

Homeowners: Condensing Gas Boilers

From RVR

Condensing Gas Boilers

Condensing gas boilers are the most modern, efficient boilers you can buy. They can convert up to 96% of fuel into heat by capturing the heat normally lost in waste gases.

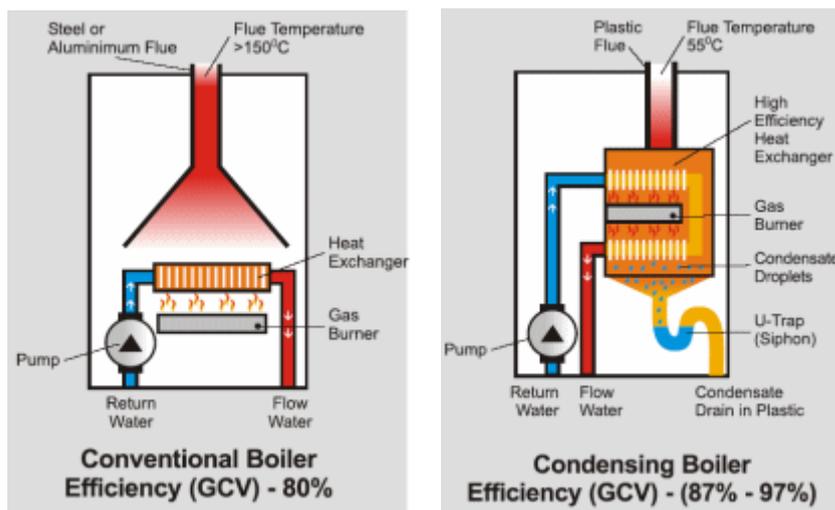
It has become compulsory to install a condensing boiler in Ireland if you are installing a gas boiler. Chances are that if you have an older house - then you probably have an older poor efficiency boiler.

A typical condensing boiler will cost about €1500 to install but usually pays for itself with fuel savings very quickly.

How does a condensing boiler work?

When gas or oil is burned carbon dioxide and water are produced. In an old fashioned boiler, these exhaust gases go up the chimney or flue at high temperature (about 150°C). At this temperature the water produced by combustion is in the form of vapour which ends up in the atmosphere. About 1/5 th of the total heat produced by burning the gas is wasted in this way.

A condensing boiler has a much more efficient heat exchanger which extracts the maximum amount of heat from the burned gas. The exhaust gases are at a much lower temperature of between 40°C to 70°C. At these temperatures, the water produced by combustion begins to condense out resulting in even more energy recovery. A condensing boiler wastes only about 1/20th of the fuel compared to 1/5th for a conventional boiler.



Variable Heat Output

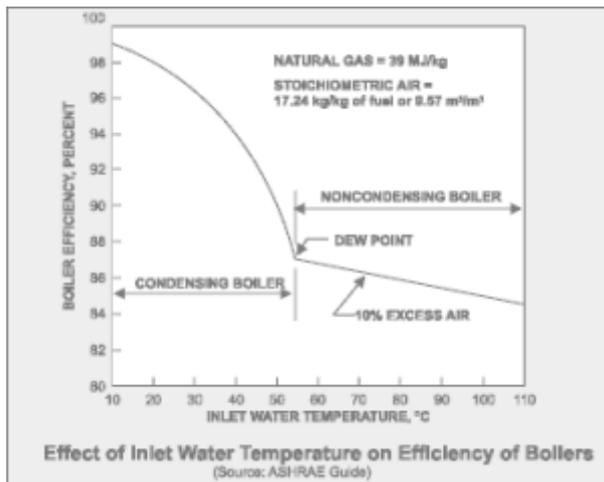
Older boilers switch on when heat is needed and off when it isn't so there are constant cycles of 'HOT' and 'COLD'. A modern condensing boiler does not work like this. It modulates it's output by automatically increasing or decreasing the flame to match the heat demand.

The Weather and Boiler Efficiency

In mid winter when the temperatures often approach 0 degrees or below, it is important to have maximum heating available. At this time of year the boiler should send high temperature water (80C) to the radiators in your home.

However the average temperature during the heating season is closer to 8 deg so the maximum heat demand is not often needed. In fact the heating system usually needs less than 60% of its maximum possible output. A good condensing boiler can compensate for these changes in the weather by varying the temperature of water circulated in the central heating system. In order to achieve this the boiler will be fitted with a special temperature sensor which is installed outdoors. This is called 'Weather Compensation'.

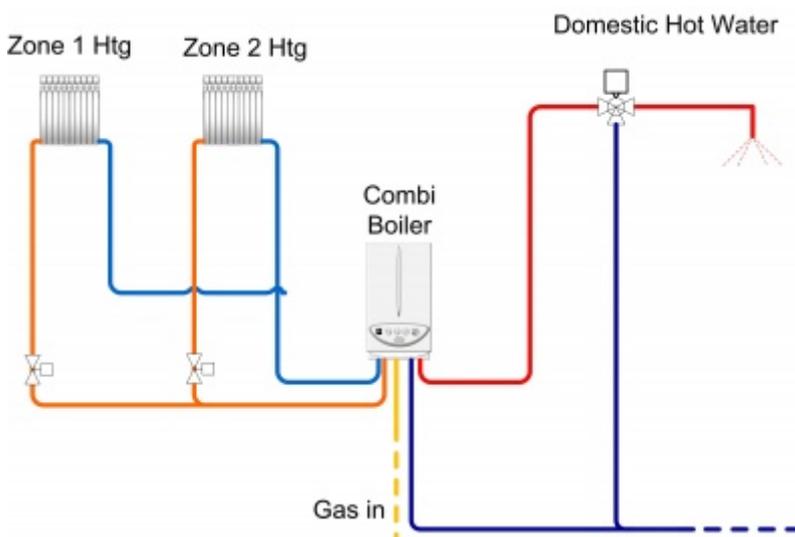
This greatly improves the boiler efficiency. The lower the water temperature in the central heating system ; the more efficient the boiler. The graph shows how the efficiency of a condensing boiler varies with the return water temperature of the central heating system.



Types of condensing boiler

Condensing boilers come in various configurations. There are three basic types of condensing boiler, Combi boilers, Storage Combi boilers and System boilers.

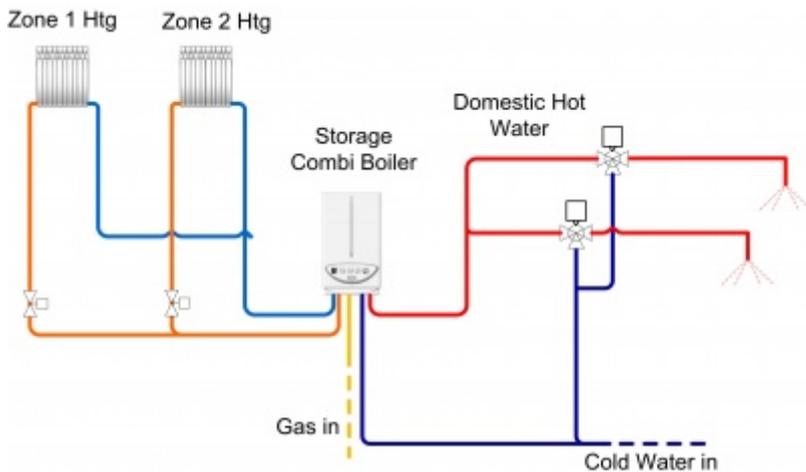
Combi Boilers



A combi boiler comes complete with a built in heat exchanger for providing domestic hot water on demand. When a tap or shower is turned on, the cold water is drawn through the boiler and instantaneously heated.

This type of boiler is generally quite low cost. However, it can have problems heating the water if too many showers and taps are turned on at the same time. This type of boiler is suitable for apartments and small homes.

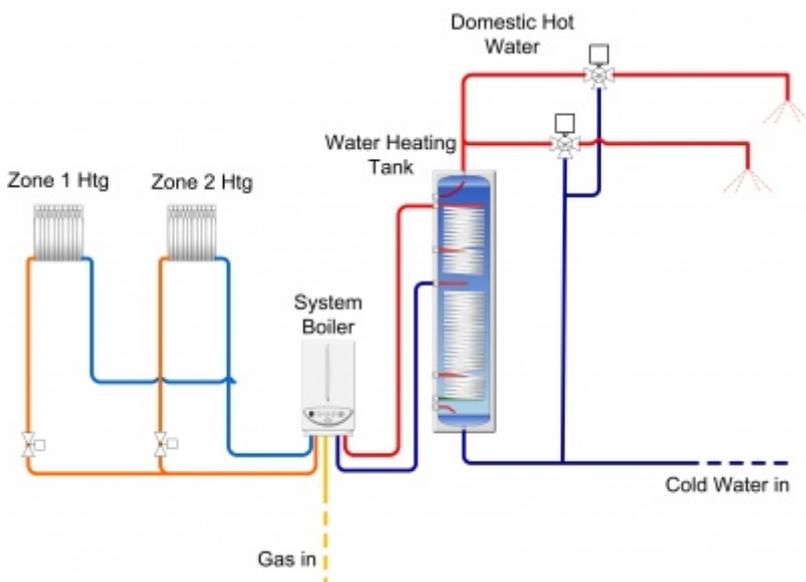
Storage Combi Boiler



A storage combi boiler comes complete with a built in storage tank (generally 45-60 litres) for providing domestic hot water on demand. When a tap or shower is turned on, the cold water is drawn from the in-built storage tank.

This type of boiler is a little more expensive than a combi boiler. However, it does not have the same problems as a combi boiler as it always has a reserve of hot water available. The coil in the built in storage tank is also very powerful, so it has little problem keeping up with demand. This type of boiler is suitable for apartments and homes up to approximately 3 bedroom.

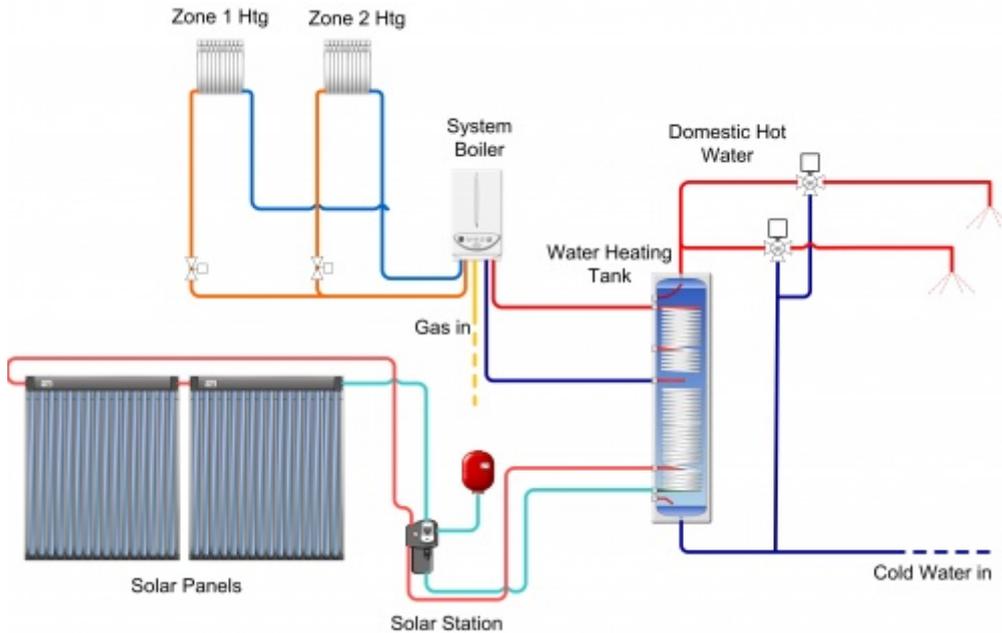
System Boilers



A system boiler has no built in storage or heat exchanger. As a result, it must have a separate water heating tank. It heats the domestic water indirectly through a coil in the water heater.

This type of system is suitable for heating any home. However, it is generally not used in apartments as it requires extra space for the water heating tank.

Systems combining solar and condensing gas boilers



It is very easy to combine a system boiler with a solar heating system. This is done by installing a twin coil water heater and connecting the boiler to the top coil and the solar to the bottom coil.

Condensing boiler products

RVR Supply gas boilers from Italian company Immergas. They are the largest manufacturer of gas boilers in Europe.

For more information, please see the Gas Boiler Products page.

Retrieved from "http://www.rvr.ie:900/index.php?title=Homeowners:_Condensing_Gas_Boilers"