

# DECO MAGAZINE

17

2/01

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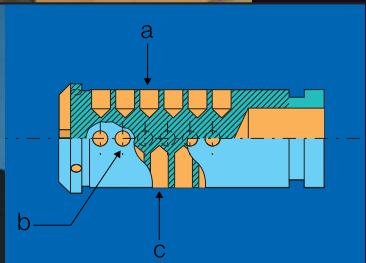
Gestion  
professionnelle  
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Neue  
TB-DECO 5.05  
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MULTIDECO 32/6 i  
A multispindle  
turning cell all  
in one!

RIELDA...  
Tecnologia e  
fantasia

Den första  
presentationen  
av DECO 42 f





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**IMPRESSUM  
DECO-MAGAZINE 17 2/01**

**Industrial magazine dedicated to turned parts:**

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# TORNOS has been floated on the stock exchange...



Dear Clients,

Our company has been quoted on the SWX – Swiss Stock Exchange in Zurich from the morning of 13th March.

For TORNOS, this operation marks the end of an era, which has seen the company grow from a local and family-run business to a majority yet family-type shareholder, before being taken over by an investment company by way of a «leverage buy-out».

All these changes, paving the way towards a solution, which will guarantee the future existence of the company through an ideal financial structure, enabling the company to develop further, have culminated in the flotation of TORNOS on the stock exchange.

The funds the company raised by this operation amount to approximately CHF 100 million and form a new basis to exploit the company's present and future potential.

This financial backing now provides the structure needed to put the company in a position to pursue its growth. In other words, this new basis will allow us to supply you with products, which meet your requirements even better.

Even if the stock exchange collapsed on the 13th March, thereby dragging the TORNOS stocks down, the fact of even having been able to be launched on the stock exchange is real proof of the company's force and potential. Even if the stock exchange were to fluctuate in the short term, we look at things from a medium to long-term view and are quite convinced that investors will always come out on top with TORNOS shares.

Our results have been tried and tested for more than 4 years (average increase in turnover of 23 % per annum and average increase in EBITDA of more than 30 % per annum), our customer-base is continuously growing, our product ranges are constantly being updated and developed, our production site is permanently undergoing upgrading – these are, of course, not as «exciting» as certain fashionable trends, but in all events, these are solid values upon which our company has been able to grow over these last 4 years and which will allow us to continue developing in a state of harmony.

You know that TORNOS will continue to listen to you and continue with its innovations so as to launch market solutions perfectly tailor-made to your current and future requirements.

We have been working to gain and develop our customers' confidence for years – now, our shareholders and the stock markets are new elements, to which we have to demonstrate our capabilities...

The launch of our two latest products, for which demand has so far been promising, i.e. the DECO 42 f and MULTIDECO 32/6 i scheduled for the autumn of this year, is the best proof of our ability to supply the market with that little extra something...

Will this trigger a reaction on the stock exchange?

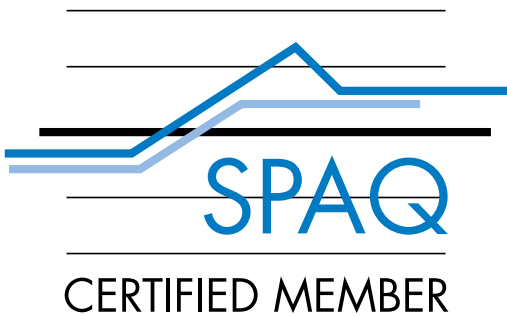
Anton Menth

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# Professional management of the sub-contracting process

## Interview with Mr Gilles Berdat.

Nowadays in a company like TORNOS with continuously and rapidly changing production schedules driven by a make-to-order policy, the role of sub-contractors is vitally important. To ensure that this key element of just-in-time management and company response quality never fails to deliver, TORNOS has initiated a "quality and sub-contracting" programme. To discuss this, we arranged an interview with Mr Gilles Berdat, the man in charge of manufacturing quality and the supply chain. He kindly agreed to provide us with an insight into this important project.



**Mr Berdat, it's a pleasure to meet you. Would you be kind enough to summarize for our readers the background, details and underlying objectives of this new development?**

Yes indeed, and thank you for coming. We have actually been working on this project for some considerable time. We have had good experience with setting up and managing modular production units ("islands") which operate in accordance with a "client-supplier" logic which is identical to the one encountered in the sub-contracting sector. In other words, we are looking to benefit from our in-house experience by applying it in a professional manner to our approach to sub-contracting, thereby eliminating any scope for dysfunctional operation.

**Are you in fact saying that the current approach towards sub-contracting actually leaves a bit to be desired in terms of quality?**

Indeed, we are absolutely committed to working methodically in a

way which better integrates our sub-contractors. After all, they run operations to supply products which impact directly on the quality and attention to detail in our finished products. The underlying aim in this process of integration is to ensure that the quality of components and/or sub-assemblies arriving beside our production lines fully satisfy our requirements (which are of course ultimately the same as those of our own clients).

At the present time, the quality of components manufactured by our sub-contractors is very good. Unfortunately, subsidiary operations such as packaging into consumer units, the speed of two-way communication, identification, traceability etc. still leave much to be desired. These deficits have an obvious knock-on effect on the overall quality of the goods they supply to TORNOS.

**If I have understood you correctly, you wish to formalize procedures to improve the quality of these aspects, but you are afraid of "encumbering" the workload and perhaps drowning your sub-contractors in red tape and paperwork?**

Procedure is one of those words which tends to make everyone fear the worst, suggesting as it does impaired dialogue, inflexibility etc.. However, what we would like to establish is an organizational structure to which both parties consent: on this basis, we could all benefit in a large number of ways, for example:

- ◆ reduction of work in progress for both parties

- ◆ smooth traffic flow between our sub-contractors dispatch staff and availability of products and components beside our assembly lines
- ◆ simplified recording, distribution and management
- ◆ traceability and management across the board
- ◆ prompt exchange of information (virtually instantaneously via e-mail)
- ◆ rapid and dynamic response, precisely tailored to requirements
- ◆ greater autonomy for the sub-contractor, combined with complete mutual confidence.

For our sub-contractor, for example, if corrections have to be made to a product after a defect, has been identified, or following product development or a modification, feed-back on a given component is instantaneous and our partner is then able to correct production immediately.

**To be more specific, what are the real benefits for TORNOS in all of this?**

The principal aim for TORNOS is to have reliable partners on whom our company can count at all levels:

- ◆ consistently reliable product quality
- ◆ supply guarantees, all deadlines achieved and documentation quality
- ◆ elimination of the need for inspections (e.g. incoming goods)
- ◆ appropriate packaging in accordance with TORNOS standards
- ◆ precise identification of stocks and work in progress



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The present

◆ suppliers who are fully conversant with all of our product versions.

**At the same time, are you not concerned about perhaps putting off some of your sub-contractors with this increase in administrative workload ?**

I agree that, when viewed from the outside, what I have to say may appear contradictory, but our experience with modular production units has demonstrated that it is entirely possible for a relationship of "supplier – sub-contractor – partner" to work and be managed on a virtually paperless basis. The way the non-compliance and waiver reports are linked into product improvement loops and the continuous improvement in quality to which this gives rise create an information system which all parties enjoy working with.

Our objective with this procedure is to assure the reliability of our supply line while at the same time improving the quality standards achieved by our partners.

**What action have you taken to implement these measures ?**

Specialist colleagues were recruited recently and are now receiving training in this area. Their job will be to maintain dedicated lines of communication with our sub-contractors. This will entail establishing and maintaining regular contact, accompanying each supplier at all points down this process, and training them whenever a knowledge deficit is identified.

We are firmly committed to regarding our sub-contractors as business partners with whom we wish to establish a privileged relationship as a platform for growth.

TORNOS will be auditing and evaluating its potential sub-contractors with a view to identifying their training needs, and to bridging these, in order to assure TORNOS of quality output at all levels:

- ◆ component quality
- ◆ packaging quality
- ◆ identification quality
- ◆ traceability quality
- ◆ organizational quality
- ◆ relationship quality.

**Do you mean to say that TORNOS will be imposing a certification process on its sub-contractors ?**

No – the important thing for us is to establish mutual respect for what I would describe as a "spirit of the standard", and to establish a real partnership. We see TORNOS

growing on the strength of our sub-contractor business, to which end we have to help them build on their expertise to ensure it is firmly in line with our system, but we have no wish to impose any certification process on them.

At present, and this is regrettable, the best efforts of some of our sub-contractors – and very capable ones at that – are impaired or indeed wiped out by problems relating to packaging or transport.

**Viewed in global terms, what is the company policy towards sub-contracting ?**

This is not something we have ever made a secret of: we are aware in the company that all our strategic components require specialist expertise and/or very challenging production facilities, and it is therefore difficult to find these outside the company.

All components which do not fall into either of these categories, and a not insubstantial volume of these has a high added value content, lend themselves to a sourcing solution, i.e. they can involve sub-contractors. We will be evaluating our sub-contractors in accordance with the same criteria as our mo-

dular in-house production facilities with the ultimate objective of obtaining the best possible combination of quality/price/lead-time.

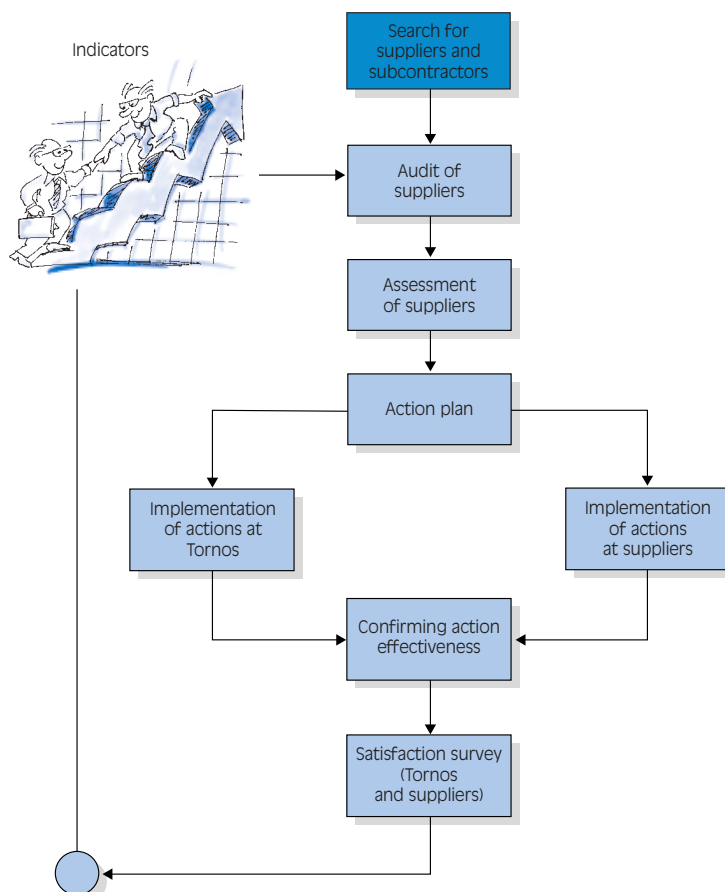
**What organizational changes in TORNOS will that process entail ?**

As I mentioned earlier, two members of staff will be accompanying our sub-contractors at every stage of the improvement process. There will also be a new person responsible for sourcing from sub-contractors and a quality officer working beside the assembly lines. The aim of this additional staffing is to inject greater dynamism into the lines of communication, ensuring that information flows effectively to and from the supply units.

**That means that a lot of people are going to be involved. Is it not rather difficult to add all these staff positions to an organization which, at the end of the day, already functions perfectly well ?**

We have engaged in an improvement loop in order to improve our productivity and to ensure the high standards of quality which our

Program "Quality and subcontractors"



# Professional management of the sub-contracting process

Interview with Mr Gilles Berdat.

clients have a right to expect. These are fundamental and primary objectives here at TORNOS.

**Mr Berdat, thank you for giving us such a detailed explanation.**

### Conclusion

The general trends observed in current industrial processes can be found in operation at TORNOS, i.e.

- ◆ companies are willingly externalizing all non-core activities
- ◆ as a consequence, suppliers are becoming progressively more important
- ◆ which means that suppliers who operate competitively have a secure future
- ◆ contracts are becoming increasingly global and long-term in nature
- ◆ new technology makes competitive tendering much easier to manage

◆ and greatly improves information flows (e-mail, internet, etc).

The product offered by the sub-contractor is taken in overall form (the product and all that surrounds it in terms of service and associated phenomena). This key development in the location of a product in an entire chain of suppliers is compelling companies to revisit their assumptions about business relationships:

- ◆ Purchase of solutions.
- ◆ Joint training towards a shared objective.
- ◆ The provision of equipment, personnel and savoir-faire.

◆ Greater professionalism in terms of 2-way exchanges.

- ◆ Lines of communication.
- ◆ Creation of real partnerships.

**The philosophy of TORNOS could perhaps be summarized in the following manner:**

- ◆ Lasting commitment to dynamic partners.
- ◆ Total confidence in the expertise and skills of these partners.
- ◆ Relationships firmly rooted in a spirit of "Win-Win".
- ◆ Transparency of information and 2-way exchange.

### Inset Sub-contracting at TORNOS in a few figures

*(estimates based on financial results for the year 2000)*

Estimated turnover with suppliers (TORNOS products):	CHF 60 mill.
Number of sub-contracting companies:	100 approx.
Geographical origin:	Mostly in the Jura region

Interview

## TORNOS website...

The [www.tornos.ch](http://www.tornos.ch) website has experienced for one month the following amazing figures:

- ◆ 2 Gigabites (2000 Mb!) of downloaded material
- ◆ 8000 unique visitors per month, i.e.
- ◆ 260 unique visitors per day!



## Now, TORNOS offers you the possibility to benefit from these.

A new section will be launched within the web site «**Looking for subcontractors using DECO and MULTIDECO ?**»

This section, real high precision turning world entrance gate, will offer you the possibility to put

- ◆ Your company name
- ◆ Details: Name  
Address  
Contact  
Phone  
Fax

- ◆ A link to your website (onto the most relevant web page)
- ◆ 2 lines of information regarding your company

If you are interested in using this medium, simply send us an e-mail with the items of information as above.

Couldn't be easier and it's free.

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# New macro versions for the

# TB-DECO 5.05

With the launch of the TB-DECO 5.05 (version 7), some macros were optimized so as to achieve even faster and more flexible programming. The following macros underwent revision :

Single spindle, sliding headstock machines



## 1. G903: Tool indexing

### Improvement

The macro G903 allows optimum tool indexing by way of circular G2/G3 interpolation. In previous versions, this macro was restricted purely to indexing tools for thread chasers 1 & 2, i.e. axes X1/Y1 and X2/Y2. This limitation has now been overcome and the macro G903 enables tool indexing for all program operation lines. For example, it is possible to program the indexing of tool positions for end machining or of tool positions for counter operations.

### Limitation

The G903 works out an ideal path by circular interpolation so as to change from one tool position to the other. This is why **the current tool and tool being indexed must be within the same tool group.**

What is understood by tool group are those tools, where the tens identifying the support number are the same.

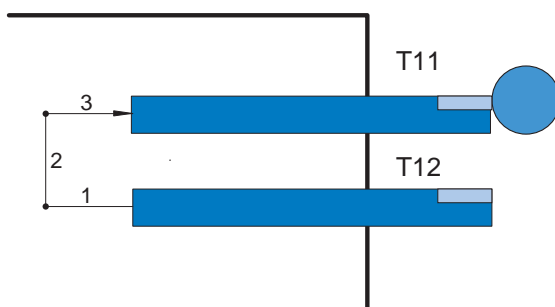
G903 POSSIBLE	Current tool support	Tool support undergoing indexing
YES	T31	T33
NO	T33	T41

### Why G903 ?

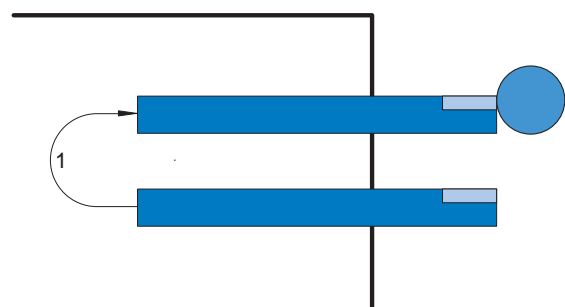
Using the G903 saves time during programming and allows for improved management of the machine's energy resources. Indexing not generated by G903 requires 3 accelerations and decelerations, whilst the G903 only requires one acceleration and deceleration. In such cases, the mechanics (recirculating ball screws, guides) will be less tried and tested (see diagram below).

### Advantages

- ◆ The G903 automatically takes account of tool geometry. If the tool undergoing indexing has a different geometry to the current tool, a linear movement will automatically be created before the circular indexing movement. Consequently, the indexed tool will find itself back in precisely the same position as the previous tool.
- ◆ Indexing the tools through a circular movement considerably reduces the risk of collision, unlike indexing by way of linear interpolation. The radius creates a natural clearance, thereby avoiding collisions.



Without G903



With G903



## 2. G977: Drilling – Stripping

### Addition of an additional parameter – P15

The G977 drilling–stripping macro now has an additional parameter - P15. Using this optional P15 parameter, it is possible to input a feed for returning the drill back into the

hole after stripping and clearing. The cycle now executes the return movement in the hole in G1 with P15=F(feed). If P15=0, return to the hole will be in G100. By default P15=0.

## 3. Database: Supports 91-94

Tool supports 91, 92, 93 and 94 have been added to the machine databases for the DECO 7/10, DECO 13, DECO 20 and 26. These supports are automatically linked to axes X3 and Z1.

The use of these new supports is as follows:

**A) Programming a machining operation with the end machining tool by combining axes X3 and Z1 (see tip in DECO MAGAZINE No.13)**

One of these supports (for example 91) may replace support 39 described in the article of Deco Magazine No.13.

**B) Programming an external thread whirling on position T33 on DECO 10.**

Where these supports are not, as yet, entered in the databases, then all one has to do is:

1. open the standard database (e.g. V4\_10\_20.dbm) and select the supports tab
2. secondly, open the database to be updated
3. use the mouse to drag & drop the standard database to the database being updated with these new supports, which will be added to the existing ones.

**2. Only request speed synchronization. This function is controlled by variable #3004, which acts in a modal way on function M418. If #3004 is at 1, then phase synchronization is carried out, otherwise, if #3004 is at 0, then only the speed synchronization will remain effective.**

◆ **Solution No. 2 is more productive and therefore recommended.**

Synchronization management by way of variable #3004 is operational for all machines of the MULTIDECO range.

#### Reminder:

◆ Phase synchronization is only necessary where the part is retrieved on material profiled with a profiled counter-spindle clamp or if profiling has been executed by polygon operation on spindle S1.

◆ Speed synchronization is sufficient for the majority of parts. By default, the variable #3004 will be zeroed.

#### Warning:

When working with profiled material (for example, 6-sides), if the machine has a single fixing device on one position and this holding device is used for a cross machining operation, it will be impossible to then pick up the part in counter-spindle mode using a profiled clamp. In such cases, even by programming #3004=1, the angular reference is lost during fixing because of spindle uncoupling.

### Multi-spindle machines



## 1. Synchronisation management S4 by the variable #3004

Variable #3004 (phase synchro authorization) is used to manage the synchronization of the counter-spindle. Synchronization is controlled by function M418. A distinction is then made between two states of synchronization:

- a) speed synchronization
- b) phase synchronization

During phase synchronization, the main spindle S1 is physically displaced by a certain angular value.

This displacement is executed almost instantaneously. At this stage, it is impossible to proceed with thread chasing on S1. The result is an increase in pitch as a result of the angular displacement of S1. To get around this problem, we suggest the following two tips.

1. Synchronize operations so as to proceed with thread chasing prior to M418 synchronization.



# New devices...

Every three months, for the past 4 years, we have presented our readers with new devices and equipment designed to increase machine capabilities and meet specific requirements. This edition features two innovations for the DECO 13 a and b.

## Option 5465

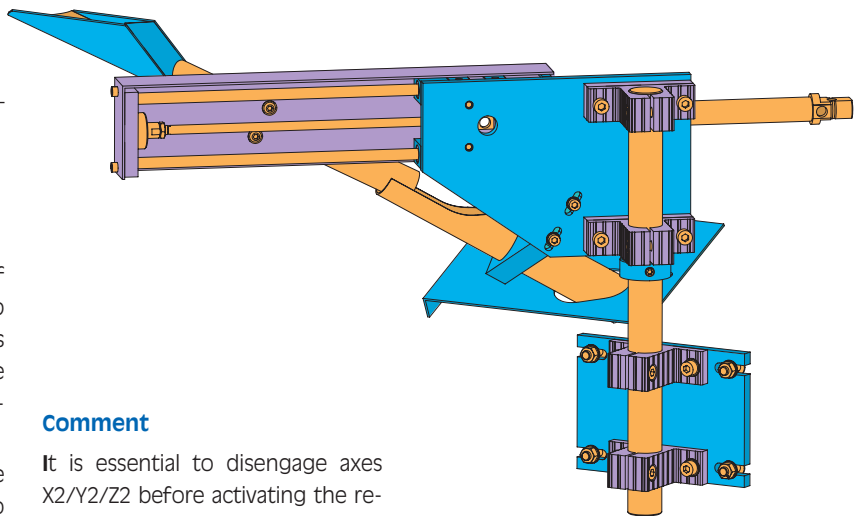
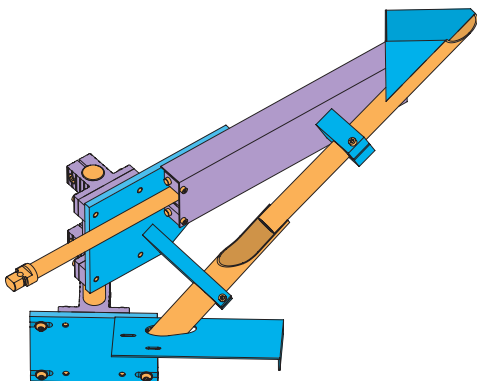
**Device for recovering parts using the guide bush**

### Application

This device recovers parts by way of the guide bush for the DECO 13 b and DECO 13 bi machines. It has been designed to recover single parts and requires no counter-operations.

The collection of a part by the counter-spindle and feeding it to the conventional recovery trough has wasted a lot of time. This new unit picks up the part that is being cut through the guide bush, thereby dispensing with the conventional form of pick-up.

This unit is also quite capable of recovering very small parts or parts, which cannot be picked up by the counter-spindle on account of their shape.



### Comment

It is essential to disengage axes X2/Y2/Z2 before activating the recovery device. If they are not disengaged then a collision will occur between the latter and tool positions T31-T33.

There are two ways to disengage the X2/Y2/Z2 system, i.e.:

a) Disengage X2 and Z2 where there are no tools on positions T31 to T33.

b) Disengage X2/Y2/Z2 if tools are present on T31 to T33.

As regards cutting a non-supported part, a dog point will be located on the cutting face.

### Compatibility

This device is specific to the DECO 13 b and bi. It can quite easily be adapted and dismantled, depending on the parts being machined.

### Technical properties

<u>Types of control:</u>	M functions M160 advances from the recovery device. M161 goes back from the recovery device.
<u>Travel:</u>	250 mm
<u>Types of parts:</u>	Minimum diameter: 1 mm Maximum diameter: 16 mm Minimum length: 1 mm Maximum length: 100 mm



**Option 3350**

**Milling/drilling unit, with rotation axis perpendicular to the spindle axis, for assembly on an end device.**

**Application**

This device increases the cross machining possibilities on the DECO 13 a by adding a further position at 90° to the turning tools fitted to the screw dies.

It is now possible to proceed with machining using three cross tools, engaged simultaneous (a, b and c).



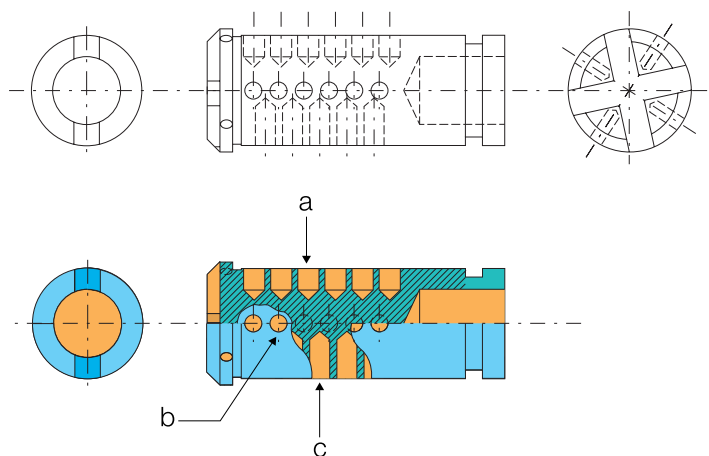
**Comment**

This device is provided as standard for turning tools fixed in an ESX 12 collet (standard DECO). The addition of a bearing and shaft (supplied as standard with this option) means that this device can be fitted with a sawing machine.

This device requires option 3200 (S3 motorization).

**Compatibility**

This new option is available for the DECO 13 a



**Technical properties**

Assembly position:	T34
Max. tool diameter:	7 mm
Cutter/saw diameter:	Internal 10 mm External 50 mm
Drive:	Synchronous belt

In our next edition we shall give you details on option 5480, – a fire-proof device – and its interface (option 5485). This latest feature is intended for all the DECO machines.

TORNOS strongly recommends that the fire-proof device should be installed in all situations.



# RIELDA

## Technology and fantasy In true Italian style...

The first time I met the Rielda company, after having crossed the High Latium mountain range in central Italy, I immediately had the feeling that the scene before my eyes resembled more a tourist attraction rather than a place of work.

My confidence in our sole agent for the region, Mr. Scassellati, started to waiver, when suddenly, I was confronted with the sight of two extremely elegant buildings on the side of the mountain, right in the middle of the region.

It was, and still is, the headquarters of a company, which, from all aspects, was soon to become one of the most important clients of TORNOS, not only on account of its size, but above all because of the technology being developed there for highly interesting production applications executed on DECO 2000 lathes.

For me, this foreword justifies the first question, which I spontaneously thought of when meeting the owner and chairman of the Rielda company, Mr. Alberto LORETI.

*May I ask you, Mr. Loreti, why you decided to establish a company at Antrodoco, in the province of Rieti, which, whilst it is stunning country from a tourist point of view it is rather cut off from the mainstream – if not well isolated from the large companies in Latium?*

The reply summarizes the spirit and soul of this company, which is totally geared towards productivity, innovative technology and attaining ever-greater targets.

**M.** Loreti: If I can make a historic comparison, I would refer to the Bernese region in the Jura mountains which, in times gone by, allowed its highly industrious and

inventive inhabitants to produce the first watches, by exploiting their isolation to develop new ideas and projects in the calm of a setting, where the pervading serenity was highly conducive to concentration.

One day I had a technological inspiration and immediately thought of getting away from the pressures of the city and intrusions of a place, which today goes hand in hand with stress and tension, and where I could develop my ideas and produce the product I had conceived and still strongly believe in. Now here I am in Antrodoco which, just like the Swiss Jura, will provide me with the necessary calm and allow me to concentrate on my aims, without having to worry about distractions.

I said to myself, "If my idea is successful, the product will find its way in the market irrespective of the place where it is produced.

The whole Loreti family took part in the project and committed themselves to its operation. Hence the origins of the name Rielda which has been produced by the initials of Riccardo, Elisabetta and Dario (the three sons of Mr. Loreti) and with this name, there also emerged an industrial reality, which is now a quality world leader in its sphere.



### The company

The Rielda company was founded in 1990 with an initial production shop of 500 m<sup>2</sup>, which was followed in 1995, with a second production shop covering 3000 m<sup>2</sup>. The third establishment is scheduled for the end of next year.

At present, the Rielda company employs 40 people in the administrative, commercial and production engineering divisions, including workers and staff on the production lines.

Since its establishment and despite its young age, the company has enjoyed unrivalled success by putting everything into high production technology, thereby meeting the long-term targets earmarked at the outset.

The determination with which it approached the market and its conviction of the quality of its own product enabled Rielda to make immediate inroads in all sectors, by achieving an extraordinary production rate of 1,000,000 parts per annum.

### The product

Rielda produces reprogrammable high security locks, which are mainly used by the banks, communications companies, service companies, industries, aircraft companies and the military sector.

Nowadays, the distribution of this particular type of reprogrammable cylinder for security locks is such, that there are no limits to its areas of use.

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Private dwellings are also a growth market owing to the high level of security achieved, compared with conventional locks.

The Rielda cylinders and locks have unique properties throughout the world and are patented in 64 countries. This is an innovative product, which guarantees security and renewal.

The cylinder reprogramming facility allows the owner or user to change the key being used, simply by canceling the use of the previous key – and this without having to call in outside services.

This is absolutely essential in all those instances where cylinder security is breached, such as the theft of the key, loss, temporary surrender, lending a key which is not returned... where all such cases would entail an immediate change of cylinder.

The Rielda product enables rapid changing of the house security locks, which the owner can do quite independently. He can standardize the cylinders; use a single key for all the locks, even if they are of different types, and can change this set-up at his option or if it is necessary.

One can carry out an unlimited number of code changes. The keys are produced as standard kits comprising a spare gold coloured key and general-purpose keys.

**Production process**

Research & Development represents one of the vital departments in the Rielda company. The laboratories are fitted with the latest equipment and apparatus for constant testing and quality control.

The current, highly automatic production process at Rielda is managed according to the latest criteria.

Considerable investments in machinery and numerically programmed production centers, as well as in multi-axis, sophisticated and high-performance machines, enabled this company to produce goods of exceptionally good quality and to triple its production capacity, whilst pursuing continuous development and innovation of its

processes and hence, its finished product.

The meeting between Rielda and TORNOS – especially concerning the DECO SYSTEM - led to the recent development of very close technological co-operation, which is now manifested by the company's great execution flexibility, extensive production capacity, high-speed production processes coupled with efficiency and precision, whilst ensuring a high quality standard.

The Rielda – DECO combination gave rise to a synergy, which culminated in the financially rewarding development and production of certain parts, which, up to the time of this meeting, could never have been completed on automatic lathes.

Thanks to the intuition of Messrs. Alberto and Riccardo Loreti, the vast flexibility and enormous potential offered by the DECO system, which, moreover, have not as yet been fully explored, meant that the Rielda company was finally able to produce important parts by dispensing with costly in-house reworking and materials handling operations, which frequently upset quality consistency and entailed losses in efficiency. The investments made led to rapid returns.

It can therefore be unequivocally stated that the hand of TORNOS, guided by the Rielda spirit, is holding the trump card for both companies, which confirms the characteristics of

- ◆ quality
- ◆ efficiency
- ◆ flexibility
- ◆ productivity
- ◆ universality

for both their respective products.

I personally, am convinced that the continued market demand for Rielda products will lead to closer co-operation with TORNOS, with the common aim of increasing the efficiency and quality of the companies' respective products.

In Rielda, TORNOS has not only found a major client but also a true partner who, through his high level of technology, allows us to exploit and demonstrate all the vast

opportunities offered by the DECO system.

Besides which, locks with reprogrammable security cylinders are not only a brilliant idea, but represent the rewards of professionalism of the personnel working at Rielda, coupled with on-going research, training, the dedication of the production lines and the high technological content.

Rielda is a highly dynamic company whose activities are directed towards market requirements and



continuous expansion. With its devoted commitment to improving its production, its quality controls, its research into innovation, Rielda has what it takes to be permanently at the forefront...

Enzo Pitton  
Commercial Head  
TORNOS Technologies Italia



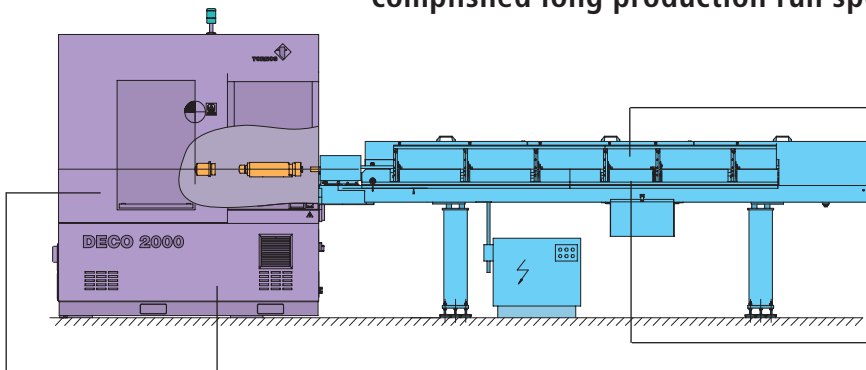


# MOTOREX-FOCUS:

So that your DECO runs  
and runs and runs...

**Continued care and maintenance contribute to lower operating costs and enhance the reliability of a machine tool.**

**If we take as our example, a DECO 2000 by TORNOS, MOTOREX will show you all you need to transform your machine tool into an accomplished long production run specialist.**



**At the right time and place:  
MOTOREX 190 EP lubricant**

The DECO 2000 has around 55 points, which require greasing between 50 and 1000 hours of operation. TORNOS supplies a detailed lubrication schedule and oiler for this purpose.

MOTOREX is offering a choice of two professional lubrication solutions, depending on the machines in use.

is loaded directly and correctly into the pump in 400-g cartridges. Maintenance work requires approximately 200-g lubricant. We recommend this pump for up to five DECO machines.

**MOTOREX Matof F555** manual lubricating pump, Item No. 198.595

**Flexible tube**, 33 cm, Item No. 162.019

**190 EP lubricating cartridge**, 400 g, Item No. 032.387

**TORNOS Option number:** This appliance hadn't been numbered at the time we printed the DECO Magazine. In case of including into our prices lists, this number will be communicated on a next issue of the magazine.

the carriage. If you have to maintain 5 machines or more, the MOTOREX RAASM 64035 is an absolute must.



**MOTOREX F555 manual oil pump**

Using this manual oil pump, one person can easily reach the majority of areas of the DECO 2000 that require lubrication. Thanks to an extension tube, inaccessible connections can now be reached with the greatest of ease. The lubricant

**MOTOREX RAASM 64035 lubricator**

Mobile lubricator for a 17-kg grease drum fitted with a pneumatic pump. One person can easily handle this device and thanks to the 4 meter long tube, it can easily reach all connections requiring lubrication. There is no need to reposition



RAASM 64035

**Warning**

When lubricating accessible areas, whether with the manual lubricating pump or pneumatic device, always ensure that the connections being lubricated have been previously cleaned, since any dirt conveyed with the lubricant can increase wear.

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**MOTOREX RAASM 46035** lubricator, Item No. 263.109

**17 kg MOTOREX 190 EP** grease drum, Item No. 030.376

**TORNOS Option number:** This appliance hadn't been numbered at the time we printed the DECO Magazine. In case of including into our prices lists, this number will be communicated on a next issue of the magazine.

**The Robobar runs smoothly with MOTOREX COREX HLP ISO 100**

The DECO 2000 machines run with a bar feeder, which supplies the bars to be machine. Like a ghost hand, it moves the un-machined material to the right place at the right time. The hydraulic oil used in these devices also plays an important part – for the DECO 2000 the MOTOREX specialists recommend type COREX HLP ISO 100.

The Robobar tank (SSF 210, 226, 532 as well as that for the DECO 13 bi) has a capacity of 80 litres. Filling it is child's play if one has the following two items of equipment:

**Manual pump with MOTOREX RAASM 30050 carriage**



RAASM 30050

This is a 4-wheel carriage supporting a small drum, fitted with a dual-purpose manual pump with a pumping output of 0.2 litres each time the dual pump is activated. The 150-cm long oil hose termi-

nates in a curved metal part. It can be perfectly adapted to any 60-litre drums and is controlled by only one person. We would recommend this for up to 2 DECO machines:

**Manual pump with carriage** supporting a small drum and fitted with a hose  
MOTOREX RAASM 30050, Item No. 263.150.

**60 litre hydraulic oil drum**  
MOTOREX COREX HLP, ISO 100, Item No. 013.943

**TORNOS Option number:** This appliance hadn't been numbered at the time we printed the DECO Magazine. In case of including into our prices lists, this number will be communicated on a next issue of the magazine.

**Pneumatic pump with MOTOREX RAASM 37100 carriage**

From now on it will be easier to fill the Robobar with hydraulic oil: This is a 4-wheel carriage, which is easy to move and which has been designed to carry 200-litre drums. The hose winder is incorporated. 10 meters of 1/2" tubing is ready for use.

It pumps up to 18 litres a minute through its dual action. The oil pressure gun fitted with a counter and dual valve accurately meters the hydraulic oil. We would recommend this for up to 3 DECO machines.

**Pneumatic pump with MOTOREX RAASM 37100 carriage** art. No. 188.824



RAASM 37100

**200 litre hydraulic oil drum**  
MOTOREX COREX HLP, ISO 100, Item No. 013935

**TORNOS Option number:** This appliance hadn't been numbered at the time we printed the DECO Magazine. In case of including into our prices lists, this number will be communicated on a next issue of the magazine.

**Please find below the purchasing address details:**

The above lubricants and devices can be purchased directly from MOTOREX. You will be notified of prices and given delivery information on request.

◆ MOTOREX AG, PO Box CH-4901 Langenthal tel. 0041 (0)31 919 76 76 fax 0041 (0)31 919 76 96 or motorex@motorex.com

◆ Or through your MOTOREX importer

If you have any queries you would like to discuss with the MOTOREX specialists concerning the lubricants and infrastructure required to maintain your machine tools, please contact us at the following address:

**MOTOREX AG**  
*Customer Services,*  
*"Lubricants and devices"*  
**PO Box, CH-4901 Langenthal**  
*or send an e-mail to:*  
**motorex@motorex.com**

**DECO MAGAZINE**  
**No. 18**  
*(Special EMO edition)*  
*will provide you with*  
*all the MOTOREX details*  
*relating to the new*  
*generation*  
*of SWISSCUT cutting*  
*oils.*



# The world tour of our **agents:**

A new section into DECO Magazine

**On the basis that good ideas from one market can be implemented all over the world, we present Ehn & Land, our Swedish partner.**



Niclas Axelsson (product manager for TORNOS products) will present the company...

**We want to cooperate with our suppliers and customers Ehn & Land – 50 years of experience**

Since 1950 Ehn & Land has delivered machine tools, tools and industry accessories to the Swedish and Norwegian engineering industry. The company started as a family business. Today Ulf Karåker who has been the general manager for 15 years and his younger brother Björn Karåker jointly own it.

Ehn & Land has 21 employees and the turnover is approximately 140 million SEK/year (CHF 23,5 mio)

The policy during all these years has been to have a close and good partnership with customers as well as suppliers. This has now become even more important.

One person who has been at the company for 18 years is Claes Enfors. Today he is the manager of both the after sale service department and for spare parts for the TORNOS range. The after sales service department also includes Rainer Poser and Peter Tingstam who are responsible for helping customers with tooling, spare parts and service. Claes is also responsible for our four service engineers. They are specially trained at TORNOS in Moutier and at least 2 or 3 times per year they visit Switzerland to be educated and updated with the latest information about all machine models.

Ehn & Land are invited to the regular service meetings where those responsible from TORNOS subsidiary companies meet to discuss any problems or improvements. At these meetings, as representatives of Sweden, we have the possibility to present our proposals and improvements which we find this very positive and very interesting.

**Service agreement**

To meet our customers' requirements for the past year we have offered our DECO 2000-customers a contract for preventive maintenance and 35 % of our customers

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have taken this up. Recently almost all of our new customers have bought this maintenance contract with the purchase of a new machine.

**What is the reason for preventive maintenance?**

A number of advantages can be achieved with preventive maintenance such as:

- ◆ Reduced risk of unplanned shut-down of the machine
- ◆ Continuous documentation of the machine state
- ◆ Report with recommended measures after performed service to schedule production stops for service
- ◆ Updating of machine software
- ◆ Free telephone support on trouble shooting
- ◆ Urgent service guaranteed
- ◆ Improved and maintained precision by scheduled measuring and adjusting the machines

Ehn & Land's service engineers are authorized according to TORNOS standards and carry out the work.

**Training at our office in Stockholm**

Our aim is to hold additional programming training at least 4 times a year in Stockholm. Here the customers have a possibility to meet and increase their know-how in programming of TB-DECO. In the training room we have computers so that two attendees can share one computer, a large picture TV and other equipment to provide good training.

We adapt the courses to satisfy the customer requirements in the best possible way, Alfonso Osuna from TORNOS in Moutier holds these in English and is a very popular and capable teacher of programming. We would be glad to see him much more in Sweden.

The DECO-concept is a quite excellent system, which means that it is only the limitations of the users that put a stop to what the machine can handle. Therefore we believe that training is important. We also visit various events in the evening, as seeing ice hockey in the fantastic Globe Arena or just to get good food. All to strengthen the unity within Ehn & Land and the TORNOS family.

**Availability in service**

We have a vision that we in the future could offer our customers a 24 hours service. Today our service personnel can be reached directly on the phone. All service reports are sent to TORNOS for registration in special machine records. We have also internally a very advanced data structure. Next step for the future is that through an intranet we will be connected to TORNOS' own data system.

With this we could give our customers information about delivery times and prices for spare parts much faster.

We'll also have the use of a troubleshooting database, which we can go in ourselves and see proposals to solutions when we have problems. A problem already solved somewhere else could save time

**Tools and accessories**

We continuously try to update and adjust our stock of spare parts in Stockholm. To be as independent as possible we try to have as many spare parts as possible in stock, but as it is impossible to have everything we are always dependent of support from Switzerland. However, with modern logistics it should not matter if the stock is located in Stockholm or in Switzerland.

Our strategy is also to be able to help our customers with solutions of selecting good tools. Therefore we have employed

Magnus Wahlquist who has built-up a very impressive tool program with many of the best tool manufacturers in Europe.

The same is for various accessories such as sleeves, collets and cutting fluids.

**Cooperation**

For us at Ehn & Land a close cooperation with customers as well as suppliers is very important. Criticism should always be given and received positively. It should be seen as a measure to become better. The will to permanently be better and find new solutions must always be there – and it is, both at Ehn & Land and TORNOS.



*Niclas Axelsson*

Niclas Axelsson





# A meeting took place at the initial presentation of the **DECO 42 f**



**Mr. Roland Breitschmid is the manager of the «fixed headstock» business unit and the main instigator in reorganizing production at TORNOS SA.**

**Good day Mr. Breitschmid. Can we start by asking how a production manager can take charge of a business unit?**

I don't really want to talk about me, except to say that basically, I come from a mixed background, because apart from my engineering qualification, I am also trained as an economist. I felt that the time had come to concentrate more on the economics.

I will also not hide the fact that the «new adventure» factor also played a major role in helping me to opt for this change. With the DECO 42 f we now have the facility of tapping into a new, major potential market by providing a completely new solution.

**You talk about an adventure – do you not feel that this word is somewhat out of proportion ?**

If one considers the very high development potential coupled with the knowledge and experience gained with the DECO and the absorption of SCHAUBLIN know-how, I sincerely believe that the adventure which is starting today, will create a real «DECO effect» on this new tailstock small parts turning market. With this in mind, we must relive the whole DECO adventure, which was born, on the one hand, out of the sliding headstock, with more than 3000 machines sold, and on the other, out of the multi-spindle with very promising results.

**Referring to the markets aimed at with this new product, what are your sector targets ?**

This new product is an automatic lathe with a type of fixed headstock and the overall size of this sector is bigger than the one we are



currently dealing in with the 7 to 26 mm DECO range.

I will tell you our aims under the following three points:

1. In terms of customer satisfaction and solutions, our aim is to offer a lathe incorporating the DECO philosophy. In other words, a standard product (meeting most of the technological requirements of the market), which also offers a very good quality-to-price-to-productivity ratio.
2. The areas of application are the automotive, connector technology and medical sectors, as well as bearings and high-precision turning work are, very similar to those covered by the DECO.
3. In geographical terms, we can also say that we are aiming at the same markets as with the sliding headstock (USA, Europe, and Asia).

In all, we shall be launching the machine at the EMO in September. We

also plan to supply a further 30 machines this year and win 100 orders.

**You talk of big markets and of the DECO effect and you want to cover a lot of sectors very quickly. Do you think that you can sustain such growth ?**

The fixed headstock business unit is fully incorporated in the TORNOS production process and consequently we are benefiting from all the developments and changes in production (i.e. production has been reduced from 8 months to 6 weeks – lean production – Kanban system etc...).

For the future, a very important development program is underway. The aim of this program is to double output within the next 2 years. To achieve this, we are investing in new buildings and proceeding with revamping production, especially with the arrival of the new machining centers, by extending our Fastems systems and a huge increase in robotisation.

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Furthermore, all the industrialization know-how acquired over these last few years will be incorporated in the new product.

***This new DECO with fixed headstock, is it really a DECO or is it merely a name so that you can «profit from an effect»?***

It is obvious that we based this new product on the DECO concept. It

regard to customer services and production. As regards production, the fixed headstock business unit obviously benefits from the developments made.

***Does this then mean that current «TORNOS-SCHAUBLIN» products are going to disappear?***

all the CNC range, yes. The 125 and 180 CCN lathes will remain, but they won't be called TORNOS-



operates with the PNC-Deco and incorporates the system based on the DECO experience.

However, we have gone even further. As far as we're concerned, this is a new market, with different sizes and constraints. To meet this challenge, we obviously made good use of SCHAUBLIN know-how (I would like to point out that the acquisition of the SCHAUBLIN lathe and turning center activities was based on this thinking right at the outset).

***Are these actually SCHAUBLIN or TORNOS-SCHAUBLIN products?***

We had to lay down priorities in our development programs and despite the vast means which were set up (both in terms of research and development and with means of production) it was impossible for us to achieve everything.

This is why we decided to concentrate on implementing a radically new market solution and not to continue developing the SCHAUBLIN turning centers.

Our project is in full swing and we are making sure that we have the necessary means available. We have taken on specialist staff to reinforce our business unit, both with

SCHAUBLIN any more. Our new product will gradually replace the 42 and 65 turning centers.

***Are you not afraid of losing the confidence of your existing customers and those you are aiming at with the new technology like the one being proposed?***

The DECO effect in the fixed headstock sector will obviously be the same as that experienced in the sliding headstock sector – the lathe must be good and justify the fact of having to change its technology. However, there are three aspects, which slightly temper this assumption:

1. There could be considerable synergy between the DECO a (advanced), b (basic) range and f (fixed headstock), just as with the MULTIDECO. A large proportion of our current customers are already active in those markets we are aiming for with our DECO 42 f. For these customers, the transfer should be very easy, since the concept is the same. The steps taken by TORNOS today enhance the customers' conviction in the durability of their choice and in justifying the pioneering concept they have witnessed for almost four years now.

2. With the increase in the TORNOS product range, those customers, who were skeptical of the DECO concept, now should review their approach to investments, since this concept has become standard in the small parts turning industry. The DECO concept has proved itself, with

the result that we have gained a lot of know-how, which we are using to our advantage.

3. The modern world has changed a lot since 1996 – a time when programming on PCs and the IT aspect were an even greater stumbling block than is the case today.

***Mr. Breitschmid, thank you very much. Do you have any conclusions to this first presentation?***

I would like to take this opportunity to reveal details of the marketing program for our new machine, the topic of which could be:

***Don't miss this second chance to benefit from the DECO concept.***

- ◆ 2nd March: TORNOS IPO press conference, product presentation.
- ◆ June: The sale of the TORNOS DECO 42 f will commence. This will include price lists and documentation and will enable initial requirements for parts to be worked out.
- ◆ 12th September: Launch at the EMO in Hanover.
- ◆ By December: Delivery of the first machines, orders for 100 further machines



This is a very ambitious program. However, we fully believe that we are seeing a «third revolution» and we shall ensure that we have what it takes to allow our customers to benefit...

***Let us take up the challenges of the future together.***



# MULTIDECO 32/6 i

A multispindle turning cell all in one!

**At the EMO in Hanover during September of this year, TORNOS will unveil as a first throughout the world, its new multispindle lathe working on the DECO concept: – the MULTIDECO 32/6 i.**

**We see this as a real 32 mm with 6 spindles, incorporating its own bar feeder!**

The concept of a «turn-key» solution has gone one stage further than merely incorporating a bar feeder, since the conveyor and filtration systems are also incorporated into the machine. This machine is suitable for all types of material.

#### A summary of experiences

This new multi-spindle lathe benefits from all the experiences gained with the DECO and MULTIDECO over almost the last five years and is making use of this base to develop even more advanced features. The traditional benefits – i.e. combining the versatility and productivity of a multispindle lathe, the user-friendly nature of the DECO concept, programming in masked time and tool pre-adjustment are now backed up by

- ◆ New quick change tooling systems;
- ◆ Dispensing with the feed fingers/tubes;
- ◆ Increasing the machining possibilities using single point tooling (machine fitted with 5 numerical cross slides).

All these elements are complemented by reduced commissioning times and simplified set-ups and tooling arrangements.

We shall touch upon the subject of the machine's versatility in a subsequent article, which will demonstrate the practices adopted by some of our clients, who change their set-ups several times a week, if not daily...

#### Vital power

To accommodate the larger machine capacity, the motor power has been increased and cross slides have been strengthened.

Consequently, the high precision of this machine is guaranteed, even in extreme machining conditions.

#### A large number of novel features

Apart from the above points, MULTIDECO 32/6 i has several novel features (as option), which enable our clients to pursue the logic of an «integrated multispindle turning unit» even further:

- ◆ Checking tooling life and automatic wear management.

- ◆ Interface with part measuring systems.
- ◆ A high-performance fire extinguishing device.
- ◆ Tool condition monitoring.

This lathe will provide the highly competitive, medium-capacity, multispindle turning market with new and innovative solutions.

Unfortunately, this initial article does not do justice to this new lathe, since its integrated concept, its power and capacities as well as its precision, merit far more.

Would you like to receive more complete documentation? Please send your full details to DECO-Magazine, TORNOS S.A. CH-2740 Moutier or by e-mail to [decomag@tornos.ch](mailto:decomag@tornos.ch).

This new document will be available from June 2001.

To find out more about this machine and the development of the MULTIDECO concept, come to the EMO in Hanover from 12th to 19th September 2001.

