



# Orthopedic solutions

For manufacturing complex instruments and implants  
at the lowest cost-per-part

Walter – the world leader in CNC tool grinding – now combines a proven and patented machine design, linear motors, superior coolant delivery, and innovative new software to bring you NXis Ortho:

- Shorter cycle times for the lowest cost-per-part
- A better end-product that minimizes post-processing
- Versatility for a wide variety of components
- Fast programming and setup
- Superior support to maximize up-time and help you adapt to changing requirements



# The machine technology that makes NXis Ortho fast and flexible

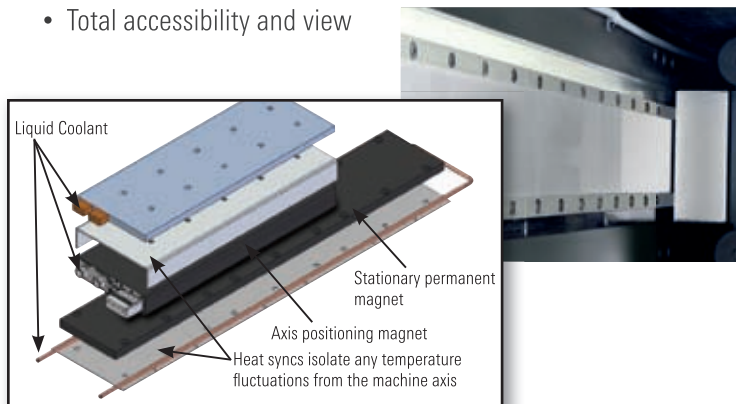
The mechanical basis for NXis Ortho is Walter's Helitronic Vision machine. The machine has proven itself to be 30% more productive than competing tool grinders for reasons that make it ideal for orthopedic applications:



*Helitronic Vision equipped with an automatic part loader and twelve station automatic tool/wheel changer – space savings options with quick payback for most orthopedic applications*

## ▣ Patented 3D gantry for speed and flexibility

- Unsurpassed dampening properties for optimum grinding precision and surface finish, particularly when trying to achieve the fastest possible grinds
- Compact axis travels for shorter cycles
- Grind in all four quadrants for geometric versatility
- Total accessibility and view



## ▣ Linear and direct rotary drive technology for shorter cycle times with minimal post-processing

The A and C rotary axes use gearless direct drive motors while X, Y, and Z use linear motors. No ball lead screws, gears, motor bearings, or backlash. **The motor is the motion!**

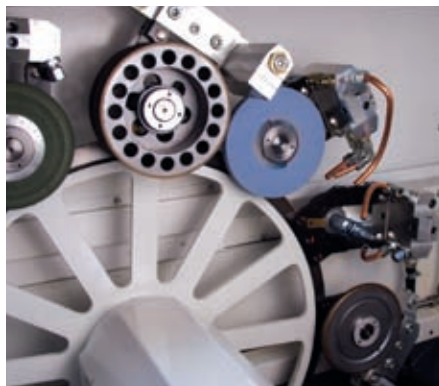
- Speeds up to 2,000 IPM (50 m/min)
- Incredible acceleration for minimal non-grinding time
- Absence of drive linkage means motors position as accurately as their glass scale feedback mechanism
- Accuracy and smooth performance, plus the machine's dampening characteristics, result in unsurpassed surface finishes and contour tolerances — up to two times more accurate than other CNC grinders
- No wear parts for better reliability
- Longer grinding wheel life



**☑ Superior coolant delivery for minimal part distortion and maximum speed**

The Vision applies a 32 GPM (120 l/min) flow of coolant at 300 PSI through optimized “compacted” nozzles. The result is much better coolant placement than competing designs for:

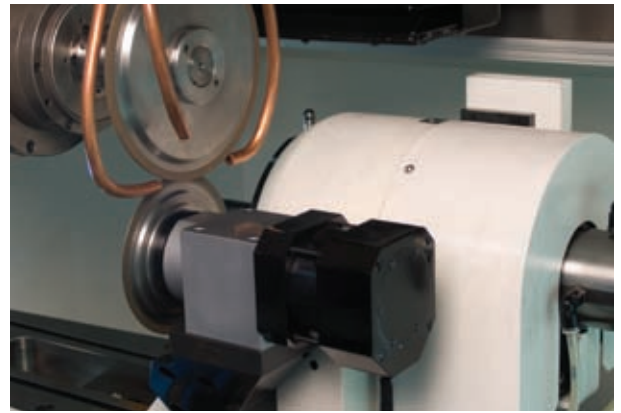
- Shorter cycle times
- More accurate parts, minimal thermal distortion
- Excellent surface finish (with no burning) & minimal post processing



**☑ Smart solutions for high volume production**

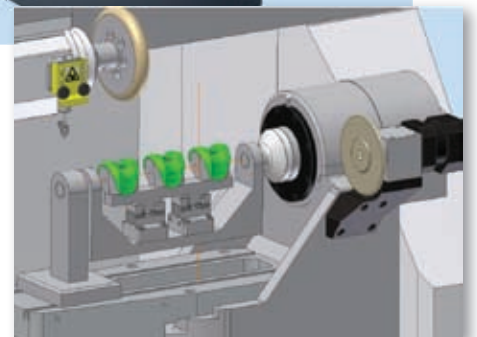
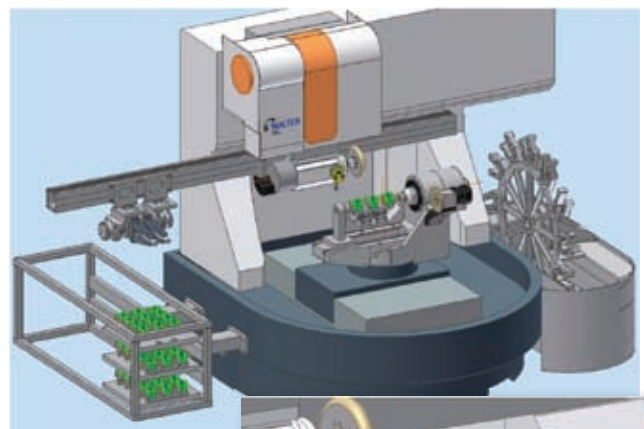
Automatically switch between up to 12 wheel sets/cutting tools in under 10 seconds. Manufacture complex parts or a variety of parts in one setup without human intervention.

A modular fixture for three knee castings sits on generic mounting blocks attached to the main carriage. The blocks in turn sit on Walter’s standard loader pallets. The main cradle, A-axis driving system, and fixed rigid support are the same for all knee sizes. And you can mount different size knee castings on the main carriage.



**☑ In-process wheel dressing maintains high productivity with high accuracy**

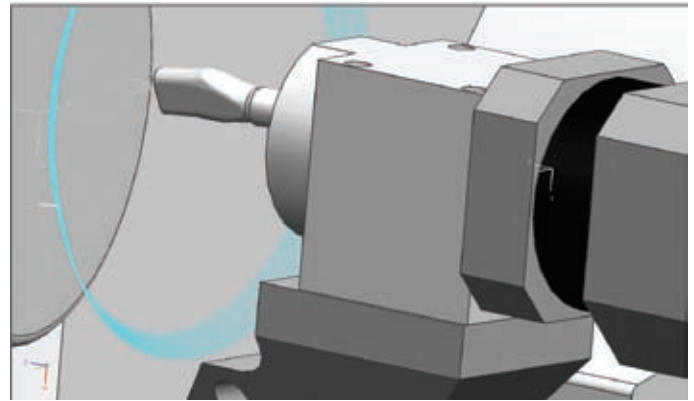
Auto-loading parts does little good if the wheel form breaks down. Integrated dressing automatically maintains the form of conventional and vitrified CBN wheels.



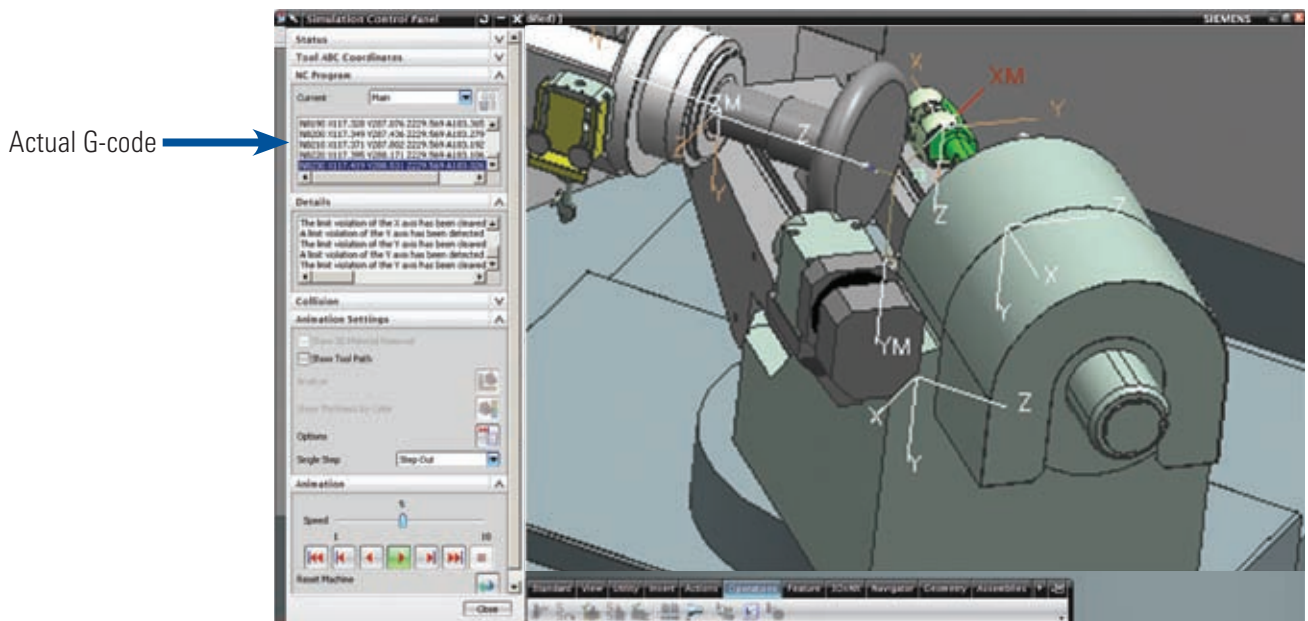
# The software that makes it easy and flexible

## ❑ NXis Ortho software makes setup easy, fast, and versatile enough to handle almost any part you throw at it

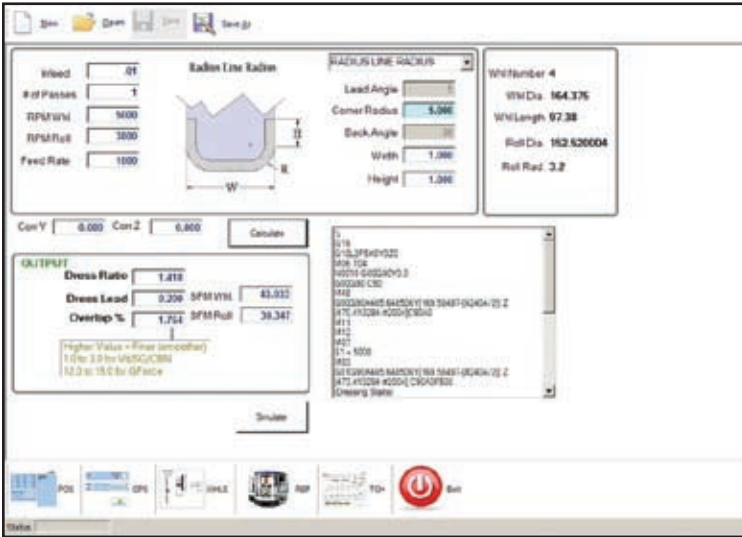
- Complete 3D machine simulation in Siemens PLM NX (formerly Unigraphics), including collision detection. Full 3D solids based machine tool simulation driven from the G-code output of the post processor. Verify your grinding/machining paths and machine moves on a PC for peace of mind and fast setup on the machine.
- Design your machine paths with accurate simulations of the wheel (or cutting tool) you plan to use. See the machine paths and material removal using the tool you've selected.
- The NX post-processor is not designed for a specific application, giving you a ready solution for virtually any machinable part that fits in the machine.
- Generic man-machine interface lets you run any Fanuc compliant G-code, freeing you to use other CAD/CAM packages.
- Grind at 3, 6, or 9 o'clock positions on the wheel, working around the fixturing as you see fit. Eases setup and helps you handle a wide variety of part geometries.



*Optimize your tool paths (pictured here in blue) using a variety of canned routines before sending your program to the machine*



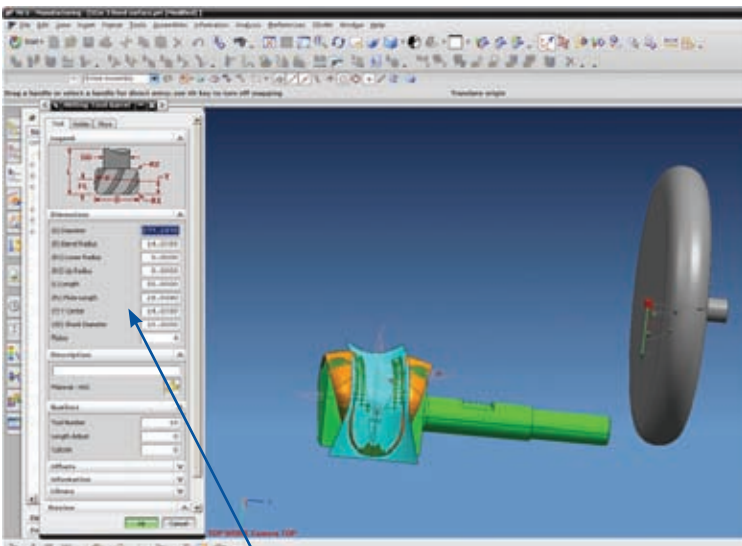
**Fast setup and peace of mind:** Simulate the complete machine, including wheels, tools, workholding, dressing equipment, and the part in 3D. Eliminate interference problems and verify the G-code before sending it to the machine



*Straightforward menus make it easy to configure wheel dressing routines, after which the necessary NC code is generated automatically. The man-machine interface also automatically performs optimum dressing calculations and presents them as a guide.*



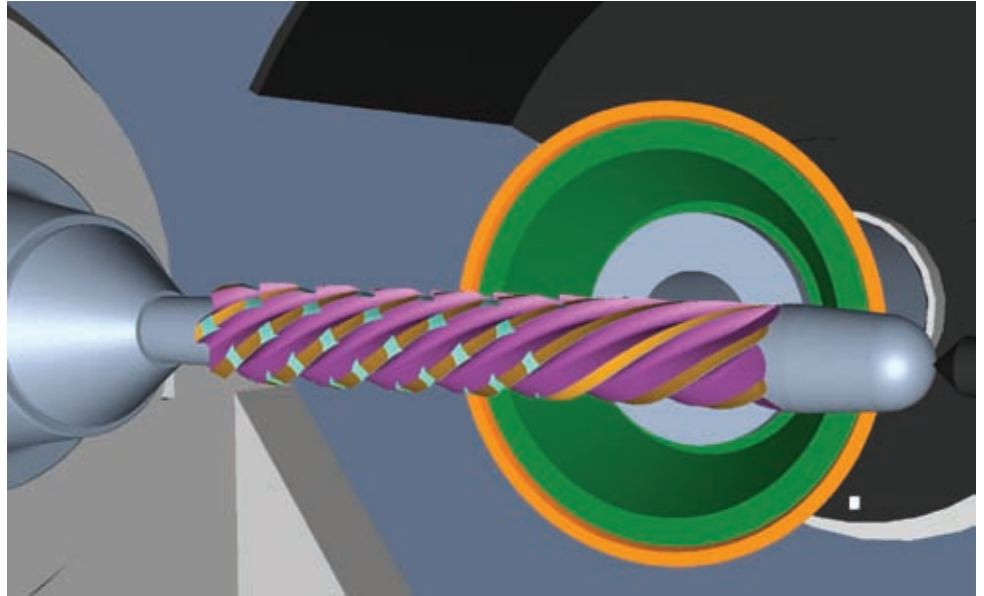
*For manufacturing complex instruments and implants at the lowest cost-per-part*



*Design your machining tools in detail and simulate them accurately, including workholding, and grinding wheels (competing systems treat every "tool" as a ballnose endmill)*

# Helitronic Tool Studio grinding software combines incredible flexibility with ease of use

Tool Studio makes it easy to design and manufacture complex or unique cutting tools. With Tool Studio, you model the tool with an interactive 3D graphic – changing any feature. When you like what you see, send it straight to the machine because the grinding program has already been written in the background! To maximize productivity, do all the setup on an office PC. Simply transfer the file to the grinder when you're ready to make real tools.



*See the complete machine, including workholding, and the grinding sequence. Check for—and eliminate—collisions. See the full 3D simulation on the machine control in real time.*

## ☒ **“What You Model Is What You Grind”**

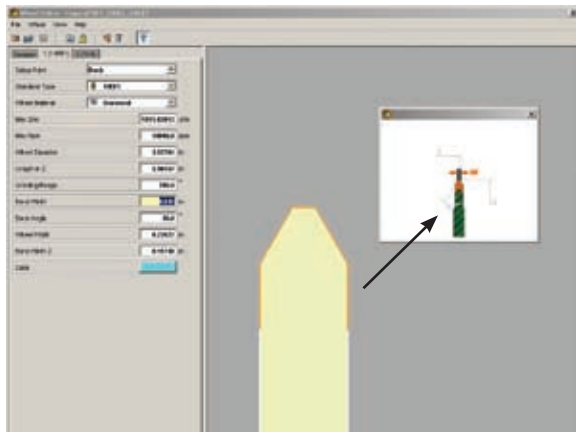
Every change appears instantly in a high-resolution 3D graphic and automatically rewrites the grinding program in the background. Watch your grind in real-time on the machine control – so clear and accurate it's like you've turned the coolant off in the machine.

## ☒ **Unlimited flexibility**

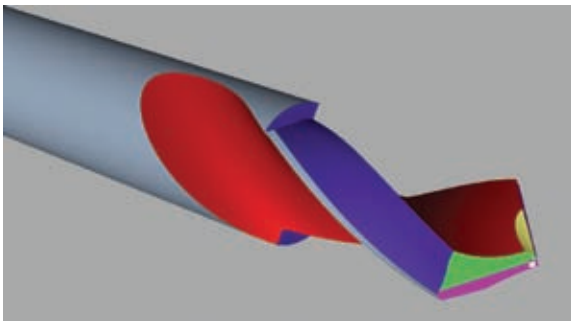
Add any number of grinding operations per tool, mix and match operations, and change any individual feature to create geometries of any complexity. Everything – including simulation – is within one software package and most everything is changeable: Variable helix...Variable rake...Variable core... Variable land width...

## ☒ **Wizards offer easiest way to make standard tools**

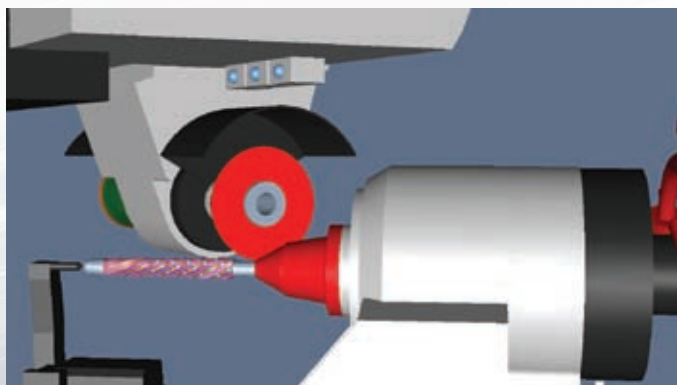
For standard tool families, Wizards show only the relevant data, minimizing the data input required. The software then uses a database built on decades of WALTER tool grinding experience to complete the grinding program with astounding speed. At the same time, more proficient users can take a standard tool as the basis for more complex designs by adding new operations.



*Interactive menus make it easy to define new wheel shapes, in this case for a threading operation to turn the drill into a bone screw, as shown below*



## Helitronic Tool Studio – grinding software combines unlimited flexibility with ease of use

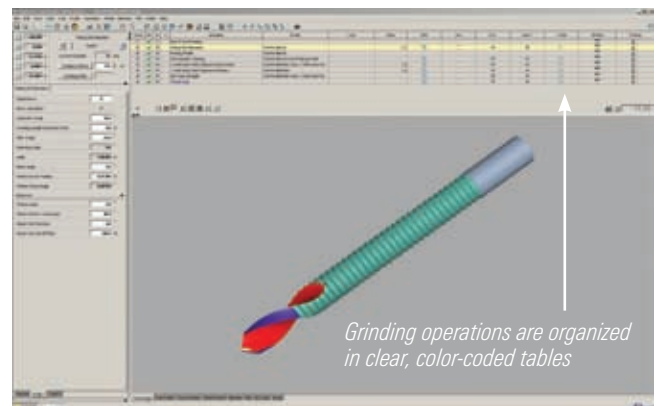


*Simulate complete machine and accurate workholding to see and eliminate collisions. Tool Studio automatically checks for and prevents collisions before each cycle, even if you don't run the simulation.*

### ☑ Saves time and aggravation

Simply clicking the 3D graphic lets you see anything relevant to that part of the tool: grinding parameters, operations, wheel data, a 2D cross section, a profile view, and a complete machine view. You can even snap the wheel to the current position or turn the operation on and off. You don't have to hunt through separate windows and menus. You can optimize tool holding positions for maximum rigidity, simulate custom workholding, and detect and eliminate collisions.

Plus you can measure tool features from this central screen, try new design ideas, and check the results instantly—before grinding any real tools. Helitronic Tool Studio also lets you measure and optimize cycle times for individual operations and the complete grind. Improve your production planning and cost estimation.



*Grinding operations are organized in clear, color-coded tables*

### ☑ Under fire to minimize cycle times? Get AMMO!

Tool Studio includes an Automatic Machine Move Optimizer (AMMO) that makes lift-offs as small as possible while avoiding collisions. It also calculates the shortest possible path between operations. So ALL non-grinding moves are minimized for reduced cycle times.

If you add an operation—even in the middle of a grind—AMMO automatically adjusts the machine moves to prevent a problem. You're maximizing productivity AND protecting your machine without programming!

# Superior support to maximize up-time and help you adapt to changing requirements

## ☑ A large in-house staff to give you the help you need, when you need it

- Applications engineers
- Software engineers
- Design engineers
- Electro-mechanical service technicians



## ☑ Field service technicians near you

Our many field service technicians are based so they can respond quickly at the lowest possible travel cost:

- Fredericksburg, VA
- Detroit, MI
- Dayton, OH
- Phoenix, AZ
- Mexico City, Mexico



## ☑ A disciplined system that supports over 2,000 machines in North America

We track all support requests in a central database until completed and keep detailed records for future reference and statistical analysis. That contributes to improved support processes, the right decisions about key machine components, and input for future designs. All to make sure you get the best solution.



## ☑ Fanuc control and drives – world's most reliable

Statistically, you'd have to wait more than 10 years for a fault to occur. That's a major reason customers are so happy with Fanuc that two out of every three CNC machines sold today feature Fanuc or GE Fanuc systems (1.9 MILLION installations worldwide).

- More service locations for even better coverage
- Parts supply guaranteed for 20 years or longer
- High speed back-up of all data gives you peace of mind
- Strict separation of the CNC and the PC virtually eliminates the risk of viruses and system crashes in the CNC. Plus start-up is extremely fast.
- Precision in the nanometer range
- Integrated Dual-Check safety function complies with international standards



## ☑ The stable partner you can trust – globally

Walter is part of Körber AG, a German holding company with over \$2 Billion in annual sales and over 9,000 employees in 30 companies on three continents. The group has been consistently profitable, in good times and bad.

- **Diversified** – Körber is divided into four distinct business groups, which balances business risks and contributes to our stability
- **Privately held and socially responsible** – Our sole share-holder is the non-profit Körber Foundation; earnings are re-invested in the business or go to charity
- **Top technology** – Körber invests roughly 7% of sales in R&D. And we combine the know-how of the technology leaders in cylindrical, centerless, surface and profile, and tool and cutter grinding. So you get much more productive solutions than others offer.



*Walter's 65,000 sq ft facility in Virginia. We also have offices in Dayton, OH, Los Angeles, and Mexico City*

## ☑ Remote diagnostics tools help solve most issues without travel



## ☑ Most parts can be shipped to you overnight from within the US



# Easy, automatic inspection for QC and certification



Walter Helicheck machines can automatically measure a wide variety of geometric features quickly and without contact. Repeatability and accuracy are within microns. Yet setup is easy, with simple menu driven routines.

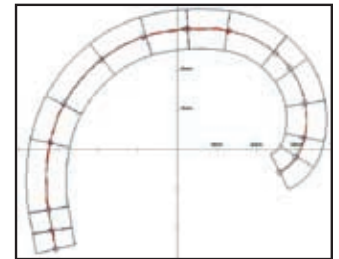
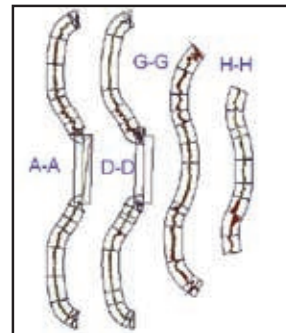
For example, a Helicheck can measure all the following features on a knee in under 5 minutes:

- Fit of distal face and anterior face
- Outer contour of the lateral and medial condyles
- Posterior and distal condyle thickness
- Width of medial and lateral condyles
- Width of the slot
- Anterior radius of the IC slot
- Height of the condyles
- Height of the anterior tip
- A-A, D-D, G-G, and H-H section scans

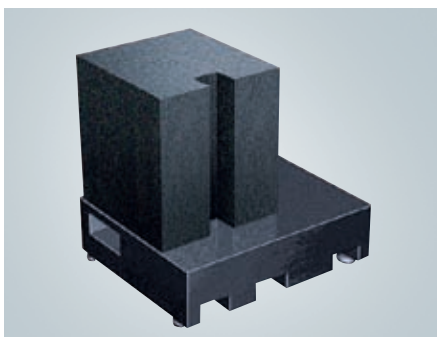


## Automatic non-contact measuring with ideal illumination

The Helicheck performs its measurements without touching the part, independent of operator influence. Segmented LEDs provide the optimum degree and direction of lighting needed to capture the tiniest details.

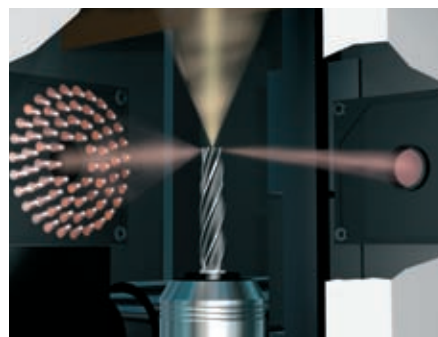


*Reports showing deviation between the nominal and scanned contours*



## Solid granite base for temperature stability and vibration dampening

The Helicheck's incredible accuracy and repeatability starts with its massive base. There is no shortcut to achieving the required stability.



## 3D views without swiveling the cameras – accurate and fast!

The Helicheck's standard CCD cameras can capture both end-face and side views without the need to swivel. The cameras are fixed securely to a linear CNC axis, which is in turn mounted to the granite block. Glass scales maintain near-perfect positioning accuracy.



## Open interface to other grinders – cuts setup up to 50%

Helicheck measurement data can be exported for statistical process control in any database or use by other machine tools. For example, accurate wheel measurements from the Helicheck can get grinder setup time in half.

# Technical data

	<b>HELITRONIC VISION</b>		<b>HELICHECK PRO/PLUS</b>		<b>HELICHECK BASIC</b>	
	CNC Grinder		CNC Measuring Machine		CNC Measuring Machine	
<b>Axes</b>	<b>Inch</b>	<b>mm</b>	<b>Inch</b>	<b>mm</b>	<b>Inch</b>	<b>mm</b>
X-Axis	18.9	480	10.2	260	18.1	460
Y-Axis	12.6	320	13.0	330	12.6	320
Z-Axis	27.6	700	9.8	250	25.9	660
A-Axis	360°	360°	360°	360°	360°	360°
<b>Part Capacity</b>						
Max. Diameter <sup>1</sup>	12.6	320	7.9	200	12.6	200
Max. Length <sup>2</sup>	14.6	370	11.8	300	15.7	400
<b>Accuracy</b>						
E1 (L = length in inches/mm)	n/a	n/a	0.000,06 + L/11.8	1.4 + L/300 µm	0.000,09 + L/11.8	2.2 + L/300 µm
Diameter Measurement Repeat accuracy <sup>3</sup>	n/a	n/a	0.000,04	1 µm	0.000,06	1.5 µm
Length Measurement Repeat accuracy <sup>3</sup>	n/a	n/a	0.000,04	1 µm	0.000,06	1.5 µm
<b>Magnification <sup>4</sup></b>						
Transmitted-light camera 1	n/a	n/a	50x	50x	50x	50x
Transmitted-light camera 2 (Plus)	n/a	n/a	400x	400x	n/a	n/a
Reflected light camera	n/a	n/a	200x/400x	200x/400x	100x	100x
Top-Light camera	n/a	n/a	200x/400x	200x/400x	100x	100x
<b>Grinding head</b>	<b>Inch</b>	<b>mm</b>	<b>Inch</b>	<b>mm</b>	<b>Inch</b>	<b>mm</b>
Peak power, Standard	40 HP	30 kW	n/a	n/a	n/a	n/a
Grinding spindle Speed, Standard	0 – 10,000 rpm		n/a	n/a	n/a	n/a
Wheel changer	0 – 10,000 rpm		n/a	n/a	n/a	n/a
Max. grinding wheel diameter						
Double-ended spindle	8	200	n/a	n/a	n/a	n/a
Wheel changer	6	150	n/a	n/a	n/a	n/a

<sup>1</sup> Max. diameter depends on tool type.

<sup>2</sup> Measured from the face of the ISO 50 workhead. Longer gundrills and similar tools can also be accommodated.

<sup>3</sup> Measured with certified stepped plug gauge at constant environmental conditions.

<sup>4</sup> Magnification based on a 17" monitor.

**See the individual machine catalogs for additional technical details.**



**UNITED GRINDING VIRGINIA**

United Grinding Technologies, Inc.  
5160 Lad Land Drive  
Fredericksburg, VA 22407  
Phone: (540) 898-3700  
Fax: (540) 898-6819  
In Mexico, please call or fax:  
01-55-655-9981

**UNITED GRINDING OHIO**

United Grinding Technologies, Inc.  
510 Earl Blvd.  
Miamisburg, OH 45342  
Phone: (937) 859-1975  
Fax: (937) 859-1115

**WALTER WEST**

11095 Knott Ave., Suite A  
Cypress, CA 90630-5136  
Phone: (714) 890-9885  
Fax: (714) 897-9040

**Offices Worldwide**

[www.grinding.com](http://www.grinding.com)

