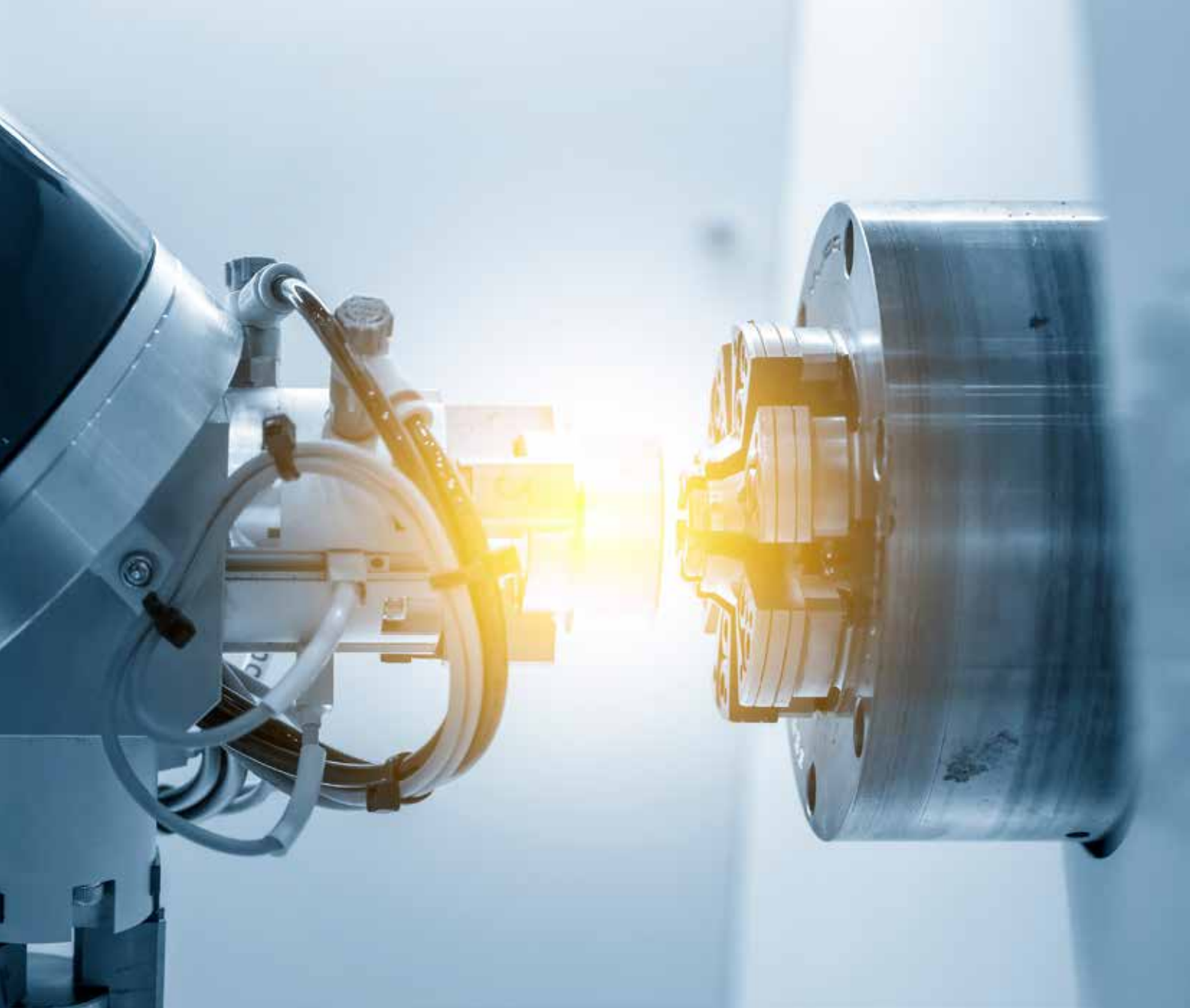




Digitized Automation for a Changing World

Delta CNC Solution B Series



www.deltaww.com

 **DELTA**
Smarter. Greener. Together.

Delta CNC Solution B Series

Delta Numerical Control B Series

Delta's new general-purpose CNC controllers support the standard ISO G-code format and algorithms for highly precise and high-speed performance. It integrates a human machine interface (HMI) for developing a user-friendly operating interface and implementing customization requirements for industries. Built-in with Delta's DMCNET motion bus, the CNC controllers can fulfill highly precise, high-speed, and smooth processing with the AC Servo System ASDA-A3 Series or ASDA-B3 Series, permanent magnet (PM) motors / induction motors (IM) for the spindle, and encoders.

Through long-term cooperation with in industries and continuous development of industrial automation, Delta has a deep understanding of client needs and can provide industry-specific processing technologies to assist customers in becoming more competitive in their markets.

- **User-definable operating interface**
- **Easy operation with abundant functions**
- **Fully compatible with NC and MLC of A Series**



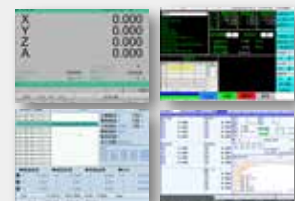
Flexible Operating Interface and Useful Graphical Programming Tool

Easy operation and friendly interface with DOPSoft software for HMI programming



Customization for Industries

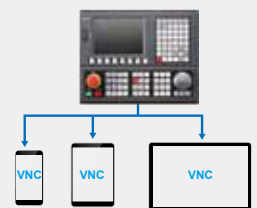
Built-in with a new HMI that offers a definable industry-specific operating interface to enhance the operating experience





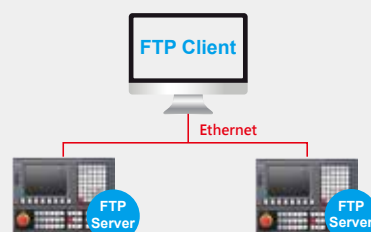
VNC Server for Remote Monitoring

Built-in VNC server for remote monitoring and operating of the HMI via VNC Client App on mobile devices and computers (Windows, iOS, Android)



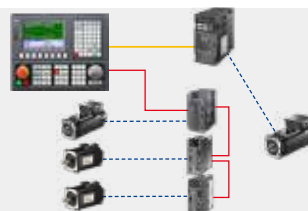
FTP Server for Remote Monitoring

Built-in FTP server to update recipes, transmit processing data, and backup historical data, operation log and alarms



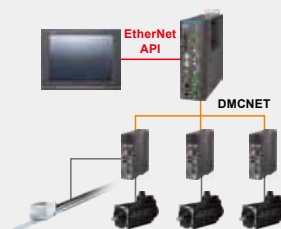
Flexible Control of Spindle Driving

Flexible spindle control via Delta's DMCNET, analog signals or pulses



Full Close-Loop Control with Signal Feedback from Linear Scales

Ensures position accuracy of the feeding axis with various brands of pulse type or communication linear scales, including Nikon, Mitutoyo, Fagor, Renishaw, and HEIDENHAIN



CNC Product Features

Delta Numerical Control B Series

Interactive Editing

Industry-specific and interactive graphical editing and programming for an easy-to-use operating interface for process management



Smart Machine Tuning and Integration

The CNC controller supports servo inertia estimation, resonance suppression, bandwidth control, and servo friction compensation with one-key operation for fast machine tuning, and eliminates issues of tool marks resulting from quadrant changes. For tapping applications, one-key tuning is available as well



OpenCNC Software Operation on Large Touchscreen

Comes equipped with a large touchscreen for operation and user-definable interface



PC + OpenCNC Software for Interface Customization and Process Configuration

Provides an Ethernet API for operating the controller, accessing data, defining a desired OpenCNC software interface, and collecting controller data for analysis



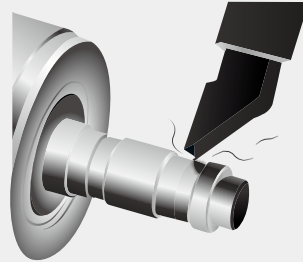
CAD / CAM Software for Advanced Grinding Processes

Delta's CAD / CAM software provides a graphical interface, allowing users to quickly design complicated milling processes, such as punch grinding, contour grinding, tool grinding, and more



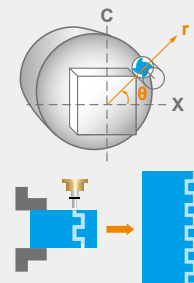
Lathe Turning without Stringy Chips

Prevents stringy or strip-shaped chips falling around tools or workpieces from damaging the processing surfaces or shortening the lifespan of tools



Compound Lathe Turning and Milling Functions

Integration of lathe turning and milling functions, such as SC switching, polar coordinate interpolation, cylindrical coordinate interpolation, driven-tool axis milling, and more, for diverse processing



Polar coordinate interpolation

cylindrical interpolation

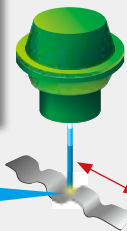
Functions Dedicated for the Woodworking Industry

Supports multiple T commands with up to 12 consecutive T codes in a single line command. Each T code includes up to 4 yards in length for fast tool change
Supports T codes to execute subroutines in advance for tool change preparation with better efficiency. The reversing handwheel operation facilitates managing anomalies

```

M10 G90 G49
M20 G40 G80
M30 G54
M40 G53 Z0
M60 T1T2T3T4
M90 M3 S10000
M100 G0 X15.59 Y100.0
M110 G00 X0.0
M120 G00 X0.0 Y200.0
M130 G1 X0.0 Y200.0
M140 X15.5 Y184.5 Z-9.95 F10000
M150 X184.5 Z-9.95
    
```

Machining Safety



MPG



UI Customization and Automatic Programming of Specific Processes

Fast process configuration with user-definable interface for standard surface / cylindrical grinding methods and ranges



Applications with Multiple Z Axes

- Provides control of synchronous and moving motions, tool table of the multi-end milling machine, and G43 length compensation for multi-end tools
- Expandable for various high-speed contacts for multiple Z-axis motions
- Industry-specific functions for single-end machine or up to six-end machine applications



CNC Product MAP

Delta Numerical Control B Series

High Performance

CNC 5 Series

- Built-in quad-core CPU for multi-path interpolation, higher Lookahead speed, better engraving and milling, and higher efficiency
- Implementation of automated processes with the multi-path interpolation, such as material loading / unloading, and multi-process operation
- RTCP function to achieve advanced mold or non-contact processing
- Automatic servo tuning and smart friction estimation and compensation
- Expandable with MLC devices, cutters, and system variables



*Coming soon in Q4, 2021

CNC 300 B Series and 200 B Series

- Built-in 32-bit high-speed dual CPU for multiple tasks and high performance
- Implements data transmission and noise suppression with Delta's high-speed servo drives
- Equipped with a high-resolution encoder with an accuracy of up to 0.1 μm for smooth and precise motions
- Automatic gain adjustment offers adequate motion control during machine tuning
- A new operating interface built-in with the DOPSoft software for interface customization
- A USB port for data access and parameter backup
- Optional spindles of communication type or analog voltage type
- The MPG function allows manual control of pulse input or handwheel input with a push button



OPEN-CNC NC30EB Series

- A new operating interface built-in with the DOPSoft software for interface customization
- Open-structured system with Delta's CNC API for developing PC software and improving equipment functions
- Supports standard G-code and Macro variable expansion
- Compact design with metal casing; high-resolution display in 720p
- MOP operating panel and 4 USB 2.0 ports
- Built-in 32 inputs / 32 outputs, spindle pulse output, and dual DAC output



Standard

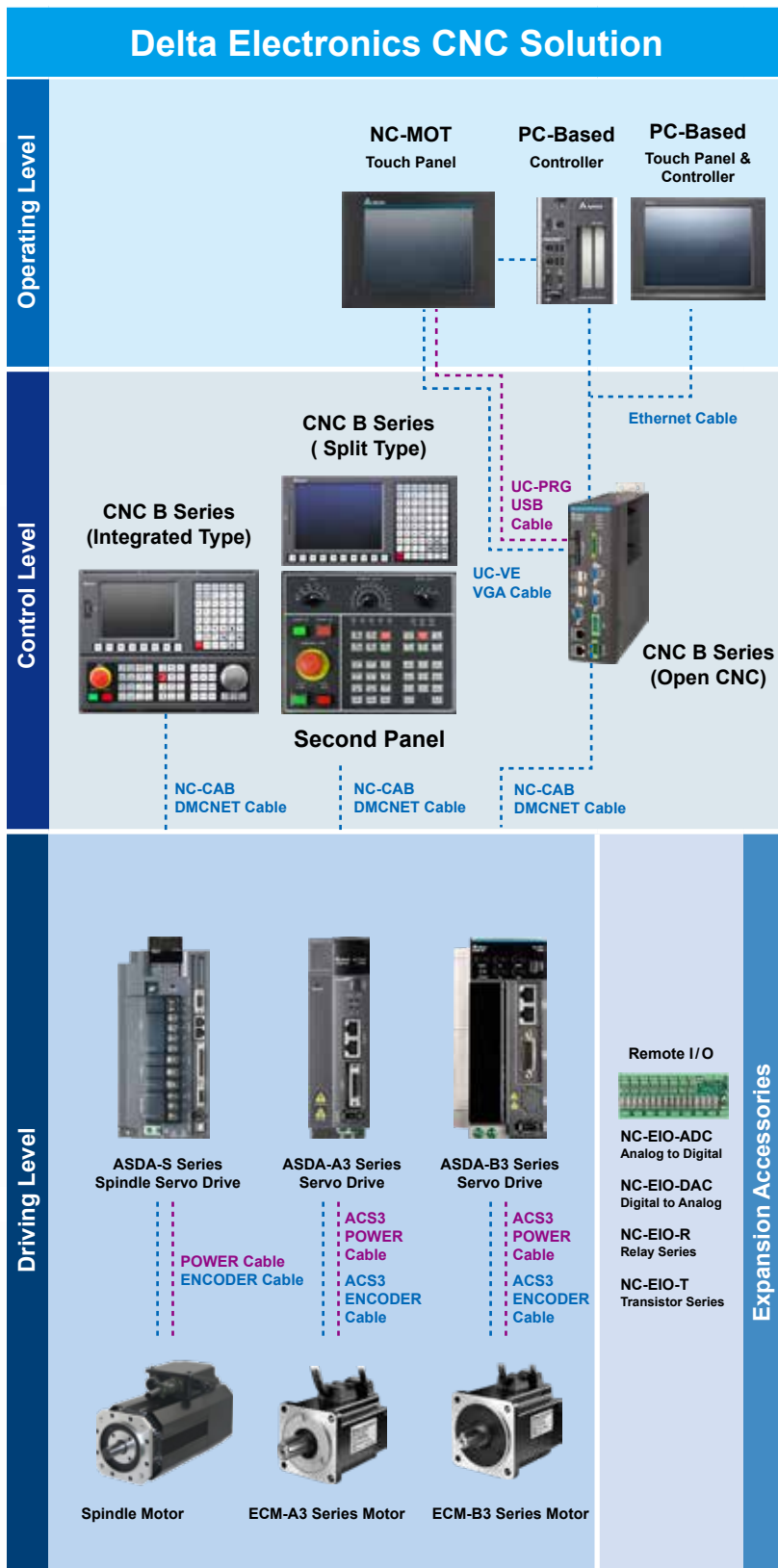
	Lathe	Machining Center
Max. Axes (Max. NC+PLC axes)	32	32
Max. NC Synchronous Interpolation Axes	4	5*
Max. Spindles	8	8
Max. PLC Axes	9	9
Max. NC Axes	6	8
Max. Paths	6	6
Min. Length Increment	1 nm	1 nm
Max. Variables	2000	2000
Max. Workpiece Coordinate Corrections	300 Sets	300 Sets
Max. Cutter Corrections	512 Sets	512 Sets

	Lathe	Machining Center
Max. Axes (Max. NC+PLC axes)	8	8
Max. NC Synchronous Interpolation Axes	4	4 (BH=5*)
Max. Spindles	2	2
Max. PLC Axes	8	8
Max. NC Axes	6	8
Max. Paths	1	1
Min. Length Increment	1 nm	1 nm
Max. Variables	1450	1450
Max. Workpiece Coordinate Corrections	70 Sets	70 Sets
Max. Cutter Corrections	64 Sets	100 Sets

	Lathe	Machining Center
Max. Axes (Max. NC+PLC axes)	8	6
Max. NC Synchronous Interpolation Axes	4	4
Max. Spindles	2	2
Max. PLC Axes	8	6
Max. NC Axes	6	6
Max. Paths	1	1
Min. Length Increment	1 nm	1 nm
Max. Variables	1450	1450
Max. Workpiece Coordinate Corrections	70 Sets	70 Sets
Max. Cutter Corrections	64 Sets	100 Sets

	Lathe	Machining Center
Max. Axes (Max. NC+PLC axes)	8	8
Max. NC Synchronous Interpolation Axes	4	4 (BH=5*)
Max. Spindles	2	2
Max. PLC Axes	8	8
Max. NC Axes	6	8
Max. Paths	1	1
Min. Length Increment	1 nm	1 nm
Max. Variables	1450	1450
Max. Workpiece Coordinate Corrections	70 Sets	70 Sets
Max. Cutter Corrections	64 Sets	100 Sets

* Synchronous interpolation models with more than 5 axes are strategic high-tech commodities (SHTC), and are not allowed to be exported to certain countries without notification. For details, please go to the website of the Bureau of Foreign Trade (MOEA).



CNC Product Specification

Delta Numerical Control B Series

Model		NC 50EB Series (OPEN CNC) Note: Coming soon in Q4, 2021.	NC 300 B Series	NC 200 B Series	NC 30EB Series (OPEN CNC)
Processor System	CPU	ARM Quad Core 1.60 GHz	HMI : ARM 800 MHz Motion : DSP 225 MHz	HMI : ARM 800 MHz Motion : DSP 225 MHz	HMI : ARM 800 MHz Motion : DSP 225 MHz
	DRAM	DDR3-SDRAM 2 GB	SDRAM 256 MB	SDRAM 256 MB	SDRAM 256 MB
	Non-volatile Memory	8 GB	256 MB CF card: 4 GB	256 MB CF card: 512 MB	256 MB CF card: 512 MB
Display	HDMI	HDMI x 1	Built-in display	Built-in display	VGA x 1
I/O Interface	USB	USB 2.0 Host x4	USB 2.0 Host x2	USB 2.0 Host x2	USB 2.0 Host x4
	Ethernet	10/100M x2	10/100M x1	10/100M x1	10/100M x1
	Fieldbus	EtherCAT	DMCNET	DMCNET	DMCNET
	MPG(D-Sub)	x1			
	Spindle (D-Sub)	x1			
	Analog Port	x2			
	Digital IO	32 Input / 32 Output	21 Input / 21 Output	21 Input / 21 Output	32 Input / 32 Output
	Remote IO	32(I/O)*8(station) = 256(I/O)			

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