EPX-SF

THE CUTTING EDGE FOR SUPERIOR TOOL PERFORMANCE

EPX-SF is ANCA's latest innovation, building on over 50 years of machine tool development, design and manufacture. EPX-SF delivers automated stream finishing capability that will deliver your competitive advantage in the market.

ANCA
CNC MACHINES

EPX-SF IS YOUR COMPETITIVE EDGE

WHAT IS STREAM FINISH?

Stream finishing is a process where granular media, in a rotating drum, is passed over the surface of a tool or work piece to hone, deburr or polish at the sub-micron level. Fine control of the EPX-SF process is achieved with

- different media (shape, size, material and blend composition)
- position, orientation & movement of the tool or workpiece in the media
- relative speed & force of the media to the workpiece (changing drum and/or workpiece RPM, submersion depth)

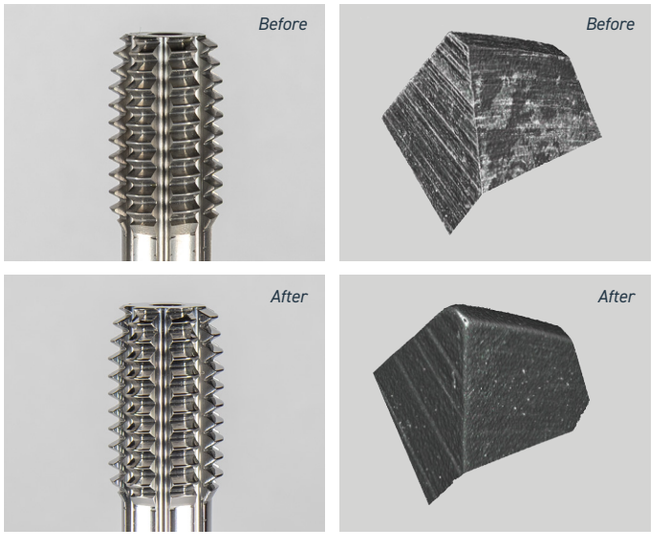
WHY DO I NEED TO STREAM FINISH?

With its precise and targeted process control, stream finishing in the EPX-SF is used with three primary process goals:

Edge Honing: Improves tool cutting edge geometry for improved coating application and additionally elevates cutting performance and life

Deburring: Burrs must be eliminated to prevent impact on cutting action or moving parts

Surface polishing: Reduces mechanical friction and makes your parts literally shine



Forming tap before and after EPX-SF stream finishing

Uninterrupted production with automated loading system.

ANCA has developed EPX-SF with our customers needs front of mind and addresses the needs of your business and your customers.

Productivity

ANCA understands your need to maximise your machines productivity. So within a compact machine footprint, EPX-SF features 3 independent work heads that are kept busy with robot automation as a standard inclusion.

ANCA is leading the way to deliver Smart Factory solutions. AIMS Connect integrates EPX-SF to your factories data management systems giving visibility and control across machine platforms.

AIMS Automate will deliver autonomous material handing between production processes to realise true unattended production.

Precision

Microns matter in a world where you seek to optimise results and set yourself apart from your competition.

EPX-SF boasts 11 axis of motion control, supported by application software that give you unparalleled ability to target the stream finishing process results precisely on the workpiece. EPX-SF controls tool edge honing at the micron level and will have you talking about surface finish in nano-meters.

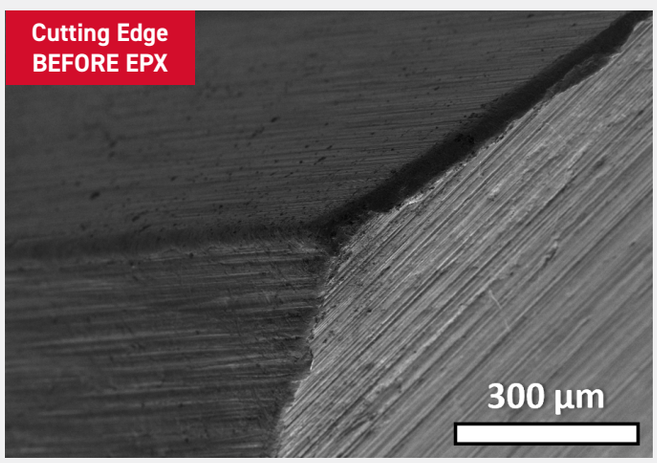
Performance

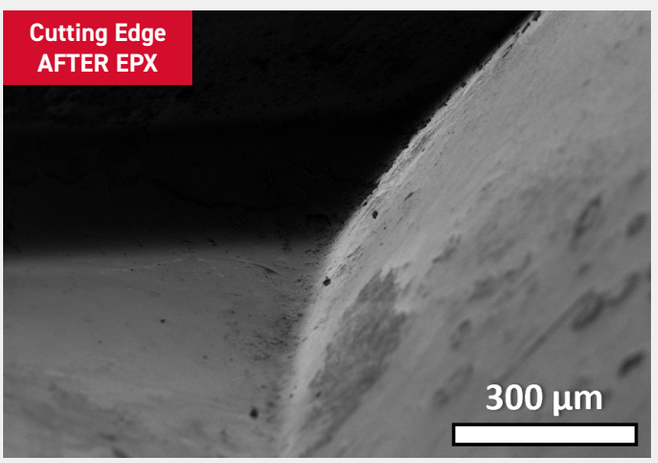
Cutting tools processed with the EPX-SF deliver step change improvement in cutting performance and life. Developing your own unique tools using EPX-SF stream finishing means your product will stand out from the competition in a market that demands continuous improvements.

EPX-SF will be your performer for years to come, backed by ANCA's reputation for delivering best in class CNC machines. Our vertical integration of design and manufacturing capability ensures all the core capabilities of the EPX-SF are fully supported by ANCA and backed by a global network of After Sales Support.

APPLICATION EXAMPLES

EDGE HONING 1:
Removal of Micro Chipping



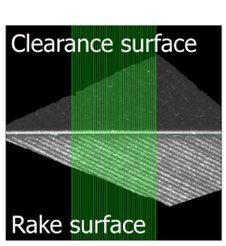


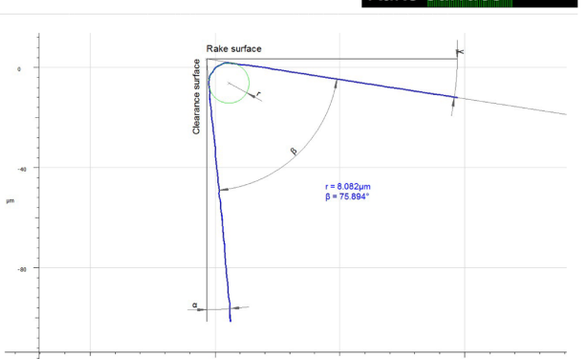
BENEFIT: **Extended tool life, improved cutting performance**

EDGE HONING 2:
Edge Rounding with Controlled K-Factor

8 micron ROUNDED

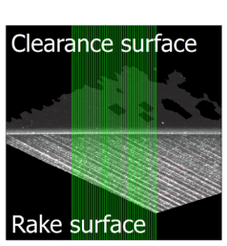
Name	Value	Unit	Description
r	8.082	µm	Mean radius of mean edge
α	5.339	°	Clearance angle
β	75.894	°	Wedge angle
γ	8.767	°	Rake angle
φ	0.000	°	Symmetry angle
Sα	10.365	µm	Dist. apex to end of clearance roundness
Sγ	10.384	µm	Dist. apex to end of rake roundness
K	1.002		Symmetry of cutting edge
Δr	5.056	µm	Min. dist. of edge to apex
WΔr	7.890	µm	Edge width
Ecq	0.062	µm	Form deviation of circle (RMS)
Ftype			Estimated Curvature

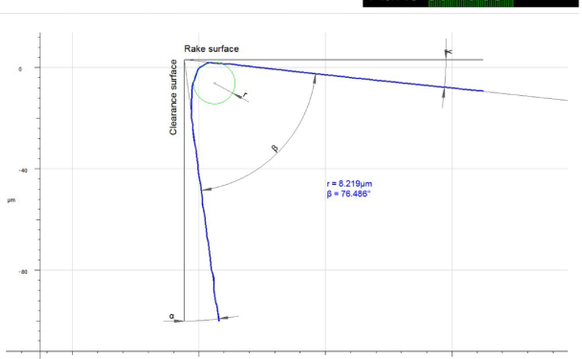




8 micron WATERFALL

Name	Value	Unit	Description
r	8.219	µm	Mean radius of mean edge
α	7.423	°	Clearance angle
β	76.486	°	Wedge angle
γ	6.090	°	Rake angle
φ	0.000	°	Symmetry angle
Sα	22.197	µm	Dist. apex to end of clearance roundness
Sγ	9.706	µm	Dist. apex to end of rake roundness
K	0.437		Symmetry of cutting edge
Δr	4.623	µm	Min. dist. of edge to apex
WΔr	7.702	µm	Edge width
Ecq	0.190	µm	Form deviation of circle (RMS)
Ftype	Waterfall		Estimated Curvature





BENEFIT: **Targeted cutting edge geometry for specific application and cutting conditions**

DEBURRING 1: Medical Drill

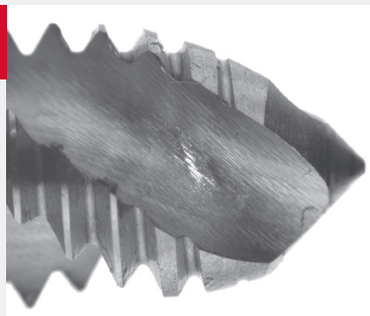
Before EPX

After EPX

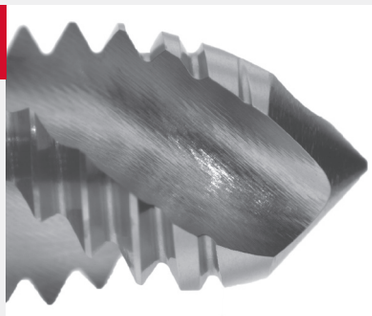
BENEFIT: **Consistent burr removal as required for orthopaedic certification**

DEBURRING 2: HSS Tap

Before EPX



After EPX

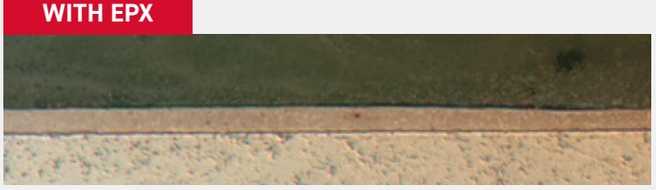


BENEFIT: **Removal of burrs in preparation for coating process**

POLISHING 1: Raw Carbide Flute Polishing (Pre-Coating)

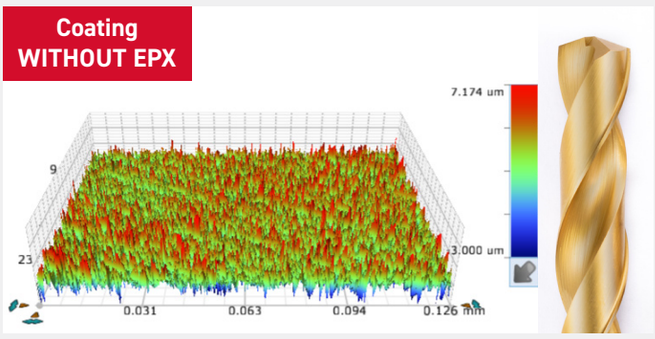
Coating WITHOUT EPX

Coating WITH EPX

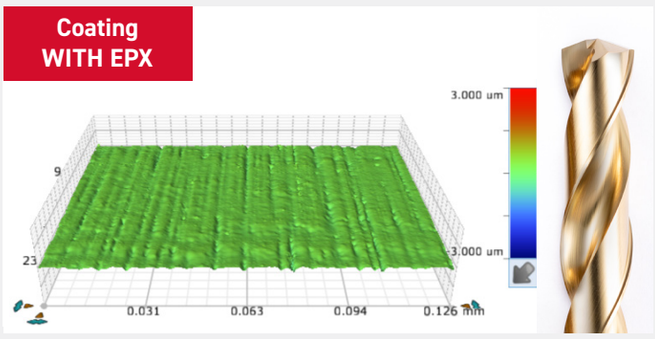


POLISHING 2: Post Coating Polish

Coating WITHOUT EPX



Coating WITH EPX



BENEFIT: **Improved flute surface finish on coated tools improves chip formation and evacuation**

FEATURES OF EPX
WITH YOUR NEEDS FRONT OF MIND

1. CONTROL PANEL

Including touch screen, USB ports and space for a standard keyboard. Ergonomic tilt adjust to suit different height operators.

2. REMOTE PENDANT

For safe and ergonomic control of the machine.

3. SOFTWARE

ANCA's market leading versatile & intuitive software is easy-to-use and gives ultimate flexibility to program EPX-SF to perform to your application needs.

4. INTEGRATED LOADER

Included as standard on EPX-SF, loader includes Fanuc robot for performance and reliability.

5. MACHINE CONTROL SYSTEM

Latest ANCA high performance CNC for flawless control of all 11 machine axes.

1. ROBOMATE LOADER

Robomate loader with up to 4 pallet stations and common pallet design to ANCA grinders.

2. INDEPENDANT WORKHEADS

3 Workheads operate independently of each other and maximise throughput. Rotation speed +/-2000RPM, tilt angle range +/-35 deg.

3. MONITORING SYSTEMS

Monitoring systems to check media surface level giving accurate control of submersion depth, tool length and tool detection before and after processing.

4. MEDIA DRUM

Media drum speed, programmable from 0 to 70 RPM. Quick change solution for rapid switching between media types.

5. FLEXIBLE WORK HOLDING

Work holding with 3 jaw gripper. Two jaw sizes hold tool shank 3-25.4mm, minimising tooling setup.

6. IN-BUILT DUST EXTRACTION SYSTEM

Keeps working space clean for machine and operator alike.

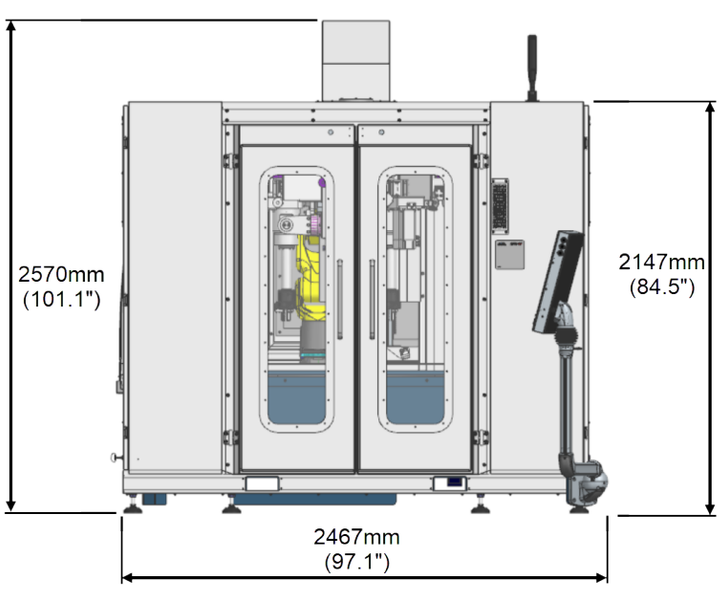
ANCA EPX-SF TECHNICAL DATA/SPECIFICATIONS

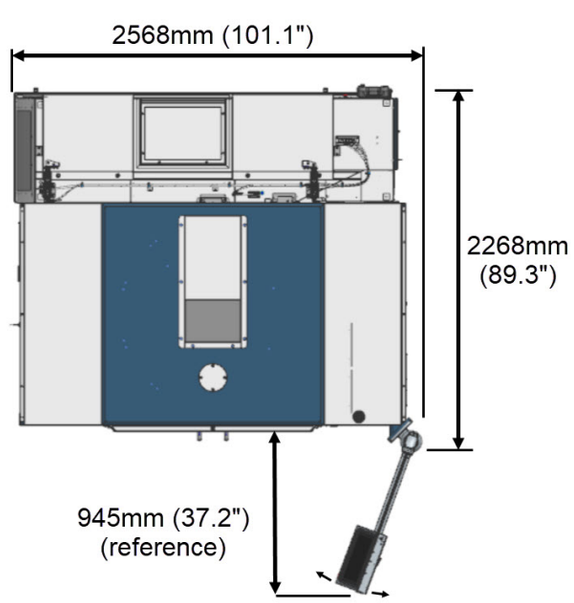
Weight	3400kg [2]	
Performance	Work heads:	3
	Head RPM:	+/-2000
	Head Angular Tilt:	+/-45 deg
	Drum Speed: .	70RPM max
	Tool diameter range:	3mm -16mm & 12.7mm - 25.4mm
	Tool Length :	50mm – 250mm
	Max. workpiece weight:	1.5kg[1]
	Media type:	dry only
	Power requirement:	27kVA, 380-480VAC, 3 phase, 50 or 60Hz.
Robot Loader Capacity:	4 Pallet Stations Offers Capacity of:	- Ø6mm tool: 1040pc - Ø16mm tool: 308pc

OTHER FEATURES

Machine Features:	Pre & Post Process Tool Detection	✓
	Dynamic Media Level Sensor for Process Compensation	✓
	Tool Length Measurement	✓
	Integrated Dust Extraction	✓
	Post Process Tool Cleaning	✓
	Drum Quick Change Mechanism	✓
	Work Heads with 3 Jaw Tool Clamp Covers Diameter Range 3-16mm & 16-25.4mm	✓
	Application Programming Software	✓
	Teamviewer™ Software for Remote Diagnostic Support	✓

Note: [1] When used with Robot Loader
[2] Excludes media





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