Press release Starrag 07-2019

Process-focused thinking
Starrag and Blaser provide tips for increasing efficiency in turbine production

The best for blisks – on the new Starrag BAZ NB 151, visitors at the Turbine Technology Days 2019 saw for themselves how better roughing, finishing and accessibility can be achieved.

Rorschacherberg

Now in its seventh year, the Turbine Technology Days 2019 at Starrag’s headquarters in Rorschacherberg, Switzerland, once again proved a hugely popular event. Over 200 visitors from around 20 countries attended – all leaders in the aerospace and energy industry, keen to find out about solutions for managing turbine production with greater productivity and reliability. With this in mind, the two hosts Starrag and Blaser did not give product presentations in the conventional sense. Instead, they focused on
demonstrating functioning process chains for machining blisks, blades and impellers with high efficiency.

The demands placed on turbine production are constantly increasing in terms of the materials to be machined, the tolerances to be adhered to and, above all, the resulting unit costs. At the Turbine Technology Days 2019, keynote speaker Colin Sirett, CEO of the Advanced Manufacturing Research Centre (AMRC) at the University of Sheffield, noted how turbine machining is extremely inefficient – especially in the case of blisks. A number of steps are still performed manually, such as handling materials between the individual operations or surface finishing, which cost valuable time and involve risks. To manage the growth that is predicted in this industry over the next ten years, he continued, we need to rethink manufacturing processes and install new automated processes.

Dr Christian Walti, CEO of Starrag Group, adds: “The Paris Air Show for the aviation and space industry took place shortly before our turbine event. There was much to learn about how positively the aerospace industry is developing and how hard OEMs and suppliers are searching for solutions to make their production processes more efficient.” But he is seeing the energy sector take great interest in further optimising the efficiency of turbine production too.

This provides the perfect basis for successful business – since Starrag has already been aligning itself with customers’ needs for a long time now. Walti explains: “We take a holistic approach. This means that selling machines is not our primary concern. We prioritise delivering production systems that offer customers a long-term benefit. This is why we are

---

The elixir of life for machine tools:
At the Turbine Technology Days 2019, Blaser Swisslube demonstrated just how much of an effect the right coolant can have on productivity, efficiency and process stability.

Relying on close partnership: (From left) Marc Blaser, CEO of Blaser Swisslube, Dr Christian Walti, CEO of the Starrag Group and Dr Bernhard Bringmann, Head of the Starrag plant in Rorschach.
expanding our range horizontally, as well as working closely with premium partners, who play an important role in the whole process.

One such partner is the coolant manufacturer Blaser Swisslube, who collaborated on this year’s event. CEO Marc Blaser remarks: “We take a holistic approach like this too, focusing on customers and their needs. In this respect, joining forces with Starrag is a great opportunity as we have already spent many years working together on numerous technical research projects and developments”. The aim, he explains, is to show both existing and potential customers how closely coordinating machine tools, tools and coolants creates solutions that enable customers to make substantial and sustainable progress.

**Blisk manufacturing in a single step**

The two hosts created a total of 13 stations, all with a focus on processes. Even at the world premiere of the NB 151 five-axis machining centre, which rounds off Starrag’s specialised Blisk machining range, the emphasis was on process advantages. After all, the machine is designed for the complete, rapid and reliable machining of blisks and impellers in a single step.

Dr Bernhard Bringmann, Head of the Starrag plant in Rorschach, explains: “With our NB 151, we also offer highly productive roughing cycles, which are in turn only possible as a result of advanced tool developments and optimised coolants. The machine is also designed for the efficient smoothing of blisks with high dynamics and precision, with the result that the entire blisk machining process is around 20 % more productive than standard solutions.”

**Coolant as a key factor in our success**

Both partners demonstrated the hidden potential of coolant, which Blaser likes to describe as a liquid tool, on the somewhat larger NB 251 blisk machining centre. It was adapted by Starrag for machining with oil and produced remarkable results during roughing trials using TiAl6V4 with an indexable insert milling cutter. For example, after 30 minutes of machining time, around 40 % less wear was measured on the indexable inserts compared to machining with emulsion.

At other stations, Blaser machining specialists explained why coolant is a significant factor for success – when tailored to the respective machining process and carefully maintained. Each variety has its own strengths.

The odourless, high-performance grinding oil Blasogrind GTC 7, for instance, ensures fast air discharge for optimal cooling performance, while the crystal-clear Synergy 735 offers outstanding surface quality.

**Unique, simple, standalone automation**

A Starrag LX 021 machining centre helped visitors understand how to minimise downtimes. The smallest model in the LX series, which was developed for the highly precise, efficient, simultaneous five-axis machining of turbine blades, is designed for the complete machining of a compressor blade. The machine loads and unloads the parts automatically from a pallet storage system, enabling this process – which is normally carried out manually – to be completed in a matter of seconds. A special device is responsible for repositioning the workpiece between base machining and blade machining, thus saving even more time.

Starrag has a wealth of experience in automation, including with regard to multi-machine systems and Flexible Manufacturing Systems (FMS). Starrag has been carrying out such turnkey projects for manufacturing turbine blades and structural components in Rorschacherberg for over twenty years, using a wide variety of Starrag Group machines. It is these FMS that prove Starrag’s extensive process expertise. Numerous elements – special carbide cutters, fixtures, the RCS CAM system, blade machining components and control centre software – are the result of Starrag’s own innovations. For other components, Starrag relies on the proven expertise of its selected partners, whose products – including grinding machines, tool systems and software solutions
– complete the process chain. A number of them also had exhibition stands at the Turbine Technology Days to hold discussions with visitors and share their technical expertise.

**Long-term planning with over 95 % availability**

Next on the calendar after the Turbine Technology Days 2019 is EMO. Starrag advertises machine availability of at least 95 % for the Group’s machines and systems – under certain conditions. Machining specialists will explain what this means at EMO, on stand B58 in hall 12.

**EMO 2019 in Hannover:**
Starrag: Hall 12, Stand B58
Blaser Swisslube: Hall 6, Stand J60

**Company profile Starrag**

High-precision machine tools for greater productivity

Starrag Group is a global technology leader in manufacturing high-precision machine tools for milling, turning, boring and grinding workpieces of metallic, composite and ceramic materials. Principle customers are internationally active companies in the Aerospace, Energy, Transportation and Industrial sectors (Industrial Components, Luxury Goods, Med Tech). In addition to its portfolio of machine tools, Starrag Group provides integrated technology and maintenance services that significantly enhance customer quality and productivity.

The umbrella brand Starrag unites the product ranges Berthiez, Bumotec, Dörries, Droop+Rein, Ecospeed, Heckert, Scharmann, SIP, Starrag, TTL and WMW. Headquartered in Rorschach/Switzerland, the Starrag Group operates manufacturing plants in Switzerland, Germany, France, the UK and India and has established a network of sales and services subsidiaries in the most important customer countries.

The shares of Starrag Group Holding AG are listed on the SIX Swiss Exchange.

**Company profile Blaser Swisslube**

The Liquid Tool

Blaser Swisslube is a globally active company in the metalworking fluid sector. The independent and family-owned Swiss company was founded in 1936 and has since grown from a small business into a global player, employing around 600 people worldwide. With its own subsidiaries and business partners, Blaser Swisslube is close to its customers in about 60 countries.

Blaser Swisslube develops, produces and sells high-quality metalworking fluids. With its profound know-how and experience, customized services and excellent products, Blaser Swisslube helps its customers fully capitalize on the potential of their machines and tools and turn their metalworking fluid into a key success factor – a Liquid Tool.

---

**For further information**

Starrag
Michael Schedler
Head of Marketing
T +49 2166 454 0
info@starrag.com
www.starrag.com

Blaser Swisslube AG
Nadia Hofer
Public Relations
T +41 34 460 01 01
media@blaser.com
www.blaser.com