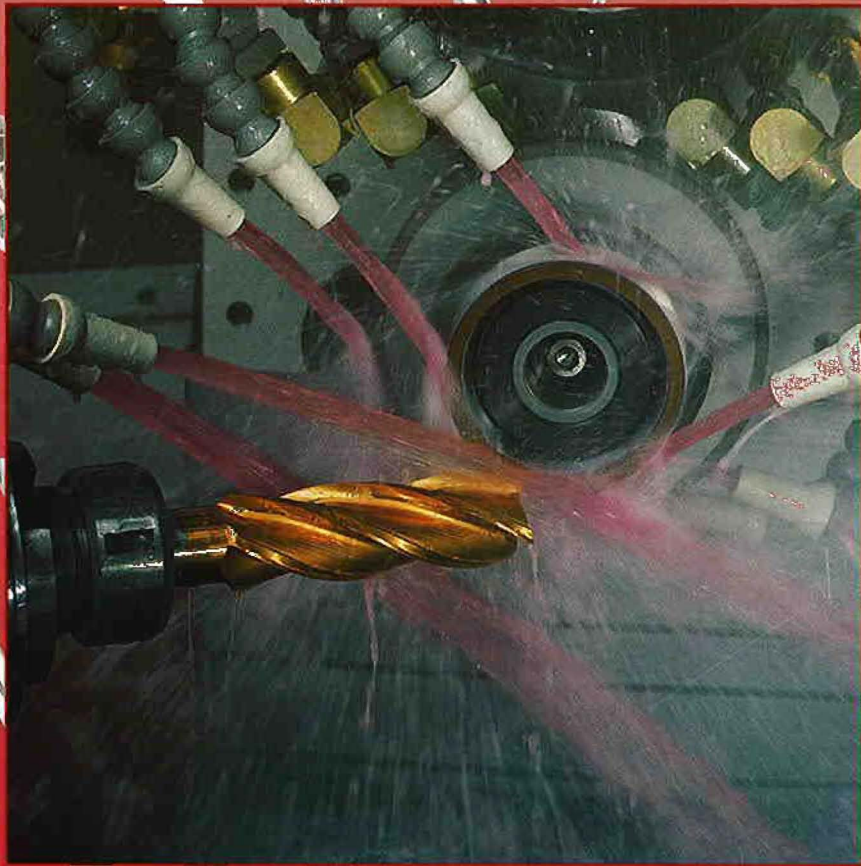
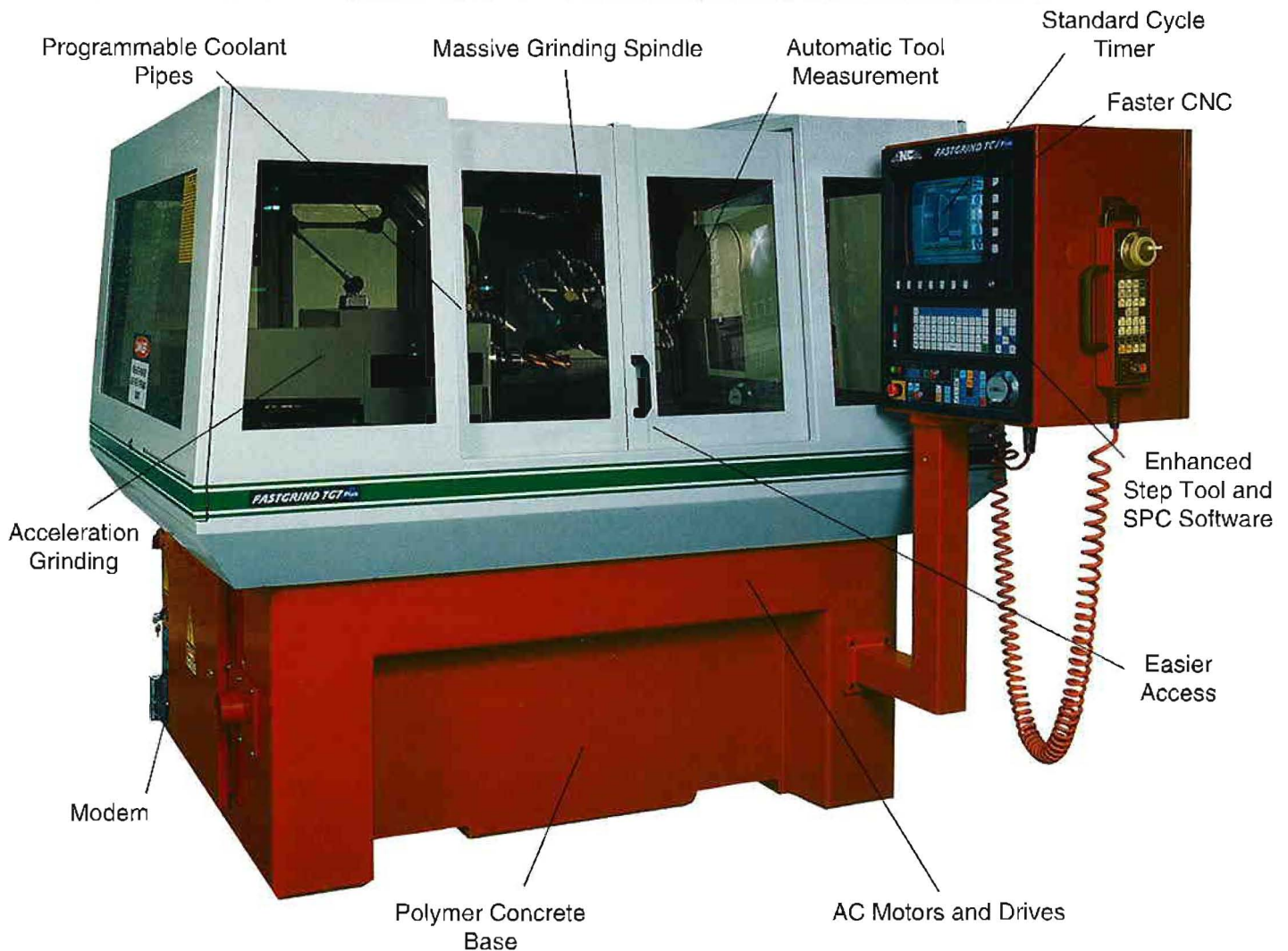


ANCA®



FASTGRIND TGT **Plus**

FASTGRIND TG7 Plus TOC



HIGH-RIGIDITY TOOL GRINDER

The FASTGRIND TG7 *Plus* is an extremely strong machine designed for the manufacture and resharping of cutting tools.

An enhancement of the well proven "TG7", the *Plus* machine provides additional features to extend the machine's performance, and further utilise the high-rigidity machine structure.

Rigidity is a vital factor in machine performance, for without a rugged base, column, spindle and headstock, cycle times cannot be minimised. Take the spindle for example - which is around 4 times stronger than some other grinding machines, and so gives 1/4 of the deflection under power - and the Polymer Concrete base is around 8 times as rigid as cast iron.

Acceleration Grinding mode has been added, to fully utilise the rigidity. This facility accelerates feedrates until a maximum power level is reached, thus reducing cycle time. High acceleration AC drives and motors, together with a faster CNC further reduce cycle times.

Programmable Coolant Pipes are located on the spindle and the headstock in order to optimise coolant flow and reduce tank requirements.

Resharping enhancements include Auto Tool Measurement to set the initial tool parameters, a lower guard for improved tool access and increased travel to handle longer tools.

SINGLE HOUSE RESPONSIBILITY

ANCA is responsible for all design and manufacturing aspects of the FASTGRIND TG7 *Plus*.

Unlike other machine tool builders, ANCA houses all of the mechanical and CNC resources needed in machine tool production under the one roof.

The FASTGRIND TG7 *Plus* was mechanically designed by ANCA Research and Development engineers using computer solid modelling and finite element analysis techniques. From this design the entire machine is produced in the ANCA factory, including the polymer concrete base, machining of components, precision fitting and commissioning.

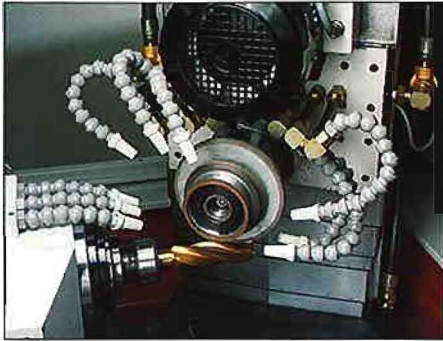
The ANCA System 32 CNC control is completely designed and manufactured adjacent to the mechanical assembly area. All CNC electrical design, operating software and tool grinding application software are produced by ANCA engineers in this area.

Training and service support is undertaken by factory trained staff from the ANCA offices around the world.

So, whatever the issue with a FASTGRIND TG7 *Plus*, ANCA is responsible.

FLUTE AND CUTTER GRINDER

PROGRAMMABLE COOLANT PIPES

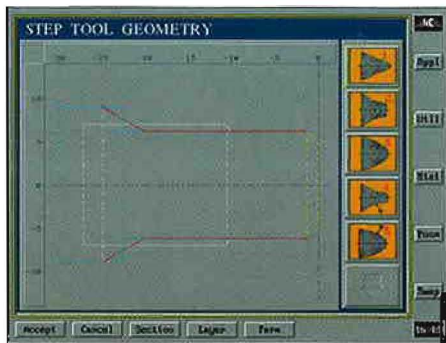


The FASTGRIND TG7 Plus is equipped with programmable coolant outlets around the spindle and on the headstock.

More control of the grinding process and reduced coolant volume requirement are the results. Naturally less coolant means a smaller tank can be used. Additionally, the headstock-mounted pipes enable coolant to be precisely directed into the flute, aiding cooling and reducing cycle times.

The selection of coolant pipes for each of the grinding operations is selectable through the standard operator menus.

EASY STEP TOOL SOFTWARE

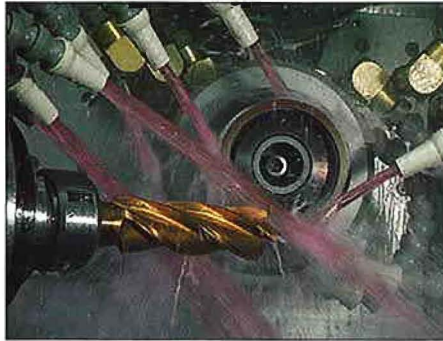


Grinding complex Step Tools has never been so easy. Using the 'windowing' software a step tool shape with convex, straight or concave steps can be entered using the icons and other graphical instructions. No calculations or special training are required.

Step Tools with different cutting edges on different flutes can be ground. Tools can be digitised along each section of the flute, a big advantage with helical flutes.

An entire tool can be manufactured or resharpened with one set-up. Operations that can be performed include digitising, fluting from solid, drill point grinding and gashing, step edge grinding (up to 20 sections - facet or rolled relief) and OD back-off.

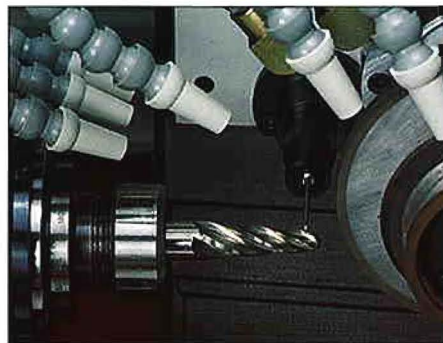
ACCELERATION GRINDING



ANCA's System 32 CNC is purpose designed for tool grinding. Processing speed, now increased to 100mhz, enables a more intelligent way of grinding - what ANCA calls *Acceleration Grinding*.

Acceleration Grinding is a way of selecting the amount of power to be used in the grinding process, and then letting the CNC determine the necessary feedrates - during grinding. So, during flute grinding the feedrate will vary rapidly and significantly as the CNC optimises the process. The result is reduced cycle times.

FASTPROBE - AUTOMATIC TOOL MEASUREMENT

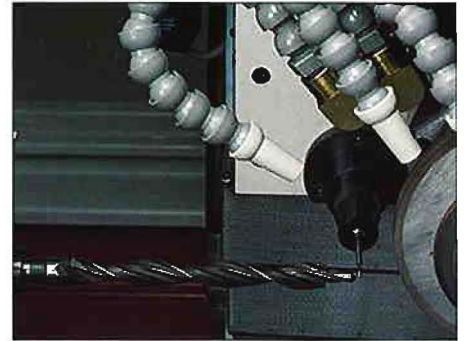


In order to reduce the amount of operator input to resharpen completely new tools, the FASTGRIND TG7 Plus features an Automatic Tool Measurement routine, using the FASTPROBE.

The Operator selects the Automatic Tool Measurement mode, and the option of digitising the end of tool position, angular position of flutes, diameter, lead/helix and flute length is presented.

With these operations selected the FASTPROBE will automatically take measurements and input the information into the grinding cycles. The operator then needs only to enter information such as the relief angle, gash angle, hook angle and feedrates and the machine is ready to resharpen.

LONGER, FASTER AND EASIER



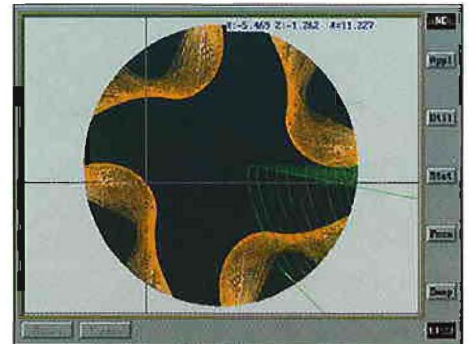
More travel in the X axis allows for longer tools to be ground. Work area has been increased by 70 mm.

AC motors and ANCA AC drives have been added to the machine. These drives allow for faster accelerations and speeds.

The 100 mhz processor yields cycle time reductions of up to 10%. Cycle times can now be viewed 'on-screen' as standard.

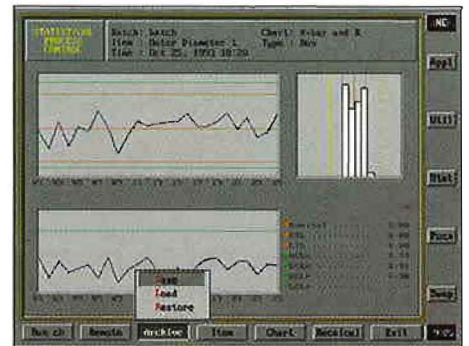
Tool set-up is aided by a lower guard design and an optional *remote jog-box* to operate the CNC from different locations.

ON-SCREEN FLUTING



PROjector fluting software, available with the grinder, allows the machine user to examine fluting options directly on the CNC screen.

STATISTICAL PROCESS CONTROL



Standard SPC charts can be displayed on the screen to show the operator the effect of, say, wheel wear on part tolerances.

TOOL AND CUTTER GRINDER

| TECHNICAL DATA | | | | C AXIS | |
|--------------------------------|------------------------------|--|--------------|------------|------------------------------|
| Model | FASTGRIND TG7 PLUS | Rotation | | | 147° |
| CNC SYSTEM | ANCA SYSTEM 32 | Positional Feedback Resolution | | | 0.0002° |
| Hard Disc | 210 Mbyte | Programming Resolution | | | 0.001° |
| Floppy Disc | 1.44 Mbyte 3 1/2" | Maximum Feedrate | | | 2830°/min |
| Ram | 16 Mbyte | Drive | | | AC Closed Loop Servo Control |
| Display | 14" Industrial VGA Colour | B AXIS (soft axis Patent applied for) | | | |
| Processor | Intel 486 DX4 100 | Rotation of wheel about grinding point | | | |
| Modem | V22 Bis (2400 baud) | Compounds X, Y & Z Axes | | | |
| RS232 | 2 Channels | Maximum Feedrate | | | 4800°/min |
| Expansion | 2ISA 16 bit Slots Bitbus 2.4 | Drive | | | Software driven |
| | Mbaud Serial Chanel | V Axis (soft axis Patent applied for) | | | |
| WORKING RANGE | | Linear retract/advance of grinding spindle | | | |
| X AXIS | | Rapid Traverse | 8,500 mm/min | (335"/min) | |
| Travel (Total) | 336 mm (13.228") | Maximum Feedrate | 8,500 mm/min | (335"/min) | |
| Positional Feedback Resolution | 0.0005 mm (0.00002") | Drive | | | Software driven |
| Programming Resolution | 0.001 mm (0.0001") | MOTORIZED GRINDING SPINDLE | | | |
| Maximum Feedrate | 8,500 mm/min (335"/min) | Manufacturer | | | ANCA |
| Drive | AC Closed Loop Servo Control | Power | 7.5Kw S4 | (10Hp) | |
| Y AXIS | | Speed | | | 2800-6675RPM |
| Travel (Total) | 243 mm (9.567") | Cartridge Diameter | 100 mm | (3.937") | |
| Positional Feedback Resolution | 0.0005 mm (0.00002") | Taper | | | ISO 30 (7/24) |
| Programming Resolution | 0.001 mm (0.0001") | Wheel Size | | | Bore 50.8 mm (2") |
| Maximum Feedrate | 8,500 mm/min (335"/min) | Nominal OD | | | 150 mm (5.9") |
| Drive | AC Closed Loop Servo Control | PROBE | | | |
| Z AXIS | | Sensing Type | | | Trigger Signal |
| Travel (Total) | 208 mm (8.189") | Tip Construction (Replaceable) | | | Carbide |
| Positional Feedback Resolution | 0.0005 mm (0.00002") | OPTION | | | |
| Programming Resolution | 0.001 mm (0.0001") | High Pressure Coolant Systems | | | Remote Jog Box |
| Maximum Feedrate | 6,800 mm/min (268"/min) | Pneumatic Precision Chucking Systems | | | |
| Drive | AC Closed Loop Servo Control | Label Printer | | | |
| A AXIS | | Steady Rest | | | |
| Maximum Swing | 250 mm (9.842") | MACHINE | | | |
| Part Weight (with toolholder) | 40 Kg (88lb) | Colour | | | RAL7035 Blue Standard |
| Workpiece Taper | ISO 50 | | | | RAL5014 |
| Programming Resolution | 0.001° | Weight | 3500 Kg | (7716 lb) | |
| Speed Range | | Base Material | | | "ANCACRETE" Polymer Concrete |
| (Closed Position Loop) | 0-200 RPM | | | | |
| Drive | AC Closed Loop Servo Control | | | | |

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

ANCA PTY LTD

25 Gatwick Road,
Bayswater North,
Victoria 3153
Australia

ANCA INC.

25335 Interchange Court
Farmington Hills,
MI 48335-1021 USA

ANCA (Europe) GmbH

Joseph-Meyer-Strasse 7
D-68167 Mannheim 1
Germany

ANCA (UK) LTD.

Units 1 & 2,
Armoury Trading Estate,
Armoury Road, Small Heath,
Birmingham B11 2RG England.