



# LASER CUTTING

**ANCA**  
**motion**  
Motion Control Solutions

# ANCA Motion Specialises In Tailoring Motion Control solutions

At ANCA Motion we design and manufacture flexible control systems, specialising in high precision CNC machines. We tailor our hardware and software to an OEM's exacting requirements, providing solutions that give customers a competitive edge.

Our continuous support and innovation throughout the life of the product allows us to deliver world class products and service.



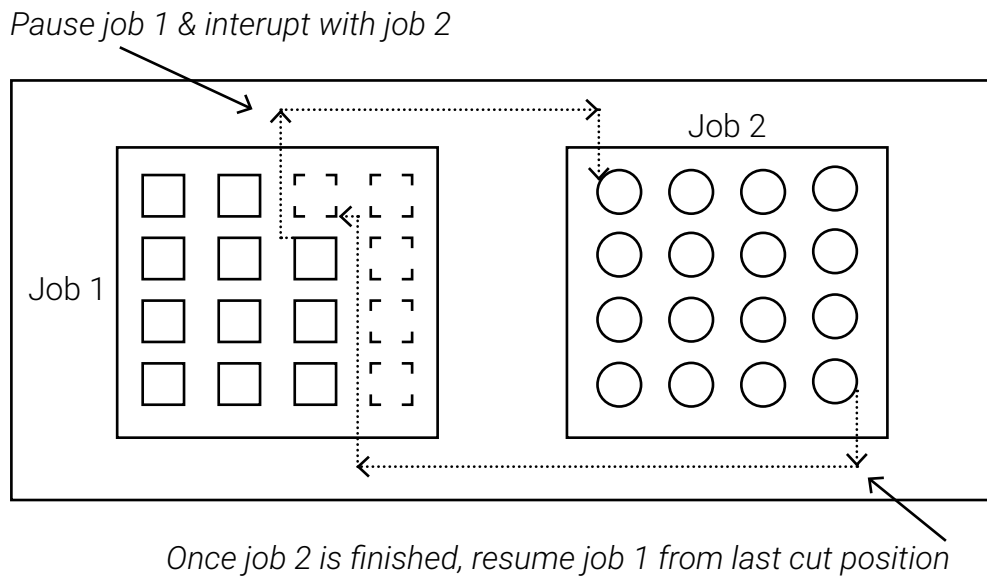
ANCA Motion's Laser Cutting control is specifically developed to deliver best in class process performance on a variety of machine configurations.

The control system provides full support for gantry machines, beam length control, height following, focal axis, and material handling.

The open and flexible CNC includes support for advanced corner modes, custom kinematics, sheet qualification, and special move types designed to reduce cycle time and improve cut quality.

By combining ANCA Motion CNC technology with the OEM's engineered Laser Cutting solution the end machine is optimised for the application.





## Job Starting Position

Job start allows for a cut job to be started at one of the following points:

- Current position
- Previous starting position
- Any position selected by the operator on the screen
- Continue at last cut contour
- Resume position after interruption

## Tech Table

The tech table is a database of cutting processes and parameters.

- OEM can define cutting modes which allow sets of parameters to be used throughout a job (e.g. normal, small, large & marking)
- Parameters can be defined by machine builder and overridden by operators
- Parameters can be set according to different materials and thickness
- Import and export functionality

## Supported Interfaces

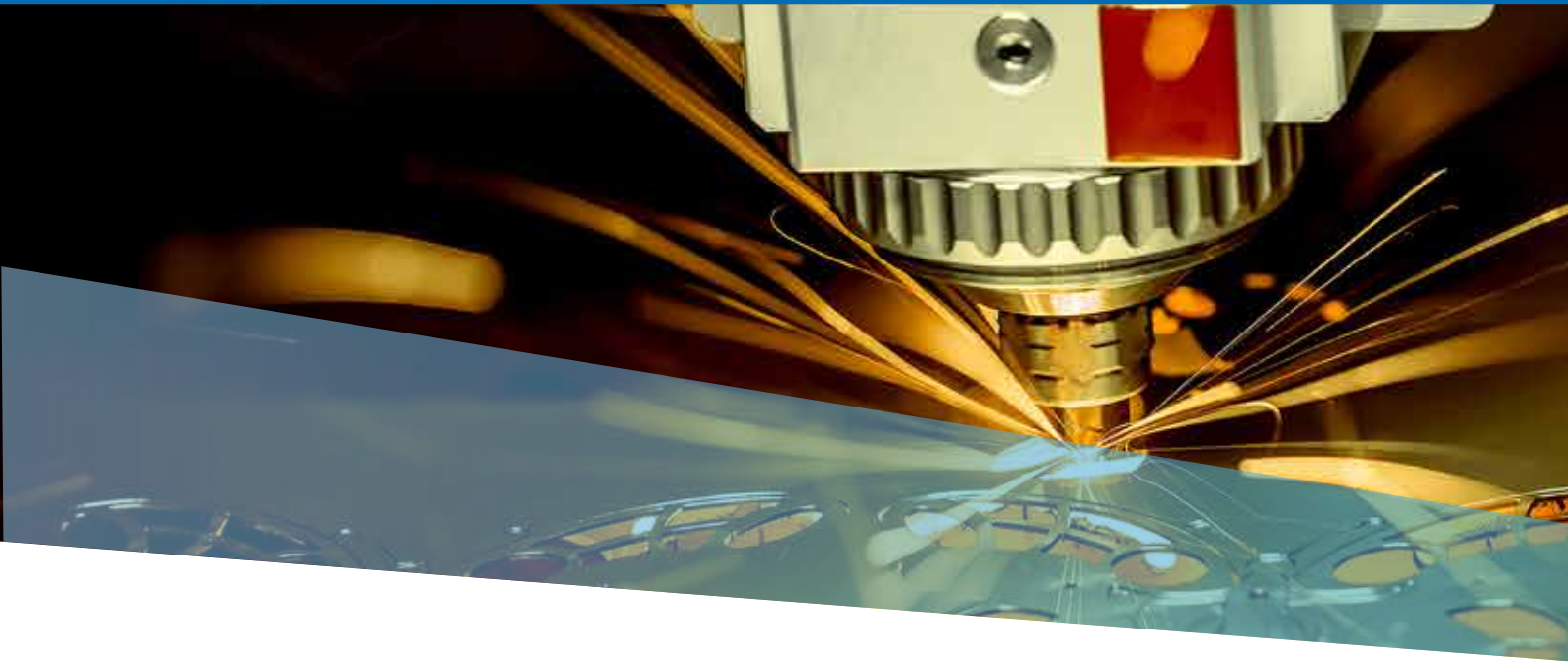
Support for major fibre laser sources such as IPG laser, Trumpf as well as others on request.

Full support for major laser heads such as Precitec and Laser Mech.

Our flexible PLC integrates with:

- 3rd party pallet changes and sheet storage loader systems
- Exhaust systems
- Door interlocking and extraction handling
- Automatic plate clamping systems
- Gas control with optional automatic pressure regulation





## Interruption of NC Process

The following functions are available if the NC-Program needs to be interrupted during cutting:

- Manually moving back and forth on the contour (retrace)
- Compensation for laser on/off delays
- Retraction of Z axis
- Switch to manual mode to allow axes to move freely
- Resume from last cutting position
- Adjustment of Tech Table parameters

## Piercing

Piercing Types/Options:

- Normal piercing - the values are defined in the tech table database.
- Stage piercing - piercing values can be changed in stages for thick materials.
- Approach piercing - gradually lowers the height during piercing
- Pre-piercing - all piercing operations can be grouped together at the start of the job

## Nozzle Cleaning Functions

If a brush is mounted on the machine a cleaning process can be triggered after a set number of cuts or manually by the operator.

## Consumables Time Tracking

Beam and gas on time can be monitored to allow tracking consumables.

## Sheet Qualification

- Qualification of each corner
- Qualification for each edge
- Trace sheet outline with or without height following
- Utilises the height following function without needing additional hardware

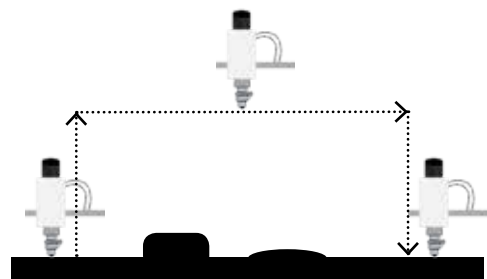


## Repositioning Moves Between Contours

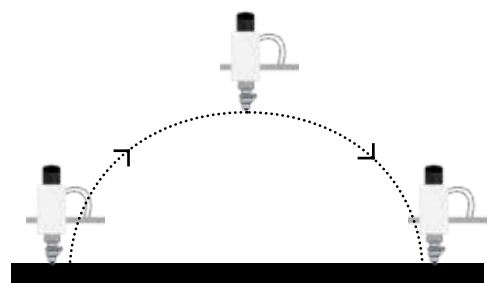
- Selectable motion types between the contours (rapid, rectangle and pingpong)
- Pingpong has an adjustable initial retractable height



*Rapid Movement*

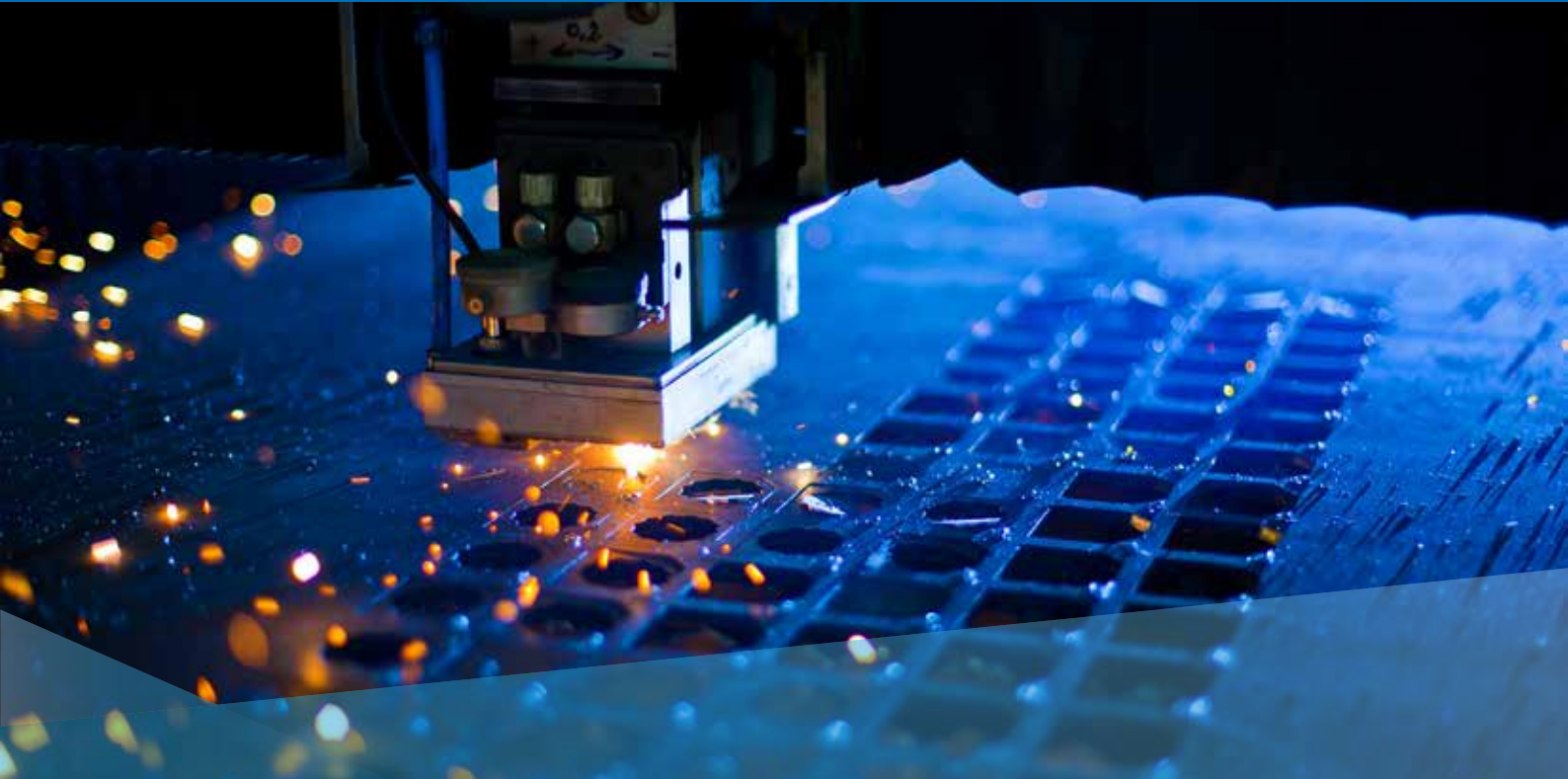


*Rectangle Movement*



*Pingpong Movement*

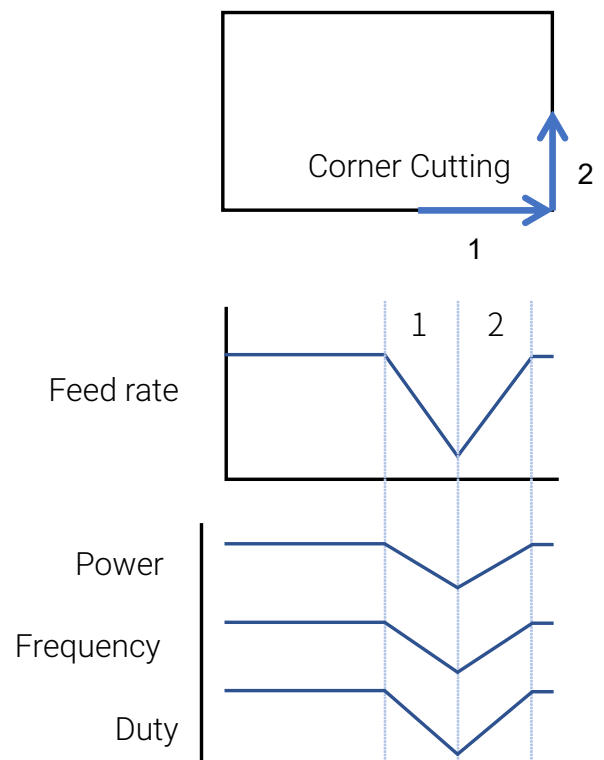
# ADVANCED FEATURES



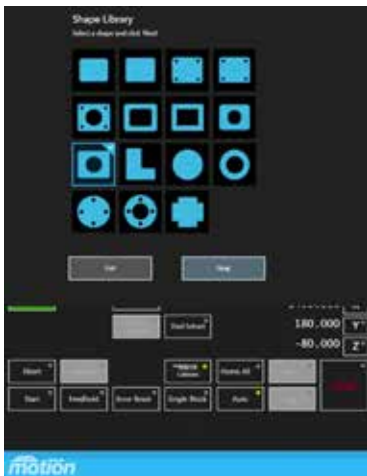
## Power Ramping

Automatically adjust laser power, delay and frequency based on cutting speed. When power ramping is enabled the machines power level is reduced as it decelerates into a corner and then increased as it accelerates out of the corner. This function results in a much better cut quality in areas of acceleration and deceleration

Power ramping is intergrated into the Tech Table and the data can be saved according to different materials or thicknesses.



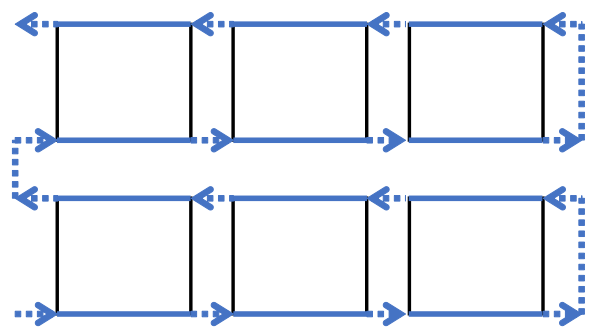




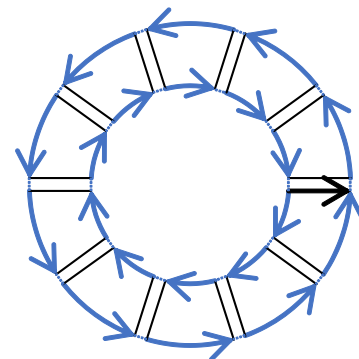
ANCA Motion's laser cutting application offers advanced functions allowing a faster cutting process whilst maintaining precision.

## Fly Cutting

Fly-Cutting allows cutting to be done with a scanning motion along straight and arc paths, significantly increasing machine productivity for thin material.



*Line Scanning*



*Arc Scanning*

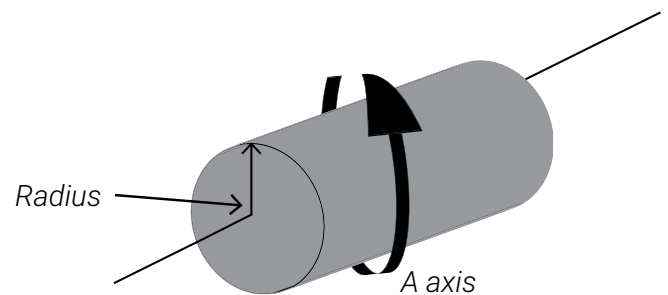
# ADVANCED FEATURES



## Pipe and Tube Cutting

ANCA Motion's Axis Swap transformation feature enables pipe or tube cutting and has two functions:

- The path can be defined in Cartesian coordinates and axis swap will produce a path with one linear axis and one rotational axis
- The needed feed rate for the rotational axis is automatically calculated by the CNC based on the radius of the part.

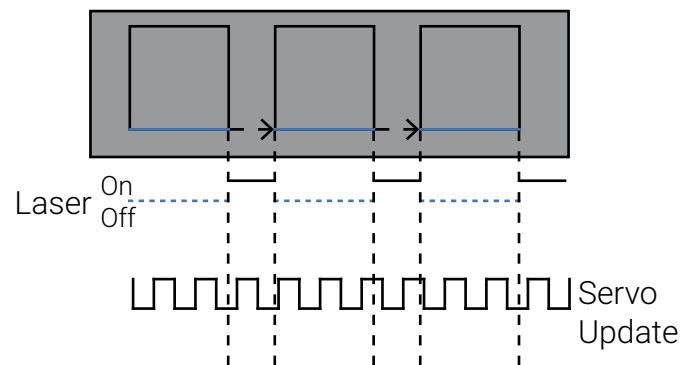


*Pipe/Tube Cutting*

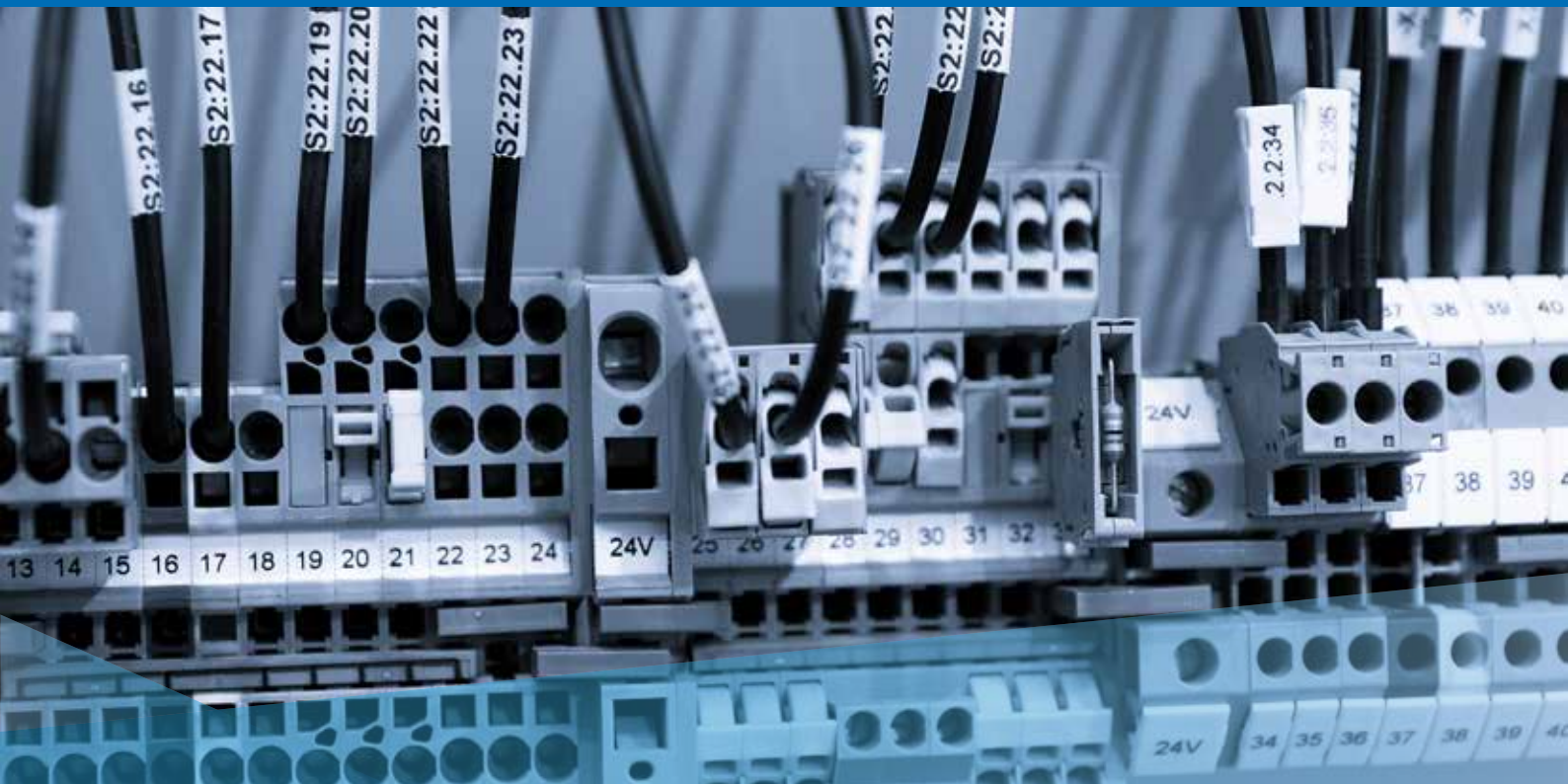


## Exact Position Related Output Signal by Fast Output

- The motion planner within the CNC ensures that laser beam is switched on and off at the exact position defined by the CAD/CAM system. This planning takes into account variables such as delay time and variations caused by velocity or acceleration.
- To achieve these results ANCA Motion make use of technology based on IEEE 1588. EtherCAT and a high speed FPGA built into each of our servo drives ensures the highest precision and performance can be maintained.

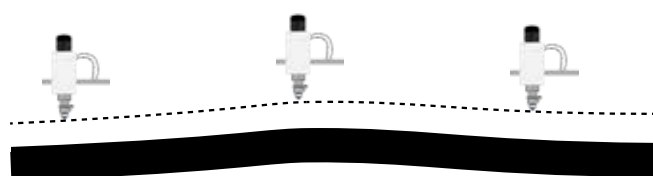


# ADVANCED FEATURES



## Height Following

- ANCA Motion's height following feature is compatible with market leading sensors and laser heads. A number of functions within the control make use of this sensor data including height following which maintains a constant cutting height even if the sheet is not flat.
- Tip touch processing ensures the active job is paused to allow any issues to be resolved.



## Laser Power Control

- A PWM output directly controlled by the CNC allows fine control of the laser power by setting either the duty or the frequency of the laser pulses.
- Combined with the synchronised output for laser control the highest precision and productivity can be achieved.

## Laser Diagnostics

- As ANCA Motion's CNCs are pc-based systems, laser diagnostic tools can run directly on the CNC system so that the diagnostic is much more convenient.



## 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

### Facade

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

### Support

- Flexible scripting can be extended using IronPython

## 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

## 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

## 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. AMCore allows you to integrate and program CNC motion control software. Soft axes allow complex axis combinations to be programmed using a virtual or software axis.

## EPPL

- ISO G-code
- Mathematical expressions
- Local variables
- Subroutines
- Control flow
- High level language features
- Up to 3 concurrent NC programs
- Support >250,000 lines/1GB

## CNC Connect

- API for application layer software
- Samples in C, C++, C#, Java, visual basic
- Access system status, machine position
- Manage execution of NC programs
- Read and write configuration parameters
- Read and write system variables
- Send and receive data and commands

## PLC Programming

- Powerful software based PLC and compiler 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 in a few simple clicks. Connect and configure multiple drives simultaneously and recall customised settings at anytime.

## Customisable

- Save and restore configurations
- Update drive code
- Load parameters
- Run tuning algorithms

## Automation

- View system response
- Automatically detect and list available drives

## Functionality

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

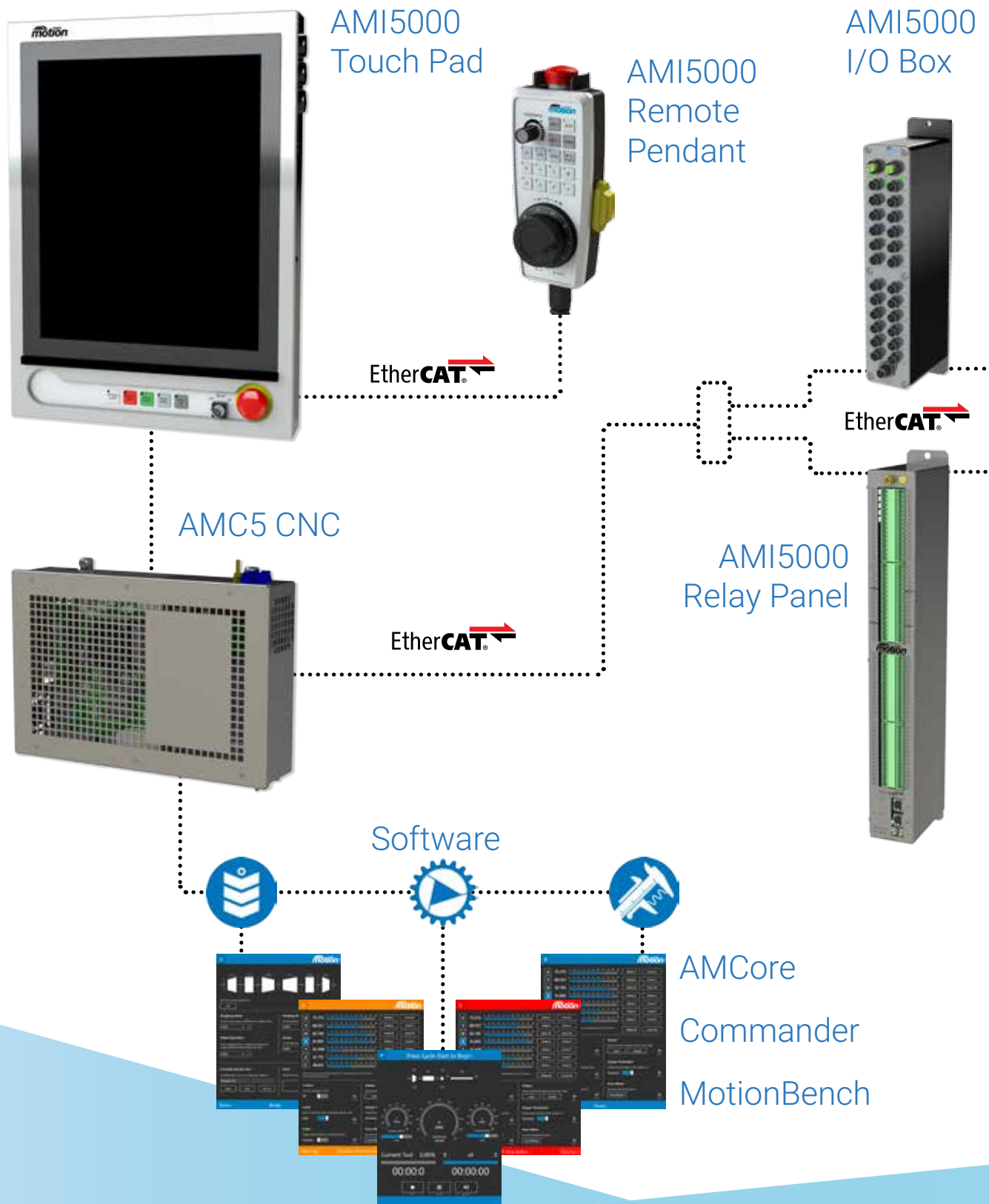
## Integration

- Can be integrated with existing software or Commander

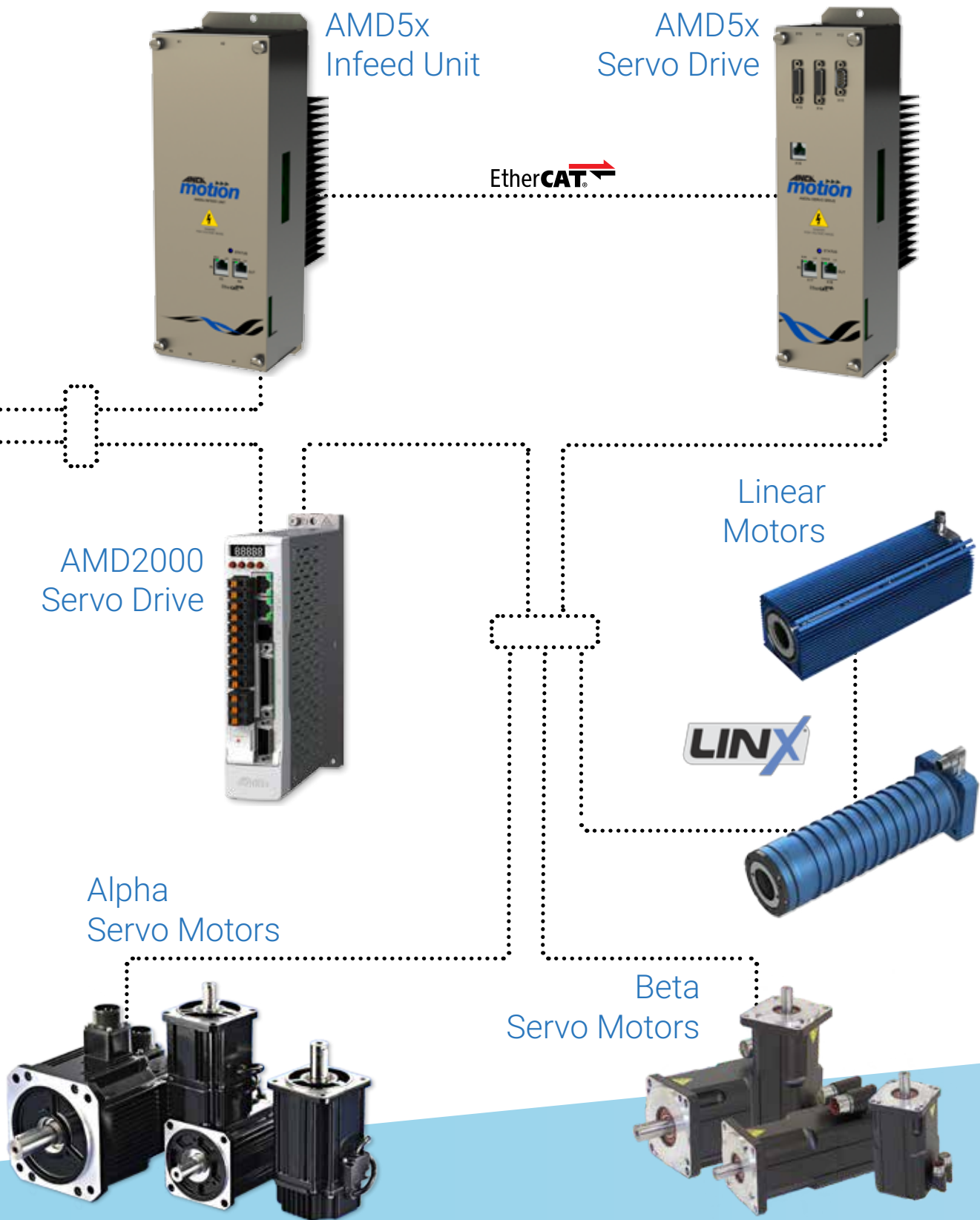
## Support

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

# PRODUCT RANGE









## 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 & 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 & Application Support

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

## Replacement Parts

ANCA Motion are able to 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.

The ANCA Group of companies consists of ANCA CNC Machines, ANCA Motion and Tinfish. The ANCA Group specialises in design and manufacture of Machine Tools, Motion Control Systems and metal fabrication. The members of the ANCA Group have

achieved market leadership through innovation and a commitment to research and development. The ANCA Group Head Office is in Melbourne, Australia, its member companies have a network of overseas branches and approximately 900+ staff worldwide.



## THE **ANCA** GROUP



### **ANCA Motion Australia**

1 Bessemer Road  
Bayswater North Victoria 3153  
Australia

### **ANCA Motion Europe**

Im Technologiepark 15  
69469, Weinheim  
Germany

### **ANCA Motion USA**

31129 Century Drive  
Wixom  
Michigan, 48393  
USA

### **ANCA Motion China**

No. 102, Building F1,  
XEDA Emerging Industrial Park,  
Xiqing Economic-technological  
Development Area, Tianjin,  
P.R.China

### **ANCA Motion Taiwan**

1F, No. 57, 37Rd  
Taichung Industrial Park  
Taichung, 407  
Taiwan

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**WE LOVE MOTION**

[www.ancamotion.com](http://www.ancamotion.com)  
[sales@ancamotion.com](mailto:sales@ancamotion.com)