TUBECUT MASTER 1.0

LASER TUBE CUTTING CONTROL SOLUTION

ANCA motion
Motion Control Solutions

ANCA MOTION SPECIALISES IN TAILORED MOTION CONTROL SOLUTIONS

At ANCA Motion we offer flexibility, reliability, innovation and precision - providing solutions that give our customers a competitive edge.

Our focus and passion is designing and manufacturing flexible control systems; specialising in high precision solutions for CNC machines. Our hardware and software is tailored to an OEM's exact requirements.

ANCA Motion provides continuous support and innovation throughout the life of the product, allowing us to deliver world-class products and services.

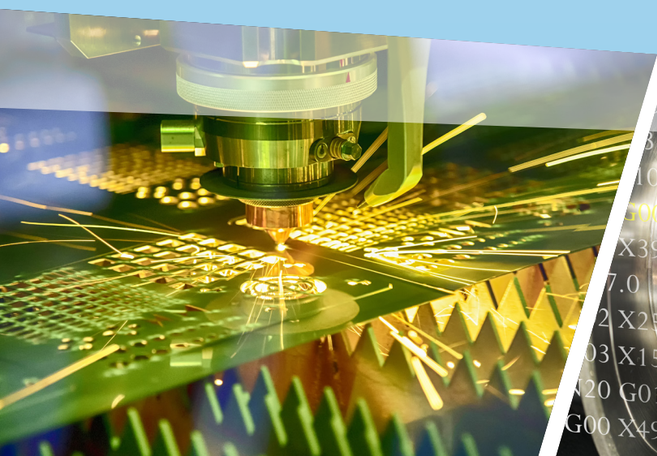
GENERAL LASER TUBE CUTTING FEATURES

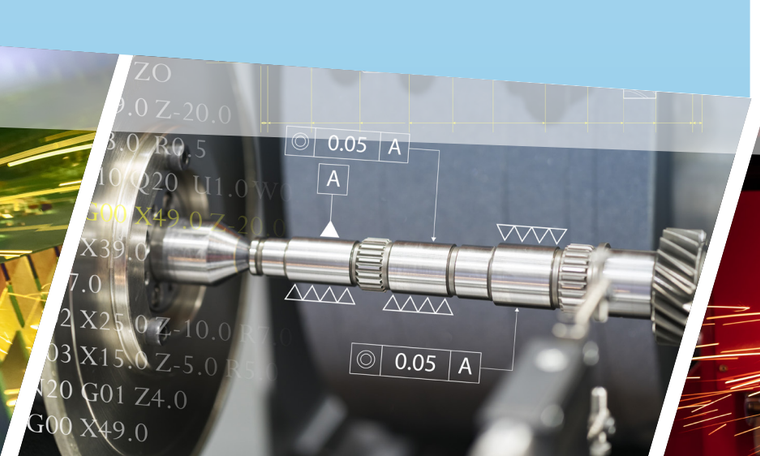
ANCA Motion's laser tube cutting solution is a turnkey solution integrated our over 40 years professional motion control knowledge & experience. ANCA Motion commits to bringing our customers with reliability, high performance, ease-of-use & flexibility.

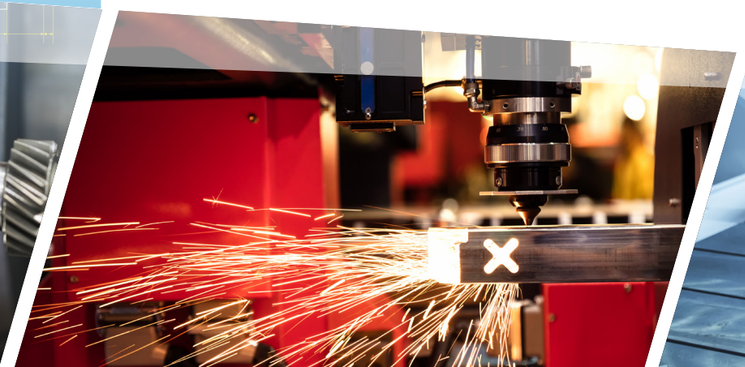
Some of the features for tube cutting application:

- Tech table for tube
- Job file 3D visualization
- Tube center detection
- Power ramping
- Square tube precision compensation
- Fly cutting
- Tube chuck pressure control
- Restart from any segment on the contour
- Diagnostic tools
- Resume
- Fieldbus for automation
- Retrace
- Piercing(Normal, stage, approach)
- Dry run
- Front supporter & rear supporter
- Commissioning wizard
- Ping-Pong repositioning move

ANCA MOTION'S TUBE LASER CUTTING SOLUTION FURTHER EXPANDS ANCA MOTION'S FOOTPRINT IN THE LASER CUTTING INDUSTRY. THIS ALSO DEMONSTRATES ANCA MOTION'S STRONG COMMITMENT IN ITS CONTINUING INVESTMENT IN THE LASER INDUSTRY AND THE DESIRE TO GROW WITH TOGETHER WITH OUR CUSTOMERS.





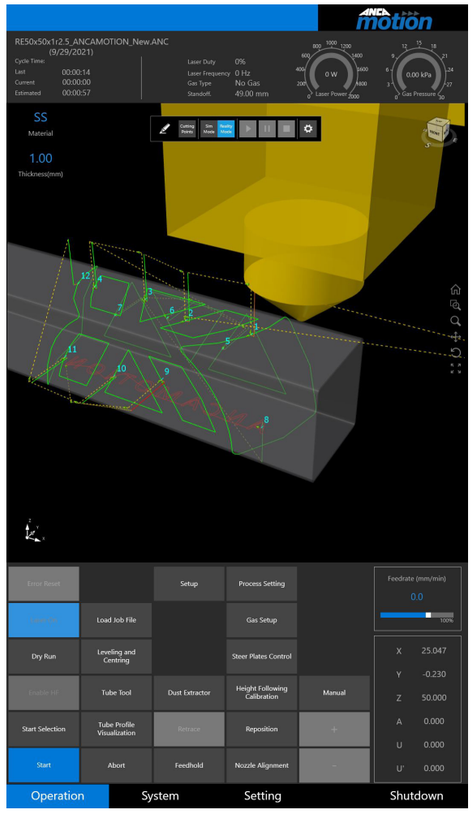


TUBECUT MASTER FEATURES

JOB FILE 3D GRAPHIC

ANCA Motion always commits to building an easy-to-use solution for both end users & machine builders. Instead of interacting with G-codes, operators can check the working process on 3D model either in real-time mode or simulation mode. When the job is interrupted or aborted, the operator can select the resuming point with the visual aids on the 3D model.

- Display processing sequence and cutting direction
- Display piercing point
- Display lead in line
- Display normal line for arcs
- Display different cutting modes
- Display cross section bounding box
- Select resuming position with 3D model indication
- Skip piercing at resuming



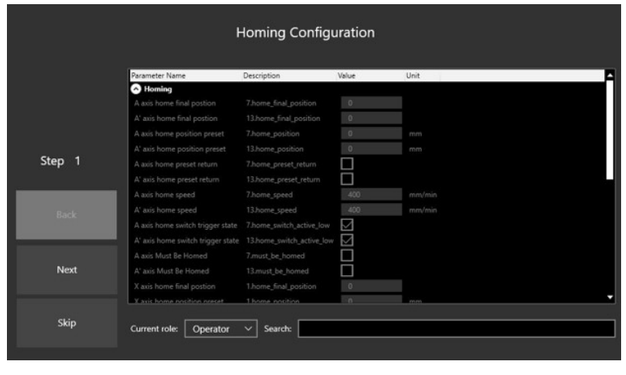
PING-PONG

In the square tube cutting process, the cutting point needs to jump from one surface to another. To ensure collision-free jump across the corner at high speed, the motion control process need to be well optimized.

ANCA Motion developed its unique height following control algorithm integrated in their AMD5x G2 servo drive system, allowing for an update rate of 250µs. Combined with the Z-axis movement, the control system can always ensure optimal moves.

COMMISSIONING WIZARD

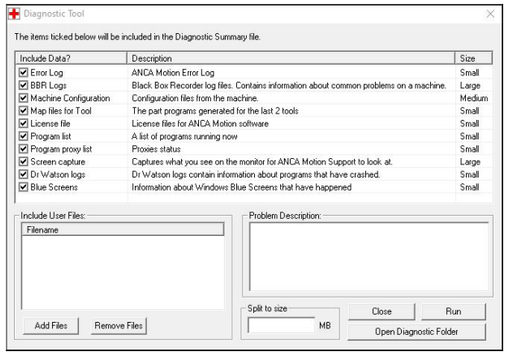
Customers can complete commissioning process step by step via a wizard, eliminating any missing steps during the initial configuration. The parameters can also be accessed by sorted function groups, resulting in higher efficiency for people who are familiar with the parameters.

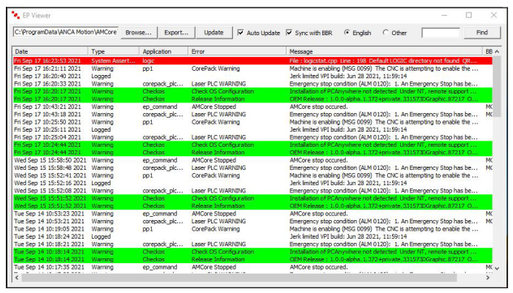


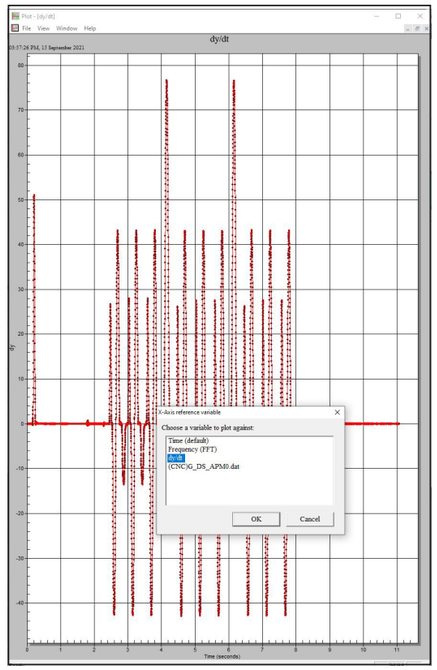
TUBECUT MASTER FEATURES

DIAGNOSTIC TOOLS

There are various diagnostic tools which allow the service engineers to check the machine status, diagnose the problems, collect the CNC operation data logs etc.







FIELDBUS

The communication between the machine's CNC control and automation equipment can be via either I/Os or the Modbus TCP fieldbus. The Modbus communication is monitored by the CNC controller all the time. Operators will be notified to ensure their fast response in checking machine status

POWER RAMPING

When cutting sharp corner on the side or cutting on the corner of a square tube, the laser power needs to be closely controlled to avoid over burnt. ANCA Motion TubeCut Master provides two sets of the power ramping configuration to meet this requirement. Operators can control the laser power precisely to get good cutting result.

TUBECUT MASTER FEATURES

SQUARE TUBE PRECISION COMPENSATION

Find tube center is the standard method to ensure the tube cutting accuracy. However, the cutting result is also dependent on the cutting head sensor accuracy & reliability. This compensation function allows operator to manually adjust the compensation values to reach much higher accuracy.

SUPPORTER CONTROL

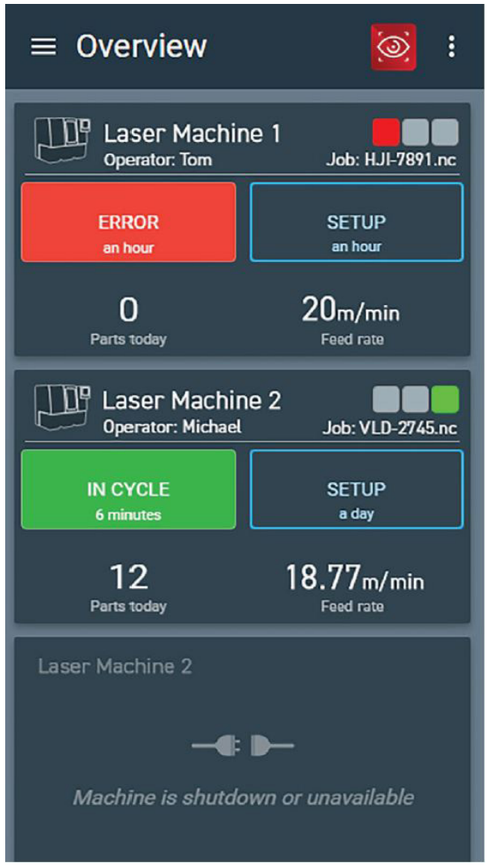
Both the front supporter & rear supporter can be controlled. Both supporters are synchronized with the tube chuck rotation. With the supporters, long tubes can be hold steadily.

IoT READY

The ANCA Motion CNC control system comes with a full featured OPC UA server that allows OEM's IoT solutions to access any parameters inside the software.

ANCA Motion also offer our own IoT platform; Redax, which can be customized for the OEM when required.

Further to that, we also provide a platform specifically for Service and Support; where the OEM can set up preventative maintenance, collect error reports, remote file access and automatic software updates.



HARDWARE

AMC6 CNC

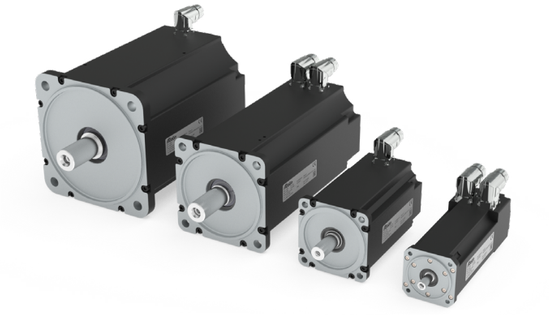
- Latest generation of Intel® Core™ i processor
- Robust fan-less design
- Windows ® 10-based real-time operating system
- Industrial leading EtherCAT® Fieldbus
- Single controller for Motion and HMI
- Protection from unauthorised programs and viruses

AMD5X G2 MULTI-AXIS DRIVE SYSTEM

- High efficiency control for rotary and liner motors
- Industry leading EtherCAT fieldbus
- Single Cable servo system
- Integrated high-speed time stamped I/Os
- Conformal coating for enhanced robustness
- Multiple cabinet mounting options for optimal thermal management

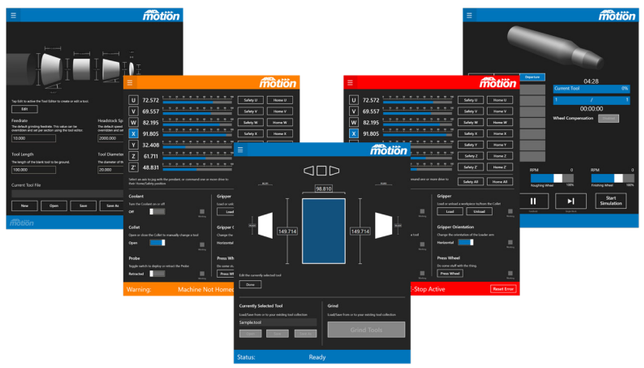
AMI5000 ETHERCAT® REMOTE PENDANT

- Portable machine control interface
- Seamless integration as easy as Plug and Play
- Industry leading EtherCAT® fieldbus
- Customisable button graphics
- Flexible mounting options with varying cable lengths
- Optional Hold to Run safety switch
- Dual channel Emergency Stop



GAMMA MOTOR

- High performance in demanding applications
- High resolution encoder feedback
- Single cable motor system
- Fully enclosed frame with IP65 protection
- Permanent Magnet AC servo motors
- Optional integrated brake and temperature sensor



COMMANDER

Designed to allow human operators to seamlessly monitor and interact with processed data, providing a cutting-edge user experience. Commander gives you the power to build custom interfaces with rich visuals, filled with custom intelligence and functionality, with no programming skills required.

Functionality

- Powerful but simple spreadsheet-like expression evaluation
- Flexible scripting using IronPython

Support

- Flexible scripting can be extended using IronPython

Fully Customisable

- Change appearance/colour easily with in-built skinning/theming to reflect individual branding
- Select from the vast in-built library or create your own widgets and styles
- Advanced plugin system

Facade

- Visually stunning
- Skin can be fully customised to reflect individual branding

Run Time Configurable

- Create or modify your interface live
- Seamlessly move and re-arrange any visual (button, text, image, etc.) to suit individual business requirements

Screen

- Touch-screen friendly design and operation
- Designed for Windows® desktop
- Vector-based (scalable) and Resolution independent

AMCORE

AMCore allows you to program CNC motion control software. Core kinematics allow machine joints to be mapped to real world machine coordinates which simplify a complex machine into a number of easy to command axes. Our MPG feed retrace and active program edit features allow you to correct points immediately during a dry-run without the need to restart.

EPPL

- ISO G-code
- Mathematical expressions
- Subroutines
- Up to 3 concurrent NC programs

CNC Connect

- Access system status, machine position
- Manage execution of NC programs
- Read and write configuration parameters
- Send and receive data and commands

PLC Programming

- Powerful software-based PLC and complier integrated
- IEC61131/61499 compatible PLC for graphical ladder

MOTIONBENCH

MotionBench is a software application designed to make the task of commissioning and tuning digital servo drives easy. Update drive code, run tuning algorithms, load parameters, and view the system response i n a few simple clicks. Connect and configure multiple drives simultaneously and recall customised settings at any time.

Functionality

- Connect to multiple drives simultaneously
- Configure motor settings
- Tune system parameters
- Drive data logger

Support

- Customised solutions tailored to your exacting requirements
- Ongoing support through your products lifecycle

PRODUCT RANGE

AMI5000
Touch Pad

AMI5000
Remote
Pendant

EtherCAT

AMC6 CNC

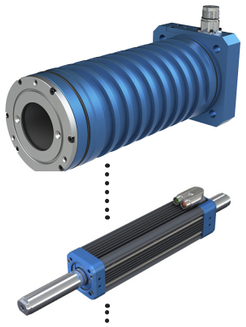
EtherCAT

AMD5x
G2 Multi-axis
Drive System

AMD2000
Servo Drive

LINX

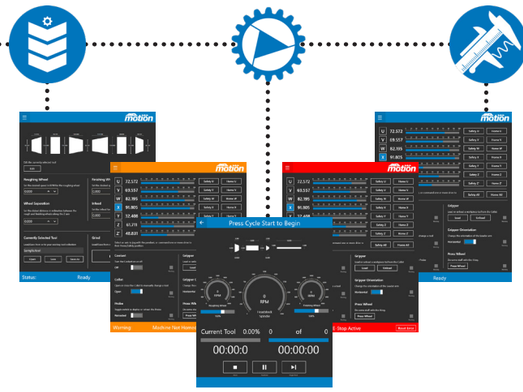
Linear
Motors



AMI5000
Relay Panel

EtherCAT

Software

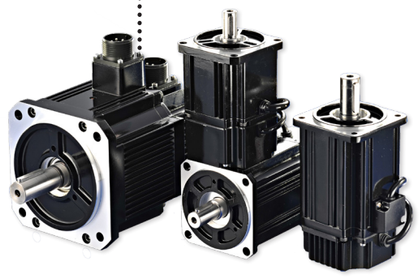


AMCore

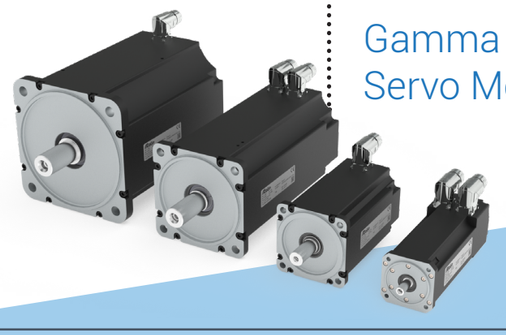
Commander

MotionBench

Alpha
Servo Motors



Gamma
Servo Motors



GLOBAL NETWORK OF SERVICE CENTRES

ANCA Motion have an extensive global network of service channels. Our service technicians are OEM factory trained and are one of the most experienced service teams in the world. We deliver the highest standard of customer service which is maintained throughout the entire life of the product.

SOFTWARE AND HARDWARE UPGRADE PROGRAMS

ANCA Motion control systems are known to have a long service life and software and hardware is updated frequently. Our service team can assist you with updates to take advantage of more recent technology.

TECHNICAL QUERIES AND APPLICATION SUPPORT

Our factory trained service team can provide technical support and advice to keep your control solution running and in peak performance.

REPLACEMENT PARTS

ANCA Motion can provide original equipment replacement parts to ensure the highest quality of operation throughout your control systems lifetime.

TRAINING

Application training can be made available when a control solution is installed or at a later date. Training is provided on site and in a wide range of topics to encompass every aspect of your company's needs.

ANCA is a global business with three main business groups; ANCA CNC Machines, ANCA Motion and ANCA Sheet Metal Solutions. ANCA specialises in the design and manufacture of machine tools, motion control systems and metal fabrication.

ANCA has achieved market leadership through innovation and a commitment to research and development. With our head office in Melbourne, Australia, we have a network of overseas branches and over 1000 employees worldwide.

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