PRECISION IN MOTION

Advanced Grinding, Measurement and Analysis Solutions

Explore the technologies driving accuracy, performance, and innovation in today's most demanding applications—from rough grind to nanometer-level inspection

Worldwide SOLIDS | WWSA Worldwide Superabrasives | SPOC Superabrasives Process Optimization Center | WWSAMX Worldwide Superabrasives

THE WORLDWIDE GROUP

Welcome to the future of Superabrasives

At WWSA, continuous improvement isn't a goal—it's our standard. Within our 2,000 sq. ft. S.P.O.C. facility, we've built a powerhouse of precision—anchored by the ANCA™ TX7+ and ANCA™ TX Linear, and backed by a wide range of advanced grinding and inspection equipment. This catalog showcases the full scope of our capabilities, reflecting our commitment to innovation, accuracy, and world-class performance.

At WWSA, excellence is not a benchmark—it's a mindset

Your success is our specialty

OUR VISION

At Worldwide Superabrasives (WWSA), our vision is simple: deliver world-class superabrasive solutions—without competing with the end user.

Backed by over 250 years of combined industry experience, we bring unmatched expertise in superabrasives and electroless coatings to every partnership.

Through rigorous quality control, advanced analytical tools, and close collaboration with customers, we ensure each product is optimized for performance, consistency, and value.

Our strong global network of manufacturers allows us to offer the right solution—at the right price—for every application.

OUR CORE VALUES

- Providing the highest quality superabrasive products
- Acting with absolute integrity
- Communicating openly and honestly with our customers and partners
- Promoting a highly motivated, valued and diverse workforce
- Acknowledging and respecting our team members
- Simplifying and continuously improving our processes

OUR MISSION

Providing superabrasive products, customer service and technical support that meet and exceed our customers' needs and expectations, while relentlessly pursuing continuous improvement strategies to further enhance these products and services.

TX LINEAR

ANCA TX Linear

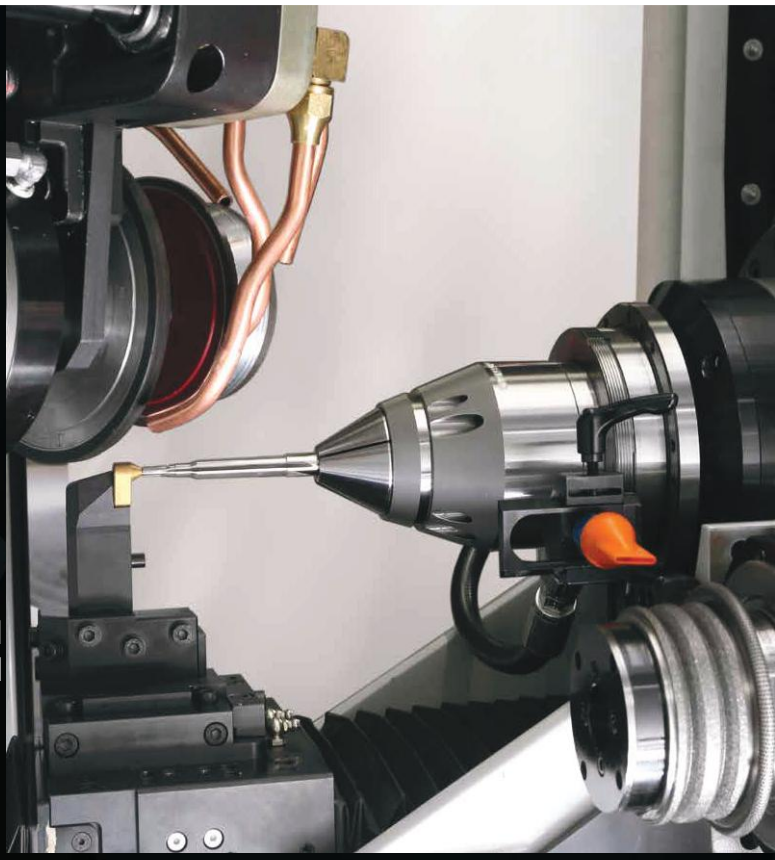
The new benchmark universal grinder

TX7 Linear is ANCA's premium grinding machine, aimed at the most demanding and diverse applications.

The TX7 Linear's large working envelope allows you to grind the widest range of tools, from a simple 3mm endmill, to a 400mm long drill or a 300mm diameter face cutter.

The 37kW grinding spindle, mounted in a rigid machine design, ensures heavy grinding operations can be completed with ease.

TX7 Linear includes, LinX linear motors on X, Y and also Z axis, ensuring a life time of uncompromised precision. Automation and a range of machine accessories mean the TX7 Linear can be equipped to meet the specific needs of tomorrow's most stringent grinding applications.



- ANCA LinX linear motors and linear scale feedback on X, Y and Z axis
- ANCA Motion AMC5 CNC with touch screen user interface
- 37kW (49HP) peak power direct drive spindle with BigPlus arbor
- 2 wheel pack changer with up to 4 wheels per arbor, maximum wheel diameter 200mm (8")
- On machine tool measurement with standard touch probe and optional LaserPlus and iView
- Variety of tool support options including fixed and travelling steady
- Two independent wheel dressing options
- Tool loading option with ANCA's RoboMate loader

ANCA TX7+

ANCA TX7+
The Tough Production Performer

ANCA's premium machine – the result of 20 years of ongoing R&D and the implementation of customer feedback. The basis of the powerful TX7+ is our expertise in CNC technology, mechanical and electrical design and software engineering. It is a machine that is an industry benchmark in CNC tool grinding.

Flexible software and tooling, combined with a large working envelope mean the TX7+ is also capable of manufacturing much more complex tools than endmills and drills. It can also be used to manufacture rotary medical instruments, standard and key hole press punches, and components for the medical, aerospace and automotive industries.

- Suitable for heavy-duty manufacturing and reconditioning precision cutting and drilling tools, plus component manufacture
- Automatic wheel changer enables up to 8 grinding wheels to be used in one set-up
- Wide variety of workholding and support tooling to meet individual needs
- RoboMate automation for unmanned operation
- 37 kW (49 HP) peak spindle power
- Integrated dresser roll on the headstock

PROTO LXRD

How XRD Works

1. X-ray Diffraction:

X-rays are directed at a material's surface, and the way they diffract (scatter) reveals the spacing between atoms in the material's crystal lattice.

2. Strain Calculation:

By measuring the lattice spacing at different orientations (tilts) of the sample, XRD can determine the strain present in the material.

3. Stress Conversion:

The calculated strain is then converted into residual stress using established relationships between strain and stress.

4. Near-Surface Measurement:

XRD typically probes the near-surface residual stress, with typical depths ranging from a few micrometers to tens of micrometers.

The Proto LXRD is manufactured by the leading name in residual stress mapping and is the perfect tool to use where residual stress is a concern for critical fatigue components. Utilizing sophisticated x-ray technology and enhanced detection software this tool provides unparalleled accuracy.

Our Materials Characterization Laboratory uses the Proto LXRD to carefully measure the levels of material stress after grinding to provide a closed-loop grinding evaluation.

WHAT IS RESIDUAL STRESS ?

Residual stress refers to internal stresses that remain locked within a material after all external forces have been removed. These stresses develop as the material returns to equilibrium following plastic deformation during manufacturing processes such as welding, machining, or heat treatment.

In contrast, applied stress is generated in a material as a result of an external load, often measured using tools like strain gauges.

TOTAL STRESS = RESIDUAL STRESS + APPLIED STRESS

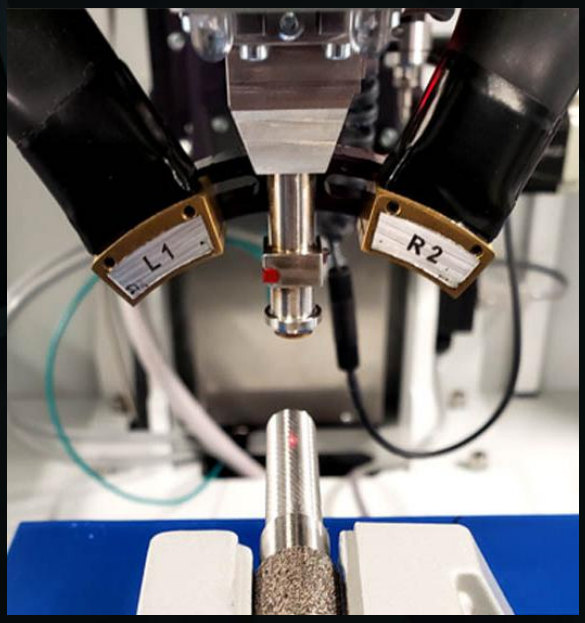
WHY RESIDUAL STRESS MATTERS

Compressive Residual Stress (–):

- Beneficial to fatigue strength and component life
- Slows crack growth
- Enhances resistance to stress corrosion cracking and hydrogen-induced cracking

Tensile Residual Stress (+):

- Undesirable in surface regions
- Promotes crack initiation and propagation
- Reduces structural durability

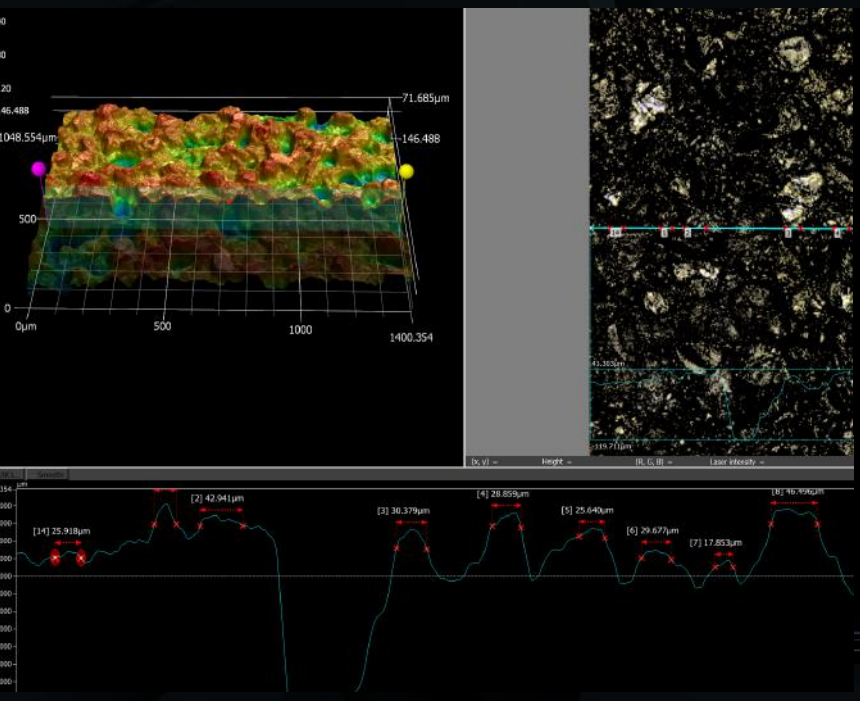


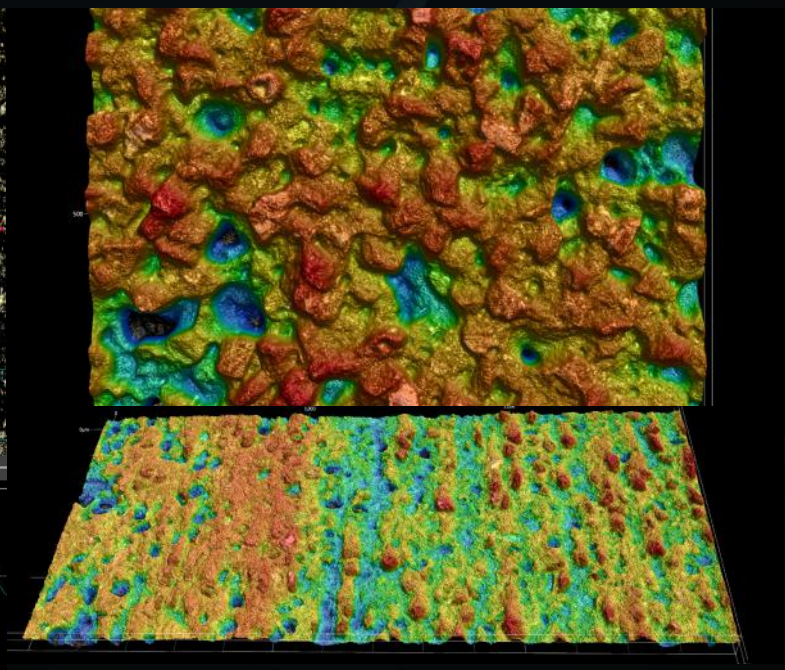
KEYENCE VK-X100
3D LASER SCANNING MICROSCOPE

The Keyence VK-X Series Laser Scanning Microscope is able to perform non-contact profile, roughness, and film thickness measurements on any material, regardless of the complexity of the surface.
It also has the ability to capture various surface information with nanometer-level resolution.

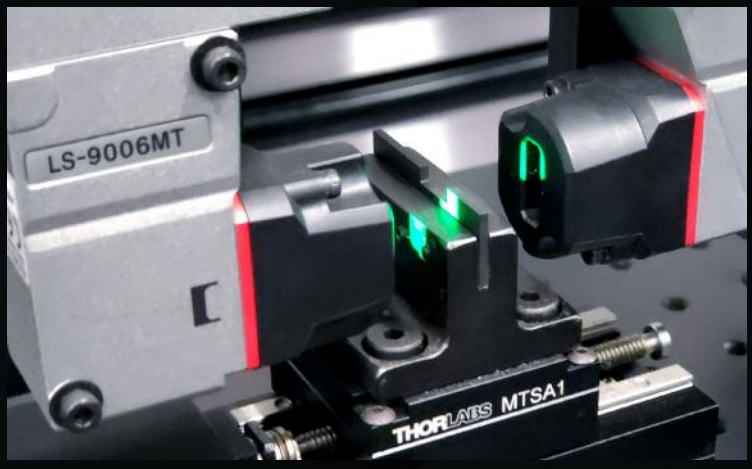
The VK-X Series Laser Scanning Confocal Microscope redefines surface analysis with ultra-fine, non-contact measurement capabilities. Combining high-resolution imaging with advanced metrology, it delivers up to 28,800× magnification and 0.5-nanometer resolution—making it a powerful hybrid tool for both observation and precision measurement.

Engineered to handle any material or surface complexity, the VK-X Series captures detailed 3D profiles, roughness, and film thickness with unmatched clarity. It breaks free from the limitations of traditional tools like interferometers and contact profilers, setting a new standard in nanoscale surface characterization.



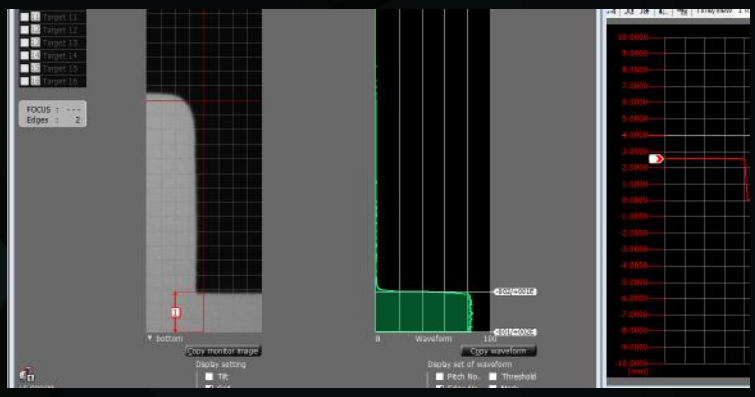


KEYENCE LS-9000 Series
High-speed Optical Micrometer



The LS-9000 features a high-speed exposure CMOS sensor combined with a high-intensity green LED, achieving an impressive 16,000 Hz sampling rate for fast and accurate measurement. Its built-in “Monitor CMOS” function ensures precise target alignment, even when measuring tilted surfaces, enhancing overall accuracy and reliability.

Designed for long-term stability, the LS-9000 uses an LED light source that eliminates errors from external light interference. With no moving parts and minimal maintenance needs, it is perfectly suited for continuous on-site operation in demanding industrial environments.



JEOL SEM
WITH EDS CAPABILITIES

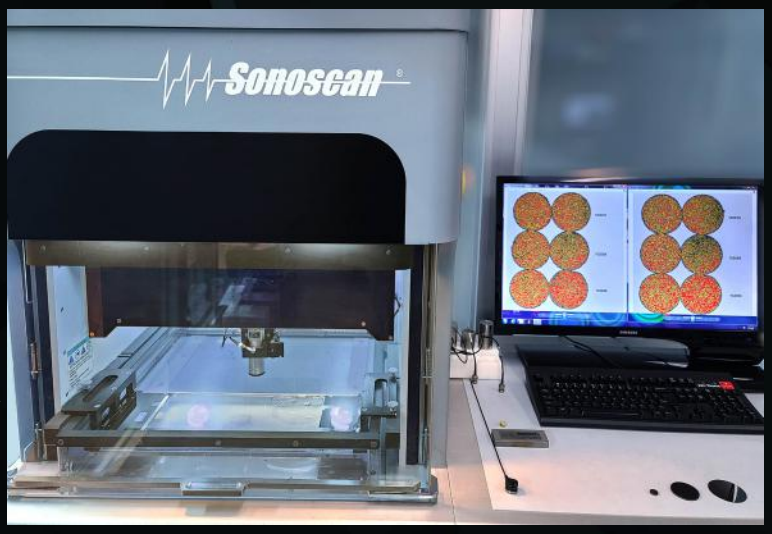
The JEOL low vacuum Scanning Electron Microscope with integrated Energy Dispersive X-Ray Spectroscopy is ideal for performing advanced analytical analysis.

Utilizing the latest Silicon Drift Detector (SDD) technology, the JEOL SEM allows engineers, scientists, and technicians to carefully assess and analyze the morphology and elemental chemistry of super abrasive grains and their coatings.

SONOSCAN D9600
ACOUSTIC EMISSION MICROSCOPE

At the very forefront of C-SAM acoustic micro imaging systems, the Sonoscan D9600 is the perfect general purpose tool for failure analysis, process development, material characterization and low volume product inspection.

Using high-frequency, non-destructive sound waves, we can utilize the Sonoscan D9600 to produce an accurate image of solid and porous samples. The performance levels of the D9600 are truly unrivaled on the market.



HORIBA LA-910

The LA-910 earned its reputation as a benchmark in laser diffraction technology, delivering reliable, high-resolution particle size analysis across a dynamic range of 0.02 to 1,000 microns. Engineered with precision, it features silicon diode detectors and dual light sources—405 nm halogen and 633 nm He-Ne laser—housed in a durable metal chassis.

Renowned for its robustness and analytical performance, the LA-910 set a high standard for versatility and accuracy in particle characterization, leaving a lasting impact on laboratories worldwide.

MICROTRAC S3500

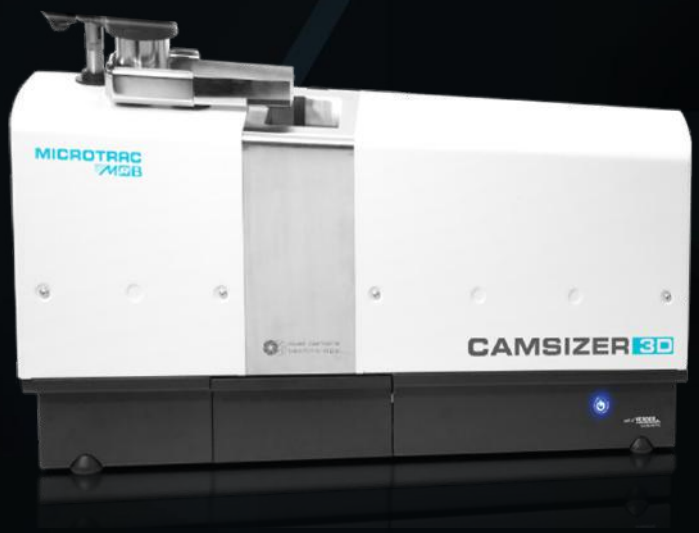
The Microtrac S3500 is a leading laser diffraction analyzer, engineered for precise particle size measurement across a wide range—from 0.02 to 2,800 µm. Its patented Tri-Laser System uses three fixed red lasers and multi-angle detectors to deliver accurate, repeatable results for both spherical and non-spherical particles using advanced Mie and Modified Mie algorithms.

Designed for versatility and efficiency, the S3500 supports both wet and dry measurements with minimal operator intervention, thanks to its enclosed optical path and rugged, low-maintenance design. Its compact footprint and seamless sample handling make it ideal for labs seeking reliable, high-performance analysis in a space-saving form.

MICROTRAC CAMSIZER 3D

The CAMSIZER 3D redefines bulk solids analysis by combining dynamic image analysis (ISO 13322-2) with an innovative measurement system. Each particle is captured up to 30 times from different angles, enabling true 3D morphology and precise shape analysis.

With a dual-camera system—featuring a 9 MPx ZOOM camera for fine particles and a 5 MPx BASIC camera for larger sizes—it covers a wide measuring range from 20 µm to 30 mm. Designed for both quality control and R&D, it's the ideal solution for dry, free-flowing bulk materials.



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