

# IMMERGAS Magis Combo Plus

## Case study - 1970s Co. Cork house

This house in West Cork was built in the 1970s and was heated using LPG.

Like many houses of this age, the house has had some basic upgrades such as a pumped cavity, attic insulation, and improved glazing, but no other significant measures.

The owner is conscious of energy usage and their carbon footprint and had previously installed a solar water heating system.



The owner wished to reduce their carbon footprint further and investigated a deep retrofit, but this would have cost them over €50,000.

Instead, they chose to install an Immergas Magis Combo Plus 9 heat pump, which allowed them to re-use their existing radiators and water heating cylinder. No deep retrofit was required. The capital cost was under €10,000.

The Magis Combo Plus is a heat pump specially designed for older homes. It's fast and easy to install as **existing radiators and water heating cylinder may be re-used.**

A 9kW heat pump provides the vast majority of the heating (up to 94% in this case). A powerful 24kW gas boiler backup module supplements the heat pump with the balance of the heating.

## Outdoor unit

The outdoor unit was mounted on flexi-feet and placed directly outside the existing boiler house. Two pre-insulated refrigeration pipes were run from the outdoor unit into the boiler house.

Wall mounting was also possible but was unnecessary in this case as there was plenty of space and ample solid ground.

The outdoor unit clearances were observed - broadly; these are 300mm left/rear, 600mm right, and 1500mm front. Power was supplied to the outdoor unit via a dedicated 32A MCB and isolator.



# Indoor unit

The old gas boiler was removed, and the indoor unit was installed in its place.

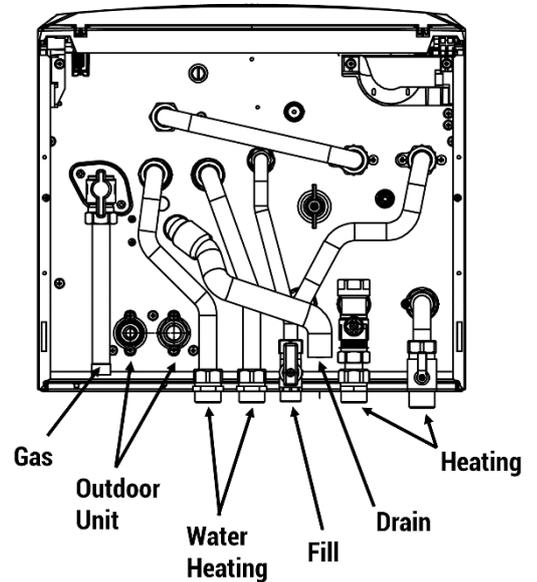
The indoor unit contains central heating pumps, expansion vessel, heating safety valve and a 3-way valve for hot water production.



Replacing the existing boiler was straightforward as the pipework required little modification. Pipe locations and centres on the Magis Combo Plus are similar to those on all Immergas boilers.

The refrigeration pipes from the outdoor unit were connected as well as gas, heating, hot water, fill and drain connections. All connections apart from flue are from below.

Magis Combo Plus 9 – connections



A standard concentric horizontal flue kit was connected to the flue connection at the top of the Magis Combo Plus. The existing flue opening was re-used.



The smart controller built into the indoor unit automatically manages the heat pump and supplementary boiler operation.

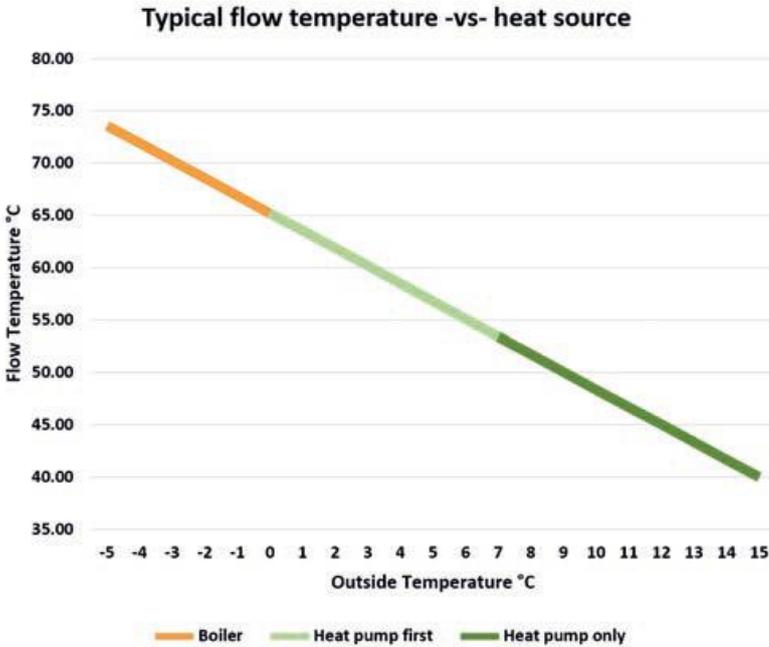
It manages up to three heating zones (two in this house), water heating and legionella control.

Power to the indoor unit was provided via a 5A fused spur.

# Central heating

Calculations showed that the house's existing radiators would comfortably run at 70°C when below freezing outside. When it is warmer, a much lower flow temperature is needed.

**A built-in feature called Weather compensation automatically increases the flow temperature to the radiators when it is cold outside and reduces the flow temperature when it is warm outside.**



**This technology is what allows the Magis Combo to work well with the existing steel panel radiators in this house.**

The Magis Combo can provide up to 65°C flow temperature, so the heat pump will be the primary heat source most of the time. Up to 94% of the heat in this house now comes from the heat pump.

The boiler backup will only run when the radiators need more than 65°C, or if the heat pump doesn't have enough capacity.

# Water Heating

The water is automatically heated by the Magis Combo Plus in the most efficient way possible. It may use either the heat pump or boiler module. This means there will never be a lack of hot water.

The house has an existing solar water heating system in place, and the Magis Combo Plus has been connected to the existing 300L twin coil stainless steel cylinder.

Both systems will work well together. The Magis Combo Plus monitors the temperature of the cylinder so it will heat the water automatically if there is not enough heat from the solar system.

The Magis Combo Plus has an anti-legionella function. It automatically heats the hot water to over 60°C periodically to ensure the hygiene of the domestic hot water is maintained. No Immersion is required.



## Summary

The Magis Combo is an air source heat pump specially designed for use in older homes.

It combines a very efficient heat pump with a powerful supplementary/backup gas boiler module.

It can be fitted in any house, with no need to change the radiators or water heating tank in most cases. It is ideal for homes with a high level of heat loss.



The Magis Combo Plus 9 model is suitable for most houses except those with a very high heat loss or floor area. Larger models are also available.

## Contact us

Please contact us for further information.

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