Edition 2/07

# world of tools

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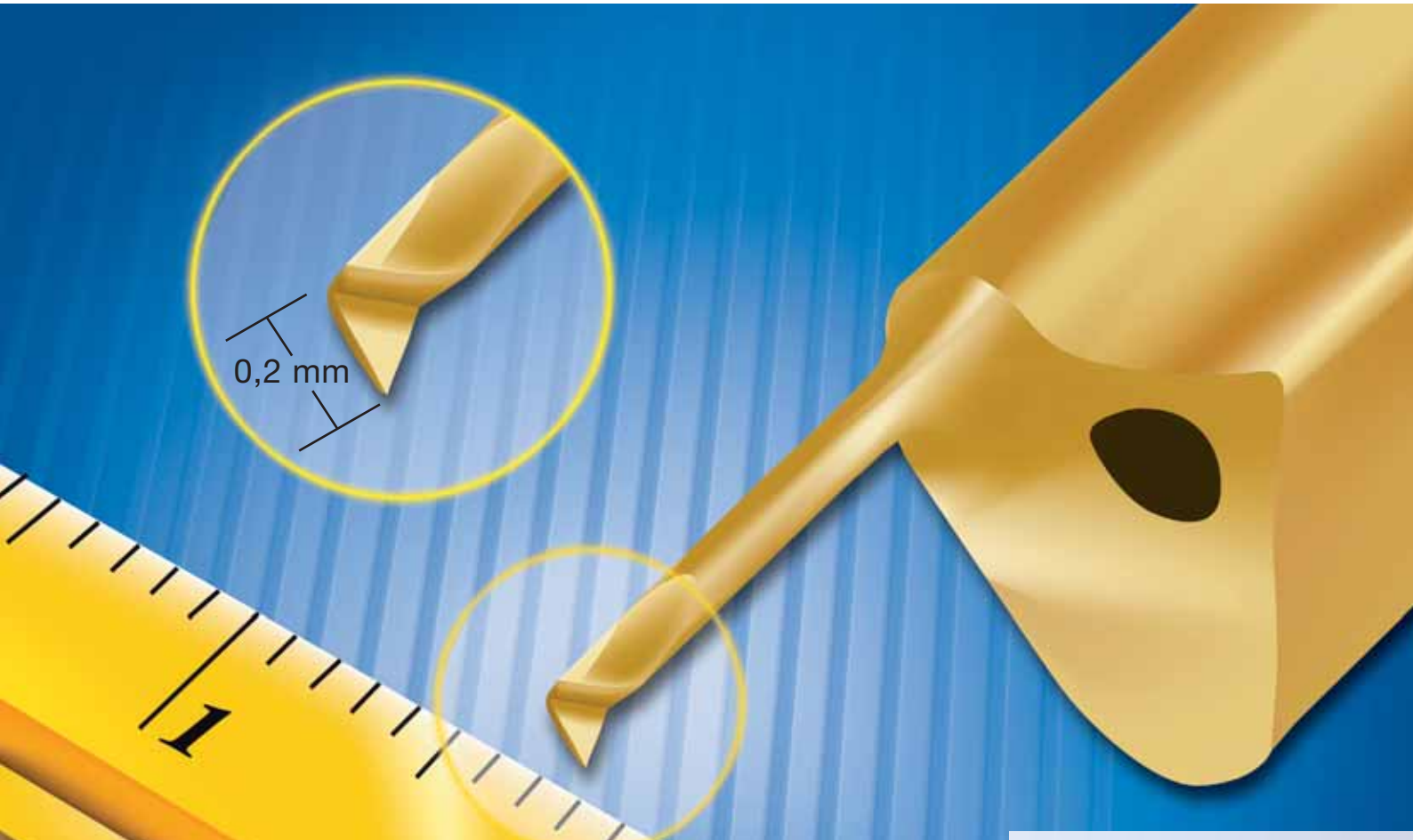
HORN'S CUSTOMER MAGAZINE




This months subject:

## SUPERMINI® INSERTS ARE REQUESTED FOR VERSATILE MACHINING APPLICATIONS

- Demanding components for the Aerospace Industry
- Development of a new clamping system
- How Supermini® are manufactured
- HORN in Italy – Dolce Vita in style of FEBAMETAL

**Ladies and Gentlemen,**

**In a manufacturing context, small is increasingly beautiful. Nearly all industries have applications within the microtechnology range and this regularly demands machining processes in the µm range. This places specific demands on the process chain and on the cutting tools, and in this edition of World of Tools we are focussing on this theme.**

The micromachining considers applications in a range between diameter 2mm and smaller. For the tools with a geometrical defined cutting edge the diameters range between 0,2 and 2mm and are already outside of the definition range. But evaluating the individual components of the tool such as carbide grade, geometry and coating it brings the discussion back into the area of the microtechnology.

A key requirement for positive results in micromachining applications is the perfect combination of all components. For this reason we are working intensively to extend our know-how through a combination of research and defined cutting trials. The knowledge gained reinforces our capability to offer the customers application oriented strategies for economical complete machining solutions.

Be assured that you can expect the well known HORN quality in the micro and small component machining range to assist in establishing a cost optimised and flexible process technology combined with stable machining processes.

Lothar Horn
Managing Director,
Hartmetall-Werkzeugfabrik Paul Horn GmbH,
Tübingen

world of tools HORN'S CUSTOMER MAGAZINE

## Practical matters





## Products



## New Products



## Technology



## Exhibitions



## About us



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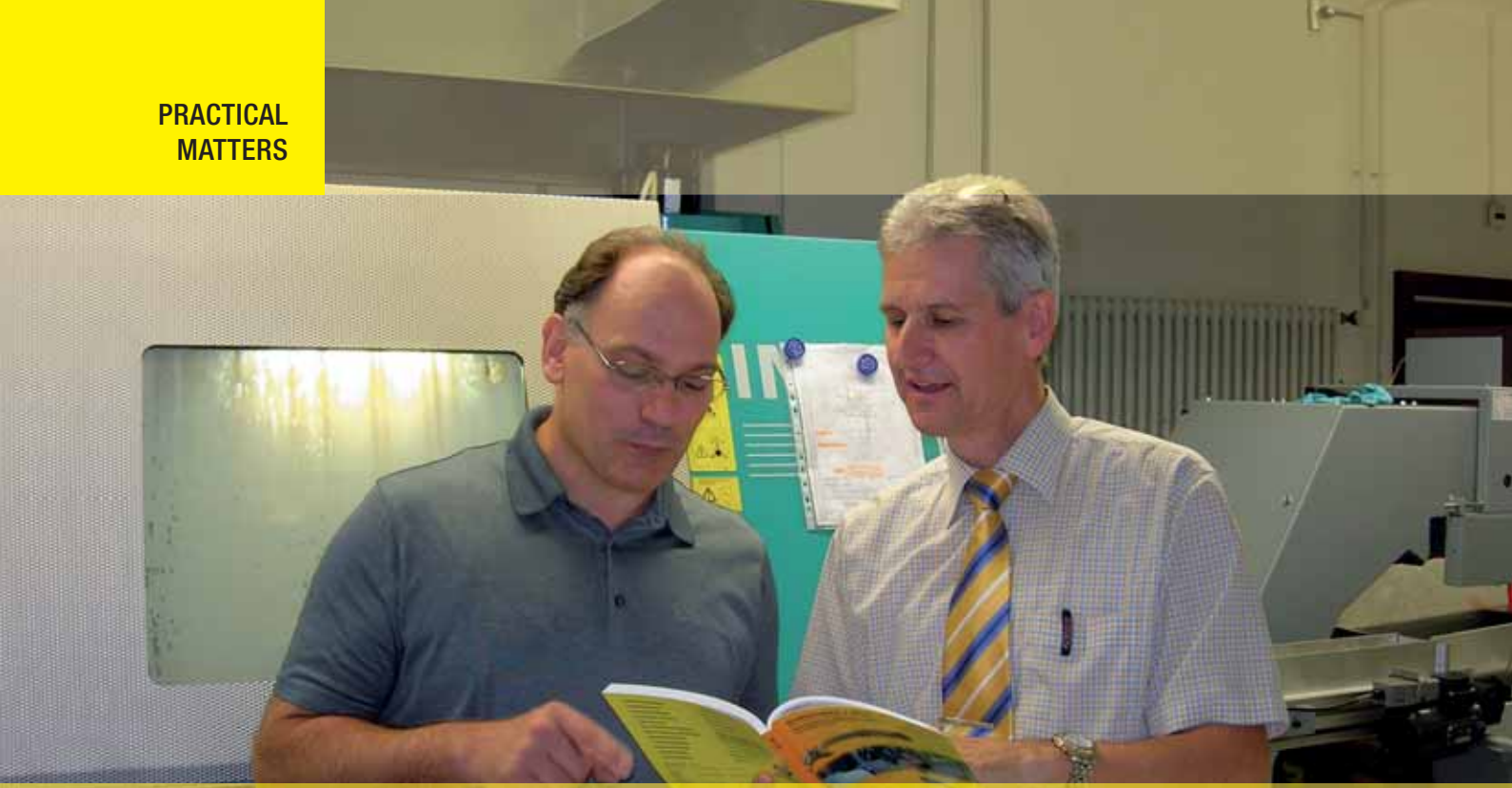


# SUPERMINI® HANDLES THE PRESSURE FOR SENSOR PRODUCTION

José Allegue (Manager Mechanical production/ company Keller) and Wilfried Iseppi (Sales Engineer/ company DIHAWAG) discuss the selection of the appropriate tools

**Keller AG located in Winterthur/Switzerland specialises in the production of piezo-electric pressure transducers and remote transmitters. Together with other products such as manometers and pressure calibrators the company has developed into Europe's leading manufacturer for these products with total sales volume of Euro 36,5 Million in 2006.**

VDI 30 attachment for the Supermini® tools

## Success Story - Flexibility

One reason for the successful development of Keller is the flexible production environment. Approximately 370 employees operate about twenty manufacturing cells. The arrangement supports manufacture of large volumes of OEM transducers as well as small quantities of special designs, economically and efficiently. Sensors are tested under working conditions and extreme pressure and temperature conditions, which are simulated in specialised test rigs. The results of the more than 300 measured values per sensor assure the continuously high quality standards of the products.

## Why HORN Tools?

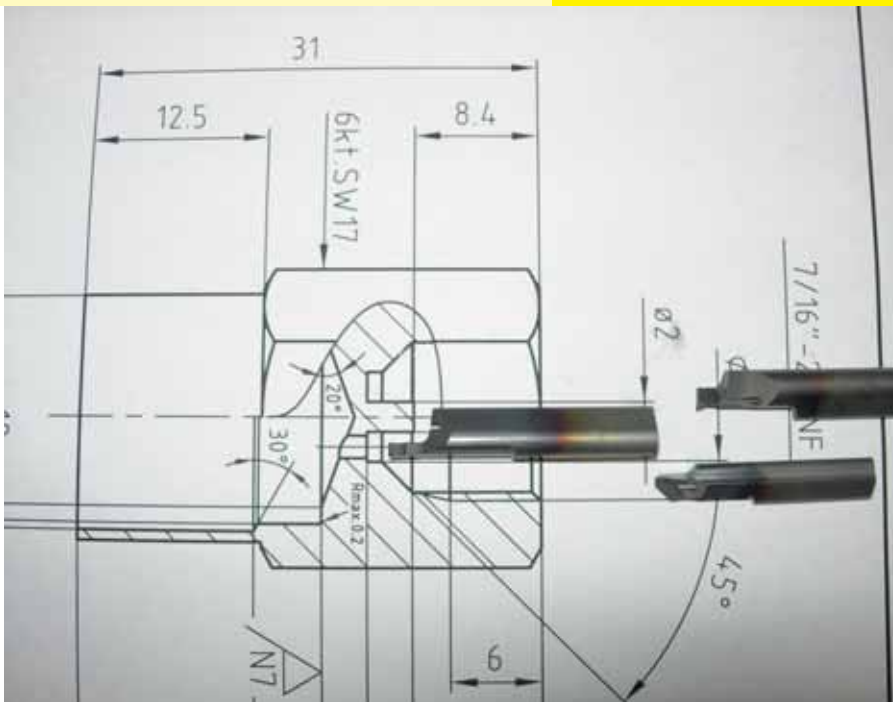
The HORN sales partner in Switzerland, is DIHAWAG (located in Biel/Bienne), which has supported Keller AG for several years. The ongoing aim is to establish stable processes for applications which run unmanned for 24h production time on six or seven days per week. This requirement makes high demands on the tools which are fulfilled by standard and special tools from the product range of HORN Supermini® and HORN System 312.

## Face grooving and boring

Wilfried Iseppi, DIHAWAG sales engineer, and José Allegue, Keller AG mechanical production manager, defined a set of Supermini® inserts to manufacture the housing from material 1,4435. The operation runs on a INDEX G200 mill-turning center with VDI 30 attachments and through coolant option with a pressure up to 30 bar.

The first manufacturing step considers a special insert for face grooving with a cutting speed of vc= 40m/min and a feed rate of f= 0,01 – 0,03mm/rev. After that a boring insert first roughs the inner contour and finally finishes the profile with surface quality of Class N7 with vc= 60m/min and f= 0,01 – 0,06mm/rev with a cutting depth ap from 0,02 up to 0,07mm per cut. In the last step a 45° boring insert again of type Supermini® forms the 45° profile in a roughing and finishing cut. The cutting data is identical with those for the boring application.

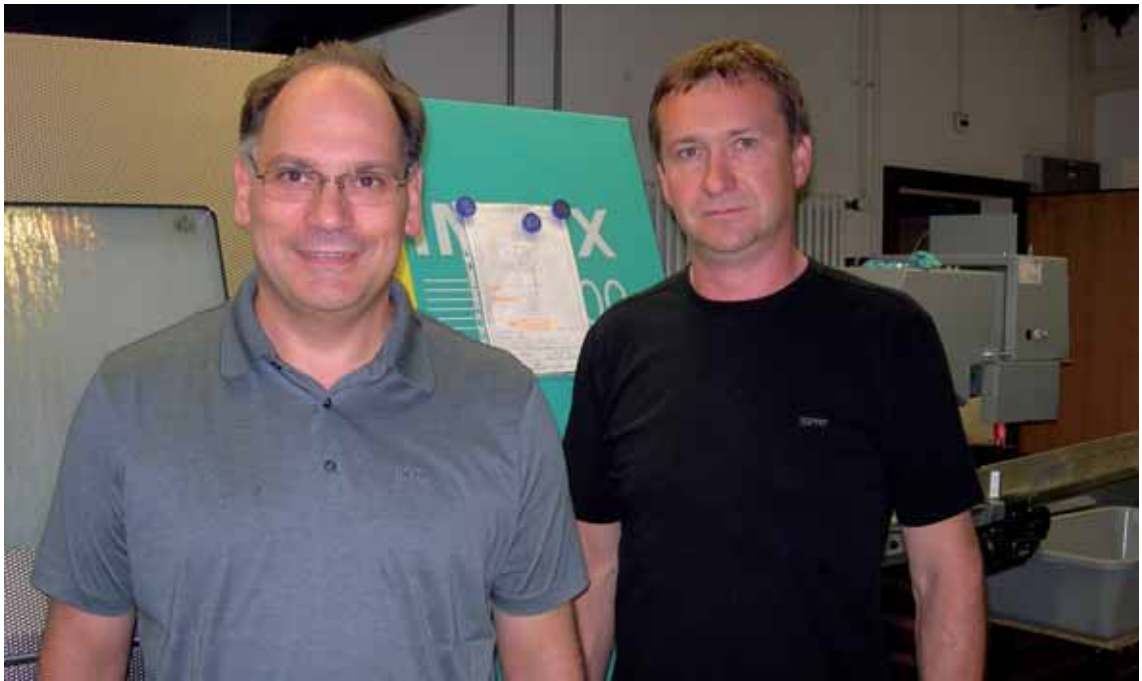
Tool life during the face grooving operation ranges from 400 to 600 pieces; during the boring and profiling operation up to 1,000 components per cutting edge can be produced. Machining time per housing is set – due to the efficient selection of the cutting tools – to a maximum of 1min. 49 sec. On an annual basis Keller AG manufactures between 50,000 to 70,000 of these housings.




**The positioning of the Supermini® insets relate to the contours of the pressure sensor housing which are to be machined**

## Goal achieved

Because of the reliability of the HORN tools a stable process and cost optimised manufacturing strategy was achieved. This confirms that an intelligent approach to production planning and control leads to a significant reduction of manufacturing costs. Being parsimonious on the tool costs leaves no space for creative ideas and productive tooling concepts. Keller AG appreciated this many years ago and acknowledges that this played an important role in the very positive development of the company.



**José Allegue and Peter Klimek (CNC programming and supervisor of component production for Keller AG) have reached their goal (from left)**


# SUPERMINI® AND MINI MAKE AEROSPACE COMPONENTS "LIGHT"

Ready to mount drinking water valve

## Drinking water valve with sophisticated internal design

**Components for aerospace applications must meet strict test criteria, with full traceability starting from purchase of the raw material through to the documented manufacturing quality and confirmation of the defined functions. HORN tools play an important role to fulfill the machining requirements.**

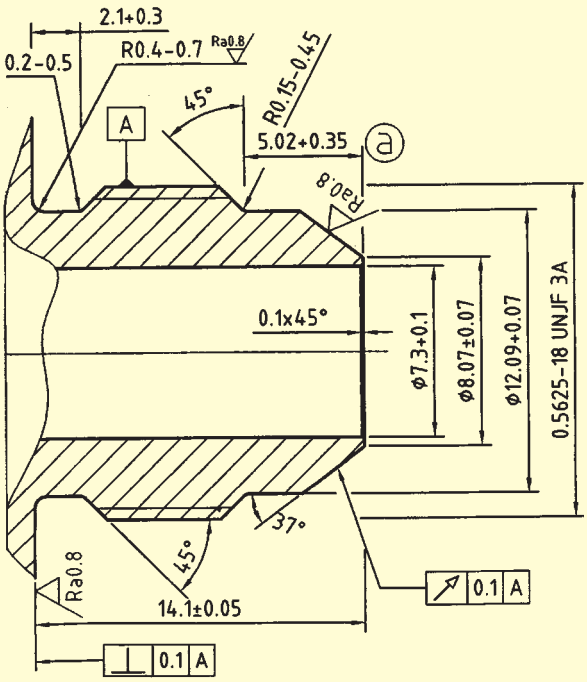
The product portfolio of Groth GmbH & Co. KG and Groth Luftfahrt und Systemtechnik GmbH located in Haltenbek near Hamburg ranges from component machining applications to quality optimization of sub-assemblies. Its complete service package includes turned, milled and drilled parts as well completed assemblies for the aerospace, medical, process control, optical and electronics/HIFI industry sectors.

General batch quantities compare with those of an ordinary component manufacturer and supplier, ranging between 50 to 1,000 pieces per batch. However, the growing competence of the company and its 85 employees has led to increased demand for prototypes, manufactured in batch sizes of 1 to 5 pieces for delivery to the customer ready to fit.

Together it is always possible to find success oriented process optimizing strategies. (from l to r) Klaus Günter Schütt, Groth, technology manager; Werner von Have, HORN application engineer and Sören Trieglaff, Groth turning section manager

### Speciality: Demanding parts for the aerospace industry

A recent project concerned manufacture of housings for a family of drinking water valves used on Airbus aircraft. There are 14 versions of the valve, which is made of material 1,4305. During development of the manufacturing route the specialists at Groth Luftfahrt und Systemtechnik set a number of targets for optimisation of machined features such as undercuts.




As part of the optimisation process Groth also investigated the raw material in a very detailed way. Each material purchase is checked per batch but additional testing is applied to assess the chemical composition and the material mechanical properties.

During definition of the machining strategy for the housing and the development of solutions for different machining related tasks, HORN application engineer Werner von Have was able to assist. This resulted in a machining process where tooling system types Mini 108/111/114, Supermini® 105 as well as the grooving tool systems 224/229/312 were utilised on the important machining steps.

## New machining strategy with HORN tools

The first manufacturing step considers the tube connection for the input side. The pre-machined bore with diameter 14,05mm reaches almost to the centre of the base component. This diameter is finished with a Supermini® insert type 105 within a tolerance of ± 0,035mm. For the more difficult to machine material the cutting speed was chosen to vc= 120m/min, a depth of cut of 0,2mm at a feed rate of f= 0,05mm/rev.

Following this, the housing side with the aerospace thread type UNJF is machined. The specific expertise of Groth and the capabilities of HORN products are demonstrated by machining of the internal bore. The shape of the bore starts with a 15° tapered surface which leads into a cylindrical form and ends with a rounded front surface in a blind hole. This rounded surface is imperative as it functions as the contact face for a seal. For this demanding section Werner von Have recommended HORN Mini with standard and special inserts of type 108. For the different external roughing and finishing operations system 312 performed highly reliably. All requirements regarding surface quality and tolerances were fulfilled.

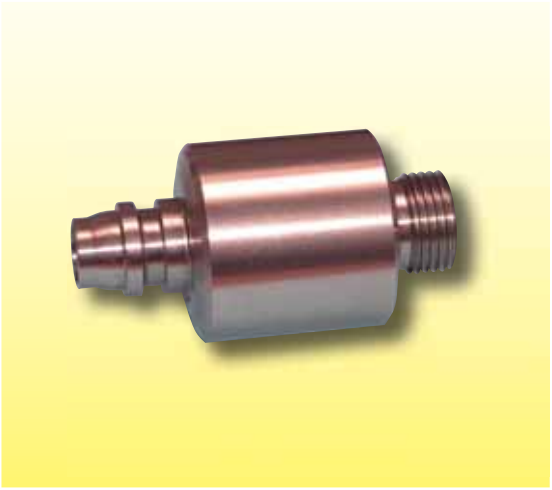
## Evaluation scale precise contour and surface quality

The base component of the housing with a average batch size of 300 pieces is completely machined within 2.75 minutes. For evaluation of this manufacturing time the tool life was of secondary importance. The key requirements were the surface qualities and the precision on the contour. For aerospace applications perpendicular surfaces and sharp corners are not allowed due to the danger of cracks. This is the reason why the tools are changed after one batch, even though they could be still used for “normal” workpieces and achieve double the tool life.

In the final functional test, the valve is checked for leakage, flow and smooth movement. In addition the completed block has to withstand functional testing at extreme temperatures. For example the component is cooled to -55°C and immediately thawed, and heated to +85°C. Neither condition should influence the component’s operation. That these requirements can be satisfied is also due to the performance of our tools. Their sharpness and rigidity enables accurate machining of the internal features that are the key to the process stability needed to manufacture the basic components.

**Picture top left:**
**Part view of “fitting end” of the drinking water valve**

**Picture top right:**
**Beside the drinking water valves a wide range of other parts are also machined with HORN tools: Boring with Mini type 111 and parting off with system 100**



**Turned part as base component for the drinking water valve**

# BEING BIG IN THE SMALL

Salvatore Gennaio, manager of the Supermini® grinding section and Walter Wiedenhöfer, production manager (from left), are responsible that the smallest inserts of our product range are manufactured with the highest precision, economically and within the delivery time

## The manufacturing of our Supermini® inserts

**During the production of small components for microtechnology there are special requirements relating to process stability and tool performance. The basic qualities of our highly productive HORN Supermini® range of sub-miniature tooling are created in our grinding section P2.**

HORN has manufactured the Supermini® since the beginning of the early '90s. The inserts e.g. for boring, grooving, threading and broaching are available as standard and special inserts capable of being used in entry bore diameters from 0,2mm up to 8mm. They perform very successful and satisfy many difficult applications for which the insert geometry can be identified only by using a magnifying glass. With more than 800 different standard products we offer the most comprehensive range of these products world-wide.

This success is based on the outstanding quality of the tools and the application oriented cutting geometry and coating technology. It is reflected in annual production quantity of more than one million inserts and annual share of 15 per cent of the company's total sales.

### Production flow in one set up

Base material for both Supermini® types 105 and 110 are ex stock carbide blanks with an egg shaped profile. These blanks are then ground with different grinding operations to their length, the neck diameter and the form of the inserts as well as any additional features which are necessary for the machining application.

To guarantee the precision of the Supermini® inserts it is necessary to grind them in one set up on the machine as each resetting creates additional tolerances. Grinding is carried out using grinding fixtures which have been manufactured in our toolroom and developed from our production equipment design office. Generally it is possible to put 120 inserts on one pallet which is placed in the automated handling system. Because each machine is designed to hold two pallets there are always 240 inserts in each machine. Average batch size of the Supermini® inserts is 150 pieces. However there are versions where it is necessary to produce up to 50,000 pieces annually.

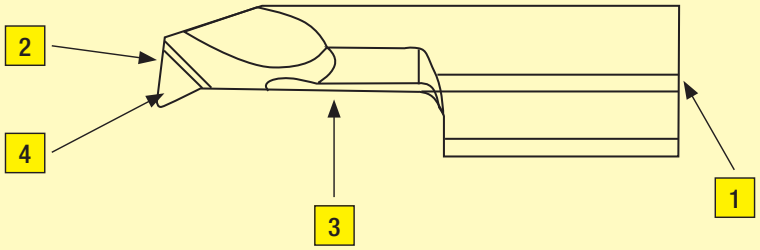
## High grade of automation secures the quality

The insert – which is in our terminology the definition of the complete tool – with the sintered egg-shape profile and the predetermined length of the blank undergoes the following working steps in one set up on our multi-axis machines: Grinding of finished length; grinding of the cutting edge and the top rake (geometry) depending of the machining application; grinding of the offset and the neck. This all happens in a fully automated sequence. Originally the Supermini® section was the first automated grinding section at HORN. The techniques were transferred to other production sections and modified to suit the requirements of the individual products.

## Continuous quality control

Using the experience of fully skilled workers with their individual responsibility for the product quality they can show their competence and we come closer to our goal of minimising setting and down times on the machines and maximising productivity. To maintain the tolerances of ± 5µm on the inserts they are inspected during the manufacturing process under the responsibility from the machine operators. This is done according to statistical criteria for general production but is quantity related for smaller volumes of special inserts. For the different control steps all employees have access in a central location between the machines to projectors, microscopes, contour measuring machines, special measuring blocks and video measuring machines. Due to this continuous control it is almost impossible that defective inserts are still part of the following manufacturing processes such as the coating process. The adequacy of the control during the manufacturing process is confirmed by our product complaint statistics: the rate is well below one percent and significantly below the average values in the industry.

**Just with the ordinary view it is impossible to recognize the details of the insert geometry**




1. Grinding of the contact face/length
2. Grinding of the cutting edge
3. Grinding of the offset and the neck
4. Grinding of the top rake

## A person of the first hours

Salvatore Gennaio is responsible for the grinding operations of the Supermini® inserts. During 26 year employment with the company he has passed a lot of different manufacturing stations from the beginning in Gomaringen until his current duty as area manager in section P2, the grinding section for Supermini® inserts. In his section are currently about 30 skilled operators tending far more than 30 CNC grinding machines. Because we couldn't really use the standard version of the machines they have been extensively modified to suit the requirements of a product related clamping situation, the special grinding arbor attachment and the coolant supply. Modifications also included modifications to the automation and the control of the base machine by our maintenance department and fixture design office. This gained the company a lot of knowledge which secures also today our technological leadership.
The grinding section operates on a daily three shift cycle, sometimes including weekends. During this time the machines run unmanned which means the machines are equipped and work until all blanks went through. The employees organise themselves to arrive from time to time in the factory to control the production process.

## Our strength: Being big in the small

In Supermini® production we manufacture inserts for bore diameters from 0,2mm. It is important to get a grasp of these dimensions. Only then can we

**Grinding operations on inserts of type Supermini® 105. In this shape the insert is used for boring applications starting from diameter 0,2mm**

View into the grinding section for inserts of the Supermini® range

understand the precision that is required, for example, to manufacture the important details of the insert geometry. Due to the small dimensions in which the machining application takes place -and here we talk about a few microns – it is possible that during production and later during machining applications the very small inserts could be deflected. In this critical area the difference between theory and practice appears immediately. To eliminate possible problems close co-operation between the people from R&D, design, production and application engineering helps to find the necessary solutions. The short information and decision paths underline our strength: quick trouble-shooting also for machining applications where the details need to be identified with a magnifying glass. Because the small and even smaller tools need to be produced very cost efficiently we see new tasks for us for the future. One future oriented application is e.g. broaching on lathes. However our developments also lead in other directions. Recently we began to manufacture Supermini® inserts with PCD tips. The intention here is to meet requests for the increased number of applications to machine exotic workpiece materials and fiberglas reinforced plastics - and to offer a wider range of Supermini® tools in the well know HORN quality.

Picture bottom left: Because of the permanent control on special measuring places a high quality standard is secured

Picture bottom right: On the profile projector with the according magnification the precision of the contour is checked and measured

# NEWS AND PRODUCT EXTENSIONS

## Grooving Systems

### Supermini®, Mini and System 264 with Kennametal KM 16 Micro high precision modular interface

**Universal, high precision quick change system for drilling, grooving and turning applications on Swiss auto lathes.**

For the Supermini® range (bore diameter from 0,2mm) there are two toolholders available with through coolant option. The 90° cranked interface allows backside machining on all Swiss auto lathes. All inserts of type 105 fit this toolholder. Currently there are more than 800 standard items available ex stock. In addition there is an even wider range of special designs possible.

For the Mini range (bore diameter from 8mm) different toolholders with through coolant of type B108 are available cranked in the same way as the B105s. These are available with overhangs of 21 and 26mm.
For external grooving and side turning applications we have designed HORN System 264 to fit on the KM16 interface. Currently 12 right and 12 left hand toolholders are available for insert widths from 1,5/2/2,5 and 3mm. Maximum depth of cut ranges from 4mm to 16mm. All current insert geometries of system 264 are able to be used.

Mounting onto the machine uses a high precision base toolholder; there is a square shank measuring 16 x 16mm and two cylindrical shanks of 20mm and 22mm diameter, each with through coolant. All of the Kennametal KM16 Micro base holders are compatible with the HORN toolholders for this range. Clamping of the toolholder/base holders is effected with torque screw drivers of type D515QL with torque set at 10Nm.

**Tools of the ranges Supermini®, Mini and system 264 with the new KM16 Micro high precision attachment**


### Boring from 0,2mm bore diameter

**Supermini® sets new standards for the smallest diameters. Two inserts sizes offer solutions for each machining operation.**

Type 110 inserts are designed for larger entry bore diameters and Type 105 for smaller diameters. Either can be used with all available standard toolholders, with and without through coolant and, if necessary, with specific machine related attachments.

For boring applications from 0,2mm the combination of carbide grade and micro-geometry guarantees the highest possible rigidity and process stability. Inserts are available in right hand and left hand versions with the carbide grade MG12 and the reach of the inserts is 1mm or 5xD.

More than 800 different standard inserts are available ex stock. In addition there are far more options possible for customised applications.

**Only high precision and continuously controlled production processes allow manufacture of inserts with a head dimension of ≤0,2 mm to machine bores with a diameter of ≥0,2 mm**


# SLOTTING CUTTER TYPE M139

Slotting cutter System 139 with a cutting width of 1,4mm

## The R & D department develops a new clamping system

**Innovative product developments were and remain the cornerstone of our R & D department's activity. Further evidence of its achievement is demonstrated with the new slotting cutter system M139.**

A significant detail of the new system is the cutting width of just 1,4mm. For comparison, the range of the existing disc milling cutters of type M310 starts from a cutting width of 4mm. The key feature of M139 is an intelligent self clamping system with a safety notch which secures, fixes and centres the insert to enable this narrow cutting width. This clamping (patent pending) holds the insert secured in position at higher rpms.

### Cutting trials underline the development on the PC screen

During development of such tooling systems we apply the latest construction tools such as 3-D-CAD systems as well as the computer based Finite-Elements-Method (FEM). Together with HORN's extensive experience in the field of carbide grooving tools it has become possible to develop tooling systems and solutions which not only show an improvement over today's technology but also set new standards for machining strategies.

Realistically new tooling systems, especially clamping systems like that used for the slotting cutter M139 can be only designed and virtually tested at the first prototype level on a computer system. Computer simulations such as rpm related crash tests or cutting trials can deliver results close to the machining reality which are then considered during the following development stages. During this process we rely on specific computer analysis tools which are specifi-

cally formulated for development of cutting tools, and which also consider the criteria of the necessary process stability.

## Standard tools of the M139 range

The first standard milling cutters with a cutting diameter of 100mm and a depth of cut up to 25mm are equipped with ten single edged carbide inserts. Disc milling cutters with a cutting diameter of 80mm and a depth of cut up to 20mm will hold eight carbide inserts.

Single edged inserts of type 139 with cutting widths from 1,4/1,5 and 1,6mm can be clamped in the same milling cutter body. The extremely thin inserts are sintered in a specific process and PVD coated after the grinding process. Additional cutting widths, geometry versions as well as full radius inserts are planned for the future product additions.

## Simple insert handling

The handling of the system is straightforward. However mounting of inserts into the very thin 1.2mm thickness cutter body disc requires more attention and care than mounting wider inserts. A special leaflet which is delivered with each cutter should make the correct mounting of the inserts easier. The mounting usually has to be performed in two steps:
a) Manual location of the insert in the pocket.
b) Soft rotation into the pocket with key P39L until the insert has full contact with the prism (A). Contact with the safety notch (B) is not necessary.

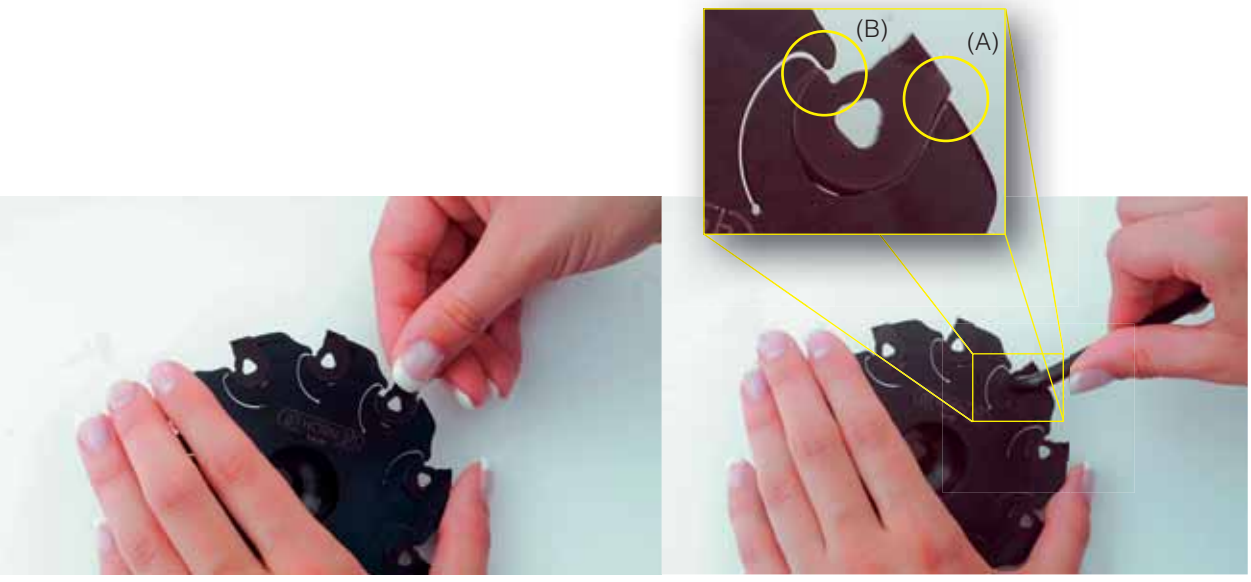
## Parameters for perfect results

For disc milling cutters with widths below 2mm the side relief angles have to be smaller than on an insert with widths above 2mm. This increases the risk of swarf being trapped between the workpiece and the milling cutter disc. Such a “trapped swarf” can often lead to immediate breakage of the tool. This can be avoided if – and this is contrary to the recommendations of our other milling tools – the small M139 cutter is used in a conventional milling process as opposed to climb milling.

The maximum rpm of the milling cutter is set at n = 1500 min-1. For tool steels, stainless steels and cast iron we recommend cutting speeds between $v_c$= 130 up to 200m/min. With a cutting diameter of 100mm and a maximum rpm of n=1500 min-1 it is possible to achieve a cutting speed of $v_c$= 470m/min, a value which offers very good cutting results machining non-ferrous materials and alloys and aluminium alloys. The feed rate per tooth varies in relation of the material between fz= 0,01 and 0,1mm/tooth. A detailed overview about the cutting data recommendations is delivered with each cutter.

## New development with a future vision

With the new milling system M139 we have a new development which is based on own ideas and developed with a great amount of effort and care. The current stage of the available products is only the beginning and indicates the direction that future developments will take.




**The location and fixation of the insert in the cutter body is quite simple**

# Retrospective

## 8. MACHTECH, 8.-11. May 2007, Budapest/Hungary

**This year´s MACHTECH Show – the international exhibition for metal cutting, machining and welding technology – which is held every two years on the Budapest Exhibition Centre, exceeded expectations by far in terms of the booked surface space and the number of exhibitors.**

More than 350 exhibitors occupied over 13.000m². Their news and product developments focussed on metalcutting machines and machining centers as well as cutting tools. In comparison with the MACHTECH 2005 this was an increase in exhibitors of 11 percent and a stand space increase of appr. 6 percent.

"During this years exhibition we have experienced significantly improved organization, a better show environment and an increased number and quality of visitors" our Export Sales Director Andreas Vollmer stated from Budapest. "By the second day we could already identify a much better response to the show" he added.


**Good visitor traffic on our stand**

Our subsidiary HORN Magyarország Kft. showed on a stand size of 104m² exhibits which comprised a complete overview of our product range including the latest product additions.

# Outlook

## EMO, 17.-22. September 2007, Hannover

**In hall 5, stand A52 we are showing the following new products and additions to existing product ranges:**

**System Kennametal KM 16 Micro.** Quick change system for external and internal machining on Swiss auto and other small lathes: boring from 0,2mm bore diameter and grooving with Supermini® as well as from 8mm bore diameter with Mini type 108. Grooving from 1,5 up to 3mm cutting width and side turning with System 264.
**Slotting cutter M139.** Equipped with 10 single edged carbide inserts, cutting diameter 100mm, cutting depth up to 25mm. Inserts with cutting widths of 1,4/1,5 and 1,6mm are clamped in the same cutter body.
**Broaching unit EWS-Slot.** The development of EWS and HORN is designed to broach grooves on more than 200 different types of lathes and manufactures groove dimensions up to 10mm width and 30mm length. It is only necessary to program the Z-Position, the rpms and the linear X-feed rate for the depth of the groove.
**Indexable insert A315 with toolholder 357.** Insert in a standard design for face grooves with depth of cuts up to 3mm and grooving widths from 1,5 up to 3mm.
**DS-Solid carbide endmills for Titanium.** Solid carbide end mills with Titandiborit-coating for general use and for high speed milling applications. Available as 4 and 5 fluted milling cutter with cutting diameters from 3 up to 16mm.
**Full radius insert S229 with geometry .K.** For grooving, side turning, finishing and profiling of profiled grooves.
**Thread Whirling M302.** Single or double pitch thread whirling on small lathes. The design of the whirling heads is defined according to the machine types.

**Broaching unit EWS-Slot**

# Investing in the future

**Manufacturing capacity for carbide grooving tools at Tübingen was significantly extended eight years ago but has now reached its maximum. For managing director Lothar Horn it was never an option to consider expansion of manufacturing in a low cost country. Mr. Horn says "Instead of following the general trend to take jobs from Germany and move them into so-called low cost markets, I am committed to this site and to the manufacturing market in Germany". He added. "Here we already have highly qualified and skilled employees for development and production of advanced, high precision carbide grooving tools."**

The construction site in August 2007

In recent years a large amount has been invested in new machines and technologies. In parallel small manufacturing units have been established for standard and special tools in the UK, USA and Italy with the intention of improving customer service.

Construction of the manufacturing site extension began in April 2007 in Tübingen. The new building will connect to the existing manufacturing facilities and building is progressing at the highest possible speed. Whilst the existing production area has a total production surface of 6,000m² the new facility will add a possible production surface of 5,000m² over two levels, plus 800m² for social facilities and an underground car park.

In the short term it is planned to create an additional 250 new jobs. When the building is completed the tool room, machining centres and parts of the grinding section will move in. It is expected that the construction will be finished in April 2008.

Hands-on people during the opening of the construction: (from left to right) managing director Lothar Horn, mayor of Tübingen Boris Palmer, Helmuth Wiedmaier, Andreas Vollmer and Walter Wiedenhöfer from the board of directors, construction site manager Mrs. Nicole Kuhn-Adis and architect Thomas Duttlinger

# Paul Horn GmbH supports the volleyball friendly match Germany–Japan in Tübingen

Successful premiere in Tübingen

**The premiere in the TÜ-Arena couldn't have been better for the very first international match played in the sports hall:**

Excited spectators, a never ending clapping of hands, a high noise level and the mexican wave – put simply the Sport-Arena on fire.

There was great interest in the match, which pitted the German national team against Japan, who came sixth in the last world championships. About 2500 spectators came to see the match, which was a preparation match for the European Championships in September, to be held in Belgium and Luxemburg. For one and a half sets the Japanese team played extremely well but the German team increased its work rate and came out as 3:1 winners against the highly rated opposition. A big party took place after the match in front of the hall.

HORN broke new ground for the company by sponsoring the event. The feedback within the company - all employees were entered into in a prize draw for tickets – was very positive. On the following day the employees who attended the match told their colleagues about the great atmosphere and the "dominating colour yellow".

Werner von Have, representative in the north

# Werner von Have, Application Technology and Distribution lines

**Our man in the north has worked for HORN since 1991 as a freelance engineer. From his home town in Wohltorf, 15km east of Hamburg, he covers appr. 350 customers in Hamburg, Schleswig-Holstein, Mecklenburg-Vorpommern and the northern part of Lower Saxony.**

Due to the low industrial density in his area Werner spends a lot of time on the road. However his accumulation of experience and high level of expertise has helped him to gain access to customers in a variety of industry sectors.

The skilled mechanical engineer was previously employed as production manager in an instrument making company which unfortunately went into liquidation. At an age where many others begin to think about retirement he rose to the challenge and started a new self employed business as a tooling engineer.

With broaching tools, solid carbide drills and end mills – and the complete HORN tooling program – he was able to offer a portfolio which met his expectations on the quality and high precision tooling level, and gave the opportunity to offer his clients highly economical tooling solutions. In addition to these products, Werner von Have offers another speciality: own-developed cutting tools manufactured by companies with whom he has a close working relationship.

As an experienced applications engineer he can solve a lot of different machining applications by himself and propose the necessary process steps and tools. With 3 to 4 visits annually to Tübingen he keeps himself up to date and also attends exhibitions with the focus on the METAV Show in Düsseldorf and the Nortec in Hamburg. As a result the very active 67-year old is rarely short of a project to work on.

Edgar Maier, Julia Scheu and Klaus Hammerschmidt (from left to right)

# Sales Group VK4

**Sales Group VK covers the area from Flensburg to Sinsheim and the western part of Mecklenburg-Vorpommern. As well as a large number of small and middle sized companies there is also a significant range of factories operated by large or global group players within their customer portfolio. These include Zahnradfabrik Friedrichshafen in Saarbrücken, Heidelberger Druck and Airbus Industrie. Not included are the automotive plants which come under the responsibility of Sales Group VK1.**

Coverage of this wide customer range with our complete tooling programme has taxing requirements and needs very good knowledge of technologies and applications. This is offset by the many interesting aspects. The trio of Julia Scheu, Klaus Hammerschmidt and Edgar Maier confirm that the contacts with the customer are sometimes quite entertaining. All these customers expect excellent service starting from the quotation including a CAD drawing, definition of the tooling concept, the order tracing and finally the co-ordination of activities for the placed orders – some of which are outside the scope of direct sales group responsibilities. Likewise the seven external sales engineers who are linked to the Sales Group VK4 expect a quick and sophisticated response because in front of the customers they want to demonstrate what a quick reaction at HORN means.

The education and the professional experience of the three merge very well together. Edgar Maier, a skilled mechanic with the additional exam as a mechanical technologist has been employed at HORN since 1994. In his spare time he enjoys riding his racing or mountain bike to find his performance limits in the hills or on the road.

Performance sport is also the chosen interest of Klaus Hammerschmidt but he prefers running the marathon. His career started also with an apprenticeship to become a skilled technician when he first joined HORN on the shop floor in the grinding department. As well as his duties on the shop floor he was also assigned to part time positions within the company for production planning and preparation of quotations for customers, before he finally found his place in the domestic sales office.

Julia Scheu completes the trio of VK4. With her commercial education and apprenticeship she has been employed at HORN for five years. Her duties are mainly related to commercial questions appertaining to sales and service responsibilities. She is also responsible for clarifying and co-ordinating processes including communication with other departments within the company. Her open and receptive personality helps to eliminate possible problem situations right from the beginning. In her spare time she likes to read good books, enjoys gardening or plan a vacation tour to world-wide places.


# DOLCE VITA IN STYLE OF FEBAMETAL

**Anyone who thinks about Italy immediately starts to dream: beautiful countryside, great wines, traditional car makers like Ferrari, Alfa Romeo and Maserati – the country and the people are very special and intensively linked with our history.**

Nevertheless everybody also thinks with a blinking eye about the regular strikes and the very famous and well known “domani”. Our sales partner in Italy, the FEBAMETAL company in Grugliasco near Torino has its own way of dealing with these Italian “rules”.


The Sales and Production Office of FEBAMETAL in Grugliasco near Torino

## Long start up phase

Initially the HORN presence in the Italian market was organised in the same way as the markets in the UK and in France until the year 1994 by the former Stellram Group. Product specific decisions by the former management of Vanadium Stellram in Italy resulted in a termination of the agreement between our companies. Together with Ing. Paolo Costa - himself a long term employee of our former sales partner - we developed strategies to keep the HORN brand on the Italian market and extend its importance long term. Already at this time we recognised that in parallel with the relaxed Italian mentality there existed an impressive combination of ambition, willpower, experience and dignity.

## Jumping into the cold sea

At the time it was not possible for HORN to invest additional capital in foreign countries so it was necessary to find a solution which offered the possibility for Paolo Costa and HORN to secure its position in Italy with limited financial backing. After an intermediate employment of Paolo Costa and Beatrice Curti in the company Ceramet in Torino the company FEBAMETAL was established in 1995 by Paolo Costa, Beatrice Curti and Franco Gazzarri. Franco Gazzarri completed the trio with his long term technical experience which

The owners of FEBAMETAL: Ing. Paolo Costa, Beatrice Curti and Ing. Franco Gazzarri (from left to right)

he had gained during is more than 30 year employment at FIAT Avio. By the way FEBAMETAL stands for both names of children of Paolo Costa (Federico and Barbara).

## Rapid development

In the first two years after the transfer of distribution rights for Italy FEBAMETAL showed a very positive development and it was necessary for the company to move into larger office premises. It was also possible to win back tooling contracts at FIAT and in addition HORN got his own supplier number for FIAT and all its Italian manufacturing plants. It was at this time that the European Union also financially supported the creation of the new engine plant of FIAT in Pratolla Sera in Avellino (near Naples). This plant played an important role in the future development of HORN's position on the Italian market, especially with the application of machining the camshafts for petrol and diesel engines.

## Outstanding technical co-operation

To safeguard these promising developments a technical support system was established for FEBAMETAL. Two young engineers joined HORN to advise and support FEBAMETAL on technical issues directly relevant to the Italian market. Initially Stefano Villa, then Andrea Panichi started to support FEBAMETAL's activities in the north of Italy. Consequent success, aided by the excellent organization of FEBAMETAL's internal and external sales staff led to continuous expansion of its business activities. In addition to our two northern Italian engineers Antonio Cavalluzzi of HORN now supports the activities of FEBAMETAL in the south of Italy.

At the beginning of 2007 HORN and FEBAMETAL started a joint manufacturing venture. In the new building in Grugliasco FEBAMETAL manufactures a selected range of Supermini® inserts to full HORN quality standards. The sons of Paolo Costa and Franco Gazzarri, Federico Costa and Luca Gazzarri are responsible for this project.

Success in Italy can be completely attributed to the selfless efforts of Paolo Costa, Beatrice Curti and Franco Gazzarri – and to the customer oriented and well chosen range of high quality cutting tools and devices which offer the Italian market a comprehensive portfolio for all metal cutting applications.

Today FEBAMETAL employs 50 people. With appr. 20 external sales engineers the company is one of the largest and most active tooling distributors on the Italian market. Sales volume in 2006 reached € 15 million. Dolce Vita in style of FEBAMETAL can be interpreted as the pursuit of long term success and a high level of customer satisfaction. Grazie!

Picture left: FEBAMETAL manufactures inserts of the Supermini® range to the full HORN quality standards

## PLUNGE CUTTING · CUTTING OFF · GROOVING · BROACHING · COPY MILLING

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