

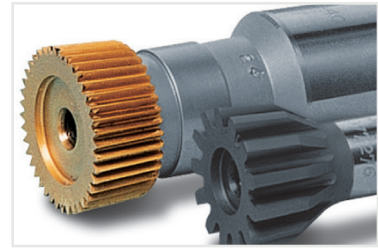
APPLYING ADVANCED COATINGS

Constant improvement of existing coatings and research of the latest coating technology is a result of the collaboration between Star SU and Oerlikon Balzers Coating.

The Coating process is further optimized by using automated cleaning equipment to remove all oils and residues. Substrates are delivered for coating in a thoroughly clean condition to help guarantee the ultimate quality of the coated product.

Our Balzers coatings will improve abrasion, wear resistance and can increase life up to 10 times in certain applications.

- HSS, MC90 and carbide tools



NEW COATING - BALINIT® ALTENSA

Boost your productivity with ALTENSA, Oerlikon Balzers new and most innovative coating available on the market. ALTENSA allows you to apply high speeds for all substrate materials while obtaining huge productivity gains, time savings and cost efficiency.

- Hobbing
- Scudding®

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● Tools Service Center

Star SU LLC, Hoffman Estates/Illinois



OERLIKON BALZERS
ALTENSA COATING
NOW AVAILABLE



TOTAL TOOL LIFE CYCLE MANAGEMENT



Services for resharpening tools, managing tool services, PPU and CPU programs



Total tool life cycle management to match your production needs...

...by optimizing each step of the tool life cycle process...to minimize your tool cost-per-piece

Are you really in control of your per-piece tool costs?

Are you really considering all costs connected to your tool supply and maintenance efforts inhouse?

Are all of the steps in your inhouse process chain optimized?

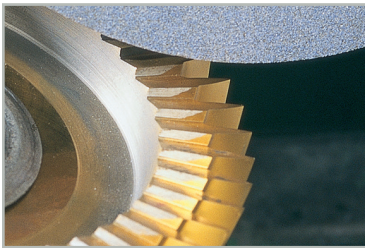
Are you paying too much to maintain your tools?

Star SU offers total tool life cycle management services and equipment for every step of your manufacturing process, including individualized support services to keep your tools running efficiently.

With our new innovative cost/piece (CPU or PPU) approach you can control your perishable tool costs from a reliable and experienced source. We guarantee a certain cost/piece, taking away your worries about the actual tool cost, its potential life or future servicing processes.

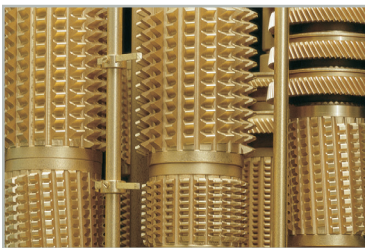
Tools are delivered on time to your appropriate production facility, used tools are automatically picked up, inspected, re-sharpened, edge-prepped and recoated, and delivered according to your needs.

Finally, you choose our level of involvement: from supplying pure reconditioning services for existing single tools to complete service management with the purchase of the initial product.



DESIGN – FROM THE IDEA TO THE TOOL

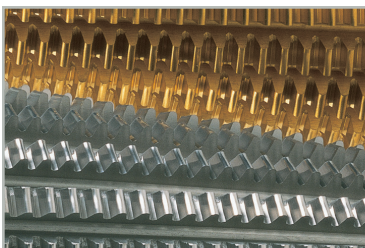
You do not have to worry about the complexity of certain tool types. Specify what you need in a particular gear, spline or tooth form and our team of application and design engineers will do the rest: from quoting the product, designing the tool drawing, creating the roll-out to the final manufacturing of the tool. Our expert staff will work closely with you to make sure you are able to meet your requirements.



COATING

All Balzers thin film coatings are available to customers world wide. Coating types are tailored for optimizing tool life and productivity.

- Titanium Nitride TiN
- Titanium Carbo-Nitride TiCN
- Futura Nano TiAlN
- Alcrona Pro AlCrN
- **Altensa**



RECOATING

Bringing coated tools back to optimum life after resharpenering by using the latest Balzers Coating Units, all types of PVD thin film coatings can be reapplied to greatly improve tool performance. For the most demanding applications, enhanced coatings from the latest Balzers Coating Units are available.

EDGE PREP

All tools are edge-prepped prior to coating to enhance tool life and coating adhesion.

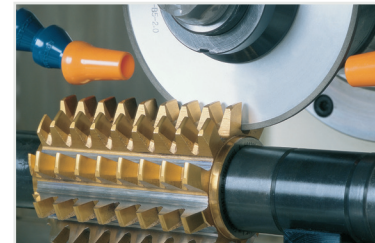
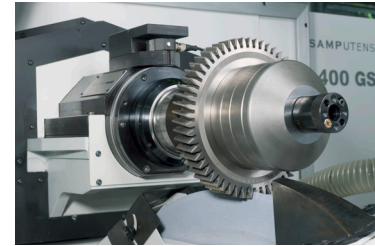
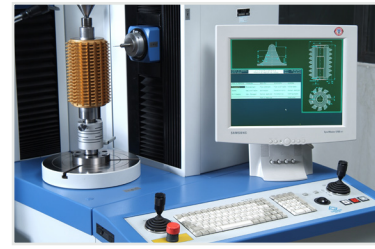


RESHARPENING – ACHIEVING ORIGINAL TOOL PERFORMANCE

Star SU utilizes high precision, modern CNC grinding machines to restore hobs, shaper cutters, shaving cutters, master gears, milling cutters, rack cutters, saw cutters, as well as chamfering/deburring tools to their original quality, condition and performance.

The widest range of types, configurations, and sizes can be accommodated: from the smallest fine pitch hob to the largest shaving cutters.

Overall, the services are fast, convenient and cost effective – with quality that is unmatched by any other regrind service.



APPLICATION SERVICES

Star SU provides the services to determine strategies to reduce cutting tool cost-per-piece through lower costs to sharpen and recoat. Recommendations for cutting speeds and feeds from experienced engineers will help you optimize your process through a design of tool review to possibilities to decrease tool change frequency and change over time.

FAST, FASTER, FASTEST

Our service centers world wide provide you with fast turnaround of high precision sharpenings and coatings.

Pickup and delivery services are available in some areas, as well as complete CMS systems to minimize freight and logistics costs by advanced logistics planning.

ADVANTAGES OF TOOLS SERVICE

- No capital cost
- No labor or indirect cost
- Reduced inventory
- Better tool life
- Increased Performance



SERVICES

- Resharpener of gundrills, reamers and solid carbide tools, including high performance points.
- Recoating of round tools, including Gundrills and reamers
- Reworking - Retip & Resharp Program
- Broach sharpening
- Retipping of gundrills and brazed reamers
- State-of -the-art inspection
- Resharpener of hobs, shaper cutters, Scudding® cutters, shaving cutters, rack cutters, master gears, milling cutters, and chamfering and deburring tools.

