



## Improved resistance to anticorrosives

NAXOS-DISKUS is developing the new bonding system „NXplus“

Precision machining needs cutting fluids to dissipate the heat generated in the process. In the work chamber of grinding machines, they bind and reliably eliminate particles removed during machining. They also protect the machined components against corrosion. Several cooling fluid makers have recently optimised the corrosion protection of their emulsions. The adverse effect of these new cooling fluids is their chemical reaction to the bonding of resin bond grinding wheels, the consequence being a faster wear on and diminished precision of the wheels. NAXOS-DISKUS Schleifmittelwerke responded promptly by

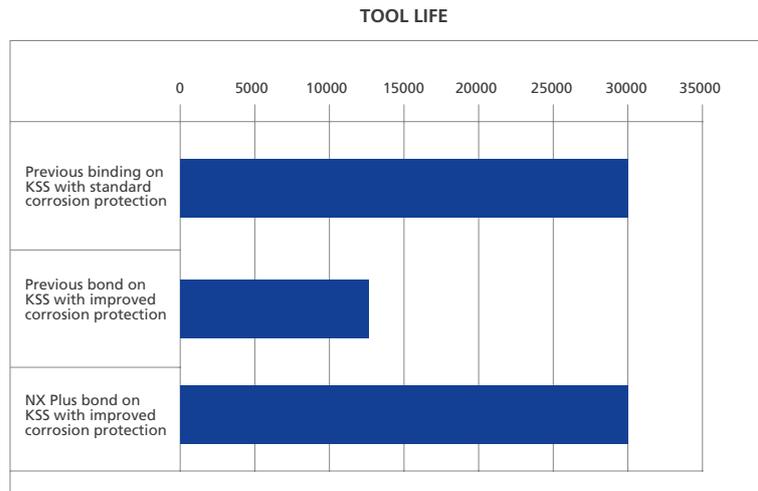
developing the bonding system “NXplus”. Initial applications in the field have shown that NAXOS-DISKUS has been successful in designing a more resistant and sturdy binding system for resin bond grinding wheels which ensures precise machining even in the presence of aggressive cooling fluids.

Corrosion is the natural enemy of every machining operation. Components previously machined with high precision become useless if stored or transported wrongly and beginning to corrode as a result. Protective coatings or anticorrosive films are used to protect the components after machining. Cooling emulsion

### Highlights

- Bonding system NXPlus avoids wear caused by aggressive coolant during grinding
- Optimised bonding strength and temperature resistance extend tool service life
- Very efficient production of components in short time

Workpiece	guide rail
Width / length	24–35mm / 3000mm
Material	100Cr6
Abrasion	0,4mm per side
Surface roughness	Rz 3
Machine	DDS 600 XL
Life (old cooling fluid)	30.000 guide rails
Life (new cooling fluid)	12.000 guide rails



manufacturers are also contributing to answering this need. Not long ago, they managed to take a significant development step towards corrosion protection and can now guarantee up to 12 months protection, provided that the parts are kept appropriately. While this is very good news, this advancement has an adverse effect on grinding operations because the improved corrosion protection of the cooling emulsions reacts aggressively to the grains bound in resin bond grinding discs, the result being a faster wear on the wheels.

### Sturdier against new cooling fluids

All of this prompted NAXOS-DISKUS Schleifmittelwerke, the precision grinding wheel manufacturer based in Butzbach, Hesse to develop a sturdier bond. The resulting bonding system NX plus has been specifically adapted to the chemical characteristics of anticorrosive cooling fluids. It ensures that grinding wheels can do their job reliably and at high precision durably as shown by initial trials on face grinding machines supplied by DISKUS WERKE Schleiftechnik, an affiliate of NAXOS-DISKUS. The optimised bonding strength and tempera-

ture resistance of the NXplus face grinding wheels significantly extend the tool service life which holds of course all the more true when less aggressive cooling fluids are used. The sturdier tool composition also benefits users with higher advancement and feed rates, a more efficient grinding process and an improved damping behaviour of the grinding wheels. Undesirable vibrations are absorbed better which makes the grinding process in general more reliable and precise. DISKUS WERKE Schleiftechnik and NAXOS-DISKUS provide the new NXplus resin bond as a system solution for single-sided and double-sided face grinding, promising great success. .

### Proven in practice

A customer of both DISKUS WERKE Schleiftechnik and NAXOS-DISKUS is convinced that the new bond to be extremely sturdy and reliable. When the customer replaced older cooling fluid with a more anticorrosive one, grinding wheel life reduced drastically when grinding guide rails. The new fluid allowed the grinding wheel to only produce about half as many components compared to the previous fluid.

Migrating to the new NXplus bond helped to restore the original tool life. Owing to their excellent damping characteristics and optimised bonding strength, grinding wheels made with the new NXplus bond also generated a lot fewer nicks (score-like damage to the workpiece surface). From the user's point of view, one of the originally four machining cycles could be omitted. The NXplus bond thus allowed the customer to make the same number of components at a reduced total throughput time. ■

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