

**SUPPLEMENT – VENTING INSTRUCTIONS FOR INSTALLATION AND OPERATION INSTRUCTION MANUALS FOR THE FOLLOWING PRODUCT TYPES:**

**HIGH EFFICIENCY CONDENSING COMMERCIAL, COMMERCIAL POWER DIRECT VENT, LIGHT DUTY COMMERCIAL POWER DIRECT VENT, LIGHT DUTY COMMERCIAL POWER VENT, RESIDENTIAL POWER DIRECT VENT, RESIDENTIAL POWER VENT MODEL SERIES, ULTRA LOW NO<sub>x</sub> RESIDENTIAL POWER DIRECT VENT, ULTRA LOW NO<sub>x</sub> LIGHT DUTY POWER DIRECT VENT, ULTRA LOW NO<sub>x</sub> RESIDENTIAL POWER VENT, ULTRA LOW NO<sub>x</sub> LIGHT DUTY POWER VENT, HIGH PERFORMANCE SERIES POWER VENT, COMBI POWER VENT, SOLAR POWER VENT GAS BACKUP.**

**INSTALLATION OF CENTROTHERM INNOFLUE® SINGLE WALL POLYPROPYLENE VENTING SYSTEMS**

This supplement is for the installation of polypropylene single wall venting system manufactured by Centrotherm ECO Systems, LLC. The Centrotherm venting system is a CSA approved alternative to the PVC, ABS, and CPVC venting components for the High Efficiency Condensing Commercial, Commercial Power Direct Vent, Light Duty Commercial Power Direct Vent, Light Duty Commercial Power Vent, Residential Power Direct Vent, Residential Power Vent Model Series, Ultra Low NO<sub>x</sub> Residential Power Direct Vent, Ultra Low NO<sub>x</sub> Light Duty Power Direct Vent, Ultra Low NO<sub>x</sub> Residential Power Vent, Ultra Low NO<sub>x</sub> Light Duty Power Vent, High Performance Series Power vent, Combi Power Vent, Solar Power Vent Gas Backup Model Series.

The Centrotherm venting system components are ULC S636 approved and listed by a recognized agency and may be installed in the U.S. and Canada. All components used must be from the same manufacturer and are designed for use with the above noted products. The Centrotherm components may be purchased from plumbing supply distributors. The vent size diameter and maximum vent lengths must be followed as detailed in the Installation and Operating Instruction Manual that was supplied with the water heater. Thoroughly read and understand the venting section of the instruction manual supplied with the water heater before proceeding with the following instructions in this supplement. The vent terminals supplied with the water heater or the factory approved accessory vent terminal kits must be used with this venting system.

 **WARNING**

The venting system must be properly installed. Failure to properly install the vent system could result in property damage, personal injury, or death.

**DO NOT** install damaged venting system components. If damage is evident then please contact the supplier where the water heater or venting system components were purchased for replacement parts.

Use only the vent terminals provided or factory authorized terminals for venting this water heater.

The water heater requires its own separate venting system. Do not connect the exhaust vent into an existing vent pipe or chimney.

All of the exhaust venting connections must be leak checked with a soap solution upon initial start-up of the water heater. Any leaks must be repaired before continuing operation of the water heater.

Do not terminate the venting where noise from the exhaust or intake will be objectionable. This includes locations close to or across from windows and doors. Avoid anchoring the vent and intake pipes directly to framed walls, floors, or ceilings unless rubber isolation pipe hangers are used. This prevents any vibrations from being transmitted into the living spaces.

Do not exceed the venting distances or the number of elbows listed in the instruction manual supplied with the water heater. Exceeding the maximum venting distances may cause the water heater to malfunction or cause an unsafe condition.

**DO NOT** operate this water heater until the venting installation is complete and the piping completed. Failure to complete installation before operation can result in property damage, personal injury, or death.

## WARNING

DO NOT install Centrotherm Innoflue venting components with any other manufacturer's vent components. Centrotherm Innoflue components must be used exclusively throughout the entire venting system from the water heater coupling or vent connection to the outside wall or ceiling near the vent terminal location.

This supplement is intended only for additional information for installing Centrotherm Innoflue single wall venting system and the instruction manual supplied with the water heater must be followed for the detailed information provided for the venting system installation.

**Step 1:** Thoroughly read and understand the venting section of the Installation and Operating Instruction Manual that was supplied with the water heater before determining the location of the water heater and the vent terminals. Locate the water heater for the shortest practical vent length to the outside. Measure the total venting distance required to reach the outside wall or roof. Determine the diameter of the venting components to use for the length of vent pipe (and combustion air supply for direct vent models) required by referring to the venting tables in the instruction manual for the maximum vent length for each diameter pipe size. Obtain all the necessary venting system components for the installation.

**Step 2:** Before installation, inspect each vent component for damage making sure the gaskets for each component are fully intact and in undamaged condition. Do not attempt to install or repair damaged components. If a gasket is damaged, these are available from the supplier of Centrotherm Innoflue components. Do not use gaskets from another manufacturer and do not try to repair the gasket.

**Step 3:** A Centrotherm PVC to Polypropylene adapter (Centrotherm ISAGL part series) must be used to connect into a PVC coupling or tee (Commercial and Residential Power Direct Vent air intake connections), condensate elbow (High Efficiency Commercial Condensing models) or the exhaust outlet adapter for Commercial Power Direct Vent and Residential Power Vented models. To make the insertion of the gasketed fittings into the coupling easier, Centrocerin gasket lubricant is recommended. Centrocerin is a water based lubricant available from your Centrotherm supplier. If Centrocerin is not available, water may be used. DO NOT use any other kind of lubricant which may damage the gaskets.

Apply lubricant using your finger to the gasket surface and inside of the coupling and insert the male end of the adapter with the exterior gasket into the coupling, condensate elbow or exhaust outlet adapter connection. If a larger vent diameter size is to be used, use the appropriately sized reducer coupling first on the water heater intake or exhaust vent connection as detailed in the installation manual supplied with the water heater. See the following photos.

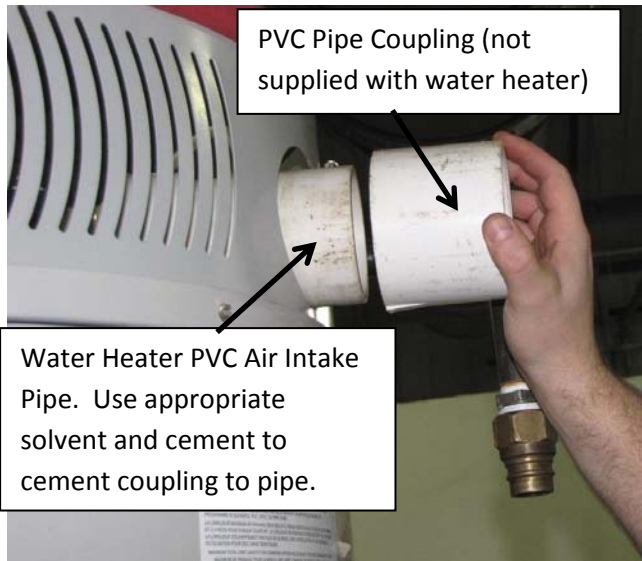
## WARNING

Use only water or Centrocerin lubricant for lubricating the gaskets and pipe ends to allow easy insertion. DO NOT use any other kind of lubricant, since deterioration of the gasket may result, which may allow dangerous flue gases to leak into the room. If the vent pipe needs to be disassembled after the gasket has dried, wet the joint thoroughly to loosen the connection.

**High Efficiency Condensing Commercial Models:** Use the appropriate primer and cement (refer to venting section of instruction manual with water heater) for cementing a PVC coupling (not supplied with water heater) to the end of the PVC air intake pipe connection. Apply Centrocerin lubricant with your finger to the male gasketed end of the Centrotherm PVC adapter and fully insert into the air intake coupling. Loosen the Centrotherm flue pipe clamp (Centrotherm p/n IAFC03) and install on the end of the PVC coupling so that the 3 clamp hooks secure the PVC adapter to the PVC coupling. See following photos.

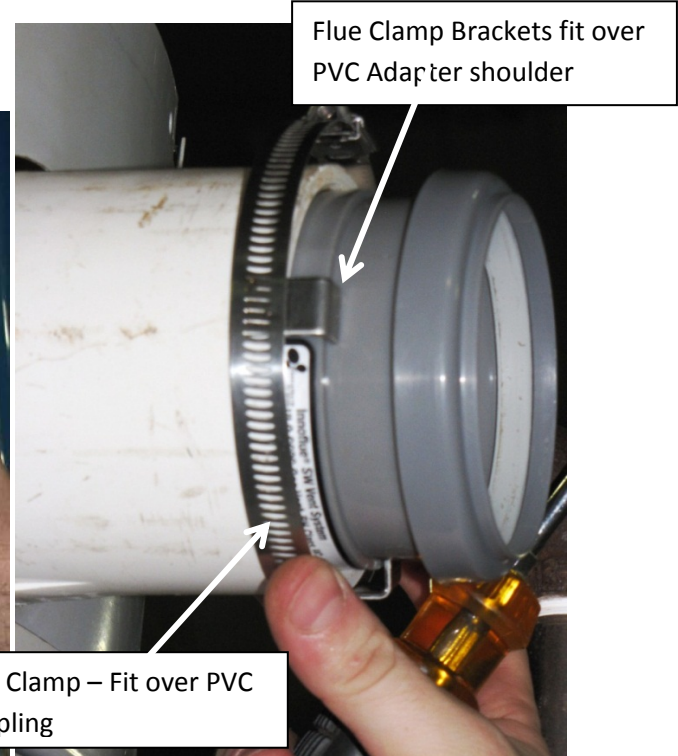
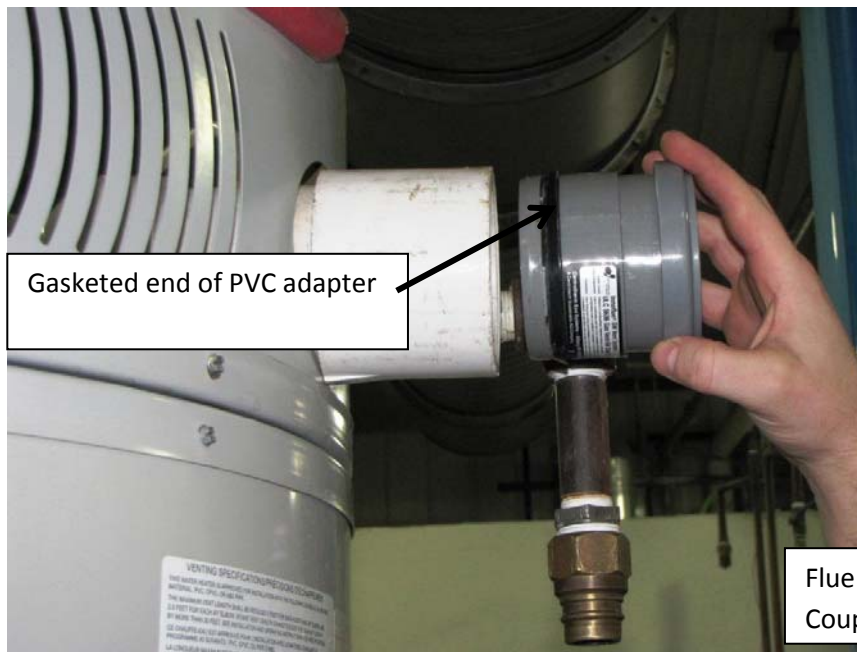
Install PVC pipe coupling over air intake pipe connection and cement to pipe using appropriate solvent and cement.

Apply Centrocerin Lubricant to PVC Adapter gasket using finger



Insert male gasketed end of Centrotherm PVC adapter into PVC pipe coupling.

Install Centrotherm Flue Clamp (IAFC03) over the PVC coupling so that clamp brackets secure the shoulder of PVC adapter fitting.



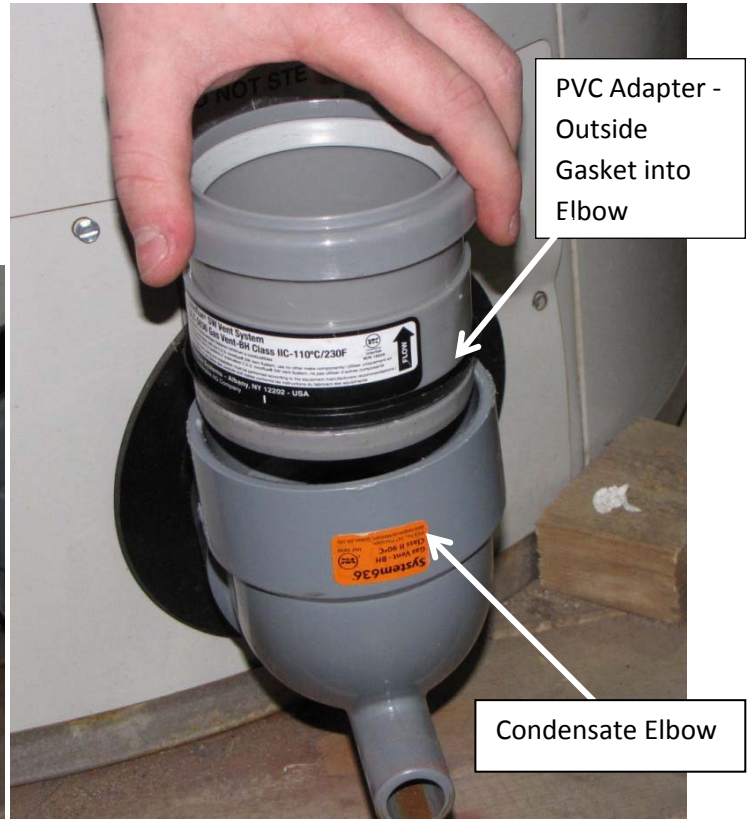
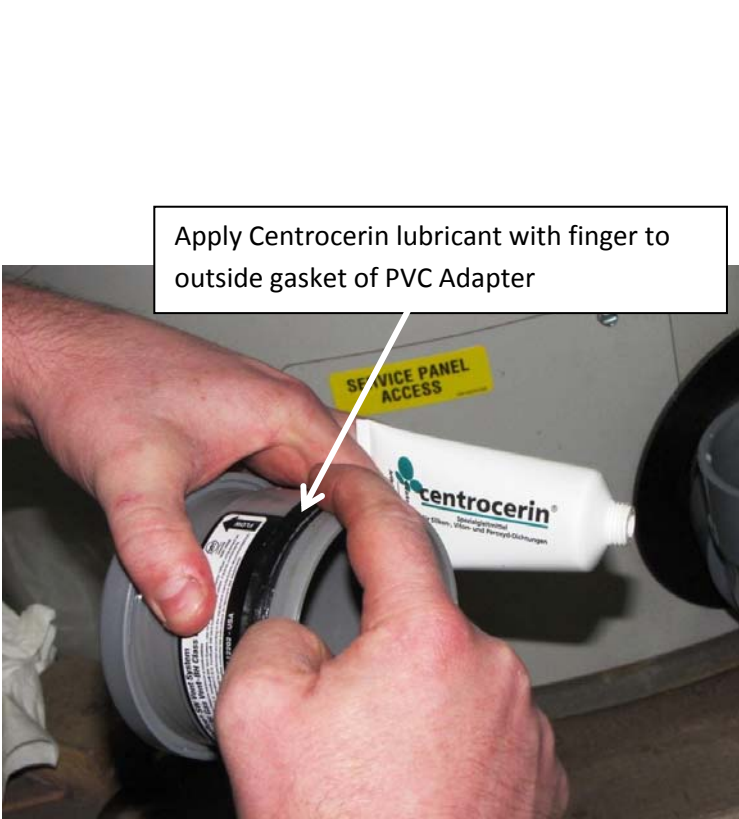
Tighten clamp screw securely to secure the PVC Adapter to the cemented PVC coupling. Refer to the instruction manual for appropriate solvent and cement.



**⚠ WARNING**

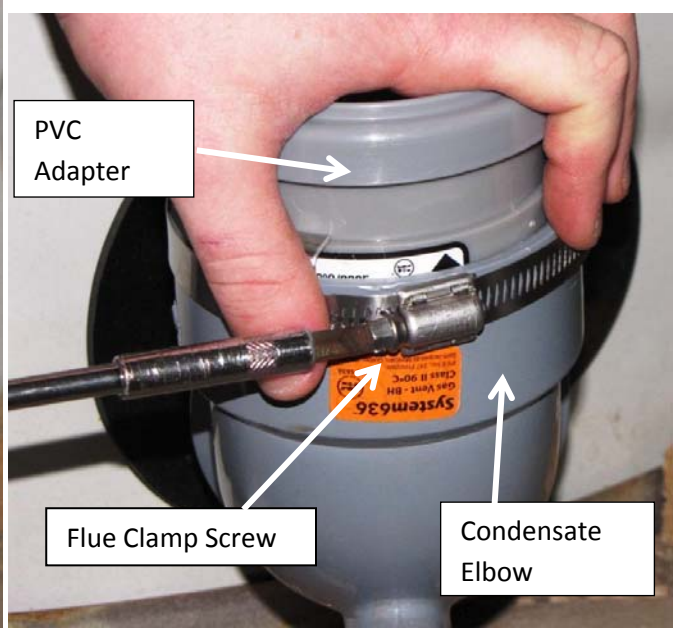
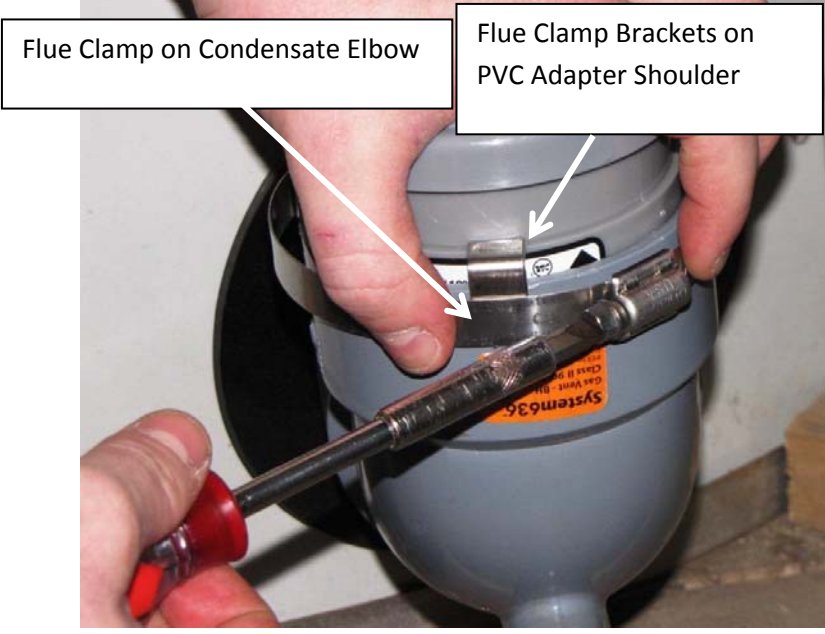
Centrotherm Flue Clamps (p/n: IAFC02, 03, or 04) **MUST** be properly installed to secure the PVC Vent Adapter. **DO NOT** operate the vent system without first installing the Flue Clamps.

For High Efficiency Commercial Model series exhaust connection, apply Centrocerin lubricant with finger to outside gasket and insert PVC adapter into the condensate elbow. Insert PVC Adapter fitting into Condensate Elbow as shown.



Install Centrotherm Flue Clamp around outside of elbow so that Clamp Brackets engage PVC Adapter shoulder as shown.

Tighten Flue Clamp Screw to secure PVC Adapter into Condensate Elbow



Commercial and Residential Power Direct Vent Models and Residential Power Vent Models:

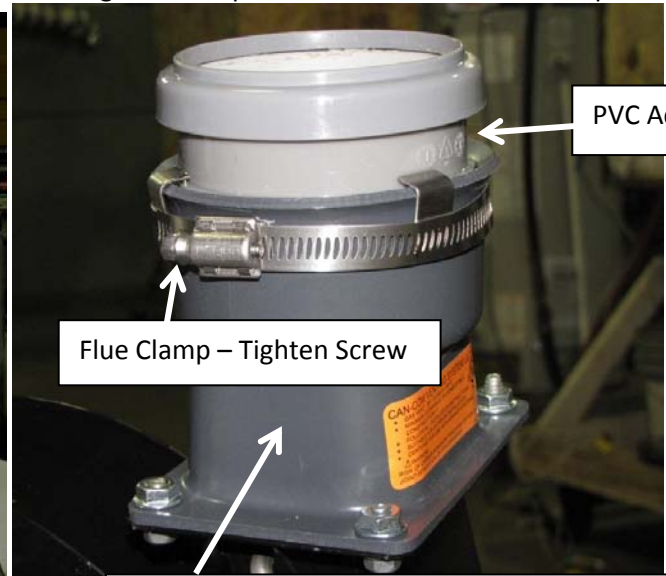
For installations of commercial and residential power direct vent models, install the PVC adapter into the air intake pipe tee as shown.

Install the Flue Clamp over the Air Intake Pipe Tee and tighten Flue Clamp Screw to secure the PVC adapter.



For the exhaust venting for all power vent and power direct vent models, insert the PVC Adapter into the Exhaust Outlet Adapter. On residential models, tighten the clamp to secure the PVC Adapter.

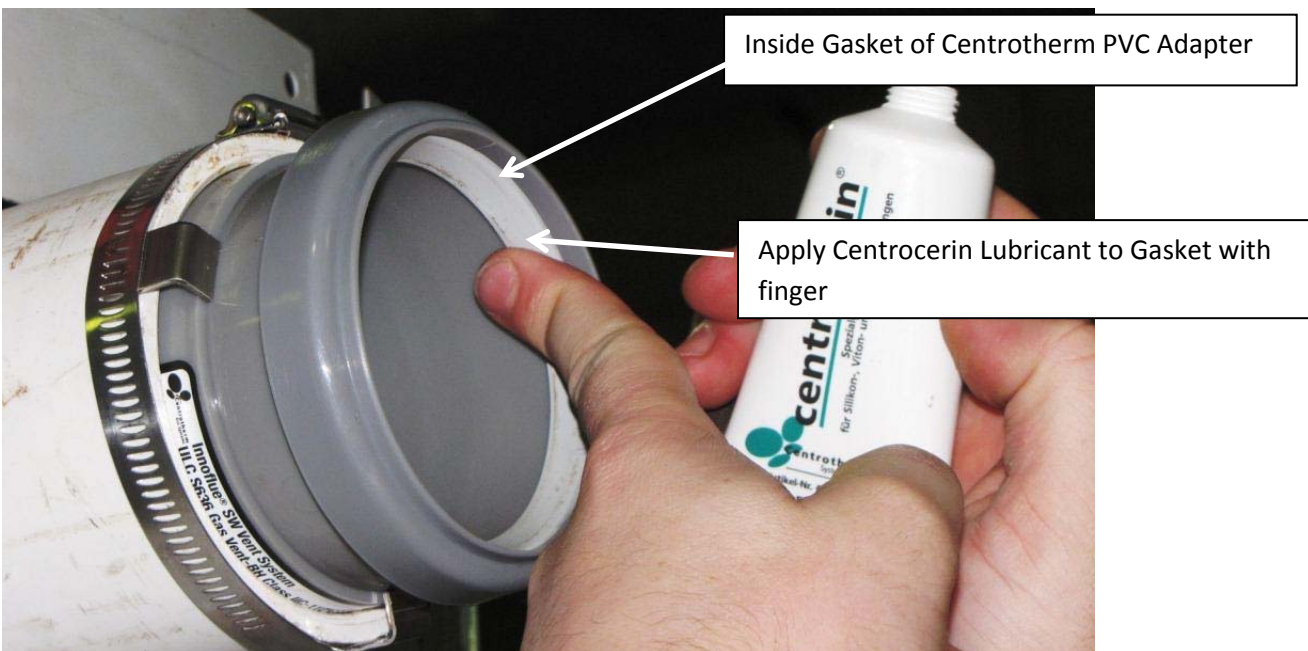
For Commercial Power Direct Vent models, insert PVC Adapter into Exhaust Outlet Adapter. Install Flue Clamp over Exhaust Outlet Adapter and Tighten clamp screw to secure the PVC Adapter.



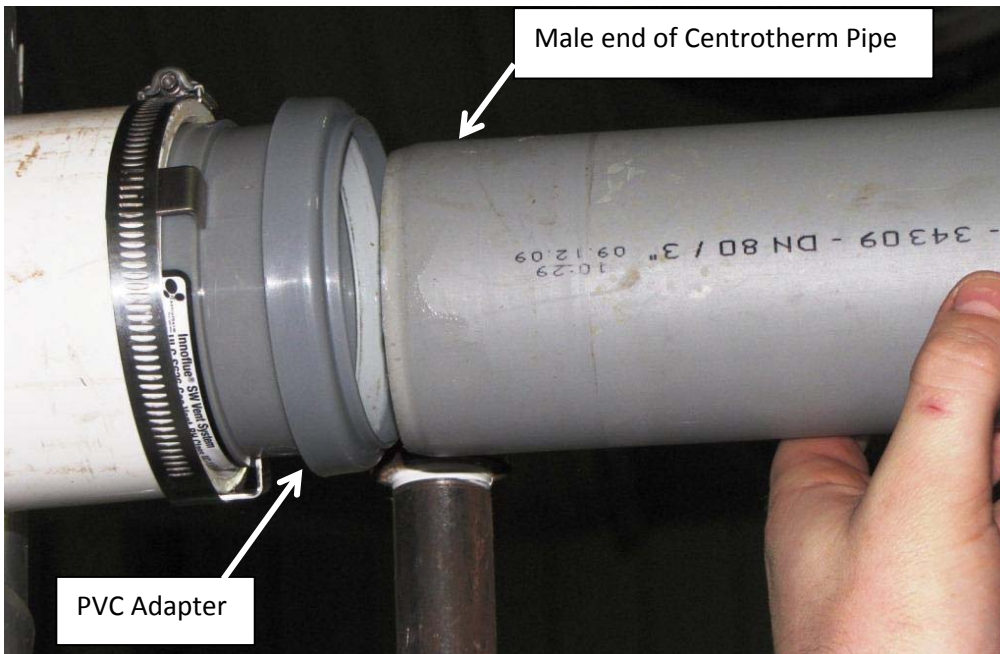
Commercial Power Direct Vent Exhaust Outlet Adapter

**Step 4:** Lubricate the inside gasket of the PVC adapter and the male end (without gasket) of the elbow or straight section of pipe for running the exhaust or intake pipe from the water heater. Insert the male end of the elbow or straight section into the PVC adapter. Use a twisting motion while pushing the male end of the pipe or elbow into the PVC adapter to fully seat into the gasket. The male end of the pipe or elbow must always point toward the water heater.

Apply Centrocerin lubricant to the inside gasket of the PVC adapter.



Insert the male end of the straight pipe or elbow into the flanged gasketed end of the PVC adapter. Push the pipe or elbow into the adapter using a twisting motion to fully insert the pipe into the gasket inside the adapter.



## WARNING

Make sure pipe sections are fully inserted into the PVC adapter and/or gasketed end of Centrotherm fitting. Insertion depth is no less than 2 inches.

**Step 5:** Centrotherm supplied support brackets must be used to support the pipe sections. The vent pipe sections **must be** supported a minimum of every 5 feet (1.5 meters) of vertical run or every 3 feet (1 meter) of horizontal run of pipe. Consult local codes for additional requirements. In addition, support brackets must be installed on both sides of elbows used in the venting system.

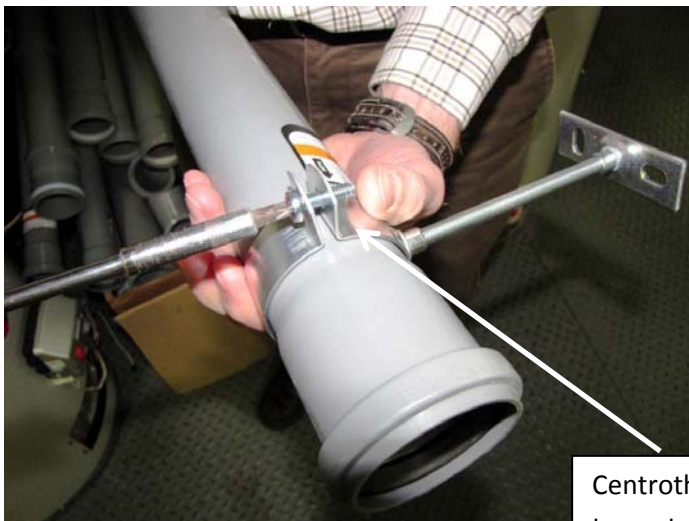
### High Efficiency Commercial Condensing Models:

For horizontal sections of flue pipe, the pipe must be installed with a slight upward slope of approximately 5/8 inch per foot (5.6 cm per meter) toward the water heater (as recommended by Centrotherm) to allow condensate to drain into the condensate elbow.

### Residential and Commercial Power Direct Vent and Residential Power Vent Models:

To prevent condensate from accumulating in the exhaust blower, install the horizontal vent pipe with a downward slope toward the vent terminal of 5/8 inch per foot (5.6 cm per meter) of horizontal vent pipe. An optional condensate kit is available for residential power vent models or a tee fitting with a condensate drain loop may be used on commercial power direct vent models to prevent condensate accumulation in the blower for long vertical runs of vent pipe. Refer to the venting section of the Installation and Operating Instructions supplied with the water heater.

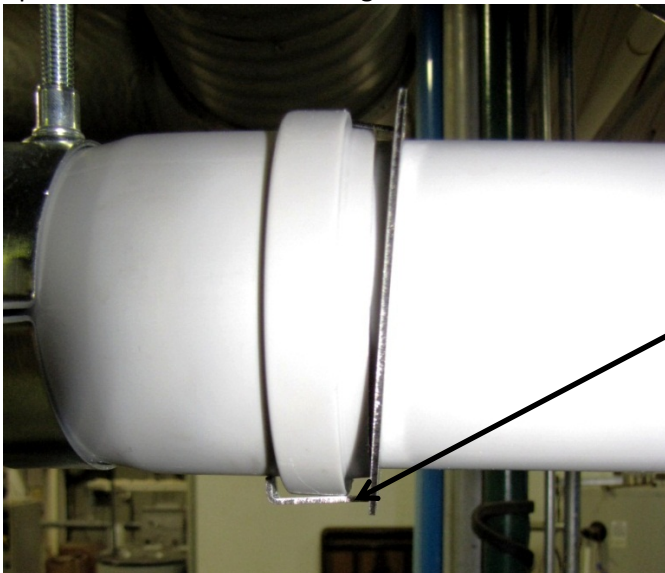
Installing pipe clamp around pipe every 3 feet to support pipe. Install pipe clamps on each side of elbow.



Centrotherm Pipe Hangers – Clamps attach to vent pipe.

Steel joint connector rings (available from Centrotherm supplier) must be used at each pipe joint. The connector rings ensure that the joints do not separate under heavy loads. These connector rings must be used to comply with ULC-S636 requirements. See following photo with the joint connector attached to the pipe sections.

Pipe shown with connector ring



 **WARNING**  
DO NOT operate vent system without properly installing Connector Rings.

Centrotherm Connector Ring. Hooked bracket over bottom joint as shown

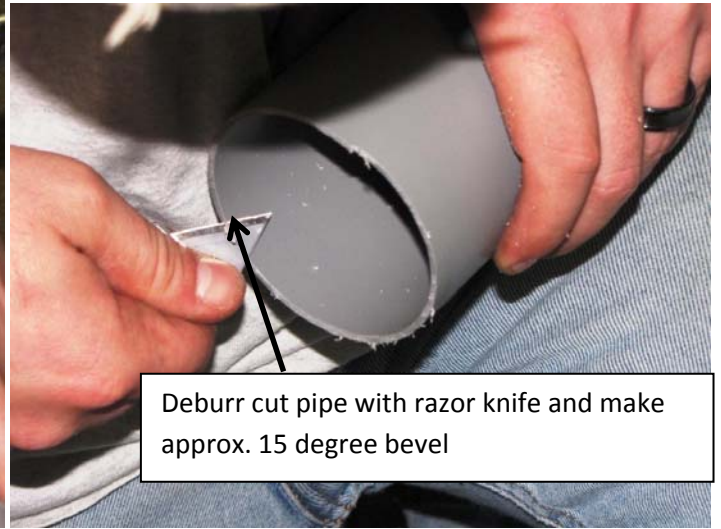
Step 6: If any of the straight pipe sections need to be cut, use a hack saw and make a straight cut on the male (ungasketed) end of the pipe. When making the cut, allow for the 2" minimum (51 mm) insertion distance inside the female end of the pipe. Using a razor knife, deburr the edges of the cut pipe to make an approximately 15 degree bevel to avoid any sharp edges that may damage the gasket.

 **WARNING**  
Cut pipe edges must be properly deburred. Damage to the gasket from not deburring the edges of the cut male end may result in the release of dangerous flue products.



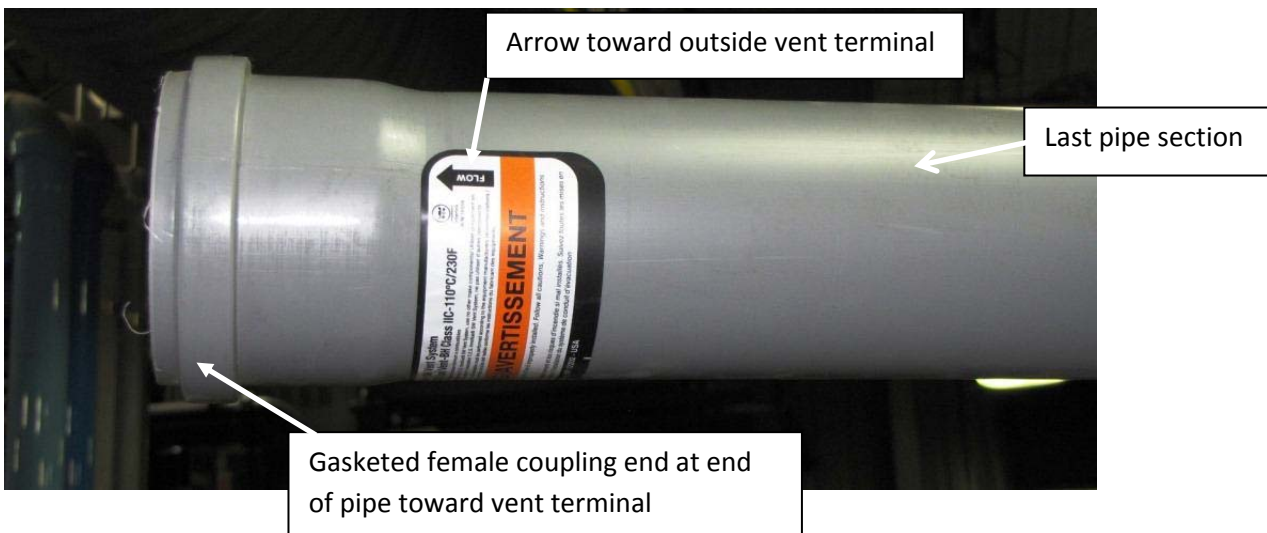
Cut end of pipe to length using a hacksaw. Cut male end only and allow for 2" insertion depth into female end of fitting.

Deburring cut pipe edge with razor knife to create smooth 15° (approx.) bevel to prevent gasket damage.

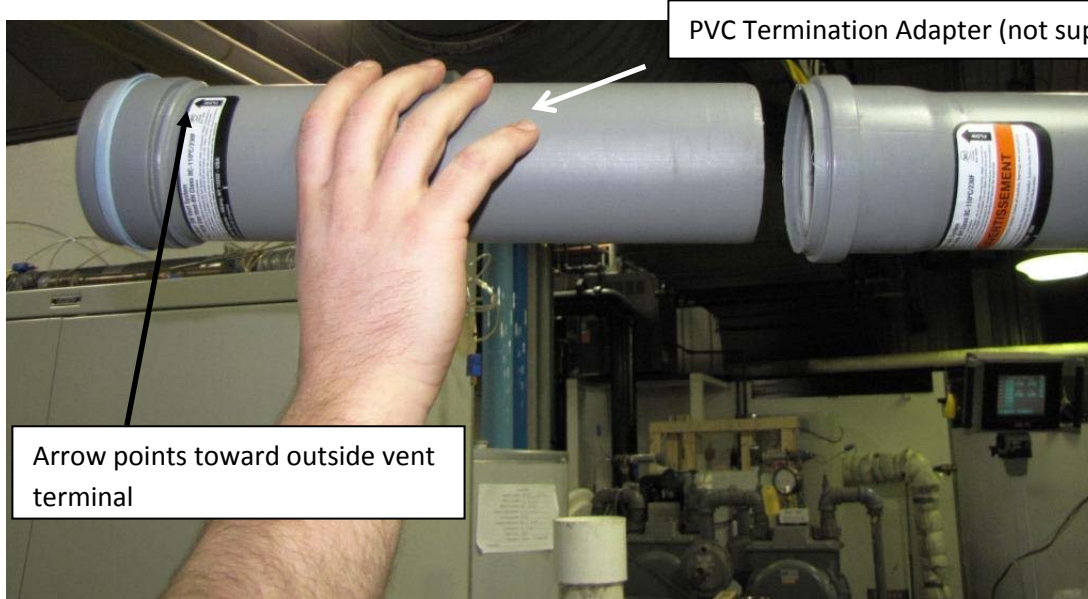


**Step 7:** Continue installing straight sections of pipe and elbows and support with pipe support clamps as previously shown a minimum of every 36 inches (1 meter). Run the vent pipe near the outside wall or roof to be terminated. A Centrotherm ISTAGL-0202, 0303, or 0404 PVC Termination Adapter (2", 3" or 4" diameters) must be used to connect the Centrotherm polypropylene vent pipe to PVC pipe first before exiting the wall or roof. The Centrotherm polypropylene to PVC Vent Adapter has a male ungasketed end and a male outside gasket on the other end. The ungasketed end of the Centrotherm PVC Termination Adapter is inserted into the last section of the gasketed end of vent pipe. The arrow on the Centrotherm PVC termination adapter must point toward the vent terminal. Connect the PVC coupling and flue pipe clamp to the gasketed end of the PVC Termination Adapter. Cut the PVC pipe to the length needed to exit the wall or roof. Refer to the installation instruction manual supplied with the water heater for information regarding the location of the vent terminals.

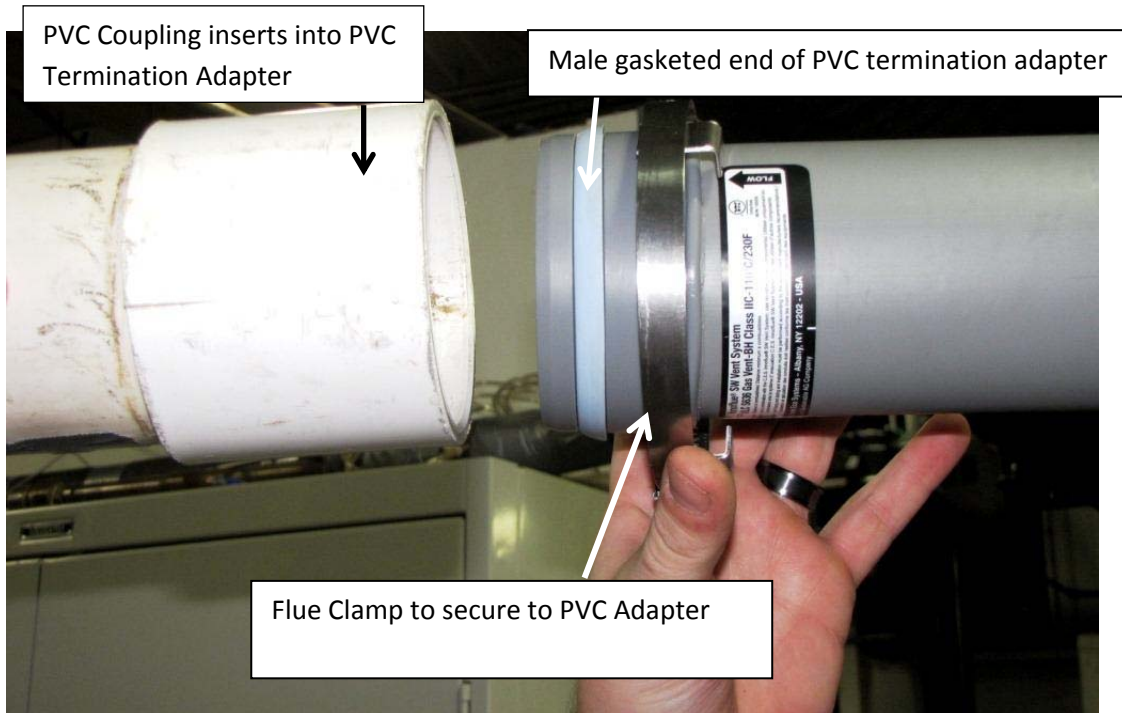
Cut the male end of the last piece of pipe to the length as needed to get near the exiting wall or ceiling of the desired outside vent terminal location. Install this last section of pipe.



Install the appropriate diameter Centrotherm ISTAGL PVC Termination Adapter on the end of the last pipe.



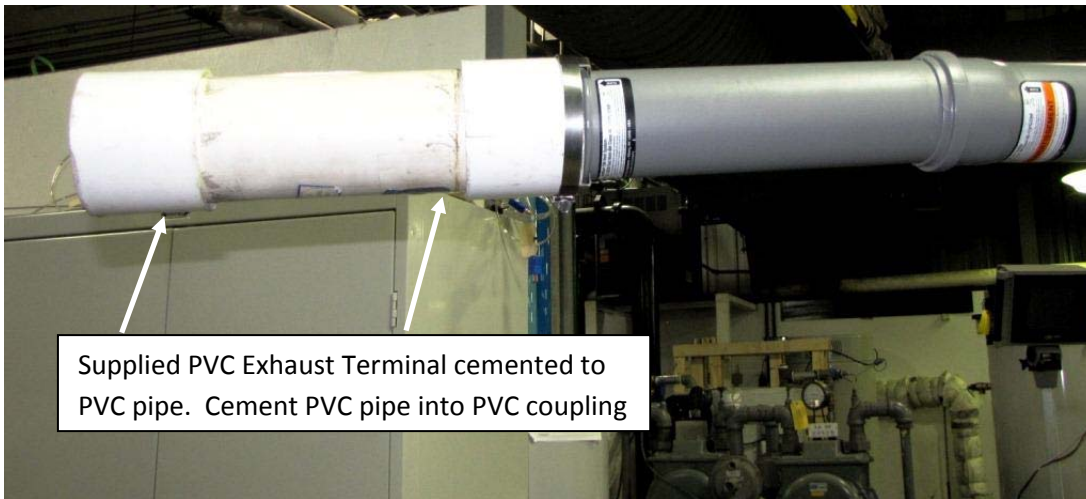
Install a PVC coupling onto the male gasketed end of the Centrotherm PVC Termination Adapter. A reducer coupling may be needed to use the supplied vent terminals if a larger pipe diameter size was used. Cement the straight section of PVC pipe to the PVC pipe coupling. Install the PVC pipe to exit the wall or roof, and then cement the vent terminal onto the PVC or CPVC pipe. Refer to the venting section of the water heater Installation and Operating Instruction manual for the appropriate solvent and cement to use. The exhaust vent terminal for the EF model series is shown. Use the vent terminals supplied with the water heater. See the following photos.



## WARNING

A Centrotherm ISTAGL series PVC Vent Termination Adapter must be used at the end of the last section of polypropylene vent pipe to connect to the PVC pipe coupling. The arrow must point toward the vent terminal. DO NOT USE THE SAME PVC ADAPTER THAT IS USED TO CONNECT TO THE WATER HEATER.

Secure the PVC coupling to the PVC Terminal Adapter with the Centrotherm Flue Pipe Clamp. Cement a short section of PVC pipe into the PVC pipe coupling. Cement the supplied PVC exhaust terminal coupling onto the PVC pipe.



Step 8: After the venting system installation is completed, start the water heater and check all joints for leaks using a soapy water solution. Any leaks found must be repaired. If a gasket is damaged, replacement gaskets may be obtained from the local Centrotherm supplier.

## **WARNING**

All of the exhaust venting connections must be leak checked with a soap solution upon initial start-up of the water heater. Any leaks must be repaired before continuing operation of the water heater. Periodically check all venting system connections for leakage. Replace any defective venting components. Refer to the maintenance section of the Installation and Operating Instructions for further details.