



Venting and Combustion Air Intake Guidelines for Thermal Solutions Boilers

Proper venting of flue gases and appropriate combustion air intake considerations are critical elements to the boiler’s operation, performance, longevity and overall safety of others. Here are some common inquiries that I have summarized regarding venting and combustion air intake “do’s” and “don’ts”.

Venting Flue Gases

Thermal Solutions gas-fired boilers require Category 2 or 4 venting. The venting material must be designed and constructed in accordance with the National Fuel Gas Code/NFPA 54 ANSI Z223.1 and applicable local building codes.

- AL294C has been lab tested; May use single wall pipe.
- If you have a negative draft, you can use category 2 or 4 venting.
- If you have a positive stack you will need category 4 venting.
- The boilers can be individually vented using the same size stack as the connection on the back of the boiler up to 50 equiv. ft. including bends; never reduce piping size less than boiler connection.
- If you exceed the 50 ft. you will have to upsize the diameter of the pipe; Contact the factory for CFM requirements to give to the venting supplier to calculate the diameter required.

You can only common vent our boilers if they are non-condensing and the vertical run is longer than the horizontal run for a natural draft.

- You must provide a barometric damper on the end of the common.
- The common venting must be sized by a venting supplier to accommodate the CFM requirements for all the boilers on the common. Contact the factory for the CFM requirements.

EVCA (condensing boilers) must be individually vented to a positive stack. You may use the same size venting as the connection on the back of the boiler up to 50 equivalent feet. If the stack is longer than 50 equivalent feet, you must upsize the stack. Contact the factory for the CFM requirements to give to the venting supplier so they can calculate the required diameter.

Combustion Air Intake

Inside Room Air - Thermal Solutions boilers can use the air in the room for combustion air as long as the boiler room has a positive pressure. Make sure the screen on the back is clean and there is nothing blocking it.

Outside Air (Sealed Combustion) - You may duct the combustion air to the back of the boiler from outside.

- Combustion air piping can be galvanized smoke pipe, PVC, CPVC, or flexible aluminum piping.
- Use outside air if inside air quality is questionable.
- Use outside air if the boiler is installed in manufacturing plants, laundries, dry cleaners or other locations with heavy particulates in the air.
- Do not locate air intake where petroleum distillates, CFCs, detergents, volatile vapors or any other chemicals are present. Severe boiler corrosion and failure will result.
- Do not locate air intake termination where natural convection or wind conditions may cause the boiler exhaust gases to be drawn into the air intake.
- You may use the same size piping as the connection of the boiler up to 50 equivalent feet (including bends); never reduce piping size less than boiler connection.
- If you exceed the 50 equivalent feet please contact the factory for the CFM requirements so you can upsize the ductwork accordingly.

Please refer to the appropriate Thermal Solutions boiler manual for more instructions and guidance regarding venting and combustion air intake requirements.