decomagazine

THINK PARTS **THINK TORNOS**

59 04/11 ENGLISH

THINK 2012 **THINK HAPPY NEW YEAR**

Integrated PC
for greater flexibility

Iscar and Tornos,
a system partnership defined by the customer

Additional
performance creates a competitive advantage

What if technical
documentation were a tool for competitiveness?

UTILIS®

Tooling for High Technology

WERKZEUGE FÜR DIE MEDIZINALTECHNIK

KOPIERDREHEN

OUTILLAGE POUR L'INDUSTRIE MÉDICALE

TOURNAGE PAR COPIAGE

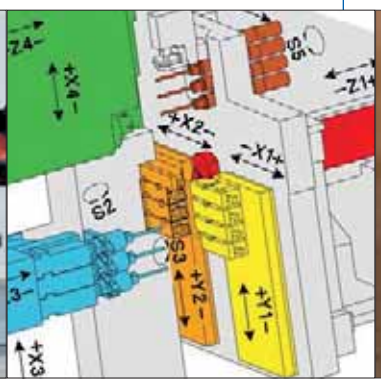
TOOLS FOR THE MEDICAL INDUSTRY

COPY TURNING

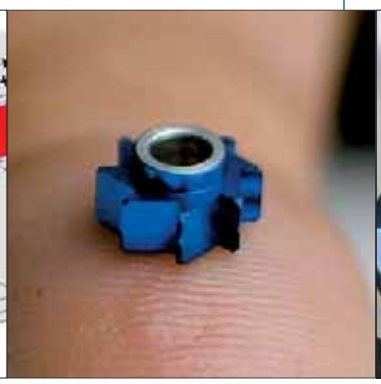
Utilis AG, Precision Tools
Kreuzlingerstrasse 22, CH-8555 Müllheim
Phone +41 52 762 62 62, Fax +41 52 762 62 00
info@utilis.com, www.utilis.com

Utilis France SARL, Outils de précision
597, avenue du Mont Blanc, FR-74460 Marnaz
Téléphone +33 4 50 96 36 30, Téléfax +33 4 50 96 37 93
contact@utilis.com, www.utilis.com

Ensuring continuity…



Greater production thanks to rigidity



Doing the impossible everyday with a little help from Tornos

The right tool for every need

IMPRESSUM

Circulation: 14'000 copies

Available in: English / French / German / Italian / Swedish / Spanish

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

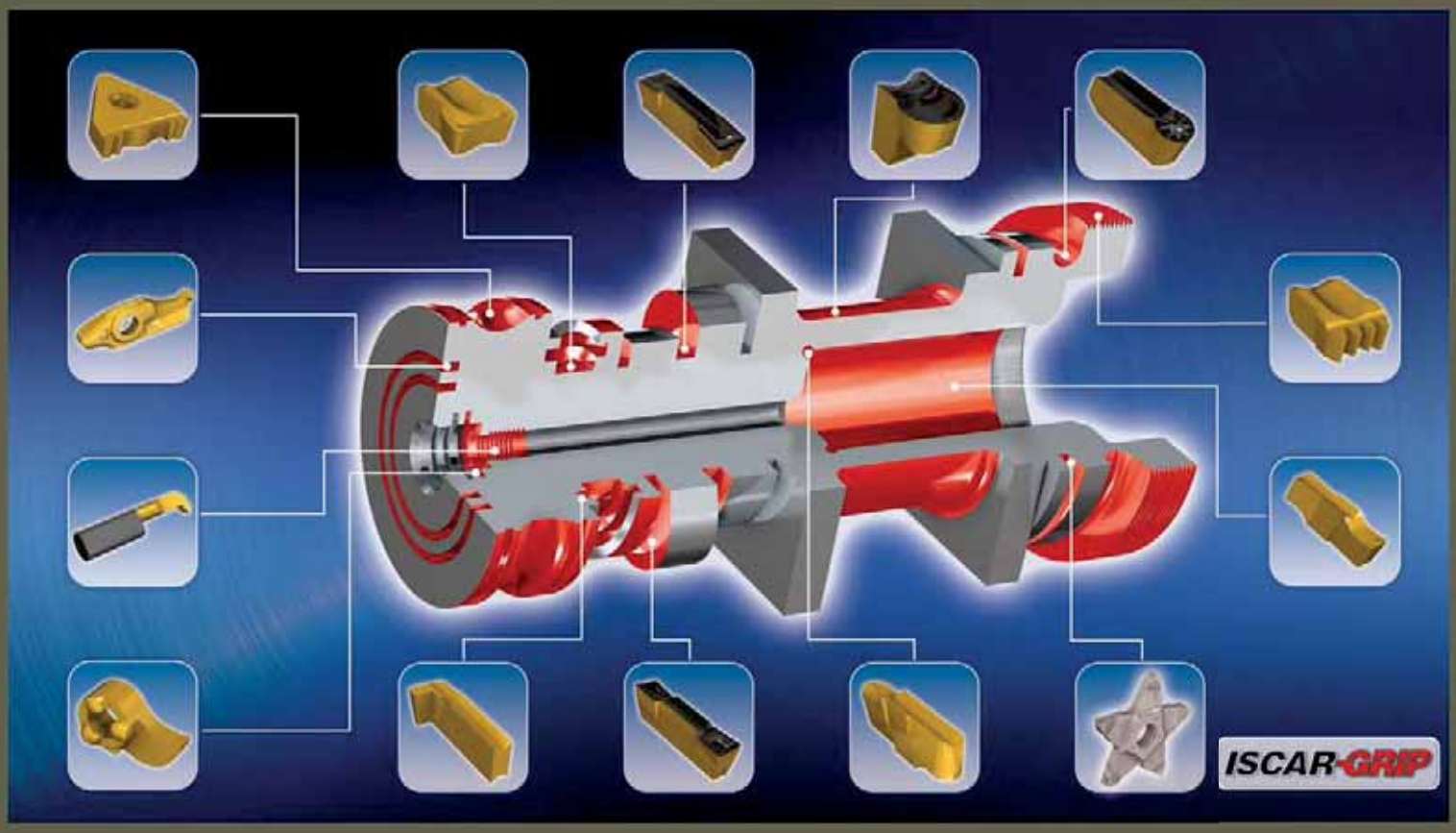
Graphic & Desktop Publishing:
Claude Mayerat
CH-2830 Courrendlin
Phone ++41 (0)79 689 28 45

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

Contact:
redaction@decomag.ch
www.decomag.ch

SUMMARY

The best ever EMO…	5
Ensuring continuity…	6
Integrated PC for greater flexibility	8
Greater production thanks to rigidity	11
New range of bar feeders	14
New high pressure unit for Gamma/Delta 12-20	16
Dental implants for the whole world	19
Iscar and Tornos, a system partnership defined by the customer	23
Tornos Poland	26
Skilled workforce development collaboration in medical technologies (MEDTECH)	29
Flexible "MultiSwiss" multispindle machine	31
Doing the impossible everyday with a little help from Tornos	35
Additional performance creates a competitive advantage	39
What if technical documentation were a tool for competitiveness?	42
The right tool for every need	47
Production surveillance interface	50



Des combinaisons gagnantes en tournage-gorges pour une **réduction significative** des coûts de production

Pour plus d'informations, rendez-vous sur www.iscar.ch et cliquer sur la version interactive de cette annonce

Dispo 24/7

ISCAR TOOL ADVISOR
www.iscar.com/ita

Member IMC Group
ISCAR
www.iscar.ch

Fournisseur de Rentabilité
ISCAR, la garantie des résultats

ITA recommande l'outil optimal à partir des paramètres de l'application et de la puissance machine.

3 propositions minimum et jusqu'à 25 alternatives donnant conditions de coupe, puissance, temps de cycle, volume copeaux, informations techniques, etc

THE BEST EVER EMO…

The EMO show, the world's largest machine tool show was held in Hannover, Germany in September. Many of us were wondering whether the recent turbulence from the financial markets and the uncertainty in the general global economy would have an impact on this exhibition. However, there was no mention of all this; it was the best EMO I have ever attended!

Visitors from all over the world filled our booth during the entire duration of the show, and no wonder. Tornos exhibited 9 different products of which three were world premières; the MultiSwiss, the Cyklos and the Delta 38.

MultiSwiss

The interest was huge for this revolutionary machine. The sales team was continuously occupied in explaining to the interested audience the numerous advantages at the machine or in front of the two interactive video screens. The accessibility and flexibility of a single-spindle machine combined with the productivity of a multispindle machine and all this with minimal floor space – truly a revolution!

Cyklos

The vision to become a partner for our customers along their entire manufacturing processes was further extended with the new surface treatment plant called Cyklos. The philosophy to have the surface treatment in-house with a compact and completely sealed process, is for many customers a new and very interesting option.

Delta 38

In 2008 Tornos introduced the Delta 12 and the Delta 20 to satisfy the increasing demand for high quality from more simplistic machines. Now, this line has been extended with the Delta 38, a 5-axis machine for larger diameters.

Additional News

Besides these machines there were a number of other novelties shown. For micro mechanics and electronic applications the brand new EvoDeco 10 and the Delta 20 were presented. In the medical field, an EvoDeco 16 produced an entire set of a dental implants (first the lower part, then the upper part and then the screws) without intervention of an operator. Further in the medical field, a bone plate manufacturing cell consisting of two vertical micro milling machines with an integrated robot for handling, deburring and cleaning was shown. Also, on a Gamma machine a bone screw was produced in a most economical way. For automotive applications the new Sigma 32/6 and the MultiSigma 8x28 working from a blank part underlined the strong presence of Tornos in this field.

With such an extended set of new products and applications that are paired with our competent sales and product specialists, Tornos underlines its willingness to remain an innovator and competent partner for our customers.

There is also more to discover from this new issue of the Decomagazine.

Sincerely yours,

W. Nef
Head of Sales

ENSURING CONTINUITY…

No-one is irreplaceable, that goes without saying, but in the case of a sales director who has personified the company for many years, who has tirelessly represented it in Switzerland, France, Italy and Spain (Tornos' TTSO zone) and is someone who customers are happy to deal with, such an exercise would be more difficult. When this kind of change is taking place, it is necessary to put in place a transition and replacement solution which customers can confidently rely on.

For some customers, it is a relationship dating back several decades that will be witnessing change with the arrival of Hugues Leuzinger as Tornos'new Southern Europe Sales director. Francis Koller will actually be passing his responsibilities on to his successor at the end of this year. In response to this introduction, Mr Koller explained: *"Your comments are only partially true, as in this role it is essential to know how to surround yourself with experienced colleagues who provide the real interface between the customers and the company. The teams that I put in place more than ten years ago in the various countries are highly competent, dedicated, well-known and well-regarded within the market, which will ensure continuity is achieved".*

Gentle transition

Commencing the new role from the recent summer holidays, Mr Leuzinger has been undergoing gradual training and is familiarising himself to ensure his smooth integration into a high performance team. Mr. Koller will remain with the company to help launch Cyklos onto the market and to support Tornos France on a management level. We will therefore have the chance to talk with him again until at least the end of 2012.

A new challenge so close to retirement?

When talking about Cyklos, Mr Koller cannot hide his enthusiasm, he so fired up about being able to lend his experience to Tornos' new activity which was actually brought to Moutier by this same Francis Koller. He explains: *"I could not have imagined that after all these fascinating years I would have the opportunity to end my career with a new challenge of this scope".* Cyklos is actually a completely new concept that Tornos is placing on the market, and the company is mobilising all its resources to allow customers to discover and benefit from this incredible innovation!

An element of stability

The industrial world changes quickly, which is as it should be. Some customers may feel lost when they visit one of their suppliers' exhibition stands and find that most of the team is new and they don't know anyone and, more importantly, no-one knows them, while they have been indispensable partners throughout Tornos' history. On the markets covered by Francis Koller and his team, this has been far from the case; visitors have always been able to meet the local Tornos teams, and also their director and they are always welcomed with professionalism and all the warmth that such a longstanding relationship creates. In the context of the difficulties that the world of machine tools has experienced, this factor has allowed Tornos to provide clear, reassuring stability.

New setup…

Like changing a piece in a jigsaw puzzle, all of the TTSO teams must now take their place with Mr Leuzinger. Francis Koller explains: *" It is actually quite a major change, but both our sales staff and their new head are equally aware that they must work together with a common goal in mind: working for our customers and aiming for excellence".*

… working for customers

With almost 45 years of experience, including over 10,000 customer visits, Mr Koller is a privileged observer of the market. And while nothing can be taken for granted, the basis for success will always remain the same. He concludes: *"We must continue to get closer to our customers if we want to be able to guide and help them. My goal has always been to be side-by-side with them, and to provide them with clear and correct information. They have to know that we are working for them and that we will keep our word; that is the foundation that allows us to work with their trust. This approach, which has been the one I have adopted for many years, will continue into the future with Mr Leuzinger and I wish him the very best".*

Yes, but no twinge of sadness Mr Koller? No small tear to shed…?

"Of course, I am leaving my role, but I'm not really one for looking back. I had the opportunity and the honour to be able to work for Tornos and for its customers for many years. In Moutier, in the subsidiaries and within the markets, I had the opportunity to work with extraordinary people who have most definitely given me more than I have given them. I am very aware that such a long period will leave its mark; that is life, after all.

"But the most important thing is Cyklos. Tornos is revolutionising the market with this extraordinary product, you know…"

The incorrigible Francis Koller!

Decomagazine wishes both Mr Koller and Mr Leuzinger the very best in their future endeavours.

INTEGRATED PC FOR GREATER FLEXIBILITY

With the advent of the EvoDeco 10 and 16 machines, Tornos has unveiled a new control interface that greatly simplifies operations on the machine. Consisting of a latest generation integrated PC, a capacitive touch screen protected by a window, using Windows 7 Embedded and communicating via a HSSB (High Speed Serial Bus) with the NC; this solution makes it possible to capitalise on TB-Deco while still building for the future. Interview with the Tornos development team.

A PC built into the machine is not new for Tornos, as MultiAlpha machines have used this solution since 2008. However, PCs remain separate from numerical control, but the connection between the two is extremely rapid. In comparison with MultiAlpha, the EvoDeco machines have a more responsive touch screen and greater processing power.

Managing Obsolescence

If 10-year-old Deco machines are still sought after, it's because all the calculations required for machining are made externally by TB-Deco and the machine simply reads the tables. Does the integration of a PC repudiate this concept? Mr. Philippe Charles, product manager for EvoDeco explains: *"Not at all! The integration of an easy to use touch screen PC brings the user many advantages faced with today's constraints on machining, flexibility and programming. Furthermore, the processing power of today's PC is such that the system's limitations are unlikely to be reached".* If one day a customer wants to change the PC to be up to date with the latest technology, this can be done quite simply thanks to the way EvoDeco machines have been designed.

Time Savings

One of the criticisms of TB-Deco was the relatively sluggish operation when in use during adjustment phases. It's not unusual to have to transfer the program several times and, depending on the method used, this can take quite some time. The integrated PC makes it possible to do away with

transferring programs from an external PC to the machine control. In addition to the gains in efficiency, it means laptops are no longer needed in the workshop.

Greater Flexibility

Even though for many customers programming will continue to be carried out in a centralised department, it is still advantageous in terms of flexibility to be able to modify the program directly on EvoDeco. Transfers to the machine can be made via the company's network (wireless or not) or simply using a USB key. Integrating a complete PC also makes it possible to offer other services, in particular being able to view the service instructions. This guarantees the highest level of responsiveness and increased efficiency.

Programming in concurrent operation time?

One of the strengths of TB-Deco is its concept that separates the PC from NC and therefore makes it possible to program in concurrent operation time. With EvoDeco, this separation has naturally been retained and it is entirely possible to program the machining of a part while the machine is producing another. The user also has the option of consulting the information available. For example, the service instruction manuals or any other application installed can be consulted while the machine is running.

Complete Security

One widely recognised problem in IT is when the system is "polluted" with viruses or other unwanted elements. With EvoDeco this contamination is no longer possible as the machine uses Windows 7 Embedded, which completely resets the system after each restart, so that regardless of the operations carried out and any possible virus or configuration issues, the PC's operating system is restored with each start-up.

New features for the operator

Programming is still carried out on the standard TB-Deco, but the main new feature is the possibility of making modifications directly on the machine. Each operator is 'recognised' by the machine and, depending on access rights, they are able (or not) to edit the programming. Security is also guaranteed at this level.

As noted above, the PC offers important services in terms of information and troubleshooting (on this subject see the article on service instructions and in particular identifying replacement parts on page 42).

A system that is open to the future

As with (almost) all computer programs, TB-Deco evolves every year, and EvoDeco is completely free at this level. Persons with the customer's authorisation can install the new program versions according to their needs and requirements. Mr. Charles concludes: *"With PC control we have made a significant step towards greater ease of use and performance for our customers at equipment level. With regards to programs, our engineering teams are constantly working on new developments that will be presented in 2012".*

The EvoDeco 10 and 16 models are already available.

Small Part Machining

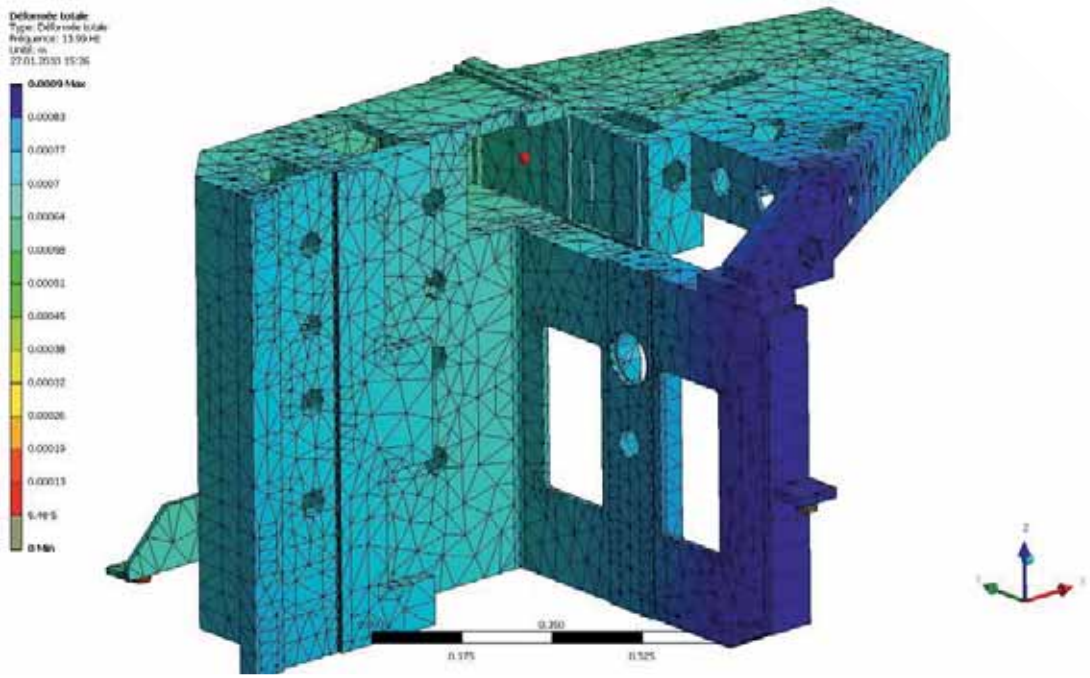
Small parts – great solutions

SANDVIK Coromant

Your success in focus

GREATER PRODUCTION THANKS TO RIGIDITY

The rigidity of the new EvoDeco 10 machine has been reinforced thanks to several actions implemented at different fundamental levels of the machine's design: let's find out more…



Almost all machine manufacturers talk about rigidity, improving it and its importance. But what are the actual advantages of a rigid machine, as seen by customers? This is what Decomag has sought to find out. We met with Bertrand Faivre, in charge of single-spindle applications at Tornos, and Clovis Brosy, in charge of single-spindle design and development at Tornos. These specialists are constantly involved with customers' challenges, so they are well-versed in the "issues of rigidity".

A logical progression of advantages

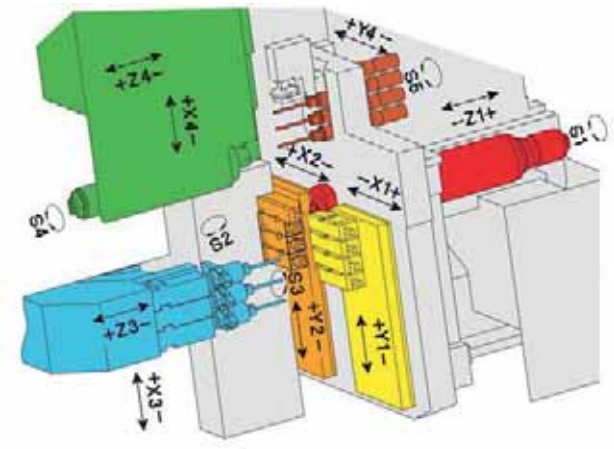
"The more rigid a machine is, the fewer micro-vibrations it emits when machining, which means the tool is more stable. It cuts firmly into the material, ensuring a better surface finish. In addition, the tool will benefit from greater longevity, which means fewer machine shutdowns. This increases productivity", highlights Clovis Brosy. There are many benefits: The user has better quality parts at a reduced cost. Often it can increase the progress of the work while remaining within the machine's optimal operating limits. More rigid production equipment also means greater production.

Improvements on all levels

A machine's rigidity can be increased in different ways. A recent example is the EvoDeco 10 machine that was first unveiled to the world at mediSIAMS 2011. The EvoDeco 10 is designed to replace the Deco 10, of which 3000 units have been sold since its launch in 1996. Needless to say, the Tornos engineers had to pull out all the stops for this new machine to take on Deco 10's legacy and do it justice. The machine has many new developments - four main ones concerning rigidity. However, it still ensures the continued success of the Deco 10.

Development 1 - Ballscrew, guides and chassis

One of the first measures to go hand in hand with reinforcing the chassis was to replace the ballscrews of the different tool systems on the machine with larger components. So the 16 mm diameter ballscrews were replaced with 20 mm diameter models. The guides were also reinforced.



Development 2 - Rotating guide bush

The rotating guide bush is essential to the precision of the bar turner; it is a key component. It therefore needs to be perfect. The construction of the rotating guide bush was also redesigned, and the bearings were re-worked and reinforced. This new construction guarantees a more rigid assembly. The new-generation of rotating guide bush can also be fitted upon request to Deco 10 machines equipped with a Fanuc 16 i-TB CNC.

Development 3 - Combined tool unit on T30 tip

The fixed spindles of the combined unit have all been recalculated or rebuilt, and the device itself has also undergone the same treatment. It is more rigid and better supported. The system is also more modular,

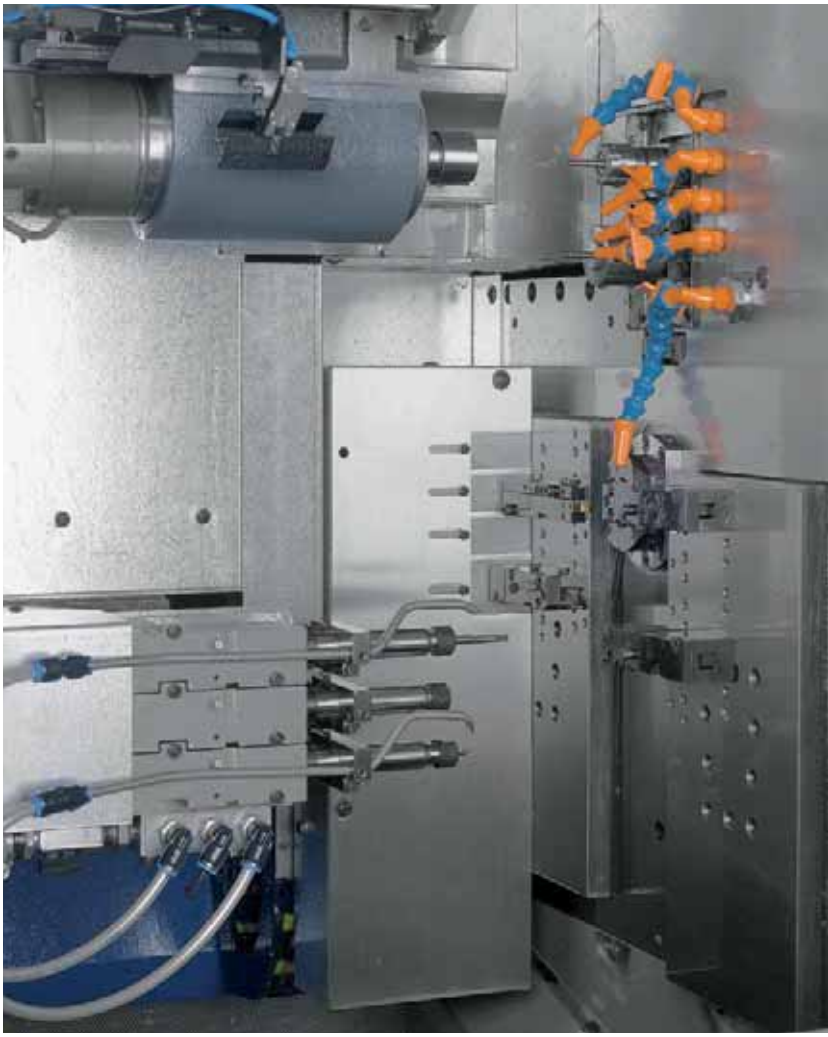
the centre spraying system has been simplified and it is now possible to change the spindle only, rather than the entire assembly. It is also possible to retrofit this device to existing Deco 10 machines.

Development 4 -
New drill reinforced with needle bearing

"The standard 1600 drill is already well-dimensioned and the vast majority of our customers have been completely satisfied with it for years. In order to widen the possible uses of the machine, we have added to the catalogue a reinforced device with a needle bearing", explains Mr. Faivre. Fitted with a standard bearing, the old drill sometimes showed its limitations during very demanding machining operations. The reinforcement of the various structures means that this option has had to be redesigned to ensure flawless machining quality under highly demanding conditions. The standard bearing has therefore been replaced with a needle bearing affording the assembly superior radial rigidity. Finely hand adjusted by Tornos specialists, this device makes it possible to carry out very demanding milling and drilling operations.

Permanent Improvement

Mr. Faivre adds: *"This is an insight into the different steps we take every day to assist our customers in constantly improving their machining quality and productivity. Each little item contributes to the finished product, for example with the EvoDeco 10 a new T40 tool support has been created. This support now accepts 20 and 25 mm diameter tools".* This new support can also be retrofitted to Deco 10 machines fitted with a 16 i-TB CNC.



Success from continued development

One thing is certain: users of machine tools must constantly develop to maintain their productivity and customers of the Moutier-based manufacturer are in a good position for success in this performance race. Tornos guarantees that customers not only purchasing a high-performance machine base, but also ensures continued improvement and ongoing adaptation of the product to meet the needs of the market. Over 15 years after the Deco 10 was released, some new devices are still able to be adapted to the first machines supplied.

NEW RANGE OF BAR FEEDERS

After the success of the SBF320 bar feeders on the Delta and Gamma product ranges, Tornos is introducing a new low-cost line of "e" bar feeders.

Streamlined design

These bar feeders are different from their predecessors in that they are more simple in design and offer basic functions. They have an offset control on the bar feeder and guide components for a single channel.

Optimal integration

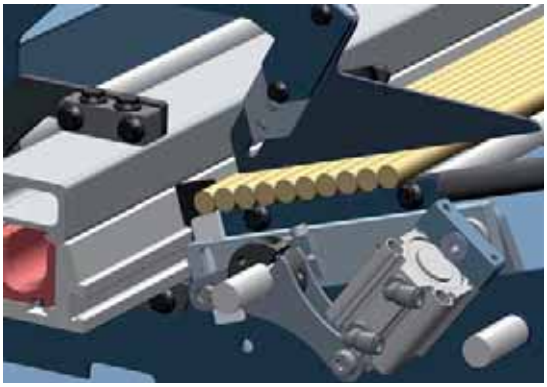
These bar feeders were developed in conjunction with the development of the machines and this helped eliminate all the trade-off and interfacing-related problems such as those sometimes encountered with so-called "universal" bar feeders.

Not revolution, evolution!

By adopting the characteristics that made its predecessors so successful, Tornos can now offer a "simple" alternative to its high-end bar feeders.

On the "e" range, all the controls are found in one unit. The number of guide components offered as an option has been increased and the guide channels are inter-compatible between models. Its operating flexibility is a real advantage.

Close attention has been paid to the design of the SBF 212e which will support turning machines up to a spindle diameter of 12 mm. Screw loading prevents small diameter bars from overlapping. The insertion



into the guide at the screw outlet will be accompanied by a mechanical movement.

Robobar SBF 212e/SBF 320e

- Optimum integration
- Guaranteed bar guiding
- Offset control on the bar feeder
- A single guide channel per guide
- One supplier for machine and bar feeder
- Excellent price/performance/quality ratio

Christophe Tissot, Peripherals Product Manager, explains *"These new bar feeders, with their elegant design, do not offer all of the functionalities of Tornos' high-end bar feeders. They are sold as an add-on to our standard machines and have been a big hit with our customers as the message is clear: these are bar feeders offering basic functions at a competitive price".*

These new peripherals were premiered at EMO and the first orders will be delivered at the start of 2012.

Technical specifications	SBF 212e	SBF 320e
Machine	Micro 7, Micro 8, Delta 12, EvoDeco 10	Delta 20, Gamma 20, EvoDeco 16
Min. bar diameter	2	3
Max. bar diameter without preparation	12	20
Available guide components	Ø8 / Ø11 / Ø14	Ø8 / Ø14 / Ø17 / Ø23
Guide system	Oil bath	Oil bath
For round, hexagonal and square bars	Yes	Yes
Bar length (±200 mm)	3 m / 4 m	3 m / 4 m
Scrap extraction	Front or rear	Front or rear
Type of loading	Screw	Inclined plane
Magazine capacity	Ø2 to Ø12 = 15	Ø3 = 90, Ø20 = 13
Max. rotational speed	15,000 rpm	12,000 rpm
Power required	1.5 kW	1.5 kW
Lubricant reservoir capacity	40 litres	40 litres
Adjustable guidance aperture	Yes, manual	Yes, manual
Extendible	No	No
CE/EMC label	Yes	Yes
Weight	414 kg (3 m) / 500 kg (4 m)	414 kg (3 m) / 500 kg (4 m)
Required air pressure	6 bar	6 bar

NEW HIGH PRESSURE UNIT FOR GAMMA/DELTA 12-20

Depending on the operations to be carried out, the materials to be machined or even the volume of swarf to be managed, it is necessary to adapt the use of the cutting fluid. Whether you require a significant amount to 'clean' the machining area or more directly, high pressure is needed as with deep drilling; Tornos now offers two pumps for Gamma machines, according to the requirements, and one pump for the Delta.

Two different pumps

Gamma machines are equipped as standard with a cutting fluid pump with a pressure of 3 bar. It is possible for a 60 or 120 bar pump to be added. Pipework at the rear of the machine connects the standard sprinklers with a simple T-union. Depending on the pressure selected, one or other of the pumps will activate.

Examples of the main uses of the different models:

- 60 bar: To deal with swarf in demanding situations or for drilling large diameters with oil hole drills.
- 120 bar: Mainly intended for deep drilling in the diameter range from 2 to 12 mm, it can also be used to deal with swarf in very demanding situations.

TECHNICAL SPECIFICATIONS

		HP60-I	HP120-II
Max. pressure	bar	60	120
Max. flow rate	l/min.	30	25
Max. flow rate at max pressure	l/min.	20	13
Motor power	kW	1,5	4
Filtration	µm	150	150
Fine filtration	µm	20	10
Container volume	l.	150	220
Operation		using M-codes for all models	

Sprinkling

The Gamma machine has three sprinkling points for operation and a fourth for counter operation.

OPTIONS

Gamma

The 60 bar pump bears the number 462-6555. The 120 bar version does not yet have an option number. If you are interested in either of these solutions, please contact your usual Tornos dealer.

Delta

The 60 bar pump is also available for Delta 12 or 20 machine tools but does not yet have an option number. For more information on this option, please contact your usual Tornos dealer. The 120 bar version is not compatible with the Delta 12 and Delta 20.

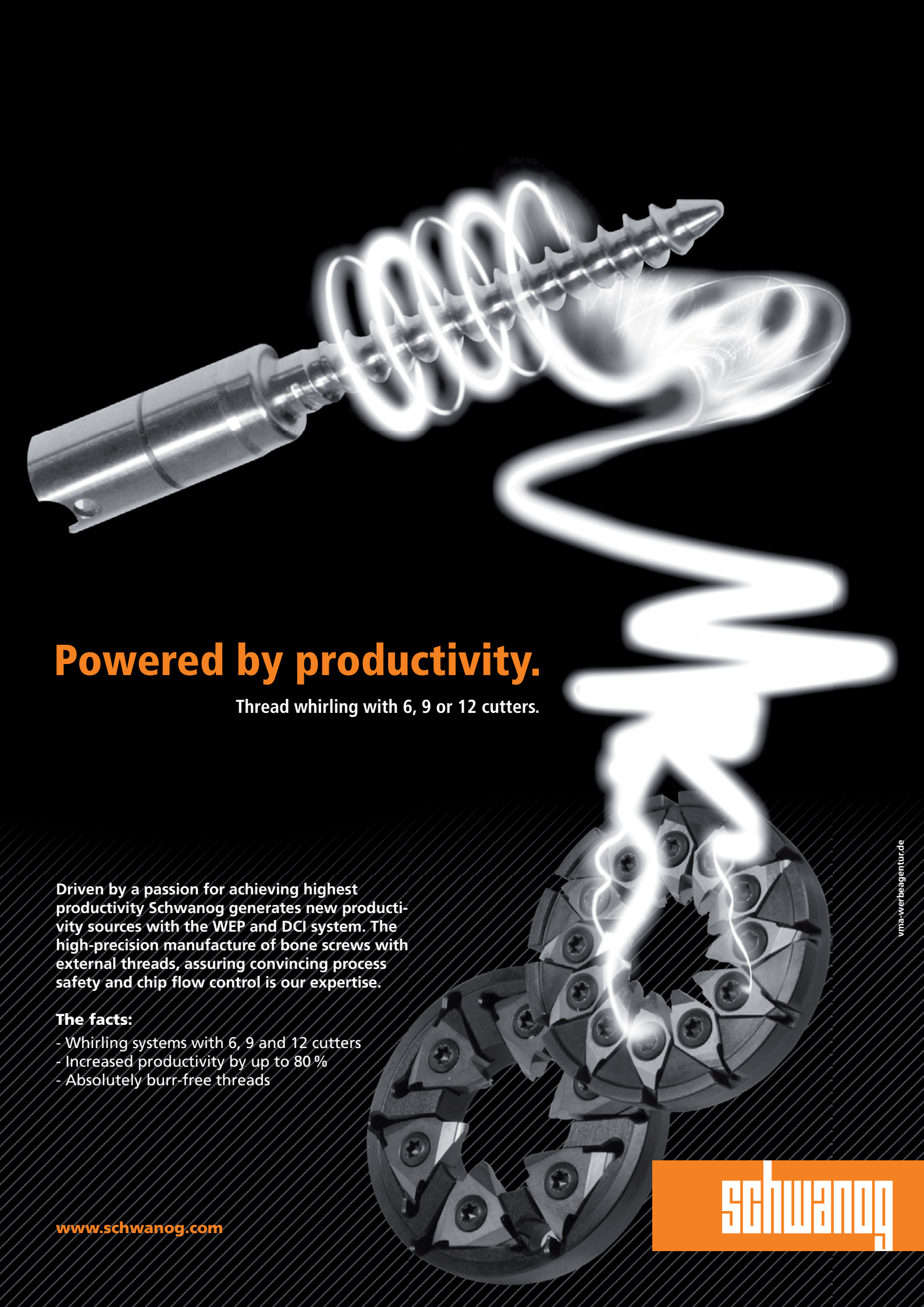
"Eco-friendly" pumps

Using high-pressure pumps automatically generates higher energy costs. In order to minimise the impact of this, Tornos is offering three features that are "kind to the environment":

- The pumps feature a frequency converter that provides "the right pressure at the right moment"
- Control using M-codes guarantees that the pumps only operate at the right moment
- The gravitational feed system eliminates the need for an additional drain pump (which is normally the case).

Availability

These pumps are now available ex-works. It is possible to fit these to machines that have already been installed, but this entails a complex retrofit (modification of the tank).



Powered by productivity.

Thread whirling with 6, 9 or 12 cutters.

Driven by a passion for achieving highest productivity Schwanog generates new productivity sources with the WEP and DCI system. The high-precision manufacture of bone screws with external threads, assuring convincing process safety and chip flow control is our expertise.

The facts:

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

www.schwanog.com

schwanog

DENTAL IMPLANTS FOR THE WHOLE WORLD

A specialist manufacturer from Hagen has developed market-leading technology for high-quality solutions in the medical sector.

At the age of 55 most people are already thinking about retirement, so at that age it takes courage to set up your own company. Not only that, but setting up a company in the medical technology sector, one of the most difficult and demanding, certainly demonstrates more than a little bravery. Building the company up into a leading dental implant manufacturer in a short space of time demonstrates not just courage but also a large degree of knowledge and expertise. The success story of Hagen-based AK-tek GmbH is closely linked with the Swiss lathe manufacturer Tornos, whose machines have provided the basis for high quality and technologically advanced solutions with trademark German quality.

AK-tek GmbH was started in Hagen, Westphalia, in 2003 by Michael Arndt and Stefan Klaus, at that time both 55 years old. Michael Arndt has decades of experience designing and manufacturing medical technology products, while Stefan Klaus is a skilled CAD design engineer. Their shared goal is to develop and produce high-quality dental implants, as this is a market segment which offers great potential for growth. Working closely with the pioneers in this field, AK-tek developed and produced innovative implant systems on the basis of verbal specifications, sketches and also their own ideas.

Modern dental implants consist of several parts, which are made almost exclusively by machining titanium, stainless steel, precious metals or ceramics on lathes and milling machines. A dental implant normally consists of a screw-shaped piece that is screwed into the jawbone and an abutment. Both parts are held together by means of a screw. The abutment serves as the base for the dental replacement to be produced by the dental technician. One-piece screw implants are also produced and can be coated according to the customer's wishes.

Implants are in product families, which are available in various sizes and designs. The abutment, and then later the tooth on the implant can be individually designed using various technical solutions. The basic aim is for the abutment to the implant to resemble

the basic shape of the human tooth, in order to provide the dental technician with optimum conditions for carrying out the work. The demands of customers in the German market are very high indeed.

Whilst implants used to consist almost only of rotationally symmetrical parts that could be made using lathes, modern implants increasingly require complex free-form surfaces to be developed and produced. AK-tek has acquired considerable expertise in this field as the recognised development partner of highly-reputed universities in Germany and abroad. The company's particular strengths are its flexibility and its ability to fulfil all the technological demands of customers in relation to development, design and production.

This is very much reflected in the employees' and owners' following achievements: Development, design, production, consultation with customers, precise testing of and documentation of the finished products, surface finishing, cleaning and clean room technology, packaging of the parts. 3D animations can be made available for use in staff, customer and user training. Completion of the annual audit in order to maintain medical technology certification. In addition, developing and implementing new production procedures and much more. The company's expertise is employed right through from the first idea right up to the product in its packaging with registration and documentation. In this context it is interesting that the implants in some countries are different owing to the patients' different jaw shapes, a factor that AK-tek takes into account when developing implants for the Asian and American markets as well as in the development and production processes.

A development partnership with a long tradition

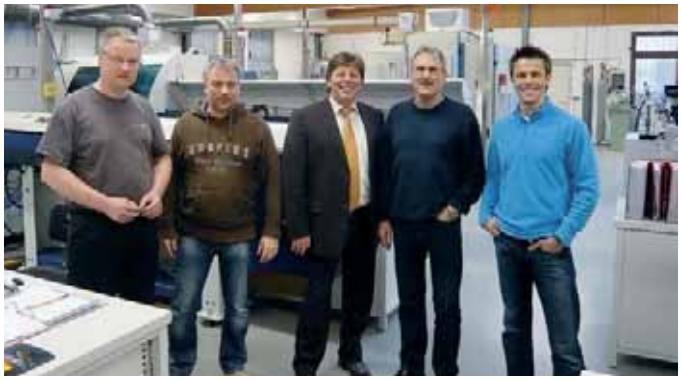
Michael Arndt has known about Tornos machines since 1980, so it was an obvious choice for him, as they were best suited to his company and its requirements. And so, AK-tek 2003 began with two Tornos TOP 100 sliding head automatic lathes and four highly-qualified employees. As with all Tornos machines, the TOP 100 models are distinguished by their rigidity and the resulting concentricity. With the firm machining titanium 95% of the time using internal with external thread whirling, angled post milling, transverse holes, etc. and a tolerance field of plus/minus one hundredth of a millimetre, the machines are really being put to the test. It speaks volumes about the quality of Tornos machines that even the oldest machines still work without machine-dependent tolerance errors. Over the years, the machinery has been steadily added to and now AK-tek, in addition to the two first lathes, has eight further Tornos Deco 13s and a CNC 5-axis horizontal bar milling and turning centre.

Michael Arndt values how Tornos works together with AK-tek in partnership and provides equipment packages suited to its requirements. The machines are configured and set-up in accordance with customers' needs by technicians working for Tornos in Moutier and Pforzheim. Most of the machines

feature high-speed spindles, oil filters and high-pressure systems as well as deep hole drilling equipment and other pieces of advanced technology that are indispensable for the complex process of manufacturing implants. The production is documented every two hours. The quality of the workpiece is manually and electronically measured and visually monitored at each stage of the production process. As the equipment runs overnight fully automatically and unmanned to increase profitability, AK-tek invest heavily in process reliability. This is where the quality Swiss engineering in Tornos machines comes to the fore and is supported by a telephone hotline and automatic CO_2 fire extinguishing systems.

Top quality is the minimum standard

The whole of the AK-tek team would not be where they are today if it was not for their permanent search for ways to improve their manufacturing processes. The production process is always being analysed and the company invests in new procedures. During the production of implants, only special tools made of natural diamonds, polycrystalline diamonds or hard metal with a special coating are used. Some machines would be pushed right to the limit in these procedures, but not the Tornos Deco 13a. In terms of quality and durability, particularly when angled post milling, this machine is on a par with a machining centre, but it is considerably more cost-effective. Deco 13a machines are also pretty much unbeatable when it comes to energy efficiency. Michael Arndt recorded some astonishing results calculating energy efficiency on a specified test piece. A Deco 13a is 15% more productive than a Top 100, and consumes 53% less energy. This is yet another argument for him to replace the two machines with two more Deco 13a machines. This should ensure that the success of the previous years will be continued into the future. The company has doubled

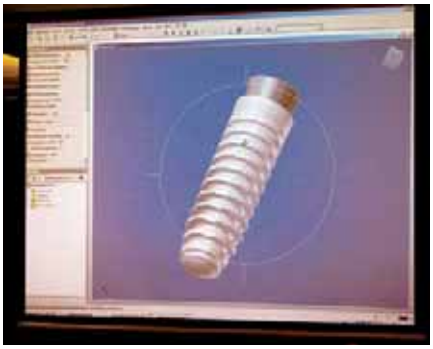


Tornos sales advisor, Werner Kleine (pictured centre), along with AK-tek specialists. To his right is the company founder, Michael Arndt.

in size in the past few years, and plans to expand further in all areas. Since it was founded, the company has purchased a new, fully equipped machine every year. Michael Arndt values how each machine is able to work right from the word go and be integrated straight into his production process. This is in no small part due to the good relationship he has with Tornos employees in Pforzheim, who provide committed support for everything from advice on machine configurations through to installation and commissioning.

On course for further growth

The worldwide dental implant market is currently growing at around 10% per year and is set to grown even further. Providers in the Czech Republic, Israel, Eastern Europe and China are looking to benefit by bringing low-cost, mass-produced implants onto the market. Because of the higher wage costs, manufacturers in Germany cannot compete, therefore AK-tek specifically concentrates on the top 5% of the market, who demand hi-tech products. Working closely with leading universities, new prototypes are being developed and tested. With new materials and innovative geometries, the breaking strength is increased whilst the size is reduced. AK-tek sees itself really as a "hi-tech blacksmith's". The company's real strengths lie in everything from its CAD designing and simulation through to prototype production. This is best demonstrated by the training the employees receive and the structure of the machinery. The small but effective team consists solely of highly qualified experts and technicians who revel in the challenges they face and enjoy experimenting with new ideas. With the help of the flexibility of Tornos machines, ideas are being put into practice that will later be mass-produced and profitably brought onto the market. This is how AK-tek, despite the competition from 'cheap countries', provides implants mostly to Germany and Europe as well as USA and Asia. The company has all the relevant registrations and test certificates. Their success story and their partnership with Tornos, currently in its seventh year, will surely continue, and it will be interesting to see which dental implant developments AK-tek and Tornos will be bringing onto the market in the years to come.



AK-tek GmbH
Röhrenspring 16
58093 Hagen
Germany
Telephone +49 (0) 2331 396 03 60
Fax +49 (0) 2331 396 03 68
E-mail: info@ak-tek.de
www.feinmechanik-aktek.de

Tornos Technologies
Deutschland GmbH
Karlsruher Strasse 38
75179 Pforzheim
Germany
Telephone +49 (0) 7231 91 07 - 0
Fax +49 (0) 7231 91 07 - 50
E-mail: mail@tornos.de
www.tornos.ch

ISCAR AND TORNOS, A SYSTEM PARTNERSHIP DEFINED BY THE CUSTOMER

At a two-day "multispindle seminar" last autumn, Iscar and Tornos together presented an innovative machining concept on a MultiDeco and won over the almost 100 people in attendance with impressive practical demonstrations. The response to this event was so positive, that we wanted to find out more about the objectives, expectations and concrete results from the people responsible.

decomagazine: Equipment and in-house demonstrations are currently increasing at an almost exponential rate. Have you followed this trend with your event, or were you offering your visitors something a bit special?

Manfred Nowy: Iscar doesn't follow trends, it sets them. We have been organising seminars and symposiums for years, to help our customers make their production process more economical and reliable. These are not actually sales events, but rather an opportunity to exchange practical experience that benefits our customers and, ultimately, us.

Eckhard Lenz: These seminars are part of our strategy. Iscar is a trendsetter in intelligent developments and wants to bring these to the market with events of this kind. We see ourselves as leaders in innovation and are launching increasingly powerful tooling solutions on the market every year. We have complete product ranges for turning, grooving, drilling and milling. But because the pressure for productivity is increasing all the time, it is virtually impossible for our customers to select the best tool for every job. So, we make a start together with our customers and the machine manufacturers and work towards the optimum solution.

dm: That sounds relatively difficult.

Manfred Nowy: Yes, it is. The goal is always to minimise the unit price per workpiece for the customer. But the road to this goal is rocky. In addition to the mere performance parameters, there are a great many other factors to be taken into

consideration. Higher cutting values are only one side of the coin. In an integrated process evaluation - in terms of the tool alone - tool life, tool cost, changeover times, non-productive time and the right combination of different tools are all just as important.

They must consider all this in relation to each machine tool, through the additional parameters that come into the equation: hourly rates, tool magazines, energy prices, swarf disposal, tool change systems and many, many others. This calls for real engineering.

dm: Can Iscar achieve this, and will it be appreciated by the customer?

Eckhard Lenz: Appreciation is naturally what we want and also what we are aiming for. A lot of customers do not understand the effort this takes. Often, we invest a large number of man-days to find the optimum solution for the customer. So far, this has come out of our margin, as in the minds of many customers, product and service provision are still heavily inter-connected. In future, we want to set out service provision explicitly in what we offer. We know that, because of our structure and competencies, we offer a real competitive advantage.

dm: Can you explain that in more detail?

Eckhard Lenz: The way we are organised means that every customer only has a limited number of direct contacts. These contacts are the particular field staff and applications engineers that speak the customer's language, understand his problem and, where required can transfer a problem within the Iscar organisation to a skilled specialist. Such a specialist may come from either turning, drilling, milling and grooving technologies or from a particular sector (automotive, aerospace, medical technology, energy, electrical/electronics, etc.). Depending on the degree of complexity, these specialists work together across disciplines and are also increasingly bringing the machine manufacturers on board.

Dirk Becker: In turning, especially for multispindle turning machines, we are faced with huge challenges. The synchronisation of working cycles, time optimisation and splitting up operations sensibly requires some experience. Taken as a whole, tool costs also play a role. We therefore endeavour to make use of our standard kits and to combine these tools intelligently. Only when we reach the limits of these do we take recourse to special tools, which our development centre designs and builds. This is obviously always with the aim of reducing machining time which in turn increases productivity.

dm: Surely you could manage that, given the many machine manufacturers that there are?

Marco Seehaus: We endeavour to maintain good contact with all major manufacturers and build a partnership with them. Our goal is to ensure that the customer, machine manufacturer and tool manufacturer are closely linked together in a triangular relationship to prevent work from being duplicated. Of course, there are occasionally situations where we are competing, if a customer sends an enquiry about a component to various machine and tool manufacturers. Instead of everyone working hard for themselves to find a solution, we analyse the process and bring the right partners together. It is important that

THE SPEAKERS

Eckhard Lenz
Trade Sales Manager, Iscar Marketing and Services

Dirk Becker
Turning Product Manager, Iscar

Manfred Nowy
CTMS Manager Iscar

Marco Seehaus
OEM Manager Iscar

Sven Martin
Product Manager, Multispindle turning machines Tornos Technologies Germany

we deal with each other openly and fairly and trust one another. Frequently, we adapt our combination tools to the performance parameters of the machine to get the best from them.

dm: What for you was the incentive behind the joint event with Tornos?

Marco Seehaus: At the MAV Innovations forum 2010, I was very impressed by the Tornos presentation and I sensed that in terms of thinking, we're quite compatible. Tornos places the emphasis on the customers component and develops a tailored solution on that basis. In the automotive, electronics, medical and watchmaking sectors, Tornos offers almost unmatchable expertise. Combined with our tooling knowledge, this makes us a very strong team.

dm: Did the event prove that to be true?

Manfred Nowy: Yes, I think so. We got top marks from our 100 plus attendees and initiated a lively exchange of ideas. In terms of themes, we focussed on multi-tasking and multispindle turning over the two days. It was a clever combination of theory and practice, with which we were able to illustrate the goal of "making money" to our customers. Using high-quality roughing tools, we are able to work quickly and efficiently and thereby make the most of cycle time-determinant tools more quickly.

Sven Martin: Another factor in favour of our machines is the cooling system that is directed at the workpiece at a high pressure of up to 150 bar. Another highlight is that we can configure this individually. This further improves efficiency.

Marco Seehaus: The collaboration in preparation for, and during the event was fantastic. We coordinated the demo parts with one another and requested a few things from Tornos. To circumvent any interface problems, we partly linked the tools directly with the machine. We have achieved a really good result, and we both benefited from this.

dm: Are you going to continue working together?

Marco Seehaus: After this great start, I can answer this question with a resounding yes. The requirements of the market will continue to grow. One the one hand, there are new alloys and materials to be machined. On the other, the move towards increasing productivity and reducing costs is far from being over. A trend, that is emerging here, is towards increasingly simple tool changes and adjustments that can be carried out without specialist personnel. The better suited the machine and tool are in this regard, the sooner these demands can be met.

This necessitates very close cooperation between the machine and the tooling manufacturers. In this respect, we are working together towards better links, which will culminate in an active interchange of data. This is all carried out on the premise that both partners are open to future collaboration. Therefore, this existing mutual trust is eminently important. This will allow us to achieve the optimal result for many future projects, defined by our customers.

TORNOS POLAND

Tornos is continuing its strategy to put in place a network of skills accessible to its customers. The opening of a showroom in Katy Wroclawskie has allowed the company to harmonise its services in Eastern Europe and to offer its Polish customers an advisory, demonstration and sales service of a very high level.

"We have moved to Katy Wroclawskie in Warsaw to be closer to the majority of our current and future customers" Bernard Caspard, sales manager, told us. And these new premises also allow Tornos to pad out its services in terms of the neighbouring countries, namely the Czech Republic, Lithuania, Belarus and even the eastern part of Germany.

More than 50 years of presence in Poland

While Tornos has had its own subsidiary in the country since 2007, it has been represented there by agents for more than half a century. It therefore has a large customer base, including its potential customers. Mr Caspard explains: *"We really wanted to offer a highly developed localised service and when we got the opportunity to open a showroom in the ultra-modern Erowa premises in Katy Wroclawskie, we jumped at the chance".* And Tornos was not alone.

Swiss Made and complementary

Tornos SA has joined forces with Schaublin SA to present their products in the Showroom in Katy Wroclawskie. These two Swiss companies share a firmly established reputation. Founded at the start of the century in the same valley, the two companies share a passion for precision and quality. The two manufacturers' complementary ranges of products allow them to offer solutions both in terms of sliding headstocks and multispindles (Tornos) and fixed headstocks and milling centres (Schaublin), for all customers.

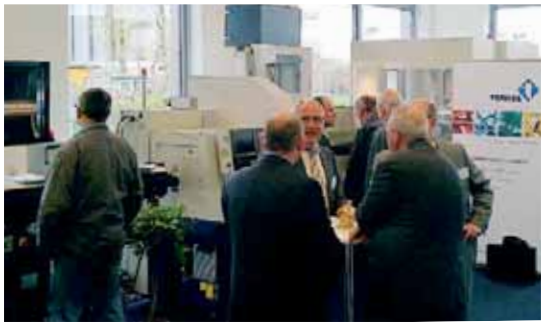
Mission to be close to customers

To turn its mission to be close to customers into a reality, the new showroom has a recent Tornos machine and can also offer the autonomy required to demonstrate the possibilities of Tornos machines. The machine currently on display is a Gamma, with equipment suitable for the medical industry. Visitors will

also find a high precision Schaublin 102 TMC-CNC turning machine. In addition, workpieces machined on all Tornos and Schaublin products are on display and can be explained to interested visitors.

Structure promoting expansion

The Tornos Technologies Poland Showroom was set up with the aim of allowing customers to visit and see demonstrations, in order to help them increase their performance using ultramodern Swiss machines. This new structure has opened up a real opportunity for expansion for customers in Eastern Europe.



Further information:
Tornos Technologies Poland Sp. z o.o.
Ul. Spółdzielcza 37-39
55-080 Kąty Wrocławskie
Poland
Tel +48 71 33 85 618
Fax +48 71 33 85 617

Contacts

Mrs Grazyna Victor
Administration and reception
poland.contact@tornos.com

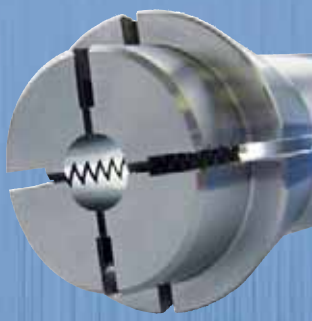
Mr Jacek Skiedrzynski
Sales engineer
for northern Poland
skiedrzynski.j@tornos.com

Mr Karol Kordus
Sales engineer
for southern Poland
kordus.k@tornos.com

Cube

Extenso

Croco



THE KEY TO YOUR SUCCESS!

Full equipment for automatic lathes (CNC- or cam-controlled)

Technical assistance

High quality and competitive prices guaranteed

Express service

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

SKILLED WORKFORCE DEVELOPMENT COLLABORATION IN MEDICAL TECHNOLOGIES (MEDTECH)

Tornos is well known for providing not only high-end CNC automatic lathes but also high precision machining solutions to his customers worldwide.

Keen on contributing to the development of Penang area's growing Medtech industries Tornos proposed to loan and install a machine at the Penang Skills Development Centre (PSDC). Thanks to this loan, PSDC students will have the opportunity to learn CNC Swiss type lathe operation and processes on a practical way, using state of the art technology.

On June 7th. 2011, an agreement was signed by Ms Lim Wei Chen, General Manager of the Penang Skills Development Centre (PSDC) and Mr Philippe Charles, Medtech-Market Segment Manager of Tornos. The signing officially initiated the collaboration of both parties towards the pre-defined missions and goal.

Tornos application specialists from the Penang Office will conduct a "Train the Trainer program" at PSDC, to impart the necessary knowledge and application know-how to the relevant training officers. An on-going application support will also be available, directly from Tornos Representative Office in Penang.

This is a Tornos solution to the growing demand for skilled workers in the Medtech sector as well as in other industries using CNC Swiss type lathe.

Tornos, Göltenbodt and you:

TOGETHER we are POWERFUL!

Down with unproductive processing times!
Anyone putting their trust in Tornos, the specialists for highly productive multiple-spindle machine tools and automatics will find that Göltenbodt a competent partner for reducing costly and time-consuming tool change and setup times. Lowering costs is strictly a matter of attitude for Göltenbodt. Your specialist for presettable tool holders, adapters and custom solutions.

- **Precise, high repeatability better than 0.01 mm**
- **Quick changeable**
- **100% pre-settable off the machine tool in X, Z, Y and taper**
- **Robust and durable**
- **Insensitive to dirt**
- **Simple handling**
- **Equipped with internal coolant supply**

Göltenbodt®
Innovation and Precision.

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

FLEXIBLE "MULTISWISS" MULTISPINDLE MACHINE

Tornos introduces the MultiSwiss, a multispindle automatic turning machine suitable for small, simple parts in small and large production runs.

A highlight on the Tornos exhibition stand at EMO 2011 was the new MultiSwiss multispindle turning machine equipped with a Series 30i Fanuc CNC. It complements the existing product range in the simple and moderately complex segment. Thanks to an integrated industrial PC, it is user friendly and highly flexible, making it suitable for both small and also large production runs.

Tornos product manager Rocco Martoccia: *"To control our machines, we need CNC and drive systems that guarantee high performance and that we can rely on one hundred per cent. We have also worked together with Fanuc on our new MultiSwiss as partners with highly specialised skills."*

"The new MultiSwiss multispindle machine from Tornos is very similar to a single-spindle machine," was the verdict of one of the five turned parts specialists asked to put the MultiSwiss through its paces as much as six months before its market launch. By no means does this assessment refer to "single-spindle" productivity, but rather the outstanding ergonomics and simple operation and programming of the MultiSwiss, which are comparable with the characteristics of a single-spindle turning machine. This is what also makes the new multispindle machine economically viable for small series production.

The first priority in manufacturing turned parts is to keep the costs per part as low as possible – while naturally also retaining superior quality features. To achieve optimum cost levels, the turned parts manufacturer must first choose the right machine. He must decide whether he wants to produce the parts on a single or multispindle machine, a turning/milling centre or on transfer machines. That depends on a large number of factors. The required number of parts or annual batch size plays a major role. However, the complexity and size of the workpieces are also decisive factors in choosing the machine. Another important element in the calculation is the machine costs.

To make the right choice, it makes sense for the user to obtain advice from the machine supplier, who ideally is able to offer a wide portfolio of automatic turning machines and can therefore provide

SYNCHRONISATION IN MILLISECONDS

For perfect machining results, the axes and spindles in multispindle turning machines have to be capable of high-precision simultaneous movement – for example for the flying transfer of workpieces from the main to the counter spindle. The Path Table Operation (PTO) function provided by Fanuc in its high-end Series 30i and 31i CNC control systems makes it possible to achieve interpolations and synchronisation with greater precision than with any other procedure. The basic structure is simple: A two-column table is drawn up for each axis and spindle. The first column contains the units of time in milliseconds used for the synchronisation. In the second column, each respective cycle is assigned an axis or spindle position that is to be achieved within this time span. In this way, all axes are synchronised in the uniform interpolation cycle. With PTO, the axis positions can be freely combined in any manner whatsoever. As a result, unlike "normal" NC Programming using G commands, it is possible to generate any trajectories and movements. It is also possible to bundle multiple axes and assign their tables to various channels in order to achieve interpolations in different movement patterns. Due to the synchronisation, however, the start and end point are guaranteed to be exactly the same.

Help functions can also be incorporated into Path Table Operation, and are given commands in a similar way to the axis movements. Even the channel structure can be broken up to move axes together. At first sight, these axes have nothing to do with each other. This can be helpful, for example, with bar feeding. In addition, various tables can be linked together and processed one after the other. Depending on various events, it is also possible to skip tables (if-then links). The user can also simplify the programming for continuously repeated processes by mixing the NC program and PTO sequentially.

customers with comprehensive advice. The Swiss machine tool manufacturer Tornos S.A. is superbly set up in this regard, with a large number of single and multispindle turning machines for a wide range of different diameters and complexities. Its multispindle range begins with the AS, BS and SAS cam-controlled automatic turning machine, machines that has enjoyed success for many years and are designed for simple, mass-produced parts with diameters of up to 20 mm. For bigger parts and moderate requirements in terms of complexity and volume, the digital MultiDeco and MultiSigma machines are ideal. Finally, the MultiAlpha range can fully process even complex components with milling operations, threads etc., and in particular has the ability to machine the back of parts.

MultiSwiss - impressive flexibility, ergonomics and precision

From autumn 2011, Tornos is offering turned parts manufacturers a new automatic turning machine by the name of MultiSwiss. With six spindles and a capacity to machine diameters of up to 14 mm, this machine slots in between the SAS16.6 and the MultiDeco. In one particular area where the machines overlap, it will even compete with them, because it is designed to be highly flexible for small and large series production. It targets the watchmaking, automotive, electronics and aviation industries, where simple, small turned parts are required.

Like the MultiAlpha and MultiSigma automatic turning machines, the MultiSwiss machines are controlled by the Series 30i Fanuc CNC. Product manager Rocco Martoccia comments on the relationship with Fanuc as the partner that manufactures its control systems: *"To control our machines, we need CNC and drive systems that guarantee high performance and that we can rely on one hundred per cent. Throughout all the years we have been working with Fanuc, these requirements have been met in full. We have also worked together on our new MultiSwiss as partners with highly specialised skills."*

The Tornos developers have focused on four features in particular: flexibility, ergonomics, precision and costs. Fanuc has the latest drive and control technology to deliver the right support, which guarantees the customary high precision while making operation and programming as simple as possible.

The MultiSwiss is equipped with the high-performance Series 30i CNC, an impressive control system boasting exceptional, high-performance hardware.

It contains the latest, exceptionally high-speed processors, a fast internal bus and a fast servo control. The high number of available channels means that each of the six MultiSwiss spindles has its own channel. An extra-fast PMC processor also helps ensure that the peripherals involved in the entire process work quickly and smoothly.

A CNC and industrial PC make a dynamic duo

With MultiSwiss Tornos presents a multispindle machine with an integrated industrial PC. This development, driven forward jointly with Fanuc, promises the user numerous advantages, for the Fanuc CNC 30i communicates with the industrial PC via Fanuc's own serial optical High Speed Serial Bus HSSB, guaranteeing high-speed data transfer and a virus-proof, reliable connection.

The main reason for equipping the machine with a PC, however, is that Tornos can use its own, user-friendly software on it: TB-Deco. TB-Deco is programming software with a graphically animated user interface that supports the user in many ways when creating and optimising parts ranges. It communicates with the Fanuc software PTO (Path Table Operation – see text box) provided by the Series 3xi CNC control systems.

Until the range of automatic lathes with integrated computer was available, use of TB-Deco was restricted to external computers. Use on the machine was not possible until the integrated industrial PC became available. Rocco Martoccia explains: *"The advantage is that the operator can introduce changes with regard to tools etc. right there on the spot. It saves him going to the PC and transferring the entire NC program."*

With MultiSwiss, the operator can call up TB-Deco on the control screen and the software will guide him through the programming procedure. In many areas there is visual support, an especially user-friendly feature. For example, the user sees a display of axes and spindle resources, and can easily optimise the machining process. Graphic synchronisation and axis locking are also possible, as is optimisation in terms of energy. In addition, TB-Deco uses several of the functions conventionally found in Windows, such as copy/paste, find/replace or help using the search function "F1". After the programming procedure, TB-Deco converts the input data into binary format. This data can be input from the CNC via the PTO function and used to control machines.

The interface PC that is coupled to the control system also makes it easier to incorporate "third-party software", such as process and tool monitor, for example. Instead of a separate screen, the MultiSwiss software uses the convenient control system touch screen. Because it is quickly coupled to the CNC, the system can tap directly into information there about torques and power. If defined limit values are exceeded, the system emits an alarm signal or even stops the machine to avoid further damage. Even non-digital axes can be monitored by means of sensors.

ABOUT FANUC

FANUC CORPORATION, with headquarters at the foot of Mount Fuji, Japan, is the most diversified manufacturer of Factory Automation (FA) products, robots, machine tools and injection moulding machines in the world. Since its foundation in 1956, Fanuc has contributed to the automation of machine tools as a pioneer in the development of CNC control systems. Fanuc technology has established a manufacturing revolution, which evolved from the automation of single machines to the automation of entire production lines. For the 21st century, too, it is Fanuc's aim to continue to develop the best and most reliable products.

FANUC

FANUC FA Switzerland GmbH
Grenchenstrasse 7
CH-2500 Biel/Bienne 8
T (+41) 32 366 63 63
info@fanuc.ch
www.fanuc.eu

Tornos SA
Rue Industrielle 111
CH - 2740 Moutier
Tel.: +41 (32) 494 44 44
Fax: +41 (32) 494 49 07
contact@tornos.ch
www.tornos.ch

HAROLD HABEGGER

Canons de guidage
Führungsbüchsen
Guide bushes

Type / Typ CNC

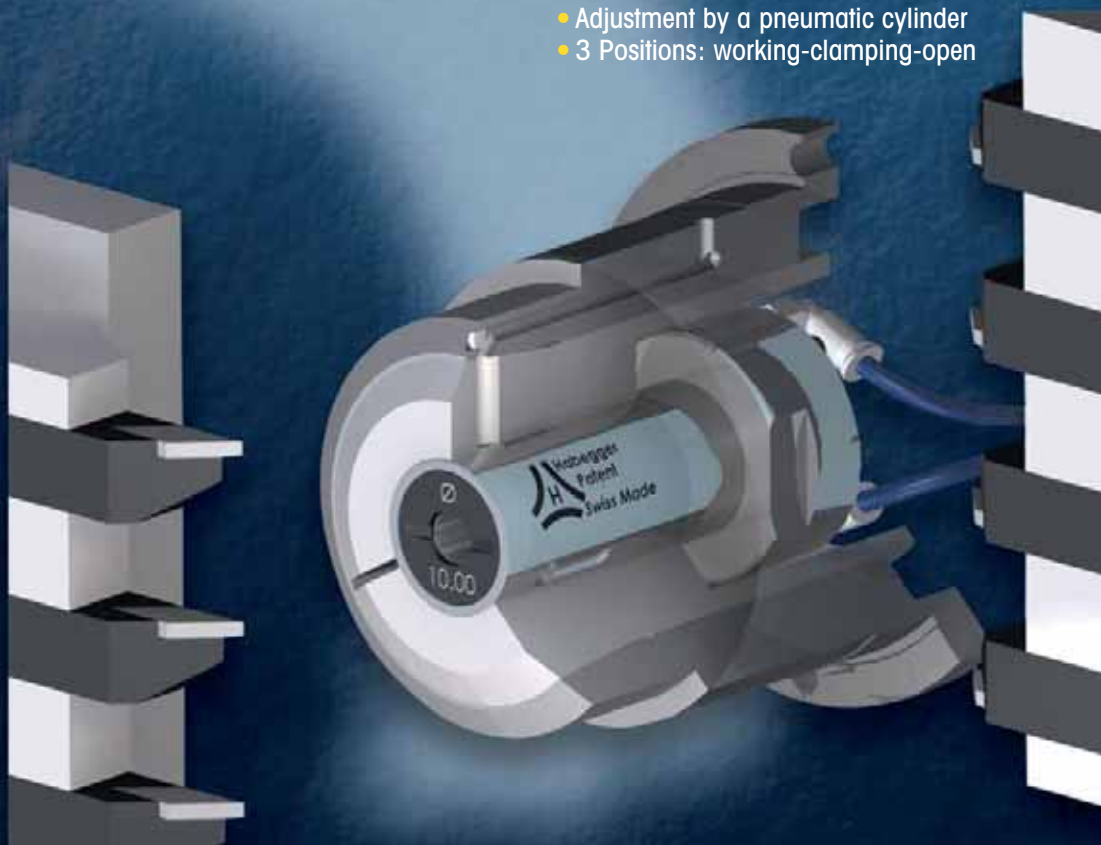
- Canon non tournant, à galets en métal dur
- Evite le grippage axial
- *Nicht drehende Führungsbüchse, mit Hartmetallrollen*
- *Vermeidet das axiale Festsitzen*
- Non revolving bush, with carbide rollers
- Avoids any axial seizing-up

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

DOING THE IMPOSSIBLE EVERYDAY WITH A LITTLE HELP FROM TORNOS

In sunny southern California, USA, a successful medical and dental parts machine shop is run by a fellow named Grimm. But there's nothing grim about the work they do at California Wire EDM.

The 12,000 square foot headquarters for California Wire EDM is spread amongst four buildings, with 10 Tornos Swiss turning machines distributed throughout, connected by passageways like the chambers of the human heart. Mike Grimm, founder and owner, circulates through his shop, stopping to reflect on the many miracles of machining that have been trusted to his operation over the 27 years they've been in business.

"On our Deco 10s, we make a little part called a Feed-Through Pin out of Kovar (a high nickel material that happens to have the same thermal expansion rate as glass so it's used a lot in devices that are hermetically-sealed)," states Grimm. The part goes in a heart pump and is so small that it fits on the tip of a finger. *"We've been making that part for a number of years and I was told by my customer recently that the pump was implanted in a 10 year old girl who was suffering from heart failure. And after wearing it for about four years, her heart was able to recover and was strong enough that they could remove the device. That makes the work we do so rewarding to me personally and to our operators. It's great to make a part that actually helps someone."*

California Wire also makes a miniature part for an intravenous ultrasound device used on patients in need of arterial stents. *"Did you know,"* asks Grimm, *"that 60% of all stents are placed in the wrong location? Our customer's device recognizes four different kinds of arterial plaque. It gives a view looking down the blood vessel. And then, in split screen, it gives a cross-sectional view that helps the doctor to identify exactly where the stent needs to be placed."* Grimm continues, *"Many people think stents need to go where the build-up is – it's true that you want to open up the artery for better flow – but it's also*

important to place the stent on the ulcer that is releasing the [crud] that is allowing for build-up further downstream."

The part that California Wire makes for the intravenous ultrasound device on their Tornos Deco 10s, has an OD of just four hundredths of an inch. The part length is just three tenths of an inch. There is a two hundredths inch hole drilled all the way through it that has to be concentric within a half a thousandth. On one end of the part is a flange with 8 little holes that are six thousandths in diameter and on the other end is a pentagonal flange. Amazingly, a miniscule circuit board is wrapped and then secured around the part by hand. *"I imagine,"* notes Grimm, *"that the workers have to have very high magnification, good vision, and tiny little fingers!"* Then he adds, *"It's a one-time use part and it helps people – the physician and the patient. We look for parts like that. They're difficult to find; but when we do, the Decos… they can make anything we can imagine! We haven't found a part yet that we couldn't make."*

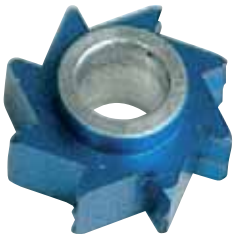
California Wire EDM, as its name implies, was born as a wire EDM shop, specializing in medical and dental parts that could be machined out of a block of metal. And today, they have added Mikron milling machines to the mix which they're using to make zirconia teeth that adhere directly into dental implants without an abutment. But the balance of

INTERESTING SIDE NOTE

Once upon a time (back in 1995) Mike Grimm and his brother John tried their hand at another industry along the way. The talented brothers Grimm had an Internet startup company called the EDM Network. But that didn't turn out to be the fairy tale they had hoped; and they sold the company, turning their focus back to machining.

the company's work in the last decade has moved to tiny parts machined out of bar stock on Tornos Swiss turning machines.

With nine Deco 10's and one Deco 13, Grimm knows his way around his Tornos machines. Applying his wire EDM background to the much smaller parts that he now cuts on his Swiss turning machines, Grimm has carved a comfortable niche in the medical parts arena. He takes on work that others turn away as "impossible".



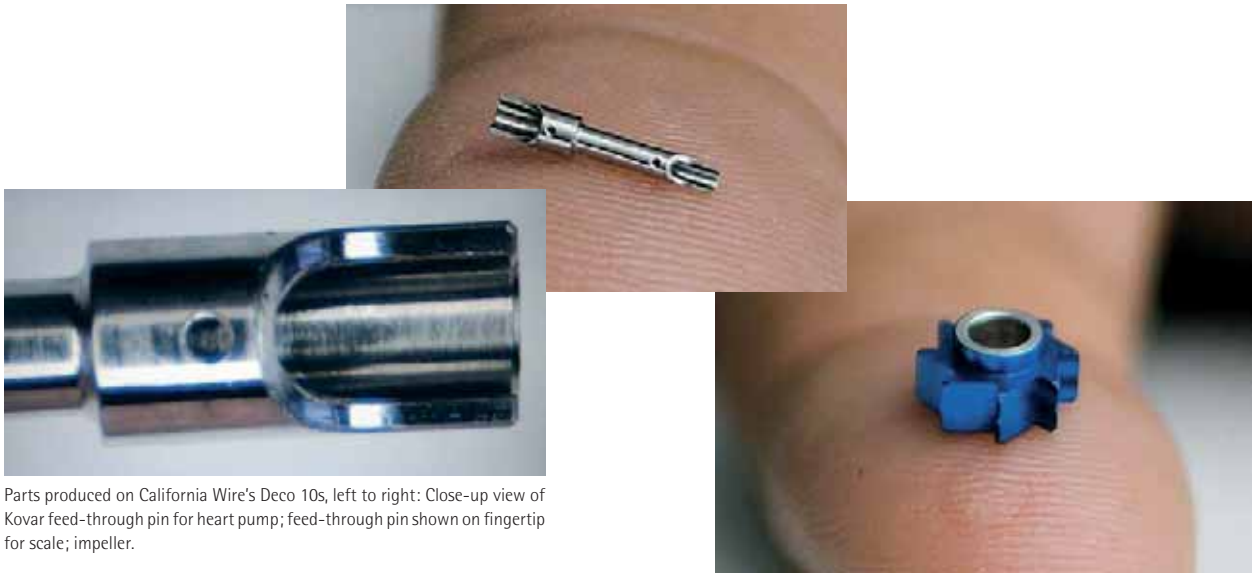
"Back in 1999 I decided that I needed to start making little parts to augment our wire EDM business. I thought: there are all kinds of little things to make! And one of them was dental spindles, a consumable item. I thought that I should buy a larger machine originally, but my Tornos salesperson was a very knowledgable guy. He convinced me to get the Deco 10 because he said that 80% of the screw machine parts are under four tenths of an inch. I had thought the Deco 13 looked more powerful. But I was just not accustomed to making parts that small.

"So the first machine we got was a fully loaded Deco 10 with thread whirling and live spindles (both spindles were full c-axis) and of course, we got the Robobar bar loader. At first I thought my customer that I was doing EDM work for would be upset when he found out I bought a screw machine, (because that's what he had). But as it turned out, he was happy! He said 'Great! Can you make these impellers for us? Because we have a problem… our customer is complaining about too much noise and we think it has to do with the impellers.' We ended up making 100,000 of them over the course of a couple of years. It was a great job and we really improved the problem with the noise. That was one of the first parts we started making on the screw machine."

Their next part was for Nobel Biocare. That customer had a lineup of their own (non-Tornos) Swiss turning machines but were having trouble making a particular dental device. *"That was a tough part,"* explains Grimm. *"It was a tough material, with cross-drilling in the sub-spindle and a tiny hole drilled all the way through it. The part was about an inch and a quarter long with very tight tolerances. We were successful at it. And our Swiss turn business really took off from there."*

Tornos is the juice that keeps California Wire running strong

California Wire moved on to making tiny mandrels for liquid handling machines for a company that got its start testing the pH of orange juice in Orange County, California. The head of each liquid handling machine, explained Grimm, looks like the beak of a hummingbird and holds 384 little pipettes with 384 little mandrels – all requiring OD tolerances of three tenths. *"The Deco holds size all day and all night long,"* boasts Grimm. *"They are fine machines!*



Parts produced on California Wire's Deco 10s, left to right: Close-up view of Kovar feed-through pin for heart pump; feed-through pin shown on fingertip for scale; impeller.

"And on our Deco 13, we make a very nice copper part called a cryostat. For that part we have to order custom, heavy-walled copper tubing. The part is 4-1/2 inches long and we mill a very coarse, tall thread on the outside. This part goes into a wand and they run liquid nitrogen down inside the tube. At the other end of the tube is an expansion valve and when the liquid comes out it turns into a gas and gets very cold. The device is used on patients with prostate cancer. The doctors can place the cryostat right where the little blob of cancer is and they turn the machine on and it creates a little ice ball. And the doctor can control the size of the iceball and freeze the cancer cells killing them immediately. They withdraw the cryostat and the patient leaves that day with no cancer." California Wire delivered 7,000 of those cryostat parts this month. They are disposable. Doctors can only use them a few times and they have to throw them away.

"The Deco 13 is a fabulous machine. We've never had a bit of trouble with it. It's a deadly accurate machine and does a nice job on the cryostat. Making parts like that is rewarding. And the guys running the machines feel the same way. They take great care in making those parts."

California Wire got their first wire EDM machine 27 years ago. They already had the building and the work and were waiting on the machine delivery. *"It arrived on my birthday in 1984,"* recounts Grimm. *"And we made parts that afternoon. We started off with 1200 square feet and now we have the entire building. And that's many thanks to the Deco product for sure. They've been tremendous machines!"* The balance of machines at California Wire has shifted over the years from primarily EDM to a much greater focus on Swiss turning. The shop now has 6 EDM machines, 5 axis milling machines, and 10 Swiss turning machines.

Grimm concludes by emphasizing what he likes best about his Tornos machines. *"They're versatility. You can mill things on the side. You can do thread whirling. You can do thread milling on the side or on the front or on the back for that matter. They're just so capable. And they hold the tolerances we need… all day. They are very fine machines."* And perhaps most important to the heart of the operation… to solidifying their niche in miniature medical devices: *"They allow us to make these very tiny, difficult parts that others have trouble making."*

California Wire
2737 S Croddy Way # F,
Santa Ana, California USA
(714) 751-2336

ADDITIONAL PERFORMANCE CREATES A COMPETITIVE ADVANTAGE

Faster, more precise and less expensive production are today's industry requirements from every bar turning business. Cost pressures have increased tremendously due to the current economic situation and all too often an unsuitable but consequently less expensive cutting oil puts the fragile balance of production factors at risk. Because of the changeover to the universally usable high-performance fluid Motorex Ortho NF-X, A. Berger + Co. were able to fill an order for 9000 turned parts for an automotive supplier at short notice to the satisfaction of everyone.

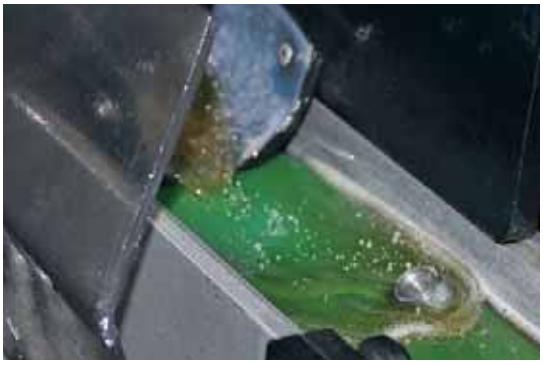
"Total commitment for a positive outcome" is a motto that A. Berger + Co, a manufacturer of precision turned parts in Delémont, Switzerland, are successfully following by using the high-performance Motorex Ortho NF-X cutting oil to achieve a competitive advantage.

A. Berger + Co. was founded in 1988 in Delémont, Switzerland as a subsidiary of Berger Holding GmbH & Co. KG with headquarters in Memmingen, Germany. The company in Switzerland manufacturers turned parts made of non-ferrous metal, aluminium, steel and titanium on more than 20 different machines. The main customers of the pre-finished parts are the automotive industry and its suppliers as well as the machine industry. In this bar turning business, 25 workers machine bar material in diameters of 3 to 26 mm, or 32 mm when softer materials are involved. The parts are either delivered ready-to-use to the end customers or also to one of the 8 additional plants (e.g. for installation in an assembly) in the Berger Group. The company currently works in accordance with ISO 9001 and is aiming for the environmental quality standard ISO 14001, which has already been attained at other companies in the Berger Group.

Higher performance and precision

"If CNC programming is already in existence and in some cases the part has already been produced before, we are speaking about a turnaround time of just a few days depending on the complexity and the size of the batch", Jean-Marc Frésard, Production Manager of the plant in Delémont explains to us. As a professional in his field, he knows how central the quality of the cutting oil can be - indeed all of the

Dispensing with the use of chlorine, heavy metal and volatile components in Ortho NF-X has contributed greatly to workplace quality and recycling.



Cutting oil is a production factor often undervalued by users – Ortho NF-X with its ground-breaking performance characteristics is an impressive "liquid tool".

machining processes are directly influenced by the quality of the cutting oil. Using Motorex for the analysis of the optimum machining fluid and the groundbreaking technology in Ortho NF-X, part times could be consistently reduced and the level of precision could be effectively increased.

Setup times reduced drastically

"Earlier when certain materials were used in the multispindle automatic lathes with a cutting oil reservoir, the setting up the machine involved filling it with a different cutting oil. And straight away, we are talking about 400 litres that had to be pumped out, filtered and stored. Afterwards the machine was cleaned and filled with the specified cutting oil. On average this work takes 4 hours. Now that we use the universally usable Ortho NF-X with a viscosity of ISO VG 15, we no longer have to do this work several times a week", J.-L. Frésard states as one of the main benefits following the changeover to the Motorex product.

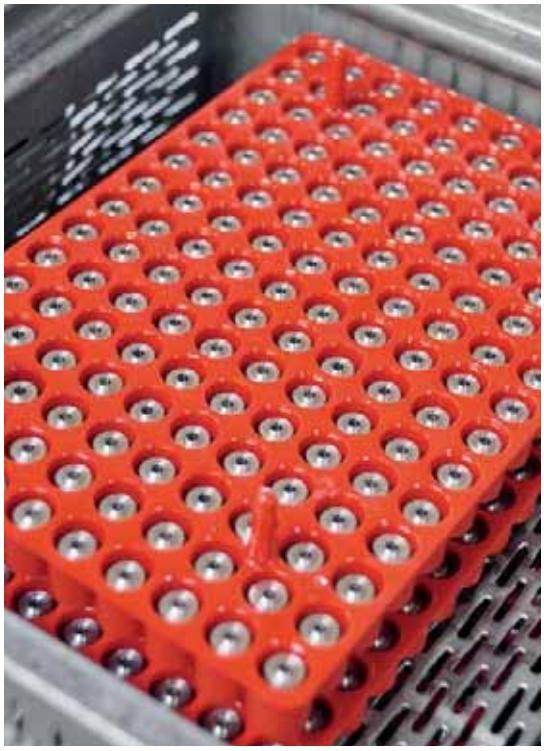
Exclusiveness of Vmax technology

The advantages of the Motorex Vmax technology in the formulation of the Ortho NF-X are made possible through an innovative additive package. Vmax refers on the one hand to the high manufacturing speeds that are possible and on the other hand, to compliance with precision specifications. In addition to dimensional accuracy, the quality control inspectors at Berger + Co. are also naturally interested in the R_a value of the surface and for example the colouring of the non-ferrous metal or aluminium surfaces.

The heat between the workpiece and tool tip created by the cutting pressure and the optimum cutting speed is specifically used in the Motorex Vmax technology to raise the high-pressure stability in the machining process. This is particularly desirable with

"It was this express order that was punctually produced through the use of Motorex Ortho NF-X, that made me aware of the advantages of this high quality cutting oil. In my opinion, the machining medium used is still being given too little recognition, because traditionally it is a "low interest product". If a company is able to make correct calculations and the production parameters are harmonised to each other perfectly, the additional effort will most likely pay off sustainably and repeatedly. Today, companies can simply no longer afford to use an inadequate cutting oil where modern machines, expensive tools and trained personnel are involved!"

Jean-Marc Frésard
Production Manager
A. Berger + Co.
Precision turned parts
Delémont



In a machine park with 10 machine tools, an increase in productivity of 10% already corresponds to the performance of a production centre!

At A. Berger + Co. in Delémont, everything will revolve around lean processes, highly efficient production and steady improvements in the future.

turning. The absolutely homogeneous and stable film of lubricant between tool cutting edge and workpiece acts, figuratively speaking, as a kind of protective cushion. And even then, this film of lubricant is only a few thousandths of a millimetre in thickness. Motorex Ortho NF-X reaches operating temperature rapidly and cools optimally during the entire process. Even under high delivery pressure, it does not create foam and guides the swarf efficiently away. These are properties that are all important where high process reliability is involved and is indispensable particularly with unmanned shifts.

Openness to innovation increases the competitive edge

It is well known that progress does not appear out of thin air - it also calls for entrepreneurs willing to embrace change and the right technology at the right time. The changeover to Motorex Ortho NF-X and many new innovations such as modern software and measuring solutions is proof that A. Berger + Co. is using its innovations to their full potential.

Motorex specialists would be delighted to provide you with information about the current generation of Motorex Ortho cutting oils and the scope for optimisation within your area of application:

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

A. Berger + Co.
Precision turning parts
Rue St-Maurice 7c
CH-2800 Delémont
Tel. +41 (0)32 422 54 51
Fax +41 (0)32 422 53 42
a.berger-co@swissonline.ch
www.berger-co.ch

WHAT IF TECHNICAL DOCUMENTATION WERE A TOOL FOR COMPETITIVENESS?

What if technical documentation were a tool for competitiveness?

Ideally, a business buying a production machine wants a fully trained workforce to use the machine tool with maximum efficiency. The technical documentation supplied with the machine will, in addition to the training, contribute to that efficiency. Interview with the man in charge of creating documents for Tornos, Francis Petithory.

With over 7000 service instruction books available in 25 languages, it is vital for Tornos' technical documentation to be created and monitored to a highly professional degree. On top of this, there are many legal aspects that affect the documentation and govern its creation in many ways. To make things even more complicated, the knowledge and expertise of the document's potential users will be very diverse, so the documentation needs to be interesting and useful for each level of expertise. However, these tools must also be straightforward and easy to use. Is this challenge realistic?

A powerful tool

Service instruction documents will not automatically be used and, generally speaking, in industry the truth is that these unappealing documents do not represent the most interesting of reads. *"We have begun a major rewriting project for our documentation, and have reviewed the structure as well as the form of our manuals. Our aim is to make people want to read our documentation and make the experience of using the instructions, both in paper and electronic format, interesting and useful,"* explains Mr. Petithory.

Clearly, the documentation has to add value to the machine and not simply be a poor relation.

Simpler, more compact, more effective

"In the past, our documents were very technical. In terms of completeness of information, this was perfect, but it had a detrimental effect on accessibility and the experience of working through the instructions. Today we work to a similar concept as the automotive sector, with the user having at his

disposal a compact manual with many illustrations, making it easy to navigate. A mechanic will have other information to hand". This approach allows Tornos to guarantee access to useful and targeted information. The analogy with the automotive sector does not end there as, from 2012, instruction manuals will take the form of an actual book (see box).

Cutting to the chase

In the best case scenario, service instructions are used when the user has a query, and in the worst case, they are used 'when nothing else works'. There is no point therefore in burying the useful information under a lot of details that in most situations are irrelevant. For this reason, the documents are produced with an intensive customer approach and are based on the following basic questions: Who is the user? (operator or technician?) At what stage in the life of the product and its use does the problem arise? (Information according to theme and context dependent) What tools will be used to research the information?

A REDESIGNED FORMAT

"We exchanged a lot of ideas with users, not only of machine tools but also other technological products, in order to analyse the hindrances and constraints to the use of technical documents. The project quite naturally culminated in the production of compact, 'real' books," explains Mr. Petithory. These new tools will be available from 2012 for Tornos' new range of machines. Users of the instruction documents will of course be able to order the new version. For more information, please contact your usual Tornos dealer.

Customer feedback

For the documentation to be effective, it is created by writers in direct contact with the developers, who follow a guiding thread that allows them to respect the information classification concept to ensure effectiveness. Once the documents are created, they are submitted to 'test customers' who have worked with the first machines. They give a 'field report', which is essential for improving the documents.

Technology working for users

The documents are created in a simple and clear manner, with the information focusing on the essentials and assisted by as many pictograms as possible. If these elements are essential for paper documentation however, they are equally as important for more modern document applications, namely with the use of the CD (supplied with all paper documentation) and more recently stored on the PCs built into the machines. Mr. Petithory explains: *"If the documents are well written to begin with, we can offer so much more to customers by progressing to computer-based versions. In the case of a search, the results are sorted according to context. For example, if you are searching for information on the spindle, the search results will instantly give you the option of opening the maintenance documents or user manual. In this way, access to the relevant information has been made easier".*

A powerful search tool

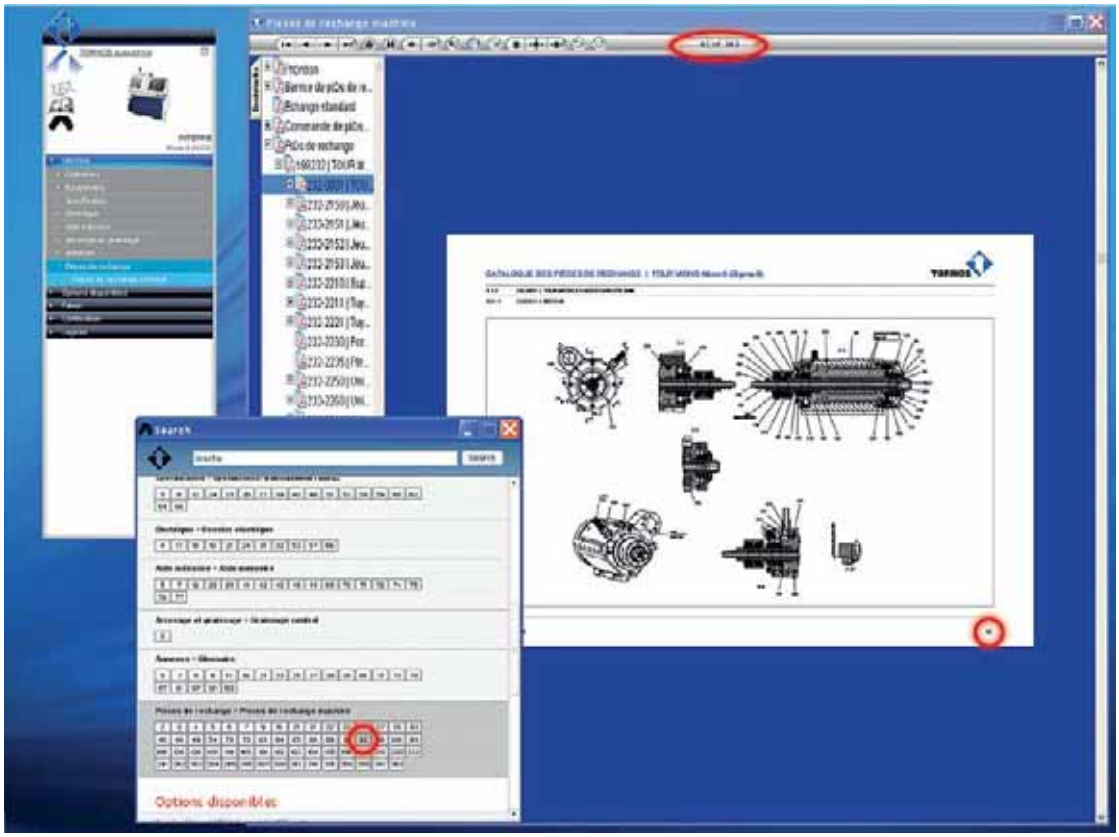
This search function also makes it possible to easily identify replacement parts. This ensures that the customer can order 'the right part at the right time'. Mr. Petithory adds: *"We work very closely with customer services (after-sales and parts) with the objective of simplifying and shortening contacts, allowing the customer to make gains in efficiency. A machine needs to be stopped for as short a period as possible".* Following the same troubleshooting logic for

A SIMPLE PROCESS

Providing documents that meet all requirements is a delicate operation. They must have all the legal aspects covered and include all possibilities and types of use, while remaining interesting and effective. To achieve this, the company applies the following process:

- Machine definition
- Prototype creation
- Risk analysis
- Creation of version 1 of documentation
- Validation by the company's internal departments
- Approval/modification by the test customer(s)
- Production
- Follow-up and real-time updates according to feedback from the training departments and after-sales departments as well as from customers

Documentation exists as a living thing and will continue to evolve for as long as the machine concerned remains in the catalogue. Mr. Petithory adds: *"A customer who purchased a machine two years ago and who now purchases an identical machine will be able to observe that our documentation follows a continuous process of improvement".*



In the case of a search, the results are sorted according to context.

customers, all the basic parameters of the numerical control are also loaded in the instructions. In case a full reset is required, the customer has all the settings.

A tool designed equally for after-sales service

With service instructions, technicians today have at their disposal a powerful tool that is always up to date, whatever the type of information: documents, electrical diagrams, software releases, commissioning, retrofits and a range of actions relating to after-sales, that are all documented. The technician therefore not only has instructions that are specific to the customer but also all of Tornos' internal knowledge base. Whatever the age or type of the customer's machine, at any given time the technician can, for example, load updates or new software releases for the NC. The flexibility of the service offered by Tornos is thus greatly strengthened.

Over a year of preparation

During EMO, Tornos presented MultiSwiss to the market and the first deliveries in Europe will be taking place soon after. It has taken over a year of preparation to create the technical documentation for this new machine. Mr. Petithory reveals: *"The machine is compact, simple and user-oriented and we have followed this concept through to the documentation. We have created a new document structure that is oriented even more towards the needs of the user and it does away with redundant information. We have designed a true user-oriented technical documentation that provides all the necessary useful assistance in one downsized volume".*

Documents that are equal to the investment

A customer who orders capital goods worth several hundred thousand Swiss Francs should expect to receive technical documentation that meets his expectations and fulfils the manufacturer's promise. This is the objective of Mr. Petithory's department. He concludes: *"Today we have a very efficient publication system and our concept for discovering information is reliable and proven. We still have many projects underway to make life easier for Tornos machine users and we will be revealing these soon".*

THE RIGHT TOOL FOR EVERY NEED

The right tool for economic production - this basic concept also applies to the bar turners. However, these experts are often presented with a dilemma: They must produce parts that are sometimes relatively simple, but can also be quite complex. In addition, the batch sizes are usually smaller, and the part costs should also be less. So… The Swiss machine manufacturer Tornos has the answer with its comprehensive model range.

Robert Meier, independent specialist journalist, Rupperswil

Two essential cost elements have an effect on the pricing of the turned parts: On the one hand, it is the price of the material, on the other the costs for the turning machines to be used. Even if the material is used to best effect, the right machine can bring real benefits. Efficiently adapted production on ideal turning machines, however, brings the main benefit. With its cleverly structured product range, the turning machine manufacturer Tornos can lend an effective hand to specialists in turned parts.

Product range extended downwards

With its high-quality turning machines, Tornos, which is based in Moutier, Switzerland, has made a name for itself globally. Such machines are very efficient in the manufacture of highly-specialised turned parts, but are also quite pricey, which until now has limited the range for simpler parts somewhat, because quite complex parts can sometimes be produced on simpler and therefore less expensive machines. This was recognised by the specialists at Tornos, which is why they introduced a turning machine product range onto the market that spans from the introductory model to machines for more complex tasks and highly productive machines for elaborate parts. A look at the product range.

The introductory package

No cutting corners in terms of precision. Having set this requirement, Tornos is now offering in the Delta single-spindle turning machine series a reasonably priced 3 to 5-axle product family which is best suited to simpler turned parts. This machine has two specialities which make it an interesting production tool:

On the one hand, all models are already fitted in the factory with a counter spindle. This means that they have the option of counter operation, without the part leaving the machine. This substantially increases the flexibility of this lower segment machine and enables a noteworthy increase in output, which naturally has a direct effect on the price of the part.

A second special feature is that work can be carried out on these machines with or without a guide bush. Particularly with valuable and therefore costly initial materials, maximum use is made of the bar stock by machining without a guide bush. This represents a saving that is likewise reflected in the part price itself. Depending on the model, the tooling system incorporates up to 20 tools, which lends this automatic turning machine family a respectable flexibility. Part lengths of 45 mm (without guide bush) or up to 210 mm (with guide bush) prove that a wide range of turned parts can be covered by this automatic turning machine.

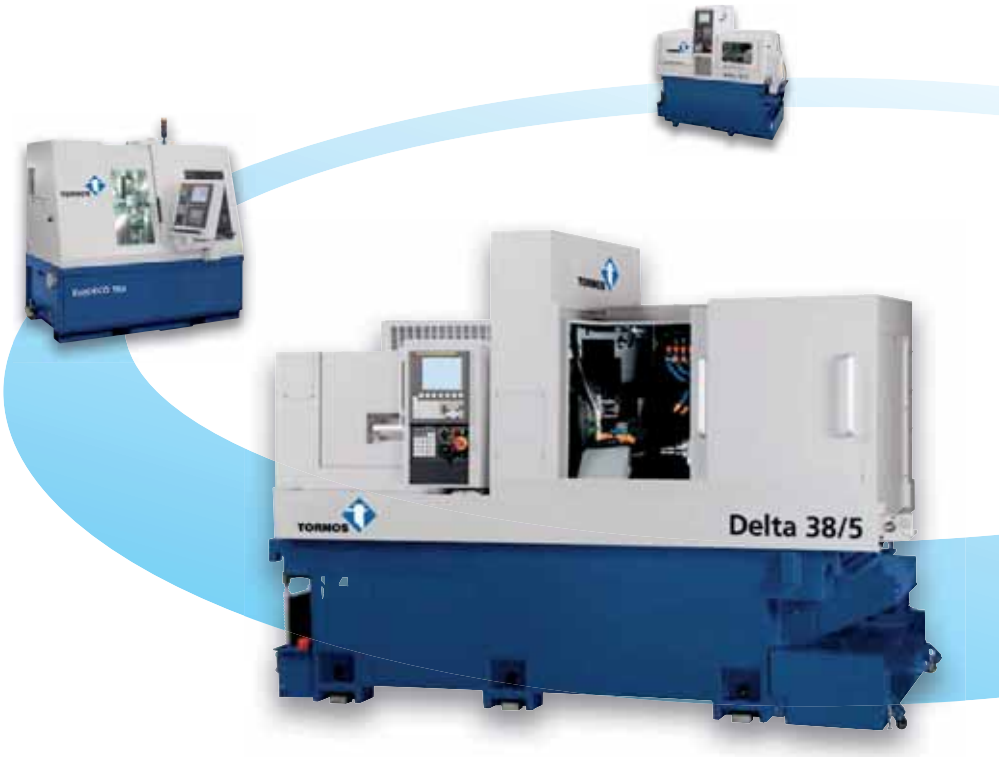
Up to 35 mm

Up to now, this Delta machine series, which can be set up very quickly, has covered diameters of 12 to 20 mm for workpiece lengths of up to 210 mm. The great interest in the marketplace for these models means that users often wish for a greater diameter for those parts for which this type of machine is ideal. Since May 2011, Tornos has fulfilled this wish with the Delta 38/5, an automatic turning machine that is the equal of the other models in this family in terms of its technology and equipment, but which is designed for part diameters of up to 35 mm. This is a welcome improvement for precisely those workpieces with greater diameters. It goes without saying that the user of this automatic turning machine family need not do without an attractive level of productivity and a high level of precision at the same time.

When it gets more complex

The medium product range covers the single-spindle automatic turning machines of the Gamma and Sigma families. A special feature on these machines is the extensive range of fixed tools, but mainly power tools. However, the main attraction here is the option to use drilling and milling units in the main machining phase either radially or inclined, and, during counter operation, axially and as a double unit. It becomes clear that, using this option, very much more complex turned parts can be produced at market-driven costs. When the production of threads using whirling technology is under consideration, these machines with their thread whirling ability are the best option.

The Sigma family comes up with a higher output and an extremely rigid design. These single-spindle, automatic turning machines are designed for manufacturing turned parts with diameters of 20 and 32 mm. If higher cutting volumes are required, this family with its high output properties for high metal



removal rates on the head and the independent counter spindle is the obvious choice. The machining range has been designed to be just as generous, so that chips are removed in the best way possible. Thanks in particular to the fact that two tools can be used at the same time, this range is particularly economical, and suitable for both small batches of more complex parts and larger production series.

Mastering the greatest of challenges

Complex part geometry, high metal removal rates and extremely high levels of precision and economical part prices - these are the areas in which the single-spindle automatic turning machine family EvoDeco comes into its own. Already designed for the highest levels of productivity and simultaneously high levels of precision, the top range from Tornos is currently being revised. As its first model, Tornos recently presented the EvoDeco 16, which was followed by the EvoDeco 10. On both machine types, the Tornos engineers optimised the machine housing, which is now even more rigid. Also new are the synchronous spindle motors, which ensure an even torque in the direct drive. These two innovations alone promise continuously high levels of precision in the parts without any loss of output, thereby ensuring top quality.

Deep-drilled bores in one pass

Hard work has also been going on in terms of productivity: The option of moving four tools in one go – three in the main machining phase and one in the counter operation – as well as the ability to be highly productive when whirling inner and outer threads, proves that we are talking about powerful manufacturing centres for turned parts here.

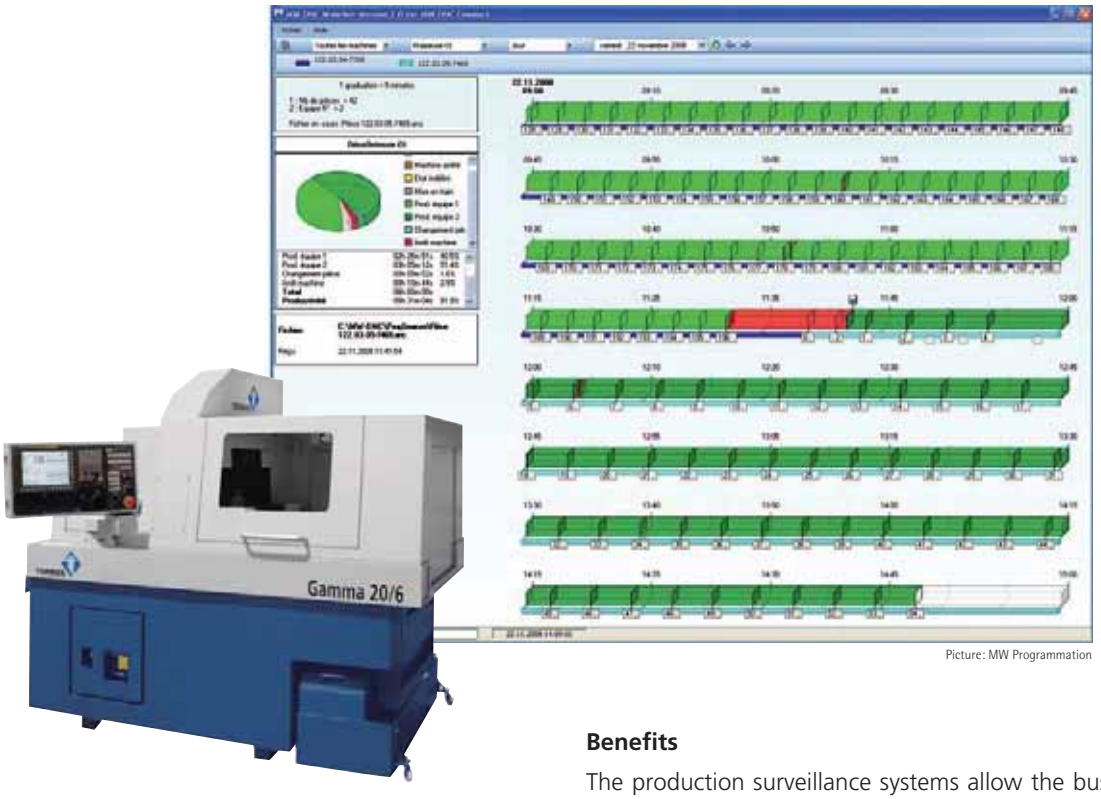
The coolant pressure of 340 bar cannot go without a mention either. It ensures continuous chip removal, which is valuable for high metal removal rates, but which becomes interesting for deep-drilled bores in particular. This technique allows such bores to be drilled in one pass, which means that the tool no longer needs to perform multiple passes. The time gained from this (without any loss in quality, of course) is reflected in the cost efficiency of the machine.

Both models have four independent tooling systems, three on the main spindle and one on the counter spindle. The EvoDeco 10 has 22 positions for fixed tools, 10 of which are driven, while the EvoDeco 16 has as many as 27 positions, 15 of which are driven. Not simply yet another victory for cost efficiency, these high-performance automatic turning machines are particularly well prepared for the production of families of parts, among other things.

A keen observer of this automatic turning machine family will not have failed to notice that access to the working area is designed to be particularly generous. This includes the control unit, which is mounted on rotary arms, and which the machine operator can now pull to right beside the working area during set-up, thereby making set-up even more efficient. The multi-programme system also provides the option of manufacturing various workpieces consecutively from the same bar – pure productivity.

PRODUCTION SURVEILLANCE INTERFACE

More and more businesses are connecting all their machines to a computer system in order to manage them in real time. Many service providers supply such software solutions (and hardware if a network needs to be installed or the machines need to be linked to the company's Wi-Fi network). Tornos is now offering an interface for Delta and Gamma machines that has already been available for some time for Deco machines.



Picture: MW Programmation

Universal Unit

The electrical interface is potential-free and can be connected to any production control system, whatever its function or technical properties (12 or 24 volt power supply).

Basic Functions

The surveillance interface offers the possibility to transmit the following data:

- Machine powered on or not
- Functioning or stopped
- Counting of parts
- Possibility of stopping the production cycle remotely

Benefits

The production surveillance systems allow the business to monitor the condition of the machine base in real time whether covering one or more production site and provide reliable indicators and collate statistics. It is also possible to simply put into place telephone, SMS or email alert systems.

Constraints

This system is not compatible with two options available with Delta and Gamma machines:

7053 – Tool life management with alert system

5130 – Tri-color configurable beacon.

Availability

This adaptation is available ex-works. Installation on pre-installed machines possible.

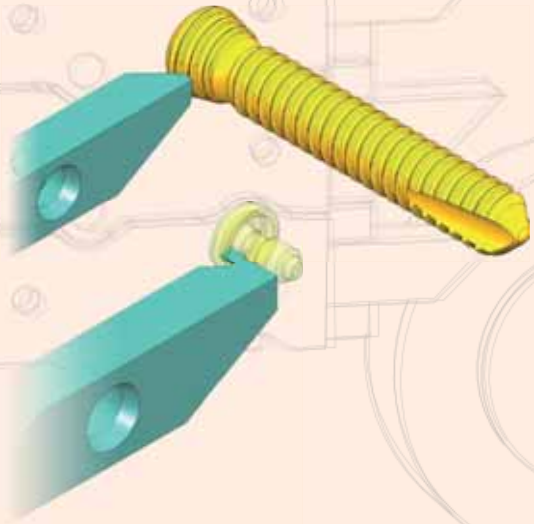
Bimu
cutting tools & accessories

Swiss made

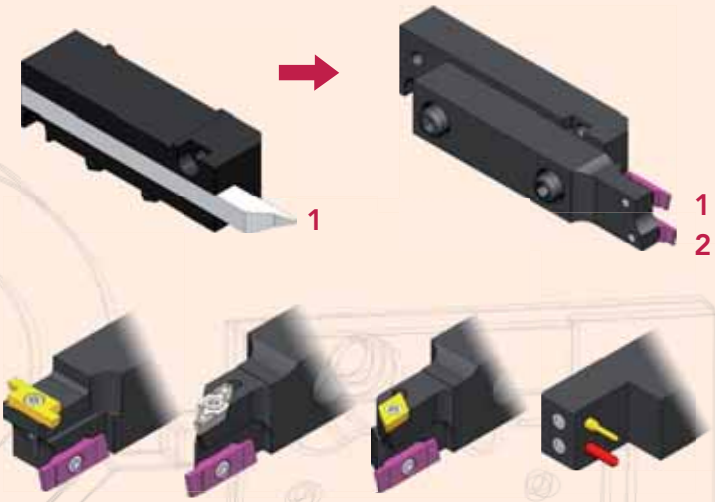
www.bimu.ch

Your tooling specialist for swiss-type automatic lathes

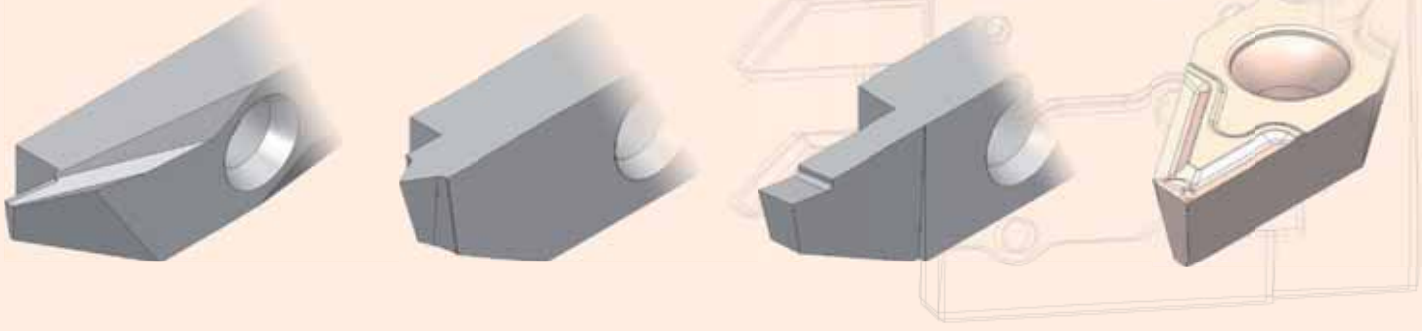
Special adaptable inserts for dental & medical applications



Tecko system : double the number of tools on your machine !



Large choice of insert's geometries



Rivenditore ufficiale dei prodotti Bimu per l'Italia

A.T.A.
Attrezzature Torni Automatici

A.T.A. DI PAPARELLA A. & C. SAS
Via Carlo Farini, 36
20021 Cassina Nuaova Di Bollate (MI)
Italia

Tel-Fax +39 02 355 8328
info@atapap.it
www.atapap.it

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