

PRESS RELEASE

The magnificent seventh!

Starrag's year-on-year turbine technology developments

With a new blisk and impeller machine making its public debut, complemented by a host of technology developments and demonstrations on a range of machines and 'partner' workstations featuring innovative production and manufacturing technologies, this year's Starrag's Turbine Technology Days – the seventh in the series – left a record number of visitors (from 18 countries) with plenty to think about in terms of world-class manufacturing of turbine blades, blisks and engine casings.

While the spotlight was firmly on the new Starrag NB 151 for the machining of impellers and blisks of up to 600 mm diameter and weighing 300 kgs, there was a range of other on-machine presentations that also caught the eye. These were showcased alongside several workstations featuring the latest in tooling, toolsetting and tool management, CNC system technologies, CAD/CAM and inspection routines, as well as in-process grinding, for example.

The on-machine demonstrations included:

[] The production of compressor blades (with a blade length of 46 mm and an airfoil length of 32 mm) 'in one go', using a Starrag LX 021 machining centre that also utilised diamond wheels to grind the blade root as part of single set-up machining. The result is impressive savings in overall roughing and finishing times by minimising the loading and unloading routines traditionally associated with multi-operation machining; and

[] How coolant (Synergy 735 from main event partner, Blaser) can improve tool life and promote environmental aspects. The comparative tests on the Starrag LX 251

machining centre demonstrated the benefits of this 'liquid tool' coolant which is free from chlorine, boron and formaldehyde.

Another presentation highlighted Starrag's expertise at combining Starrag Group machines to develop cost-effective and efficient flexible manufacturing systems for workpieces in the aerospace and energy sectors – for example, a system incorporating three Starrag STC 800 machining centres and a trio of Berthiez TVU 1400 vertical turning lathes (VTLs).

Colin Sirett, chief executive of the Sheffield-based Advanced Manufacturing Research Centre with Boeing - the keynote speaker at the two-day event at Starrag's headquarters in Rorschach, Switzerland – reinforced how the challenges of turbine machining are being met by Starrag in terms of machining technologies that are also increasingly surpassing users' expectations for better production rates, accuracies and validation/verification.

These are, of course, demands for which solutions are being driven not only by Starrag's chief executive Dr Christian Walti and managing director, Dr Bernhard Bringmann, but by everyone involved in Starrag's applications engineering, as Mr Bringmann highlighted:

"The starting point for every Starrag Group solution is the component, not one of our machines," he emphasised. "We vary machine configurations and machining concepts to determine the overall effect on cycle times; pushing everything to the maximum to develop an all-embracing solution that is specific to each workpiece.

"We are not in the market to sell 'standard' machines; we strive to continue to be the 'application champion' whether on specific parts required in either low- or high-volume. Our customers have to be competitive and, likewise, we have to remain focused on delivering cost-effective and efficient solutions – time after time."

The development of the new NB 151 impeller and blisk machine is the latest example of this focused approach. The all-new machine features a number of world-class developments for the effective and efficient machining of blisks. In particular, an

innovative rotary (A and B) axes spindle movement that allows the tool/cutting angle to be positioned relatively closer to the workpiece, resulting in not only a more stable machining process but also a much more effective route to minimal cycle times.

Importantly, this improved accessibility to the workpiece is courtesy of a B axis stroke of 280 deg which, together with the compact A axis and relatively slender spindle, enables the component to be accessed in all directions including even at the bottom of the Y axis stroke.

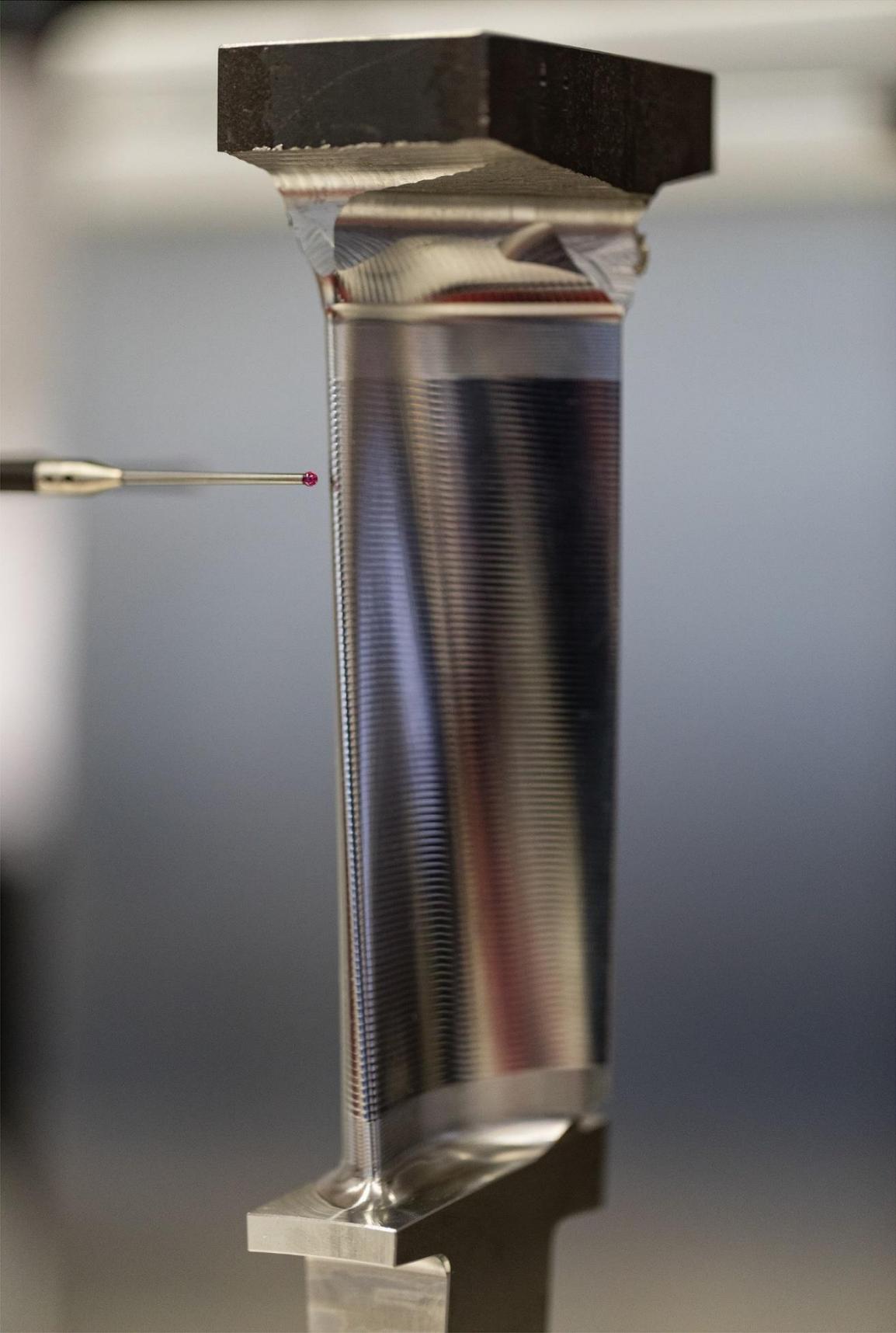
Mr Bringmann re-stated how Starrag's 'Engineering precisely what you value' strategy is all-embracing: "Components are increasingly becoming more complex and require more demanding machining, so we have to work closely with customers to also develop (and provide) special-purpose fixturing and tooling, for example. Nowadays you need the whole package!"



Starrag's new NB 151 impeller and blisk machine



The Starrag LX 021 demonstration area



Starrag's Turbine Technology Days focused on the world-class manufacturing of turbine blades (above), blisks and engine casings

-end-

With compliments

Colin Hoskins

C H Media Ltd

E: colin@ch-media.co.uk

P: + 44 (0) 7785 293077

Issued on behalf of:

Starrag UK Ltd, 43-45 Phoenix Park, Avenue Close, Nechells, Birmingham B7 4NU

Tel: 0121 359 3637

Website: www.starrag.com

Contact: Mr Lee Scott, Starrag UK Director for Sales and Applications

Editorial enquiries: lee.scott@starrag.com

No of words: 679

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, Scharmman, 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.