

NXT

TOOL GRINDER



Since 1927
Star[®]
STAR CUTTER COMPANY

THE NXT GENERATION OF TOOL GRINDING

The Star NXT CNC 5-axis tool and cutter grinding system provides a large grind zone that enables manufacturers to run both small and large diameter tools, yet is packaged in a cost-effective compact footprint. The NXT leverages the heritage of Star Cutter's previous grinding machines' capability reimaged in a modular design that offers easily configurable options and a competitive price point.

Packaged with industry leading NUMROTO software, the NXT is the smallest and most capable CNC tool and cutter grinder on the market.

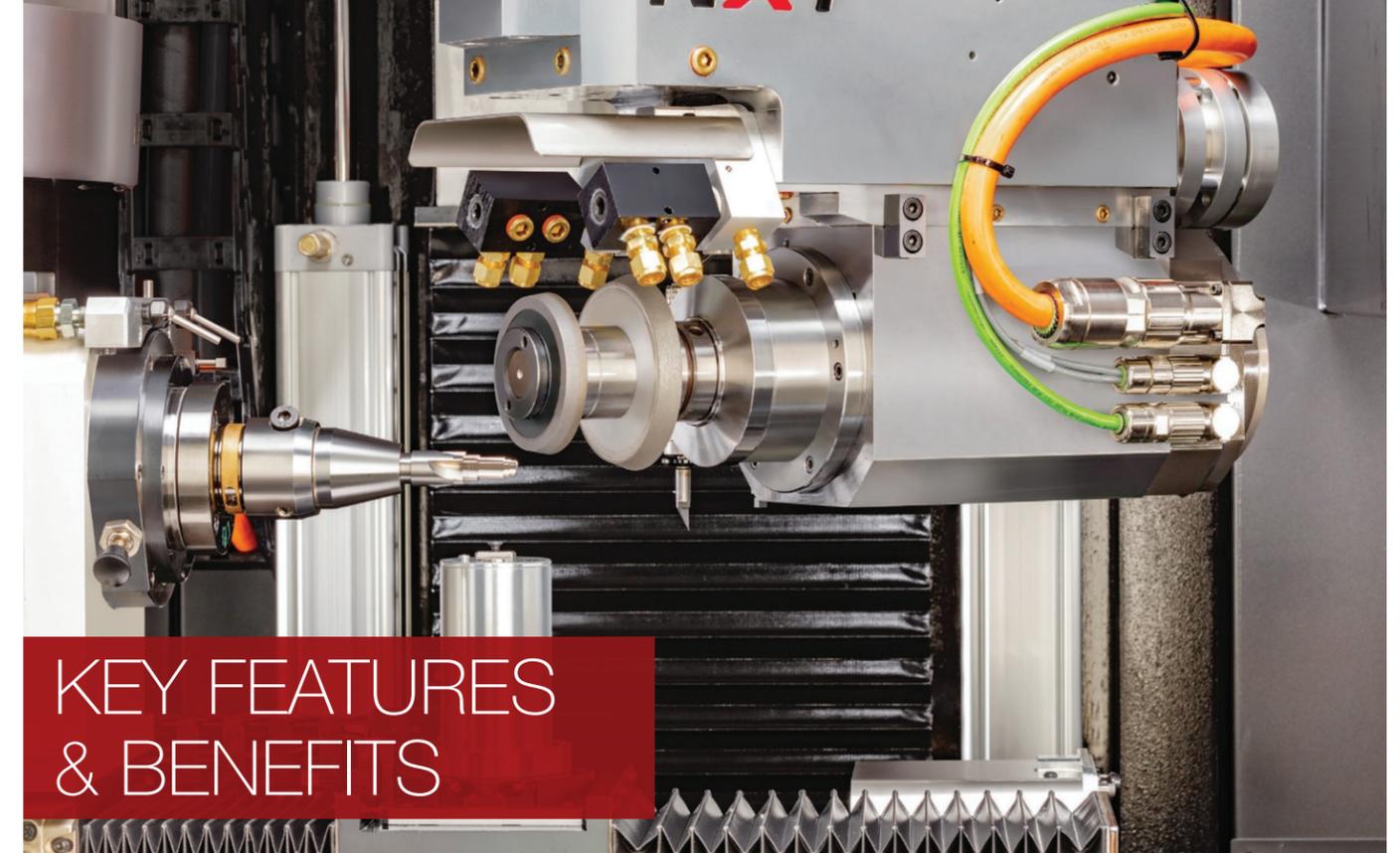


ABOUT STAR CUTTER COMPANY

Star Cutter is a vertically integrated tool manufacturer that specializes in solving unique challenges for precision applications, delivering best-in-class solutions that improve quality and reduce machining cycle time to drive overall cost savings for its customers.

A COMMON PLATFORM

- Focused design to deliver a maximized grind zone with a minimal footprint
- Travels: X: 19.7" [500mm], Y: 25.6" [650mm], Z: 29.5" [750mm]
- Linear motors instead of ball screws to eliminate backlash, friction effects, and drive vibration
- Capable of 15" end work, 10" diameter parts, utilizing up to 8" wheels
- Machine centered wheel changing capability with up to (5) storage locations
- Auto-lube grease system for worry free maintenance
- High-resolution linear glass scales
- 24-hour service response time
- Manufactured in the USA
- Grinding spindle options



KEY FEATURES & BENEFITS

MODULAR DESIGN

Based upon a standard platform, the NXT was designed to decrease lead times while providing more options and the ability to quickly adapt to specific customer application requirements.

WHEEL AND COOLANT MANIFOLD CHANGING

The ideal wheel pack and coolant manifold is different for each process. We offer configurations of up to five stations, and flexibility built in to handle anything from a high mix, low volume application right on through to the low mix, high volume producers.

TOOLING RAIL AND SUPPORT OPTIONS

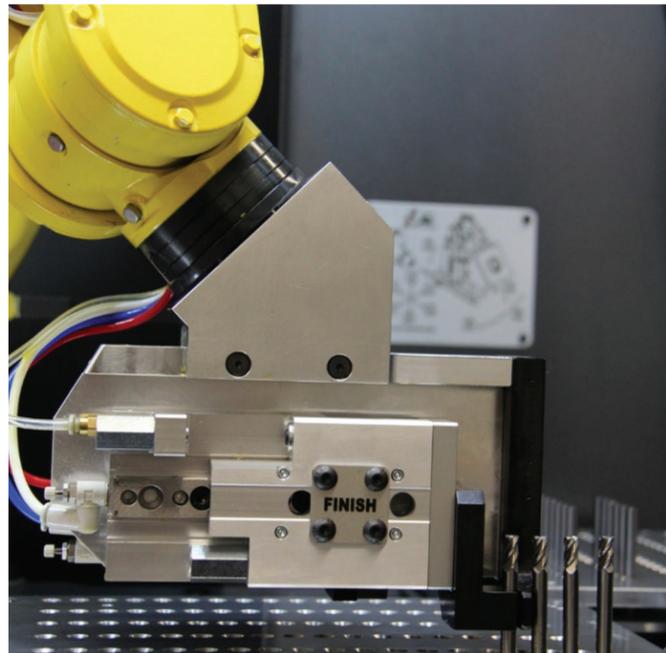
The NXT offers both standard and extended length tooling rails, which allow for the use of rail mounted steady rests, as well as clearance-optimized flip-up and air-actuated tailstock to accommodate various tool lengths. A traveling W-axis option is available for more complex applications.

The NXT includes a variety of workholding solutions plus our engineers can work with customers on custom workholding and support solutions to meet particular application needs.

SPINDLE OFFERINGS

Offered with two different spindle options, the NXT can support all tool cutter grinding needs ranging from light duty manufacturing to heavy fluting and all-purpose manufacturing.

kW	RPM	Spindle Type	Purpose
15 kW	24,000 RPM	Auto HSK	Manufacturing, regrinding, and high RPM applications
28 kW	20,000 RPM	Auto HSK	All-purpose manufacturing



Robot grippers accommodate tools from 0.188" - 1.25" (5 - 32mm) with optional gripper fingers available for other sizes.

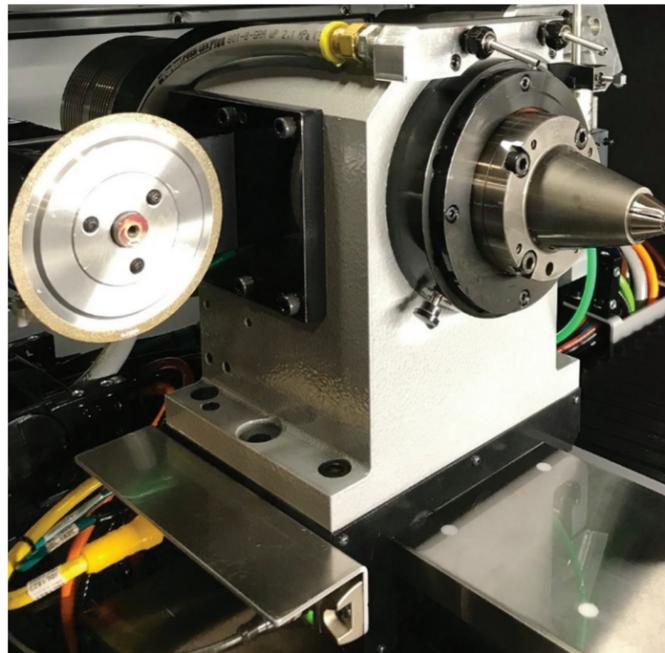
AUTOMATION

The NXT has a fully-integrated Fanuc 200iD to serve round and flat blank applications. It comes standard with four pallets and can automatically load, unload, and flip parts for grinding on both ends, as well as adapt to multiple part profiles within a single run.

Automated tool laser marking is also an available option.

AUTOMATION SPECIFICATIONS

Part Diameter Range	Grippers accommodate 0.188" - 1.25" (5 - 32mm)
Part Length	Auto load parts up to 14" (356mm)
Part Weight	Auto load single parts up to 6.5 lb. (3kg) or dual parts up to 3.3 lb. (1.5kg)
Part Pallets	4; 2 for blanks, 2 for finished parts.
Pallet Density	0.188" - 0.275" (3.7 - 7.0mm) - 221 parts/pallet 0.275" - 0.512" (>7 - 13mm) - 130 parts/pallet 0.512" - 0.787" (>13 - 20mm) - 63 parts/pallet 0.787" - 1.26" (>20 - 32mm) - 30 parts/pallet



Optional 12,000 RPM wheel dresser: for manufacturers who intend to produce and maintain precision contours in grinding wheels.

POWER TRANSMISSION

As with our other offerings, the NXT is free of ball screws, belts or gears for power transmission. The machine axes are driven by linear motors and direct-drive torque motors for years of worry-free use. This, coupled with high resolution glass scales, enables the NXT to deliver tight tool tolerances.

STRUCTURE

A mineral cast base provides a critically-damped machine that keeps natural frequencies low and resonances from affecting the cutting feeds and speeds. A closed-loop chilling system provides thermal stability for the NXT on every processed tool.

MAINTENANCE

Real-time tracking of temperatures, spindle hours, and bearing travel distances have been incorporated to improve preventative maintenance functionality.



Star **NXT**: Compact, Capable, Consistent

STEADY REST Hydraulic Pop-up Steady Rest

For precision tool support. 25mm of travel allows for the rest to drop down and out of the way for automated loading and unloading.

FANUC 200ID Robotic Load / Unload Option

Optimize your production with the addition of an optional, FANUC 200iD interfaced with our NXT to handle all loading and unloading of blanks to finished tools.

OPTIMIZE CAPACITY Space Saving Feature

Optimize space in the automation pallet bay as it holds two full pallets and two unload pallets. As an example, capacity on .375" tool blanks is 330 pieces.

WHEEL CHANGER Flexible for Your Needs

Handle a variety of applications with the up to 5-station wheel changer. Loads wheel packs and coolant manifolds for quick changeover and maximum uptime.

GRIND SPINDLE OPTIONS Faster and More Capable Than Ever

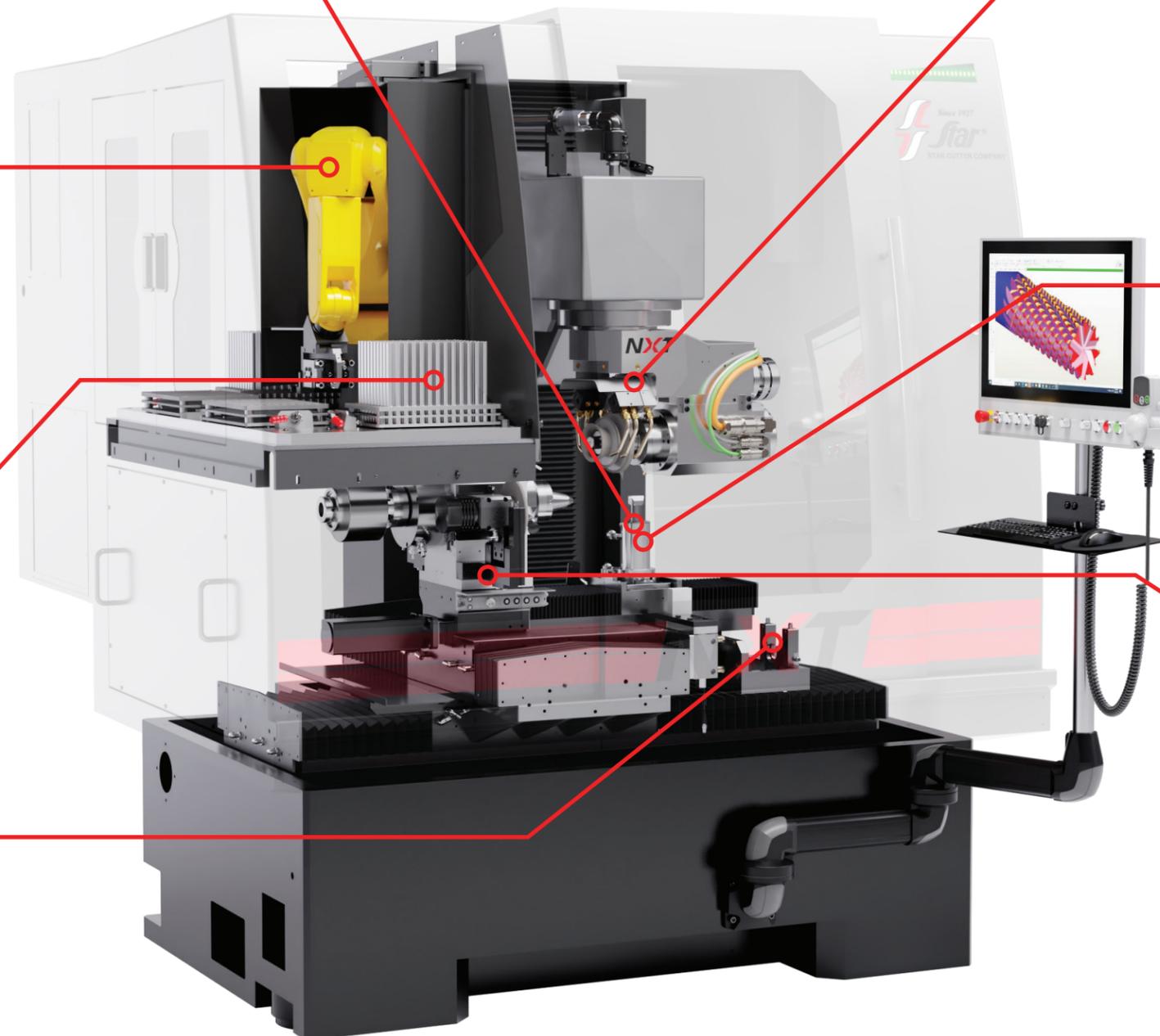
Ideal for applications from tool regrinding through large tool production. Two sizes for optimized torque and power — 28kW at 20,000 RPM or 15kW at 24,000 RPM for smaller diameter wheels.

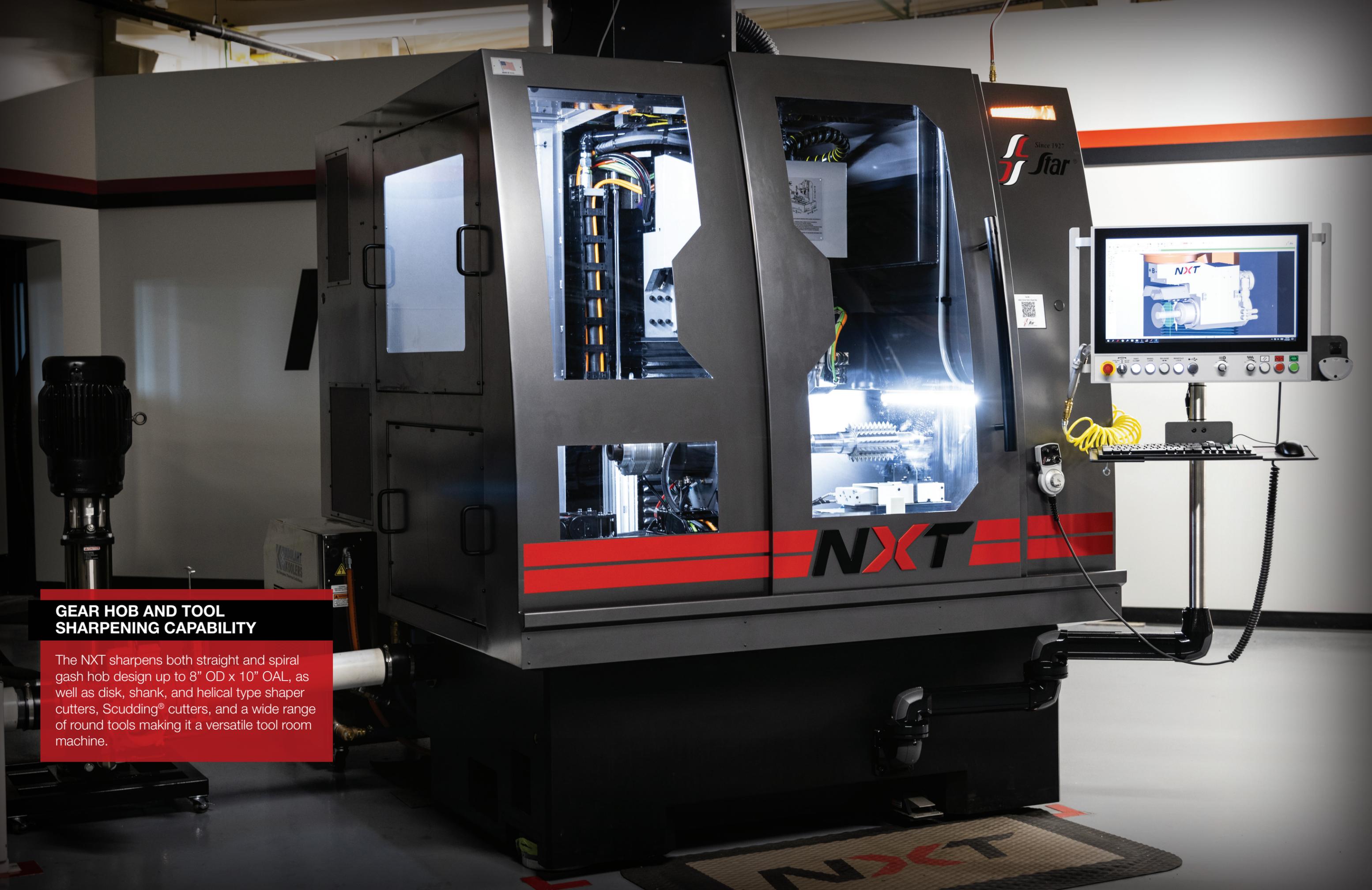
AUTOMATIC & PROGRAMMABLE POSITIONING Independently Servo-Controlled

Auxiliary W-axis runs parallel to the Z-axis and is independently servo-controlled. Allows for programmable positioning of tool supports as well as a follow steady-rest option for fluting support.

WHEEL DRESSING Holds Precise Tolerances

Optional 12,000 RPM wheel dresser offers renewed cutting action for producing and maintaining precision contours on grinding wheels.





GEAR HOB AND TOOL SHARPENING CAPABILITY

The NXT sharpens both straight and spiral gash hob design up to 8" OD x 10" OAL, as well as disk, shank, and helical type shaper cutters, Scudding[®] cutters, and a wide range of round tools making it a versatile tool room machine.

INDUSTRY-LEADING SOFTWARE PARTNERS

NUMROTO® PLUS

NXT systems feature the latest Flexium+ CNC solution with NUMROTO 4.2.0, a comprehensive software package for producing and re-sharpening a wide range of tools. Even the most complex shapes can be easily programmed and executed.

A complete NUMROTO solution includes many functions to manufacture or regrind a tool as efficiently as possible. With functions such as 3D simulation, extensive and precise probe cycles for tool and wheel, in-process wheel dressing, job control, creation of elevation drawings, adaptive grinding and more, the system can be expanded per user needs.

Based on current Windows systems, NUMROTO can be integrated into the company network. Central storage and administration of part programs and extended back-up functions are therefore easy to implement.

- Full library of available software to tackle the most demanding cutting tool designs
- Free software version updates for the life of your NXT
- USA based application support team for training and troubleshooting

numroto®



ESPRIT CAM

To serve the medical grinding community, Star Cutter and Hexagon Manufacturing Intelligence have established a partnership where ESPRIT CAM software is pre-packaged to run the Star Cutter 5-axis software right out of the box.

ESPRIT is a high-performance CAM system for CNC programming, optimization and simulation. Using a digital twin of the CNC to simplify the programming process, ESPRIT delivers edit-free G-code. This packaged solution is perfect for manufacturers of complex medical tooling, such as hip rasps, rotary files, bone files and drills, etc. ensuring that your machine will launch quickly and keep running at top efficiency.

READY TO HANDLE AN ARRAY OF APPLICATIONS

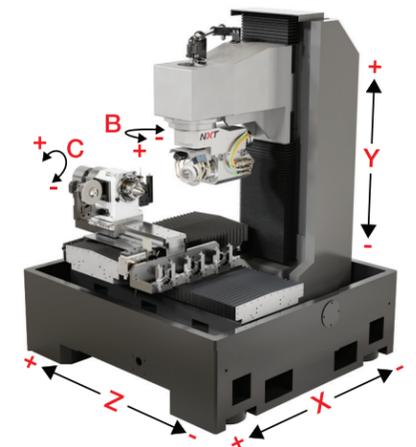
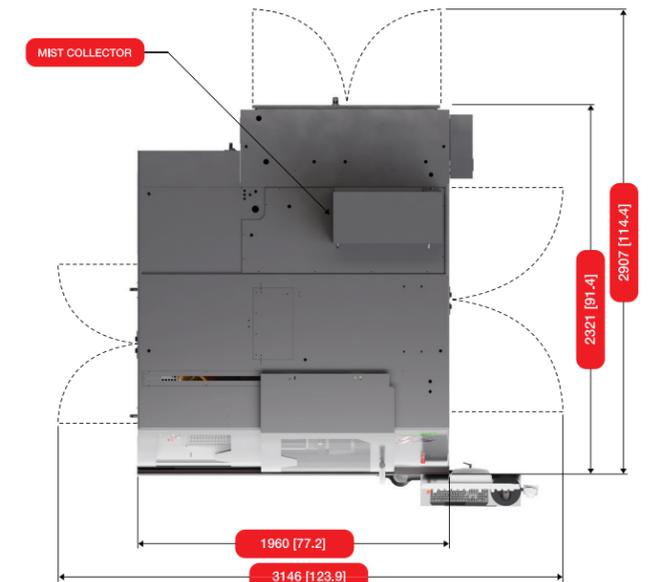
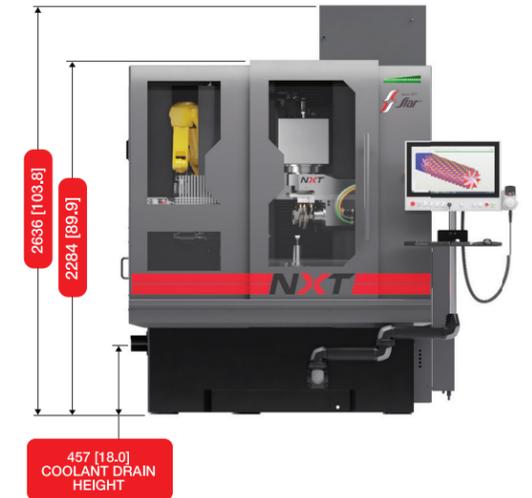
Star's team has a strong knowledge of engineering trends, the engineering process and the design parameters behind cutting tools providing them the ability to understand how this relates to your tool grinding manufacturing and reshaping needs. Our application team will work with you to clearly understand the scope of work to ensure you will achieve your application requirements.

- Drills and Reamers
- Milling Cutters
- Form Cutters
- Medical Tools
- Taps
- Punches and drives
- Gear Tools
- Specialty Tools
- Boring Bars
- Profiling Blades/ inserts

MACHINE SPECIFICATIONS

	Metric	Inch
Base Machine Dimensions (L x W x H)	2300 x 2032 x 2284 mm	7' 6" x 6' 6" x 7' 5"
Total Weight: Base Machine	5,964 kg	13,150 lbs
Maximum Workpiece Diameter *	254 mm	10 inches
Maximum Grind Length, End Work	381mm	15 inches
Maximum Grind Length, Fluting	406 mm	16 in
C - Axis Headstock Spindle 360° Rotation	1,000 rpm	1,000 rpm
B - Axis Grinding Spindle Swivel +/- 120°	12 rpm	12 rpm
X - Axis Horizontal Travel	506 mm	19.9 inches
X - Axis Travel Speed	50 m/min	1968.5 inches/min
Y - Axis Vertical Travel	650 mm	25.6 inches
Y - Axis Travel Speed	50 m/min	1968.5 inches/min
Z - Axis Horizontal Travel	768 mm	30.2 inches
Z - Axis Travel Speed	50 m/min	1968.5 inches/min
Grinding Spindle Max. Speed	20,000 rpm	20,000 rpm
Peak Spindle Power	28 kw	38 hp
Grinding Wheel Diameter (Wheel Changing) **	203.2 mm	8 inches
Smallest Programmable Movement - Linear	0.001 mm	0.00039 inches
Linear Axis Glass Scale Feedback Resolution	0.00001 mm	0.0000004 inches
Smallest Programmable Movement - Rotary	0.0001 deg	0.0001 deg
Rotary Axis Feedback Resolution: C-axis	0.000068 deg	0.000068 deg
Rotary Axis Feedback Resolution: B-axis	0.00000006 deg	0.00000006 deg

* Maximum Work Piece Diameter: Up to 12" with smaller grind wheel selection
 ** Grinding Wheel Max. Diameter with no wheel changing, manifold & probing: 12"





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