



DUAL ROBOT AUTOMATION

ANCA
CNC MACHINES

A market first - **dual robot grinding cell**

Tomorrows manufacturer, no matter the industry, must always be searching for new ways to improve quality, reduce cost and enhance productivity. Recognising this, ANCA, a global leader in the manufacture of universal CNC tool grinding machines, was first to use robot technology to change grinding wheels and work pieces, delivering unparalleled flexibility in rotary cutting tool manufacture. Adding to this success, the TXcell Linear grinding machine, is now offered with dual robot automation, creating highly versatile and customisable production grinding cell, adaptable to a wide variety of component manufacturing industries.

With the enhanced flexibility of two robots, the TXcell Linear can have additional capabilities included, saving the time and cost of doing them on external dedicated work stations. In addition, because these operations are done in the robot cell rather than the main TX grinding machine, there is no increase in overall takt time. Examples include part loading to a fixture, laser etching of part ID, part buffing or brushing, part cleaning and part gauging, to name just a few.

Working with ANCA's professional Engineering Team, your solution can be designed and built to meet the needs of your specific part and factory processes, ensuring maximum gains in quality, productivity and profit.





ANCA TXcell Linear, Dual Robot Machine – The Details

TXcell Linear is a combined TX7 Linear grinding machine with Robot automation cell, and is ANCA's premium universal grinding machine, aimed at the most demanding and diverse applications.

TX LINEAR OVERVIEW

- 5 hard axes allow universal grinding capability of complex forms
- 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
- On machine tool measurement with standard touch probe and optional LaserPlus
- BT50 work head with pneumatic or hydraulic actuation interfaces to a variety of work holding options
- Two independent wheel dressing options
- Ethercat port provides connectivity for company servers and machine data gathering

ROBOT CELL OVERVIEW

Primary robot performs principle automation tasks:

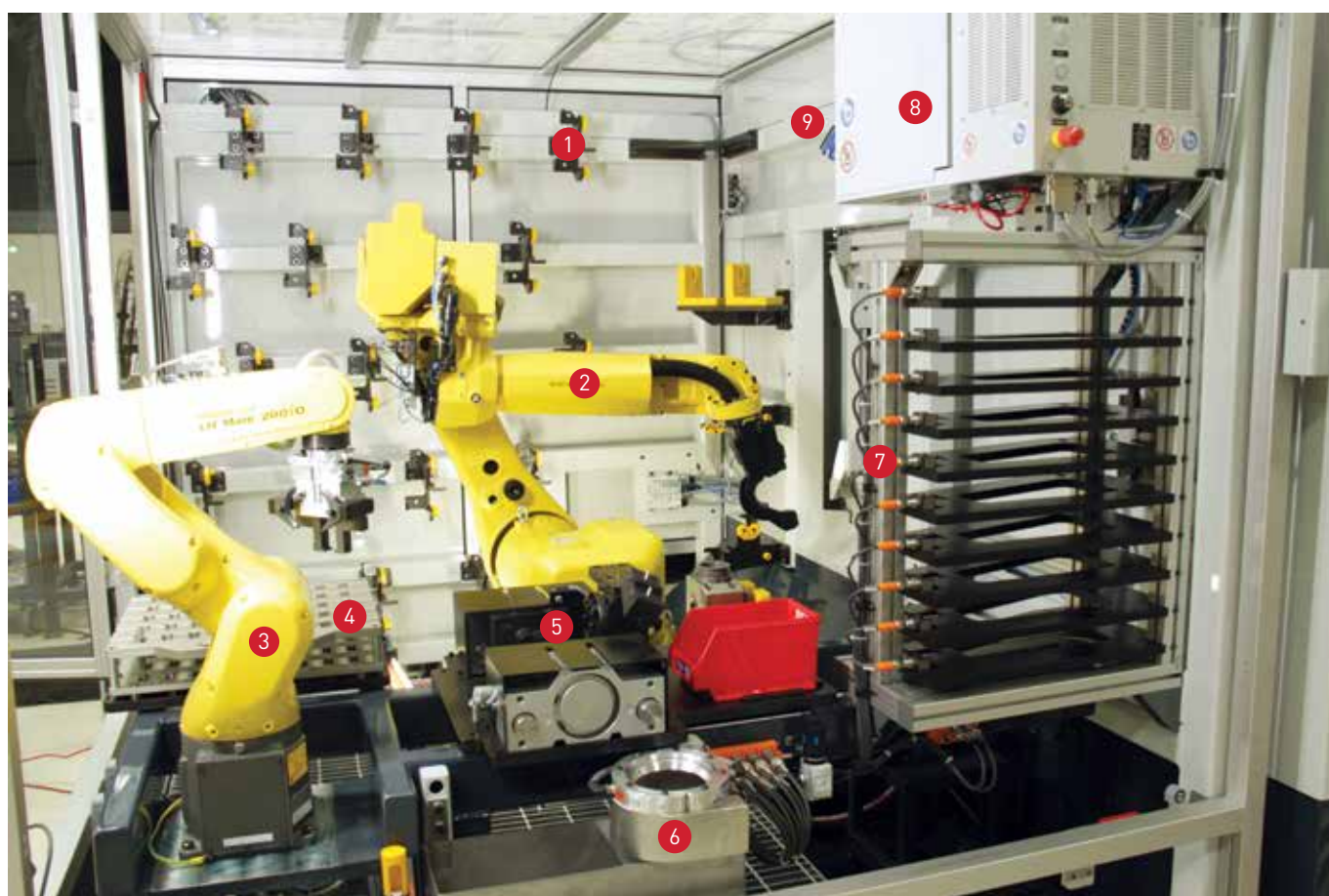
- Workpiece table for mounting of workpiece pallets
- Up to 24 wheel or tool stations
- Loads to the spindle grinding wheel packs up to 300mm (12") diameter, together with their coolant manifold
- Loads to the spindle other tools such as brush wheels, high speed spindle, mills and drills for diverse machining applications
- Loads work piece to machine headstock

Secondary robot adds further function, flexibility and capacity:

- Load workpiece to dedicated fixture
- Extra workpiece processes can be done in the cell without impacting TAKT time
- Examples include ID scanning, laser etch, part clean/wash, part inspection/gauging, buffing & polishing, pelletizing for extended capacity

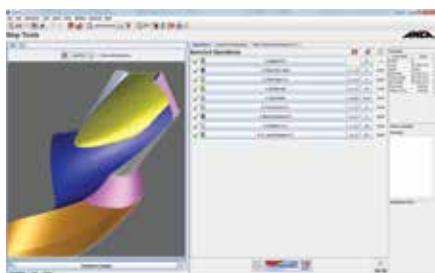
Dual Robot Automation

Customise the dual robot for your needs



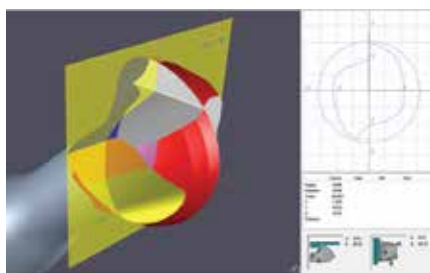
- ① Storage racks for up to 24 wheel packs, endmills and spindle speeders
- ② Primary robot changes wheel packs and fixture mounted part and manages secondary operations (eg. pallet change, laser etch)
- ③ Secondary robot loads workpiece into fixture and manages secondary operations (eg load finished part to cleaning station or Renishaw Equator™ gauging station (not shown))
- ④ Pallet for work pieces
- ⑤ Fixture loading station
- ⑥ Workpiece cleaning station
- ⑦ Multi pallet stacker
- ⑧ Post process laser etch (eg. Automator™)
- ⑨ Part identification camera (eg. Cognex™)

Software



ToolRoom

ANCA's versatile software is what sets ANCA and its customers ahead of the competition. ANCA has 40 years of tool grinding experience and is well-known for its userfriendly and flexible tool design software. ANCA's ToolRoom software suite caters for a wide range of tool types and applications with an easy-to-use interface to input tool geometry parameters. ToolRoom ensures that the FX Linear machines will efficiently handle any regrinding or manufacture challenge. The machine operator is able to easily and quickly set up or modify tool programs, depending upon the required tool type. For more proficient users, advanced software pages exist to access complex tool designs and operations. ToolRoom supports the grinding of drills, end mills, profile tools, burrs, routers and many other special applications.

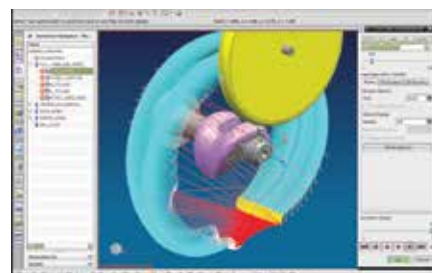


Cim3D

CIMulator3D simulates the programmed tool path exactly as it would be ground on the machine. New tool programs can be verified for size, shape, machine clearance and cycle time estimates. CIMulator3D maintains continuous workflow through the machine by reducing the development time and trial grinding.

The parts can also be accurately sliced and inspected in any orientation providing fine control of the measurement process. The ability to import DXF overlays allows comparisons to be made between the simulation and the nominal design.

All machine models, work holding and accessories are available in CIMulator3D for the entire grinding sequence to be animated and collisions detected automatically. Coolant holes can be programmed as part of the blank editor and can be simulated and checked for coolant hole breaches. Option is also available to analyse minimum wall thickness and tolerances of coolant holes to the fluting and OD operation.



ANCam NX

ANCam NX is a post-processor solution for Siemens NX software. Integration between 5-axis CNC tool grinders and CAD/CAM software is especially useful for designing orthopaedic implants. ANCam NX enables CAD generated models to be used to create NC programs for grinding, light milling and drilling. All from within the Siemens NX software. The generated program can then be used within ANCA's iGrind tool design software to manufacture the part. This means process parameters can be changed on the machine, minimal post processing of CAD data and full offline 3D simulation is possible with CIM3D.

Technical Specifications

Axis Travel

X-axis: 586mm (23.1")

Y-axis: 408mm (16.1")

Z-axis: 242mm (9.5")

C-axis: 264 deg.

A-axis: 360 deg.

Spindle

37kW (49hp) (peak power) to 8,000RPM, 15,000RPM option.

Wheel/Tool Stations

BigPlus BT40: 9 standard, 14/19/24 optional

Grinding Wheel Diameter

Max. 305mm (12") (on selected wheel packs)

Tool Loader (Work piece)

Tool load kit (option)

Loader Workpiece Capacity (cylindrical tools example)

Tool Diam	Small Cell (2 Pallet)	Large Cell (4 Pallet)
3mm	840	2520
16mm	154	462
25mm	63	189

Tool Load Time

20s

Spindle Orientation

Included

LinX Linear Motors and Linear Scales

Standard on X, Y, Z

Touch probe

Standard (Renishaw)

User Front panel

Standard 19" touch screen with tilt adjust

Hand held Remote Pendant with MPG Feed™ function

Standard

Machine Power Requirement

Machine: 25kVA +

Cell: 3kVA

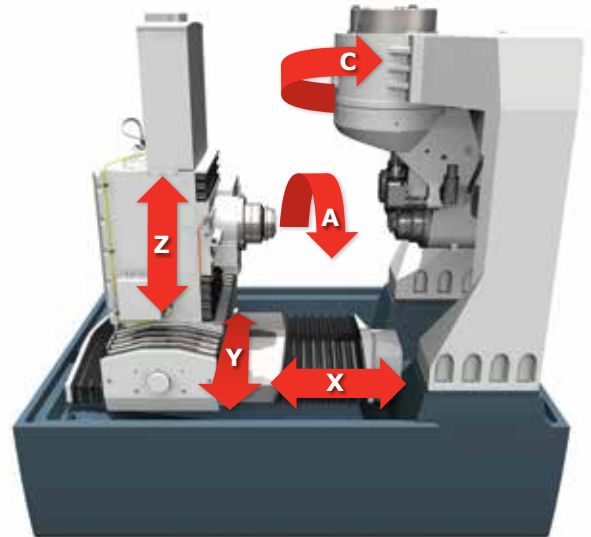
Machine Weight

Machine: 8500kg (16,500 lbs) +

Cell: 2500kg (5500lbs) max.

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

*Dependent on tool geometry, program and tooling layout



AUSTRALIA

ANCA Pty. Ltd.
25 Gatwick Road
Bayswater North
Victoria 3153
AUSTRALIA
Tel +61 3 9751 8200
ozinfo@anca.com

USA

ANCA Inc.
31129 Century Drive
Wixom
Michigan 48393
USA
Tel +1 248 926 4466
usainfo@anca.com

UNITED KINGDOM

ANCA Ltd.
2 Eastwood Business Village
Harry Weston Road
Coventry CV3 2UB
UNITED KINGDOM
Tel +44 2476 44 7000
ukinfo@anca.com

JAPAN

ANCA Japan
66 Shinmori-cho
Moriyama-ku, Nagoya
Aichi 463-0071
JAPAN
Tel +81 52 768 7157
japinfo@anca.com

CHINA

ANCA Machine Tool (Shanghai) Co. Ltd
West Wing, 1/F., Building 4,
475 Fu Te No.1 Road[W]
Waigaoqiao FTZ, Shanghai, 200131
CHINA
Tel +86 21 5868 2940
chinfo@anca.com

INDIA

ANCA Machine Tools Private Ltd
8/1, Dr. M H Marigowda Road,
Arekempahalli,
(Wilson Garden),
Bangalore 560027
INDIA
Tel +91 80 67592100
indiainfo@anca.com

BRAZIL

ANCA do Brasil
Rua Francisco Ferreira Leão 377
Sorocaba 18040 330
São Paulo
BRAZIL
Tel +55 15 3221 5512
brinfo@anca.com

GERMANY

ANCA Europe GmbH
Im Technologiepark 15
69469 Weinheim
GERMANY
Tel +49 620 184 6690
gerinfo@anca.com

THAILAND

ANCA (Thailand) Ltd
Eastern Seaboard Industrial Estate,
No. 109/20 Moo 4,
Tambon Pluakdaeng,
Amphur Pluakdaeng,
Rayong 21140
THAILAND
Tel +66 3895 9252
thainfo@anca.com

ANCA
CNC MACHINES
www.anca.com