decomagazine

THINK PARTS **THINK TORNOS** 65 02/13 ENGLISH

Multi-spindle machines: the flexible solution

First exceptional steps

A more competitive edge with Tornos

Irish subcontractor bottles success with Tornos

UTILIS

multidec®

swiss type tools

PRECISION TOOLS FOR THE MICROMECHANICAL AND THE MEDICAL INDUSTRY

UTILIS®

Tooling for High Technology

Utilis AG, Precision Tools
Kreuzlingerstrasse 22, 8555 Müllheim, Switzerland
Phone +41 52 762 62 62, Fax +41 52 762 62 00
info@utilis.com, www.utilis.com

Swiss ST 26 CE arrives in Europe

Tornos MultiSwiss 6x14 and the Joseph Martin company: a shared success story

Precisely measured: Measuring-technology components from itp Völklingen

A commitment to tradition

IMPRESSUM

Circulation: 16'000 copies

Available in: Chinese/English/French/German/Italian/Portuguese for Brazil/Spanish/Swedish

TORNOS S.A.
Rue Industrielle 111
CH-2740 Moutier
www.tornos.com
Phone ++41 (0)32 494 44 44
Fax ++41 (0)32 494 49 07

Editing Manager:
Brice Renggli
renggli.b@tornos.com

Publishing advisor:
Pierre-Yves Kohler
pykohler@eurotec-bi.com

Graphic & Desktop Publishing:
Claude Mayerat
CH-2830 Courrendlin
Phone ++41 (0)79 689 28 45

Printer: AVD GOLDACH
CH-9403 Goldach
Phone ++41 (0)71 844 94 44

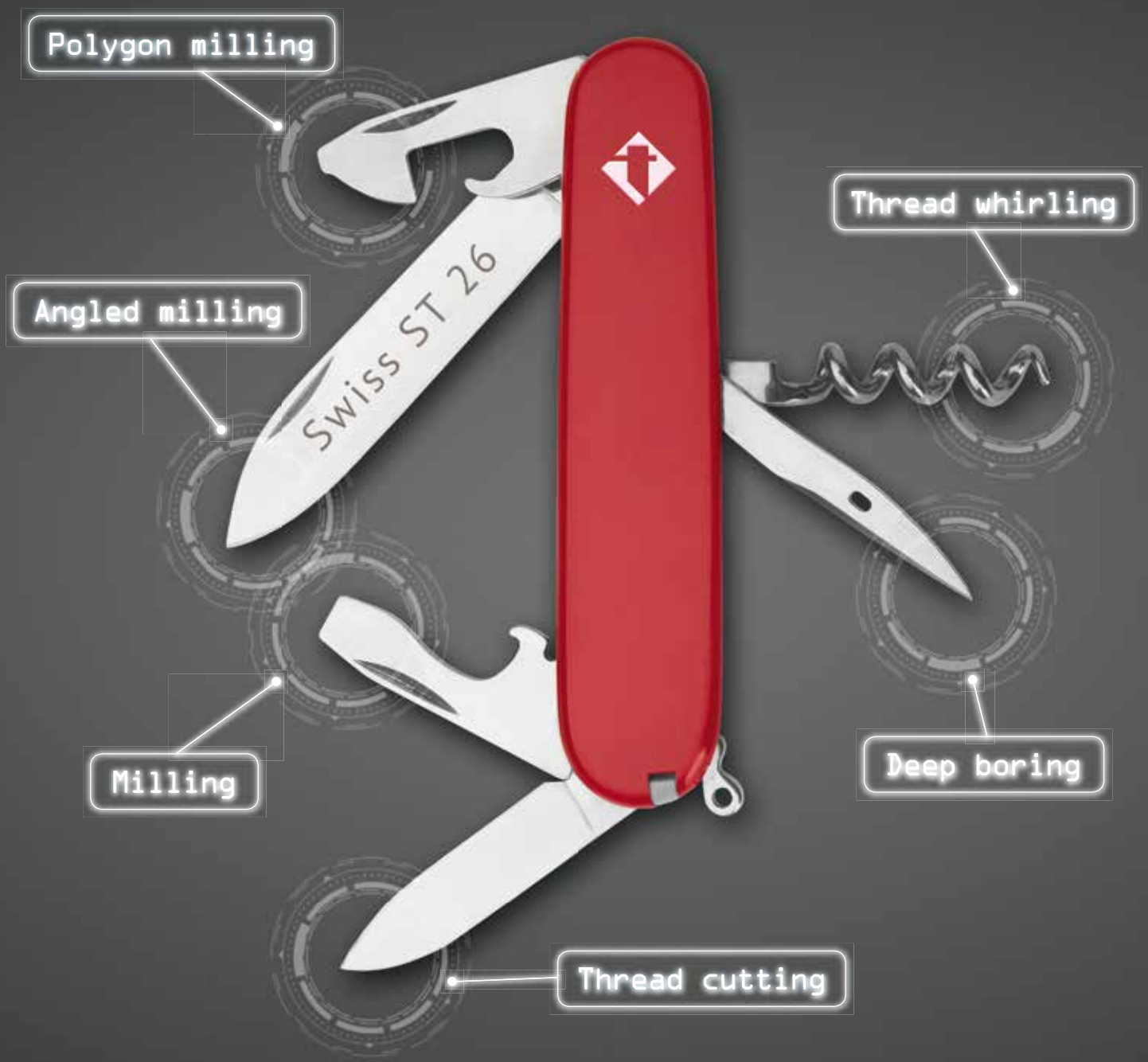
Contact:
aeschbacher.j@tornos.com
www.decomag.ch

SUMMARY

THINK PARTS **THINK TORNOS**

TORNOS

THE SWISS KNIFE FOR TURNED PARTS



WWW.SWISSTYPE.COM

TORNOS S.A. - Rue Industrielle 111 - CH-2740 Moutier - Tél. +41 (0)32 494 44 44 - Fax +41 (0)32 494 49 03 - contact@tornos.com - www.tornos.com

TORNOS
MADE IN SWITZERLAND

The world is in constant flux and Switzerland is no different. In the industrial sector, we have noted a concentration in the watchmaking and medical technologies industries. Other sectors such as the automotive and electronics industries are under enormous pressure from global competition which demands that they be closer to the end customer.

Our Swiss industry, renowned for its high precision and its advanced technology, must be able to count on production tools which offer this same benefit. Tornos has always worked hard to bring innovation to the heart of each new product developed in Moutier and La Chaux-de-Fonds.

We have seen the arrival of the EvoDECO line, then the MultiSwiss and now the SwissNano.

With its 10 mm and 16 mm versions - shortly to be completed by 20 mm and 32 mm versions - the EvoDECO provides continuity to a line of machines which is firmly anchored in the production of high added value parts.

The MultiSwiss brings together the 2 worlds of sliding head machines and multi-spindle machines. With its simplicity and its ergonomics, it is comfortable to use while maintaining a very high production rate.

Finally, the latest little arrival: the SwissNano. It may be small in size, but the advantages it offers are anything but. Its precision, stability, design, size, ergonomics, ease of use and communication tools are just some of the benefits it offers. It was developed in Switzerland and is produced in Switzerland for Swiss watchmaking.

In addition to its expertise as a machine manufacturer, Tornos is a major player in promoting barturner training on a very wide scale. As well as our internal training centre, there are 6 other training centres in the Jura area which receive our support.

Our ability to provide products locally and offer services which meet our customers' expectations are just some of the factors which keep Swiss industry competitive.

Carlos Almeida
Sales Manager Switzerland
Market Segment Manager
Micromechanics

SWISS ST 26 CE ARRIVES IN EUROPE

Making its world debut at IMTS 2012, followed by DMP 2012 in China, the Swiss ST 26 was developed as a simple machine covering a wide range of requirements for the Asian and American markets. Building on its success in these markets, the company has decided to produce a CE version for Europe.

Equipped with 7 axes, the newcomer will be positioned as a direct competitor to machines equipped with 5 or 6 axes, and available in the same price range. It completes Tornos's mid-range offering, sitting between the EvoDeco, a flexible solution with excellent production capabilities, and the Gamma, a machine with proven performance in machining moderately complex workpieces.

Initial feedback

With the first machines already delivered, the company decided to find out what customers think. They are all impressed by two things in particular: the kinematics, which offer two independent plattens, the rear of which can work on the bar and perform back operations, enabling several machining operations in concurrent time, and the identical operation and

back operation spindles, which are both powerful and highly responsive. The combination of these two components enables balanced setup between the two sides of the workpiece being machined, and the production of relatively complex workpieces for such a "simple" machine'. Three tools can be engaged simultaneously in the material. Back operations are performed in concurrent operation time, while platten 1 allows work to continue on the guide bush.

A high-tech spindle

Entirely developed and produced in Moutier, the synchronous type spindle delivers 9.5 kW as well as super-fast acceleration and deceleration (from 0 to 10,000 rpm in 0.9 seconds). It is by far the most powerful and responsive machine on the market in this product category. Equipped with an integrated cooling system, the spindles contribute to the machine's thermal stability. This results in increased precision.

MEDTECH PACK

THREE OFFERINGS FOR THREE PRODUCT CATEGORIES

The Swiss ST 26 is offered as standard in three versions: Starter, Advanced and Medtech. These three packs include a variety of equipment suited to the type of workpieces to be produced. Depending on the requirements, the company can also supply additional equipment: chip conveyor, high pressure pump or oil mist extractor. Mr. Villard continues: *"We are obviously not in the same league as the EvoDeco in terms of the machining possibilities and options available, however for a machine with a price tag similar to that of our competitors, we are offering more flexibility and power".*

PACK STARTER

Main operation
- Tool holder for 5 turning tools
- Tool holder for 3 turning tools
- Offset tool block with 8 bores to accept holders for work in main (4x) and counter operations (8x)
- 3 drill/milling attachments with ESX20 collet
- Tool block with 2 bores to accept drill holders for deep drilling; mounts on the left side of the counter spindle

Counter operation
- Tool holder for 3 turning tools
- 2 tool holder for end working positions with ESX 20 collet

ADVANCED PACK

Main operation
- Tool holder for 5 turning tools
- Tool holder for 3 turning tools
- Offset tool block with 8 bores to accept holders for work in main (4x) and counter operations (8x)
- 5 drill/milling attachments with ESX20 collet
- Tool block with 2 bores to accept drill holders for deep drilling; mounts on the left side of the counter spindle

Counter operation
- Tool holder for 3 turning tools
- 2 tool holder for end working positions with ESX20 collets
- 5 drill/milling attachments with ESX20 collets

MEDTECH PACK

Main operation
- Tool holder for 5 turning tools
- Tool holder for 3 turning tools
- Offset tool block with 8 bores to accept holders for work in main (4x) and counter operations (8x)
- 3 drill/milling attachments with ESX20 collet
- 1 thread whirling unit
- Tool block with 2 bores to accept drill holders for deep drilling; mounts on the left side of the counter spindle

Counter operation
- Tool holder for 3 turning tools
- 2 tool holder for end working positions with ESX20 collets
- 5 drill/milling attachments with ESX20 collets

MAIN TECHNICAL SPECIFICATIONS

Max. workpiece diameter:
23 (25.4) mm

Max. workpiece length:
220 mm

Spindle and counter spindle speed:
0-10,000 rpm

Spindle and counter spindle power:
9.5 kW

Dimensions (length x width x height):
2300 x 1300 x 1700 mm

Weight:
3300 kg

Several tools available

Equipped with a Deco type tool system, the machine can take up to 36 tools, including 16 rotating tools. Numerous devices are available for specific operations, e.g. polygon operation, thread-whirling process, milling. Serge Villard, product manager at Tornos, explains: *"The Swiss ST 26 has been designed to competitively produce all types of workpiece, and is intended in particular for the medical and automotive markets. Its kinematics and synchronous spindle motor make it up to 30% more efficient than its direct competitors with 5 or 6 linear axes".*

Service, Tornos-style

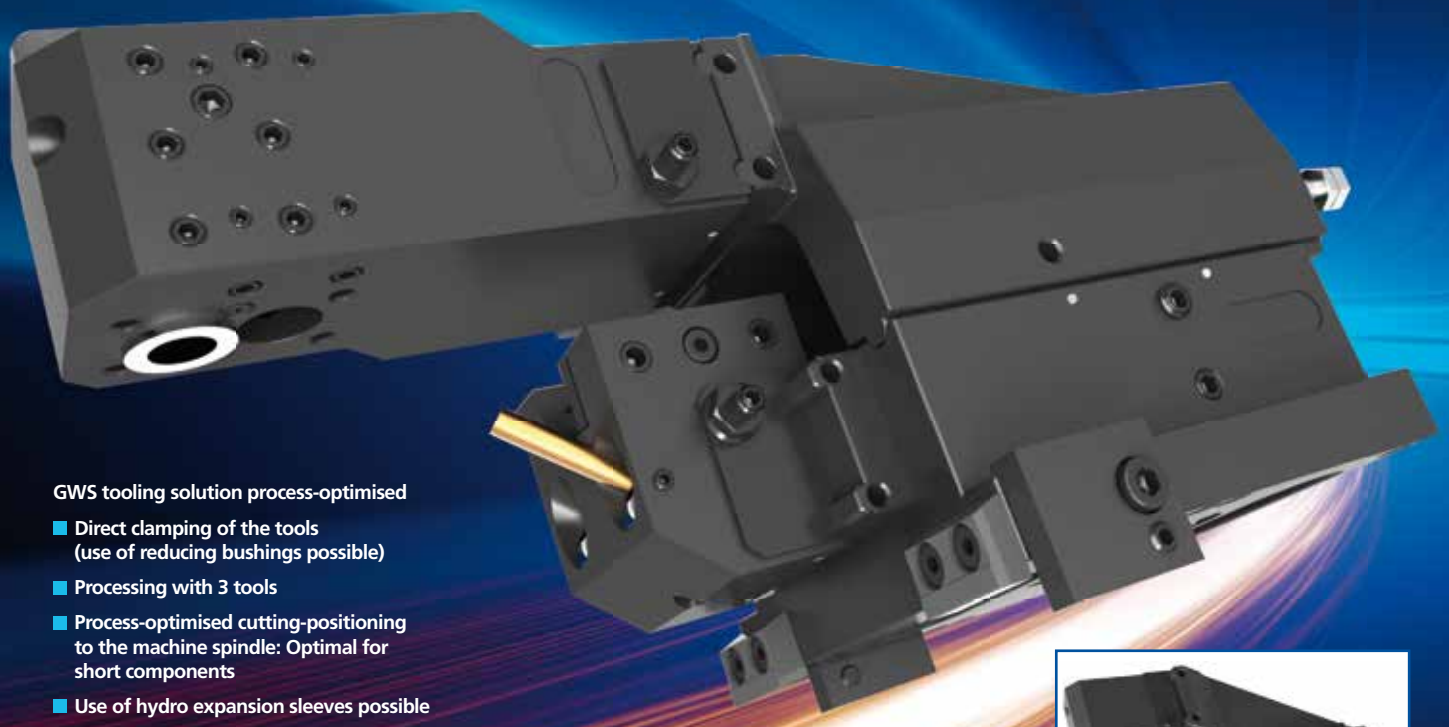
Available from June 2013 in the CE version, the machine will be on show at this year's EMO. Mr. Renggli, marketing manager, tells us: *"Even though the machine does not require much in the way of training or support, it will not be offered with a discount service. As with the company's other products, training will be given in Moutier and at the European subsidiaries, and customers will benefit from Tornos's application support".* A European stock of spare parts will enable the company to fulfil all orders quickly.

TORNOS

Tornos SA
Industrielle 111
2740 Moutier
Tel. +41 32 494 44 44
Fax +41 32 494 49 07
contact@tornos.com
www.tornos.com

GWS TOOLING SYSTEM FOR TORNOS MULTISWISS 6X14

FLEXIBLE!



GWS tooling solution process-optimised

- Direct clamping of the tools (use of reducing bushings possible)
- Processing with 3 tools
- Process-optimised cutting-positioning to the machine spindle: Optimal for short components
- Use of hydro expansion sleeves possible

Sleeving solution

TAKE PART AND WIN!

Learn more about our GWS tooling system and, with a little luck, win a new iPad 3.

For the competition go to

www.goeltenbodt.com/tornos-multiswiss

The new GWS tooling system for TORNOS MultiSwiss 6x14 is unique in its design. Profit from the highest cost effectiveness, precision, flexibility and efficiency with GWS.

- Positioning – Variable or 0-point
- Highest repeatability
- Maximum flexibility
- Standard GWS tool holder for use on a variety of machines
- Variable coolant management for choosing high or low coolant pressure

More detailed information can be obtained from Göltenbodt and TORNOS.

GWS for TORNOS MultiSwiss:
Technological competence comes from Göltenbodt!

Göltenbodt®
Innovation and Precision.

Göltenbodt technology GmbH ■ D-71229 Leonberg ■ Tel: +49 (0) 7152. 92 818 - 0 ■ info@goeltenbodt.de ■ www.goeltenbodt.com

MULTI-SPINDLE MACHINES: THE FLEXIBLE SOLUTION

With the MultiSwiss, Tornos is proposing a radically new solution in machining terms, to bridge the gap between the worlds of the conventional single-spindle and multi-spindle systems. The engineers from Moutier have worked hard to propose new options for this machine. We met with Mr Olivier Rammelaere, MultiSwiss product engineer.

In many cases, it is now possible to replace a single-spindle machine (with a poor productivity/footprint ratio) with a MultiSwiss turning machine. As it takes up little room, it can be sited in place of the machine which has been removed. Some of the new features on offer include:

Watch movement screws on the Multiswiss

When, at the end of last year, the engineers were consulted regarding production of a watch movement screw, the challenge was to produce the part with the existing equipment. The precision of the threading, the bevelled slot and the finish had to match the highest levels of performance offered by single-spindle turning machines. Mr Rammelaere explains: *"To achieve this, we produced quite a complicated setup including a stack of milling devices. The machining results exceeded all our expectations, but it was still not easy to use. It was obvious that we needed a numerical Y axis to simplify the setup"*. This axis is currently being developed by the Tornos technical department and will be marketed from the beginning of 2014.

To respond more exactly to the needs of watchmakers, the minimum diameter of bars which can be machined on the MultiSwiss will also change from 4 to 3 mm.

Thread-whirling process +/- 15° on the MultiSwiss

The medical field could not function if without the thread-whirling process. Tornos will soon be offering a thread-whirling device specially developed for the MultiSwiss. Mr Rammelaere added: *"Even for fields where threads can be produced using other means, thread-whirling delivers a significant increase in productivity and enables our customers to remain productive, in Switzerland and in Europe".*

Barrel drums on the MultiSwiss

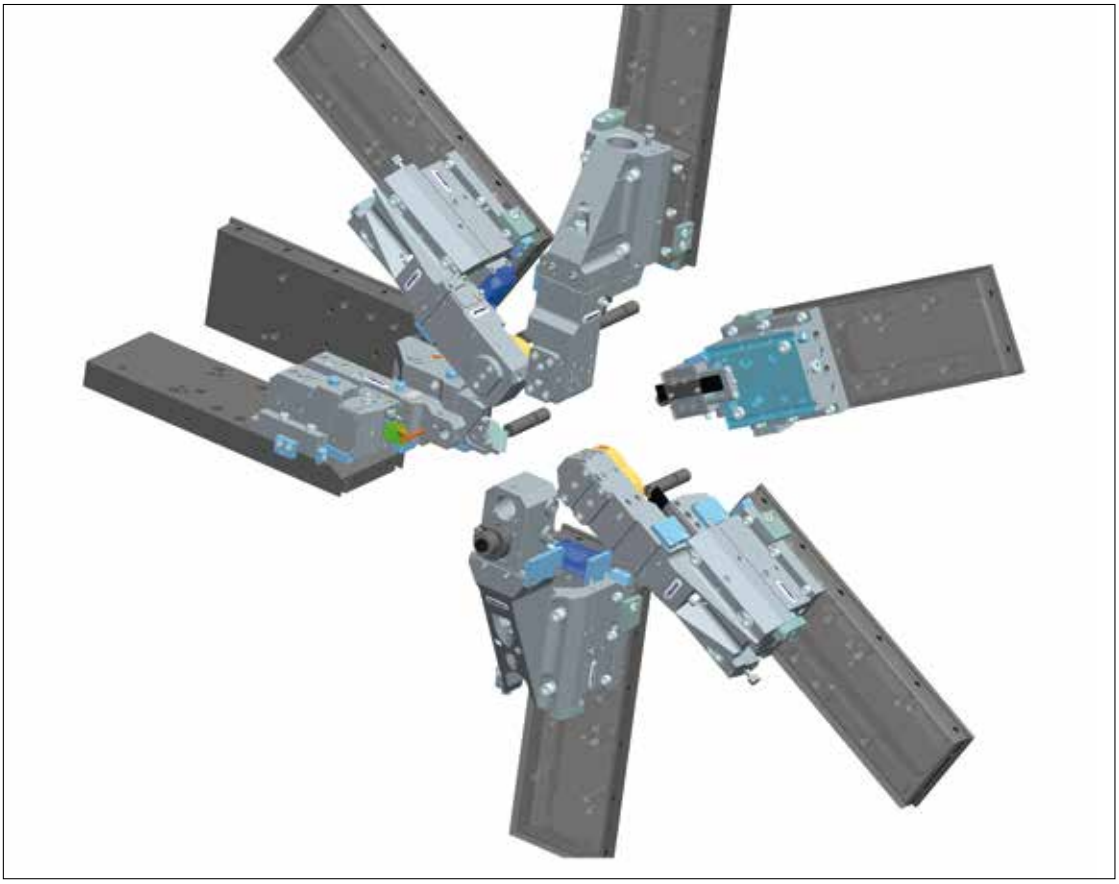
Another application developed by the engineers from Moutier is the machining of barrel drums (uncut) on the MultiSwiss. Mr Rammelaere explains: *"The world of watchmaking is subject to the same constraints as other areas; watchmakers are constantly striving to enhance their productivity and we are offering the perfect solution to this issue in the MultiSwiss, as it is a multi-spindle which is flexible enough to make frequent changes in setup".* The Multiswiss perfectly keeps the strict tolerances and produces the high-quality finishes required.

Unparalleledproductivity

"In the example of the watch screw, our customer could produce the screw at a rate of 2 parts per minute using the single-spindle solution. With the MultiSwiss, productivity rose to 10 parts per minute. This amounts to a 5-fold increase in productivity for the same footprint!", explains the product engineer. At these rates, it is clear that investing in a MultiSwiss turning machine is almost equivalent to having 5 single-spindle turning machines.

The Göltenbodt tool holder in the standard program

Based on a well-known column of GWS tools and incorporating cutting fluid management, the range of GWS tool holders for the MultiSwiss offers variable or 0-point positioning with optimal precision, repeatability and flexibility. *"Tool changes can be made very quickly while still enabling tools to be repeatedly positioned to a very high standard. We wanted to offer customers a solution which was easy to use, while still focussing on reducing the time taken to change tools or entire setups. These tool holders are the product of a collaboration between Tornos and Göltenbodt, to make the most of the expertise of each company"* added Mr Rammelaere.



Many other developments…

In these difficult times, the sales performance of MultiSwiss machines is good as they are outselling all other multi-spindle machines together. Perfectly distributed between Europe and Asia, sales to the USA have only just begun but, as Mr Rammelaere explains: *"This distribution is particularly due to the introduction of the MultiSwiss which has been staggered in several phases. It began with the EMO trade show in September 2011 for the European market, followed by the IMTS show in Chicago in 2012. The main Asian exhibition took place in November 2012, at the METALEX show in Bangkok. In view of the global economic situation, we are investing to significantly increase our market share in the Asian and American continents".* With regards to the areas concerned, it is also well balanced between the automotive, medical and microtechnology sectors (including watchmaking). And all of these sectors very often request customised solutions.

Mr Rammelaere concluded: *"This article has covered some new developments, but we have also already developed many other applications. These include, for example, part collection systems featuring carousels (small and large), conveyor belts or the Chucker system which can work using blanks. (For more information on this subject, see the MultiSwiss Chucker article on page 23). We are constantly developing the MultiSwiss to best meet the market needs. If you have any specific enquiries, please contact us".*

www.multiswiss.info

TORNOS

Tornos SA
Industrielle 111
2740 Moutier
Tel. +41 32 494 44 44
Fax +41 32 494 49 07
contact@tornos.com
www.tornos.com

FIRST EXCEPTIONAL STEPS

In our previous edition, we exclusively introduced the SwissNano machine. Since then, it has been unveiled for the first time at the Tornos open days in Moutier. We wanted to find out how it had been received by customers and hear about the results of this exhibition. Interview with Brice Renggli, marketing manager.

During the launch of the SwissNano machine, three classes of apprentice bar-turners and mechanics were in attendance. They all agreed that the machine was perfectly suited to their modern, colourful world.

"It was an exceptional success: We welcomed 340 visitors - a 30% increase on the previous year. We sold 25 machines in a week" explained Mr. Renggli, by way of introduction. To find another such example of customer enthusiasm for a machine manufactured in Moutier, we need to go back 17 years to the launch of the famous Deco 2000 7/10 mm capacity machines.

A breath of fresh air

One of the major developments made by the SwissNano team was to approach the design as a real means of differentiating the product and adding value. In the words of Mr. Renggli: *"One year ago, if someone had spoken to me about creating machines in all different colours, like a coffee machine, I would've replied that this crazy idea would never become a reality, and yet one year later, the machines are available and everyone is talking about them".* And while not all customers are necessarily aware that they can buy it in a range of colours, they have all noticed the new lease of life and breath of fresh air these machines have brought to the conventional world of bar turning.

And the bar turning profession really does need a bit of fun and joy to encourage young people to start training in this field.

Visitors had an opportunity to look at parts produced on the SwissNano under a microscope. They could see that the finishes really met their expectations.

Michael Hauser, CEO

An acclaimed design

While the design has caused a stir, this has also been due to the practical aspects involved. The customers were unanimous: The 180° access to the machining area, the easy to remove "crash helmet" protection, the control on a mobile arm and the wireless tablet won a clean sweep of the votes. Developed with a very strict set of specifications dedicated to watchmaking, the machine appealed to those working in this domain. The capacities of the machine, like the number of tools and the various devices available, were deemed perfectly adapted to the field. Mr. Renggli explained: *"The kinematics with the two independent plattens allow simultaneous blanking and finishing (i.e. using two tools in the material simultaneously), and the hobbing unit, were particularly well received"*. Customers were also impressed by the high level of precision offered by the machine, which can stand beside the Micro 8, one of the most accurate machines on the market.

Size: finally!

Although designed to complement cam-type machines and not to replace them, the SwissNano has a very small footprint which allows customers to make a 1:1 replacement in a workshop. Mr. Renggli summed up what a bar-turner who only uses cam-type machines said to him: *"The manager of a small company which only has cam-type machines admitted to us that, finally, for the first time ever on the market, there was a machine that could fit in his workshop and that he was ready to buy to try it out"*.

And the tablet?

All the machines sold during the exhibition have an integrated PC which allow a connection to the tablet, enabling production to be monitored. *"Our customers could see beyond the gadget appeal'. Having the latest versions of the service instructions directly on the tablet, for example, was highly appreciated. Being able to have an integrated PC also brings a wide range of additional possibilities, such as managing stock of parts on the machine, for example"* explained Mr. Renggli. Customers also liked being able to customise the Fanuc control screens. Developed using the "Android'' operating system, these pages are very intuitive and user-friendly.

Tornos store

The company has set up a virtual store for downloading applications for the tablet. Mr. Renggli explained: *"With a tablet running with Android, customers can download a free application which allows them to have a system for keeping service instructions continuously up-to-date, communicating news to them and giving them access to the Forum".* Access to this is restricted to SwissNano customers.

Different service packs

The SwissNano machine is now on sale with different service packs: Starter, Silver and Gold. The three types of pack include basic training, access to the forum and membership of the SwissNano users' club (we will return to this in a later article). The Silver level also includes a day's coaching with the customer and requires the purchase of a SwissNano with an integrated PC. The most comprehensive pack also comprises preventive maintenance once a year and a 36-month warranty extension. Mr. Renggli explained: *"There are also three different setup versions. I would recommended that interested customers contact their usual Tornos distributor".*

Coming soon

While the 23 machines already sold are black, customers also chose a yellow machine and a pink machine during the open days. The SwissNano machine will be on display at EPHJ (Stand B83) and during EMO… which colour will you choose?

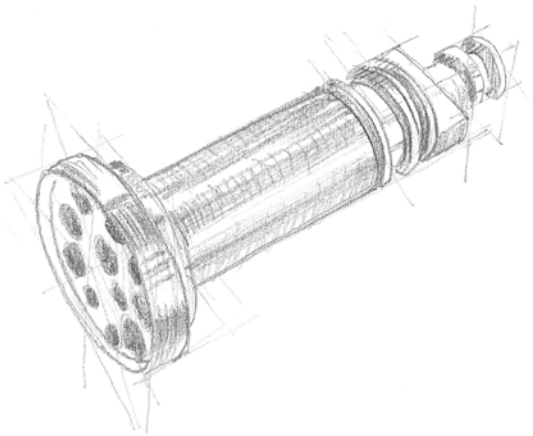
TORNOS

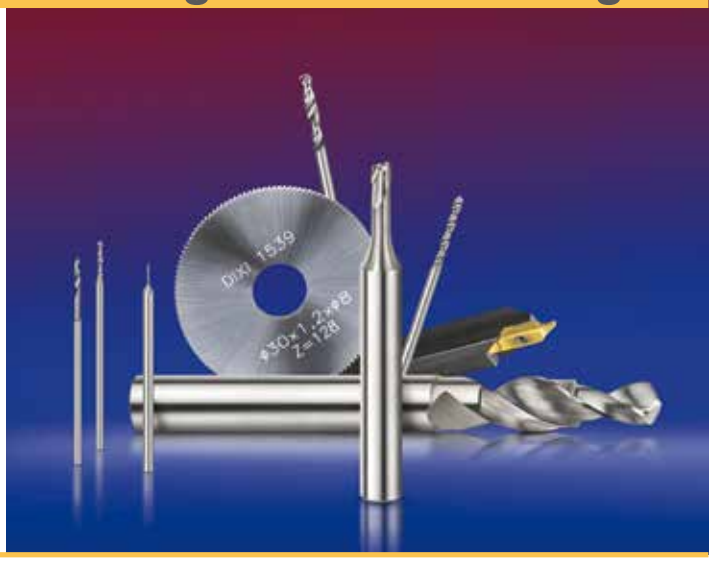
Tornos SA
Industrielle 111
2740 Moutier
Tel. +41 32 494 44 44
Fax: +41 32 494 49 07
watchme.tornos.ch

Tungsten carbide and diamond precision tools

DIXI 4

Turning-screw cutting





Our know how compliments your experience

DIXI POLYTOOL S.A.
Av. du Technicum 37
CH-2400 Le Locle
Tel. +41 (0)32 933 54 44
Fax +41 (0)32 931 89 16
dixipoly@dixi.ch
www.dixi.com

MANAGING ACCESS RIGHTS ON THE TB-DECO

In some workshops, the access rights for different users commonly need to be differentiated. For example, it is possible to easily manage groups of users. This simple functionality allows customers to give their end customers a clear and effective answer when asked if they have a system in place to ensure their processes are secure. Having access rights reassures the end customer that the workshop is professional.

This aspect is more important than ever now that a good number of machines are supplied with an industrial PC which allows programming to be carried out directly on the machine.

How does this work in practice?

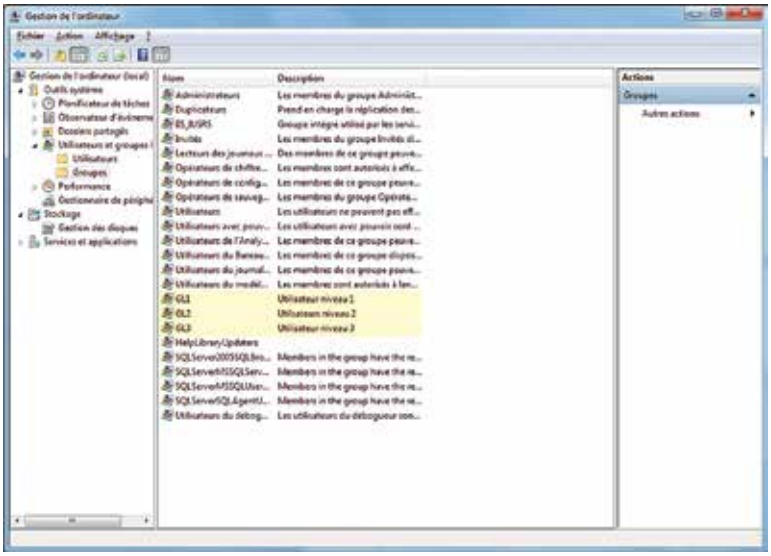
Two different types of use of the TB-Deco must be differentiated: use with a remote PC, or with a PC interface as on the latest generation of EvoDeco 16, EvoDeco 10 or MultiSwiss machines.

An early version of access rights management was developed using the user and user group management system in the Windows operating system (2000, XP, VISTA, 7) as a base. With the PC interfaces, it is not possible to define user groups in the operating system, and another method based on passwords was adopted.

Some separate functions of the TB-Deco are therefore only accessible to a predefined level of users. These levels can be edited if necessary (maximum of 5 levels), but by default, 3 levels (GL1 to GL3) are provided. The accessible functions with their levels are presented in the list of accessible functions below.

Use on a remote PC

The Windows operating system is already set up for managing user groups. A person with administrator rights on a computer workstation therefore has the option to use it to create various TB-Deco user groups.



The TB-Deco programme comprises three access levels (Group Level GL) predefined by Tornos:

GL1: Standard user (minimal rights) - Operators

GL2: Advanced user Set-up/Setting technicians.

GL3: Administrator (All rights) Approved technicians, methods department, network administrators, etc.

List of accessible functions

	List of accessible functions			Levels (GL)		
Pos.	**Fonction**	**Menu**	**Conditions requises**	**1**	**2**	**3**
1	Managing machines (Add,delete&)	Files\Machine manager&	Administrator			=
2	Changing machine database	Editing\Changing machine			=	=
3	Editing the machine database	Machine DB tab: – Global: BarLoader, MachComment – Adding/Editing a support. – Collisions: DESCRIPTION				
4	Editing workpiece, Renaming programme	Contextual menu				=
5	Managing configurations	Options\Configuration	"Managing access by user groups" remains accessible with the Administrator level + ADV Option (750-0005)			=
6	Editing the licence no.	? \ Licence				=
7	Editing workpiece information	Editing \ Editing workpiece \ Workpiece info \ General workpiece data				=
8	Editing the parameters for macro assistants	Editing parameters (macro in question)	Remains inactive if: – ADV licence not available – Operation restricted to Tornos. – Operation commented out		=	=
9	Managing axes (offsets, speeds)	Editing \ Editing workpiece \ Origin \ Correction of clamping			=	=
10	Managing spindles (initial speeds, status)	• Editing \ Editing workpiece \ Spindles \ initial spindle speeds • OP line header: (double-click or) Contextual menu \ Editing \ Configuring spindles			=	=
11	Editing the global workpiece variables.	Editing \ Workpiece editing \ Global variables&			=	=
12	Modifying the successions (PNC / PTO / ISO machines)	Successions tab.				=
13	Managing tools (add, clear, copy)					=

14	Editing tools (geometries, correctors, information)	Workpiece management tab \ Tools catalogue \ (double-click or) Tool contextual menu \ Editing \ Editing a tool		=	=	=
15	Selecting a shared catalogue	• Files \ Creating (or using) a shared tools catalogue or &\ Deleting sharing of the tools catalogue • Workpiece management tab \ Tools catalogue \ contextual menu: Creating (or using) a catalogue&		=	=	
16	Managing synchronisations and constraints (add, move, clear, edit)	Contextual menu on operating icon				=
17	Configuring the operating line (Edit, Modify)	Operating line header: Contextual menu (or double-click).				=
18	Managing operating lines (insert, clear, move a line.)	Operating line header: Contextual menu.				=
19	Editing an operation (Edit, modify an operation)	Operation icon: Contextual menu Editing ISO code (or double-click). (Also valid for TORNOS OS)			=	=
20	Managing operations (insert, clear, copy an operation)	• Tool bar \ Assistant icon& • Menu \ Insert \ Operation. • Operating line: Contextual menu \ Insert an operation I				=

These access levels may be modified / adapted on request. The levels (GL1, GL2, GL3) must be created in the Windows user groups and allocated to the TB-DECO users, to allow this option to be used correctly.

Identification by password.

The **Identification** dialogue box is accessible from the **User level** menu or the ad-hoc button on the 'auxiliary function tool bar'.

Unlike PC interfaces, on remote PCs access right management must be active to be able to access this menu. This dialogue box allows a user level to be defined which frees up certain TB-Deco functions. The user must enter a password which corresponds to the selected user level and press **OK** to activate the required user level. The active *user* group can be consulted in the **'About TB-Deco'** dialogue box.

The default identifier is displayed when the dialogue box is opened and it is not necessary to enter the password if you wish to select this as the default user level, simply press OK.

By selecting the **'Administrator'** user, it is possible to go to the **'Configuration as administrator'** dialogue box.

This second dialogue box allows the administrator to define the different passwords for each *user* and the new default *user* level.

The **Read** button allows the current password to be checked and the **Change** button is used to allocate the password entered (maximum of 15 characters, case-sensitive).

The **Finish** button takes you back to the **Identification** dialogue box.

Default password values:

	Remote PC		PC interface	
User level 1	(empty)	*	ul1	
User level 2	(empty)		ul2	
User level 3	(empty)		ul3	*
Administrator	AdMiN2740		AdMiN2740	

* *Default user level*

TORNOS

Tornos SA
Industrielle 111
2740 Moutier
Tél. +41 32 494 44 44
Fax +41 32 494 49 07
contact@tornos.com
www.tornos.com

SBF 538e BAR FEEDERS – RANGE EXTENSION

Tornos has unveiled a new addition to its "e" range of economical bar feeders. The new large-diameter product covers the 5 mm to 38 mm range, and its robust construction means it can easily cope with hexagonal or profiled bars.

The SBF 538e bar feeder is available in two versions, for 3- and 4-metre bars. It features the same design as other products in the range, namely the SBF 212e and SBF 320e. The SBF 538e adopts the same philosophy as the rest of the "e" range: exceptional performance at a highly competitive price. The bar feeder benefits from an extremely rigid construction as well as the latest technological innovations.

Rapid diameter change

To reduce downtime to a minimum during changeovers, the interchangeable guide components are fully and easily replaceable in less than 10 minutes, with no tools required. The guide components can be removed and replaced simply by pressing on the mounting system. Simply replace the other necessary components and enter the new production values on the remote control which manages all of the functions, and the operation is complete. All of the guide components are very long, and have their own oil injection devices. The bar is therefore centred and any vibrations which may affect the quality of the machined workpiece are efficiently damped.

Ramp loading system

Thanks to its material loading ramp with automatic adjustment, the bars are placed inside the bar feeder then loaded into the bearings as necessary. The angle of the ramp can be set between 5 and 15° to allow hexagonal or square bars to slide easily. The SBF 538 can accommodate seven 38 mm-diameter bars, fifteen 20 mm bars and thirty 10 mm bars.

Hydrostatic aperture

The aperture on the SBF 538 offers unparalleled bar security at the bar feeder outfeed. It is ideal for frequent diameter changes and the production of workpieces with strict tolerances. Thanks to hydrostatic technology, the hydrostatic aperture absorbs vibrations as close as possible to the lathe and also holds the pusher when the bar is no longer in the bar feeder, in order to guarantee maximum stability right up to the last workpiece.

www.tornos.com

COMPATIBLE PRODUCTS

Delta 38/5 – Delta 38/5 BL – Sigma 32/6
Sigma 20/6 – Swiss ST 26 – EvoDECO 20
EvoDECO 32

TORNOS MULTISWISS 6x14 AND THE JOSEPH MARTIN COMPANY: A SHARED SUCCESS STORY

During the 2011 EMO, a new concept of machine forming a link between sliding headstock lathes and multi-spindle machines was unveiled by Tornos. In the edition of decomagazine which came out at this time (decomagazine number 58), we introduced the French company Joseph Martin SA, which was the first to be able to test the MultiSwiss 6x14 turning machine.

From left to right: Messrs. Eric Rethoré, Laurent Martin and Yves Gabillet.

At the end of 2012, Joseph Martin purchased a second MultiSwiss machine, this time in Chucker version. We met with Laurent Martin, CEO, Yves Gabillet, Technical Director and Eric Réthoré, NC Single-Spindle Workshop Manager to discover this new machine with them.

decomagazine: Mr. Martin, when we last met, you said you had suggested a number of ideas to Tornos about how they could take this further. Was the Chucker part of this?

Laurent Martin: Indeed. This machine and its design are perfect for reworking billets; all that was needed was to find a smart, economical solution to the loading problem, as we wanted to avoid having a 6-axis robot. Loading simply uses a vibratory feeder, and the billets are conveyed to the machining area via a pneumatic system that we have developed.

dm: We have seen that loading takes place in position 5 and that the barrel rotates in reverse. This is rather unusual - can you tell us more?

Yves Gabillet: We actually asked Tornos if it was possible to reverse the cycle to facilitate loading of the workpiece; we worked together to resolve this issue. The machine now turns perfectly in Chucker

mode, but it can also be converted back into a machine working with bars in a few operations. To do this, we simply load the TB-Deco model for the "bar" machine and dismantle the loading system if necessary, and the machine is ready for production using bars.

This machine is characterised by an incredible flexibility, which is made possible by the replacement of the Hirth gear with a large torque motor which turns the machine barrel. Without this technology, the feat of reversing the machine's rotation would not have been possible. In addition, the MultiSwiss torque motor is equipped with hydrostatic bearings.

Eric Réthoré: We were pleasantly surprised by the very long service lives of the tools on the MultiSwiss with the first machine, where the high level of rigidity has a positive effect. The workpiece that we need to machine contains phosphorous and silicon, a material which is therefore very abrasive. With a tolerance of 15 microns for the diameter and 2/100 along the length, we needed a very precise and rigid machine. Following our positive experience with our first machine, a second MultiSwiss was an obvious choice for us. MultiSwiss and its hydrostatic bearings provide an unbeatable advantage in terms of the service life offered by the tools. In certain cases, the gain is over 70%, which makes it a perfect choice for difficult materials. To ensure the high levels of precision and repetitivity required, the machine temperature is controlled.

The Chucker machine is directly connected to the company's cold water network, whereas the first machine is equipped with a water chiller, which makes it easy to install in any kind of environment. Filtered cutting oil is used directly in the hydrostatic bearings, and unlike systems where the hydraulic oil is mixed and changes the viscosity, the MultiSwiss oil does not required any additional maintenance.

A SIMPLE, HIGH PERFORMANCE MACHINE

MultiSwiss has 6 powered spindles, which means the machine is programmed like 6 lathes with 3 axes. The integrated PC equipped with a TB-Deco ensures programming is incredibly intuitive. Unlike other multi-spindle machines on the market, MultiSwiss is very accessible, meaning a single-spindle operator can get to grips with the machine very quickly. In addition to its simple programming, the MultiSwiss certainly remains the most ergonomic machine on the market. The operator effectively 'enters' the machining area, which allows him to be very close to the tool holders, thereby facilitating their changes and reducing set-up time.

A COMPANY AT THE CUTTING EDGE OF TECHNOLOGY

Joseph Martin has been specialising in the automotive industry for several years; offering extremely high levels of performance, this company has one of the most modern workshops, comprising single-spindle and multi-spindle machines. This structure is supported by employees boasting the latest knowledge.

Company:	a family company founded in 1946
Employees:	180
Turnover:	24 million Euros
Machine inventory:	50 cam-operated multi-spindle turning machines 19 CNC multi-spindles 32 CNC single spindle turning machines 2 MultiSwiss
Materials machined:	mainly high alloy steels
Facility:	over 7500 m^2. Plus a second site of over 10,000 m^2 acquired in 2009
Markets:	more than 80% automotive (specialist in parts for the fluid regulation systems up to 2500 bar!) and miscellaneous equipment
Geographic coverage:	International
Certifications:	ISO TS 16949 – Automotive

dm: And how are adjustments made?

Eric Réthoré: Adjustments are very quick. The Tornos tool holder system is truly practical, and in the case of our Chucker part, we have a lubricating system integrated into the tool holders. During drilling, the bit is directly lubricated from its centre, so the system and its integration have proven highly practical during use. All adjustments are numerical, each Z axis can be adjusted independently, and it is possible to define different offsets on each spindle. Obtaining precision workpieces on the MultiSwiss is therefore not a problem.

dm: And how is it to use and what about the results?

Yves Gabillet: On this type of workpiece, and with the kind of machining that we do on this machine, it is not necessary to use the preheating programme; the first workpieces are good despite the restrictive tolerances. This proves beyond doubt that the machine is well-designed. At just 6 metres in length, the MultiSwiss takes up no more room in the workshop than a single-spindle machine, which gives the Tornos turning machine a serious advantage over its competitors.

We now understand: The MultiSwiss is a surprising machine! This new Chucker version stands to further expand its machining scope.

décolletage JOSEPH artin

Joseph Martin
491, rue des Fontaines
74130 Vougy (France)
Tel.: 04 50 34 59 55
Fax: 04 50 34 02 51
www.martin-joseph.com
info@martin-joseph.com

COSTCUTTER

THREAD WHIRLING WITH SCHWANOG CUTS YOUR PART COSTS BY 40%!

- Whirling systems with 6, 9 and 12 cutters
- Completely burr free threads
- Optimized chip control
- Increased productivity by up to 80 %

www.schwanog.com

schwanog

HAROLD HABEGGER

Canons de guidage
Führungsbüchsen
Guide bushes

Type / Typ CNC

- Canon non tournant, à galets en métal dur
- Evite le grippage axial
- *Nicht drehende Führungsbüchse, mit Hartmetallrollen*
- *Vermeidet das axiale Festsitzen*
- Non revolving bush, with carbide rollers
- Avoids any axial seizing-up

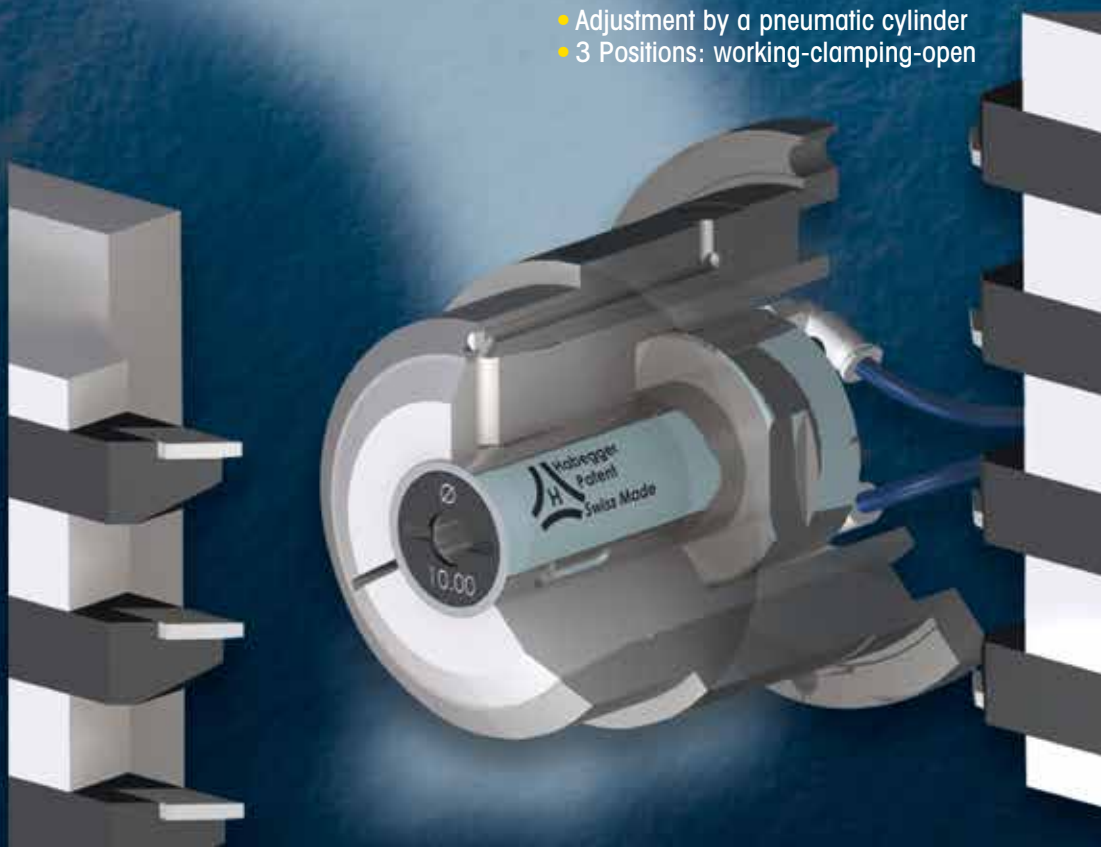
Type / Typ C

- Réglable par l'avant, version courte
- Longueur de chute réduite
- *Von vorne eingestellt, kurze Version*
- *Verkürzte Reststücke*
- Adjusted from the front side, short version
- Reduced end piece

Type / Typ TP

- Réglage par un vérin pneumatique
- 3 positions: travail-serrage-ouverte
- *Einstellung durch einen pneumatischen Zylinder*
- *3 Positionen: Arbeitsposition-Spannposition-offene Position*
- Adjustment by a pneumatic cylinder
- 3 Positions: working-clamping-open

1 Porte-canon: 3 types de canon Habegger!
1 Büchsenhalter: 3 Habegger Büchsentypen!
1 Bushholder: 3 Habegger guide bush types!



Harold Habegger SA
Route de Chaluet 5/9
CH - 2738 Court
www.habegger-sa.com

A GLOBAL NETWORK SUPPLYING MASTERCAM SWISS EXPERT WHICH CAN BE USED TO CONTROL ALL TORNOS SINGLE-SPINDLE TURNING MACHINES

As per the plan, the training of retailers of the CAM for the Mastercam Swiss Expert bar-turner is continuing with 450 companies which retail Mastercam across the world.

At present, more than 30 retailers have been trained and the first sales have been made in the USA.

This bodes well, since manual programming is becoming increasingly complex with recent turning machines models, in particular those with a B axis, such as the EvoDeco 16.

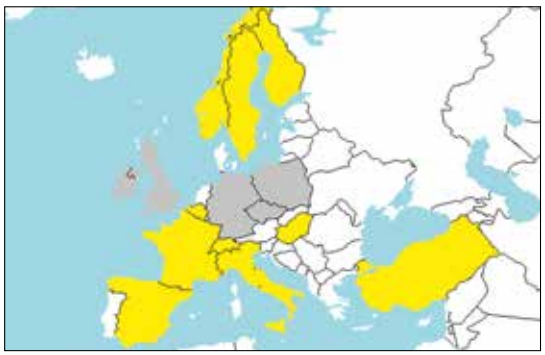
Mastercam stand at the IMTS fair in Chicago, 2012.

Global distribution of the Mastercam Swiss Expert

As announced in 2010, after buying out SylvieXpert, CNC Software Inc. has given its large distribution network the option of increasing their activities by opening it up to the promising bar turning market. In fact, the publisher of Mastercam software, the most widely used CAM software in the world, took the opportunity to offer software specific to bar turning. And now, more than 30 retailers have been trained on Mastercam Swiss Expert at CNC Software's headquarters in the USA and at its subsidiary CNC Software Europe SA in Porrentruy, Switzerland.

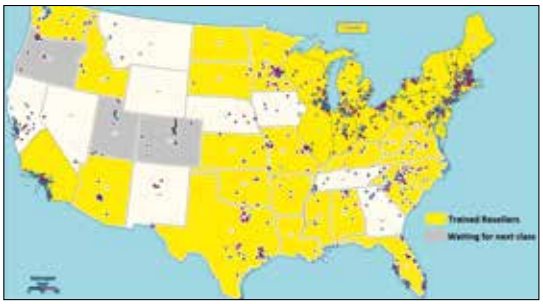
The retailers, specialists in milling on up to 5 simultaneous axes, turning and machining by wire-cut EDM, are not only trained on the software. They are also familiarised with the techniques and specific features of bar turning so that they can better understand the needs of their customers.

The maps below show in yellow the countries and American states which have at least one retailer trained on Mastercam Swiss Expert and the principles of bar turning. The grey areas show regions where retailers will be trained in the near future.



European training takes place in Porrentruy, Switzerland.

In a number of countries, the Mastercam Swiss Expert retailers work closely with machine-tools distributors who are often already Mastercam partners.

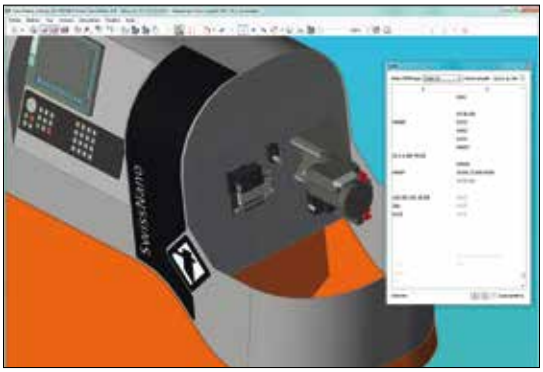


Mastercam Swiss Expert now present across the USA.

Mastercam is very well represented in the USA and Canada, as CNC Software Inc. is located in Tolland in Connecticut and is this year celebrating its 30th anniversary. It is therefore not surprising to see that many states now have a company offering services relating to Mastercam Swiss Expert targeting this new bar turning market. The USA has already seen the first sales in this market, which is a promising one as this special solution offers considerable set-up time savings as compared to the manual method or by using standard software.

Currently, more than 50 turning machines, including Tornos' entire single-spindle range, can be controlled

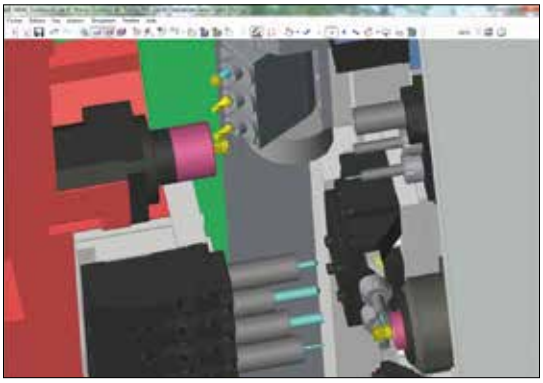
To generate an exact code (C1=… or C4=… or X1=… or X2=…) with the synchronisations, it is imperative to know the location of the workpiece (main spindle or counter spindle) and the position of the tool used. For this reason, the programs are generated automatically in ISO or TB-DECO code. To this end, Mastercam Swiss Expert integrates the entire kinematics of the machines in 3D, with their tooling. As soon as a new turning machine is announced, or at the request of a user or manufacturer, CNC Software will integrate the 3D model of the machine with its kinematics. Then the post-processor will be created, allowing accurate control of the machine. The integration of the SwissNano is a good example of this partnership.



The new SwissNano is already controlled.

The new challenge for bar-turners: managing the tool along 5 axes

Like other manufacturers, Tornos is now offering a turning machine with an additional B axis, allowing numerical orientation of the tool. This new option opens up machining possibilities which were unthinkable in the bar turning word just a short while ago. In this scenario, and for all operations involving complex geometries, the use of CAM software is essential if accuracy, speed and efficiency are required. Detecting collisions during a realistic simulation is indispensable for reducing the set-up time. Integrating the 3D

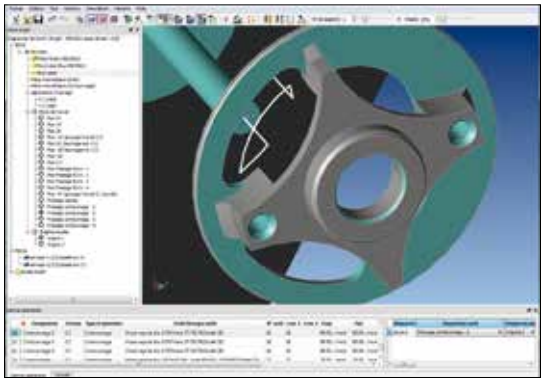


Control of the B axis on the EvoDeco 16.

algorithms and 5 simultaneous axes which exist in Mastercam into Mastercam Swiss Expert is continuing in line with the development plan and the forthcoming version will offer a number of additional functionalities in this field.

CAM: efficient help for the bar-turner

Training a user used to manual programming how to set up with CAM software is a necessary obstacle to overcome if today's turning machines are to be controlled. In addition to being a CAM designed for the bar-turner, Mastercam Swiss Expert is supplied with a range of pre-configured models and specific tools. During training, programming examples are carried out on the customer's machine. The last day of training is dedicated to programming a part chosen by the customer. After training, bar-turners may execute their subsequent programs with the help of their personal database. To programme a new workpiece corresponding to a model range, simply clicking on the 3D digital model will generate the program in ISO or TB-DECO code with no trial and error or risk of mistake.



All the numerical values are taken on the 3D model.

Specific bar turning operations

The software is perfectly adapted to the bar-turner's work. Specific operations are integrated into the software based on the machine's options but also in accordance with the user's requirements. Machining operations have been implemented for specific areas of activity such as watchmaking, dental, medical and the connectivity business.

In the current version, there is a new, well-received functionality which can directly display the machining update when modifying a parameter in the dialogue box. The parameters defining gear hobbing are taken completely into account by the software. Once the parameters have been optimised, the user can create a model range which includes all the values, tools

Gear hobbing.

and cutting conditions. In this way, the system can capitalise on knowledge, which means applying a set-up to another geometry can be carried out easily, without wasting time on trial and error.

Standard CAM or Mastercam Swiss Expert

For a company, selecting which CAM to use is a strategic choice, and not one to be taken lightly. During the many recent benchmark comparisons, we noted that the standard CAMs we come across today are not at all adapted to the specific needs of the bar turning industry. It is an attractive idea, but maybe a utopian one, to want to control the entire bank of machines with a single piece of software. CNC Software, inc. produces two pieces of software which offer the best for each application. We believe that bar turning has specific needs which must be managed with specific software if the user wants to reach peak performance and work quickly without any trial and error. So, the question is, do you want to be accurate, capitalise on your expertise and be able to set up your turning machines quickly?

Mastercam Swiss Expert

published by

cnc software, inc.

Tolland, CT 06084 USA
Call (800) 228-2877
www.mastercam.com

Development centre dedicated to bar turning:
CNC Software Europe SA
CH - 2900 Porrentruy, Switzerland

Marketed in Swiss French:
Jinfo SA
CH - 2900 Porrentruy, Switzerland
www.jinfo.ch

PRECISELY MEASURED: MEASURING-TECHNOLOGY COMPONENTS FROM ITP VÖLKLINGEN

Based on the Völklingen Ironworks site, a UNESCO world heritage site, itp is ideally situated as a precision metal-working company. Here, around 50 employees produce measuring-technology components on Tornos automatic turning machines with high-performance Motorex Ortho NF-X cutting oil, which can be used universally.

Foto: www.fotolia.com

itp GmbH specialises in the production of high-precision components for measuring technology. The company therefore knows how to use the beneficial characteristics of innovative materials such as titanium, ceramic and carbon effectively. In line with the motto "Simply the best", the company based in Völklingen, Germany, works with global market leaders.

Quality inspection is a significant part of every product. During the industrial production of components for a wide range of technical sectors (automotive, aerospace, mechanical engineering, medical technology, etc.), individual components are measured again immediately after production, in some cases directly in the production centre, before subsequent processing. In this way, quality inspection has been integrated directly into the production process and allows the production flow to be monitored simultaneously. In addition, itp provides a key success factor, with the most comprehensive range of probes and accessories for all manufacturers of coordinate-measuring and gear-measuring systems.

Measuring with coordinates

When measuring with coordinates, the touch points of an object are recorded and saved on a computer. The algorithmic evaluation of these points then produces the required three-dimensional measuring result. The computer compares the actual value

At itp, the entire production process takes place under one roof. The bright and logistically well-thought-out production room is located in a former Völklingen Ironworks building (www.voelklinger-huette.org)

with the target value and calculates the result. The touch points are measured on the workpiece with so-called probes (main image). The production of these probes, as well as other measuring-technology components, is the core competence of the innovative company itp.

Always the right probe

The range of probes used is virtually unlimited. For example, in addition to conventional probes, itp also produces star probes, cylinder probes, disc probes, extensions, holders, adapters, etc. In the past, a lot of aluminium was used, but today, 90% of products are made from titanium. A classic probe consists of a probe holder, the shaft and a probe ball. The smallest shaft has a diameter of just 0.17 mm. Particular attention is paid to the expansion/contraction of the probe materials so that the measuring result is not affected. As aluminium expands quite significantly, it was exchanged for titanium, which is lighter and more temperature-stable. For example, the benefit of extensions made from carbon with titanium end pieces is therefore that the carbon contracts slightly at higher temperatures and the titanium components expand by an amount which can be calculated precisely. Therefore, the values almost cancel each other out, and fluctuations in temperature have practically no effect on the measuring result.

"Since starting our business and in line with the motto "Simply the best", we have worked with leading suppliers and, thanks to this positive experience, we use Motorex to cover all areas of technical lubrication in the production plant."

Holger Warken,
Production Manager
itp GmbH, Völklingen

‹ Probes made from carbon are extremely stiff and have significant benefits compared with those made from metal and ceramic. The right choice of probe material is clearly reflected in the measuring results.

Precision masterpieces

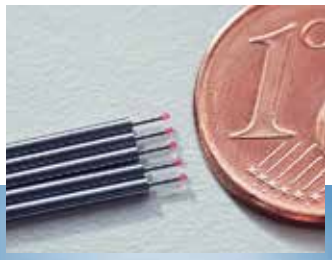
The vertical integration at itp is impressive – in addition to the development of innovative measuring-technology components, the whole production range is covered in Völklingen. CNC machining centres (including the Deco 2000/26, the Deco 13 and the Delta 20/5), and grinding and drilling machines are the centrepiece of production. In addition, itp uses a laser welding system to connect metallic components.

Essential expertise is the drilling of blind holes in the probe balls. Using production equipment developed especially for this purpose at their own factory, itp is the only manufacturer that can drill blind holes in probe balls with a diameter as small as 0.8 mm, regardless of whether they are made from industrial rubies, silicon nitride, ceramic, carbide or zirconium oxide. The drilling technology used for highly resistant materials comes from machining mechanical bearing elements for the most well-known watch manufacturer in Switzerland. In addition, the highest level of precision is achieved when drilling with completely vibration-free high-precision drilling spindles using diamond tools.

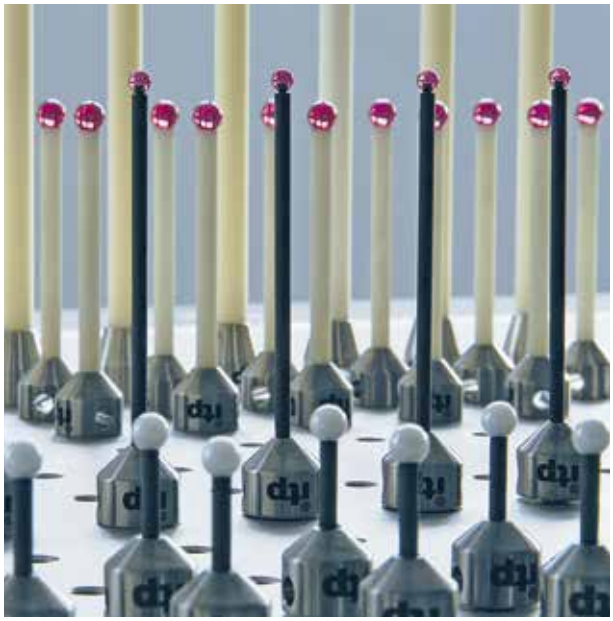
Top results with Motorex

A cutting oil which can be used universally is required, especially when machining various materials (steel, aluminium and titanium) on the same machines. Based on the many positive experiences and joint development cooperation, the machine manufacturer Tornos recommended the ground-breaking high-performance Motorex Ortho NF-X cutting oil. After an analysis of requirements by the Motorex partner for itp in Germany (FS GmbH, Bickenbach), all machining processes were able to be successfully carried out with Ortho NF-X. Furthermore, another advantage was the flash point of Ortho NF-X 15, which is beneficial for the flammable process of titanium machining, for which there is a rapidly increasing volume of orders. After the first tests, outstanding finishes had been achieved, which in turn significantly reduced the post-processing costs. The professionals at itp were impressed by Motorex Ortho NF-X, as the high-performance cutting oil:

– Allows all materials to be machined using just one cutting oil;
– Guarantees maximum power across all processes, e.g. deep drilling, turning, milling, thread-whirling, etc.;



The smallest measuring probe has a probe ball with a diameter of only 0.5 mm at the tip. This was drilled and mounted onto the shaft, which is only 0.17 mm wide. This demands the highest degree of precision.



The materials and versions of the probes are virtually unlimited. However, each material must be skilfully machined and connected to other components, such as the probe base and the probe ball.

This probe ball made from ruby has an extremely high circularity (grade 5), which corresponds to 0.08 to 0.13 µ. Drilling blind holes for mounting the probe ball is one of itp's specialities and requires a great deal of knowledge and skill.

– Reaches operating temperature rapidly and cools down superbly;
– Clears away swarf without foaming at a pressure of up to 120 bar;
– Provides optimum lubrication and is odourless;
– Increases the service life of tools;
– Can be removed effortlessly from the workpieces;
– Is free of undesirable, critical substances.

Internationally focussed

itp operates all over the world and supplies all major industry sectors and their subcontractors. Customers can also order all products online using a sophisticated online shop. For the overseas markets, itp maintains sales branches in the USA and Japan. Since itp was founded in 1994, the company has consistently kept to the motto "Simply the best" and has therefore made a name for itself as a manufacturer of precision probes and accessories for industrial measuring technology.

Whether it is cutting, grinding or hydraulic oil, the Motorex lubricants recommended by various machine manufacturers is used throughout the factory. The Motorex analysis service is also used time and time again.

We would be delighted to provide you with information about the latest generation of processing fluids available from Motorex and the potential for optimisation in your organisation:

MOTOREX® Oil of Switzerland

Motorex AG Langenthal
After-sales service
P.O. Box
CH-4901 Langenthal
Tel. +41 (0)62 919 74 74
Fax +41 (0)62 919 76 96
www.motorex.com

Motorex sales partner:

FS GmbH

FS GmbH
Philipp-Reis-Strasse 16
64404 Bickenbach, Germany
Tel. +49 (0)6257 9981 301
Fax +49 (0)6257 9981 310
www.fsfiltergmbh.de

itp the probe company

itp GmbH
Rathausstr. 75 – 79
66333 Völklingen, Germany
Tel. +49 (0)6898 8509 10
Fax +49 (0)6898 8509 129
www.taster.de

L'USINAGE INTELLIGENT

Member IMC Group

ISCAR

www.iscar.ch

A MORE COMPETITIVE EDGE WITH TORNOS

When we think about the Bronx in New York, Swiss CNC screw machines are not the first thing to come to mind. It is therefore quite surprising to find Supreme Screw Products, Inc. there, only a few blocks from the Yankee Stadium. But skills can be found everywhere, and oh, what a high level of skill we discovered there. Over the past few years, when the rest of the market was slowing down, this company tripled its number of employees and its results skyrocketed. How?

Ralph Lauro, Vice-President of Sales (on the left) and Misha Migdal, President, discussing a quotation for a very complex part.

The company manufactures high-end components for the Defense and Medical industries. It is hard to believe that the parts they produce are finished on automatic lathes. The components look like they were manufactured using several machines with a series of set-ups. However, one Deco, if used efficiently, will eliminate the need for several machines and operators. The result: Better machined parts, higher quality, and at a lower price for the customer.

A never-ending challenge

"Customers always want better prices and the parts are becoming increasingly more complicated. The challenge is to find clever ways to produce the parts and thus, to be able to make the parts ahead of the competition," says Misha Migdal, the company's President. To be one step ahead, Supreme Screw Products, Inc. relies on three elements: Its team of dedicated professionals, its machine pool, and its vision of the business. *"I never say no,"* says the President. He adds: *"We try to offer our customers the best solution time and time again."*

The best people

"I have to train my employees to make them see and think like me in terms of customer orientation and ways of dealing with our business," says Misha Migdal. New York may not have the largest set of skills to draw on for screw machining, but, the company's employees are nonetheless highly skilled

and motivated. *"It is never easy to find well-trained people, so we have developed in-house training to make people achieve the different skill levels that are needed to help our customers,"* explains Paul Zherebtsov, Production Manager. Paul himself is a "graduate" from the training provided in-house at Supreme Screw Products. The first stage, continues Paul, involves the operators. They are responsible for keeping the machines running. They feed and check the machines, as well as maintain them. In the second stage, the operators are able to set-up the machines and edit existing programs. Finally, in the third stage, they can produce the parts, set-up and program the machines; basically, they can do it all. When asked about hiring skilled people, the boss is very clear: *"That's impossible. I hire very ambitious people that are willing to be trained and help the company grow. They are working with Supreme Screw Products by choice."*

The best machines

"We're familiar with the different kinds of Swiss turning machines on the market. Before choosing Tornos, we had carefully considered all our alternatives. We chose the Deco machine because it's the only one that can put 4 tools in the material simultaneously. It may be tricky to use it at full capacity, but it clearly gives us a competitive edge," states Mr. Migdal, when speaking about the machines. And the boss is also impressed by TB-Deco: *"The clarity of the manufacturing process is just perfect. We can see directly how any change in the balance of operations affects cycle time. The real-time visual tools and the wizards are well done. The software helps us save money."*

The more complex the part, the more Supreme Screw Products' customers benefit from the company's technology and experience.

Where skills make the difference

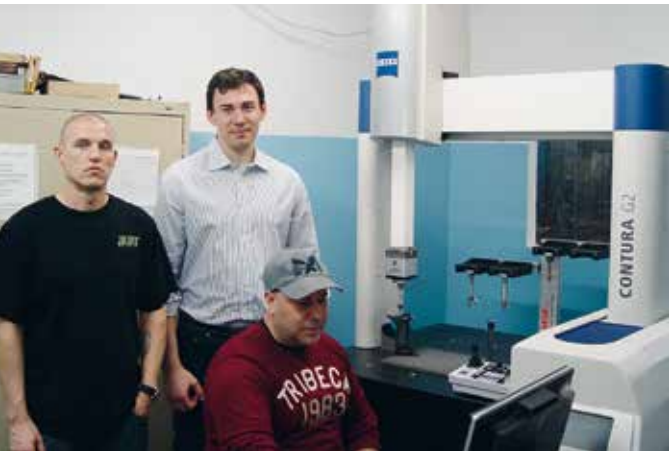
Paul Cassella, a Tornos engineer says: *"When some people from Tornos Moutier, unaccustomed to Supreme Screw Products' creative work, saw the parts SSP produce using their Decos, they had difficulty believing it."* It is what clearly distinguishes the company from others. But the President is very clear: *"We are not the market's only company to make outstanding parts. Somewhere, there are people as good as us, and we are motivated to always strive for excellence."* The company also invests a lot in its quality system (ISO 9001:2008 and ISO 13485:2003 certified), as well as the people using it. Communication within the company is crystal clear and brief production and quality meetings are held daily. Mr. Migdal says: *"We always offer our customers in-depth knowledge and expertise at the best price and on time, without compromising on quality."* The company's growth clearly points to the management's vision of business.

The best service

"We are well supported by Tornos, we have a good relationship with both the US subsidiary and the headquarters in Moutier," says Mr. Migdal. He continues: *"We are very lucky in the US as we have Paul Cassella, as well as Roland Schutz, who is in charge of service. These guys are amazing; they help us solve*

David Rubin, Quality Assurance (on the left) and Paul Zherebtsov, Production Manager in front of the "most advanced machine".

Misha Migdal and Boris Shimunov, Shift Supervisor



To guarantee a perfect quality, the company also invested massively in the quality control department. From left to right: Paul Zherebtsov, David Rubin and Hacene Boudebaba, Quylity Control Manager.

our problems quickly and efficiently." Roland says: *"We know that we cannot leave our customers with a machine that doesn't work, it's bad for them, but it's also bad for us."* Tornos USA is also committed to the Swiss quality of Tornos products.

A partner for the future

To offer even more to its customers, Supreme Screw Products offers prototype capabilities, component design services, as well as assembly possibilities. With its skills and machine pool, the company aims to machine any part (even the most complex ones) at the best possible price, quality, service and delivery.

"The parts are only limited if they have not yet found a way to machine them."

Supreme Screw Products, Inc.

Supreme Screw Products, Inc.
1368 Cromwell Ave,
Bronx, NY 10452
Phone 718-293-6600
Fax 718-293-6602
http://supremesp.com
misha@ssp-net.com

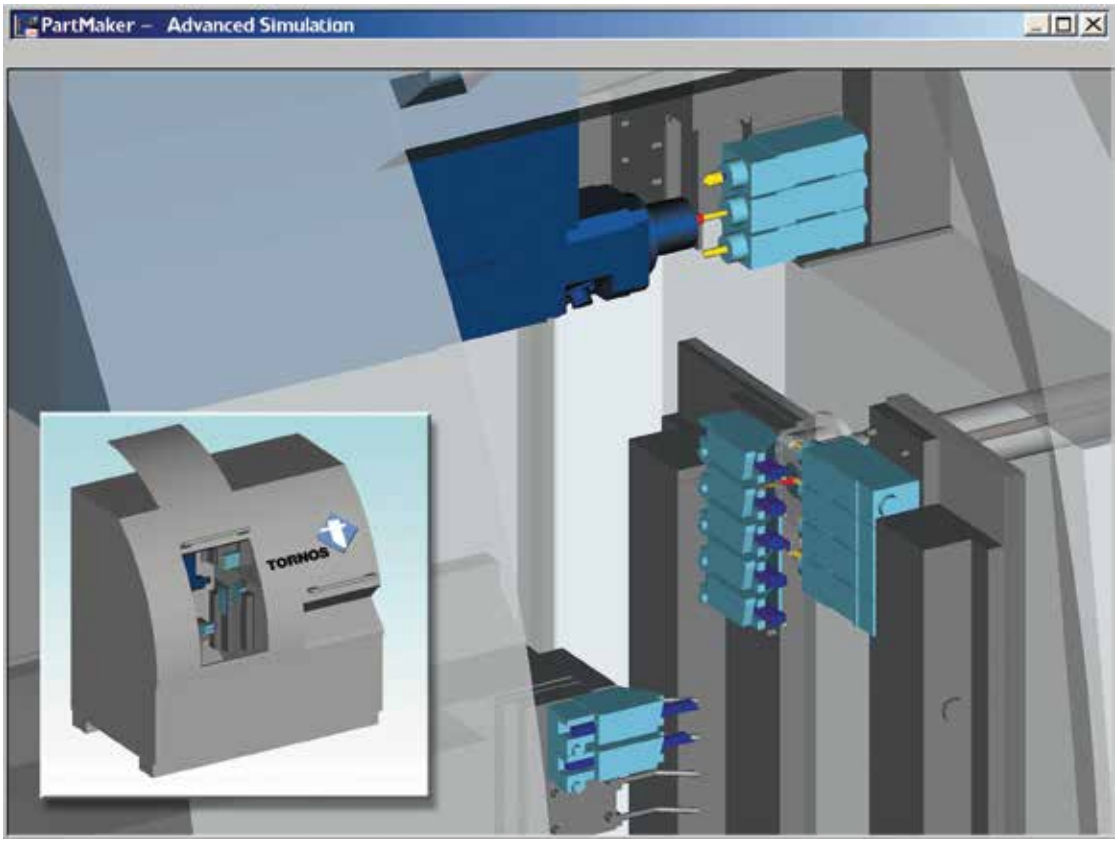
SUPREME SCREW PRODUCTS, INC. IN A FEW WORDS

Founded:	1963
Current management:	Misha Migdal, took over the company in 2008.
History with Deco:	First machine acquired in 2003.
	In 2013, the company now owns 15 machines and has just ordered two more.
	Deco 10, 13, 20 and 26.
Employees:	40
Markets:	Medical, defense and aerospace.
Batches sizes:	From prototypes through to large series.
Main asset:	In-depth knowledge of screw machining for difficult parts.

PARTMAKER SWISSCAM: CONTINUING TO INNOVATE FOR TORNOS USERS

They say time flies when you are having fun.

It's hard to believe it's been almost eight years since PartMaker SwissCAM became the first CAM system to receive certification for use by Tornos on its Deco series machines. A lot has changed at PartMaker and Tornos over that time. What hasn't changed is PartMaker's commitment to supporting both the Tornos end user community and the Tornos global applications support team to help assure Tornos users program their machines productively, no matter whether they are programming Tornos Deco, ST, Gamma, Sigma or Delta series Swiss-type lathes.



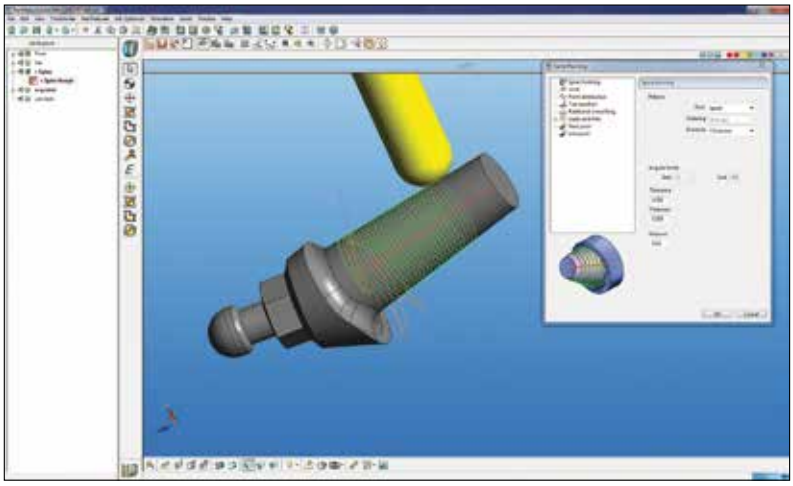
PartMaker's Full Machine Simulation let's Tornos users see any collisions on the machine before sending a program to the machine.

Here at PartMaker, we've found that innovations in automating the programming of Tornos Swiss-type lathes didn't end with PartMaker's certification by Tornos in July 2005. In fact, we found that achieving certification by Tornos was just the beginning of a number exciting technical innovations we made to make programming Tornos Swiss-type lathes more productive.

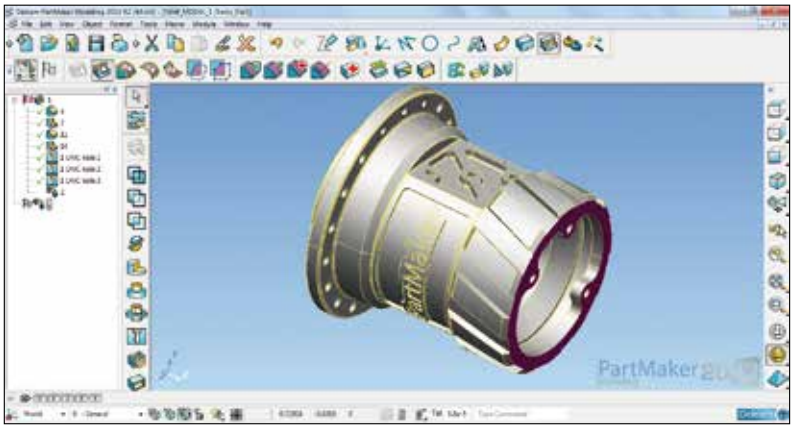
Changes at PartMaker Inc.

Probably the biggest change since PartMaker first appeared in the pages of Deco magazine almost a decade ago is the company's ownership. The company that originally developed PartMaker was acquired by Delcam Plc in July 2006. PartMaker Inc. is a wholly owned subsidiary of Delcam Plc. Delcam, based in Birmingham, UK, is the world's CAM soft-

ware developer and has over 300 offices around the world. Since joining Delcam, the growth in the technology offered in the PartMaker SwissCAM system as well as in the organization supporting the product around the world has been massive. Delcam is a highly forward thinking company which takes a long term view when investing in the development of technology and support infrastructure of its products. As such, Delcam has invested a great deal of development resources in PartMaker in addition to greatly broadening the reach of PartMaker's global support network. One example of this investment in global support is that PartMaker's advertisements in each local language version of Deco magazine are now made in each local language in which the magazine is printed (i.e. English, French, German, Italian, Swedish, Spanish, Portuguese and Chinese). More than just translating ads, PartMaker software is supported by local offices in every market which Tornos is present, assuring Tornos users the world over the best possible support for their PartMaker CAM system.



PartMaker's Advanced Surface Machining (ASM) module features very unique 4 and 5 axis simultaneous milling capability including the specialist "spine finishing" strategy which is ideal for making complex parts like angulated abutments in small batches without the need for form tools or expensive angled attachments.



PartMaker Modeling lets PartMaker users create, modify and repair 3D geometry.

Improvements in PartMaker Technology

The technological improvements in PartMaker over the past 8 years have also been remarkable. Headlining some of the major improvements made to the software during this time are:

- Development of new, advanced surface machining software for 3, 4 and 5 axis simultaneous machining
- Release of the "Full Machine Simulation" module for performing virtual reality like 3D machining simulations before committing an NC program to the machine
- Improvements in solids-based CNC programming
- Creation of the PartMaker Modeling application for creating 3D models as well as modifying poor quality 3D data and manipulating "dumb" 3D models
- Introduction of the PartMaker Documentation Wizard for the automatic creation of highly vivid set-up and process documentation

Improvements in PartMaker for TB-Deco Users

Here are at PartMaker, we found that achieving certification from Tornos for our integrated TB-Deco solution was just the beginning of technological innovations we made for Tornos users. Once certification from Tornos was achieved, we had the opportunity to work with some of the leading Tornos users and applications personnel across the world. Working with these users lead us not only to perfect our post processors for Deco series machines including the Deco 7, 10, 13, 20 and 26 models but also to develop new technology to make Tornos programmers more productive. One unique innovation that was developed as result of this experience was the PartMaker-TB-Deco Diagnostic post processor.

The PartMaker-TB-Deco Diagnostic post processor is essentially a "pre" post processor which allows you to perform a diagnostic check on the part you have programmed in PartMaker before importing a TTFT file into TB-Deco. The idea behind the TB-Deco Diagnostic post processor is to detect problems that will cause "alarms" in TB-Deco resulting from programming methodologies used in PartMaker which can easily be corrected by the user. Getting error alarms in TB-Deco and then having to troubleshoot their root cause can be a real nuisance. By using the PartMaker-TB-Deco Diagnostic post processor, errors in programming that would cause errors in TB-Deco

can be detected before they occur, allowing TTFT files imported from PartMaker into TB-Deco to run error free first time.

Another innovation that applies to all PartMaker users but that was developed specifically in conjunction with a number leading Tornos users in the medical device field is PartMaker's unique thread whirling functionality. PartMaker has developed specialist software user interface and algorithms for automating and optimizing the programming and 3D simulation of thread whirling, which makes it easier from all users to capture the benefits offered by thread whirling.

Supporting the Entire Tornos Range

Tornos' product offerings have also grown much more diverse since 2005 with the addition of a number of machine models including those in the Evo Deco, Gamma, Sigma, Delta and ST ranges among others. PartMaker has kept pace by continuing to work closely with Tornos and its customers to stay current with these machine models, developing robust post processors and full machine simulation kits for the models as they come to market. PartMaker's applications development team takes a proactive approach to working with Tornos and it users to assure it stays current with Tornos' product development.

Supporting the Needs of a Changing Industry

Perhaps the biggest change since 2005 has been the continued change in the Swiss-turning industry in general. PartMaker has focused its development to help its customers cope with these changes. The major fundamental changes in the industry over the past decade have been:

- Reduced lots sizes
- Shortage of skilled labor
- Shorter lead times
- Increased part complexity
- Growing popularity in 3D "solid modeling" for mechanical designs

PartMaker has reacted to these trends by making the software more capable for advanced users, while continuing to focus on making it easier to use for new users. A good example of how PartMaker has become easier to use are the improvements made to the software's user interface in recent releases, where getting around the software has been made faster with more vivid graphics and icons. The software has also been made significantly more capable with improvements to its core machining algorithms, allowing PartMaker to make calculations for more complicated geometries and tool paths faster. Additionally, not only has solids based programming been improved, but with the introduction of PartMaker Modeling, PartMaker users now how have truly unique utility for creating and manipulating 3D engineering data.

Here at Delcam's PartMaker Inc. division, we are very grateful for the opportunity we've had to work with so many leading Tornos users over the past decade. We look forward to the continued opportunity partner with both our existing Tornos users and the Tornos users not yet using PartMaker for many years to come.

Delcam

PartMaker

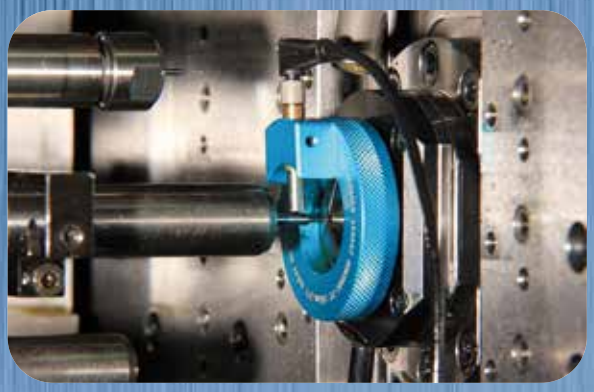
PartMaker Inc.
550 Pinetown Rd., Suite 470
Ft. Washington, PA 19034
Tel: 215-643-5077
Fax: 215-653-0105
info@partmaker.com

SWISS LINE

New spindle centering system
Makes your life easier !

HIGH PRECISION – FAST – SMART

Video >>> www.wibemo-mowidec.ch



WIBEMO SA
WILLY BENDIT
OUTILLAGE DE PRÉCISION

www.wibemo.ch
Wibemo SA | CH-2832 Rebeuvelier | téléphone ++41 (0)32 436 10 50 | fax ++41 (0)32 436 10 55 | info@wibemo.ch

A COMMITMENT TO TRADITION

Using new ideas to preserve values and safeguard the future.

The young Vietnamese entrepreneur Trong Luat Nguyen relies on a strong team, and on Tornos' quality and expertise.

"I want to preserve values and give something back to the world" – this attitude sets Luat Trong Nguyen apart from numerous top managers working for international companies. In 2010, he took over Rowi, an insolvent Pforzheim-based company with a long tradition, and continued to lead the company there, despite carefully considering relocating production to the Far East. At the same time, he is currently building up the precision engineering business division for automotive and medical engineering, and as a result is setting the course for long-term growth. In the process, he is relying on a young team, and Tornos' quality and skills.

The young Vietnamese businessman Trong Luat Nguyen can look back on an eventful past. When he was 14 years old, he came to Germany on a boat as a refugee and as a student, he worked his way to the top – he took the Abitur (the exams taken at the end of high school), studied to become an industrial engineer and founded the Viet Trade Center (VTC) in Frankfurt, a consultancy company that advises German and Vietnamese companies about production and sales in both countries. He is thankful for the opportunities that Germany has offered him and would like to give something back. On behalf of a Vietnamese group of investors, he should have relocated production to his home country to save costs, after Rowi Schäfenacker GmbH, a company steeped in tradition, was declared insolvent. However, he was delighted with the technological skill and commitment that the remaining Rowi employees showed, and Nguyen therefore decided not only to keep traditional production in Pforzheim, but to expand it. The businessman explains his decision by saying *"Made-in-Germany quality ultimately tipped the scales for him."*

More than 125 years of history

Rowi is a Pforzheim-based company with a long tradition. It was founded by Eugen Rodi and Wilhelm Wienenberger in Pforzheim in 1885 and gained an international reputation in 1952 when its Fixoflex wristwatches were patented. The flexible metal strap's triumph began with industrial production at Rowi. 3205 pieces were produced in the same year and Fixoflex was registered for patent approval. By the millennium, more than 100 million Fixoflex straps

had been produced, and if they were laid end to end, the chain would reach from Pforzheim to Australia. But once the patent had expired and cheaper imitations emerged, the company began to decline. Trong Luat Nguyen has stopped this, and slowly but surely things have been improving again. Currently, 17 people are employed by Rowi in Pforzheim, and they handle production, administration, marketing and sales. *"Quality always shines through in the end and that is why we are not giving into any short-term price wars. Besides, we value the quality of the workforce and the training level in the region,"* extols Luat Trong Nguyen.

The flexible metal strap's triumph began with industrial production at Rowi, and these top-quality products continue to be produced on special machines.

Building up a second pillar

"Whoever is able to produce quality in series, is also able to develop complex manufacturing solutions." With this motto in mind, and with an additional focus on CNC technology, Rowi has developed a second, sustainable pillar. A young, highly motivated team has been built around Production Manager Andreas Denzinger, and they produce individual parts and small batches for customers from various industry segments. In addition to the three machining centres that were already available, a powerful turning machine that is precise, flexible, cost-efficient and suitable for a wide range of parts was sought. Following a recommendation from a close businessman, Luat Trong Nguyen and Andreas Denzinger turned to Tornos in Pforzheim. Together with the responsible account manager Werner Hoffmann, various concepts were tested and different scenarios were developed. In the end, a Delta 38 was chosen. The Delta series is designed to manufacture simple standard turned parts that can be competitively manufactured thanks to low machine-hour costs. These are good-value machines that are based on a shared construction kit. They are available with three, four or five axles for 12, 20 and 38 mm bar diameters. Thus the platform includes six machine models that can be supplied in different configurations, such as with or without C-axles or transverse drill spindles, for example. Models 12 and 20 can easily be converted from a sliding headstock to a fixed headstock. Depending on the application, the 38 machine can be ordered as either a long- or short-turning machine. The entire Delta range is a very robust and reliable example of this kind of machine. Chip cross-sections can be manufactured using the Delta range, which is very rare for a long-turning machine.

The possibility to adapt the machine to optimal manufacturing conditions, depending on the workpiece geometry, material or even the bar quality, is

At the same time, Trong Luat Nguyen (centre), with the help of Werner Hoffmann from Tornos (left), is currently building up the precision engineering business division for automotive and medical engineering, and as a result is setting the course for long-term growth.



A young, highly motivated team has been built around Production Manager Andreas Denzinger (left), and they produce individual parts and small production runs for customers from a very wide range of industry sectors

a significant highlight of the Delta range. Working without guide bushes is also very beneficial. On the one hand, material waste and loss are reduced by approximately two thirds. Depending on the material price, this leads to considerable cost savings. On the other hand, the bar material must not necessarily be highly dimensionally accurate and must not be additionally reground.

Achieving success together

The machine base with a socket and spindle mount, as well as the stands have been optimally dimensioned. This guarantees high stability and, as there are no micro-vibrations, the best surface finish and high tool life. The machine's ergonomics are very good. Despite taking up little room, the machine has a large, easily accessible working space. The controls are in the centre of the machine and provide good visibility, making it easier for the operator to access the machining area. For the young team at Rowi, this was a criterion that was not to be underestimated, as they were practically thrown in at the deep end. All employees were well-trained cutting-machine operators but none of them had long-lasting experience with turning. Here, as with all their customers, Tornos' usual co-operative approach took effect once more. The employees were given in-depth training, and to begin with, projects were discussed jointly and supervised. In the meantime, all Rowi employees are now fully trained and have developed outstanding expertise. Thanks to higher-than-average commitment, tricky tasks are mastered and rushed jobs are finished over the weekend. This is seen as positive by more and more customers and the order books are full. Luat Trong Nguyen is pleased as he sees this as confirmation that jobs do not necessarily have to be relocated abroad for financial reasons. Nevertheless, he is constantly looking for companies that want to invest in Vietnam. *"Vietnam is an ideal location for small and medium-sized European companies that want to serve the Asian market,"* says the Rowi boss. It does not have to be at the expense of jobs in Germany. *"German quality is setting the standard worldwide,"* he swoons. As a mediator between these two worlds, he can also certainly see the chances that Vietnam has to offer. Siemens, Adidas, Bosch and a further 230 German companies already manufacture in Vietnam. Luat Trong Nguyen is still looking for medium-sized partners with whom he can jointly set up production facilities in Vietnam. Tornos is his first choice of machine supplier and he also hopes to continue the constructive cooperation in the Far East.

ROWI since 1885

Rowi Präzisionstechnik GmbH
Kaulbachstrasse 48
75175 Pforzheim, Germany
Tel.: +49 (0)7231 92 08 0
luat.nguyen@rowi-gmbh.com
www.rowi-gmbh.com

IRISH SUBCONTRACTOR BOTTLES SUCCESS WITH TORNOS

When Killala Precision Components Ltd was acquired 12 months ago by a brother and sister partnership with a background in the manufacturing and wine industry, the new owners immediately tasted the potential for success. The recipe for success with the County Mayo company started with the acquisition of a Tornos Sigma 32 from Premier Machine Tools, the Ireland agent for the Swiss machine tool manufacturer.

When the new directors acquired the subcontract business based on the West Coast of Ireland, the growth potential was apparent. Supplying prestigious manufacturers in the oil & gas, refrigeration, hydraulic & pneumatics, brewing, medical and automotive sectors with machined parts in batches from 50 to 500,000 on its array of CNC and CAM auto machine tools, the 34 employee company is maximising its growth potential. Previously, Killala Precision was turning work away because of the capacity limits and capability levels of some of its machine tools. To rectify this issue, the company bought a Tornos Sigma 32/6 from Premier Machine Tools of Kildare.

Commenting upon this acquisition, Killala Precision's Managing Director, Mr Brian Irwin says: *"We had another manufactures 32 mm capacity sliding head that wasn't capable of producing many of our parts. This was pushing more complex parts onto our 10 year old Tornos Deco 20 that is an extremely capable and busy machine. We desperately needed a new sliding head, so we reviewed the marketplace and the Tornos Sigma 32 was the hands down winner. It is extremely powerful, versatile and very productive. Whilst we have CNC machine tools from a vast array of vendors, the existing Tornos Deco is a workhorse that is very reliable, productive and well supported, so we were very confident in the brand. We took delivery of the Sigma 32/6 in November and it has delivered beyond our expectations already."*

This confidence is boosted by the fact that Tornos is the only sliding head turning specialist with a sales, service, technical support and training base in Ireland. This is all provided by machine tool specialists Premier Machine Tools, a company that delivers levels of service unparalleled by alternate machine tool suppliers. Whilst this support was one of the major deciding factors behind the ISO:9001 registered company's selection of Tornos; from a productivity perspective

the 7.5 kw spindle power on main and sub spindle that is beyond many fixed head machines was also a major selling point.

Regarded as the only Swiss type sliding headstock machine capable of producing parts in the realms of a fixed headstock machine, the Sigma 32 has a heavy duty construction for main and counter operations that make it the ideal addition to any machine shop. The rigid and robust nature of the Sigma 32 is noted in the 2.2 kw power output of the driven tool stations that can machine at 10,000rpm. The driven and fixed tool stations see the machine offer 28 tool positions that have improved overlapping processes for Killala Precision. The increased capability for simultaneous operations has improved productivity by over 40% in the short period since the machine's introduction.

As expected with a subcontractor covering such a diverse range of industry sectors, the materials processed on the Sigma 32 include stainless and mild steel, aluminium, bronze and brass through to inconel and hard materials commonly used in the oil & gas sector. Since its introduction, the Sigma 32 has been tasked with producing hydraulic valves, sleeves and pump components in batches from 50 to 5000. One project the Sigma was acquired for, is a family of stainless steel tubes for the brewing industry. Regularly produced in batches from 1000 to 3000, the 80 to 135 mm long tubes have a 9.52 mm external diameter, a 7 mm internal diameter and require external turning down to 8 mm. The previous sliding head lathe created deformation, elongation, part bending and poor tool life. The 3 m barfeed system with improved component support and guiding on the Sigma has improved machine rigidity, as Killala Precision's Engineering Manager, Mr Ray O'Boyle comments: *"We were scrapping 15% of tube parts, primarily because of poor tool life - a result of the machine parameters. We were getting 25-35 parts with each parting and turning insert edge on the previous sliding head and when we transferred the job to the Sigma 32/6 we instantly noted tool life improvements up to 100 parts per edge with the same Kennametal inserts. With the Sigma, we have more than doubled tool life, significantly reduced our scrap rate and improved our productivity by well over 40%."*

This 40% improvement has arrived from a cycle time reduction from 90 to 65 seconds on one

family of tubes whilst further savings have arrived from reduced insert changeovers. As Mr O'Boyle continues: *"We were using the machine counter to change inserts at set intervals. If an insert was damaged, we would notice damage on previous parts that would deliver a high scrap rate. The Sigma has eradicated this problem. Additionally, by not opening the machine doors to change inserts as often, we are not suffering unnecessary downtime."*

The Sigma 32/6 is running over 30 different jobs with part families within this grouping. As Mr O'Boyle says: *"We are witnessing cycle time and set-up savings on every part we transfer to the Sigma. One set of stainless steel locating pins with a time saving from 40 to 32 seconds is produced in batches of 1000. Moving the pins to the Sigma has cut non-machining times with drilling and tapping conducted on the sub-spindle whilst the main spindle is also machining."*

"From a set-up perspective, the Tornos TB-Deco system is simple to use and works with ISO programming, so set-ups are kept to a minimum. It also

simplifies overlap machining, so we can virtually eliminate non-cutting times. Furthermore, the Sigma has an integrated barfeed system with 4 channel options and 4 pusher sizes as standard. This reduces set-ups, improves synergy between barfeed and machine and also eliminates the additional cost of channel supports, steadies and drives. This is ideal for us as we do job changeovers daily. Like the Deco machine, the new Sigma is running over 16 hours a day, every day, and we are delighted with its performance and also confident in the service and support we have been receiving from Tornos UK and Premier Machine Tools," concludes Mr O'Boyle.

The introduction of the Sigma 32/6 has freed capacity from the company's Deco 20 that is producing smaller parts whilst taking larger work from the company's 51 mm fixed head machine. The company is delighted that the Sigma can produce a combination of small screws at 4.5 mm diameter and large parts over 32 mm at cycle times faster than alternate machines whilst freeing capacity on its other CNC turning centres.

KILLALA PRECISION

Killala Precision Components Ltd
Woodlands Industrial Estate
Killala, County Mayo
Ireland
Tel. +353 (0)96 32255
Fax +353 (0)96 32306
info@killalaprecision.com

A SMALL TEAM DEMONSTRATES
IMPRESSIVE PERFORMANCE

SATISFIED CUSTOMERS ARE A TOP PRIORITY

Manfred Brock is a straightforward person and he knows what he wants. Together with his son and one employee, he leads a small but mighty turning shop, which has earned an excellent reputation in the sector over the years. When customers themselves no longer know what to do, or other suppliers have to admit defeat, MB Präzisionsteile GmbH comes into play. In addition to knowledge, experience and commitment, a prerequisite for this is an appropriate machine inventory, a large part of which consists of Tornos machines.

Besides the complexity of his parts, Manfred Brock is proud of the quality produced.

MB Präzisionsteile GmbH was founded as a sideline business in 1975 by Herrmann Brock, the father of the current owner. In his free time, he produced mass turned parts on a second-hand Traub A 25 cam-operated lathe for his employer at the time. In 1990, Manfred Brock took over the company. One of his main character traits is the pursuit of autonomy. He did not want to be dependent on one or two large customers and get into tough price negotiations each year. He therefore started production of highly complex turned parts, which he produced as sample parts or in small production runs. To do this, he needed to invest in CNC technology, and as early as 1991, he purchased his first Tornos ENC 164. The strategy paid off, and the company grew continually. In 1997, it moved to the current company premises in Pforzheim-Huchenfeld. At the same time, the machine inventory was increased to the current number of six machines.

Firmly established in the region

One of the company's strengths is the flexibility and pragmatism with which all tasks at hand are approached. For example, on Boxing Day 1999, two years after the new company premises had been obtained, Cyclone Lothar swept across the country and ripped half of the roof off the building. But with

the help of local workmen and good cooperation, all production could continue just two days later. Generally, this is also necessary for the orders that Manfred Brock receives. He produces a wide range of complex workpieces, which must be delivered as sample parts or in small production runs, and usually at short notice. In order to do this, one or two night shifts or weekend shifts are inevitable. Several times a day, the machines are retooled and optimised for a new workpiece. For Manfred Brock, it is flexibility and the retooling times that have a significant impact, not the machine running times. Specific machines are required, particularly for the automotive and electronics industries, due to their complex geometries and high quality requirements. Therefore, in 2005, Manfred Brock decided to purchase a Deco from Tornos, since this machine was best suited to the projected range of products.

As he saw it, no other machine in the diameter range of up to 10 mm was quicker, better or more flexible for his electronic parts. The two parallel slides, the TB-Deco control system and the comprehensive auxiliary equipment were all clear and convincing plus points for the DECO. When making purchases, Manfred Brock always chooses the best equipment so that the company is genuinely able to react to any challenge. And it has a lot to offer – the company machines almost all materials that are usually supplied commercially and have at least a tolerance class of h9. In this regard, he appreciates cooperating with Tornos on a partnership basis. For every new machine, he and his team received intensive training in Switzerland and were familiarised with the finer points of the technology, right down to the smallest detail. And even when something was very complicated, the technology experts in Pforzheim and Moutier were on hand with help and advice.

We live quality

In addition to the complexity of his workpieces, Manfred Brock is proud of the quality produced. Quality is one of his main focal points. He sees the entire process of certification as a sign of bureaucracy rather than a helpful instrument. Together with his son and employee, he is responsible for quality. A drawing of each workpiece is produced again in-house, in order to avoid and determine potential stumbling blocks or problem areas. Only then can work begin on the right machine, and the workpiece is worked on meticulously and experimented with, until it is just right. This high standard of quality is best suited to the Decos from Tornos. They have very precise tolerances and create surface finishes that almost measure up to those of grinding machines. The company has a comprehensive range

Manfred Brock and Tornos Customer Advisor Werner Hoffmann are in constant contact.

Here, the boss himself stands by the machine and is a guarantor for its absolute quality.

of measuring and testing equipment, and products are only delivered to the customer when the boss is satisfied. In-time orders also present a particular challenge here. If the drawing arrives in the morning, production starts the same day and the ordered parts are delivered within an extremely short time frame. Naturally, the Tornos Deco 10 and Deco 20a single-spindle automatic turning machines make a significant contribution to this. Due in particular to its intelligent control system, they offer benefits which at present cannot be achieved by any other manufacturer. In addition, they are extremely accurate and, as you would expect from a Swiss manufacturer, provide the right quality and availability.

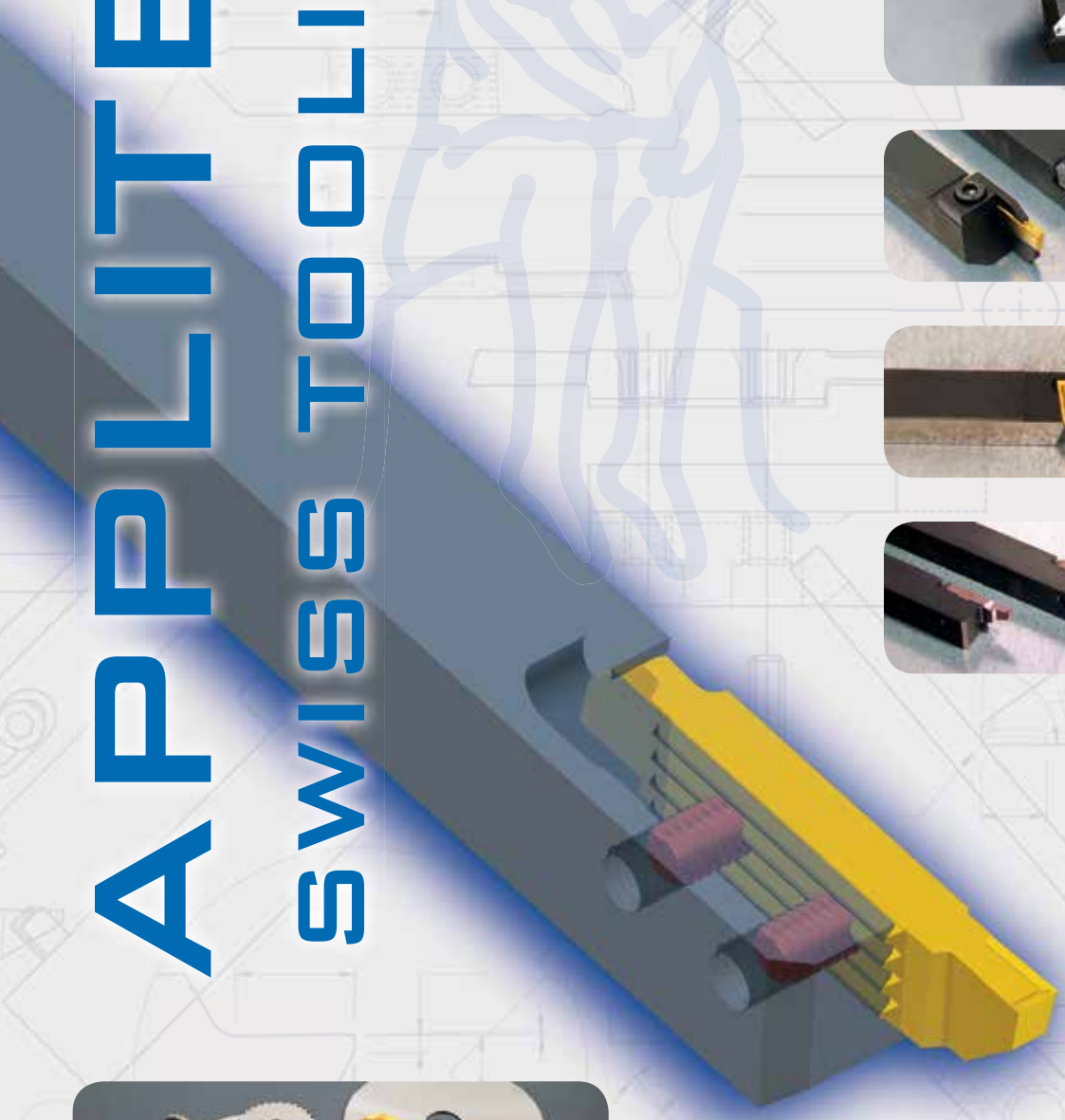
Prepared for the future

In 2012, Manfred Brock's son joined the company and will carry on the tradition started by his grandfather and father. In doing so, he must currently be able to cope with a voluntary double workload, because as a local voluntary first aider, he is on-call for the rescue services at least once a week. He has the same focus on quality as his father, and Manfred Brock can therefore let go of the reins in good faith. He will hand over responsibility gradually and also treat himself to a long holiday. However, for the moment, he cannot imagine withdrawing completely just yet. He will help his son on the basis that "there is always work that must be done." However, his son can put his ideas into action and develop the company in his own way. The collaboration with Tornos and a modern machine inventory provide the ideal conditions for this.

MB Präzisionsteile GmbH
Manfred Brock
Mittlerer Hardweg 19
75181 Pforzheim-Huchenfeld
Germany
Tel.: +49 (0)7231 97 98 40
Fax: +49 (0)7231 78 95 55
manfred.brock@cnc-drehteile-brock.de
www.cnc-drehteile-brock.de

APPLITEC

SWISS TOOLING



SWISS MADE

APPLITEC MOUTIER SA
Ch. Nicolas-Junker 2
CH-2740 Moutier
Switzerland
Tel. +41 32 494 60 20
Fax +41 32 493 42 60

WWW.APPLITEC-TOOLS.COM