



decomagazine

THINK PARTS THINK TORNOS

60 01/12 ENGLISH



 **CYKLOS**



Tornos: In a good position to seize opportunities



Working for the watch industry...



Consistent focus on quality



75 years old - and full of optimism

UTILIS
multidec[®]
swiss type tools

**WERKZEUGE FÜR DIE MIKROMECHANIK
UND DIE MEDIZINALTECHNIK**

**OUTILLAGE POUR LA MICROMÉCANIQUE
ET L'INDUSTRIE MÉDICALE**

**TOOLS FOR THE MICROMECHANICAL
AND MEDICAL INDUSTRY**



MEDTEC
Europe

SIMODEC
SALON INTERNACIONAL DE LA INGENIERÍA Y DE LA MECÁNICA

UTILIS[®]
Tooling for High Technology

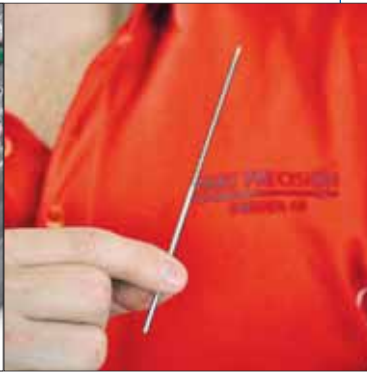
- **Utilis AG, Precision Tools**
Kreuzlingerstrasse 22, CH-8555 Müllheim
Phone +41 52 762 62 62, Fax +41 52 762 62 00
info@utilis.com, www.utilis.com
- **Utilis France SARL, Outils de précision**
597, avenue du Mont Blanc, FR-74460 Marnaz
Téléphone +33 4 50 96 36 30, Téléfax +33 4 50 96 37 93
contact@utilis.com, www.utilis.com

12



Cyklos: the surface treatment for everyone

15



Part Precision Sweden a recently established company - but with long experience and leading-edge competence

34



Tornos opens up capacity at Machined Component Systems

48



Class meets mass

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

SUMMARY

| | |
|---|----|
| To the nearest micron... | 5 |
| Tornos: In a good position to seize opportunities | 7 |
| Working for the watch industry... | 10 |
| Cyklos: the surface treatment for everyone | 12 |
| Part Precision Sweden a recently established company - but with long experience and leading-edge competence | 15 |
| Customer-focused industrial design | 19 |
| A comprehensive range of multi-spindle turning machines | 22 |
| More innovation thanks to the "cutting oil" design factor | 25 |
| Consistent focus on quality | 31 |
| Tornos opens up capacity at Machined Component Systems | 34 |
| Inclinable HF spindle holder | 37 |
| High rigidity milling device | 39 |
| 75 years old - and full of optimism | 41 |
| Tornos delivers logical solution to Unicut | 45 |
| Class meets mass | 48 |

JETHPLINE

Excellent **Chip Control** for
Machining Titanium, Heat Resistant
Alloys and Alloy Steel

Delivering **MAX** Profitability



70-300 Bar



200%
Increased
Cutting Conditions

TO THE NEAREST MICRON...

Is it not astounding to see the considerable efforts undertaken by the manufacturers and users of machine tools to ensure stable production of workpieces to dimensional tolerances of a few microns over lengths of a few tenths of a millimetre and surface finish of a few dm^2 (an accuracy of 0.01%)? Additionally, to then see these parts transported to a distant processing plant, risking impact that could alter their properties, to be coated or engraved to a precision of 50% at best. In fact, the variations in thickness during treatment typically reach at least 10 microns for an average value of 20 microns.

In the general field of thin surface treatments that cover a wide range of industries such as semi-conductors, flat screens or photovoltaic's with precision in the range of 10%, or 1% in the most carefully managed cases are obtained as standard. Sometimes over surfaces of several m^2 . So why should the engineering industry not benefit from the same level of performance since its competitiveness depends to such a crucial extent on its ability to manage the dimensional stability of parts?

Admittedly, the topologies of engineering parts are certainly more complex than the flat objects in the electronics industry, making the uniform application of reagents to the surface of parts more difficult. But could the techniques used in this industry not also be used to benefit the engineering industry? This is exactly what the new Cyklos technology is offering, with this first piece of equipment, the A300 that is dedicated to anodising aluminium parts and will be unveiled as a world first at Simodec 2012.

Actually, this highly innovative technology is based on something successfully used in the electronics industry for vacuum surface treatment procedures, which has then been adapted to the aqueous phase

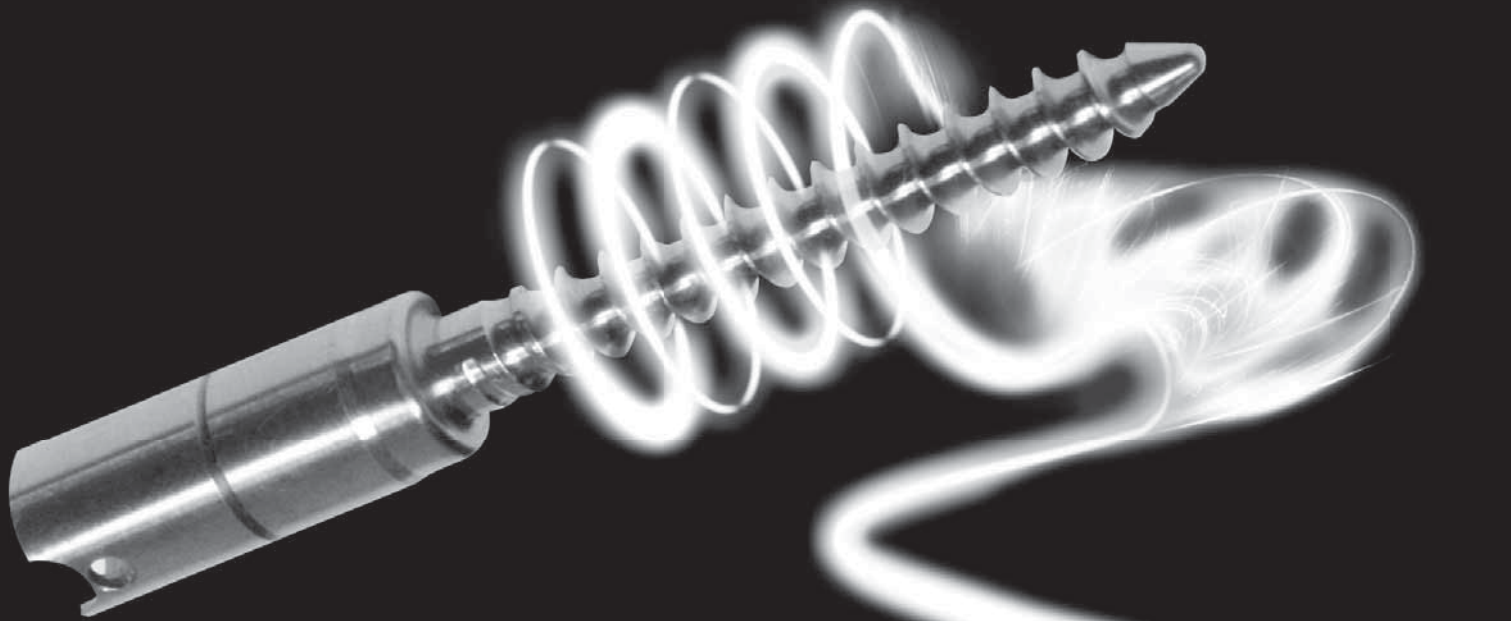
treatment processes in engineering. After automatic loading, the parts are then transported in small baskets that make complete rotations in different treatment baths, thereby ensuring that any non-uniformities connected to the parts' complex topologies, electrolytic current or temperature variations, gaseous emissions and other phenomena are partially or completely mitigated by the rotary movement.



In this way, the Cyklos A300 equipment at least halves the variations in thickness (variation of 5 microns over an average thickness of 20 microns) and prevents any of the treatment defects conventionally caused by bubbles being trapped, even for parts that have the most complex forms.

It is now possible for manufacturers of engineering parts to continue their quest to control the finished part to the nearest micron, by adopting Cyklos surface treatment technology in their workshops.

*Emmanuel Turlot
Director of Cyklos SA
(a Tornos Group company)*



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

TORNOS: IN A GOOD POSITION TO SEIZE OPPORTUNITIES

After his 100 first days with the company, we met with Michael Hauser, the new CEO of the Tornos Group, to discuss this “learning period” and the future of the company with him.



Mr. Hauser may be new to Tornos, but he benefits from 22 years of experience in industry and knows that domain far better than the average man as he is also the vice-president of Cecimo and Chairman of Swissmem's Machine Tools and Manufacturing Technology group. The insights he can provide are therefore to combine a fresh outlook on the company with extensive know-how in this business area. The CEO spent his first 100 days visiting both customers and sales representatives as well as Tornos employees all around the world. Let's discuss these topics with him.

BEST IN CLASS WORK WITH TORNOS

decomagazine: First question, what do you think about Tornos customers? You visited a lot of them; can you draw a kind of photofit?

Michael Hauser: What surprised me most is that no matter what field of activity they are involved with,

customers working with Tornos machines are successful ones. In every industry, the best in class are using Tornos machines. I spoke to many customers and I was positively impressed by a few points they had in common: They are convinced they have made the right investment (and indeed they make money with Tornos), users care for their machines and this also has an effect on the output, they are very skilled and are adept at “pushing their machines to the limits” and finally they are dedicated to the company and have a very good understanding of the strengths of our products and solutions.

dm: Do you mean that we need to be very skilled to run Tornos machines?

MH: No! Tornos machines can be run by anyone. Both the mechanical ergonomics and the programming are very well designed and allow people to achieve great results easily. All these successful customers take advantage of it to go one step further. Again, what surprised me was the level of

dedication to the brand. Of course, I was aware of Tornos before, but after this extended period visiting customers, I understood that what makes Tornos successful is also the passion of its customers. There are ordinary machine tools and then there are Tornos ones.

LISTENING TO CUSTOMERS AND...

dm: According to what you discovered, what are the reasons for this dedication?

MH: Obviously the product counts towards the success of the users. The Deco machines have been a true revolution that brought productivity to the shop-floors, allowing customers to move ahead in their markets. The know-how of the company also bears a mention; Tornos specialists are also dedicated people with an in-depth knowledge of the fields of activities they work with. I've never seen that before at such a level. That means that the solutions our customers work with are perfectly suited to their needs and to the general needs of their industries. So they know that they can rely on us.

... ACTUALLY CARING ABOUT THEM

dm: Do these customers tell you anything about the way they are treated by the company?

MH: Yes and this is another point of wonder to me: customers are very close to Tornos, most of the time they've been dealing with applications engineers for years and they are very often friends... and indeed it's always a better basis for communication if we feel we are on the same wavelength and can speak the same language in a friendly way. But this is not the only way we see this care expressed. Access to Tornos management is easy and customers from all around the world can contact us (please don't all call me just to see if it's true... But feel free to do so if there is an issue you think I need to be aware of). I find these aspects of loyalty and closeness very impressive and quite difficult to copy. This means that both Tornos and our customers are in a good position for the future.

PROMISING PRODUCTS

dm: Have you also discussed products with customers?

MH: We spoke about the Deco machines and also about the fact that no matter which Tornos machine they bought, they are convinced that it was the right investment. On the subject of the latest machines released by Tornos, Delta, Gamma, Sigma or EvoDeco, the customers emphasize the quality of the fit between the products and their needs. That means we really have a large product range adapted to every need. This is complemented by the large know-how

we offer with the machines. This is highly valued by our customers.

dm: What about the latest products

MH: I've heard a lot about both MultiSwiss and Cyklos. I was not with Tornos at the time of the Deco revolution, it must have been a very challenging and exciting period... and from what I discussed with customers, it seems that the MultiSwiss represents another of these huge steps that allows customers to reach the next level. I am very happy to be able to be experiencing this time!

Cyklos addresses a topic we've never even approached before. It is totally innovative and yet further proof that the success of our customers is at the core of our concerns. With this product we've been rewarded by a strong start to sales.

dm: If you had to sum up your customers visits, what would you say?

MH: I was positively surprised by the way Tornos is perceived on the markets. Customers are proud to work with Tornos machines (and very efficient indeed). They know our strengths quite well and that makes me feel very positive for the future.

PASSION AND KNOW HOW

dm: You've also met people from the Tornos sales network, R&D, Production, Service and every department of the company. Does the impression you gained there fit with the one drawn from the markets?

MH: Yes, actually the two main aspects I discovered on the markets are the same inside the company: a strong dedication to Tornos and in-depth know-how (to the benefit of customers). Actually people in Moutier basically think that everything is possible! Every quotation, every demand from the market represents an opportunity to do better for the customer. It is absolutely remarkable. Nevertheless sometimes we must think twice to be sure we spend valuable resources on creating a solution that actually adds value. Excessive quality or over engineered solutions are not necessary.

FOCUS AND SPEED TO GO FURTHER

dm: How do you intend to make people "think twice"? Tornos employees are dedicated to helping customers and telling them that maybe they should stop doing things could be misinterpreted.

MH: Yes this is one of the challenges I face. Writing "stop doing" lists is not intended to dismiss people

that fight to find the best solutions for customers, but we just need to be sure that all the fights are worthwhile. It does not help customers if we spend time developing a solution that brings them no added value. That is not even really the issue, but rather the fact we could have used these resources to be more focused on key topics to bring solutions on to the market faster. Do not misunderstand me, people in the company do a great job and don't waste energy, they sometimes simply work on too many projects simultaneously. To be faster, we must be better focused. Time to market (thus speed) is clearly one of the key factors for the future and I am sure that Tornos employees will embrace this challenge with passion.

dm: How do you see the future?

MH: As I explained here above, one of the challenges will be speed, and to ensure success we will need to communicate widely and in a transparent way within the company. Yes, this could lead to some changes in the way we work, but we will address these together and I have confidence in Tornos' employees and management. We are faced with a fantastic opportunity to be even better on the market.

We face two other challenges. First is the parity between the Euro and Swiss Franc. Clearly we do a great job, provide great machines and there is nothing we can do about that aspect... but we have to deal with it and one of the ways is also to bring value rapidly to our customers!

Another challenge is internationalization. Even though Tornos has been present in the worldwide markets for very many years, we could, and have to, do more at that level and have a better presence in BRIC countries. But we must obviously do so without abandoning our historical markets like Switzerland and Europe. We will carry on serving our customers and helping them be successful in their markets.

100 DAYS TO BE CONVINCED?

dm: What will change for Tornos Customers?

MH: Basically the aim of having a new CEO is not to change everything in a company (at least not always). The previous management did a great job and both the CEO and the CFO are members of the board now. In addition to their know-how, I bring my experience of international markets and management of large companies. I also have connections to a large network and this will give us an even better understanding of the markets.

For Tornos customers, we will carry on focusing on all these strengths I explained above and yes, we want to address their challenges with even greater speed.

dm: We hear about crises and troubles, nevertheless our discussion is very positive and you seem confident, are you?

MH: I covered thousands of kilometers and met hundreds of people, both inside and outside the company, and yes, the impression I have gathered is very positive. Tornos is in a good position to seize all the opportunities this period will present.

The next occasion for our customers to discover our innovations is Simodec in France (March 6 to 9) where they will be able to see the MultiSwiss and Cyklos.

Thank you Mr. Hauser for sharing your passion with us.

WORKING FOR THE WATCH INDUSTRY...

According to the Federation of the Swiss watch industry, 2011 was a buoyant year for Swiss watchmaking sector and the forecasts for 2012 are optimistic. Switzerland is (by far) the largest exporter of watches and its SMEs are starting to notice manpower shortages and are looking for increasingly high performance production equipment. As a "longstanding manufacturer" in this domain, Tornos and Almac have a wide range of dedicated solutions to offer.



The CUB 112 will not only be a high-performance production tool but also a machine to catch the visitor's eye in the workshops. (Photos: Robert Meier)

For the last 4 years, Tornos has organised an exhibition for watch producers at the start of the year, which takes place between SIHH and the Baselworld shows. During this event, visitors can take the time to discover the Moutier manufacturers' entire range for the watchmaking industry. This allows manufacturers to see how the company can help them improve their performance in all areas of watch machining, both for movements and casing.

FEEDBACK ON THE PRODUCTS ON DISPLAY AT THIS EXHIBITION

Single-spindle sliding headstock turning machines

Tornos has radically rejuvenated its range of single-spindle automatic turning machines. This has resulted with the famed Deco making its exit after a good

many years of service with numerous manufacturers. These have been replaced with the EvoDECO machines. More rigid, more reactive, more flexible and offering more power at all speeds (thanks in particular to the powered spindles with synchronous motors), these machines have retained the kinematic layout that previously made the Deco such a success. During the watchmaking open days, visitors were able to discover the EvoDECO 10 designed to create a sliding pinion with cutting as a counter operation, thanks to the addition of a new working axis (Y4) whilst the EvoDECO 16 was used to create a balance with holes comprising S0.22 whirled threads.

As for the Micro 8 machine, this is well-known in the watchmaking world as hundreds of these machines are already in use. During the watchmaking open days, the visitors were able to machine a double plate for themselves. At Baselworld, this machine will be on display equipped to create the same part.

Almac CUB 112



View of the main spindle: the machine is ready to machine face one of a new plate directly on the bar.



The counter spindle waits for a plate to machine it on face two...



...which it takes directly from the main spindle.

Multi-spindle machines

During EMO, Tornos presented a new compact numerical multi-spindle machine concept, the MultiSwiss. This new turning machine, which offers unrivalled ergonomics, can replace a single-spindle turning machine in a workshop without any layout reorganisation required. In fact, its compact dimensions do not take up any more space than a Deco machine equipped with a bar feeder. With a capacity of 14 mm, this 6-spindle turning machine can take up to 15 tools, 3 of which are for secondary operations. Its integrated PC and large screen ensure it is perfectly ergonomic to programme and use. During the 4th watchmaking open day, this new machine was used to produce a crown.

Machining centres

For the watch plate specialist, Almac's CU 1007 machining centre enables automated machining of 6 faces. As the veritable heart of an integrated production system, the CU 1007 can evolve to meet the needs of its users. When used with a Stäubli 6-axis robot, the CU 1007 not only makes automation possible, but also additional operations such as cleaning, polishing and deburring. The CU 1007 was used to create a main plate during the exhibition.

The New Almac CUB 112 to be unveiled at Baselworld

The CUB 112 is a machining centre designed to manufacture main plates and bridges for the watchmaking industry, directly from a bar with just one fixture setting and in a time that defies all logic. In fact, it is possible to finish main plates or bridges from the bar, fully automatically, in just 15 to 20 minutes, a feat never before seen in this market. Benefiting from innovative technologies such as linear motors on all axes, the precision of the CUB 112 and the flexibility of its setup also set it apart. During Baselworld, visitors will have the opportunity to discover this new way of working in person. The old ways of doing things will soon show their age.

Different domains with similar constraints

Whether in the medical-dental technology sector, micro-technology in general or watchmaking, the overall trends towards shortening lead times and seeking greater productivity and flexibility are the same. The solutions offered by the Tornos group mean each domain can benefit from experiences acquired in the other sectors. Mr Renggli, marketing manager, explains: *"Today, the Almac solutions which were originally designed solely with the watch industry in mind are being successfully' exported to other domains, in particular the medical sector, where the experience acquired in very high precision management is very much in demand"*.

The watchmaking sector remains one of the group's key domains, as you can see for yourself by visiting Baselworld.

BASELWORLD 2012

Dates: 8th - 15th March 2012

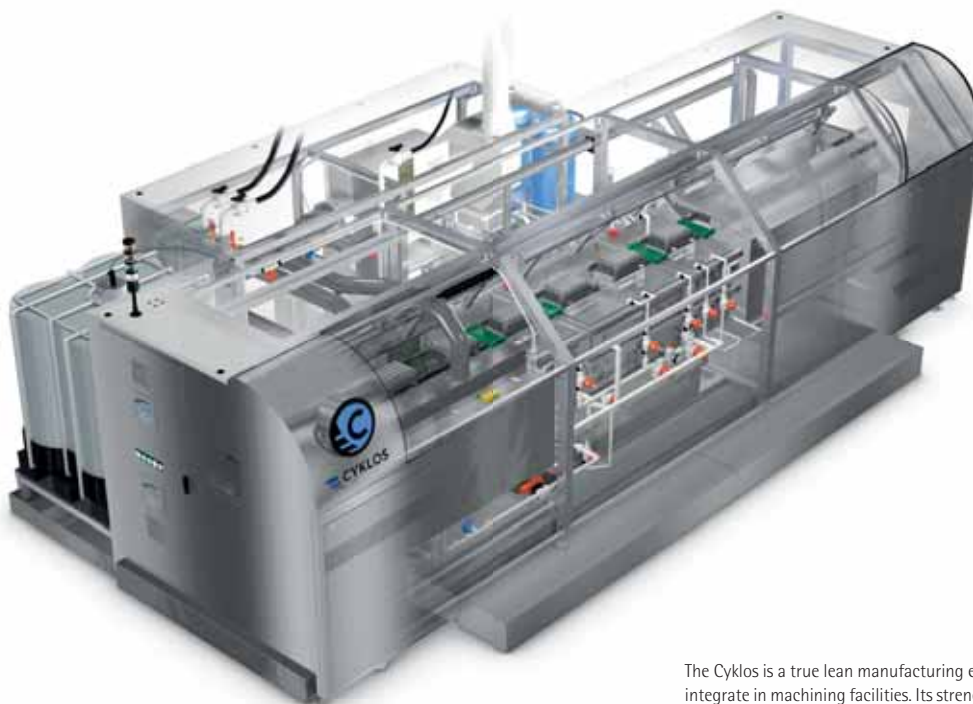
Times: from 9.00 to 18.00 (15 March 16.00)

Tornos Stand: hall 3U, stand J20

Machines on display: Almac Cub 112 – main plate finished just one fixture setting;
Micro 8 – double plate

CYKLOS: THE SURFACE TREATMENT FOR EVERYONE

At EMO 2011, Tornos presented Cyklos - a new, totally autonomous kind of surface treatment technology that can achieve exceptional levels of quality thanks to its innovative rotary process. At the Simodec show, Tornos not only exhibited the technology but, for the first time, the Cyklos A300 equipment. Better still, this machine carried out treatments on the stand.



The Cyklos is a true lean manufacturing enabler. It is ready to integrate in machining facilities. Its strengths on that aspect? No special construction is required, it needs no waste reject to drain and no waste treatment on site. Acid vapor are confined and filtered.

The Cyklos project was challenging for the engineers in charge, which in itself is good news: there was never any compromise with this ambitious project. *"The Simodec show is an opportunity for us to prove that our concept really works; thanks to the presence of Tornos machines on the stand, we can perform 'live' treatment on parts produced by the turning machines. This way, visitors can see for themselves that integrating a Cyklos machine in a bar turning workshop really is possible without any prior knowledge of surface treatment,"* stated Brice Renggli, Head of Marketing at Tornos.

Prospective customers will realise that Cyklos is the centrepiece in the workshop re-created on the stand for the show. Tornos turning equipment will machine an aluminium pen barrel, while Cyklos will anodise it. This demonstrates a major strength of the Cyklos A300 equipment; treatment can be performed in

standard workshops, off-cuts are filtered, concentrated and retained inside the machine before subsequently being reprocessed in specialist centres. This concept offers a great deal of autonomy and significant savings in logistics-related costs. Confidentiality is reinforced as parts no longer leave the factory for treatment and just-in-time production flows are possible.

Simple and effective

Bucket loading can be automated using a robot cell. Visitors to the show can also see just how easy it is to get started with the machine. In fact, it requires very little basic knowledge and can achieve unprecedented quality levels: *"Initial orders have already been delivered and customer feedback is very positive. The product is very easy to master,"* reports Emmanuel Sagnes, Product Manager at Cyklos.

The prototype at Simodec

At Simodec, visitors were able to discover the prototype of the A300 machine designed to anodise aluminium. It was on this prototype that the various processes were validated and on which the first customer tests were carried out. *"This equipment has enabled us to validate and improve the end product; the production machines also benefit from numerous improvements compared with the prototype,"* explains Mr. Renggli. Ergonomics have been improved and the look of the assembly has been redesigned in line with the new Tornos MultiSwiss range. Of course, the general principle and the effectiveness of the treatment are identical to the production models in every regard.

Long production runs of aluminium parts...

This equipment can handle the production of some ten million parts per year. It is primarily aimed at long production runs of those aluminium parts mainly produced in the automotive sector. Brake pistons are one such example of a typical application perfectly suited to the Cyklos A300 which offers great flexibility in anodisation treatment (thickness, parts, etc.). The chemical treatment processes required for each part number is stored in the automatic control system and then chosen according to requirements with less than a 30 minute delay between each part number

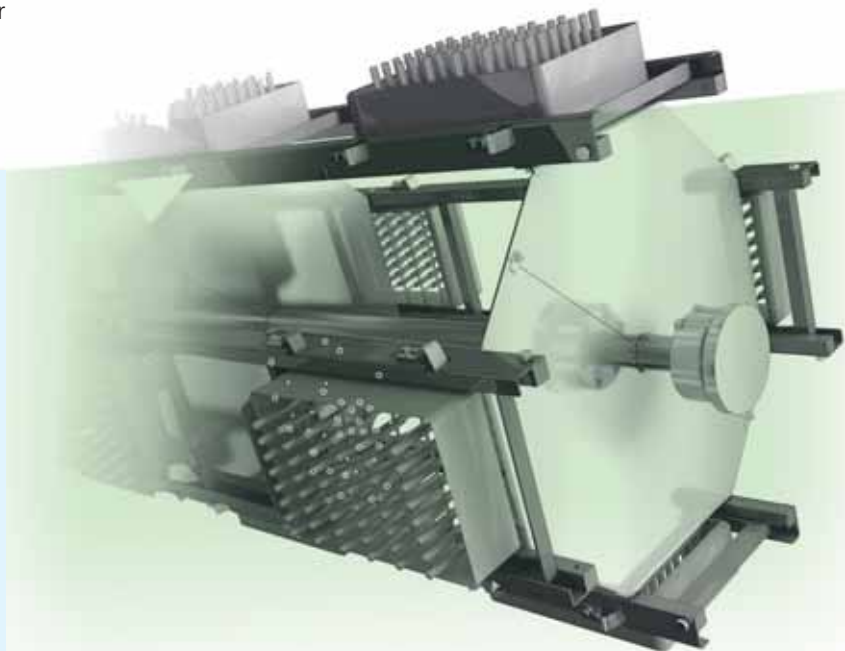
treated. The buckets must be adapted to the part not only so that they can be correctly held in place during the rotation process, but also to guarantee the uniformity and reproducibility of the treatment.

...and excellent quality results

The quality of the treatment is also one of the distinguishing characteristics of the A300 machine. The process implemented by the Cyklos company guarantees a uniformity of treatment of ± 2 microns with no fault in treatment either on the inside or the outside of the part. In classic processes the parts are often immersed vertically and almost statically, so the uniformity of treatment obtained thus often exceeds ± 5 microns and some internal areas may have faults in (absence of) treatment caused by trapped bubbles of air or gas released during the treatment. The rotary process and the A300 equipment offer many advantages which the specialists at Cyklos invite you to discover at the Tornos stand at Simodec.

MARKETING HAS BEGUN

Cyklos SA is part of Tornos Holding; the company's aim is to develop and market integrated surface treatment solutions. Initial customers will mainly be bar turners in the automotive sector, however, Cyklos is in a position to quickly address the needs of other markets such as medical, watchmaking and electronics with treatments such as metal deposition or deburring. It is here that its innovative concept would offer significant benefits. *"We are confident that Cyklos will be a commercial success as we are offering an exceptional product and we benefit from the support of an equally exceptional team,"* states Francis Koller, Sales Director at Cyklos SA.



Cyklos offers a uniform and repeatable processing for the following reasons: each part follows the same path in the liquid, bubbles are removed due to parts rotating, bath concentration and temperature are automatically controlled, liquid remains homogeneous thanks to parts rotation, bath to bath contamination is minimum and electrolytic current non uniformities are averaged equally on each part.

New spindle centering system Makes your life easier !

Patent pending



HIGH PRECISION – FAST – SMART

Video >>> www.wibemo-mowidec.ch



design www.babay-creation.ch

PART PRECISION SWEDEN A RECENTLY ESTABLISHED COMPANY WITH LONG EXPERIENCE AND LEADING-EDGE COMPETENCE

The three fellows in red shirts attract a certain attention in the central situated premises in Mariestad, a town located in the southwest of Sweden, when people walk by in the industrial estate and take a look through the big windows towards the street. The man in the street has no idea about what is going on in the nice and light premises. Today they have the use of 200 square meters but with a possibility to expand on further 400 square meters.



Anders Dahl, Emil Sandin and Jarkko Peltola are the men behind Part Precision Sweden AB in Mariestad.

The knowledge among people in general about what a precision-tool workshop is and about Swiss type turning is really poor but Jarkko Peltola, Emil Sandin and Anders Dahl certainly know what they are doing.

"We are not beginners in this line of business and all three of us come from a big company in the engineering industry in which we have worked together for about 15 years. Unfortunately it is a fact that the management in big companies continually wants to make changes, reorganize and question the activities", Anders Dahl says, presenting himself as a part-owner of Part Precision Sweden AB. "Anders has a long experience from production and comes from engineering school and after that he worked as a

machine operator, supervisor and production technician with great knowledge of both Swiss type turning and automatic turning."

"I have had the honour to work for one of the leading companies in my line of business and learnt a lot, but one day you come to a dead end and you could not get anything out of the work you do and you need new challenges. Jarkko and Emil felt the same and that is the reason why we stand here today."

"I had to improve at the same time as I personally feel that it is easy to be invisible in a big organisation. I like the small-scale business and I get great pleasure out of working in smaller units where you become acquainted with your colleagues and get a quite



To produce very close tolerances and small, narrow dimensions is a specialty at the newly started Part Precision Sweden in Mariestad.

different relation. Therefore I jumped at the idea of starting a small workshop with Emil and Anders who I see as extremely capable production technicians with great knowledge of cutting technics. I myself have worked with selling and marketing for 20 years so I hope to bring something. We are three different personalities with different knowledge fields and complement each other extremely well. Emil and Anders took the first step and they know everything about metal cutting but how should they get in contact with the customers? It was here I entered the scene. After two weeks we had sketched out a business plan, made our first budget and worked out a vision."

"I was of the same opinion as Anders, that they reorganized once too often and I lost the joy of working and the enthusiasm. I have a long experience of mechanic work as a machine operator and production technician. At the same time as Anders was walking around thinking of this new company I got a new job in another company. As old colleagues and

friends we kept the contact with each other all the time and one day during spring 2011 the three of us decided to start up our own workshop", Emil Sandin says.

TARGET PLAYERS IN ADVANCED METAL CUTTING WITH TURNING IN FOCUS

"We are a production partner who is specialized in machining of difficult materials as titanium, stainless steel, super alloys and different types of plastics for the medical industry in advanced dental and fracture surgery and precision parts for the offshore and defence industry. The business is concentrated on prototypes, small and medium size series with up to 50000 components."

The three partners have with their long experience and great technical competence combined with leading-edge technology set the standard that all the work at Part Precision Sweden has an extremely high precision. To that must be added that they have decided to be certified according to ISO 13485:2003 and this work is very much in progress.

A great deal of the company's rapid success is related to the fact that they are familiar with the market. Jarkko Peltola has a long experience of selling and marketing and together with the professional skills, know-how and experience of his two partners Emil Sandin and Anders Dahl they know how to make the most of their Tornos machines.

We asked Olov Karlsén, product manager and technical salesman at Ehn & Land AB, the Swedish agent for the Swiss manufacturer Tornos, a company well-known worldwide primarily for their development of machines such as single spindle and automatic lathes.

"We know each other since 12 years and we have a mutual confidence in each other. I know what these people can achieve and I realized early that they should go for it to 100% right from the very beginning. New machines was their only choice, to buy used equipment was out of the question as this could end up with machine stops and loss of valuable production time. At the same time they wanted to have use of all guarantees available on new machines."

"During my years as a machine salesman I cannot remind me of a workshop that have started up so quickly (2 months) and they have today three 4-axes single spindle lathes from Tornos with an interesting technique. They can run the machines without guide bushes, which means that they can use the machines as conventional lathes."

"Just to be able to run the machines without guide bushes is a big advantage as you do not need the

same high quality on the material and you get less waste i.e. shorter end pieces”, Olov Karlsén says and continues: “but the special feature with these lathes is just that you have both possibilities! Most common is that you have to make a choice when you decide which lathe you shall buy – with or without guide bush – but here you have both options which of course is a big advantage!”

“The guys are so competent that they stretch the limits as regards the machine’s capacity and possibilities, and they have shown our supplier Tornos that this is possible. To reach the maximum out of the machine technique together with Tornos is something that will be very interesting to follow”, Olov Karlsén says. They have already tested the limits with production of inclined holes and angled abutments for dental products, parts that normally are produced on much more advanced machines.

Anders Dahl informs us that they are extremely satisfied with Tornos single spindle machines, which have an impressive dimensional stability, and during two months’ time they have 1300 production hours in each machine - and this only during daytime - so this is terribly good. A great deal of this is volume products with close tolerances on which other workshops have had difficulties to manage the quality, but we keep the dimensions without problems.

“The production has had a fantastic start and we almost walk around expecting the first adversity”, Jarkko Peltola says. He says that it is now spread out in this business sector that Part Precision Sweden is in action and many of them have shown their interest in our knowledge and our experience.

“We will also work with training in programming on Tornos machines and help other companies with programming and commissioning of components on a consultant basis. The fact is that we already have been out and assisted some companies with this.”

The press reporter on spot cannot do otherwise than be impressed of the existing qualifications and it is obvious that they have a high-class competence and knowledge.

Finally they inform us that their vision for the future is to be six to eight people and to have a highly automatic production with ten single spindle lathes which feels good as they do not want to grow too much. They will keep all the advantages with the small workshop. Last but not least important is that they have fun at work.

Source: Maskinoperatören magazine

PART PRECISION SWEDEN AB

Part Precision Sweden AB
Hantverkaregatan 3
SE-542 31 Mariestad
www.partprecision.se
info@partprecision.se



Tornos Delta 12/4



EHN & LAND AB

The Market Leader

For over 60 years Ehn & Land has been a leading supplier of tools and machine tools to the engineering industry in the Nordic countries. Working together with the best-known and most successful manufacturers in Europe and Japan, we offer our customers a unique and extensive product range. We provide customized solutions to industries where high precision, top quality and a secure process are vital. Our main markets are in the precision machining, aerospace, power generation, medical, electronic and tool manufacturing sectors.

Ehn & Land's suppliers are primarily found in Switzerland, Germany and Japan. They are the absolute elite in terms of quality and development.

The Knowledge Company

Ehn & Land is very much a knowledge-based company, and the skills and experience of our employees combined with the innovative thinking and research of our suppliers enable us to provide our customers with specialized, profitable and high-end solutions. The success of our leading sales team lies in its customer focus as well as our added values such as experience, know-how, high availability and service level.

Our service staff and their knowledge allow us to stay close to our customers and to offer them prompt support and maintenance service.

The Family Enterprise

Since it was founded in 1950, Ehn & Land has been a family-owned company, with all the stability and values that this brings. We pride ourselves on delivering the best possible service and quality, ranging from availability to prompt maintenance and service.

We establish long-term relationships with our customers and aim to become a natural part of their day-to-day business.

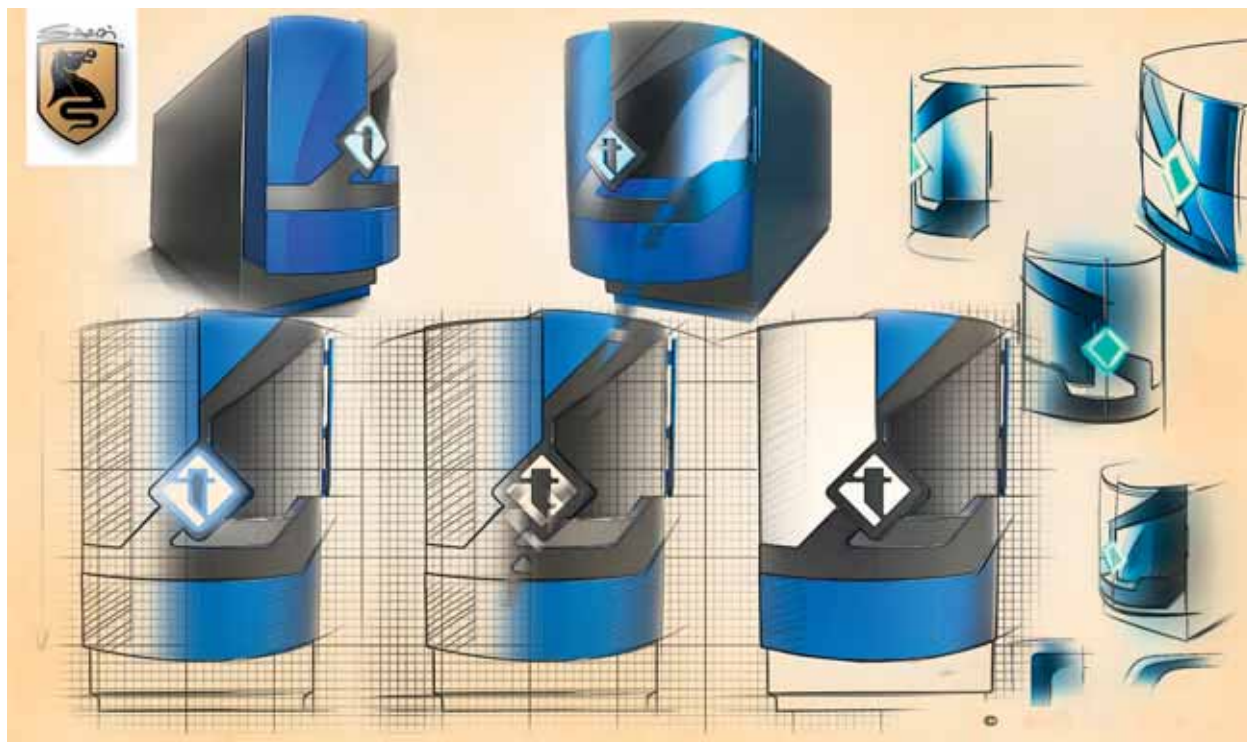
This approach enables us to provide our customers with the very best solutions.



www.ehnland.se

CUSTOMER-FOCUSED INDUSTRIAL DESIGN

Following the success of the MultiSwiss, we wanted to know more about its design and we met with Enrique Luis Sardi, head designer on this project.



The MultiSwiss is a good example of the top design quality achieved by Tornos. The demand for innovation is rising in the industry, Tornos products need to be capable of amazing performance, but also need to invite people to work on them. Tornos is constantly upgrading, innovating and improving the machines offered to customers.

A multi-award-winning team

Enrique Luis Sardi and the Sardi Innovation team are multi-award-winning innovation experts. With a very long, successful background in helicopters, cars, food, home products and motorcycles, they are the design signature behind the MultiSwiss. Now they are working constantly with Tornos to improve every single aspect of "design thinking" on every Tornos machine.

Its design inspired by a gladiator helmet, the MultiSwiss is equipped with 6 sliding headstock spindles that use torque motor technology for barrel indexing and its front illuminated logo is already lighting up many workshop around the world.

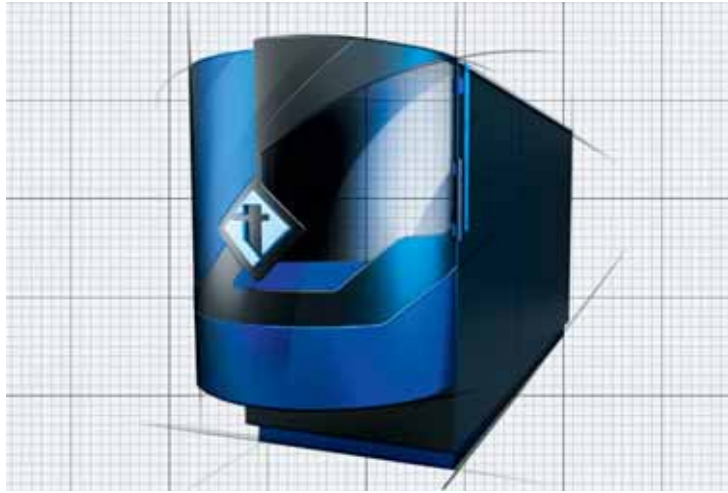
decomagazine: How does this design influence the economical aspect of the machine?

Enrique Luis Sardi: The challenge for Tornos was to achieve the best design without adding any extra cost to the machine, and we did it. Even if, historically, design modifications have required important investments to reach the highest levels in the innovation charts, this project had this specific requirement and we proudly accepted the challenge.

To this end, we modified the current manufacturing process to achieve smart solutions with zero impact.



Enrique Luis Sardi



TORNOS INNOVATION HISTORY

From 1880, bar turning processes were developed in the Moutier area. The first lathes competed with each other, in spite of their rudimentary tools, to achieve a formidable efficiency for that time. One and even two camshafts were linked in the designs to optimise production. The basis of the fantastic rise in machine tool production was laid. Moutier, the birthplace of the precision turned parts industry, was inextricably linked with the three local companies: Tornos, Bechler and Petermann. This competition, with its great synergistic effect, was profitable to the three companies and allowed extraordinary development. In the pursuit of excellence, these 3 companies joined together to form a single entity with one main concern: meeting customers' requirements.

- **1950** - Launch of the MS7
- **1969** - Launch of the SAS 16.6 and BS 20.8
- **1970** - First CNC machines
- **1996** - Launch of the DECO machines and TB-DECO
- **1997** - Launch of the MultiDECO
- **2005** - Launch of the Sigma line and the MultiAlpha
- **2007** - Launch of the Micro line and the MultiSigma
- **2008** - Strategic partnership with Precision Tsugami for the production of entry-level products
- **2009** - Launch of the EvoDECO 16
- **2011** - Launch of the MultiSwiss



It has been less than 6 months since the first MultiSwiss machine design was ready, and we've already met with unprecedented success by attracting the attention of the market all over the world. The reasons for this are our methodology, having the right team and a clear brief. These components represent 90% of our success. And in this project, these three parameters were indeed respected.

dm: Can you tell us about the MultiSwiss and its design approach?

ELS: The approach was to place the entrepreneur and the worker at the center in every single aspect. The detailed design of the machine is 100% focused on them. The design thinking teams work around special subject areas that can be powerfully applied to the industrial machinery; these include perceived quality, usability, subliminal messages, workers' environmental impact, branding, personality, enhanced performance, appeal, brand and model recognition, aesthetic time alignment, marketing strategy compliance, perceived balance, internal product compatibility, the interface aspect, accessibility, intuitiveness, impression of safety – these are just a few of the design thinking tricks that we apply to each Tornos design focusing on our customers' success.

dm: What about the new front logo? You designed this use of the logo and it will be used as a signature on every Tornos machine from now on.

ELS: Yes, in this area we are also emphasizing our desire to focus 100% on the owner and the user. The front logo represents the Tornos light illuminating the path for parts producers all around the world,

but it is also the feedback lamp for the workers: this is designed to remind you that every time you think of a machine you should look for the Tornos logo.

dm: What does innovation mean to you?

ELS: Innovation thinking is a human-centered approach to the industry, based on a very specific design methodology and strategies to integrate the needs of people, empower the machine's performance and create the basis for business success. We are talking about a leading global brand, and like every leading brand, Tornos has to reflect its quality and value in every single product design.

Every MultiSwiss customer is proud of its quality, performance and design. Tornos and the Sardi innovation team are very proud to have worked together to bring this new design to the market.

The principle is obvious: innovation breeds life and performance, and so does Tornos.

A COMPREHENSIVE RANGE OF MULTISPINDLE TURNING MACHINES

In our last issue, readers learnt that Tornos offered an extensive range of single spindle machines. The company isn't just focussed on the domain of single-spindle machines. People often forget that the Swiss turning machine manufacturer also specialises in multispindle turning machines for diameters below 32 mm.



From the simplest part to the most complex

Tornos offers solutions specially designed to meet all machining needs, however complex or large the batch sizes. Let's consider these in detail:



SAS 16.6

The Tornos line starts with the SAS 16.6 machine which is the last cam-type machine still produced by the Moutier-based manufacturer. This machine is popular with its users and also well-known by some competitors. The SAS 16.6 remains an incredibly effective solution for producing relatively straight-forward parts up to 16 mm in diameter with high or very high-output rates. There are not hundreds, but thousands of these machines in service all over the world, some having been in operation for many decades! *"The SAS 16.6 is quite simply unbeatable on certain parts"*, assured Fabrice Shori, SAS 16.6 Product Manager at Tornos. He added: *"The SAS is the production solution for long production runs of simple parts at high-output rates: it is reliable, extremely productive and cost-effective. It responds perfectly to the needs of a group of experienced users who are generally true connoisseurs of the product. Over the years, the SAS 16.6 has been upgraded to ensure its very loyal customer base remain satisfied."*

MultiDECO: A major success story

The Deco numerical multispindle machines that made Tornos famous, launched the MultiDECO line in 1997 and several hundred of these machines are currently in service. This line comprises of 3 machines:

- **MultiDECO 20/6b** – 6 spindles, capacity up to 20 mm (25 mm) diameter
- **MultiDECO 32/6** – 6 spindles, capacity up to 32 mm (34 mm) diameter.
- **MultiDECO 20/8b** – 8 spindles, capacity up to 20 mm (25 mm) diameter

The MultiDECO 20/8b has 2 more positions than the MultiDECO 20/6b, thus enabling the production of complex parts with the very highest quality finishes.

MultiDECO machines are the gateway into the world of numerical control multispindle machinery. Compared to the SAS 16.6, they offer greater flexibility thanks to their numerical control. The TB-Deco programming system featuring on all Tornos numerical control multispindle machines makes the machines very easy to use and program. This programming system and the unique kinematics create a concept that offers the same advantages of machining capacity and flexibility as a single-spindle machine. This unit offers turning, flexibility, straightforward and ergonomic programming. The standard capacities on the MultiDECO can be augmented using various special tool holders (polygon operation tools, milling devices, cross drilling tools and so on).

MultiSigma: an advance for highly demanding parts

This range of machines is perfectly equipped to produce highly demanding parts. With its 8 synchronous motor-powered spindles, each with its own C axis, each position allows controlled stopping. This enables any positioned cross-drilling or milling operation to be carried out, at any time, on any spindle. These spindles can be synchronised in an angular fashion which means that positioned operations can be performed on several different stations (e.g. cross drilling at one station and tapping on another). The MultiSigma can be equipped with one or two counter spindles according to requirements. The unloading of parts can be programmed and controlled and an integrated palletisation unit can be added as an option. It is also possible to produce two parts per cycle with the 2x4 option. With a bar capacity of up to 28 mm, the MultiSigma is the complete, high-performance machining solution.



MultiAlpha: designed to handle the most demanding operations

The MultiAlpha is the most complex line of multispindle machines currently offered by Tornos. Compared to the MultiSigma, the MultiAlpha has one or two completely autonomous stations for counter-operations. The line comprises two models: MultiAlpha 8x28 - 8 spindles, capacity up to 28 mm and MultiAlpha 6x32 - 6 spindles, capacity up to 32 mm (34 mm). The MultiAlpha 8x28 is the latest addition to the line with a power output of 11.2 kW and an impressive torque of 17Nm. Its powered spindles can tackle all types of machining operations, even the most demanding ones. All positions are fitted with a C-axis to enable total flexibility on setup by providing the perfect distribution of work across all work stations. One or two autonomous counter-spindles can be fitted on 3 linear axes (X/Y/Z). Thanks to the second counter-spindle, it is possible to reduce machining time of the 'other side' of the part by 50%. Just like the MultiSigma, the MultiAlpha can be equipped with an integrated PC to make these two turning machines even easier and more flexible to use.



Presentation



Chucker

For many years Tornos has been offering chucker versions (for working with billets or forged parts) on request for its multispindle turning machines. A robotic or powered loading system is available; some versions are so successful that they have been converted into chucker bar machines.

MultiSwiss: The hybrid of the family

At EMO 2011, Tornos unveiled the MultiSwiss machine. Based somewhere between the multispindle turning machine and the sliding headstock bar-turner, this machine with 6 mobile spindles offers a maximum capacity of 14 mm diameter. Very easy to access, it can take the place of a single-spindle turning machine and its barfeed in a bar turning workshop. However, it is 4 times as productive as a single-spindle turning machine. This is because it can accommodate up to 18 tools including 2 counter-operation tools. Equipped with innovative technology, the MultiSwiss guarantees excellent machining quality at a competitive price.



Find more information at www.multiswiss.info and www.tornos.com, plus many machining videos on YouTube www.youtube.com/tornoschannel

MORE INNOVATION THANKS TO THE "CUTTING OIL" DESIGN FACTOR

The claim of Tornos' level of innovation has never been as pronounced as now. After the successful launch of the EvoDECO 16a and EvoDECO 10a, the technology company surprised its customers with the revolutionary MultiSwiss 6x14. For years, the lubrication technology specialist Motorex has been involved as early as in the planning phase of new product developments with Tornos. If you ask the Tornos development engineers, they will say without hesitation that the cutting oil used, is an actual design factor.



The tool holder of the Tornos MultiSwiss 6x14 now has an oil hole that guides the machining fluid precisely to the cutting edge - Between the tool cutting edge and the workpiece.

Creative R&D teams have the task of incorporating innovative technologies into new products reliably and economically. In order to be able to walk the tightrope between technical master-strokes and products that will ultimately also suit the market, the engineers and technicians must be given as much room for manoeuvre as possible. For this reason, Tornos makes use of the great knowledge and expertise of Motorex when it comes to lubrication technology. To be precise, we are talking here

about the multi-purpose cutting oil Motorex Swisscut Ortho NF-X.

A prime example: Tornos MultiSwiss 6x14

The new MultiSwiss product range skilfully combines single and multi-spindle turning machines. The Tornos MultiSwiss has over 6 sliding headstocks and uses a torque motor for indexing the spindle drums. This makes it fast and virtually able to reach almost



The heart of the machine: The machining area with its 6 sliding headstocks. Thanks to the multi-tool concept, up to 18 different tools can be fitted to the machine.



The new MultiSwiss machine generation heralds new market segments for Tornos, and is excellent proof of the high potential for innovation displayed by the traditional Swiss company.

the same cycle times as those on a cam-controlled multi-spindle turning machine. Throughout the machine, all technical lubricating tasks are carried out by the cutting oil. These include:

- Cooling the machine, tool and workpiece
- Lubrication and pressure compensation between the cutting edge and workpiece
- Hydro-dynamic lubrication of the hydrostatic headstock bearings with ultra-fine filtered (5 μ) cutting oil
- Guiding swarf and abrasive residue out of the machine to the integrated tape filter (50 μ), and then towards the micro-filters (5 μ)
- Protecting all oiled components from corrosion.

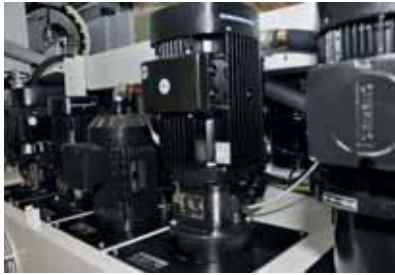
A Première: Hydrostatic bushings

Hydrostatic bushings for the 6 headstocks is a world première. With very powerful synchronous motors, the headstocks are accelerated in less than 1 second from 0 up to 8000rpm, thereby giving the machine a dynamism that has never been seen before. In addition to its own C-axis, this type of headstock also has its own Z-axis, which is guided by hydrostatic bearings. This achieves a pronounced damping effect, which in turn enables a significant increase in the life of the tools and surface finish. It is precisely this aspect that makes Motorex Ortho NF-X an important success factor in implementing the new technology in

series production. It is enough to consider the hydrodynamic demands made of the cutting oil in order that it functions perfectly at a pressure of 80 bar and at speeds of up to 8000rpm, thereby acting as a sort of liquid bearing. Because reliability has highest priority at Tornos, this new development was successfully tested in extreme test conditions (40 million cycles), under every imaginable type of condition.

Multi-purpose Motorex Ortho NF-X

Practically all new developments in the Tornos development department are filled with the universal high-performance cutting oil Ortho NF-X from Motorex. With Swisscut Ortho NF-X machining fluid, which is free from chlorine and heavy metals, Motorex has succeeded in perfectly machining high-alloy types of steel or implant steels, as well as non-ferrous metals and aluminium. This is an absolute first in modern manufacturing technology and ensures a maximum of latitude for the R&D team. This means that various types of time-consuming work are no longer required such as separate production lines during mixed machining, untimely washing of non-ferrous metal workpieces and the mixing of different types of machining oils during the production process. Motorex Ortho NF-X is available in viscosity classes ISO-VG 7, 10, 15, 22 and 32. For the recommended quality, always consult the machine's technical manual.



No expense was spared for the efficient oil supply. Several pumps simultaneously supply different classes of purity of Swisscut Ortho NF-X, which is crucial for machine performance, to the lubrication points via different circuits.



An integrated tape filter processes the cutting oil (average value 50 µ). The main container holds 880 litres of cutting oil. Another tank, which can hold approx. 240 litres, supplies the hydrostatic bearings with Ortho NF-X, micro-filtered at 5µ.



The MultiSwiss has two oil micro-filters. Thanks to an equally sophisticated piping system, one or another filter can be quickly and easily replaced during operation, without having to halt operation. The oil pressure in the machine is up to 80 bar.

The fact that all specialist lubrication functions in the MultiSwiss 6x14 are covered by just one medium is also practical from a logistics point of view, but there is also another, much more important reason. According to the applicable GMP guidelines (Good Manufacturing Practice), every process must now be documented and reproducible. This is why, for example, suppliers in the field of medical technology want to hear of no more than a single machining fluid in use where possible. This means that "lubricant cocktails" are now no longer tolerated in the latest generation of machining centres. Depending on the machine, the workpiece may come into contact with cutting oil, hydraulic oil or other type of oil and in the

case of leaks with spindle coolant. For this reason, Tornos and Motorex have formed a synergy project and defined the solution for the MultiSwiss 6x14 in Ortho NF-X ISO VG 15.

In spite of maximum performance and Vmax technology, and thanks to modern additive technology, Motorex Ortho NF-X contains no ingredients that are subject to labelling.

Complex oil circuit

No less than 1120 litres of cutting oil circulate inside the new MultiSwiss 6x14. The oil circuit is complex and travels through several filters. In addition, the

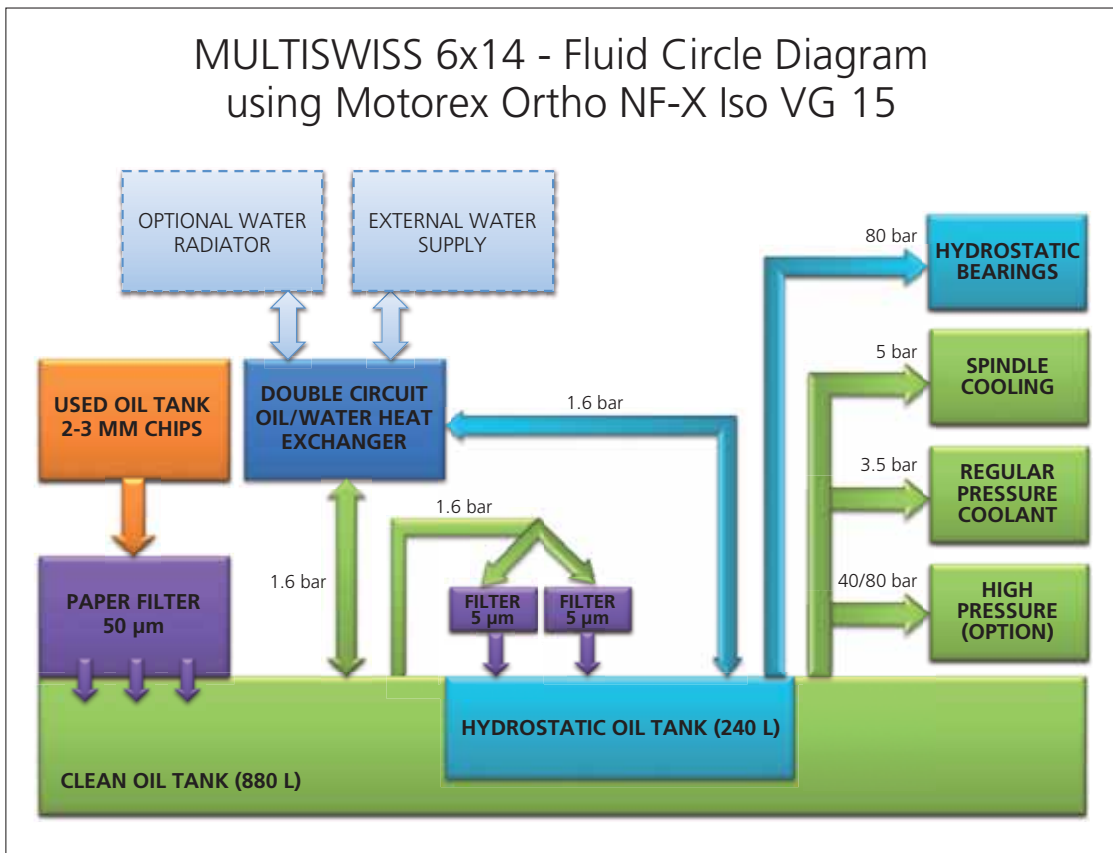
MORE FREEDOM FOR INNOVATION

"For the past three years or so, we have only been using Motorex Ortho NF-X machining fluid in the Research and Development department in Moutier. Thanks to continuous cooperation with Motorex, we have been able to go significantly further than before in the area of lubrication and cooling. This has been demonstrated by the production of the MultiSwiss 6x14 in particular. We have never had as much latitude as this in the areas of expertise already mentioned. The final result is that the brand new MultiSwiss generation will be able to enthuse and inspire far beyond Swiss borders. For efficient operation, Tornos recommends that its customers use Ortho NF-X, because all current machines were developed using it and were also run in with it during tests and actual applications."



Patrick Pellicanno
Specialist in machining design and set-up,
Tornos SA, Moutier





entire machine is thermally stabilised using a powerful cooler/heat exchanger unit, thereby ensuring the highest level of precision thanks to constantly stable temperatures. A whole range of powerful pumps feed the lubricant to the lubrication points and bearings. Cutting oil channels and nozzles, which are integrated into the tool holder, supply the tools in the new machine generation with oil much more accurately than before. Adjustable nozzles spray the cutting oil precisely onto the tool cutting edge and the workpiece. Supplying cutting oil according to the “oil can principle” in the work area is now a thing of the past. This also means that there are fewer oil fumes and less evaporation loss. The sophisticated supply for the MultiSwiss can also be traced thanks to the oil circuit shown (diagram). Last but not least, this innovation also has an effect on the potential cutting parameters and is an ideal precondition for forging ahead to the highest performance class with Ortho NF-X.

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

THE PILLARS OF YOUR PRODUCTIVITY!

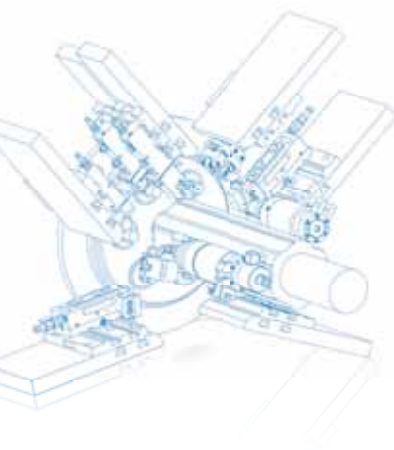
INVEST
IN YOUR
SUCCESS!



Hall D – Stand K21



GWS-tooling system with
internal coolant supply



The market demands production which is more and more rapid, flexible and cost-effective. The success lies in reducing the unproductive, tool-related machine downtimes via a presettable and quick-changeable tooling system.

Trust in the proven combination of the GWS-tooling systems and the machines from Tornos!

GWS-tooling systems with pillar-guiding system:

- The most exact positioning
- The highest repeatability
- Large variable adjustment range
- The easiest handling and cleaning

 **Göltebodt**[®]
Innovation and Precision.

PIBOMULTI

SWISS MADE

JAMBE-DUCOMMUN 18
CH-2400 LE LOCLE
TEL +41(0)32 933 06 33
FAX +41(0)32 933 06 30

www.pibomulti.com - info@pibomulti.com

Specific equipment and accessories
for TORNOS machines

PIBOMULTI

SWISS MADE

TTE 10X5 18'000 rpm
Integrated ratio : 1 to 5



Specific equipment
and accessories
for lathes

Minispindle Extensions
Ø5.0 mm collets Ø2.0 mm



Multispindle head
small spindle
axis distance
4 mm
revolution
15'000 rpm

Synchronous
multispindles Head



6 spindles multispindle head



Modular spindles
for presetting outside
of machine

**BMRC****PIBOMULTI**

SWISS MADE



Hobbing unit
for making gears

Polyvalent drilling and milling head
for heavy machining with speed-reducer
Usable with or without over-arm

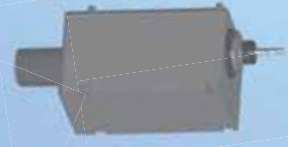


Adjustable angle head
with range of adjustability
from 0 to 90°
5 mm clamping capacity



ASK FOR OUR FULL RANGE CATALOGUE !

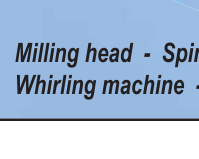
Axial spindle speeder
8 mm clamping capacity
30'000 rpm



Whirling machine



Right angle spindle speeder
5 mm clamping capacity
15'000 rpm



Milling head - Spindle speeder - Angular head
Whirling machine - Drilling heads

PIBOMULTI

SWISS MADE

Mini-Pendelhalter MPH

Zange ER 8
Spannbereich 0.5-5 mm
Pendelweg 0.25 mm

Petit Mandrins Flottant MPH

Pince ER 8
Capacité de serrage 0.5-5 mm
Oscillation 0.25 mm

Small Floating Chuck MPH

Collet ER 8
Clamping range 0.5-5 mm
Floating range 0.25 m



• Ø 23.5 mm

[mph]

stampfli

PRECISION TOOLS

Andreas Stampfli · Solothurnstrasse 24f · 3422 Kirchberg · Switzerland · Phone ++41 34 445 57 67 · Fax +41 34 445 67 29 · www.andreas-stampfli.ch

AN UNCONVENTIONAL COMPANY SHINES WITH SIGNIFICANT GROWTH RATES

CONSISTENT FOCUS ON QUALITY

At first glance, Otto Weber does not necessarily fit the picture of a successful entrepreneur, but he is a man with his heart in the right place and he has an exemplary success story to recount. His motto "Looks are not important but performance is," has brought his company annual growth rates from 20 to 30 percent and an excellent reputation with its customers. His straightforward attitude, technical expertise and the resolute customer focus corresponds precisely to the Tornos mentality, which has led to an extremely successful partnership being formed over the years.



For Otto Weber (second from right) and his dedicated team, customer satisfaction is the be-all and end-all.

"Our customer satisfaction is the benchmark for everything we do", this statement characterises the mindset of Otto Weber and explains why, at 50, he started his business. On 15th October 2000, in Gosheim, the centre of the German bar turning industry, Otto founded yet another company, Weber Präzisionstechnik GmbH, starting out with five staff and 30 conventional lathes. The earliest customers included renowned writing implement manufacturers, whose loyalty Weber was able to win over the long term through the top-quality products and absolutely reliable delivery. This diligence and commitment quickly paid off and the company was in the black right from the start. The profits were not taken, but reinvested in the company to extend the range of services and to expand still further.

Tentative entry into CNC technology

In 2003, Otto Weber started producing parts for the electronics industry. Due to the complex geometries, the ever-changing and ever-smaller batch sizes and the high quality requirements, market entry without CNC technology was not possible. Otto Weber thought long and hard about this step and planned it meticulously. All the existing products on the market were tested and tried out. Finally, a Deco from Tornos was chosen, since this machine was best suited to the projected range of products.

As Otto Weber saw it, no other machine in the diameter range up to 10 mm was quicker, better or more flexible for his electronic parts. The two parallel slides, the TB-Deco control system and the comprehensive

Presentation



auxiliary equipment were all clear and convincing plus points for the Deco. Tornos worked very much like a partner in close collaboration during this initial phase. Otto Weber and his staff received intensive training in Switzerland and were familiarised with the finer points of the technology, right down to the smallest detail. The fact that Otto Weber now has more than 15 CNC machines, clearly demonstrates that this training experience was worthwhile.

We live quality

In addition to the complexity of his parts, Otto Weber is proud of the quality produced. Quality is one of his main focal points. This is why most customers have now agreed a "ship-to-stock" policy with him, i.e. delivery without a goods-in inspection. The staff, who receive ongoing training and education, are highly motivated and an atmosphere of camaraderie prevails, backed by a firm sense of self-assurance.

Weber has invested extensively in the training of staff and values a good working climate. He asks a



Siegfried Broghammer, Tornos' specialist (center) with Otto Weber (left) and Paul Beck, head of production (right) during a factory tour.

lot from his staff, but leads the way by always setting a good example himself. Whenever time is at a premium, the boss can be found working in production at the weekend. In-time orders also present a particular challenge here. If the drawing arrives in the morning, production starts the same day and the ordered parts are delivered within an extremely short time frame. To facilitate this process, the company also installed its own tool manufacturing in order to be even more flexible in its response to new demands. The company's focus on quality is also reflected in the production hall. It is light and spacious, with the automatic lathes neatly grouped into production units. The Tornos single-spindle automatic lathes are naturally a highlight. Due in particular to its intelligent control system, they offer advantages which at present cannot be achieved by any other manufacturer. In addition, they are extremely accurate and, as you would expect from a Swiss manufacturer, provide the right quality and availability.

Prepared for the future

Otto Weber was not able to fully escape the economic crisis but, unlike other companies, it left no lasting effects on his business. As a true family company, Otto Weber and his wife are aware of their responsibility to their staff. As one of the last companies remaining, they implemented short-time working in the Heuberg region and, together with the staff, endeavoured to maintain all jobs. As a result, they have emerged from the crisis stronger and were able to return to full-time working straight away. The enormous pricing pressure for turned parts has however lead to serious reflection. Otto Weber is now investing even more than previously in technology and automation. The machines must run 24 hours a day. In the last few months and weeks,

new machines were therefore acquired as well as equipment and options for automation. What Otto Weber values about Tornos is that the machines already possess a good many of these options and have been inherently designed for process-reliable, automated operation. Through the collaboration with Tornos and his modern machinery, Otto Weber sees himself as ideally prepared for the future.



Weber Präzisionstechnik GmbH
 Heerwasenstrasse 27/1
 78559 Gosheim
 Germany
 Tel.: +49 (0)7426 6007 - 0
 Fax: +49 (0)7426 6007 - 20
 info@weber-praezision.de

TORNOS OPENS UP CAPACITY AT MACHINED COMPONENT SYSTEMS

Steering its way through a relentless recession and coming out the other side with remarkable success has been a difficult journey for Redditch based Machined Component Systems (MCS); a journey that according to Managing Director Mr Warren Gray has tested and proven the true character of the staff, the management and the company's ability to work closely with its customers. The resulting success has seen the company acquire six machine tools in 2011, with the latest acquisitions being two Tornos CNC turning centres.



Throughout the recession, MCS retained all of its customers but suffered a downturn as OEM customers de-stocked their inventory levels as the decreased demand for product filtered down the supply chain. For MCS, this resulted in the loss of staff. However, exiting the recession as a leaner and more robust business, MCS has now won a number of new contracts that includes a six year contract within the Jaguar/Land Rover supply chain to supply a range of components for knuckle assemblies and suspension assemblies and a two year contract with a multinational company supplying products for the assisted living industry plus additional long term contracts.

To service the new contracts MCS has acquired HAAS and Daewoo machining centres as well as a Daewoo chucking lathe, an additional turning centre and a Tornos Delta delivered in June with a Tornos Sigma

ordered at the recent Tornos Open House that has now been delivered. The new orders and machine acquisitions have brought further good news for the West Midlands area with the staff levels rising including two apprentices.

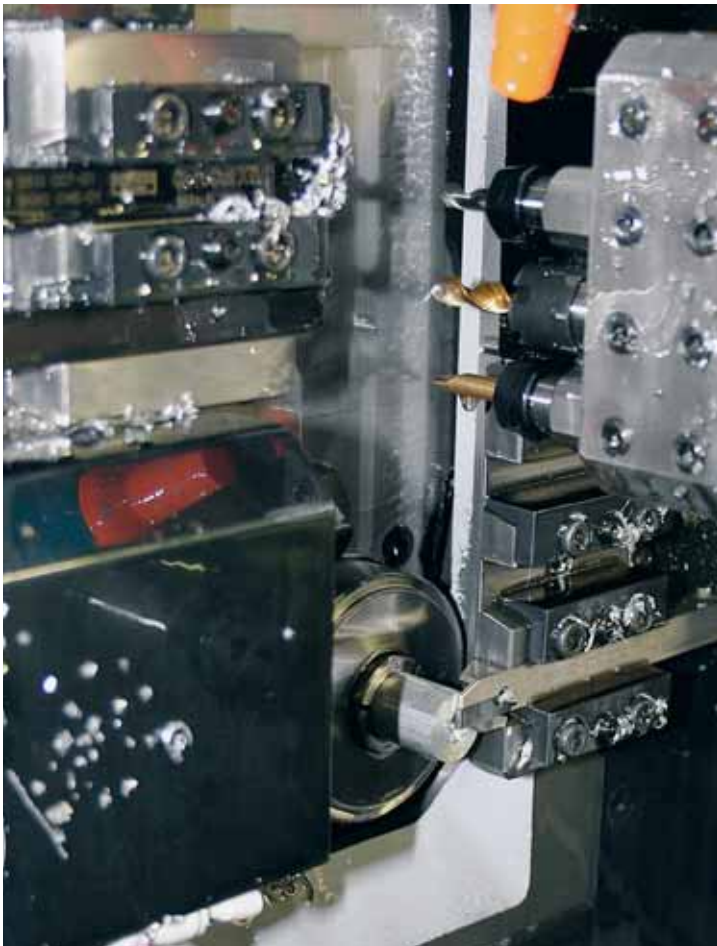
With an order book that includes medical, automotive, petrochemical and environmental work, MCS demands machine tools that are extremely capable, flexible and suitable for its 24 hour a day, five and a half days a week lights-out machining operation. From a machine tool acquisition perspective this has historically involved the purchasing of Tornos Deco sliding head turning centres. However, with diversification into various industry sectors, the company has had to widen its machine tool scope to incorporate larger turning centres and machining centres.

For its new long term automotive contracts, MCS required a turning centre for machining parts up to 20 mm diameter that would meet the new capacity demands of the company. As MCS Managing Director, Mr Warren Gray comments: *"With almost 40 CNC machines, we knew what we were looking for from a turning centre. Despite historically being a Tornos customer, our last Tornos Deco arrived in 2004 and all the relevant suppliers have evolved considerably in the last 6 years, so we had to conduct a full review of the marketplace. Our conclusion was that the Tornos Delta 2015 5-axis turning centre was without a doubt the best machine available for a number of reasons."*

"In comparison to competitor machines the Tornos Delta has an extremely compact footprint that incorporates high pressure coolant, in-built filtration and a small work envelope with a large capacity for swarf. This small work envelope means that the resting position of the tool stations are very close to the work-piece. This really does make a difference to cycle times as the tools don't travel far before cutting."

"The contained design of the Delta 2015 makes it very clean and quiet in comparison to alternate machines. Additionally, its capability level to cost ratio is far more impressive than alternate turning centres whilst the accuracy is everything you would expect from Tornos, holding a 9 micron bore tolerance across a full day of production," continues Mr Gray.

The Tornos Delta is currently producing long automotive rods that have been moved from the Tornos Deco machines that are reserved for more complex components. Freeing up capacity from the Deco sliding head lathes, the Delta is currently producing automotive rods from mild steel in batches of 1000 per week with other allocated jobs including batches of 200 to 2000 petrochemical valve components per week, manufactured from 316 grade stainless steel. With all the relatively 'simple' parts that have been moved to the Delta, the machine has undoubtedly improved cycle times with the numerous parts it is producing. Furthermore, the tool turrets accept 16x16 mm tooling whereas competitor machines hold a maximum tool shank of 12 mm. This increases



Warren Gray, CEO MCS

Presentation



rigidity, surface finishes and creates greater flexibility by allowing MCS to transfer tooling between machines.

With the company increasing its workload in the petrochemical, environmental and healthcare sectors the complexity and diameter range of the parts coming through MCS's door is continually increasing. To meet this demand, the ISO:9001 and ISO:13485 (medical certification) company recently ordered a Tornos Sigma 32 at the Tornos Open House. As Mr Gray continues: "We already have a number of machines capable of producing parts in the size range up to 32 mm diameter. However, besides bringing desperately needed capacity to the business, the 10-axis Sigma brings a flexibility and ease of use beyond that of our other machines for complex parts. For example, the Sigma offers the Tornos' TB-Deco programming platform as well as ISO programming. This enables machine setters familiar with ISO controls or TB-Deco controls from the Deco machines to both operate the new Sigma."

Additionally, the Sigma is regarded as the only machine tool on the market with identical power and rigidity on the main and counter-spindle. With up to 28 tool positions and a large swarf capacity, the Sigma will fit in perfectly with the lights-out philosophy at MCS. From a productivity perspective, with an independent roughing tool, the Sigma has the capability of 3 tools working simultaneously on the workpiece. As Mr Gray continues: "From our time studies we expect the Sigma to be considerably faster than our alternate turning centres. We have five turning centres dedicated to one family of parts for one customer over a 3 years period and we expect the Sigma to make a significant impact on this project."

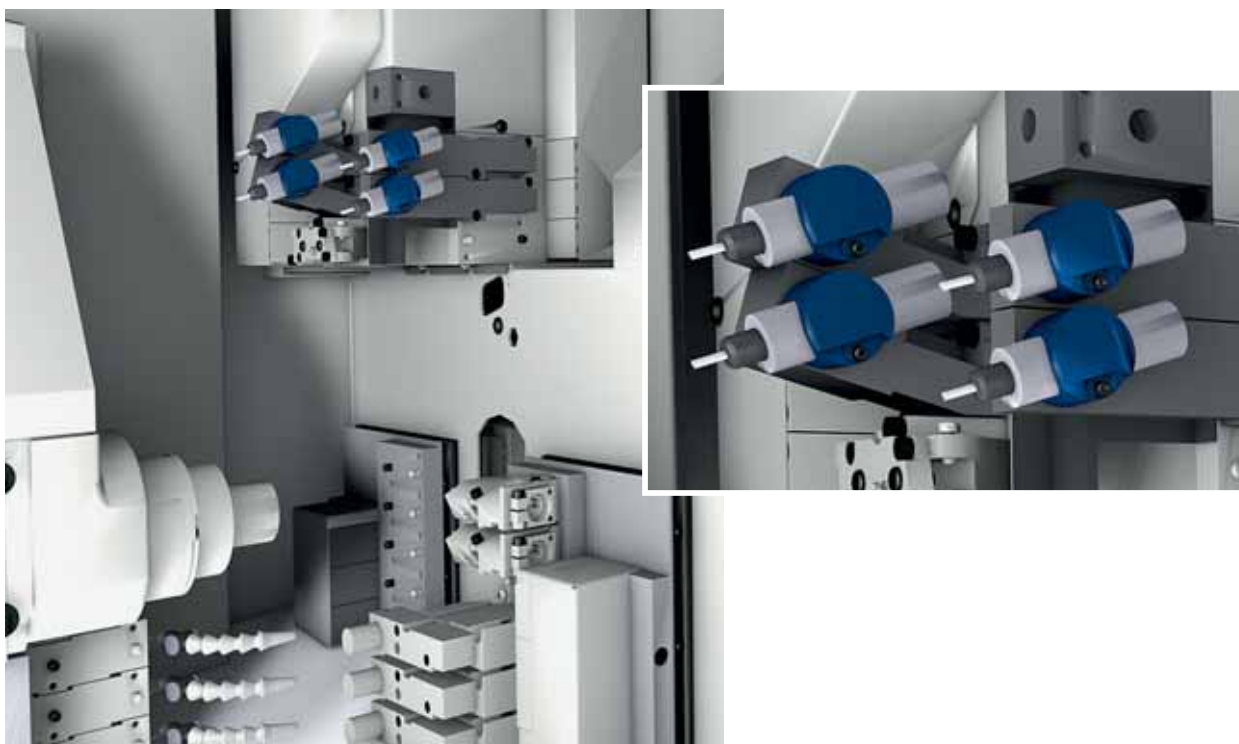
Looking to the future Mr Gray concludes: "We have made a significant investment in staff and machine tools since the recession and we are already looking at new machines and staff for 2012. In 2011 our business has grown significantly compared to our best ever previous year and we project additional growth for 2012, so we have to be prepared by putting the correct procedures and plant in place. We are confident with the level of service and support we receive from Tornos that they will be a part of our future growth plans."



Machine Component Systems PLC (MCS)
Ravens Bank Business Park
2-5 Madeley Road
Redditch, Worcestershire
B98 9NB

INCLINABLE HF SPINDLE HOLDER

On the Deco 13, fitting inclined HF spindles previously prohibited the use of fixed angular supports. In order to increase the flexibility of such operations, Tornos is offering an inclinable support for Ø 22 mm HF spindles.



Option

There is no option number yet for this device. For more information, please contact your usual Tornos dealer.

Principle

The HF spindle support can be adjusted visually once fitted on the machine (comparator), but more improved ergonomics and angular positioning is also possible on the pre-adjuster.

Benefits

- No positioning constraints.
- Greater flexibility in adjustment.
- Universal angular spindle holder that replaces numerous fixed supports.

SPECIFICATIONS

| | |
|------------------------|---------------|
| Continuous adjustment: | from 0 to 45° |
| Spindle diameter: | 22 mm |

Compatibility

EvoDeco 16.
Deco 13 upon request.

Availability

Available 'ex works' and as an option for machines already in service.



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

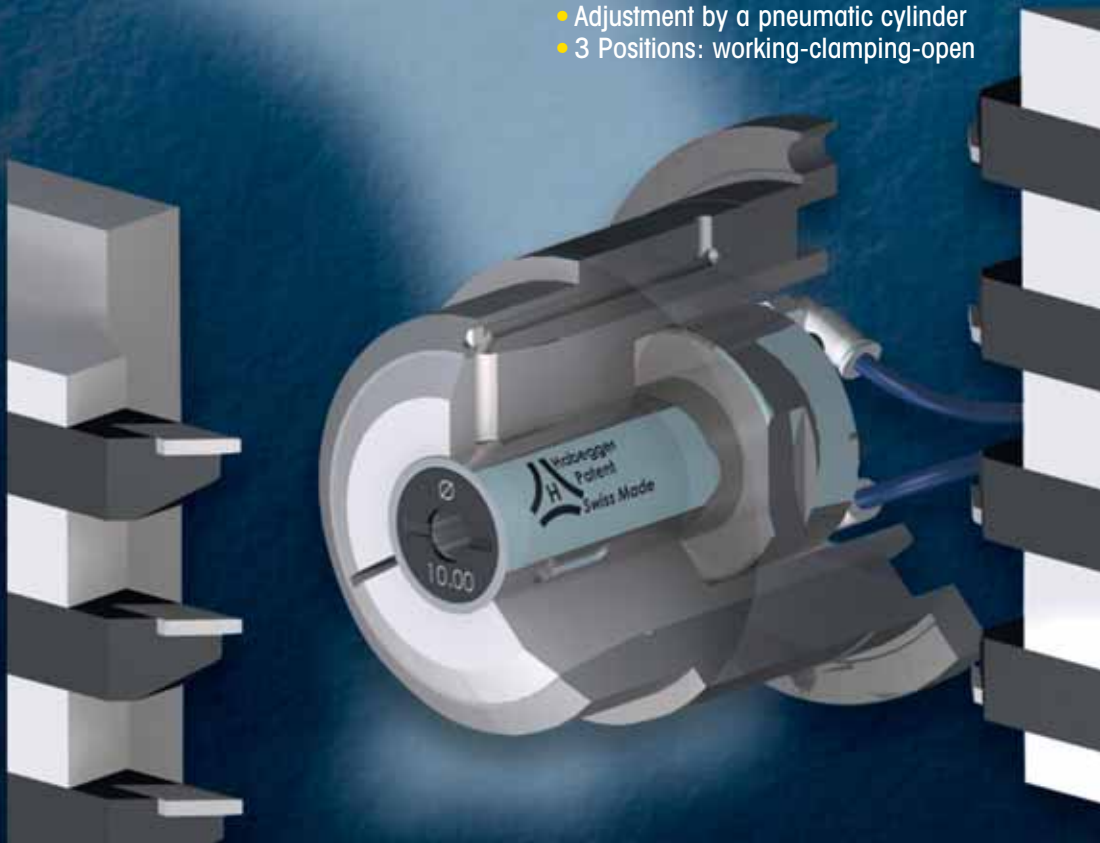


Type / Typ C

- 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

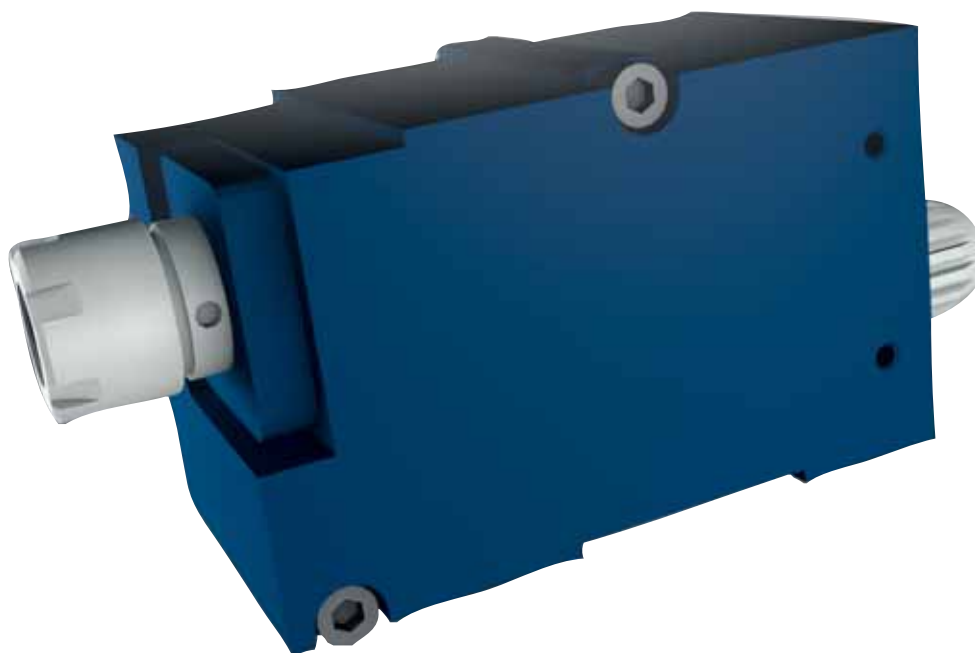
- Réglage par un vérin pneumatique
- 3 positions: travail-serrage-ouverte
- *Einstellung durch einen pneumatischen Zylinder*
- *3 Positionen: Arbeitsposition-Spannposition-offene Position*
- Adjustment by a pneumatic cylinder
- 3 Positions: working-clamping-open



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

HIGH RIGIDITY MILLING DEVICE

To increase the milling options on the guide bush for the Deco and EvoDECO, Tornos is now offering a new milling device as an option with a gear reduction ratio of 2.5:1 to significantly increase the available torque.



Option

High rigidity milling device option number 243-1645 containing device No. 245385.

Principle

For operations requiring greater milling torque, the traditional milling device can be replaced with this new option. The device enables longitudinal milling operations to be performed at the tips and from above.

Benefits

- Improved milling capacity on the guide bush.
- Very high quality finish (Ra).

Compatibility

Deco 13a and EvoDECO 16.

Availability

This device is available 'ex works' and can be adapted to machines already in service.

SPECIFICATIONS

| | |
|------------------|---|
| Fitting: | On the plattens. Important: the device requires two positions |
| Max. speed: | 4,000 rpm |
| Reduction ratio: | 2.5:1 |
| Max. torque: | 12 Nm |
| Type of gripper: | ESX 20 |

Mastercam Swiss Expert




Mastercam Swiss Expert delivers everything you need to make the most of your Swiss machine, including:

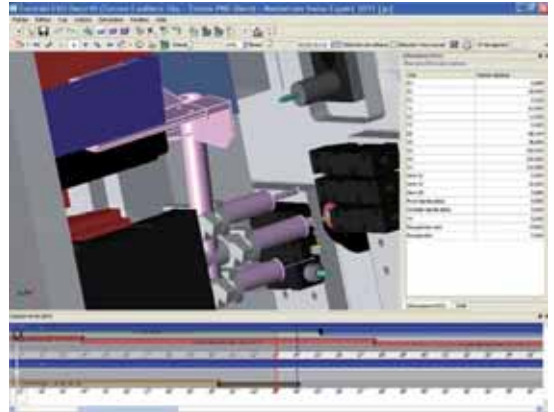
- ✓ Solids-based programming precision.
- ✓ Easily read in and machine families of parts.
- ✓ Full support for gang, turret, and sub-spindle programming.
- ✓ Immediate machine simulation, letting you see your finished job before it goes to the shop floor.
- ✓ Support for unlimited programming streams.
- ✓ Powerful synchronization tools for complete control over your streams.
- ✓ G-code editor tailored to a multi-stream Swiss environment.

cnc software, inc.

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

CNC Software Europe SA
 CH - 2900 Porrentruy, Switzerland
www.mastercamswissexpert.com

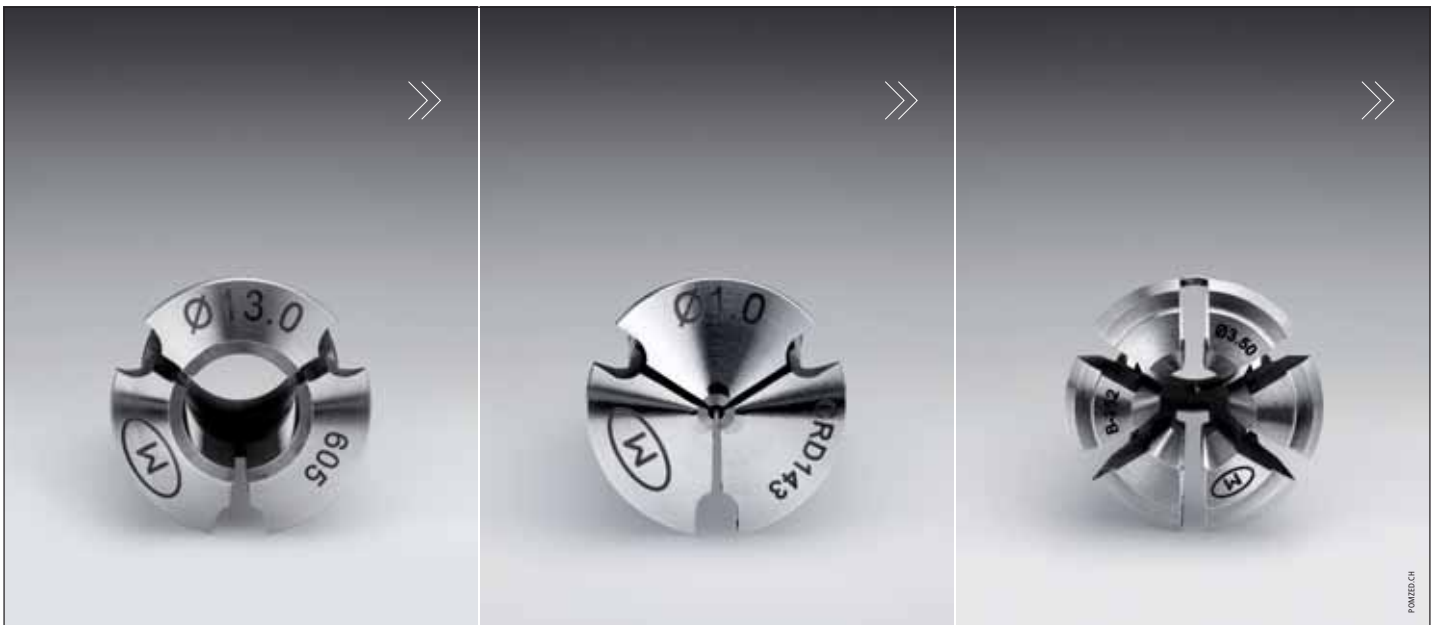
certified for DECO [a-line] by **TORNOS** 



Management of a collision on EvoDECO 10a

Jinfo

CH - 2900 Porrentruy, Switzerland
 Call +41 32 465 50 60
www.jinfo.ch



PM2010.CH

ROUTE DE CHALUET 8
 CH-2738 COURT
 SWITZERLAND
 T +41 32 497 71 20
 F +41 32 497 71 29
INFO@MEISTER-SA.CH
WWW.MEISTER-SA.CH



serge meister  **sa**

P R E C I S I O N C A R B I D E T O O L S

75 YEARS OLD - AND FULL OF OPTIMISM

Even though the economy has proven depressed in recent times, Blaser Swisslube believes in the future. And above all, in its own lubricants.



In Blaser Swisslube's new laboratories, Blaser Swisslube's CEO, Mr Marc Blaser explains how important this area is for the company.

For more than 75 years, Blaser Swisslube has been aspiring to deliver products that offer measurable added value whilst protecting people and the environment. Now in its third generation, the company has remained true to its principles.

The beginnings

The history of Blaser Swisslube dates back to 1936, when Willy Blaser developed a shoe polish that became a successful seller. Today, 90% of the company's activities are within the lubricant sector with some slight diversifications. For example, a multipurpose cleaner that has been biologically degradable for over 60 years, long before the 'organic' label even existed.

From Hasle-Rüegsau to a World Renowned Business

Forty years ago, Blaser Swisslube was only active in Switzerland. The fact that the Swiss customer base and sales area developed into a global business is something that stems from the succession of different generations to the company's leadership. When Peter Blaser took over the firm in 1973 as the second generation, Blaser enjoyed an excellent reputation as a Swiss company. Peter Blaser quickly realised that he had to invest in the lubricant sector if the firm was to adopt an international position. In 1978, the company entered the Japanese market and in 1986 a manufacturing facility was opened in the US, followed by China in 1996 and India in 2001. Today, Blaser Swisslube markets its

Presentation

environmentally-friendly products for all industry sectors in the 50 largest industrial countries of the world.

Serving comes before earning

"My father and my grandfather before him, both ran our company along this principle," says Marc Blaser. "Our initial consultation is free of charge for the customer. We work with them to analyse their individual challenges. Then, we provide evidence that the goals we have set are achieved during the test run. Only then do we earn the right to start supplying them and count them as one of our customers". Blaser Swisslube is constantly taking both current customer requirements and future application conditions into account and allowing this to feed into the development of their products. *"To be able to provide customers with simple, trouble-free operation, we use*

a lot of advanced technology in the development of our lubricants," says Marc Blaser. To ensure this, the Research and Development department is supported by the in-house technology centre. This means that Blaser Swisslube is able to test the entire range of lubricants for their performance and operational behaviour in real conditions.

The results of the tests ensure that the knowledge of the complex interactions between chemicals and mechanisms in the machining area is continuously being improved. This unique structure allows Blaser to work with customers to achieve their goals and requirements, in terms of their application, to the greatest degree possible. To optimise their complex manufacturing processes and to sustainably increase their productivity, customers are not looking for products alone. They expect increased value which is measurable, whether expressed in tool edge life, easy workpiece cleaning or in the number of finished



The new generation at Blaser Swisslube – Marc Blaser took over the reins of the company from his father Peter Blaser. Marc Blaser sees the challenge for his generation as using the right lubricant to reduce the customer's production time.



In the Technology centre, Blaser lubricants are tested one by one on the newest machine tools. *"Previously, the machine took three minutes to complete a drilled hole. Now it takes seven seconds."*

Headquarters in Hasle-Rüegsau – Research and Development are run from here. Blaser Swissslube made huge investments in this area in its anniversary year, expanding its research and development centre to cover 3,476m².

workpieces per time unit. They are also looking for a reliable partner. *"We want to be this partner,"* explains Marc Blaser. With their experienced after-sales service, the specialist in-house and external staff at Blaser has the expertise to make a significant contribution to increasing productivity in conjunction with the machines, tools and lubricants. *"If, through the right lubricant, we help our customers to take care of their tools and increase machine power, then it really pays off. There is great potential everywhere to offer customers added value. The more stringent the machining process requirements, the more impressive the results our liquid medium can offer,"* stresses Marc Blaser.

Blaser Swissslube's success is founded on that fact that customers can rely on the products, services and professional advice they receive. In this regard, the international company is typical of its region. It keeps its promises. The skilled, committed workforce has been working day in and day out to provide customers with the most valuable solutions, for the past 75 years.



Blaser Swissslube SA
Winterseistrasse 22
3415 Hasle-Rüegsau
Tel. 034 460 01 01
www.blaser.com

Walter Dünner SA

SWISS TOOLING PRODUCER

SINCE 1935

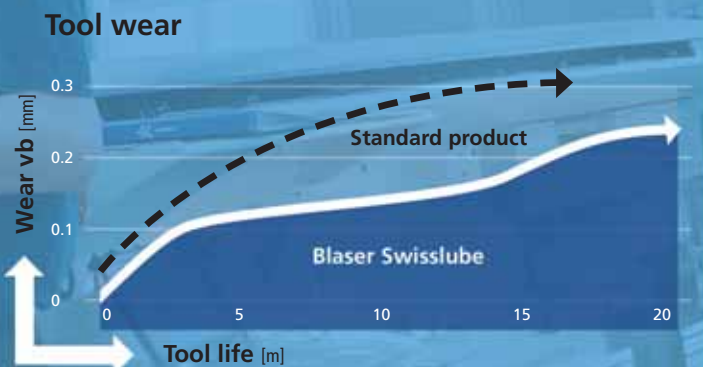
www.dunner.ch

High tech for best performance !



« Tests have shown that a performance increase of up to 40% is possible with Blaser cutting oils. »

Daniel Schär
Product Manager, Mechanical Engineer Dipl. Ing. FH



We are happy to serve you.

www.blaser.com

e-mail: liquidtools@blaser.com

Phone: +41 (0) 34 460 01 01

TORNOS DELIVERS LOGICAL SOLUTION TO UNICUT

Running its machine shop 24 hours a day to accommodate existing business and an influx of new contracts, Unicut Precision has now acquired two Tornos Gamma turning centres to service its influx of new business and resolve potential capacity issues.



With over 20 fixed and sliding head turning centres on the shop floor producing tens of thousands of turned parts each week, the Hertfordshire business is without doubt an expert in its field. With the recent increase in orders, instead of turning to its regular machine tool suppliers, the company opted for two new Tornos Gamma 20/6 turning centres.

As the core of the business is built around machining relatively small batches of components up to 32 mm diameter with a fast turnaround time, Unicut has previously opted for Japanese sliding head turning centres based on flexibility and ease of use. However, the

new Tornos Gamma series has completely changed the perception of Tornos turning centres for this Welwyn Garden City business.

As Unicut Managing Director, Mr Jason Nicholson comments: *"This business is modelled on 'logic of brand' and we didn't previously feel that Tornos machines were the best fit solution for our business. However, the new turning centres the company has developed have really opened our eyes to what they have available. When we were looking for new turning centres, Tornos offered the Gamma and it immediately struck me as a high capability machine that was a cost effective package."*

Presentation

The first 6-axis 20 mm diameter Gamma was delivered in July and it created such an impact that a second machine was installed in October. The high level of capability and flexibility of the Gamma's has the machines producing batches of 500 to 1000 parts from a host of materials that include steel, aluminium and aerospace alloys.

The ISO:9001 business is set up in departments to suit its vast array of component types with one machine shop tailored to turned parts up to 20 mm diameter, another unit for parts up to 32 mm and another department for machining complex parts beyond 32 mm diameter. The acquisition of the Tornos Gamma's has enabled Unicut to move work from its alternate sliding head machines in the 20 mm component department to deliver increased capacity.

As Mr Nicholson continues: *"Our business model is based upon supplying OEMs with impeccable service and quality. To win such prestigious long term agreements with OEMs we have to meet stringent criteria that includes contingency planning. This contingency planning includes covering a series of 'what if' scenarios such as machine breakdowns, staff shortages and so on. To this end, we always aim to buy*

machines in pairs in the event of such situations. It also gives us flexibility in our workflow scheduling. As the Tornos Gamma was a new step for us, we initially acquired one machine. The machine immediately proved itself, so we ordered a second machine."

These latest acquisitions take the Unicut investment level to a staggering £1m in seven months. In a two year period the company has now installed a fixed and sliding head turning centre, a Mazak 5-axis machining centre and the two Tornos Gamma machines. The 2012 investment plans are set to include a fixed head twin turret turning centre and a new component cleaning system. This investment level has now seen the company add seven new staff in 2011 to take the workforce up to 35 employees.

When looking for new machine tools, as always Mr Nicholson reviews the available options in the marketplace. On this occasion, it was the Tornos that delivered the ideal package for Unicut. As Mr Nicholson continues: *"The latest Tornos machines show the company has done its homework. The Gamma has all the best elements that are available in competitor machines and has taken it a step further by offering features only available in competitor*



machines that are way beyond the Gamma's price bracket. The Gamma is installed as a package that includes a Y-axis for rear end working, high pressure coolant (HPC) and a high number of fixed and driven tool positions. One example of the machine being a 'complete package' is the high pressure coolant system. On competitor machines a HPC system would be an additional extra at a cost of £9000, on the Gamma it is integrated into the machine and included in the price."

For Unicut the benefits of the Gamma are numerous. With regard to the HPC system, the integrated system on the Gamma is not only more cost effective than competitor products but it also sits comfortably within the work envelope as opposed to competitors bulky external units that take up floor space. Additionally, the Gamma incorporates a full Y-axis tool platen that offers up to 8 tool positions for front and rear end working. Of the eight positions, up to four can accommodate driven tooling. Alternate machines can offer the same system but in a price range way beyond the Tornos Gamma.

Additional benefits of the Gamma include the new guide-bushless system that reduces bar remnants and the associated material costs. This innovation not only creates a saving but improves rigidity, which in turn improves tool life and component quality. The guide-bushless system will note more aluminium parts being transferred to the Gamma's at Unicut. This is because sliding head machines inherently encounter quality issues when machining intricate aluminium parts. However, the Gamma with its ability to work as a sliding head or fixed head centre credit to the guide-bushless system, eliminates any issues and offers additional flexibility to Unicut.

"The Tornos Gamma's have slotted into our business very well and we are delighted with the machines. The Gamma 20/6 machines have a pulse generator for scrolling through complex programs, which aids the machine operator. Additionally, they fit into our structure of running simple or relatively complex parts 24 hours a day, which includes lights out machining.

The flexibility and capability versus cost was a major factor in the purchase of the Tornos machines. The machines have ease of access for the setters and the tool positions are close to the workpiece for maximum productivity levels. We have been extremely impressed with the amount of tool positions, the live tooling positions and the overall integration of elements that are optional extras on alternate machines. Tornos will no doubt be seriously considered in our machine tool acquisition plans in the future," concludes Mr Nicholson.



Unicut Precision Ltd
6 Tewin Court
Tewin Road
Welwyn Garden City
Hertfordshire
AL7 1AU

Presentation

THANKS TO THE MERGER OF TWO SPECIALISED COMPANIES (FHAR-DREHTEILE AND RITZ) A FULL RANGE OF TURNED PARTS CAN NOW BE OFFERED BY RITZFAHR GMBH

CLASS MEETS MASS

"We are experts when it comes to turned parts". This statement from Bruno Fahr, sales director at the newly founded Ritzfahr GmbH, conveys a strong sense of self-confidence. This confidence is well-founded and based on the decades of experience and expertise gathered by the two companies operating in different market segments. Fahr-Drehteile can look back over 100 years of tradition in the field of precision turned parts manufacturing, while Ritz has specialised in the economic mass production of standard turned parts since 1960. Since November 2009, both companies have operated under the umbrella of the Escha Group, offering a hitherto unparalleled range of products and services in the sector. The new Delta range of Tornos CNC machines, which the company has used to optimise its manufacturing strategy, have contributed greatly to this.



Good reason to smile (from left to right): Bruno Fahr and Klaus Meier from Ritzfahr, and Siegfried Broghammer from Tornos. The new CNC machines in the Delta range have been an instant big hit.

A better understanding of the success being enjoyed by the new company alliance can be gained by taking a glimpse into the past. Fahr Präzisionsschraubendreherei was founded in 1911 in Weil am Rhein, Germany and quickly began specialising in the production of highly complex and high precision products, including products for the watch industry and applications for medical and high frequency technology. The company introduced CNC technology in 1995, a field which it has been consistently extending ever since.

Ritz-Drehteile was founded in 1960 in Efringen-Kirchen as a turning shop and specialised in the economic production of mass turned parts from the outset. The customers for these parts predominantly came from the automotive sector and the electrical/electronics industry. One of Ritz's most important

customers was the connector and housing specialist Escha Bauelemente GmbH. To ensure that a close relationship was maintained with this important supplier, Dietrich Turck, CEO at Escha, joined Ritz in 2006 as a partner and took over the company. In 2009, when Fahr then ran into financial difficulties during the global economic crisis, Dietrich Turck recognised the potential of merging the two companies. As such, he decided to purchase Fahr and bring the two companies together at the Efringen-Kirchen site to create the new company Ritzfahr GmbH. This was an extremely courageous decision, as it was difficult to find anyone willing to invest in one turning shop during the crisis, let alone two. Following some major efforts, this courageous entrepreneurial step already began to bear fruit in 2009. However, this success was not achieved by random chance. Instead, it was



From the simple, standard turned part through to the highly complex workpiece, Ritzfahr GmbH is equipped in the best possible way with Tornos Delta CNC machines.

Siegfried Broghammer from Tornos is regularly on-site to discuss new technical challenges with Klaus Meier

the result of a professional merger of two cultures and an intelligent investment strategy. The expertise in mass turned parts manufacturing and the technological know-how in the production of highly complex turned parts were harmoniously combined and integrated into new structures. A key component of this strategy was to replace the old, cam-controlled machines with modern CNC machines from Tornos' Delta range.

Investing more intelligently as a way of producing more economically

The first step in the transformation was to perform a thorough analysis. The goal here was to gain a clear picture of the existing customer base and the scope of parts covered, as well as to define potential target customers and markets. On the one hand, the major customer ESCHA meant that there was always demand for a certain basic volume of mass production turned parts. However, the trend with these mass produced turned parts was heading towards smaller batch sizes, ever increasing product variance and the need to produce custom solutions at short notice. These were requirements which could not be met using the existing cam-controlled machines. As such, it soon became clear that the company would need to make the switch to CNC technology as quickly as possible.

Klaus Meier, one of the pioneers of CNC technology at Fahr, was given the complex task of achieving the best possible results with the budget that had been put in place. The objectives were to maintain the efficiency of the cam-controlled machines from a cost perspective, but to become significantly more flexible in terms of production and equipment, to be able to split large orders without generating additional costs, to ensure simple programming, minimise tooling costs and so on. Meier held intensive discussions with virtually every well-known machine manufacturer during his research. Given his target specifications and the problems he was facing, he could just as easily have been from any of the major

automotive manufacturers, as one of the key issues he needed to grapple with was whether to invest in two machines with advanced technology or multiple simpler and more affordable machines.

This process went on for several months, as the most diverse parameters had to be examined and assessed. These included both the existing and future target range of parts, the logistics involved, the existing tools and equipment, the qualification and motivation of the workforce, the space available, as well as both the organisation and implementation of the actual switchover phase. After all, it was vital that production remain up and running during the switchover, since customers still needed to be supplied with parts on time. Several machine manufacturers were forced to give up when confronted with such complex tasks and challenges, quickly withdrawing from the group of potential providers. When all was said and done, only three manufacturers remained, and Tornos was ultimately awarded the contract. The Swiss company supported the procurement process from the outset and was also the only provider that was capable of integrating both technologically advanced machines and simpler models into the existing scenario. In contrast with other manufacturers, Tornos set itself the goal of providing the market with machines capable of precisely meeting customer requirements while also offering excellent price-performance. Since this time, Tornos has not only enjoyed an excellent reputation in the top performance segment, but also continues to set standards here with its DECO a-line and e-line. The Swiss manufacturer also went on the offensive in the mid-range price segment a few years ago with its new Sigma range. And its Delta machines, in the lower price segment, offer the greatest possible precision and flexibility for relatively little money. Following intensive discussions and consultations, the decision was therefore taken to purchase seven Tornos Delta machines.

The machine developed by Tornos maintains the high quality, precision and reliability standards the company is renowned for. The machines are built

Presentation



in cooperation with Tsugami in Japan, a company which itself enjoys an enviable reputation and has many years of experience in the construction of machine tools. The Delta range is supplied with 3, 4 or 5 axes and bar capacity diameter ranges of 12 mm or 20 mm. These are simple, easy-to-operate machines for standard turned parts. In their design, particular emphasis was placed on allowing easy accessibility and fast tool changes, as well as ensuring clear vision of the machining process.

The machines are delivered with a minimum of options within 2 to 4 weeks and can be commissioned immediately. The programming is performed via simple standard software and requires virtually no training. Given their affordable price, the machines are ideally suited to the extremely economical production of simple parts. From the perspective of Klaus Meier and the experts at Ritzfahr, they therefore met the required criteria better than any other machines. However, since the machines had only just been launched in the market at the time and there were few references available, Klaus Meier was somewhat concerned at first that everything would work as it was supposed to. Although stressful at the time, following the resounding success of the product launch and the fact that production was able to be immediately ramped back up to full capacity, he can now reflect on this time with a sense of accomplishment and a smile.

From investment banker to lathe expert

Bruno Fahr, sales director and one of the managers at Ritzfahr, used to work for a Swiss investment bank over 15 years ago, a time at which investment banks still enjoyed a good reputation. He now devotes this pragmatic and entrepreneurial way of thinking to the new company. Since he is always keen to examine processes holistically, he was a big supporter of the seven Delta machines. Not only do these models offer an extremely low total cost of ownership thanks to their low energy consumption and minimal maintenance costs, the costs of documenting and tracking production processes are also significantly lower than on more technologically advanced standalone machines. Added to this is the fact that the tools and devices are all uniform, allowing them to be used across all machines, and that the simple programming is the same for all machines and can be performed by any member of staff. This helps instil a sense of teamwork and encourages employees to move away from attitudes such as "that's my machine and I'm not interested in anything else". Members of staff work in rotation here, learning

about new tasks and facing new challenges. This also helps motivate the workforce and has made Ritzfahr very popular among young people and those seeking a trainee position. After all, optimising production is only the beginning. The goal now is to optimise the entire production process, thereby ensuring that the company is ready to face the challenges of the future and compete in the international arena. Internal logistics ranging from the receipt of incoming goods to the dispatch of cleanly packaged parts is currently being realigned. Similar changes are also being applied to tool management and the tool store, quality assurance and the materials warehouse. The seven Delta machines from Tornos offer important advantages here as well, impressing not only with their low space requirements, but also their uniform, end-to-end design. Thanks to the extra flexibility they offer, completely new orders can be taken on and profitably produced. Another growing market segment is polished turned parts, which are fully turned, slotted, threaded and leave the machine already polished. Even custom finish options can now be produced in small series for customers at a very attractive price. With its Delta machines and its partner Tornos at its side, the newly founded Ritzfahr GmbH considers itself perfectly equipped to handle future challenges and is confident that it will continue along its present growth course over the next few years. Replacing the old cam-controlled lathes with the new machines from the Tornos Delta range has definitely paid off for Ritzfahr, and the company's positive experiences in ongoing practical applications have also impressed the investor.



Ritzfahr GmbH
Beim Breitenstein 22
D-79588 Efringen-Kirchen
Germany
Tel: +49 (0)7628 / 9118-0
Fax: +49 (0)7628 / 9118-89
www.ritzfahr.de
info@ritzfahr.de

INNOVATIVE SOLUTION FOR



TORNOS 

DELTA 12 / DELTA 20

Standard configuration

Bimu configuration

Presetting same as Deco 10 single-spindle

2 additional tools!
(8x8 or 10x10 mm section)

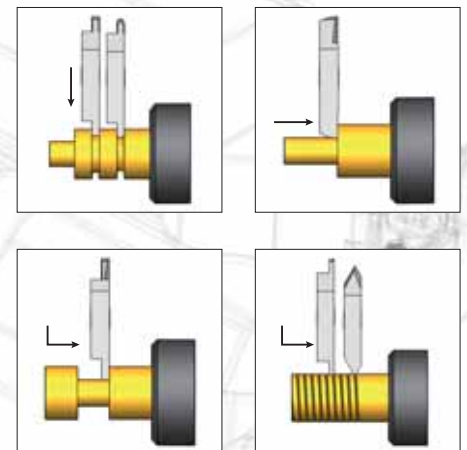
INNOVATIVE SOLUTION FOR



TORNOS 

GAMMA 20

Turning in counter-operation



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