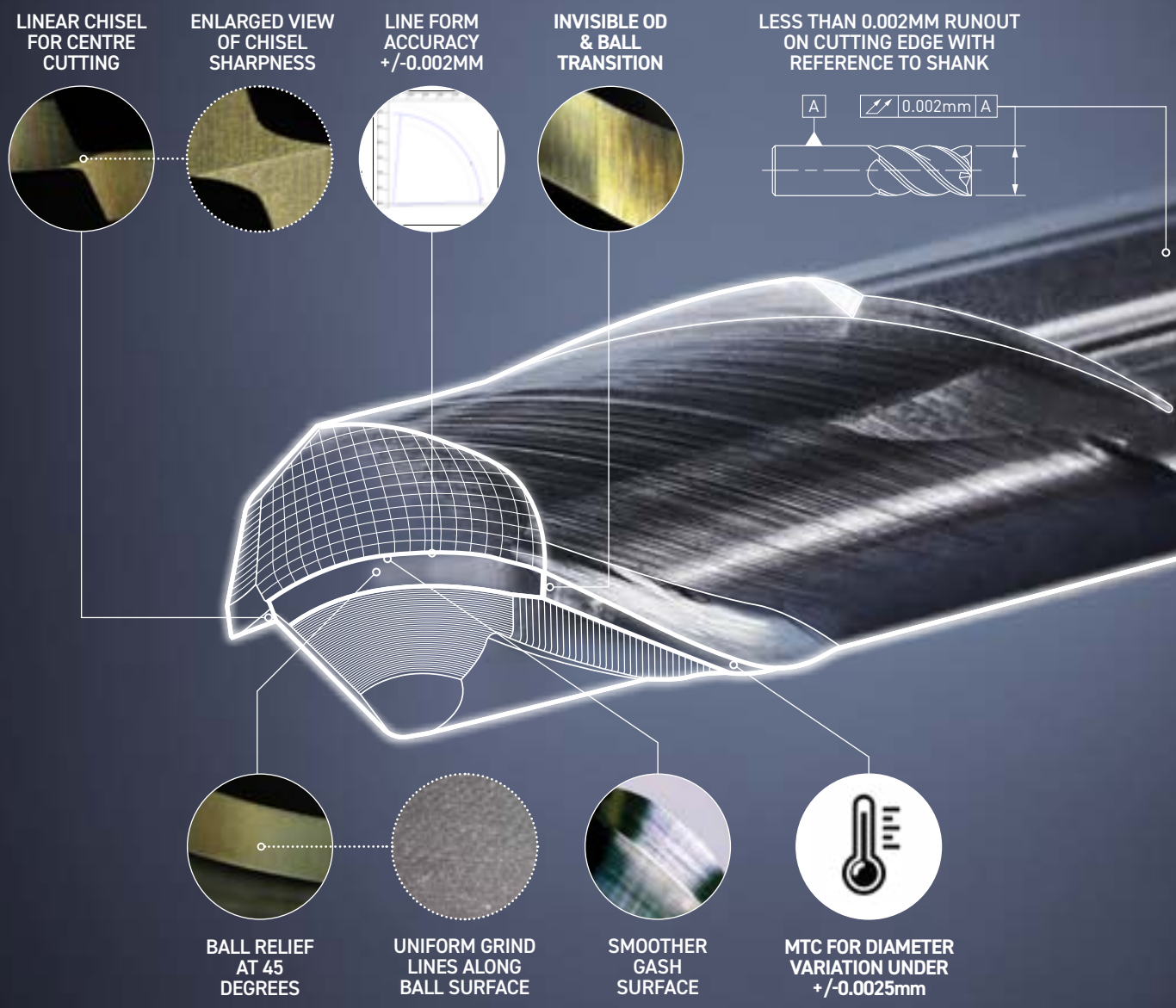
THE HIGHEST QUALITY FROM EVERY ANGLE

FROM MICROMETRES TO NANOMETRES THE MX7 ULTRA PRODUCES THE HIGHEST ACCURACY AND PERFORMANCE CUTTING TOOLS FOR ALL INDUSTRIES.

ANCA
CNC MACHINES

MX7
ULTRA

PREMIUM PERFORMANCE CUTTING TOOLS



Cutting tools like ballnose, corner radius, barrel shape ballnose, and double corner radius endmills are widely used in diemold, aerospace, power generation and other industries. The surface finish, quality, accuracy, and runout are critical for performance and cutting life in all applications.

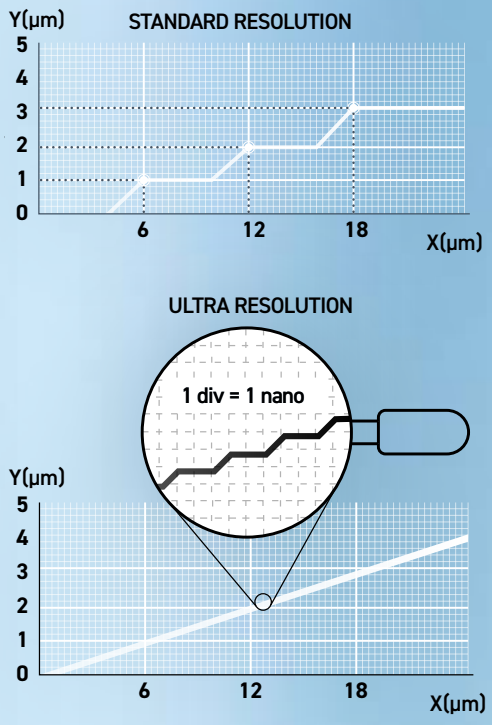
The MX7 ULTRA package includes nanometre or micro degree resolution changes to linear and rotary axis, new servo control algorithms, MTC (Motor Temperature Control), and major mechanical changes. These smoothing parameters provide greater control for the velocity and acceleration/deceleration along with machine jerk limits.

Capable of achieving high quality cutting tools with excellent surface finish, higher accuracy, and controlled runout - ANCA's new premium machine delivers batch consistency from tool number one to one thousand.

Introducing new one nanometre axis resolution, a new servo control algorithm and LaserUltra to maintain consistency and accuracy in the grinding process – this is the best solution in the market.

The culmination of ANCA's elite technology, deep industry knowledge, and customer experience in grinding – the MX7 ULTRA completes the market requirement for manufacturing large volumes of endmills and other types of premium cutting tools. The ULTRA package includes sub-micron cutting tool features for better quality, performance, and life.

More than a machine, the optimised design is possible due to ANCA's vertical integration as these levels of robust and scalable improvements can only be achieved when considering the entire machine as a system. ANCA's CNC control system is unique, offering a higher level of accuracy and flexibility which is unparalleled in the market and includes a premium package of performance and ongoing specialist service support.



NANOMETRE LEVEL CONTROL

ANCA's newly invented state-of-the-art servo control algorithm allows silky smooth motion of an axis with the use of a unique algorithm and nanometre measurement in the control system.

This unique algorithm allows an ultra-fast response to internal or external disturbances (such as irregularities coming from the linear rail, bearings or friction) being introduced into the machines.

This ensures outstanding tracking performance. It also allows ultra-performance of the servo system without using a complex, complicated, or expensive mechanical system.

Other benefits include significantly reduced reversal errors down to nanometre scale when an axis reverses its direction during grinding - removing any reversal marks on a tool.

Nanometre level control reduces the need for secondary operations like finishing or sparkout resulting in better cycletime, and higher productivity of high-quality cutting tools.

LASERULTRA

LaserUltra is part of the MX7 ULTRA package to maintain consistency and accuracy of the grinding process which includes wheel wear compensation. Its analog capability can maintain +/- 0.002mm line form accuracy of any profile which includes ballnose and corner radius tools.

The analog scanning of cutting edges is a fast and reliable process for several tool types of various diameters and lengths which reduces setup times and scrap.

iBALANCE

Tool and wheel performance can be further optimised by iBalance software, which guides a user to the optimal grinding position and RPM for vibration monitoring and balancing the wheelpack inside the machine.

Correctly balanced wheelpacks result in superior surface finish and reduced wheel wear due to the elimination of wheel vibration. This leads to increased wheel life and better quality tools.

TOOL RUNOUT COMPENSATION

A major inclusion in the MX7 ULTRA package is the total tool runout measurement and compensation operation in iGrind. When an endmill is in rotation it is important that each tooth hits at the exact same spot along the workpiece for longer tool life and efficient cutting.

Every tool in the batch can be measured and compensated for runout to make sure the entire batch is within a tolerance of 0.002mm. It is another piece of assurance that the first endmill will be as good as the last.

MOTOR TEMPERATURE CONTROL (MTC)

MTC is a patent pending innovation built into the motor spindle drive firmware. Smart control algorithm actively manages and maintains the temperature of motorised spindles in the MX7 ULTRA.

Dramatically reduced machine warmup time means production can start sooner, once the machine has reached thermal stability. This improves productivity and machine use. Consistent thermal stability of the spindle over time regardless of changes in load or speed, or coolant temperature, greatly improves the dimensional stability of grinding results.

EXTENDED WARRANTY

The MX7 ULTRA comes with a 3-year extended warranty for parts and labour, and a 5-year warranty on linear motors - a unique ANCA technology innovation.

GRINDING BEST PRACTICES

Experienced application engineers train and educate your team in the best grinding practices to make sure the ULTRA can produce high quality tools from the first day of production.

TECHNICAL SPECIFICATIONS

CNC DATA

ANCA AMC5 G2 High Performance CNC, High Speed SSD, Ethercat, Intel processor, Windows 10.

MECHANICAL AXES

	X-axis	Y-axis	Z-axis	C-axis	A-axis
Resolution	0.000001 mm 0.000000039"	0.000001 mm 0.000000039"	0.000001 mm 0.000000039"	0.000001 deg	0.000001 deg
Travel	540mm 21.25"	510mm 20.00"	215mm 8.45"	264 deg	360 deg

SOFTWARE AXES (PATENTED)

B, V, U, W

WORKPIECE*

Diameter 200 mm (7.8") max., weight 20 kg (44 lb) max., productive up to Ø20 mm

DRIVE SYSTEM

ANCA Digital AMD5x (EtherCAT standard)

MACHINE DATA

Grinding spindle:
- ANCA bi-directional
- 10,000 RPM
- Integral direct-drive
- Spindle - Single ended synchronous motor

Grinding wheel: Max. diameter 203 mm (8")
Wheel bore: 31.75 mm (1.25"), 32 mm and 20 mm
Wheel packs: 3 x 203mm (8") max, 6 x 152mm (6") max
Spindle power: 38 kW (51 HP) peak, 20 kW (27 HP) S1

OTHER DATA

Electrical power: 14.5 KVA (16 KVA with robot)

Coolant system: External

Floor plan:
Width: 2320 mm (92")
Depth: 2240 mm (88")
Height: 2015 mm (80")
Weight: 5500 kg / 12,125 lbs

Probe system: Renishaw

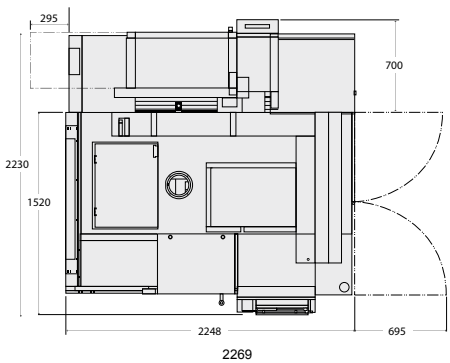
Machine base: ANCAcrete (polymer concrete)

Colour: RAL 7035 / RAL 5008

Control panel: Full touch screen (19")

Machine Structure: Bi-Symmetrical Gantry

* ANCA reserves the right to update or amend specifications without prior notice.



Shown with RoboMate loader