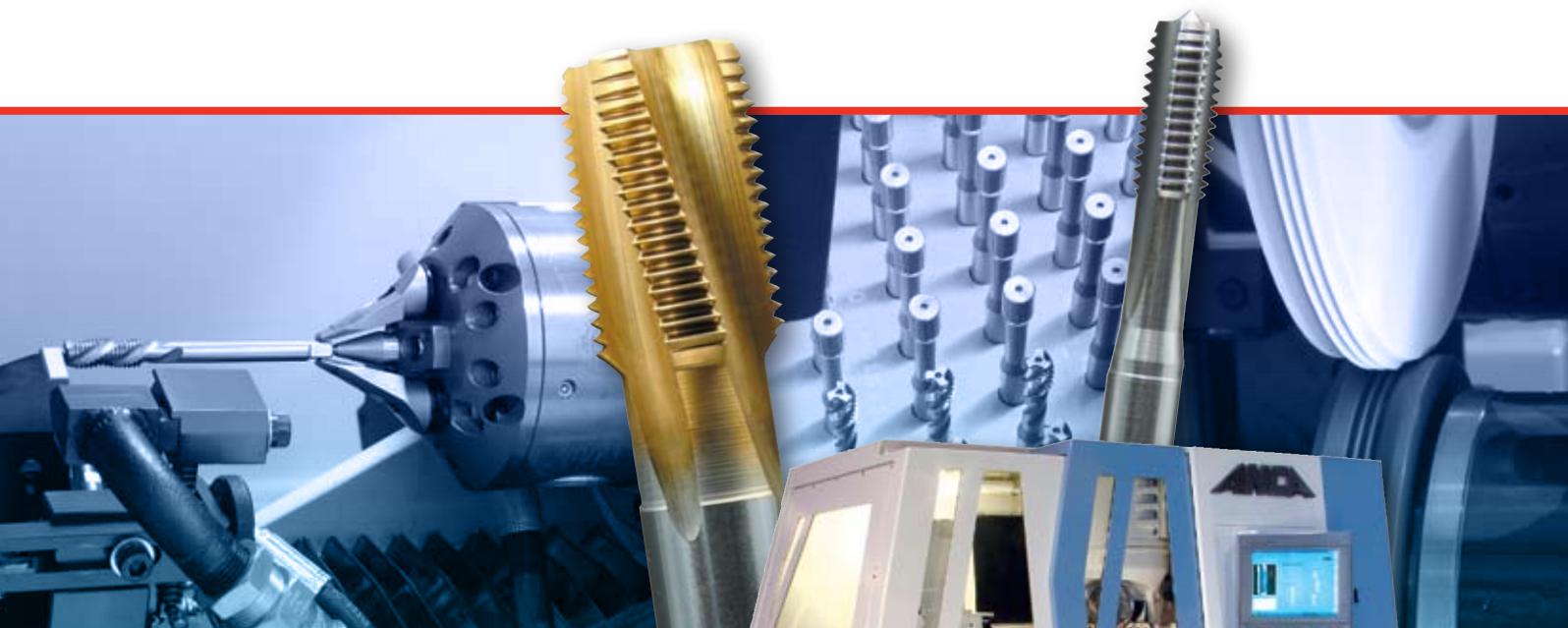


# TapX



*The Complete Tap  
Manufacturing Solution*



**ANCA**<sup>®</sup>  
TOTAL PRECISION

# TapX The revolutionary tap grinding solution

## One set-up, one machine for tap grinding

The ANCA TapX is a revolution in tap design and manufacture. Now, in a single compact CNC machine, you can perform the entire tap manufacturing process from blank to finished product. Gone are the high costs, inflexible production and low productivity due to lengthy machine set-ups.

Tap manufacturing traditionally requires several grinding machines, each performing a specific tap grinding task. Equipped with the new ANCA iTap software, TapX is a one-machine solution for tap manufacturing from the company that leads the field in CNC tool grinding.

## Flexibility, precision and productivity

Flexibility is a key feature of the tap grinding process on the TapX. Specially designed machine tooling combined with the powerful iTap software ensures a vast range of tap types and sizes can be designed and manufactured in one set-up. Combine this with the benefits of quick changeover time and it's not hard to see how the TapX can increase productivity and cut down lead times.

## A proven performer

The TapX is based on the proven design of the ANCA TX7 incorporating;

- ANCAcrete polymer base ensuring superior dampening properties and machine rigidity.
- Powerful spindle featuring the Big Plus clamping system.
- Direct drive on all motors.
- ANCA designed & built 5DX CNC control.
- Patented MPG feed control.

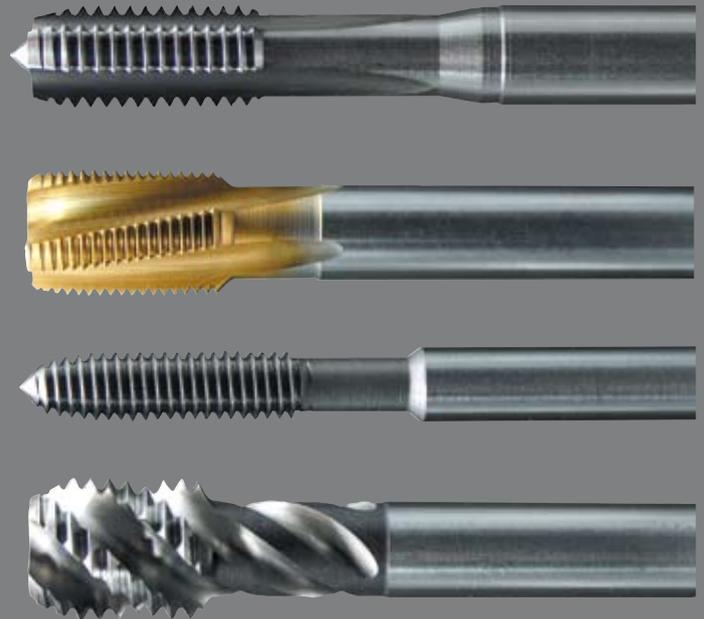
These features guarantee rigidity, precision, and all the benefits and flexibility a CNC grinding machine can offer.



*One-machine... One set-up*



*'TapX one-machine,  
one set-up means  
more flexibility,  
reduced costs  
and increased tap  
production output...'*



### **TapX: Key benefits at a glance**

ANCA TapX is a high-performance 5-axis universal Tap Grinder designed to suit the most demanding operations in terms of productivity, precision and variety of options.

- A one machine solution for the complete production of carbide and HSS taps.
- Tailstock design offers excellent rigidity. CNC control plus programmable force of the centre ensures superior accuracy and flexibility.
- Quick set-up and changeover means shorter lead times.
- Wide variety of dedicated tooling to meet individual customer needs.
- Ideal for small batch production of standard or special taps.
- Collet or between-centers tool clamping options.
- Impressive suite of dedicated tap and flute design software incorporating optional 3D simulation.
- Flexible dressing options.
- Design and manufacturing flexibility to produce a wide range of tap types.
- Two types of automation for ease of unmanned operation.
- In-machine wheel balancing.

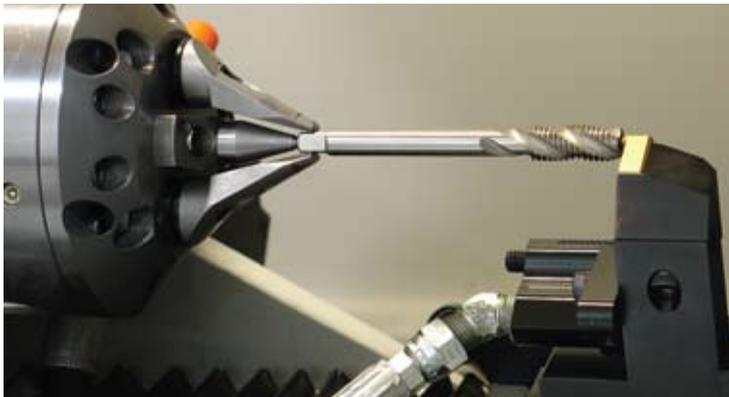
# **TapX** How TapX advances the tap grinding process

## **Accurate and reliable**

Tap grinding requires a high level of accuracy, surface finish quality, and reliability. The rigidity of the TapX ensures repeatable high quality results while the mechanical design guarantees reliability. All linear and rotary axes as well as the grinding spindle use ANCA direct drive technology. By eliminating all belts, pulleys, and gears, the TapX is not only a more precise machine, but a more reliable one as well.

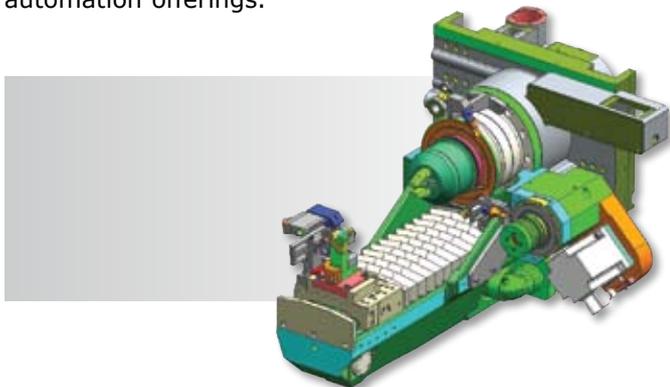
## **Dedicated tap grinding tool holding**

Performing all tap grinding operations on one machine and in one setup requires dedicated tool holding. The TapX is equipped with a compensating chuck and a CNC controlled P-axis tailstock. The tap is held between centres and is driven from the tap square. The chuck ensures extreme accuracy in clamping, and by design, set-up time is minimal.



## **P-Axis tailstock, purpose built for tap manufacturing**

The TapX P-axis tailstock has been specially designed with tap grinding in mind. Its cast iron bed and tooling design ensures rigid tool support while CNC control offers excellent accuracy as well as programmable force control. A complete range of carbide and HSS centres can be quickly and accurately interchanged to ensure fast, repeatable setup. Clever layout ensures seamless integration with the TapX automation offerings.



*'ANCA TapX is not only the **first of its kind**, its loaded with the **features you demand** in a production machine...'*

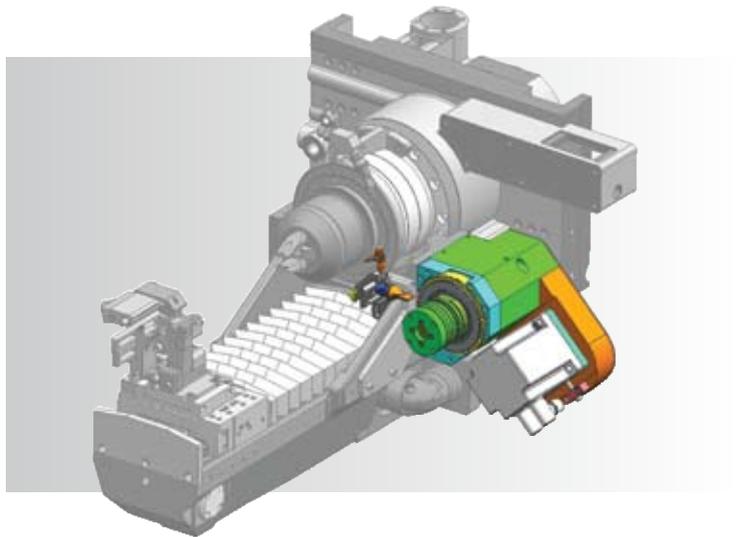




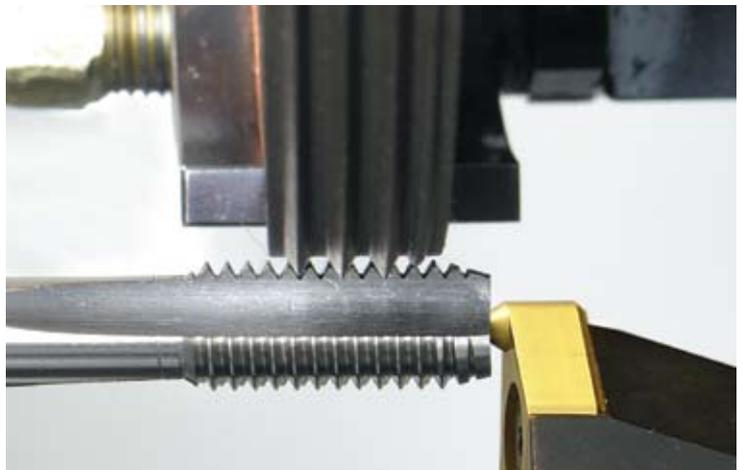
## Flexible dressing options

As a tap manufacturer you understand that wheel dressing is an integral part of the tap grinding process. The TapX provides extreme flexibility in wheel dressing through clever mechanical design driven by an impressive suite of software design tools.

The high-speed direct-drive bi-directional headstock offers speeds up to 3,000rpm and is fitted with a dresser to suit dressing of all fluting and chamfering wheels. Customized wheel shapes can be imported in the form of a DXF file and automatically dressed and used in any grinding cycle.

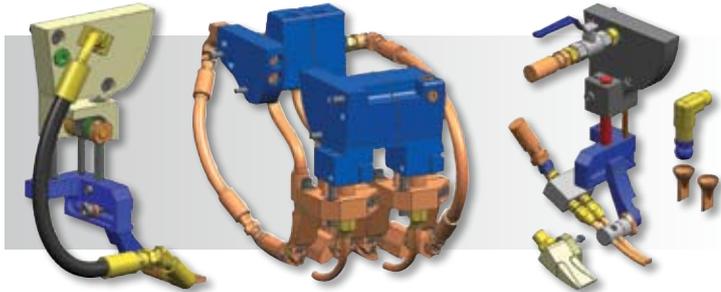


The threading wheel is dressed using a separate special purpose dressing unit. This secondary rotary dresser, integrated into the P-axis design, offers an accurate HSK spindle for rapid, repeatable changing of thread dresser rolls. Dresser shafts are offered in a variety of industry standard diameters, and with running speeds up to 6,000RPM, it is suitable for dressing multi and single rib grinding wheels.



## Specialized coolant delivery

Specially designed coolant delivery system supplied with the TapX ensures easy setup and precise coolant delivery for all tap grinding operations for a wide range of tap types.



Optional variable coolant pressure kit for thread grinding allows the operator to set the coolant pressure from 0–100%. Coolant pressure can be reduced which is ideal for finishing passes during thread grinding. This feature is particularly useful when grinding small taps.

## Two different types of Automation

Efficient and reliable automation is today a necessity for most operations within a production plant. TapX offers two different types of loaders.

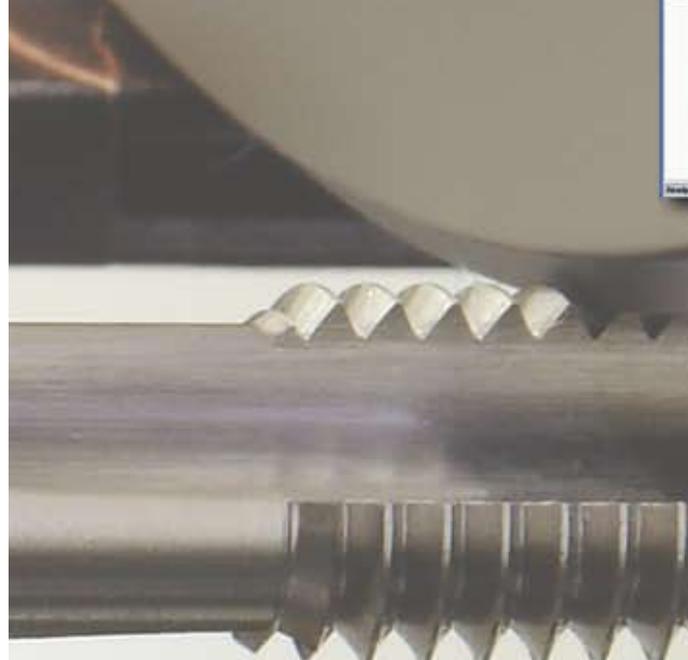
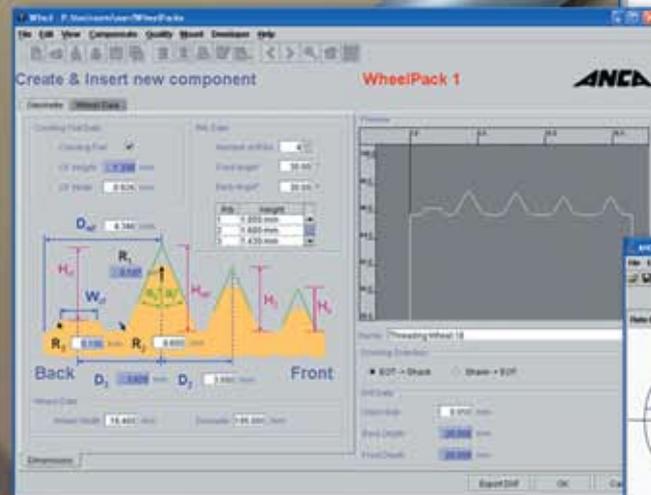
- Single pallet loader gives a pallet capacity of up to 220 tools.
- ANCA robotic loader offers a fast tap changeover and a high level of customization. It combines a compact and ergonomic design with easy programming and the capacity for up to 800 tools.

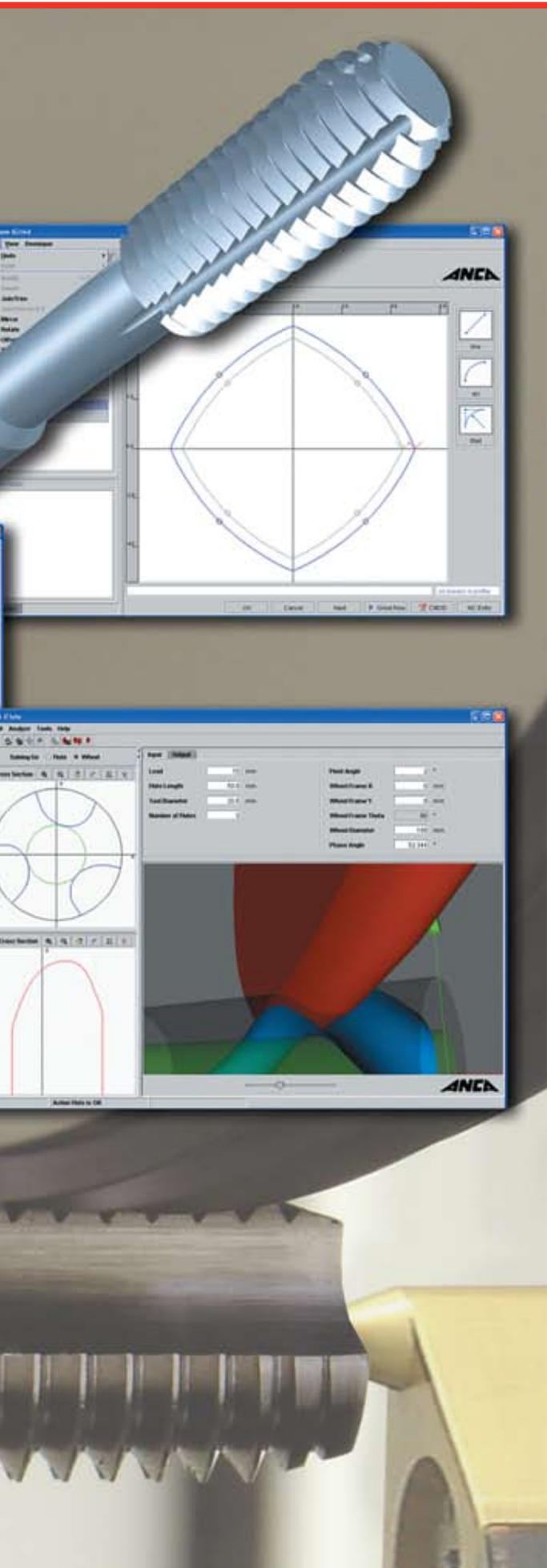


## Wheel balancing - iBalance

The ability of the TapX grinding spindle to measure the magnitude and direction of wheel imbalance means wheel packs can be balanced within the machine. TapX includes ANCA's unique iBalance software which facilitates the balancing process, ensuring superior surface finish and accuracy on manufactured taps with the added benefits of increased spindle life.

*'The iTap software has been developed with flexibility in mind. A vast range of standard and special taps can be designed and manufactured.'*



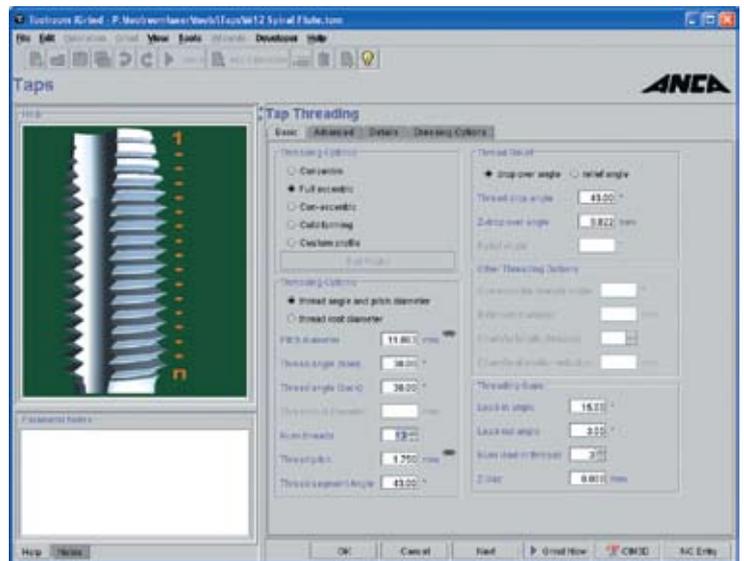


## Impressive suite of software

The TapX is provided with an impressive suite of software applications which are at the heart of the TapX.

The iTap design software allows the complete design of tap tools using an intuitive and logical approach. iTap takes the guesswork out of tap design by allowing the designer to specify tap geometry directly. Standard taps can be completely designed in minutes.

iTap has been developed with flexibility in mind. A vast range of standard and special taps can be designed and manufactured. Custom thread and cresting profiles can be directly designed or imported from DXF format using iTap. All helix, cut types, thread types, and thread relief forms are possible.



Wheel design and dressing is also greatly simplified using ANCA's wheel geometry editor and powerful dressing software. Fluting, single rib and multi-ribbed wheel design is easily accomplished and then dressed automatically on the machine.

ANCA's unique iFlute wheel design software is also provided with the TapX. iFlute takes all the hard work out of tap flute design and manufacture. Using either the DXF import facility or the in-built editor allows the designer to either;

- Specify a flute shape in order to calculate the required wheel geometry and fluting parameters.
- Specify a wheel shape and fluting parameters to determine the resulting flute shape.

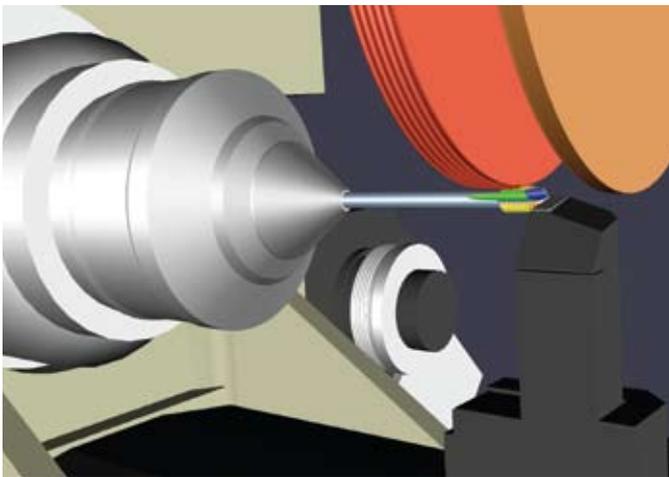
These results can be directly imported into the iTap and wheel editor software to automatically set up the process parameters and dress the wheel.

# ANCA global support is part of your investment

*'No other tap grinding solution can offer the benefits of the TapX. Reduced lead times through rapid tap design, setup and changeover provides your business with a competitive edge'*

## Full 3D modeling using CIMulator3D

The ability to fully simulate the tap grinding process using ANCA's patented CIMulator3D software means the entire grinding operation as well as the tap geometry can be setup and visually verified in 3D. The CIMulator3D software also provides the benefit of performing process optimisation, maximising machine utilisation and further reducing set-up times.



## The choice of world industry

Confidence that ANCA is the right choice goes beyond the machine. The ANCA team will be your partner with application and machine support from training right through to maintenance.

The global support includes remote diagnostics via modem, an ANCA innovation which means our technical people can diagnose your machine worldwide.

ANCA is a leading manufacturer of tool and cutter grinder machines chosen by the world's foremost industries where high precision tools and reliability are of paramount importance. By choosing ANCA you know you are dealing with a global company with over 30 years of experience and innovation in the CNC tool and cutter grinding industry.

Whether you require a solution for small batch tap tool manufacturing with minimal lead times or need to expand your current tap grinding capability, the TapX provides the reliability, versatility and confidence you need.



# TapX Technical Specifications

## CNC data

ANCA 5DX, Pentium 4, Min. 1Gb, 15" Touch Screen, Ethernet, 56kbps Modem, UPS, RW/CD R/DVD

## Mechanical axes

	X-axis	Y-axis	Z-axis	C-axis	A-axis
Position feedback resolution	0.0001 mm 0.0000039"	0.0001 mm 0.0000039"	0.0001 mm 0.0000039"	0.0001 deg	0.0001 deg
Programming resolution	0.001 mm 0.000039"	0.001 mm 0.000039"	0.001 mm 0.000039"		

**Software axes (patented):** B, V, U, W, A'

## Work piece:

Maximum tap diameter: 135mm (5.3") / Maximum tap length: 240 mm (9.5") / Maximum weight: 25 kg (55lbs)

## Drive system:

ANCA Digital (SERCOS standard) / Linear axes direct drive ballscrew / Rotary axes direct drive

## Machine data

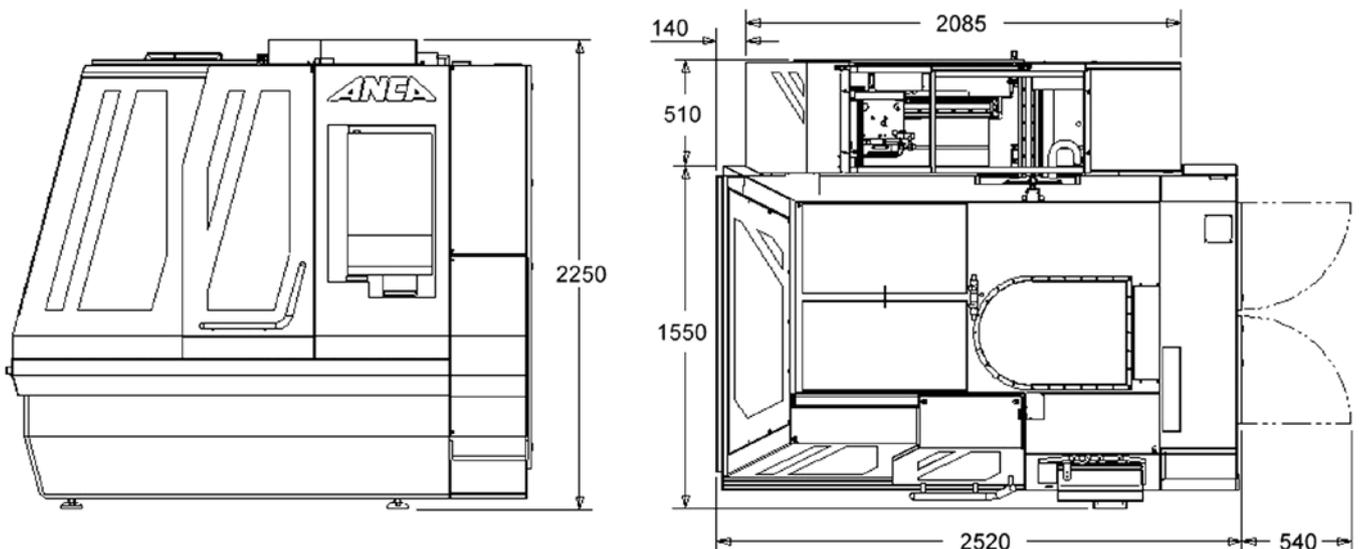
Grinding spindle: ANCA bi-directional / 37 kW (49 HP) peak / 10 000 RPM / Integral direct drive / BIG Plus BT 40

Grinding wheel max. diameter: 200mm (7.87") / Wheel bore: 50.8 mm (2") / 2 wheel packs with max 4 wheels each

## Other data

Electrical power	25KVA		
Probe system	Renishaw		
Coolant system	External		
Machine base	ANACRETE (Polymer concrete)		
Colour	RAL 7035 / RAL 7024		
Weight	Approximately 7,500kg (16,500lbs)		
Floor plan (including coolants)	Width	Depth	Height
	1550 mm	2520 mm	2250 mm
	61"	100"	89"

ANCA reserves the right to alter or amend specifications without prior notice





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