

CASE STUDY MANUFACTURING

Just Trays keeps energy costs watertight with CompAir

Less than six months after installing a new L75RS regulated speed compressor with heat recovery from CompAir, Just Trays, the UK's leading manufacturer of shower trays is on target to achieve annual energy savings in the region of £23,000, with a fast payback on return on investment.

Overview

▶ Client

Just Trays

▶ Location

Leeds, UK

▶ Application

Shower tray manufacturing

▶ Products

1 x L75RS regulated speed compressor with heat recovery

▶ Customer Benefits

High energy savings, fast payback on return on investment

Application Details

Based in Leeds, West Yorkshire, Just Trays has recently undergone a period of investment, with the aim of improving its equipment and processes to ensure the consistent production of high-quality shower trays.

Compressed air is used throughout the manufacturing process to help produce over 800 models of shower tray in six

ranges, from engineered installation solutions through to hand-made contemporary designs.

Inefficient Air

The plant's existing unit, which was around 20 years old, was no longer providing an efficient source of air, so Just Trays opted to review its compressor system.

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Comments Ricky Dumbleton, Senior Production Manager at Just Trays, “We carried out a week-long air audit to help us develop a better understanding of our growing compressed air demands.”

“Based on the results of the audit, we asked a number of compressed air suppliers to put forward their recommendations. CompAir identified that, by installing a new, lubricated screw L75RS regulated speed compressor, as well as a heat recovery system, we could benefit from considerable energy savings.”

“Our previous 110kW compressor was too big for our current air requirements, which led to costly idling. Working 10 hours per day, 4 days per week, the regulated speed technology in the L75RS produces the correct amount of air to match our fluctuating requirements and peak demand of approximately 12.5 m³/min, meaning the compressor is always running at optimum efficiency. This is set to provide cost savings in the region of £15,000 per annum.”

“In addition, the L75RS is capable of operating at up to 13.76 m³/min; meaning we have the capacity to cope with further increases in our air demands.”

Heat Recovery

Typically, almost all of the energy that is used to power a compressor is converted to heat and is then wasted. Using heat exchangers, CompAir was able to develop a system to recover the heat produced during the compression process.

Benefits at a glance

- ▶ High energy-efficiency - saving approximately £23,00 per annum
- ▶ Heat recovery system reduces the need for heat exchangers - providing additional energy savings
- ▶ Regulated speed technology produces the correct amount of air to match fluctuating requirements and peak demand
- ▶ Fast return on investment

This heat is transferred to Just Trays’ vacuum forming process, whereby a sheet of plastic is heated to a forming temperature, stretched onto a single-surface mould and held against the mould by applying vacuum between the mould surface and the sheet. Prior to the CompAir installation, Just Trays’ vacuum forming process required the use of four 9kw heat exchangers to achieve the required water temperature of up to 90°C. The heat recovery system installed by CompAir enables the water feed to be preheated, meaning only one heat exchanger is required, providing additional savings of over £7,000 per annum.

Energy savings

Ricky Dumbleton concludes, “Since installing the new compressor and heat recovery system, we are on target to achieve annual energy savings in the region of £23,000. With these energy savings, we’re also set to benefit from a fast payback on return on investment.”

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Senior Production Manager, Just Trays