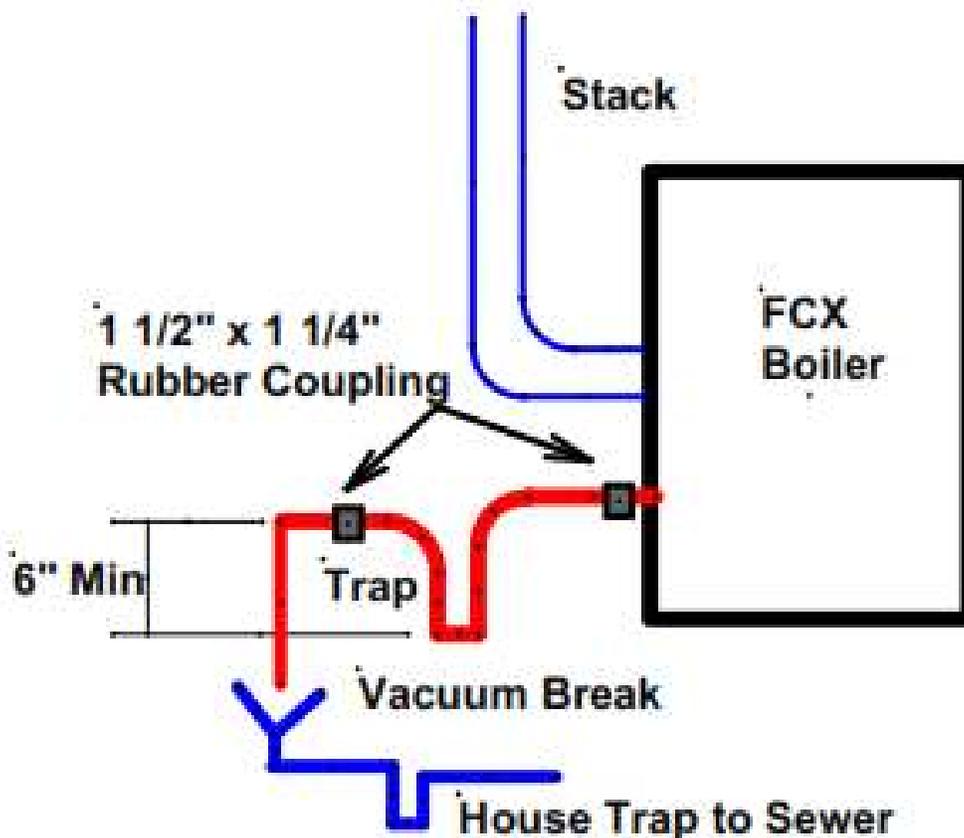


Handling the Condensate

Trap Requirements

In order to isolate the stack gasses while draining off the condensate, the use of a water trap is needed as in a kitchen drain in reverse. A kitchen drain isolates the sewer gas from the device (sink) vs. isolating the drain from the boiler.

The following pictorial demonstrates the minimum requirements: The trap may be constructed of any material rated for the slightly acidic condensate. The most popular material is 1 1/2" ABS. The ABS is then connected to the boiler condensate drain with rubber couplings. Rubber couplings are needed for disassembly and cleaning.



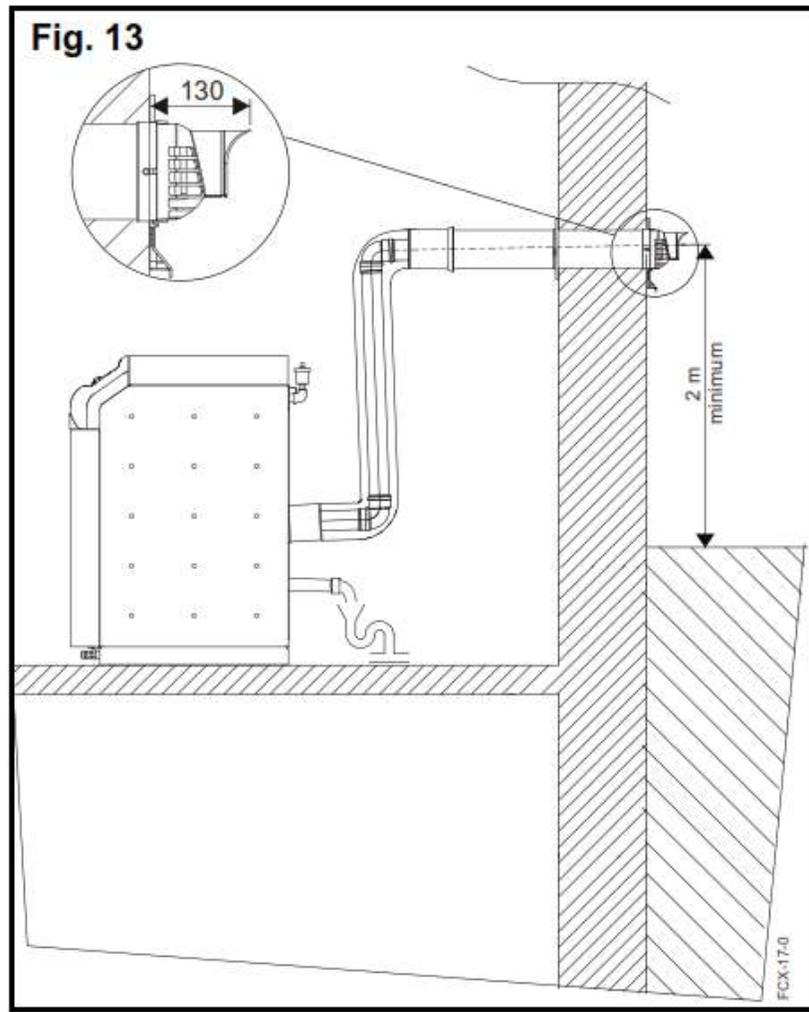
Please note the Installation Manual corrections to follow.

Installation Manual Correction

On page 20 (and other pages) of the installation manual you will find drawings such as this that are incorrect. Among other things are the maximum and minimum lengths specified, but most important is that the drawing below infers that there is an internal trap in the condensate line inside the boiler.

THERE IS NOT!

The note at the bottom of page 9 refers to an external trap which must be added or an unsafe condition will exist in the form of combustion gasses (of which carbon monoxide is a product) being released into the room.



The configuration shown in Figure 1 one below contains a number of features that may or may not be needed based on the application. They include:

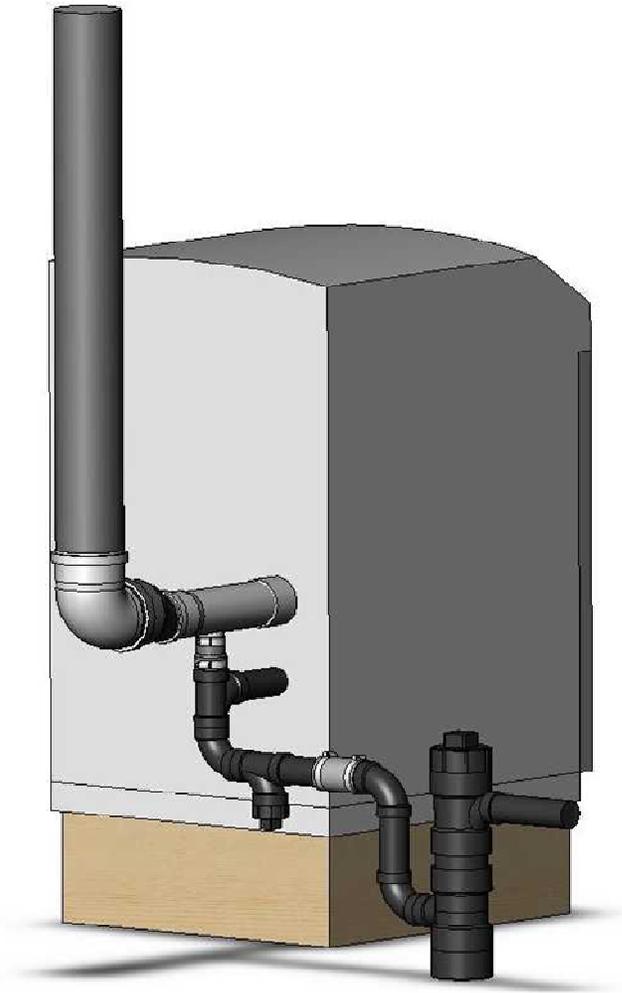


Figure 1

to be generally not needed.

Drain/Plug

This feature is handy when a condensate pump is used. The object here is to place a bucket below this drain while flushing so you don't exceed the capacity of the condensate pump.

Boiler Stand

When installing in a garage or where vehicles are parked you must use a stand to elevate the boiler. A basic 24"x24" steel stand at least 14" tall is needed.

When the boiler is installed in a non-combustible area such as a utility room, it is recommended the boiler be elevated as it is easier to work with traps and drainage. The stand can be made from 2x8's and plywood. While the boiler is a zero clearance boiler, I also recommend a sheet metal top be placed over the wood to protect from oil spills.

Stack Drain

The picture shows a single wall stack where it is drained separately from the condenser. This was originally recommended by the former distributor MPI but has shown

Neutralizer/Trap

While a trap is always necessary, a neutralizer is not. ABS or PVC pipe is immune to the acidic content and household wastes totally neutralize the effluent before affecting the septic system. However, if copper or steel pipes are used the effluent should be neutralized. The system shown uses a 3' ABS construct that can be filled with neutralizing media such as limestone. Commercial devices are also available.

Rubber Couplings

Whatever system is used make sure it can be disassembled for cleaning. If a boiler soots, this trap will also plug with soot.

Vacuum Break

A vacuum break is needed between the boiler and the household drain system. The purpose of this is if the household venting fails, it will not suck the boiler trap dry.

Figure 2 shows one of the earlier installations using this method without the neutralizer but with a stack drain, cleaning drain, and a condensate pump.



Figure 2

The Picture below shows a simplified trap consisting of a rubber coupling and vinyl tubing.



The final tubing is 3/4" ID with a threaded hose nipple with a threaded adapter and a rubber coupling to connect the boiler condensate discharge. This method is ideal for feeding directly into a condensate pump. It also allows for the removal of the hose when flushing.

Note the notch in the bottom of the hose. This prevents the blockage of the flow into the pump if it is shoved too far into the pump reservoir.