



## High Value Solutions for Precision Tooling Applications



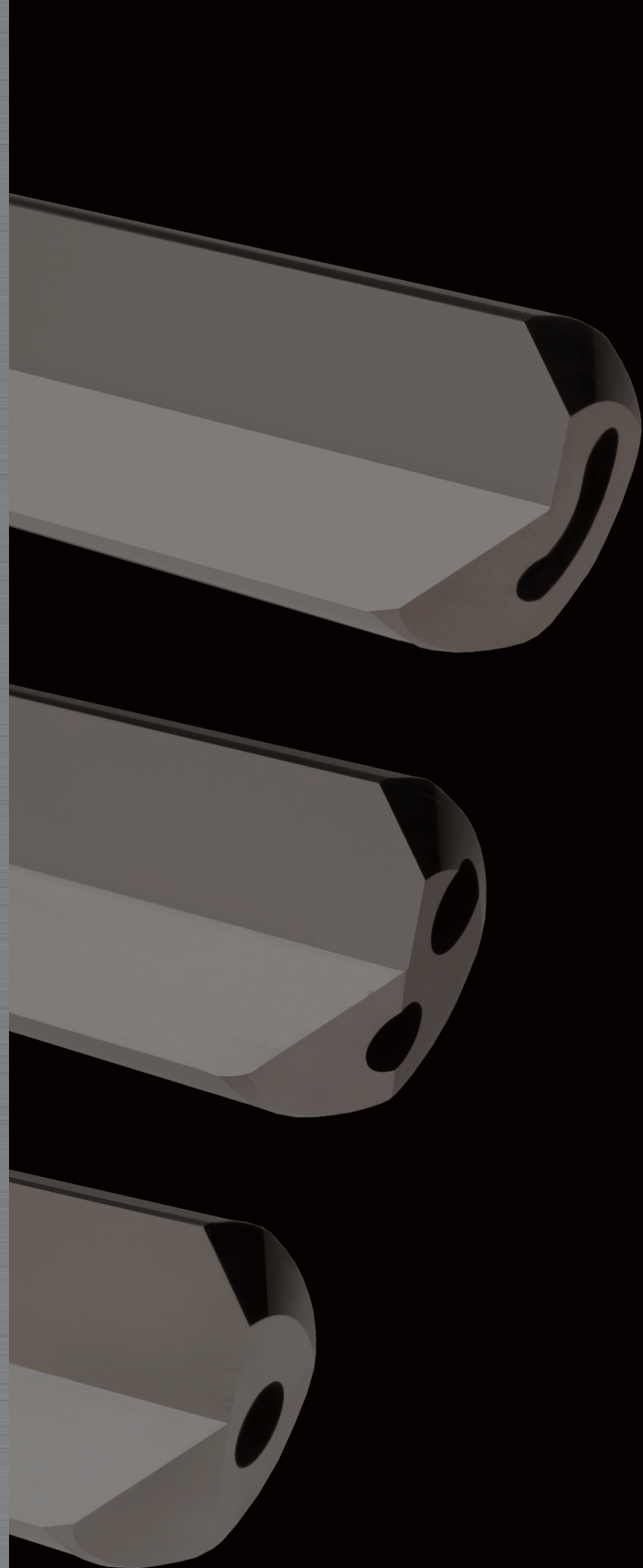
[starcutter.com](http://starcutter.com)



Star Cutter provides custom-engineered drills, reamers, and PCD tooling solutions across a variety of tight tolerance and high-precision applications for the automotive and diesel powertrain, fluid power, firearms, medical, energy and aerospace markets. With over 90 years in the business, our experience enables us to solve unique challenges that help to reduce machining time, improve quality and productivity while reducing overall costs across the lifecycle of the tool.

We oversee the entire process from engineering through the production of tools, typically using our own company materials and machine tools, backed by application support and reconditioning services. This vertically-integrated approach provides us complete control of the process to ensure we provide you an excellent customer experience. We are passionate about crafting a best-in-class solution to fit each application while fostering long-term, personal relationships with our customers.

Star Cutter Company partners with Star SU LLC for marketing, sales, and service of its products in North America, South America, Europe and the Far East.



# We Provide Optimal Solutions

## » TOOL ENGINEERING AND APPLICATION SUPPORT

At Star Cutter, with each tool crafted to suit your specific application, our engineering and application support staff play a crucial role in developing an optimal solution for your needs. We are able to work in a variety of CAD platforms, allowing us to design tools that perfectly complement your component requirements. Whether you need a particular deep hole drill, special carbide drill and reamer, or PCD tool, our team of application and design engineers will do the rest.

## » MANUFACTURING

With three specialized manufacturing locations, we are able to provide expertise in each of our tooling areas. Quality is of the utmost importance to Star Cutter and each of our manufacturing locations are ISO9001:2015 certified.



### GUNDRILLS

Ossineke, MI



### SOLID CARBIDE DRILLS AND REAMERS

Farmington Hills, MI



### PCD TOOLING AND SERVICES

Farmington Hills, MI

## INDUSTRIES WE SERVE

*Although the components produced for various industries can vary greatly in size and materials, the constant in all of them is a quest for quality. Star Cutter is a trusted partner in producing cutting tools for high precision applications, no matter what the industry – from drills for boring holes in diesel engines to small diameter tools for producing orthopedic parts.*



# Deep Hole Drilling

## Precision Drilled Holes to Meet Complex Deep Hole Drilling Needs

Star Cutter offers a variety of solutions for applications that require machining holes with a relatively large diameter to depth ratio, providing excellence in diameter and straightness control in a variety of workpieces and materials.

### » SINGLE FLUTE GUNDRILLS

#### PRECISION HOLES IN ONE PASS

These tools are designed to machine very accurate deep holes, without peck cycles, while achieving very good part surface finishes. Special designs, carbide, and coating selections are available to optimize tool performance based upon the application.

- Diameters from 0.0920" [2.337mm] - 1.5620" [39.675mm] with solid carbide head.
- Lengths to any size (over 72" [1,828mm] requires additional weld joint in body)
- SFGD Express In-Stock Program with diameters from 0.1250" [3.175mm] – 0.7500" [19.05mm] and lengths up to 48" [1219mm], 24-hour delivery
- SFGD Custom Express Program in diameters from 0.0920" [2.34mm] -1.0580" [26.87mm] and lengths up to 72" [1,828mm], shipped within 5 days.
- Double contour version drills available for optimizing TIR results.



SINGLE FLUTE GUNDRILLS

### » SOLID CARBIDE SINGLE FLUTE GUNDRILLS

#### ADDITIONAL RIGIDITY FOR HIGHER FEED RATES

The single flute gundrill features a one-piece solid carbide head and body resulting in a very rigid product that improves the tool performance by minimizing the whip and/or vibrations over the traditional brazed construction single flute gundrill. This additional rigidity allows the tool to run at higher speed and feed rates resulting in significant cycle time reduction.

- Coolant-fed diameters from 0.0276" [0.701mm] - 0.1968" [4.999mm] with up to 11.50" [292.1mm] of flute length.
- Coolant-fed diameters from 0.1969" [5.000mm] - 0.4724" [12.000mm] with up to 23.0" [584.200mm] of flute length.
- Double contour version drills available for optimizing TIR results.
- SCGD Express In-Stock Program with diameters from 0.0355" [0.902mm] - 0.1969" [5.000mm] and lengths from 4" [101.6mm] to 12" [304.8mm], 24-hour delivery.



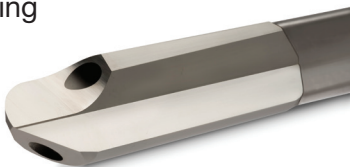
SOLID CARBIDE DRILLS

### » DOUBLE JET GUNDRILLS

#### CONSTANT COOLANT FLOW ON THE CUTTING EDGES

This original patented product boasts a unique design that keeps a constant coolant stream on the cutting edge during entry, in the cut, and breakthroughs while machining. The special placement of the coolant holes helps improve overall tool life, break the chip and reduce burrs. This is beneficial in machining steel forgings, powder metal, exotic materials, and high temperature alloys whose environments are normally detrimental to tool life longevity.

- Diameters 0.1575" [4.000mm] - 1.5620" [39.675mm]
- Lengths to any size (over 72" [1,828mm] requires additional weld joint in body)



DOUBLE JET GUNDRILL

### » DOUBLE CRIMP GUNDRILLS

#### FEED RATES TWICE THAT OF A SINGLE FLUTE

This two-fluted design is for maximizing feed rates (usually double) over the traditional single flute gundrill. The tool body is manufactured with seamless steel that is formed to maximize coolant flow for excellent chip evacuation and ideal for the machining of non-ferrous materials.

- Diameters: 0.1820" [4.623mm] - 0.7500" [19.050mm]
- Lengths available up to 72" [1,828mm]



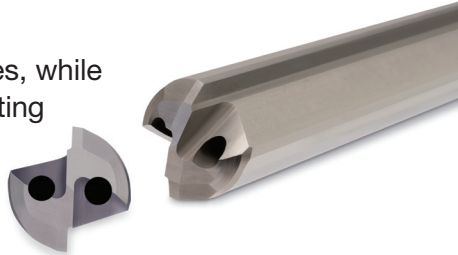
DOUBLE CRIMP GUNDRILL

### » TWO-FLUTE/TWO-HOLE GUNDRILLS

#### REDUCE CYCLE TIMES IN DRILLING IRONS

These tools are designed to machine very accurate deep holes, without peck cycles, while achieving very good part surface finishes. Special designs, carbide grades and coating selections are available to optimize tool performance based upon the application.

- Diameters from 0.2400" [6.096mm] - 2.000" [50.800mm]
- Lengths up to 48" [1,219mm]
- Double contour version drills available for optimizing TIR results



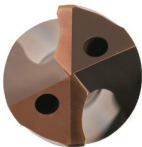
TWO FLUTE TWO HOLE MILLED STYLE GUNDRILL

### » SOLID CARBIDE TWIST DRILLS

#### SUPERIOR CHIP CONTROL AND EVACUATION

These custom-designed twist drills, featuring sculptured flute geometry and polished beyond cutting area flutes, provide superior chip control and enhanced chip evacuation.

- Available in lengths up to 40X diameter and custom lengths
- Coolant-fed range: 0.0350" [0.889mm] and above
- Non-coolant range: 0.0250" [0.635mm] and above
- Custom or standard shank sizes available with an h6 tolerance



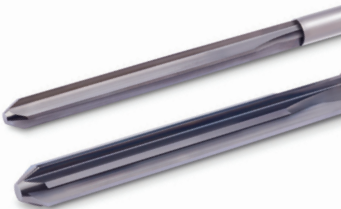
DEEP HOLE TWIST DRILL

### » PUSH & PULL REAMERS

#### SUPERIOR FINISHES AND SIZE CONTROL

Our capability to manufacture high-precision barrel reamers made to your requirements allows Star Cutter to offer a quality product with performance consistency, which includes solutions to resolve problematic issues.

- Size Range: 17-50 caliber and shotgun



PUSH & PULL REAMERS

### » RIFLE BUTTONS

#### HIGHEST QUALITY, COMPETITIVE COST

Our capability to manufacture high-precision rifle buttons made to your requirements allows Star Cutter to offer a quality, high polished button providing performance consistency.

- Size Range: 17-50 caliber and shotgun



RIFLE BUTTON

# Carbide Drills & Reamers

## Optimized Geometries for Maximum Performance in Many Materials

### » SOLID CARBIDE DRILLS

**CONFIGURABLE TO YOUR NEEDS**

Star Cutter’s specially designed, solid carbide drills are available in single or multiple diameters with options of straight or helical flutes, and come in a variety of carbide grades and advanced coatings.

Additionally, we offer solid carbide drills specifically for machining aluminum featuring selective wear-resistant carbide grades that include special cutting geometries, bolt hole circles and coolant hole sizes for application optimization.

- Diameters starting from 0.1575" [4.00mm]
- Straight or helical flute designs



SOLID CARBIDE DRILLS

### » SOLID CARBIDE CORE DRILL

**ENHANCED DRILLING PERFORMANCE**

Star Cutter core drills are ideal for machining aluminum, ductile, nodular, and compacted graphite irons (CGI) from solid or cored casting conditions, helping to correct imperfections in the casting for finishing operations. These drills reduce cycle times, provide consistency in the overall life of the product, and can be re-sharpened many times, keeping the cost per hole competitive.

- Diameter sizes starting at 0.3150" [8.000mm] (each drill order should be accompanied by casting and tool layout prints)
- Two, three and four flute designs
- Multiple diameter options also available
- Triple Margin Core Drills available to optimize TIR results



SOLID CARBIDE CORE DRILL

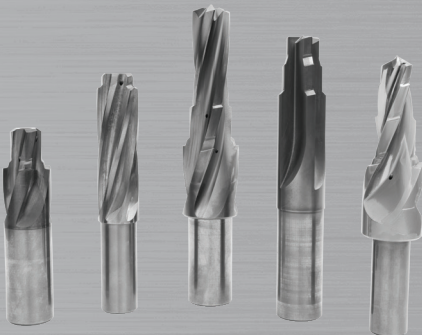


TWO FLUTE TRIPLE MARGIN CORE DRILL

## MULTI-DIAMETER SPECIAL CARBIDE FORM TOOLS

### CYCLE TIME AND QUALITY IMPROVEMENTS

The combination tooling designed by Star Cutter enables multiple diameters and forms to be consolidated into one tool, delivering the highest-quality results to meet your part specifications. In addition to reducing the cycle time for machining a tight tolerance feature, fewer tools are needed in the machine tool carousel.



### » CUSTOM SOLID CARBIDE PRECISION REAMERS

#### OPTIMIZE TOOL PERFORMANCE AND LIFE

Ideally adapted for enlarging a previous hole condition, Star Cutter reamers are uniquely designed using proper strategic coolant passages. Available in single or multiple diameters with helical or straight flutes, left or right hand spiral.

- Diameters starting at .1875" [4.763mm]
- Straight or helical flute design
- Left or right hand spiral



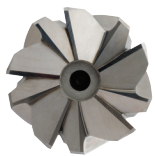
REAMER FAMILY

### » SUPER ROUND TOOL

#### ROUNDNESS AND STRAIGHTNESS WITHIN MICRONS

This unique patented design combines two tools into one with a combination of straight and helical flutes, resulting in consistent location, roundness and finish of the bore. Decrease cycle time, reduce scrap, increase throughput while obtaining the lowest cost/hole.

- Diameters starting at 0.1875" [4.763mm]



SRT REAMER  
PREVIOUSLY PATENTED UNDER  
U.S. PATENT#: 7,207,752

### » VALVE GUIDE REAMERS

**FOR ULTIMATE PRECISION**

Star Cutter valve guide reamers utilize pressurized coolant to force chips ahead of the tool producing ultra-smooth, ultra-precise holes with diameter tolerances of 0.0005" [0.013mm] and less in powdered metal and cast iron applications.

- Diameters starting at 0.1875" [4.763mm]
- Straight or helical flutes designs
- SRT version available and recommended for optimal roundness and straightness



VALVE GUIDE REAMERS

### » CUSTOM PORT/CAVITY MACHINING TOOLS

**CAVITY MACHINING IN ONE PASS OR SHOT**

Star Cutter has perfected a line of hydraulic porting/cavity tools that allow machining from solid or rough cast conditions. In many cases, these multi-step tools will allow cavity machining in one pass, known as “One-Shot”.

- Excellent concentricity is held between diameters
- Ideal for controlling part print finishes and bore sizes
- Reduce the time to machine a feature
- Fewer tools needed in a machine carousel



MULTI DIAMETER FORM DRILLS



# High Performance PCD Cutting Tools

Star Cutter produces a line of PCD tools that can be applied to all types of non-ferrous materials including aluminum, magnesium, copper, brass, wood, graphite, fiberglass, and many more. The monoblock tools feature a one-piece steel or carbide body assembled in the holder. Tools are manufactured and reconditioned in the holder, not between centers, for the best results.

- Minimize runout in the assembly
- Reduce cutting lip height variation
- Minimize TIR between diameters
- Fully-balanced tools

## » PCD DRILL

*INCREASE TOOL LIFE*

PCD drills from Star Cutter enhance part quality by providing overall consistency, improved part finish and longer tool life as compared to carbide drills, resulting in less frequent tool changes. The PCD drills are available in multiple steps and are made to custom lengths and diameters.



PCD DRILL

## » PCD REAMERS

*MANUFACTURED TO MEET CUSTOM DESIGN REQUIREMENTS*

Our multi-fluted, fixed pocket PCD precision reamer technology is proven to produce excellent bore roundness, part surface finish, and size control. These PCD precision reamers are available with multiple diameters to ensure optimum concentricity, and bore location.

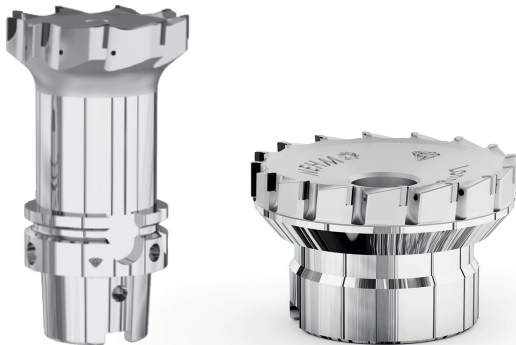


PCD PRECISION REAMERS

## » PCD MILLING CUTTER

*ENGINEERED TO MACHINE BOTH HIGH AND LOW SILICON ALUMINUM*

Our standard and special design cutters allow for the maximum number of cutting teeth compared to indexable cartridge cutters, resulting in scrap reduction, machine down time for adjustments, reduction in set up, and overall part consistency.



MILLING CUTTERS

## » PCD DEEP POCKET SIDE MILL

*OPTIMAL PERFORMANCE*

These special-designed pocket side mills feature coolant holes sized and placed for optimal performance. They can be manufactured with multiple rows of PCD pockets, which enables machining of deep-sided parts and can also face mill a flat surface to meet custom requirements.



DEEP POCKET SIDE MILL

## » PCD COMBINATION TOOLING

*DESIGNED TO MEET OR EXCEED CUSTOM REQUIREMENTS*

Our combination tools are engineered to provide customers:

- Reduced cycle time
- Reduced number of tools needed for the process
- Freeing up of magazine capacity
- Improved concentricity and form accuracy



COMBINATION TOOLING

## » PCD INTERPOLATION TOOLS

*ONE TOOL FOR MULTIPLE OPERATIONS*

PCD interpolation tools combine operations into one tool that is capable of milling multiple diameters, spot-facing and machining internal forms that improves cycle time and reduces cost per hole.

- Reduced cycle time
- Reduced number of tools needed for the process
- Freeing up magazine capacity
- Improved concentricity and form accuracy



PCD INTERPOLATION TOOLS

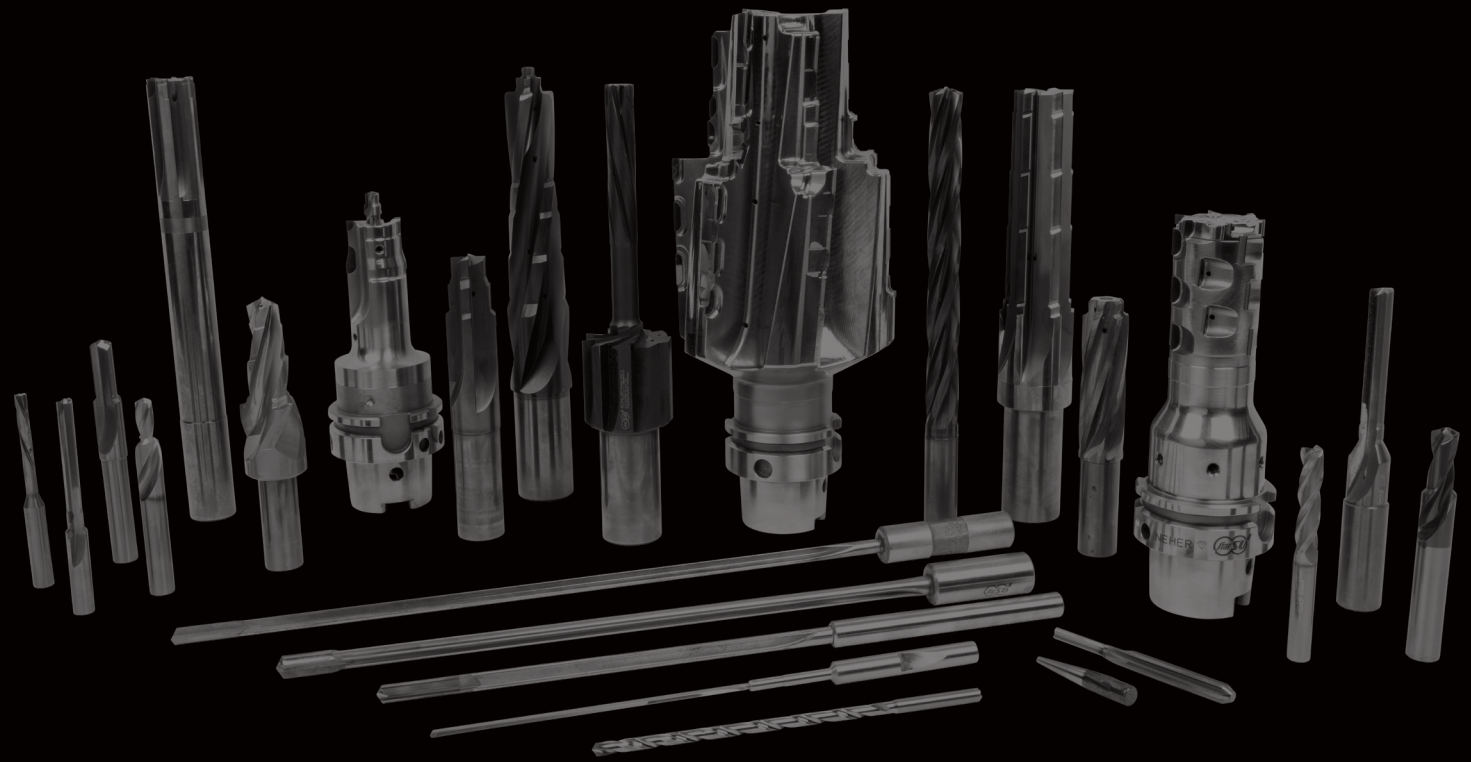
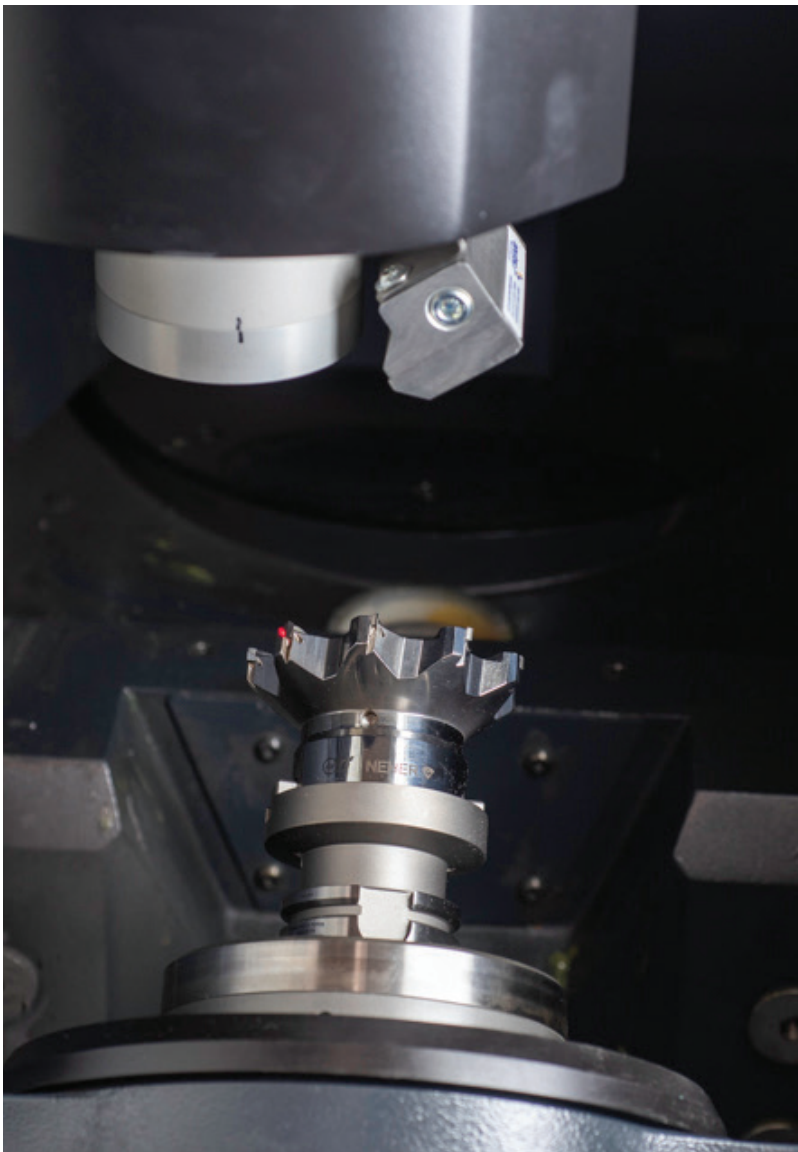
# Tool Services

## » ROUND TOOL RECONDITIONING SERVICES

*ENHANCE YOUR COST SAVINGS GOALS WITH ROTARY TOOL RECONDITIONING SERVICES FROM STAR CUTTER*

Control your tool costs and keep your tools running efficiently with individualized round tool reconditioning and resharpener support services. We use state-of-the-art technology to restore Star Cutter or other manufacturer's tools to their original performance. Advanced recoating services are also available to improve tool performance after sharpening.

- Deep hole drills
- Special carbide drills and reamers
- Port/cavity tooling
- Fixed pocket PCD tooling
- Advanced coatings



**High Value Solutions for  
Precision Tooling Applications**

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