

# TOTAL TOOL LIFE CYCLE MANAGEMENT





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 process chain inhouse 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 effeciently.

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.

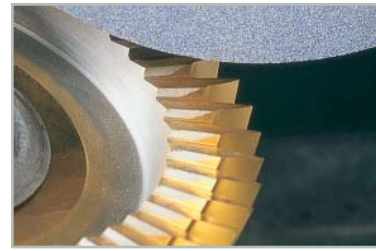
Tools are delivered on time to your appropriate production facility, used tools are automatically picked up, re-sharpened, recoated and delivered according to your needs.

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

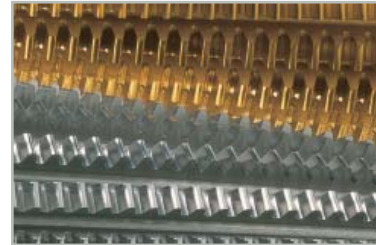
All Balzers thin film coatings are available to customers through the U.S., Canada, and Mexico. Coating types are tailored for different operating conditions.

- Titanium Nitride TiN
- Ti(C,N)
- SN (Al, Ti) N
- (Al, Ti) N



## RECOATING

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



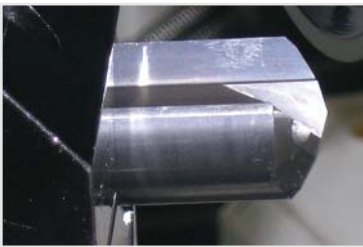
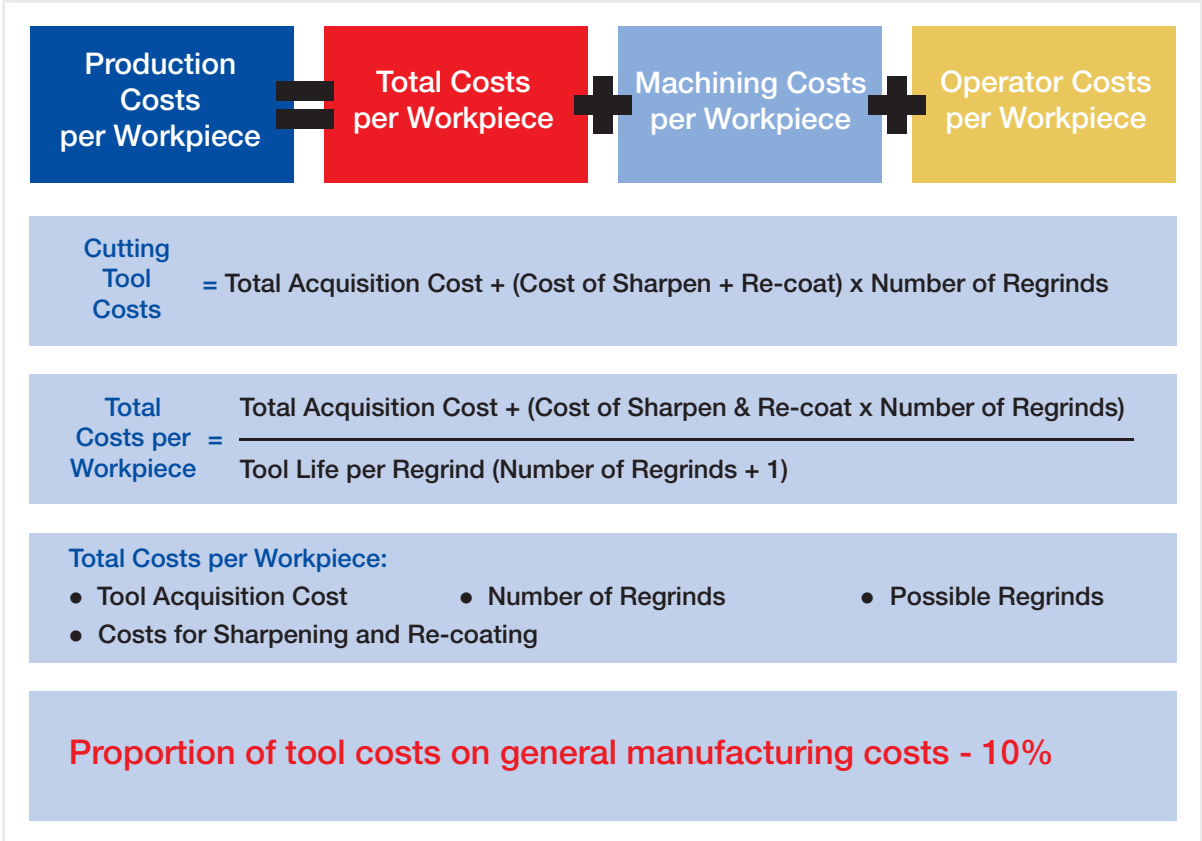
## RESHARPENING – ACHIEVING ORIGINAL TOOL PERFORMANCE

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

The widest range of types, configurations, and sizes can be accommodated: from the smallest fine pitch hob to shaving cutters as large as 32" in diameter.

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 in Michigan, Ohio, Illinois, South Carolina, and Saltillo provide you with fast turnaround of high precision sharpenings.

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.



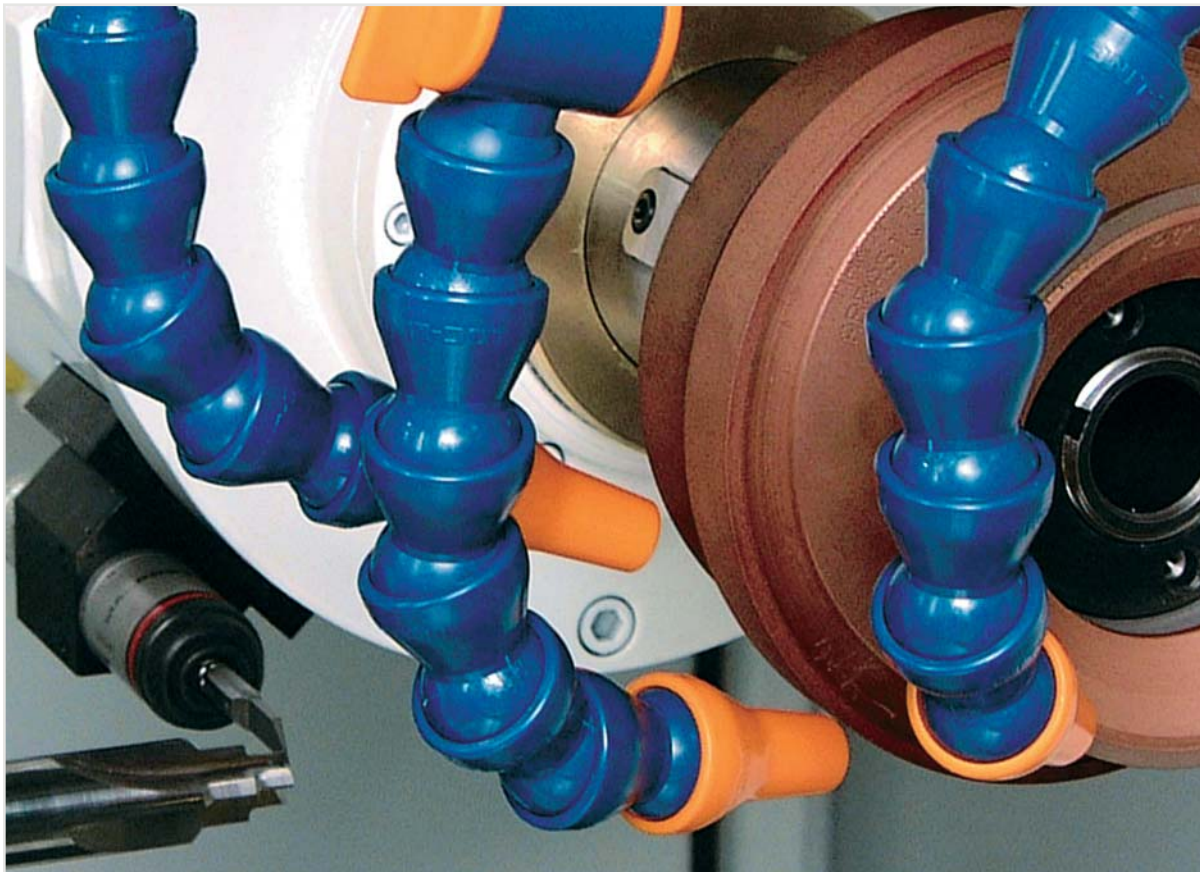
## ADVANTAGES OF TOOL SERVICE

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



## SERVICES

- Resharpener of gundrills, reamers and solid carbide tools, including high performance points.
- Recoating of round tools
- Reworking/Retipping of PCD tools - Retip & Resharp Program
- Resharpener and recoating of bevel blades
- Gundrills and reamers
- Broach sharpening
- Round tool resharpener
- Retipping of gundrills and brazed reamers
- State-of -the-art inspection



<b>BALINIT® COATINGS</b>				
	Coating Material (color)	Microhardness (HV 0.05)	Friction coefficient against steel (dry)	Max. service temperature (Deg. C)
Balinit A	TiN (gold/yellow)	2300	0.4	600
Balinit ALCRONA	AlCrN (blue/grey)	3200	.035	1100
Balinit B	TiCN (blue-grey)	3000	0.4	400
Balinit C Star	CrN+a-C:H:W (anthracite)	1000/1500	0.1 - 0.2	300
Balinit C	WC/C (a-C:H:W) (anthracite)	1500/1000	0.1 - 0.2	300
Balinit Cast	CrC (silver/grey)	2200	0.5	700
Balinit CNI	CrN (silver/grey)	1750	0.5	700
Balinit CROVEGA	CrN (silver/grey)	1750	0.5	700
Balinit D	CrN (silver/grey)	1750	0.5	700
Balinit DIAMOND	PCD (grey)	>8000	0.15 - 0.20	600
Balinit DLC STAR	CrN+a-C:H (black)	>2000	0.1 - 0.2	350
Balinit DLC	a-C:H (black)	>2000	0.1 - 0.2	350
Balinit FUTURA NANO	TiAlN (violet/grey)	3300	0.30 - 0.35	900
Balinit FUTURA TOP	TiAlN (violet/grey)	3300	0.25	900
Balinit G	TiCN + TiN (gold/yellow)	3000	0.4	400
Balinit HARDLUBE	TiAlN+WC/C (a-C:H:W) (dark grey)	3000	0.15 - 0.20	800
Balinit HELICA	AlCr-based (copper)	3000	0.25	1100
Balinit LUMENA	TiAlN (violet/grey)	3400	0.30 - 0.35	900
Balinit MICRAN	TiAlN (violet/grey)	3300	0.30 - 0.35	900
Balinit TRITON	a-C:H (black)	2500	0.10 - 0.20	350
Balinit X.CEED	TiAlN (blue/grey)	3300	0.4	900
Balinit X.CELL	TiCrN (dark grey)	2100	0.5	700



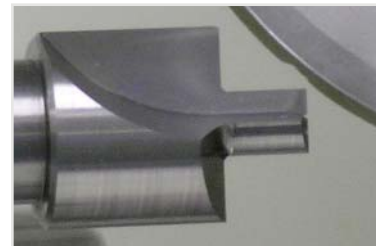
## APPLYING ADVANCED COATINGS

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 Balzer coatings will improve abrasion, wear resistance and can increase life up to 5-10 times in certain applications.

- HSS and carbide tools
- Molds and dies
- Special tools
- Machined parts and other applications





Star SU LLC  
5200 Prairie Stone Parkway, Suite 100  
Hoffman Estates, IL 60192  
USA  
Tel.: 847 649 1450  
Fax: 847 649 0112  
sales@star-su.com

Star SU LLC  
Sales Office Michigan  
23461 Industrial Park Drive  
Farmington Hills, MI 48335-2855  
USA  
Tel.: 248 474 8200  
Fax: 248 474 9518  
sales@star-su.com



Star SU LLC, Hoffman Estates/Illinois



- Tools Service Center
- Tools Manufacturing Site
- Tools Service Center – Planned

