LANEMARK INTERNATIONAL

Case Study

Industry Mini-Breweries
Company Church End Brewery
Product Helical Coil

Lanemark gas heating technology helps to give small brewer control

The success enjoyed by many of the UK's smaller breweries not only reflects consumer appeal in the wide range of products available, but also pays testimony to the individual specialist skills of those involved in the production of local ales.

This is clearly illustrated in Nuneaton, Warwickshire where Church End Brewery currently produces some 20 barrels per brew run and has steadily grown in capacity since its formation in 1994. The brewer is reporting significant gains from the decision to install highly accurate and controllable Lanemark gas burner systems to heat the brew copper and hot liquor tank.

Adrian Langford is General Manager at Lanemark International, whose responsibilities include the small brewery sector –

"The facility at Church End Brewery uses natural gas to heat the hot liquor tank to 60°C," he explains, "which is readily achieved by a Lanemark TX25E burner system. This is connected to a 2½ inch nominal bore immersion tube heat exchanger arrangement submerged within the vessel. The temperature is then raised to between 63°C and 68°C for the preparation of the mash tun.

"Once transformed into wort, a volume equivalent to 20 barrels is then transferred into an adjacent copper where a second gas fired small diameter (3") immersion tube heat exchanger is constructed as a helical coil, to minimise intrusion into the working area. Here, a TX30 delivers 200kW to heat the wort to 100°C where it is then held at a 'rolling boil' for approximately 90 minutes."

He points out that overall efficiency of the installation is typically 82% – a figure that is some 20% higher than the brewer's original facility that utilised a steam heating system.

The 20 barrel brewing copper at Church End Brewery that benefits from Lanemark process heating technology.

Enhanced efficiency and proven savings

The most recent assessment of gas usage at Church End Brewery provides clear evidence of the benefits of the Lanemark installation –

- Gas consumption reduced by 7456 cu.m. over a 12 month period – some 42%.
- Increase from 10 to 20 barrel capacity per brew over the same period.
- Efficiencies derived from burner system design and consequent alterations to working practices – e.g. minimised cask cleaning requirements resulting from larger brewing capacity.

"The environmental benefits and increased operating efficiency associated with the use of the gas fired Lanemark systems have also helped us to reduce our Climate Change Levy liability and minimise our energy costs," comments Karl Graves, Brewery Manager. "The high levels of control and accuracy available with the heating systems make a major contribution to our ongoing brewing success."

The changeover has been a key factor in assisting Church End Brewery to expand its capacity at minimal additional cost to the natural gas fuel bill.

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Today, the brewery offers some 40 brands, delivering to a wide range of free and tied houses both locally and further afield.

"Much of the brewing success in this market depends upon experience and the brewer's own interpretation of requirements," adds Adrian Langford, "and the installation at Church End Brewery is a prime example. The fact that we are able to work very closely with the customer to accommodate the specific needs of each brewing process is, we believe, very important. We are delighted to be involved with this project which has been added to an impressive list of successful Lanemark heating systems applications within the brewery sector."

The TX30 and TX25E Lanemark gas process burner systems installed at Church End Brewery on the brewing copper and hot liquor tank respectively.

Focus on the helical coil in a brewing context

– the key facts

The specialist requirements of the brewing industry have led directly to Lanemark's development of the helical coil immersion tube heat exchanger, which offers a number of key advantages –

- **Helical shape minimises intrusion into the vessel to retain maximum capacity whilst maintaining maximum heating efficiency.**
- **Heat exchangers can feature tube diameters of 1½ inch to 6 inch n.b. – depending upon heat transfer requirements.**
- **Heat input range: 15 kW to 700 kW – ideal for vessels with 5 to 80 barrel capacities.**
- **Alternative system options are assessed before installation using Lanemark TxCalc© software to optimise efficiency.**

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