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Autodesk Inventor

Carrying design forward: Micro Concepts and Autodesk Inventor - lifting design to a new level at Conveyor Lines

From initial concept design to final testing and production, a Northampton-based manufacturer of conveyors has deployed Autodesk Inventor at the heart of its bespoke manufacturing environment to great effect.

Founded in the early 1980s, Northampton-based **Conveyor Lines** is a leading manufacturer of conveyors and conveyor systems to food manufacturers and, more recently, the laundry industry. Today its products are in use both in the UK and Europe and as far afield as South Africa, China and Australia.

In 2003, the company recognised the need to take its manufacturing design capability to the next level by moving to 3D. "In order to maintain our strong position in the market, it was essential that we continued to design high quality products at a competitive price," confirms managing director, Ian Goosey. "In short, it was a natural progression for us."After looking closely at what the market had to offer, Conveyor Lines selected Inventor Series from Micro Concepts as best-suited to Conveyor Lines' requirements.

"We already had a very positive experience of AutoCAD LT," says Goosey, "and, most importantly, Inventor also offered the 2D capability which would enable a smooth transition at a pace which suited us – in effect, giving us the best of both 2D and 3D worlds. In addition, we were impressed with Micro Concepts' ability to understand our business needs and provide a solution with the right 'fit'."

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Key design tool

At the outset, Micro Concepts provided four days' intensive training, "which we found to be highly practical, hands-on and relevant to our needs," recalls design engineer, Peter Roberts. The design team has subsequently found Inventor to be highly intuitive and easy to use, delivering substantial benefits almost immediately.Now in use in full production for more than 12 months, today Inventor sits at the centre of Conveyor Lines' complete development life-cycle, from initial concept design to final testing and production and has proved to be the ideal choice in a sheet metal environment.

For example, the basis of the construction of many build-to-order conveyors is a large box framework, for which Conveyor Lines typically buys in a number of machined metal components. Historically the company has had to await delivery of all the specially-produced parts before final welding of the frame.

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With the arrival of Inventor, by contrast, the complete frame can be welded in advance, in the certain knowledge that the parts will fit, speeding up the manufacturing process considerably. “Put simply, we know that if it fits in the 3D model, it will fit on the shop floor,” confirms Peter Roberts.

Similarly, the designer’s job has been made much easier. “The use of 3D modelling has also reduced the number of errors at assembly stage,” he continues, “as we are able to see clearly from the start what we are making and see collisions and examples of poor fit and correct them straight away.”

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The company and its suppliers also benefit from the ability to create a sheet metal design as a 3D model including folding dimensions, so minimising the previously labour-intensive need for dimensioning and drawing in details such as the positioning of holes, as these are automatically done in the model.

In making to order, Conveyor Lines is also able to involve the customer much earlier in the design process. “The quality of the 3D image, together with the ability to make changes instantly, means that clients with little or no design expertise can visualise the product and make an effective contribution to the design process,” says Micro Concepts’ sales manager, Mark Mills.

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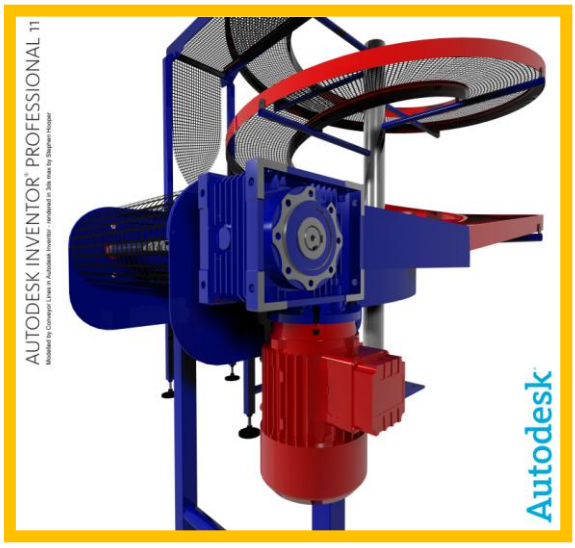
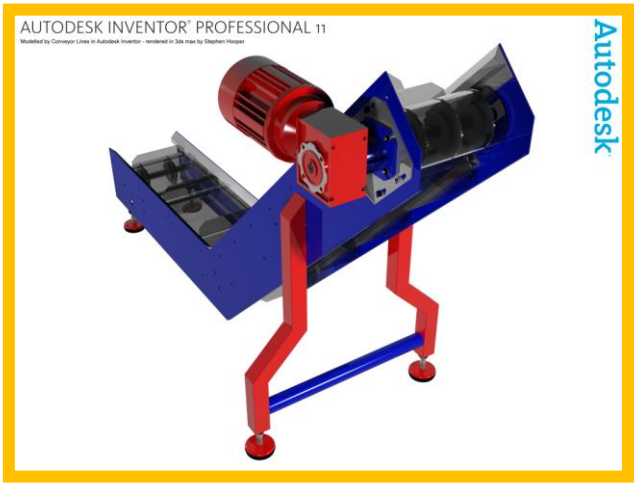
Two years on, and Autodesk’s 3D modelling software has delivered the major step forward in design for which Conveyor Lines was looking. “In effect, by ‘giving us back’ design time, Inventor has undoubtedly helped us create better products,” confirms Ian Goosey. “Production times have almost halved and, in a bespoke manufacturing environment in which we design and manufacture to order, customers have recognised – and remarked on - the improvement in the end product which we are able to deliver.”



Goosey has also been impressed with the quality of consultancy advice and support provided by Micro Concepts. “As with all clients, our objective has been to maximise both productivity and the return on Conveyor Lines’ investment,” confirms Micro Concepts’ Mills. “As a result, we take a multi-faceted development approach, including careful consideration of both the software and supporting hardware platform, together with a tailored training and support programme.”

Conveyor Lines has taken advantage of the Inventor Support package, Micro Concepts’ subscription programme for Inventor: As a result, the company automatically receives all new releases of Inventor, full telephone and email support and can attend update technical training – in the form of Subscription Support Update (SSU) – seminars in order to realise the potential of the new release’s functionality.



Standardisation

Historically Conveyor Lines used 2D to design each new conveyor from scratch. Since the introduction of Inventor however, it has been able to design and build a library of standard parts common to a range of conveyors. This not only saves time, avoiding the need to constantly ‘re-invent the wheel’, but also reduces cost, through the ability to purchase common components in bulk rather than as a series of ‘one-offs’.

Looking ahead, Conveyor Lines plans to extend this to the development of a series of standard conveyor designs, which can then be adapted to meet individual customer requirements. “The opportunity to maintain design quality at a more competitive price in this way would not be a realistic option without Inventor" believes Ian Goosey.

“Right first time, so avoiding costly mistakes further down the line, is no longer a holy grail - an ideal which is tantalisingly out of reach,” he concludes. “Backed by Micro Concepts’ first class support and with Inventor underpinning the design and manufacture of top quality conveyor products, for us it is now a fact of everyday life.”

To learn how Micro Concepts, together with Autodesk Inventor, can help make your company become Number 1 in your market – call 01223 716200 or visit www.microconcepts.co.uk