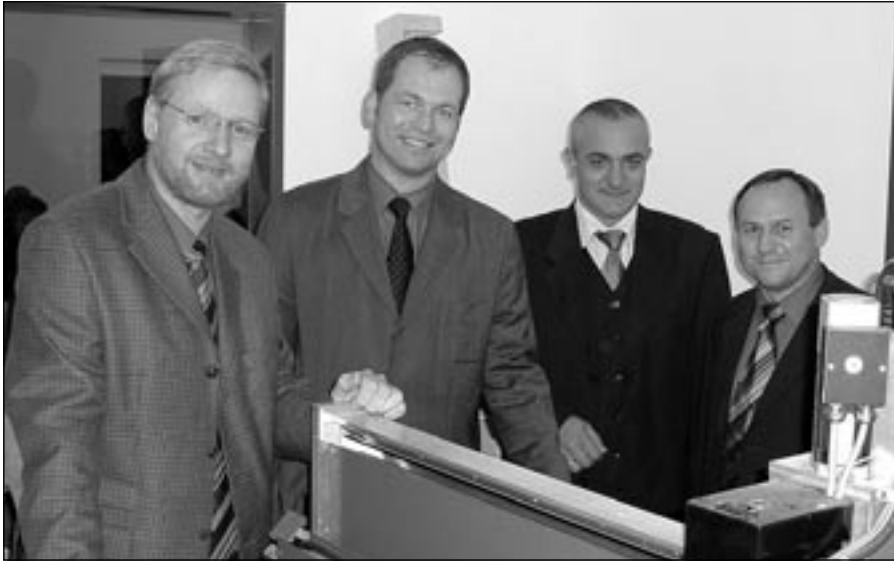

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December 2004
Issue No. 12

Open Day at Step-Four



■ Celebrating 10 years at STEP-FOUR: Dieter König, Reinhard Leithner, Mr Leitner (Chamber of Commerce) and Ernst Ramberger.

On the occasion of its 10th anniversary on October 1, 2004 STEP-FOUR held an open day at its new company building in Wals-Siezenheim on an industrial estate near Salzburg.

The birthday party lasted for two days, during which guests invited from all over the world were able to admire the latest models of CNC milling machines and computer controlled cutting systems in action. Ernst Ramberger, managing director at STEP-FOUR, has every reason to celebrate. In his opening speech in front of 120 guests he related the remarkable history of the company from a four-man firm to the present international exporting company with an an

nual turnover of 1.6 million euros. The export market is flourishing: more than 75 per cent of STEP-FOUR machinery is sold abroad and this trend is likely to increase even more. Showing his pride in his team, the managing director ended his speech with the following words: "I would like to thank my colleagues for their ideas and commitment, without which this success would not have been possible." This went down very well at a time when Austrian companies are moving to foreign countries and thousands of employees are losing their jobs.

Great Atmosphere

After the speeches a huge buffet was declared open. The "Swing Company" jazz band jazzed up the

Customer
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STEP FOUR

Editorial



Thank You!

■ Ernst Ramberger

Now that we have recovered from the move, the house-warming party and the celebrations for our 10th anniversary, we can concentrate on our customers and products again with renewed energy. I would like to take this opportunity to warmly thank all our customers, business partners and friends for the support they have given us during the past months. Now the year 2004 is ending and I wish you all a merry Christmas and a very happy 2005.



Successful Trade Fair

From November 19 to 21, 2004 we had a booth at the "Modellbau Bodensee" fair in Friedrichshafen on Lake Constance for the first time. It was a complete success. The most important model-building companies were represented. An event for real experts and anyone who would like to become an expert. We look forward to Friedrichshafen 2005.

Trade Fair Calendar

The next trade fair you can visit us at will be the "Faszination Modellbau" fair in Sinsheim, south-west Germany, from March 17 to 20, 2005. Do come and see us and discover our latest designs.



■ The "Swing Company" jazzed up the atmosphere.

atmosphere and the breath-taking, gravity-defying gymnastics of the "Novabatics" duo led to many standing ovations. The audience was delighted. It is known that STEP-FOUR's CNC machines have hit the best-seller list in the model-building field. Ever since the top "Basic 540" model was introduced six years ago, this compact milling machine has been selling like hot cakes – more than 1800 altogether.

Wide Range of Users

Today Step-Four's range of users not only includes private and professional model builders, but also constructors of prototypes and architectural models. Many companies, universities, training and research centres successfully implement the computer-controlled milling machines and polystyrene cutting systems. Even the aircraft constructor Airbus Deutschland GmbH in Hamburg uses a PC-CUT 3 polystyrene cutting machine to design its cabin interiors. This cutting unit is part of STEP-FOUR's industrial series and can cut three-dimensional workpieces from blocks of polystyrene. Being extremely robust, it is ideal for large workpieces.

"Our range of milling machines is growing all the time, from two



■ Michael Achtelik's home-made model turbine.

units to start with to meanwhile 16 different models, not counting numerous customized machines for the manufacturing industry", Mr König added.

Youth Research Programs

When asked about his personal highlight in the past 10 years, Mr König immediately replied: "It is just so exciting to see students at schools and colleges using our CNC machines to produce complex parts. Take Michael Achtelik, for example. With his home-made model turbine he won the national "Jugend forscht" (Youth Research) competition in Germany. He made the components for the model engine with the aid of a Basic 540 milling unit from STEP-FOUR. Both the expert jury and the audience were fascinated by the project and all the precision-made components, and they were surprised that even complex parts, such as the turbine control system and the compressor lid, can be manufactured using a relatively small CNC milling unit."

Loys Nachtmann

Hints on 3D Milling

What material is suitable for 3D milling? How do I proceed? Here are some useful hints from Mr Zeinecker:

After constructing a 3D workpiece on the computer, the CAD files are usually re-processed by a CAM program, such as DeskProto or VisualMill and then converted into a format that is comprehensible for the Step-Four milling unit. We use both programs. They are well thought-out and highly user-friendly. They have their advantages, but also certain disadvantages. VisualMill, for instance, offers a perfect simulation mode and the possibility to import individual raw panels, which saves considerable time when milling. DeskProto costs a lot less, however, and will therefore be preferable to newcomers.

In spite of careful planning, errors sometimes occur during conversion, occasionally resulting in a useless model. If I am not quite sure whether I have thought of everything, I mill a miniature version of my idea in styrodur to start with. Styrodur is an extruded form

of polystyrene and is used as colored insulation material in the building industry. You can buy it quite cheaply at your local d-i-y store. If, on the other hand, you would like to obtain a sealed, smooth surface, you will have to spend a great deal of time processing it manually.

MDF Panels

That is why I prefer MDF panels. In fact, this material has become my favorite. It is denser than styrodur and also easily obtainable at d-i-y stores. What is more, it is very easy to mill. If you look very closely, you notice a slightly fibrous surface structure. But don't worry, sealed with spraying filler, it can be turned into perfect prototypes for constructing moulds. Another top-quality material is used by professional model builders, who like milling prototypes from panels of polyurethane. Polyurethane, which is available in various strengths and densities, features superb chip formation and produces little dust when processed. The high-density types result in perfect surfaces. But polyurethane is not cheap. It can be ordered directly from the manufacturer and known brands include Obomodulan (www.obo-werke.de) and Necuron (www.necumer.de).

taken into account in the drawing phase, the individual parts can be fitted precisely and glued. Another advantage of this method is that the whole object is not destroyed, should step losses occur during milling. You simply mill the last panel again. Note that the position of the zero point – especially along the X/Y axis – does not have to be modified.



■ Eye-catcher I: This is how beautiful architectural models can be, especially when produced by the Halfmann company in Cologne, Germany.



■ Eye-catcher II: A model plane ready to take off, made with the aid of a Basic 1000.

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Several Work Cycles

I mill thick objects in several work cycles, because they usually exceed the useable length of the router. First the object is divided into segments and exported. The segment thickness is calculated on the basis of the total router length, where the active cutting length of the router is mostly slightly shorter. Using dowels, the location of which have to be

Miniature Copy



■ JetPump for model ships

Reto Mayer from Switzerland has come up with a remarkable miniature copy of the JetPump ship's engine manufactured by the company Schottel. "Without a 3D module it would not have been possible to produce optimum water flow channels", Mr Meyer writes. The tiny component is only 2 cm wide and is milled as a 3 D flow channel. For further information go to http://www.schottel.de/english/p_pump_jet/index2.htm

Rocket



■ The rocket from the Tintin comic "Destination Moon"

Here you can see the latest creation of our cutting expert, Cock van Driel from Holland: the rocket from the Belgian Tintin comic "Destination Moon". Fancy a space flight?

Prize-Winner



■ Andreas Potsch showing his jewellery.

The winner of our anniversary lottery was Mr Andreas Potsch from Wolkersdorf. He was delighted to receive a STEP-FOUR voucher worth EUR 500.

He writes: "I was over the moon. With the aid of a milling machine built in 1993 or 1994 I manufacture jewellery. I use solid metal routers, 1 mm in diameter, to rout all sorts of figurines from stone plates, e.g. the signs of the zodiac, animal figures, etc. With sealing wax I glue the raw material to aluminium plates bearing routed positions for the figurines. This enables me to rout up to 50 figurines per cycle."



■ Find out more about milling, hot-wire cutting and our products in the CNC forum. Simply click on "Step4 CNC-Forum" at www.step-four.at.

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