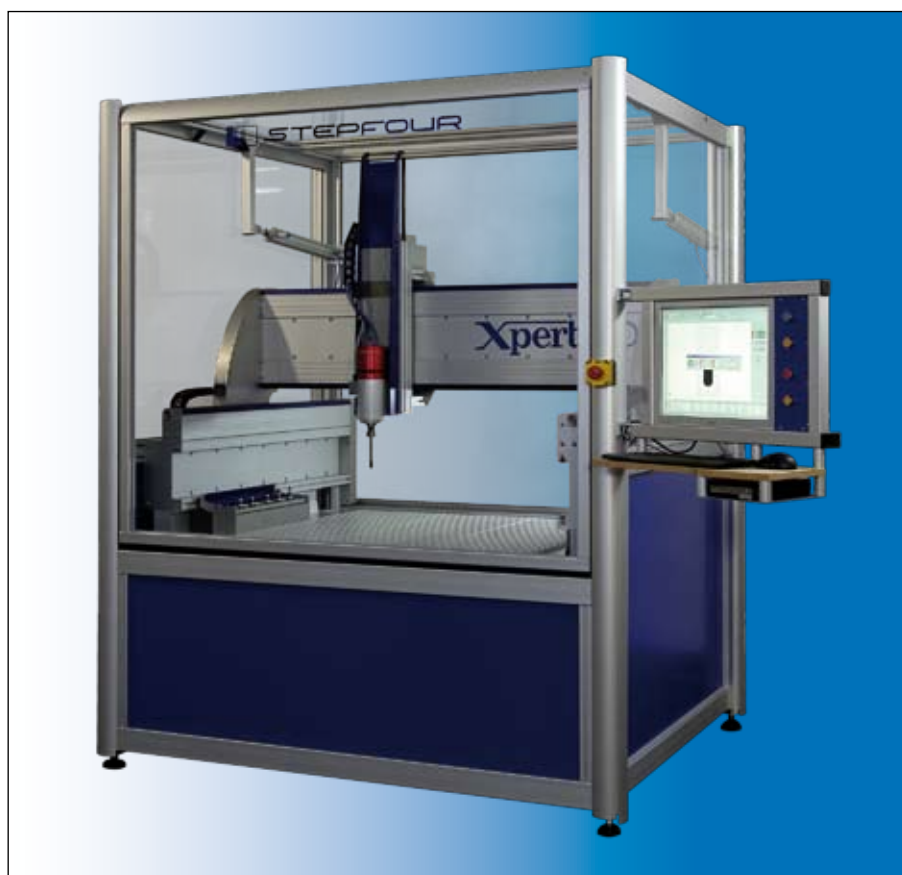


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March 2008
Issue 23

New at Step-Four: Xpert 3D



■ The new Xpert 3D machine series

At the EUROMOLD 07 we presented for the first time the new integral profiling system for our brand new Xpert 3D machine series for 3D processing of wood, rigid foams, aluminium and composites. The success was overwhelming.

Especially for the professional user this is the ideal milling machine for a great number of applications, such as the production of industrial models and patterns, industrial prototyping or series production. The new system Xpert 3D combines many technical innovations with top quality. More on pages 2 and 3.

**Information
for customers
and interested
parties**

Editorial



Spring is on the way!

■ Ernst Ramberger

We entered the year 2008 full of energy. We will need it too, as many projects are waiting to be realised. Apart from the large model making fairs in Sinsheim and Dortmund the production phase of the new Xpert 3D milling machines represents the greatest challenge during the coming months. In the model making sector we presented two DVD's, one produced in cooperation with the trade journal FMT on the subject of EPP airplanes and one about model aircraft design.

Our model making specialist Hannes Schmalzer will continue to extend the Step-Four Club and at last we are able to offer a small rotating shaft for the XpertMILL system. We wish to mention in particular our large selection of milling cutters for all materials and applications. Just visit our website with integrated webshop. There you will certainly find the right milling cutter for your application. www.step-four.at is also the ideal source of information for all other subjects concerning milling and hot wire cutting. Join us ...

Step-Four Newsletter

Register now at www.step-four.at and you receive the latest information from us regularly.

Xpert 3D: The new prof

The Xpert 3D basic units are low vibration multi-axial modular system units and are offered in three sizes in a robust frame construction made of anodised aluminium profiles with or without a protective cell with integrated electrical cabinet and the Step-Four control panel.

- We will offer the X unit in the lengths 1000, 1750 and 2500 mm.
- The Y traverse path has been standardised at 1250 mm.
- The Z stroke can be selected between 300 and 500 mm.

In this way we can cover a large proportion of the dimensions requested in the numerous enquiries.

The nucleus of this machine is a specially developed integral guide system made from anodised precision extruded profiles featuring

high rigidity at low weight. This not only reduces considerably the mass to be moved, but also permits high acceleration values for short cycle times.

Extremely quiet running

As axial drives backlash-free ball thread drives with a repeat accuracy of ± 0.01 mm with stepper motors are used. The linear units used are precise and warp resistant with backlash free, pre-stressed roller guide and threaded ball nuts. The particularly stable Z axis with up to 500 mm stroke permits processing of unusually high components. The combination of industrial mechanics with high grade hybrid motors and the high resolution microstepper controller via the Xpert CNC controller provides extremely quiet running even under highest loading for practically all materials. Immaculate milling results and excellent edge qua-

Technical data

operational range (X/Y)	1250 x 1000 mm, 1250 x 1750 mm, 1250 x 2500 mm
stroke Z axis	300 mm, optional 500 mm
max. positioning speed	12000 mm/min
max. processing speed	5000 mm/min
advance drives	stepper motors, 1.2 Nm
power transmission	X/Y/Z-axis: ball rotation shafts (16 mm Ø, 10 mm pitch) and cog belts
guide system	X/Y/Z-axis: roller guide on integrated profile system
programmable resolution	0.025 mm
max. absolute positioning error	<0,1 mm/100 mm
max. inversion error	<0.05 mm
repeat accuracy	± 0.01 mm
clamping system	T-slot bench

Professional system

lity combined with high processing speed and low maintenance costs make the Xpert 3D highly suitable for operation in the industry and crafts sectors, where high precision and fast operation at low running costs are required.

Thanks to the combination of a robust base construction, an efficient processing unit and the high speed control technology users can take full advantage of the HSC milling technology and thus achieve better surface quality. Reduction of production time is also achieved. The machine bench of face milled precision T-slot profiles, which is firmly screwed to the robust base frame, offers optimal clamping facilities for widely varying components and devices. The wide operational range covers many different appli-

cations. Tooling time for series production can be saved by fitting devices for clamping of various smaller series components. Product change can then be carried at the press of a button without time consuming retooling.

Wide operational range

The protective cell of anodised aluminium profiles and perspex panes provides a closed working space and offers protection against rotating tools and swarf as well as reducing noise level. The front door, which is fitted with a safety locking device and opens upward, permits access to the whole width of the working space for loading and unloading when at the open position. The electronic modules are accommodated in an integrated elec-



■ Shaft with tool changer

trical cabinet. Machine control is performed direct from a Windows PC and thus no further hardware is required. XpertMILL is the universal control software for the plant and provides a user friendly control and programming surface.

The list of accessories contains, among other facilities, air extraction units, vacuum clamping systems, cooling/spraying systems, clamping systems, rotating axes, tool changing stations and various processing units such as high frequency shafts.



■ View through Z axis



■ Tool changer in detail



■ Machine with hood open

New: Rotary shaft for model making



■ Now in the Step-Four programme: Basic 540 with rotary shaft set

The components are not new – new, however, is the combination of contour milling machine Basic 540, the CNC turntable and the XpertMILL extension module Xpert[ROTATION]. The rotary shaft set consists of a CNC round table with 100 mm diameter, vertical fixation and a tailstock as a counter bearing. The round table was designed as an extension and complement to our Step-Four milling machines.

Basic 540 with rotary shaft

This step converts your Step-Four 3 axis milling cutter into a 4 axis milling machine. The central clamping facility permits simple and precise chuck mounting. The rotary shaft is sealed and dirt-repellant so that no swarf can get into the gearbox. The rotary shaft can

be simply mounted on the T-slot bench and removed for straightforward surface milling operations. The activation via the Xpert CNC permits fully-fledged real time activation of all four axes making 3D rotation milling and index processing child's play. This makes it possible for the Four-Step user to mill plastic, wood, aluminium or even brass and permits all types of engraving. Stability, dimensional precision and the high quality of the components used are the features of Step-Four.

3D rotational milling

Import of s4g (Step-Four G code format) and NC data with XY-ZA values. A G code file with polar coordinates can be imported and emitted as a 4 axis interpolation.

Index processing

Each plane can be assigned to an angle. On the step from one plane to another when rotation occurs, firstly the tool change point is positioned, then rotated and then continued. The quality and price of this solution will convince you. Take advantage of our special offer on page 8.

Technical data

- worm gear
- reduction 1:72
- drive motor stepper motor
- accuracy 0.0135 minutes angle
- holding torque over 20 Nm
- protection class IP 65, maintenance free
- weight 3.5 kg

New sales partner in the industrial sector

In Promecom GmbH (www.promecom.de) we have gained a renowned sales partner in the industrial sector. Promecom GmbH was founded in 1992 and during the first years concentrated on pharmaceutical and medical technology. Their main activities were in the communications and marketing services fields. In the mid-nineties the department Sunshow Europe was launched in cooperation with the Sunshow Corp., Torrance, USA. The purpose of the department was the marketing of consumables from tungsten and other special alloys. The target mar-

ket consisted of the OEM's of the European car industry and solar technology companies.

In the course of the years the main activity increasingly became industrial services, tool machines and accessories. Step-Four is looking forward to a close and rewarding cooperation to the benefit of customers.



PROMECOM GmbH



Our man in India

Our head technician Dieter Koenig gathered many impressions during his service trip through India. His journey to the factories of Suzlon, a faithful Step-Four customer, who is among the world's largest manufacturers of wind energy plants, took him all over the country. A good example of good cooperation between east and west.



■ Dieter König and colleagues in front of the PC-CUT 6000



■ Rotor blades in the wind park



■ The Suzlon factory in India

Classified

Advertise free of charge in the Step-Four magazine. Send us your private small ads. by email as a text file (max. 1 column, 4 lines). We reserve the right to shorten or refuse the advertisement.

Don't hesitate to send us your queries, wishes, suggestions or complaints. Send us photographs of objects you made using Step-Four.

Masthead

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Smart optical devices

With the Basic 540 Mr. Schweinert in Landsberg mills mainly single components from POM or aluminium for to make his own 35 mm adapters. Do it yourself enthusiasts can then assemble these parts to form a professional 35 mm adapter that can compete in quality



■ This is a bracket including a battery case for a 35 mm adapter for the film industry. This bracket is fixed to two aluminium tubes, the so-called rod support.

with very expensive adapters. Mr. Schweinert says: "For me its always a positive surprise how precise the Basic 540 works." For further details simply visit Mr. Schweinert's homepage under www.jetsetmodels.info/news.htm



■ The diffusing screen holder is the nucleus of the 35 mm adapter. This oscillates through small circular movements causing the granulation and tiny dust particles on the diffusing screen to disappear. This results in a high quality picture free from granulation.

Technical tips from the experts

Design and mill model airplanes:

Hans Joerg Bayer of the official TurboCAD Training Center introduces you to the art of designing on a computer. Before your eyes the fuselage of the spitfire takes shape. With the aid of the attached test version of TurboCAD you can quickly carry out what you were shown. Hannes Schmalzer of Step-Four shows with WING designer how quickly an elliptical wing can be designed. Naturally the demonstration version of WING designer is on this DVD. Subsequently the data processing for a CNC milling machine is shown. Apart from the concentration of technical information and the demonstration software, the DVD also provides the plans of the spitfire. Available from 13th March 2008: RSP: € 19,-



Trade fair schedule

We will exhibit at the following trade fairs in spring 2008. Come visit us!

13th until 16th of March 2008

FASZINATION MODELLBAU

Sinsheim,
hal 6, stand 6022



16th until 20th of April 2008

INTERMODELLBAU

Dortmund,
hal 4, stand 4072



EPP flyers. Construction of (almost) indestructible RC model airplanes:

Our model making expert Hannes Schmalzer was active again. The individual work processes are described in detail. That you must see! Available from March 2008. RSP: € 29,-



Milling workshop 2008

From the drawing to the finished component

This year again we will be holding workshops on milling in model making. We have planned two target dates. For the model maker, who has no experience with a PC controlled milling machine but is interested in using one for model making, Step-Four offers a beginners' workshop. The objective is to teach the basics of milling technology.

Dates:

- Friday, 18th July 2008 (registration by 25th June 2008)
- Friday, 10th October 2008 (registration by 25th September 2008)

Participation fee: € 210,-

Max. 6 participants per date.

More Informations or registration directly at Step-Four.

Powered by FMT 

The magazine for model airplane and model making enthusiasts

More
Information
under
www.step-four.at



In-house fair

10th – 11th October 2008

10 am until 5 pm

Twice as long this year!

So that interested persons from trade and industry can visit us we have extended our in-house fair by one day.

It takes place this time on

- Friday 10th October 2008 and
- Saturday 11th October 2008
- each day from 10 am until 5 pm.

Note it on your calendar straight away! We look forward to seeing you!

Step-Four-Club

The larger the club, the larger the fund of experience that benefits you as a member.

Die Step-Four club advantages:

- Exclusive club area at www.step-four.at
- Data sets compiled ready to use for your milling or cutting machine for free downloading
- 3 % club discount on Step-Four list prices (except special offers) for orders via our webshop.
- Members' forum
- Participation in Step-Four events
- Step-Four fan articles

Register now at www.step-four.at for Step-Four club membership. The annual fee is only € 35,-



**Now for
2 days!**

Simply order material requirements online!

Did you know? At our website www.step-four.at under the heading "material requirements" you can find a large selection of milling, engraving and other special tools. You can use our convenient online webshop to place orders. Note the favourable quantity discounts.

- milling tools: single, dual and three flute cutters
- engraving tools: engraving cutters, engraving styli 3 mm and engraving styli 1/8.
- special tools: contour milling bits, rub out milling bits, insulation drill bits, tow knives ...

Verbrauchsmaterial		
Einschneider flacher Stirnanschliff Habichtsnabel polierte Spannut	Fräswerkzeuge Zweischneider flacher Stirnanschliff Aluminiumfräser Fischschwanz Downcutter Radiusfräser für 3D-Anwendungen	Dreischneider Fischschwanz Radiusfräser, HSS
Gravierwerkzeuge Gravierfräser Gravierstichel 3mm Gravierstichel 1/8"	Spezialwerkzeuge Konturenfräser Diamantverzahnt Konturenfräser Spiralverzahnt Rub-Out-Fräser Isolationsbohrfräser Schleppmesser	

■ Simple order the appropriate tool: www.step-four.at

Basic 540 milling packet

with rotary shaft



Basic 540 milling packet with rotary shaft

- Basic 540 mechanics mounted ready for use and tested
- Xpert CNC 2A, XpertMILL and Xpert [Rotation]
- Kress router, milling cutter set
- CNC round table with stepper motor and adapter plates
- right angle fixing for the round table
- 90° tailstock with handwheel for length adjustment
- 3 jaw chuck diameter: 80 mm

Now for only € 5490.- incl. VAT

Order now!

Telephone: +43(0)662 45 93 78-0 or E-Mail: office@step-four.at

Offer valid only in Germany and Austria until and including 20th April 2008.