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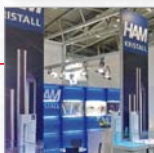
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## ***HAM further extends its head office in Schwendi-Hörenhausen***

*For more than 45 years HAM – Hartmetallwerkzeugfabrik Andreas Maier GmbH represents excellent productivity, innovation and quality for the manufacturing of precision tools. As a successful medium-sized family enterprise we develop and produce high precision cutting tools, made of solid carbide, diamond, cermet and steel.*

*At the end of 2013 the new management decided to modernize and renovate the headquarters in Hörenhausen.*

*The production facilities of the subsidiary HAM Swiss as well as the factory in Buch have been transferred and successfully integrated into the manufacturing process in Schwendi-Hörenhausen.*

*All procedures have been reviewed with the aim of moving closer to the objective "HAM becomes faster".*

*Further internal restructuring activities, optimized manufacturing processes and shorter distances are measures leading to the prime objective of an improved service for all HAM customers in future.*

*This process will be completed during the first quarter of 2016.*

*Another important aspect of the new HAM management is the training of young people. HAM has decided to build a junior factory, thereby securing the future of the company and counteract the impending shortage of skilled workers.*

*Constant presence at international exhibitions, such as Le Bourget in Paris, Moulding Expo in Stuttgart, Laser World of Photonics and the Productronica in Munich, will further increase the recognition of HAM products.*

*For more details, please refer to the reports on the following pages.*

*We hope you will enjoy reading this FACTS edition!*

*Yours sincerely,*

*HAM Management*





51<sup>st</sup> INTERNATIONAL  
PARIS AIR SHOW  
LE BOURGET  
JUNE 15 - 21, 2015

51<sup>st</sup> SALON INTERNATIONAL  
DE L'AÉRONAUTIQUE ET DE L'ESPACE  
PARIS LE BOURGET  
15 - 21 JUIN 2015



## International Paris Air Show Le Bourget 2015 – Review



The International Paris Air Show Le Bourget is the largest aerospace trade show in the world. This year the 51<sup>st</sup> exhibition took place from 15<sup>th</sup> to the 21<sup>st</sup> of June. More than 350.000 visitors from all over the world, almost half of them professional visitors, swarmed to the airport in the south of Paris. This is an increase of more than 11 % compared to 2013. About 2.300 exhibitors from all sectors of the industry presented themselves in the 120.000 m<sup>2</sup> exhibition area.

As in past years HAM France Andreas Maier S.A.S. was also represented. In the pavilion "Regions France" HAM France demonstrated the complete product range from solid carbide up to polycrystalline diamond tools in standard and special design in its showroom. Especially innovative tools for the machining of advanced materials and composite materials were the focus of the visitors.



# Le Bourget 2015 Le Bourget 2015

HAM and its partner companies are working together closely on the development of new tools resulting in the aerospace industry becoming an important mainstay for the company.

At the exhibition the European aircraft manufacturer Airbus and the North American companies Boeing and Bombardier announced a significant increase in demand for the next 20 years. Airbus calculated a demand of more than 32.000 aircrafts with more than 100 seats each worldwide in this period. This forecast allows us a positive outlook into the future.

Because of the large number of visitors and exhibitors the Paris Air Show 2015 was very successful for HAM. Many new contacts with aircraft manufactures and sub-suppliers were established. Furthermore it was a great opportunity to meet familiar faces.

***HAM looks forward to the next Paris Air Show in June 2017.***

## International Paris Air Show 2015 – Statistics

Number of exhibitors:	2.303 from 48 countries
Visitors:	351.584 in total, 149.947 of them professional
Exhibition area:	120.000 m <sup>2</sup>





## Preferred Supplier of the Bosch Group



### For the fifth time in a row – HAM is Preferred Supplier of the Bosch Group

HAM – Hartmetallwerkzeugfabrik Andreas Maier GmbH has been awarded with the popular “Preferred Supplier” of the Bosch Group for the fifth time in a row. So HAM was appointed as Preferred Supplier once again.

Mr Aquilino Díaz (IBT Lead Buyer – MRO) and Mr Prashant Badhan (IBT Lead Buyer Tools India) handed over the certificate “Preferred Supplier of the Bosch Group” in the material group “Tools” to Mr Hans-Peter Stadler (HAM Precision – Bosch Coordinator worldwide) and Mr Helmut Schatz (HAM Precision – Technical Sales Engineer) on behalf of Mr Günter Eberle (General Manager HAM Precision).

The status as Preferred Supplier is reviewed annually. Bosch suppliers like HAM have to fulfill the demands of Bosch above-average in the sectors quality management, flexibility, reliability, price, technology, constant improvements as well as in an active collaboration and the implementation of cost reduction measures.



The award emphasizes the long-lasting, intensive and successful cooperation between the Bosch Group worldwide and the main plant of HAM in Hörenhausen.

2015 is an important year for HAM, in which many changes have taken place in all company sectors. The goal is to face current and future demands in the market to be one decisive step ahead. The requested challenges are enormous. For this reason the award helps to keep the motivation of the HAM employees on a high level.

With a considerable know-how HAM will intensively work on improving different processes at Bosch and contribute actively to required cost reduction measures.



## Moulding Expo Stuttgart 2015 – Review



### Moulding Expo 2015 – strong debut in Stuttgart



**The Moulding Expo (MEX) took place from 5<sup>th</sup> to 8<sup>th</sup> May 2015 in Stuttgart and celebrated a strong debut, straightaway MEX has managed to receive the certification as an international trade fair.**

The response from exhibitors and visitors was positive above expectations. Overall, more than 14.000 trade visitors from 52 countries came to Stuttgart to take part in the trade fair launch. A key differentiator of the MEX was the high proportion of mould and die tool producers with 39 %.

Of course, HAM was represented through its own sales company Fritz Hartmann GmbH & Co. KG at this premiere event.

The main task for Hartmann was to present the HAM milling program for the mould and die production to many customers and demonstrate the availability of their products.





HAM keeps around 15.000 various products in different quantities available from stock in its sales company in Renningen.

With the slogan "A typical HARTMANN" printed on the back of their polo shirts, in contrary to all conventions the "HART MEN" lined up in jeans and polo shirts at the fair. Visitors of the exhibition were impressed by the consulting service, the exhibited product portfolio and the appearance of the consultants.

New contacts were made and existing ones further developed. The evidence can be seen in the constant increasing sales figures after the fair.

The participation of HAM in this fair was a great success!

***We are already looking forward to the next MEX, which will take place in May 2017 in Stuttgart.***

### Moulding Expo Stuttgart 2015 – Statistics

Number of exhibitors:	619 (155 from abroad)
Visitors:	about 14.000 from 52 countries
Exhibition area:	31.500 m²

Regarding the press articles  
please refer to our  
homepage  
[www.ham-tools.com / NEWS](http://www.ham-tools.com / NEWS)



In July 2015 HAM invited 15 specialized journalists for a two-day trade press conference at HAM.

## Trade press conference with HAM



After the welcome by the General Manager Mr Günther Eberle the journalists had been given a brief insight of the history of HAM – Hartmetallwerkzeugfabrik Andreas Maier, beginning with the foundation in a garage in the year 1969 until to date. Following Mr Günther Eberle reported on the current situation of the company HAM and provided an outlook into the future.

Subsequently Mr Raffael Eberle, Plant Manager of HAM, informed about the implemented restructuring and modernizing activities executed in 2014 and how these measures effected the company.

In 2015 the production facilities HAM Swiss and HAM Buch have been transferred and implemented to the head office in Schwendi-Hörenhausen. Due to these logistical measures, internal paths and intermission times have been reduced and HAM has got one step closer in achieving the major objective "HAM becomes faster".

During a company tour the journalists could obtain an initial impression about HAM products, the machine park and the new structured processes.

On the second day of the trade press conference various presentations about new products in the sector precision, polycrystalline diamond tools, electronic tools, dental and medical technology as well as crystalline technique were given.

Mr Robert Schönfelder, General Manager, and Mr Achim Schweikart, Head of Sales Force of HAM sales company Fritz Hartmann GmbH & Co. KG in Renningen, informed the journalists about the new sales organization of HAM and Hartmann and also presented some application examples concerning mould and die production.

At the final discussion many questions were asked by the journalists. The event was accepted in a very positive way by the trade press and was a big success for HAM. Numerous technical contributions have already been published in trade press magazines or went online.

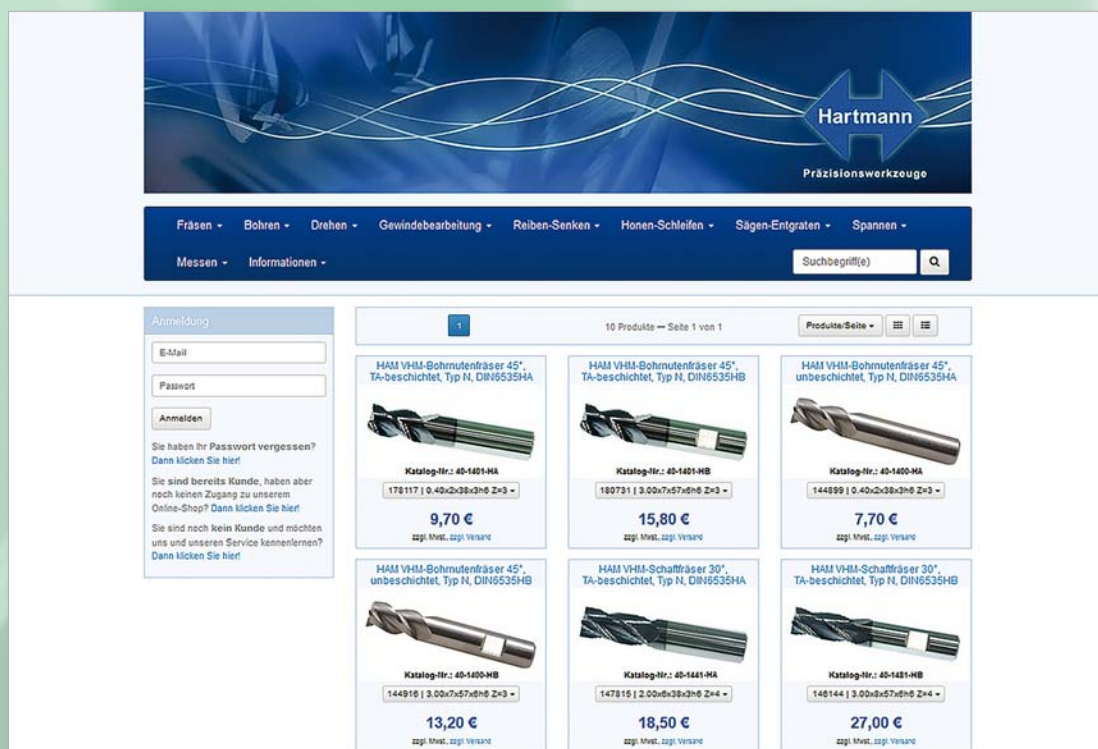




## Fritz Hartmann GmbH & Co. KG goes online

In April 2014 Fritz Hartmann GmbH in Renningen published the first printed main catalogue in its more than 50 years history. In eight chapters more than 30.000 articles on 870 pages are offered.

### e-shop of Fritz Hartmann



All items from the main catalogue of Hartmann can be ordered online by German customers as from January 1<sup>st</sup>, 2016.

So all German customers can order HAM standard tools via user-friendly interface 7 days a week, 24 hours a day. Besides technical information like coatings and dimensions the user is also informed about the availability and the price.



## JOURNEES TECHNIQUES 2015 – Review

### JOURNEES TECHNIQUES 2015 – a successful event



HAM France organizes the in-house exhibition **JOURNEES TECHNIQUES** every five years. From 15<sup>th</sup> to 18<sup>th</sup> September 2015 they presented their complete product and service program. Many important partner companies of HAM France, like Tornos, Stäubli, Bumotec, Wieland etc., participated actively in these technical days and took the opportunity to present themselves.

The company HAM France was founded in 1982 in Peillonex, a small village in the area between Geneva and Chamonix. Mr Christophe Chambet took over the management from his uncle Mr Adrien Chambet in 1999.

With 60 high-qualified employees and with modern machinery HAM France produces solid carbide and polycrystalline diamond tools (including repair service) according to customers' specifications and drawings for the French market.





Especially sub-suppliers for the watch industry settled down in close vicinity, the so-called Décolletage. The Décolletage in the area of Peillonnex is one of the largest worldwide.

Besides this very important industry in this region, the automotive industry, its sub-suppliers, the machining industry as well as the mould and die industry are customers of HAM France.

Since a few years the product portfolio has been expanded with tools for the dental and medical sector. HAM sells very successfully a wide range of products in the dental and medical sector (implant and orthopedics) directly in France via HAM France Medical.

More than 400 customers accepted the invitation of HAM France to this impressive exhibition. The visitors were shown the processing of a magnifying glass of brass (Ecobrass from the company Wieland) on a Tornos machine with a Precise HSC-spindle. All guests received this magnifying glass as a gift.

The management of HAM, represented by Mr Günter Eberle and his wife Ms Petra Eberle, and four employees of the HAM executive staff took also part.

A perfect organization, an impressive event program and many culinary highlights ensured that this exhibition will remain in the guests' memory for a long time.





Tension strut with ball joint  
for automobile

## New Cermet Reamers HAM-FINAL



The company HAM-FINAL, manufacturer of tools for machining of precise holes, has been working together with the company THK RHYTHM AUTOMOTIVE CZECH A.G. (previously TRW a.s. Dacice) since 1992. The company THK is a sub-supplier for automotive industries like FIAT, FORD, DACIA, NISSAN and RENAULT etc.

TCM in Stainz, Austria, asked HAM-FINAL for support concerning a technical solution for the reaming of a tension strut.

TCM supports the company THK Dacice with a Tool-Management und works closely together with HAM-FINAL. The main objective is to provide tools and reduce the tools costs.

A new tool solution for the machining of a hole  $\varnothing 28,06$  mm including the  $120^\circ$  seat for DUCATO had to be found. The tension strut is made from 30MnVs6 (1.1302) and 480.000 pieces are expected to be produced every year. The finishing of the boring including seat was so far performed by a combined reamer on a twin spindle CHIRON machine.





Machining of the  
DUCATO work piece



Chip formation  
at former reamers



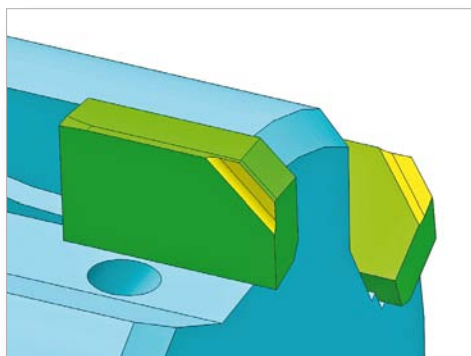
Reamers of HAM-FINAL

The main problem of the former used tools were the chips wrapping around the tools. These winding chips had to be removed by the operator 3 to 4 times per hour and this procedure took about 3 minutes. The unproductive time amounted to 658 hours per year. The manual removal of the chips caused regularly damages at the cutting edges.

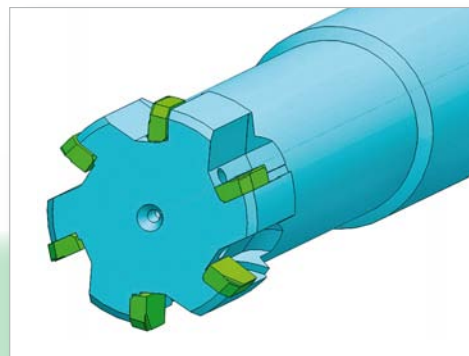
Due to the massive cutting edges damage a regrinding of the reamers was not possible, thus the cutting plates had to be completely changed on a regular basis. The demand for HAM-FINAL was to reduce the production and tool costs using the same cutting parameters.

After examination HAM-FINAL produced several reamers with brazed cermet cutting edges and different cutting geometries where the chips did not wind around the reamer body. Due to intensive tests and the following cutting geometry optimization via the support of the TCM tool experts and the technicians of THK, a reamer was developed achieving considerably better results.

The new developed cermet reamers of HAM-FINAL can be reground twice maximally and achieve the same tool life as new tools.



Cermet reamer HAM-FINAL  
with chip groove



The tools of HAM-FINAL have increased process reliability and the occurrence of winding chips has been eliminated.

Reaming of the hole  $\varnothing 28,06 + 0,06$  mm / Hole depth = 15 mm  
CNC-machine vertically (CHIRON WS 15 – twin spindle)  
Coolant IC, emulsion 40 bar, 480.000 pieces/year

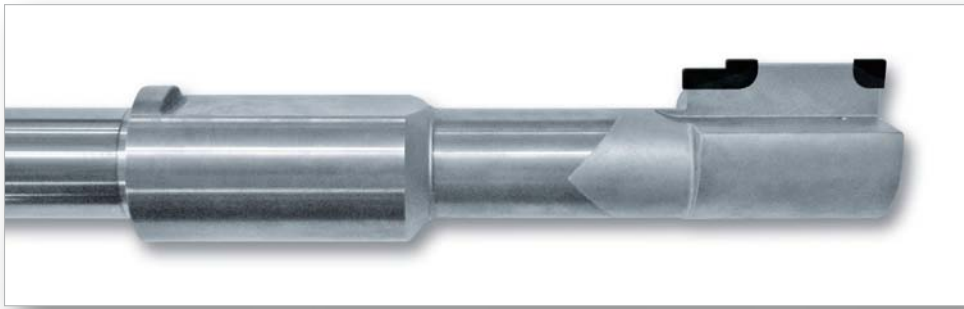
	Former adjustable reamer	Reamer HAM-FINAL
Material of reamer cutting edges, teeth Z	cermet, Z = 6	<b>cermet + PVD, Z = 6</b>
Reamer body	steel	<b>steel</b>
Cutting speed $v_c$ (m/min)	123	<b>158</b>
Feed $v_f$ (mm/min)	350	<b>2.160</b>
Tool life (m)	150	<b>450</b>
Surface quality $R_z$ ( $\mu\text{m}$ )	40	<b>40</b>
Reaming time $t$ (s)	0,086	<b>0,014</b>

Advantages against the former tool:

- Improved chip formation and chip flow
- No removing of winding chips  
> savings 658 hours/year
- Tool life 3x higher
- Reaming time 6x lower
- Hole roundness improved by 84 %

This geometry has been used in the meantime for other tools with great success. Through this measure the tool life could be improved considerably.





## New PCD Eccentric Tools for high process reliability



HAM developed for the machining of brake calipers customer-specific polycrystalline diamond (PCD) eccentric tools for reverse machining which improved the process reliability significantly.



Up to now monoblock tools, made of steel, were used for this kind of machining. HAM has analyzed the demands of the customers in detail and executed detailed processing simulations during the reverse process and thus developed PCD eccentric tools, made of solid carbide blanks and brazed steel cutting parts, for the pre-machining and finishing with fine adjustment.



Already in the construction phase of the special blanks the unbalance correction was taken into consideration which saved a lot of time and money during balancing.

In comparison to traditional solutions with monoblock tools, made of steel, the new developed PCD eccentric tools achieve a significantly improved surface quality due to a better vibration damper. Also the process reliability of the brake calipers was notably improved.

Such complex PCD tools can be produced at HAM due to a very efficient machinery. By using ultra-modern laser equipment a very good surface quality for PCD can be achieved. The laser beam cuts through the diamond and binding material with accurate reproducibility and without problems. It is possible to produce perfect cutting edges without any cracks. Thus HAM can manufacture many PCD tool versions economically.



For many years HAM – Hartmetallwerkzeugfabrik Andreas Maier GmbH has focused actively on team building. The aim of the activity was to bring together all trainees of the commercial, industrial and technical sector.

## HAM Apprentice Team – teamwork in the apprenticeship



In their future careers, all employees must work together in a team, whether it is in administration, production or technical departments. Therefore HAM places emphasis on teamwork for its apprentices resulting in notable success for both company and its customers.

Also in 2015, the apprentices of the company HAM were allowed to participate in the trainees' team training in an autumn atmosphere.

The team training 2015 took place in Wallenhausen at a "high rope course". Starting the morning fresh with anticipation, the first part of the training for the 21 trainees from HAM was to jointly analyze and solve several team tasks.

One of the various exercises was to train cautiousness by climbing a bobbing tree trunk and keeping the equilibrium. Because if a member was falling down, the whole team had to start all over again.

To achieve joint success, not only common sense is required, but equally a need for own ideas, clear communication and the realization that you can reach the goal only by cohesion.





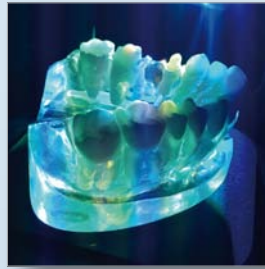
After a lunch break, all HAM trainees had to complete the eight climbing courses for which teamwork and cooperation were needed.

Often the courses were not easy to climb, but it was obvious from path to path how the team spirit and the willingness to help one another had increased.

Some trainees also tried their luck at archery – with success! This sport requires precision and discipline to hit the target.



To review the day, the apprentices collected their experiences and conclusions and placed their thoughts on paper with the summary: team building and good teamwork are important aspects in their professional lives.



## CAD/CAM cutters revolutionize the dental sector



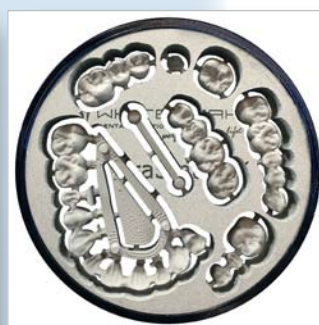
The machinery industry is continuously developing dental technology. The challenge in dental technology is the production of individual teeth on the basis of a manual or scanned impression of patient's mouth.

In the next step, a specialist processes the data with the CAM software, so that they can be transferred to the milling machine.



Even before purchasing the machine, laboratories and milling centers decide what kind of materials they want to mill. The most popular materials are e.g. zirconium, steel, plastic, titanium, wax and various kinds of ceramic.





Out of these blanks e.g. crowns, bridges, links, prostheses or abutments are milled with HAM cutters.

HAM develops and produces milling tools in different designs (radius or torus) and suitable coatings depending on the milling strategy and according to the individual requirements of their customers.

**These HAM milling tools have already been applied very successfully in the dental market:**





## Laser World of Photonics 2015 – Review



The Laser World of Photonics exhibition in Munich took place from 22<sup>nd</sup> to 25<sup>th</sup> June 2015. With 9 % more visitors compared to 2013 and an additional exhibition hall the event proved again its world leading character in the sector of "Optical Technologies".

Intelligent photonics have been implemented meanwhile in all areas of our lives. Whether it concerns internet, traffic, automotive or aircraft technology, the exhibition offered a suitable application for any desire.

HAM Crystal Technology Andreas Maier GmbH was also attending the show with a booth. HAM was very pleased to welcome a lot of customers and has been able to win a couple of new customers too.

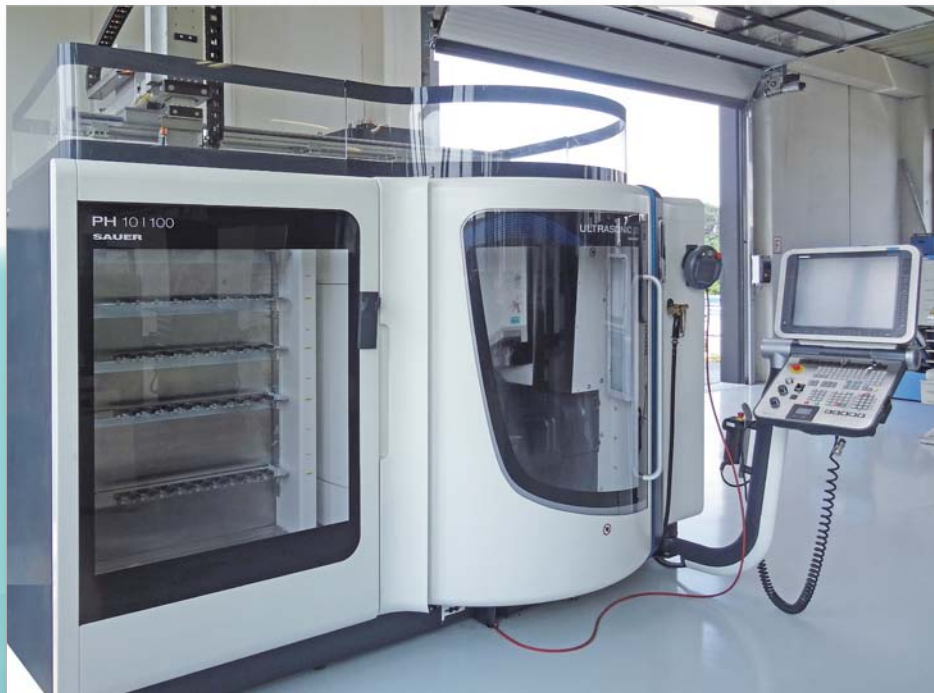
### Laser World of Photonics 2015 – Statistics

Number of exhibitors:	1.227 from 42 countries, 61 % of them international
Visitors:	31.279 professional visitors from 72 countries
Exhibition area:	55.000 m <sup>2</sup>

The expectations for the forthcoming Laser World of Photonics which will be held from June 26<sup>th</sup> to June 29<sup>th</sup> 2017 are excellent. According to a forecast of BMBF and other organizations the sales volume of the photonics industry will rise from the current 350 billions to more than 600 billions up to the year 2020.

***We are looking forward to participating again in 2017.***





## New drill and grinding center



In July 2015 HAM Crystal Technology has invested in a new ultrasonic supported drill and grinding center.

With this machine HAM Crystal Technology is finally able to manufacture optical components from fused silica, sapphire and other hard materials in almost any geometry. With the integrated ultrasonic device HAM is in a position to offer extremely smooth drilling free of any scratches and splinters. The accuracy of 2 microns guarantees highest quality and reliable precision.

The integrated automatic charging device makes reproducible manufacturing cycles possible. With this machine HAM Crystal Technology is well prepared to satisfy the customers' requirements for high precision and quality.



# FACTS



## Customer orientated – anywhere in the world



**Hartmetallwerkzeugfabrik  
Andreas Maier GmbH**  
D - 88477 Schwendi-Hörsenhausen  
Stegwiesen 2  
Telefon 00 49 / 73 47 / 61-0  
Telefax 00 49 / 73 47 / 61-142



**Kristalltechnologie  
Andreas Maier GmbH**  
D - 88477 Schwendi-Hörsenhausen  
Stegwiesen 2  
Telefon 00 49 / 73 47 / 61-0  
Telefax 00 49 / 73 47 / 61-207



**Fritz Hartmann GmbH & Co. KG**  
D - 71272 Renningen  
Benzstraße 45  
Telefon 00 49 / 71 59 / 92 10-0  
Telefax 00 49 / 71 59 / 92 10-40



**HAM France Andreas Maier S.A.S.**  
F - 74250 Peillonex, Frankreich  
Chemin de la Forêt  
Telefon 00 33 / 4 50 / 36 95 44  
Telefax 00 33 / 4 50 / 36 89 36



**HAM Italia S.r.l.**  
I - 20037 Paderno Dugano (MI)  
Via Privata Gorlich 1/A  
Telefon 00 39 / 02 9904 3335  
Telefax 00 39 / 02 9904 3354



**HAM Japan Co., Ltd.**  
J - Tokyo, 144 Japan  
4F. Takachiho Bldg. 4 - 29 - 5 Kamata  
Ohta - Ku  
Telefon 00 81 / 3 / 37 39 / 86 86  
Telefax 00 81 / 3 / 37 39 / 86 91



**HAM-FINAL s.r.o.**  
CZ - 62700 Brno, Tschechische Republik  
Vlárská 22  
Telefon 00 42 / 05 48 / 12 73 14  
Telefax 00 42 / 05 48 / 12 73 15



**HTCM Ltd.**  
Hungarian Tool Consulting & Management Ltd.  
H - 9028 Győr, Ungarn  
Regi Veszpremi ut 10  
Telefon 00 36 / 96 51 52 50  
Telefax 00 36 / 96 51 52 59



**HAM Präzision Swiss Andreas Maier AG**  
CH - 9450 Altstätten, Schweiz  
Alte Landstraße 50  
Telefon 00 41 / 71 / 7 57 03 20  
Telefax 00 41 / 71 / 7 57 03 45



**HAM Precision Tooling Systems  
Andreas Maier Inc.**  
USA - Pewaukee, WI 53072  
1275 E. Wisconsin Avenue, Unit E  
Telefon 00 1 / 262 / 691 - 7622  
Telefax 00 1 / 262 / 691 - 7643



**TCM**  
Tool Consulting & Management GmbH  
A - 8510 Stainz, Österreich  
Technologiepark 3  
Telefon 00 43 / 34 63 / 600 90  
Telefax 00 43 / 34 63 / 600 90-304



**TCM International**  
Tool Consulting & Management GmbH  
A - 8510 Stainz, Österreich  
Technologiepark 3  
Telefon 00 43 / 34 63 / 600 90  
Telefax 00 43 / 34 63 / 600 90-304



**DIBO Diamantwerkzeuge GmbH**  
A - 4522 Sierning, Österreich  
Gewerbstraße 6  
Telefon 00 43 / 72 59 / 44 222 - 0  
Telefax 00 43 / 72 59 / 44 222 - 999



**HAM China Office**  
CN - 211102 Nanjing, China  
Room 315, Block 5  
No. 998 Chengxin Avenue  
Telefon 00 86 / 25 5880 8801  
Mobil 00 86 / 138 5149 1567

HAM is represented all over the world.

Our global network system ensures  
the best customer orientated service.

### Fairs 2016

<b>intertool</b> Vienna	10.05. – 13.05.2016
<b>AMB</b> Stuttgart	13.09. – 17.09.2016

Take a look at our homepage!

[www.ham-tools.com](http://www.ham-tools.com)

