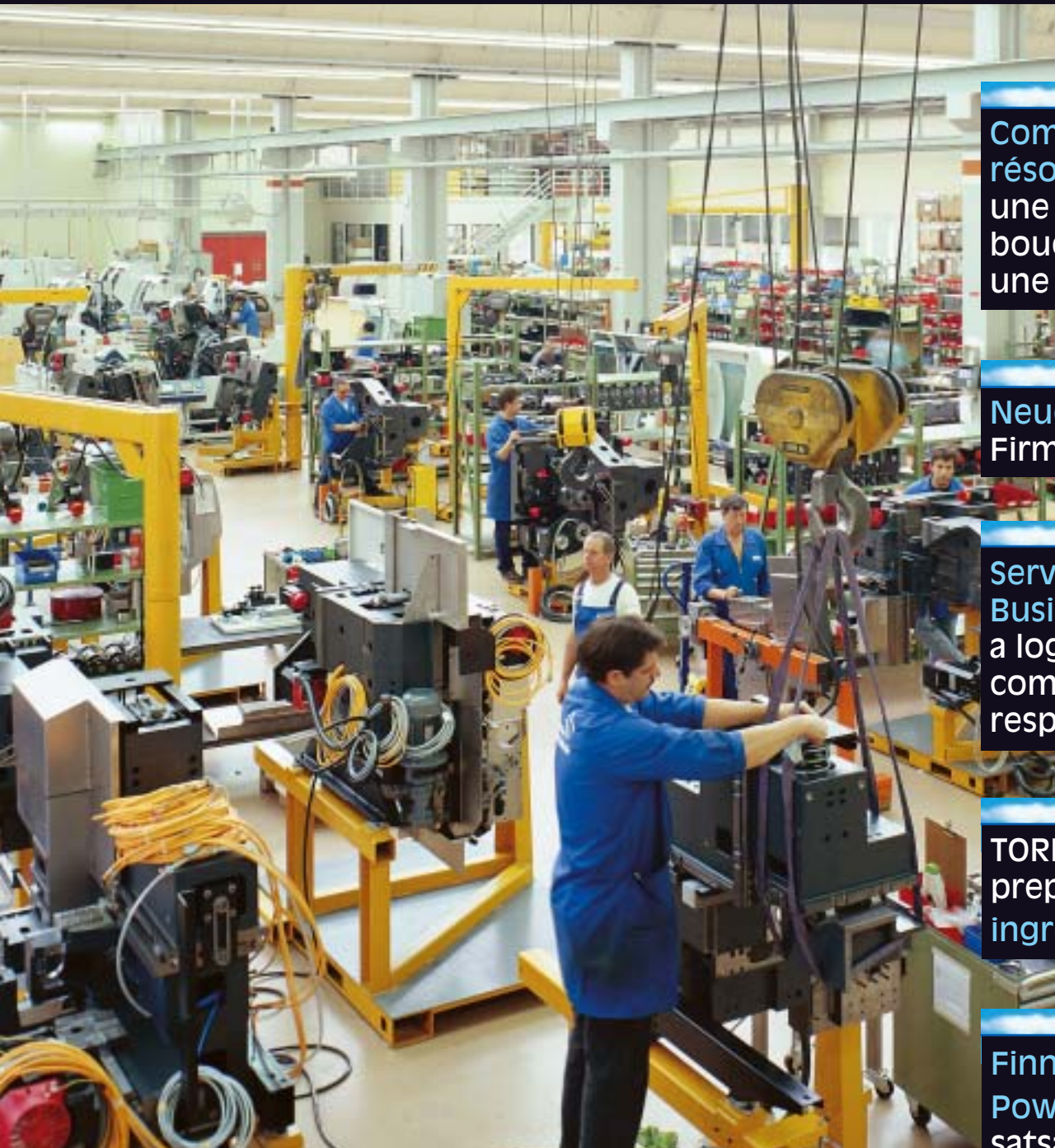


DECO MAGAZINE 15

4/00

DECEMBER



Comment résoudre une erreur de bouclage sur une broche ?

Neuer Firmenname!

Services & Business Units: a logic that commands respect!

TORNOS-BECHLER prepara il suo ingresso in borsa.

Finnveden Powertrain AB – satsar på DECO 2000.





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Editorial
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The present

Dear readers,

You don't need to be told by economists how good business is, or isn't, all you have to do is look at your own company. And right now, those companies associated with the small turned parts industry, and the connector industry in particular, are definitely looking at good times; some would even say great.

In 1999 most of our technology concerns were focused on the infamous Y2K scenario, would our businesses be operating on January 1, 2000, or would our computer run society shut down. Well, January 1, 2000 came and went with companies experiencing little or no glitches in their operations. Then, like a dam bursting, the electronic connector industry took off in 2000.

There have been numerous articles about how this industry has had extraordinary growth over the past year and that it is expected to continue over the next 2-3 years. Communications, computers, electronics – these are the big movers in 2000. Worldwide demand for electrical parts are hitting record breaking numbers.

With all this good news and increasing business opportunities, we have to wonder about the down side. With the sudden demand for increased parts, manufacturers have had to scramble to increase their production. In most cases this resulted in a need for additional equipment, manpower, and material. Unfortunately, no one foresaw the magnitude of this industry's growth in such a short time period and manpower, material as well as machine tools are all experiencing shortages and longer lead times.

TORNOS is working diligently to meet this growing demand for machines. Plans are in the works to increase production at the factory in Moutier. Our suppliers are adding to their capacity as well to help ease production restraints. All of these issues take time and we are grateful that all of our customers are willing to stay the course and wait the long period of time for delivery of their machines.

The good news, of course, is that with this increase in connector parts orders, you can be much more productive with the fast cycle times afforded by the DECO 2000 machines than your competitors.

Wishing you Happy Holidays and a Prosperous New Year.



Tom Dierks

Tom Dierks
President of TORNOS
Technologies US

E

How to overcome

a looping error on a spindle :

After having studied the way of correcting a looping error on an axis (see DECO magazine 14), we shall now deal with overcoming a looping error on a spindle.

Type of error:

Several types of looping error messages may appear during spindle programming. Message G1017 is displayed in the dialog box and a text in brackets then specifies the type of fault.

1. Looping error when running at speed

A looping error when running at speed means that the effective spindle speed (number of revolutions per minute) at the start of the loop (G13) is not the same as at the end of the loop (G113). In such cases the following message is displayed:

G1017: Looping error on spindle S1 (Speed)

2. Mode-related looping error

A looping error related to mode is detected when the spindle is not in the same mode at the start of the loop (G13) as at the end of the loop (G113). The different spindle modes could be as follows:

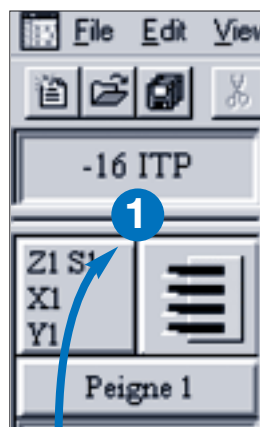
- ◆ speed mode (programmed revolutions per minute)
- ◆ synchronous mode with another spindle (M?18)
- ◆ polygon mode (G?51)
- ◆ axis C mode (M?98).

The following message then appears, for example, if there is a synchronisation fault:

G1017: Looping error on spindle S4 (M?18)

Tip: Unlike the looping error on an axis, one cannot detect the looping error on a spindle using "single mode" (see DECO Magazine No. 14).

However, the following tips will allow quick detection of the type of looping error and provide the pertinent correction.



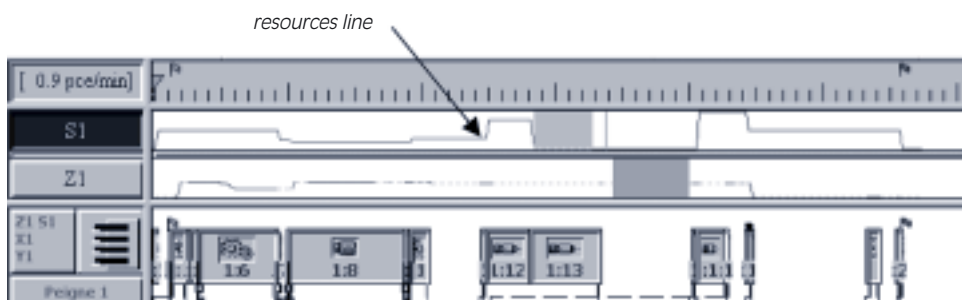
1. Use the spindle resources line.

Display the resources line of the spindle involved in the fault and observe the curve showing changes in speed or mode.

To display a resources line, proceed as follows:

Using the left button of your mouse, click on the top of the operations line (1) and without releasing your mouse, drag this line down to the bottom of the screen. In this newly created line you can – by clicking the right button of your mouse – create a resources display for one axis and/or one spindle.

- ◆ The red line shows the various programmed speeds (a different height means a different speed).
- ◆ The grey areas indicate that the spindle is in a different mode to the speed mode.



A speed value is displayed if you click on the red line. This value must be identical in both the small green flag – showing the start of the loop – and in the red flag – showing the end of the loop. Displaying the program as a GANTT diagram will allow you to determine when exactly a change in spindle speed or mode was programmed.

This method is extremely useful because the fault can be detected graphically at a glance.

M104 in order to find all the speed controls governing spindle S1.

The Find result is displayed in the window on the bottom of the screen. If you double click on the line you are interested in, this will open an ISO-DECO editor dialog box.

Tips: Isolating each spindle control in one single operation makes it easier to find programming errors. Use the icon depicting a spindle.



2. Using the find function.

Another possibility is by using the Find function (Edit menu) in order to see all the control codes relating to the faulty spindle. For example, we can find the words **M103** or

All that now remains to be done is to check that the speed values are identical at the start and end of the loop. This method also produces good results, even where there are typing errors, for example.

This tip is also available if you consult or print it out from our site at:

http://www.tornos.ch/eng/TB-DECO/default.taf?page=astuces_Submenu.html

The above tip is not, properly speaking, a specific programming tip but rather a general help intended to overcome a problem encountered from time to time. We do not have the facility for you to download the program from our site.

The most common looping errors are due to the following factors:

- ◆ The spindle is in a positioned stop (for example: M119 Q0) for a cross milling operation. On completion of this task the operator has either forgotten to restore the speed or did this incorrectly.
- ◆ The initial speed of spindle S1 indicated in the "Spindles" icon, and the speed programmed in the master program for the cutting operation are different.
- ◆ When synchronising spindle S4 with S1 (M418 S1) it is essential to cancel the synchronous mode on S4 before the end of the loop, either by M405 or a new speed control M403 or M404.
- ◆ Forgetting to cancel the polygon mode G?51 by G?50.

In the next DECO Magazine (number 16 dated February 2001):

All you need to know about polygon operations!

Finnveden Powertrain AB – on the DECO 2000.



For this edition of DECOMAG we decided to go to Sweden to see how the DECO concept has been applied there.

The public company Finnveden AB has three business areas:

- ◆ Finnveden Sheet Metal
- ◆ Finnveden Fasteners
- ◆ Finnveden Powertrain Components (FPC)

FPC consists of Finnveden Powertrain Ltd, Finnveden Powertrain AB, Finnveden Engineering, Finnveden Precision, Finnveden Inc. and Gjotal.

Finnveden Powertrain AB has five plants in Sweden.



Our journalist met Mr Birger Gustafsson, the manager of the Moheda plant within the company Finnveden Powertrain AB (the former Torsten Ullman AB). Mr Birger Gustafsson is responsible for 175 employees. The turnover is SEK 140 million.

What is the size of the business area, Finnveden Powertrain Components, and what are your geographical markets?

1400 employees generate a net sales of approximately SEK 1,5 billion annually (i.e. 234 mio USD).

The strategy is based on continued global expansion – focused primarily on European and American automotive and engine manufacturers.

Mr Gustafsson, could you please explain to our readers what is the purpose of Finnveden Powertrain AB?

The Moheda plant manufactures products with high technical content. Our main focus is at the valve train- and fuel injection components. Product and process development is conducted in close cooperation with our customers.

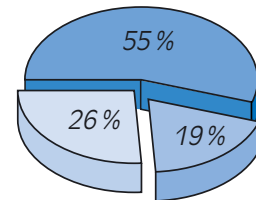
And regarding the Moheda plant?

We are machining in the diameter range of 5-80 mm. Our main machinery are 50 CNC-controlled bar lathes, both multi spindles and single spindles. As second operation machines we operates 20 high precision hard turning lathes. We have 10 grinding machines of various types. Assembly machines and handling equipment is an important part to be complete.

Therefore we use our own company Finnveden Engineering to make the automation. During the last two years we invested SEK 40 million, of which the major part was used for the 23 DECO 2000-machines.

Our main customers are Robert Bosch, Scania, Volvo/Ford, and Saab/GM.

The sales of Finnveden Powertrain Component.



55% Truck industry
26% Car industry
19% Other engineering industry

Mr. Gustafsson, what do you think are your competitive edges in "world competition"?

"The Moheda unit is specialised in machining of advanced high quality components for the automotive industry. We shaped a "business idea" of our own. Which means that we invest in standard machines and build our own automation equipment and special machines in order to create a complete production line very fast.

Rapid changes in volumes and design need to be taken care of properly. Therefore we go for standard solutions as far as possible. Few production steps and little manpower are needed to control quality. An intensive use of SPC has learned us that the temperature stability in the machines will be one of the most important items when choosing future machine concepts. Our strength is built on a long tradition in turning. We have a thorough knowledge in this field and the fact that we can offer our customers hardening, grinding, hard turning, assembling etc.

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makes us "complete" as a supplier", says Birger Gustafsson. A long tradition in tool grinding with skilled and innovative technicians in connection with brand new tool grinding machines are one other very important key factor for our success.

How did you discover the DECO machines?

The co-operation with TORNOS-BECHLER started with the start of the company, in the middle of the forties. Longturning has ever since than been one of our specialities.

In the beginning of the nineties several ENC-machines were bought, and three years ago we invested in the first DECO 2000-machine from TORNOS.

When we received some major inquiries, the DECO-concept attracted us and we found that the DECOS fulfilled our high quality and precision demands. And surprisingly "at last we found a CNC-machine just as fast as a cam-machine". Who could predict that five years ago? We were able to manufacture complicated parts, fast, in one operation. We could also easily extend the capacity in reasonable steps. The pace in the machines must always be at the near maximum. The excellent co-operation between TORNOS-BECHLER and Ehn & Land AB (TORNOS-BECHLER's representative in Sweden and Norway) lead to our choice of TORNOS-BECHLER as our main supplier of Swiss type machines. When we needed help to train people at the machines very intensive Ehn & Land was there to help us.

Today 23 machines are running in the Moheda plant, two in Alvesta and one in Torpsbruk. Gradually as we have been able to train new technicians we have extended the use of the DECOS in two, to three, to four shifts. So they will certainly have to prove reliability.

We have heard that IT technology could completely transform classical relationship, do you think your work will change?

At Finnveden Engineering we already operate different CAD-systems which are connected to a CAM- prototype workshop, which is used mostly for forged and casted items.

However for the classical turned parts, the Cad-files do not appear very often so far. But they certainly will in the nearest future.

You are working in a unit located in Sweden, is it difficult to think global?

The internationalisation means that we have to be near our customers and we therefore invest hard to set up business abroad. Our merge of Finnveden Powertrain Components Ltd (the former CS-Martin Ltd in Alford UK) is one step. Leaders and management with thrust in the future is necessary for success. It is also important to be able to react fast and in a correct manner to recruit and train motivated and competent personnel in the production field. In the past few years we have created our own school in which we train approximately 15 young engineers every year. Within the EU-Leonardo project we have an exchange of pupils with the Alford plant. Language is a very important part of the training of our apprentices.

And what about e-commerce, is it a field for a metal manufacturer?

The importance of this is very obvious, with regards to simpler products and standard articles. We

complement to the already existing and very important personal contact with our customers.

Thank you Mr. Gustafsson for this interesting presentation, in conclusion what do you think will become more important in your relationship with your supplier (like TORNOS-BECHLER)?

An important criteria which will be required in the future is 24 hour, 7 day per week availability, guaranteeing in consultation with suppliers and of course a competitive price on products and service.

You always have to satisfy the customer's demands and also to exceed these.

TORNOS-BECHLER has a good name within our organisation and we feel that they are sensitive to their customers needs even if we wish that they always should give priority to us first.

And we are eagerly waiting for the DECO 3000 as our next "Money maker".



also very carefully follow how the big automotive companies start to establish different tools to speed up inquiries, quotations and extend the competition by means of the net. However I doubt that we, in the near future, should handle all our business contacts through the net, this media has to be seen as a



Last minute:

TORNOS-BECHLER plans to enter the stock market

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Owing to its sustained growth over the last 4 years, TORNOS-BECHLER has invested more than 50 million francs in new production plant and machinery during this period, as part of two major renewal projects, which we have already discussed in DECO Magazine.

In order to cope with the strong development potential, the company now wants to manage its growth and increase its capacity to react and investment potential. To achieve this, the board of directors and senior management of TORNOS-BECHLER SA decided to make the necessary preparations for the company to be floated on the stock market during the course of year 2001.

At a recent meeting Mr. Anton Menth, general director and representative of the Board of Directors of TORNOS-BECHLER SA, indicated, as the main reasons for entering the stock market, the company's extraordinary growth potential coupled with the interest shown by several investors in global dynamic technology, especially machine construction. Just as the DECO

2000 represented the perfect marriage between the two previous generations, in combining the advantages of the control systems, so the IPO (Initial Public Offer) is the perfect marriage combining the advantages of conventional companies with those of the new economy (on average increased growth).

In 1999, the TORNOS GROUP achieved a turnover of 299 million Swiss francs, which over the last 5 years represents an annual average rate of growth of more than 15%!

The British group of investors, Doughty Hanson, has held approx-

imately 90 % of the shares in the TORNOS GROUP since 1999. The remaining shares are in the hands of the senior management.

We shall obviously keep you posted about the latest developments in this major project. For real time information, our web site includes a specific heading, which you can reach at the following address: www.tornos/ipo

Lonza Group n	858	845
Michelin p	550	546
Micronas n	790	760
Mikron n	1120	940
Motor Gal	2800	2685
Mövenpick p	824	829
Nationale Ass. n	920	919
Nestlé n	3606	3570
Novartis n	2697	2669
OZ Bank p	2270	2300
Pargesa Holding	3550	3430
Pharma Vision p	1158	1150
PubliGroupa n	1015	1005
Parmigianstait n	1356	1345
Richemont	4705	4925
Ritter Hold n	517	527
Roche bj	16746	16050
Roche p	17000	17825
Royal Dutch C.S.	109.75	110
SAIA-Burgess n	700	715
SAirGroup n	232	239.75
Saurer n	838	840
Schindler n	2650	2660
Schindler bp	2585	2560
Selecta Group n	430	445
Serono p -B-	1701	1720
SIG Hold. n	1100	1100
Sika n	470	451
Sika p	78.85	87
Sopracenerina p		108.25 d

Fuji Bank	2230.00	2230.00
Hilachi	1271.00	1280.00
Honda	3870.00	3820.00
Mitsubishi et	873.00	863.00
Mitsub. Heavy	428.00	430.00
Mitsui Co	720.00	710.00
NEC	2275.00	2245.00
Nippon Oil	595.00	571.00
Nissan Motor	600.00	620.00
Nomura Sec.	2440.00	2380.00
Sanyo	996.00	983.00
Sharp	1653.00	1637.00
Sony	10080.00	10010.00
Thoshiba	870.00	861.00
Toyota Motor	4290.00	4250.00
Yamanouchi	4990.00	5020.00

Londres (£STG)

Allied Zurich	770.00	791.50
Anglo-Amer.	49.87	51.92
BP Amoco	633.00	622.50
British Telecom	720.50	682.00
Cable & Wir.	892.00	860.00
Cadbury	424.50	421.00
De Beers (USD)	-00	-00
Diageo Plc	632.00	644.00
Glaxo Well.	2000.00	2025.00
ICI	377.00	359.00
Invensys	129.75	125.00

Francfort (Euro)

Allianz N	400.00	385.00
Arbana Indus.	118.50	119.00
BASF	40.00	41.00
Bas. H. S. H.	88.15	88.00

Paris (Euro)

AGF	64.00	63.60
Alcatel	77.05	75.70
CCF	13.18	12.98
Euro Disneyland	0.52	0.52
Eurotunnel	1.04	1.07
Géné. des Eaux	84.30	83.00
Groupe Danone	47.45	51.00
L'Oréal	54.90	82.10
Lafarge	75.30	76.40
Total	173.10	173.20

New York (\$US)

Abbot	50.43	50.56
Amexco	55.75	54.81
Apple Comp.	21.50	20.50
Atl. Richfield	-00	-00
AT & T Corp.	24.00	23.62
Avon	44.75	44.62
Baxter	86.12	87.00
Black & Decker	29.62	28.81
Boeing	60.18	60.62
BP Amoco	54.81	54.12
Bristol-Myers	60.00	60.25
Can Pacific	27.18	27.56
Caterpillar	31.93	31.12
CBS Corp.	-00	-00
Chase Manhat.	39.56	39.18
Chevron Co.	82.00	81.93
Citigroup	50.81	50.50
Coca-Cola	58.62	57.06
Colgate-Palm.	51.65	51.10
Compaq	25.41	24.77
DECO	23.68	23.68
Du Pont	41.56	40.81
Eastman Kodak	38.81	38.37
Exxon Mobil	87.81	89.18

E

Simplification

and adaptation to all requirements

For many issues, these pages have been a source of information for enhancing our machines with ingenious devices allowing certain special requirements to be met more accurately.

In this edition of DECO Mag, you will discover the new high pressure drilling device designed to be fitted onto all our machines.

Let's consider again the concept of the DECO b range: DECO 13 bi is a machine with an integrated bar

feeder, and DECO 13 b is without a bar feeder.

Option 5013

Self-Adjusting high pressure lubrication device.

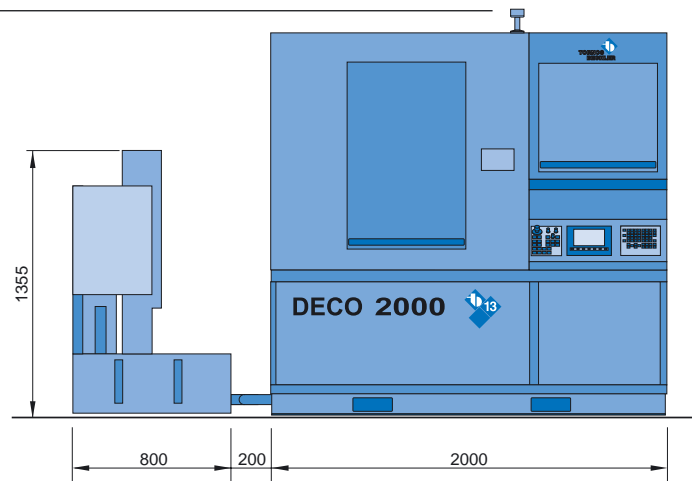
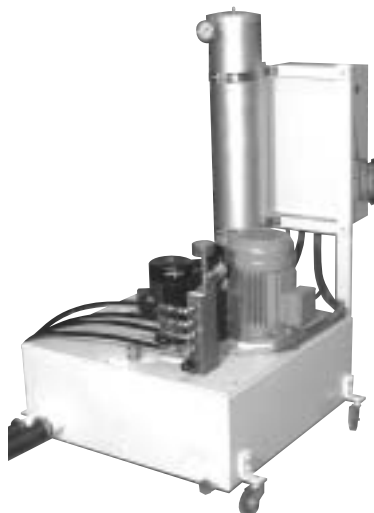
Application

This device is intended for use with through centre coolant drills and is particularly suitable for drilling to a depth of approximately 40 times the diameter. It allows 4 tools to be fed independently and alternately.

When the pump engages, a converter selects a rotation speed which corresponds to the flow and adjusts the pressure accordingly.

The flow and pressure are therefore dependant on the drilling tool.

These parameters are adjusted automatically and independently on each tool every time the pump is switched on.



Note

As the oil is subjected to a laminating effect during drilling, the oil temperature increases. Also, we recommend adaptation of a cooler which will maintain a level to approximately 23 degrees (see, for example, DECO Magazine 14 option 5270 for DECO 2000 20 and 26 mm versions).

Compatibility

This device is option equipment on all DECO machines. It can be retrofitted onto machines which are already in service. However, if you are interested, please consult us for a compatibility analysis of the equipment on your machine. There are some limitations on use.

Technical specifications

Length of pipes:	5 m (allows installation of this device to the left or right of the machine).
Independent oil reservoir, capacity:	140 litres
Self-adjusting pressure:	30 to 120 bar
Filter:	25 microns
Max. supply:	4 tools
Control:	M functions
For min. diameter drill tools:	1 mm
Reduced size:	800 x 800 mm
Cylinder pump set to	10 cm ³ /rev
Movable cradle for pre-filtering the return oil	(150 microns)
25 microns filtration for output oil (tools)	

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Option 0310, 0315 and 0320

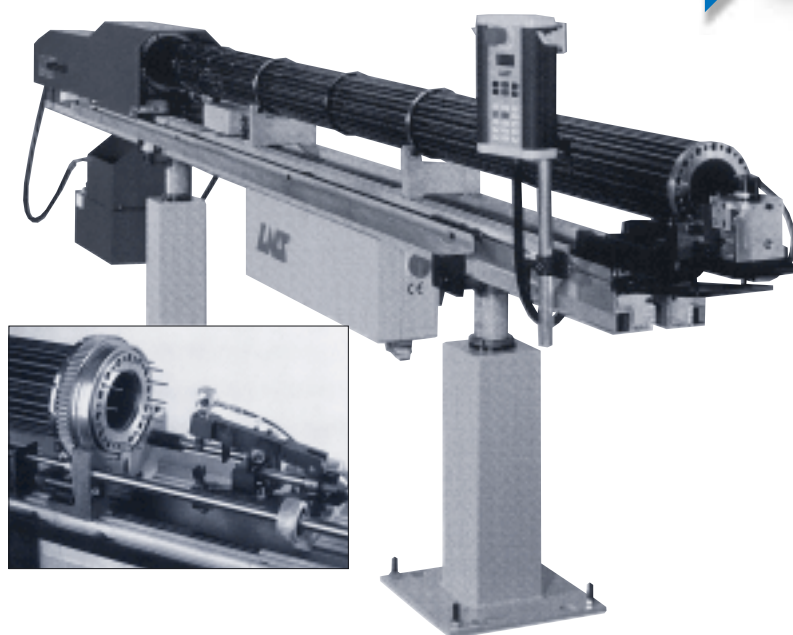
LNS Tryton 112 CNC type bar feeder hybrid with 28 tube barrel

Application

These three options (depending on the length of the bars) are an alternative to the normal bar feeder offered on the DECO 13 bi. These models, supplied by a reputable bar feeder manufacturer, are designed specially for the DECO 13 basic (only one single stand).

The After-Sales service is provided entirely by TORNOS-BECHLER.

Dedicated to very specific applications, this bar feeder allows you to draw on all the capabilities of the DECO 13 b model where the conventional bar feed solution reveals its limitations, from 1 mm diameter (4 for Robobar) and for different applications, such as machining synthetic materials.



Note

The LNS Tryton type bar feeder can receive bars of different lengths simultaneously. A detection system ensures that the feeder is positioned correctly on the machine.

The bars may be loaded from the front or rear of the bar feeder.

By loading the bars from the rear of the bar feeder you avoid interrupting the operation of the machine. However, this requires a large area for handling the bars.

When loading from the front of the bar feeder, you must stop the machine. The barrel pivots on the rear stand towards the back of the machine. The bars are thus loaded at the rear of the machine.

Compatibility

DECO 13 b

Technical specifications

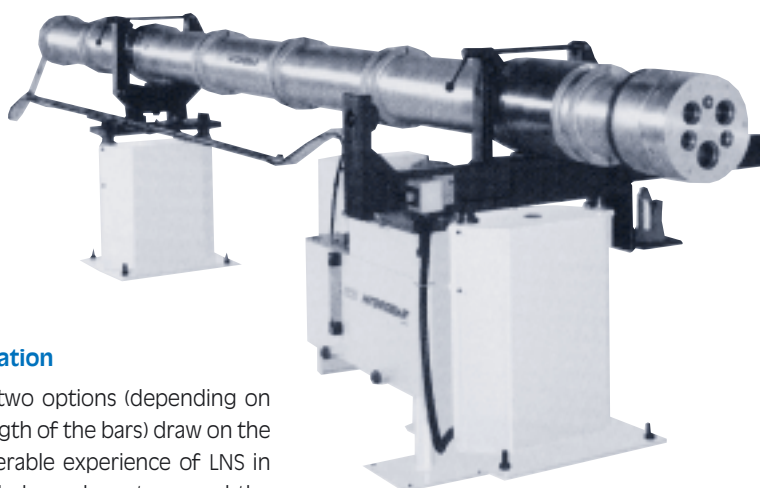
Max. bar diameter: 12.7 mm

Max. channel length: 230 mm

Hydraulic assembly with capacity of: 25 litres.

Options 0370 and 0375

Oil cooled bar feeding tube in LNS type HYDROBAR HYS 3.16



Application

These two options (depending on the length of the bars) draw on the considerable experience of LNS in oil cooled supply systems and the hydrodynamic operating principle. This tube is made specially for the DECO 13 b. It is an alternative at a good quality/price ratio which is of interest to users who do not require the high flow supply device (very intricate parts).

Note

Requires electrical interface (option 0350).

The bars must be chamfered (60 degree angle).

Compatibility

DECO 13 b

Technical specifications

Diameters: from 2 mm to a maximum of 16 mm.

3 guide tubes with interior diameters of: 6, 13, 18 mm

Independent hydraulic assembly of 120 litres (ISO 100 oil)



Services & Business Units:

a logic

that commands respect !

Interview

The services provided to TORNOS-BECHLER customers logically went hand in hand with the re-organisation of the company.

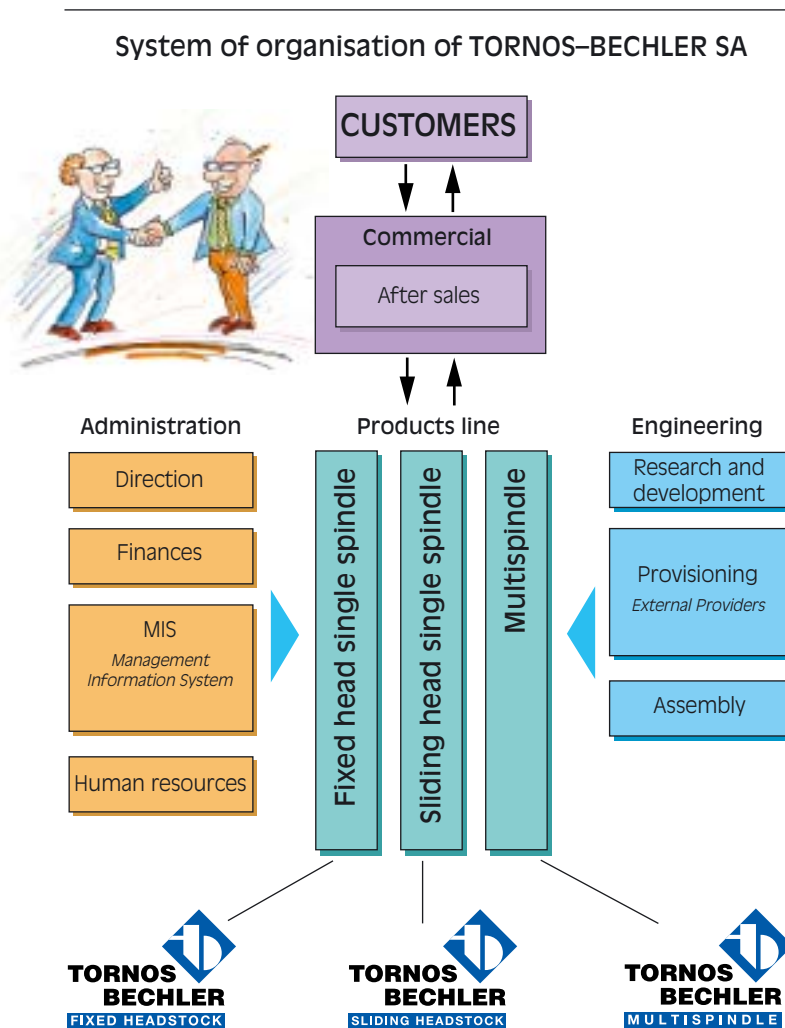
Once the various phases of company re-organisation had been completed, we wanted to know what effects these had had on the after-sales and spares departments. To find out, our journalist arranged a meeting with Didier Stadelmann and Marc de Maeyer, the heads of the company's Multi-Spindle and Single Spindle Customer Services Departments respectively.

To explain the situation, Mr. de Maeyer quickly came to the heart of the matter.

"We re-organised the former after-sales and spares services. These used to be organised by "jobs" but are now managed by "products". The aim was to provide an improved market response. This new "complete" service is now referred to as **customer services** (single and multi-spindles).

In other words, according to Didier Stadelmann, we are now proposing an integral solution, which takes account of all intermediate stages - from selling the machine to supplying spares and providing the market with products and services.

When questioned about the TORNOS-SCHAUBLIN "Fixed Headstock" business unit, our two spokesmen informed us that its operation remained unchanged.



DECO Magazine: What are the benefits and thoughts behind these business unit structures?

MDM/DS: We proceeded with this change so that we could provide our clients with an improved service. Overall, the following advantages can be quoted:

- ◆ Skills by product range produce highly accurate responses.
- ◆ Problem identification and rapid solution implementation (con-

centrated areas of research and skills).

- ◆ "Total" knowledge of the sector by combining the skills of the Spares and After-Sales divisions into one and the same unit.
- ◆ Improved overall detection of market trends coupled with more efficient and pertinent responses.
- ◆ The newly created unit is a service centre catering for pre-sales,

Services & Business Units:

a logic that commands respect!

sales and after-sales services to the public – i.e. final clients, retailers, agents and sales force.

DM: *To summarise, one can say that client demands are better understood and followed through. Does this mean that you have a CRM (Customer Relationship Management) system?*

MDM/DS: Like the rest of the company, we have had integral SAP software for just over a year.

Only the Moutier site is currently fully managed by this system. Its installation in the subsidiary companies is now under way. Consequently, the state of our operation is not the same for all the markets. This temporary solution will persist until after the complete installation of the SAP software throughout the entire TORNOS-BECHLER Group.

Nowadays, the background of our relations is followed through in real time, with service statistics, the sale of spares etc., being available by market, region, customer etc...

All the information collated is managed in a database.

The Service Management and Sales and Distribution modules of SAP interact completely. Owing to the partial inputting of SAP and a very heavy workload, coupled with an ever-growing market of machines requiring installation, this system is not yet fully widespread from a pro-active sales point of view.

DM: *What do you understand by a pro-active sales request?*

MDM: It's quite simple. This technique must allow us to offer much more to our customers in a targeted manner. For example, if the database indicates that customer X mainly machines a specific type of material and regularly orders consumables subject to specific res-

trictions associated with this type of machining ... and if, in the meantime, TORNOS-BECHLER has developed an alternative solution, then the interactive database system should be capable of suggesting the new solutions for the customer.

DS: A further example could be where a customer uses large volumes of specific items or equipment. The system must be capable of detecting this.

DM: *These aspects are extremely interesting but are all part of future innovations. Are there no other new services or aspects, which can immediately be perceived in the wake of this re-organisation?*

MDM/DS: This major change enabled us to clarify the process and set up a reactive and totally product-orientated organisation; this is already a big step forward!

However, it goes without saying that some additional services have been introduced for both agents and customers, such as standard data exchange, the maintenance contract, the international team of specialist engineers or the basic systematic training services.

DM: *For the benefit of our DECO Magazine readers, could you briefly explain these points?*

MDM/DS: Well, to start off, let's talk about a service provided to our agents, which is intended to help them become more effective and efficient in their respective countries, thereby ensuring an efficient and uniform "TORNOS-BECHLER quality" from one end of the world to the other.

A team of engineers was put together and trained in all aspects surrounding our automatic lathes, namely: proposal, calculation,

tooling, programming, starting-up, servicing and trouble-shooting. This UK-based team is fully conversant with every single machine of our range. It was created with the aim of providing back-up secondments of between 4 weeks and 3 months per country, to support our agents whilst also offering invaluable assistance to our sales and services structures in those countries with no subsidiaries, such as:

- ◆ Standing in for an absent / sick personnel.
- ◆ Providing explanations and training agents "by way of example".
- ◆ Assisting the agent when he is faced with peaks in his workload.

The second very important aspect is **basic systematic training**. In order to have a highly skilled workforce, we encourage young members of the workforce, who have just completed their apprenticeship, to join customer services. This commitment is coupled with an additional, very demanding 2-4 year training programme. The trainee goes through all the departments in the company in order to understand fully all aspects of the machines he will have to look after (machining, assembly, commissioning, after-sales service etc.). Finally, in-depth language courses are also encouraged, so as to cover linguistic skills over a very wide geographical area.

On completion of this training, these highly skilled engineers receive continuous updates of any developments to the range. This guarantees a very high and consistent quality level, which our customers are entitled to expect.

DM: *The last two points you quoted are specifically directed towards the clients. How do they work?*

MDM/DS: First of all, **the standard system of exchange** is an interesting alternative to the conventional solutions of purchasing new parts or overhaul. For some elements (especially turning parts), it is known that their useful life is not infinite. For this reason, and also to

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ensure the shortest possible down-times at our customers, we operate a standard exchange system, thereby saving them the need to invest in new parts. The benefits are summarised below:

- ◆ Quick replacement, minimum machine down-time.
- ◆ Considerable reduction in costs compared with purchasing new products.
- ◆ Unbeatable quality-to-price ratio.

DM: *This facility would appear of considerable interest, but to what items does it apply?*

MDM/DS: It is very difficult to produce a list, but it applies in general to headstocks, belts, turning parts and some electronic cards. If there is any interest, we would like to invite your readers to contact the TORNOS-BECHLER Customer Services.

As for the maintenance service, this consists in an agreement, whereby a highly qualified engineer will regularly come to your premises to examine your machines and proceed with changing those parts subject to wear, such as batteries and filters. A geometric report is automatically produced. In the event of any actual or potential problem, the engineer may propose a standard exchange of certain items.

DM: *Does this maintenance agreement apply to all products?*

MDM: At present this agreement is exclusively dedicated to DECO single-spindle machines. However, its extension to include the multi-spindle sector is currently being reviewed.

DS: In fact, we are concluding the concepts and want to implement this facility as quickly as possible.

DM: *What is the term of this agreement?*

MDM/DS: The preventive maintenance agreements usually run for a 5-year term.

DM: *And regarding the spares, does the creation of a single "all-in" service for each machine, have the same effect?*

DS: The main innovation of this service is the implementation of a supplies facility, which is separate from the overall machine production supplies facility. The aim here is to prevent any breakdowns in the flow of spares for reason of priorities, other than production priorities.

At a purely logistics level, we are organised around a central warehouse, which can supply any part in stock within 24/48 hours in Europe and/or 48/72 hours throughout the rest of the world.

DM: *This separation of supplies is aimed at meeting customer service requirements with high priority and separating this from any dependence on machine production flow (peaks). Would this not lead to a risk of losing any potential economies of scale?*

MDM/DS: We do not take any risks, because the agreements with our partners are completed on the same bases as for production; a separate supplies facility does not mean a complete severing of ties with production.

DM: *To come back to the delivery periods you indicated for stock items, how can you keep to these?*

DS: We have reached agreements with all the express transport services on the basis of their strong points and countries where they are most efficient. We therefore have a team of partners, who are committed to providing a very high level of service.

DM: *Gentlemen, I would like to thank you for this most informative meeting.*

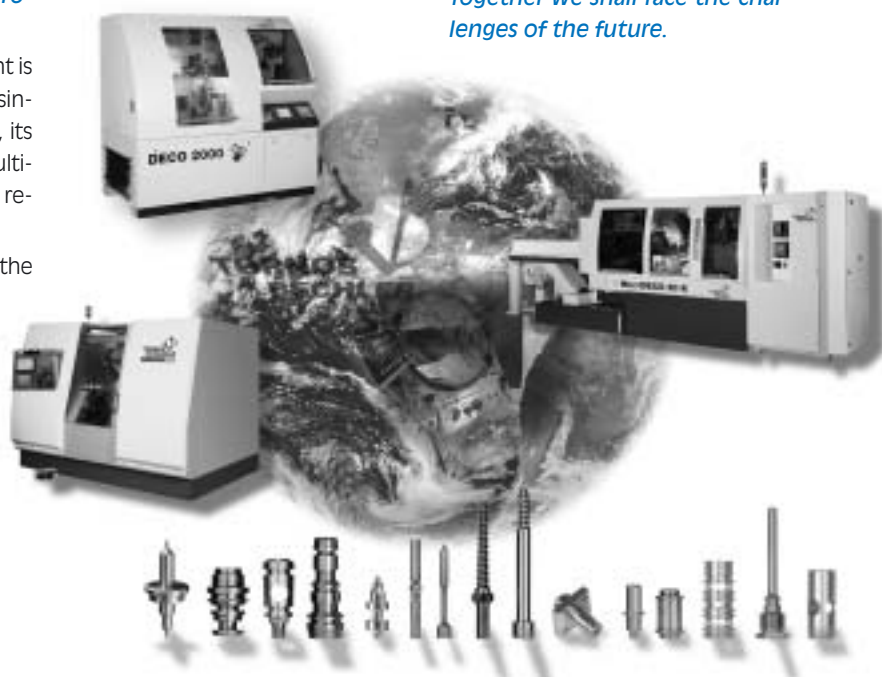
Conclusion:

Following this visit, our journalist was convinced that the re-organisation of the company involved all divisions – and was not purely a re-organisation on paper.

The "customer concept" is clearly uppermost in the minds of these two departmental managers and their staff. The very real incentive to provide an even better service more quickly and to meet the ever-changing customer requirements in a pertinent manner is forcing them to seek out new solutions and information systems on a continuous basis.

Customer Services have been highly involved in this renewal project. The fruits of this development are now available. It has been specially created for you!

Together we shall face the challenges of the future.



New

corporate name!



Following the implementation of organisation by business units, TORNOS-BECHLER is continuing its strategic changes with its primary aims being continual improvement and customer satisfaction. This is regardless of the requirements in terms of turning diameters ranging from 1 to 380 mm, in a fixed, single or multi-spindle headstock with conventional, PNC and cam machine technology.

In the field of first generation TORNOS-BECHLER cam machines and CNC replacement parts, an efficient solution of 100% TORNOS quality has been released on the market: TORNOS-ATS SA.



This business, which specialises in replacement parts, is changing its corporate name to TORNOS SERVICES SA.

This change illustrates a strategic desire to strengthen services and become a global supplier of solutions for the field of turning.

TORNOS-ATS SA, a company founded in January 1997, has changed its name to TORNOS SERVICES SA as of 1st September 2000.

As under its old name, TORNOS SERVICES SA specialises in the supply and sale of replacement parts and After-Sales services for automatic single spindle lathes with TORNOS, Bechler and Petermann cams as well as all CNC single spindle lathes, with the exception of the DECO range. TORNOS-SERVICES SA also provides the service for Schaublin 110-CNC lathes.

The new concept of managing OEM quality parts and a stock of more than 30,000 items allows TORNOS SERVICES SA to ensure continuity with its customers, as well as further reducing the delivery times.

This change has no influence on the business process. The customer will continue to work with the same representatives and the same high level of services to which they have become accustomed.

To maintain a high level of efficiency, TORNOS SERVICES SA is expanding its staff and the storage area at its premises in Moutier.

M. Huber, the manager, recently interviewed by our journalist, briefly recalls the history of TORNOS-ATS and its mission as he perceives it.

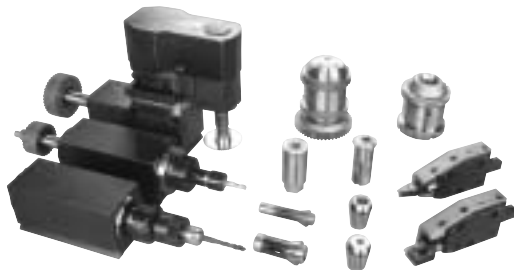
TORNOS-ATS was founded three and a half years ago with the aim of improving servicing of old TORNOS, BECHLER, PETERMANN and TORNOS-BECHLER machines. Over the course of the three years, the situation has improved and we can now state that by aiming for customer satisfaction we have improved our "global service"

Today, we can divide our services into two or three main areas of activity depending on the machines: for cam machines, we provide a replacement parts service, including the supply and prompt delivery of

quality TORNOS parts (quality tested in the approved time, place and conditions). For first generation CNC machines, we offer the After-Sales service in addition to the replacement parts service. A third aspect has today been developed in the renewal of the replacement parts and After-Sales services for the SCHAUBLIN CNC 110 turning centre. To guarantee optimum transfer of knowledge and ability with regard to this product, we have recovered all the crucial com-



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ponents for SCHAUBLIN SA, that is, the original drawings, the databases, qualified staff, stocks, etc...

Our results are excellent, since we are in a global market which is in recession, and we have increased our turnover and thus our share of the market.

When questioned on the future as he sees it, M. Huber says:

Firstly, we want to develop good databases as well as considerable reactivity (reaction speed and availability of merchandise) so that we can ensure a totally satisfactory "reaction service". Secondly, we will increase our range of services with "active services" by offering preventive checks and changing worn components before faults occur.

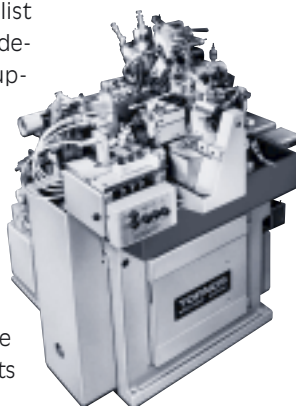
M. Menth, the managing director, then told us that, TORNOS-BECHLER is unshakeable regarding this offer of an additional service on the market. As a specialist servicing company with independent and professional suppliers, TORNOS SERVICES can offer a flawless service on the market and thus can cover the service requirements of those using older machines.

Our journalist then wanted to know if this efficient service did not compete with the desire of the company to promote its new products.

M. Menth's response is a conclusion in itself...

"Our management idea is to move from a single product vision to a wider perception of the service and to customer satisfaction. To do this we are adopting a global vision of what we offer the market.

We provide a flawless service for older products, particularly those which compete with our new products, but the most important thing is still our customers. As long as some of our customers require this service, we will provide it. It is obvious that in the long term, the great advantages of new products will slowly replace the older solutions and the market will diminish. Customer satisfaction remains our priority".



Conclusion

TORNOS-BECHLER as a global turning company? More than ever and this is regardless of your requirements... let's take on the challenge of the future together!



MOTOREX INTACT

VOC-free corrosion protection



INTACT. All the INTACT anti-corrosion liquids offer:

- ◆ *A high degree of anti-corrosion*
- ◆ *Environmental compatibility since they are VOC-free*



- ◆ *Maximum performance*

To help protect the environment, all products are VOC-free (VOC = Volatile Organic Compounds-free). According to scientific research, VOC plays a major part in ozone creation at low altitude. Attempts are being made, throughout the world, to combat this harmful product, and agents containing VOC are subject to a tax surcharge.

Protecting the environment can be financially viable.

The usual anti-corrosive products may contain between 20 and 70 % VOC. MOTOREX INTACT does not contain these harmful hydrocarbons and all metal materials are given optimum protection at a very good price, seeing that the tax surcharge is not applied! Hydration was inconceivable without VOC and this feature is precisely the great

Whether you are dealing with a series of parts or metal precision tooling, efficient corrosion protection is a very important element in industrial production processes. If insufficient attention is paid to corrosion protection, production quality may suffer, deteriorated parts start multiplying and the end result could even be complete deterioration of the product.

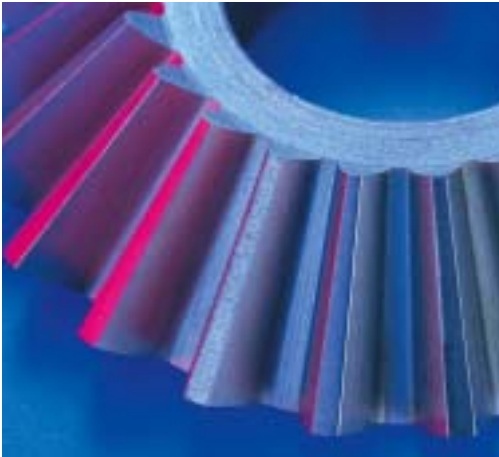
MOTOREX has been carrying out its research and development in this highly critical field of corrosion protection. Over the years, this work gave the company an unrivalled

technological edge. By complying with the following three factors, which guarantee success, a brand new type of anti-corrosion has now come to light, namely: MOTOREX



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innovation of INTACT products: their ability to remove water and highly efficient anti-corrosion properties bear testimony to this!



MOTOREX INTACT XD

This product has outstanding dehydrating properties for all ferrous metals, coupled with effective anti-corrosion – these are the remarkable features of this anti-corrosive liquid. With its special formula, MOTOREX INTACT XD quickly separates the water and forms a thin, resistant, non-adhering and waxy protective layer, which lasts for a long time.

MOTOREX INTACT XF

In addition to its hydration and am-bivalent anti-corrosion protection properties, MOTOREX INTACT XF also effectively removes aggressive substances and forms a protective layer which does not fully dry out. Its excellent compatibility with the

MOTOREX INTACT X

MOTOREX INTACT X is a highly dehydrating liquid, which remarkably removes any residues of water-soluble cooling lubricants from the metal surface. After drying, a dry, dust-repelling surface is obtained, which is perfect for immediate machining work, such as drilling a blind hole etc.

MOTOREX INTACT A

MOTOREX INTACT A is an anti-corrosive, which can be diluted with water. The water represents merely a transporting function and a means of penetration for the active substance. It evaporates completely during drying. What remains is a very thin oily protective film. Treated in this way, machined parts and even the tooling can be stored in the dry without problem.



materials frequently used means that this product has a very wide scope of use.

There are several ways of applying the protection, namely steeping, spraying or brushing on. Depending on requirements, i.e. varnishing, galvanisation and

enamelling of parts, the product can be removed very easily. The ultra-thin protective layer (1 g/m²) provides highly economic protection against corrosion.

MOTOREX INTACT – so that your masterpieces retain their value.

