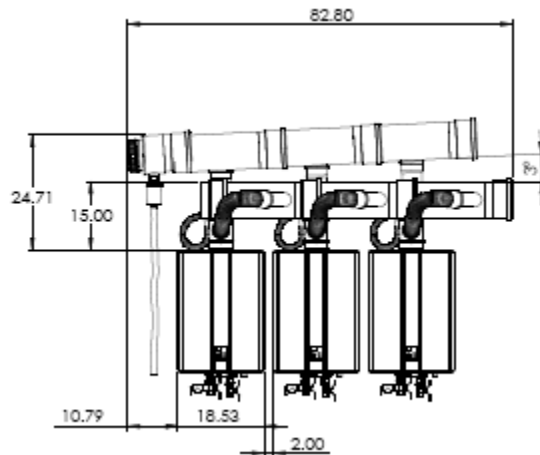


Item	Description	Material	Qty.
1	Terminal Cap	Stainless	1
2	8" Exhaust Extension (Black)	Plastic	1
3	8" Inner Exhaust Assembly (With (2) 8" C Vent Distancers)	Plastic	1
4	Terminal Clamp Ring	Stainless	1
5	Terminal Outer Shell	Stainless	1
6	Terminal Base	Stainless	1
7	Termination Clamp	Galvanized	1

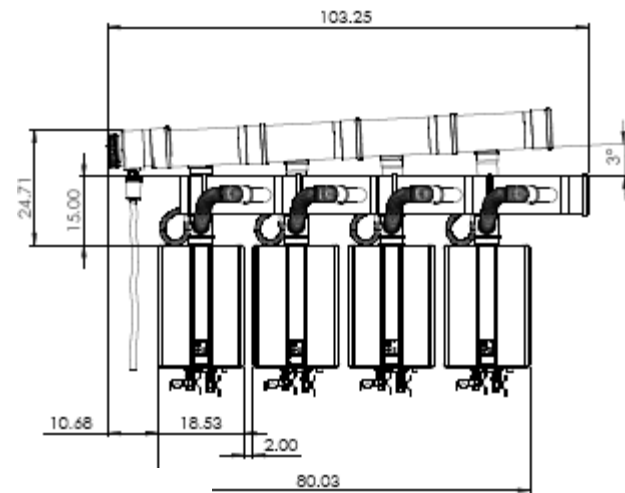


Overall Dimensions of In-Line Racks

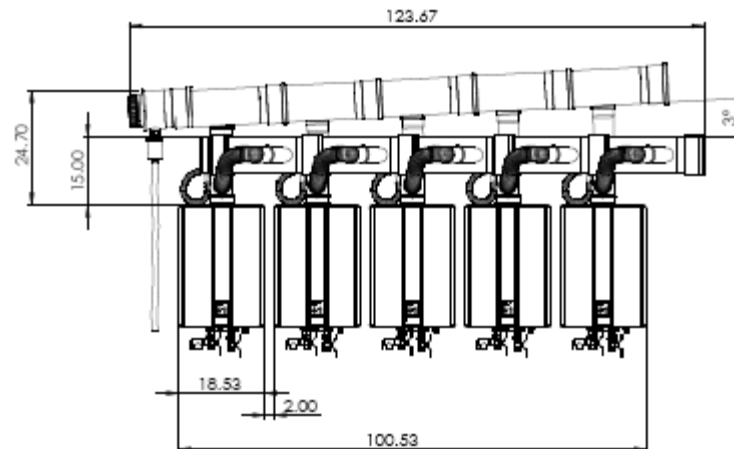
3 Unit In-Line



4 Unit In-Line

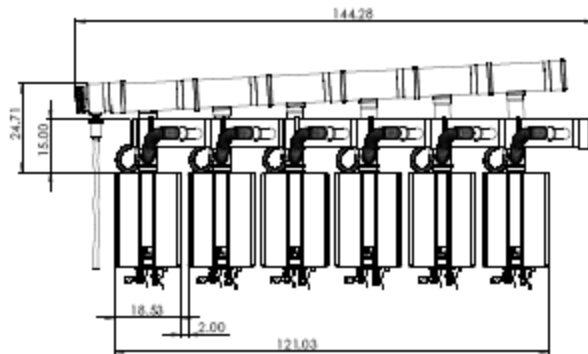


5 Unit In-Line

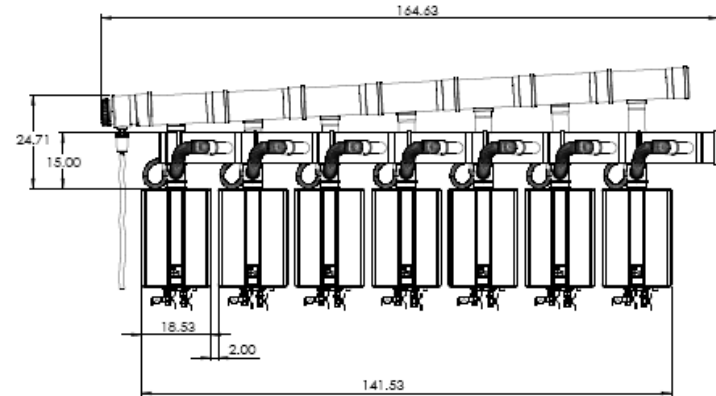


Overall Dimensions of In-Line Racks

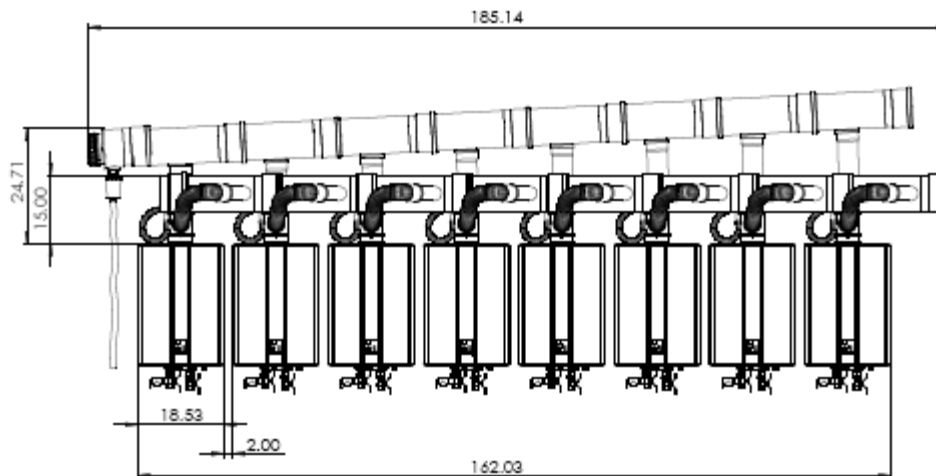
6 Unit In-Line



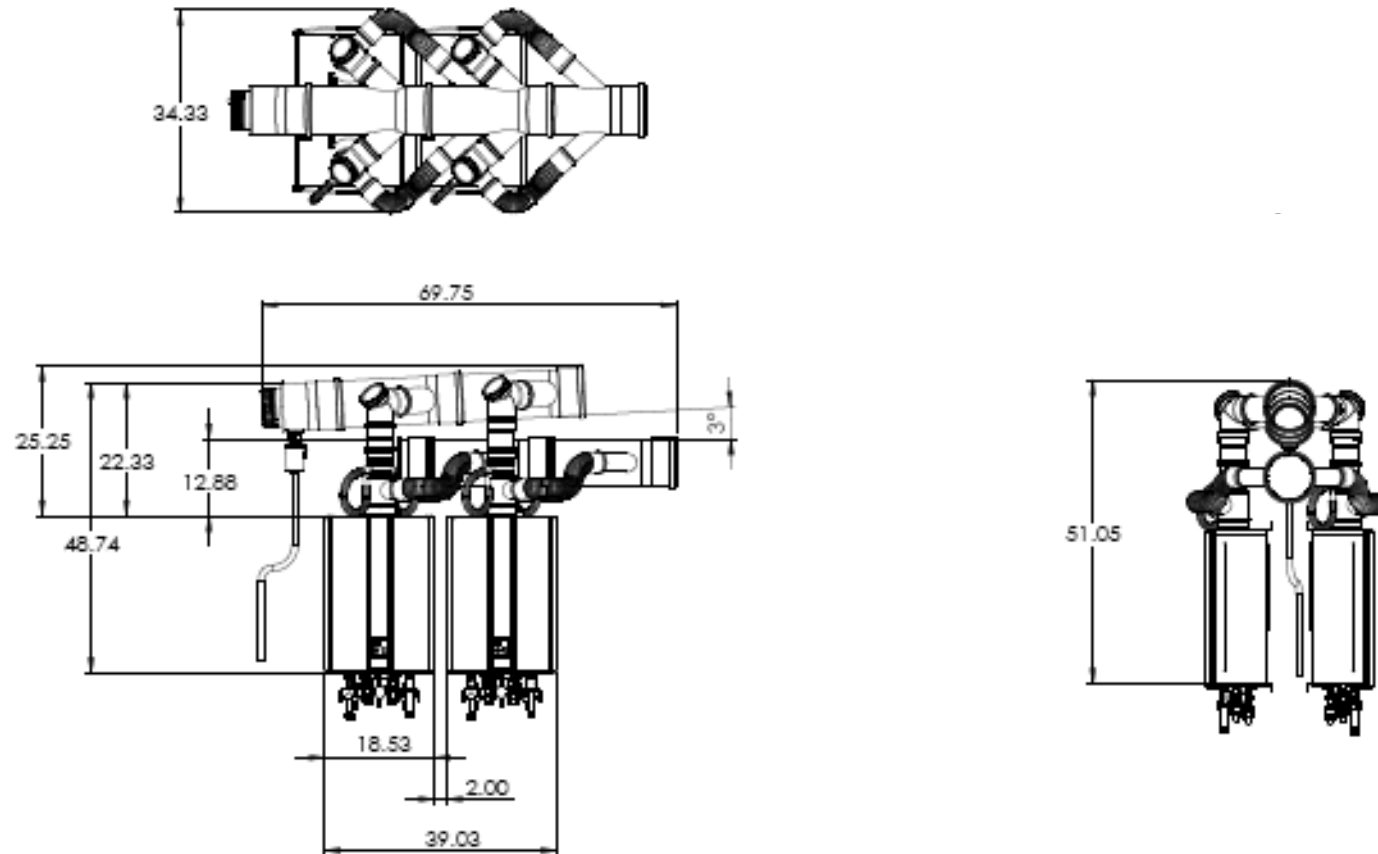
7 Unit In-Line



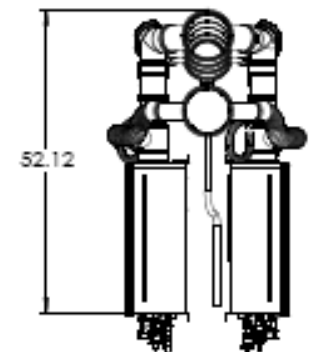
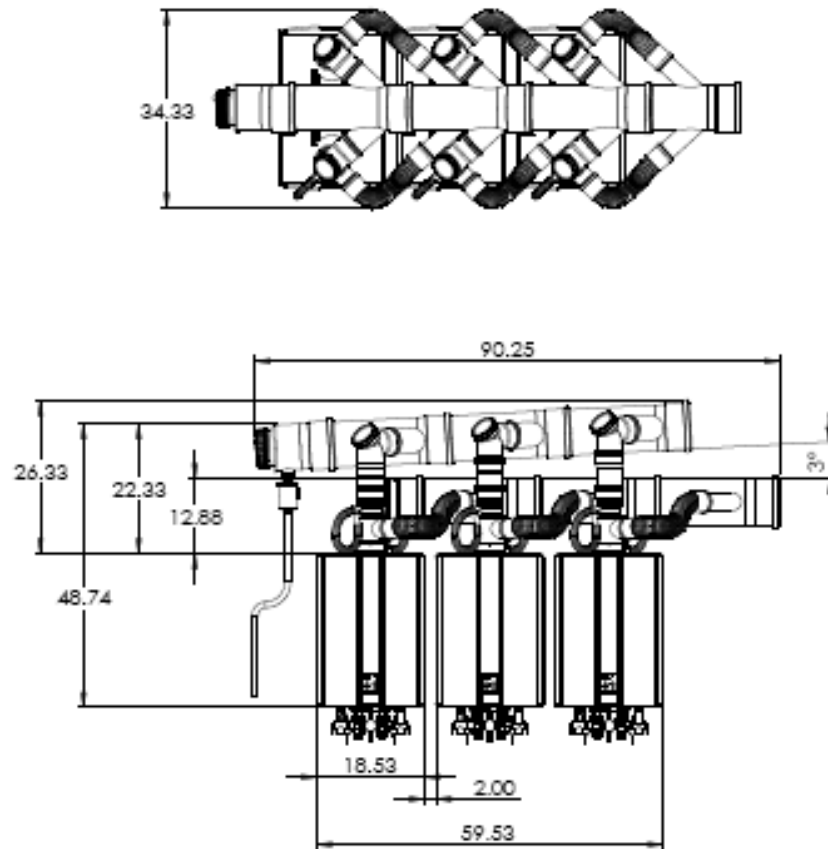
8 Unit In-Line



Overall Dimensions of 4 Unit Back to Back Rack



Overall Dimensions of 6 Unit Back to Back Rack



The End

Rinnai

Common Vent Training

Version 02282014GW

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