

Ranheat's new Economisers at W10

THE USE of woodwaste as fuel to heat factories in the furniture and wood processing industries is nothing new. There have, however, been advances in design that have lead to greater efficiency in the use of wood as a fuel.

Modern boiler design, with conventional fuelled boilers, has led to a new generation of oil and gas condensing boilers. They are called condensing boilers as they take the flue temperatures so low that water vapour can be seen issuing from the flue, often with a plastic flue system.

Whilst it is not possible to do this with a wood fired system, the efficiency of a boiler can be greatly increased by the use of an economiser. The economiser is a separate or integrated heat exchanger that takes the exhaust flue gasses from a boiler and then passes them through another two passes in a heat exchanger to extract more of the heat from the flue gasses.

Ranheat exhibited the new RHE range of economisers at the recent W10 exhibition at the NEC in Birmingham. The economiser typically reduces the flue temperature by over 100 °C, giving increased efficiency.

The increase in the use of economisers has been driven by government legislation and grants and incentives to encourage the use of biomass as a source of heat. If companies are buying in fuel, then the user needs to obtain maximum return on the fuel bought. Grants have been awarded under the DECC Bio-energy capital grants scheme: to qualify for the grants a high efficiency is required. The Renewable Heat Incentive, or RHI, also requires high efficiency from the boilers on the scheme to receive payments under the RHI.

Economisers are available to fit to existing extractions to increase output and efficiency.

The return water from the system is passed through the



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economiser before being recirculated through the boiler.

The economisers are fitted with hinged cleaning doors at the front and cleaning accesses at the rear for ease of maintenance, which consists mainly of keeping the tube nest clean for better heat transfer. The other advantage of the economiser is that all of the components after the economiser run at lower temperatures, such as the flue gas cleaning equipment and chimney fan.

Economisers can be manufactured and installed to fit most makes of boiler: some older boilers typically run with flue temperatures of 350 °C.

With a well designed economiser, this can be brought down to the low 100s. It also results in a much cooler environment in the boiler house.

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