FINGER CNC

B SERIES LATHE MACHINE CONTROLLER

Company
Profile

Guangzhou Finger Technology Co., Ltd. is committed to creating high-performance open CNC systems, making automation development simpler. As one of China's leading high-performance controller manufacturers, Finger Technology focuses on customer needs and continually pushes the boundaries of technological innovation. The company has built a comprehensive automation ecosystem with key technologies, offering differentiated solutions and convenient services to clients. Finger strives to help customers gain value from its products, accelerate growth, and generate substantial returns.

Finger Technology is fundamentally driven by technology, originating from CNC but not confined to it. Firmly rooted in CNC technology, the company actively explores motion controllers, edge computing controllers, Open CNC development platforms, CAD/CAM technologies, machine vision technologies, and industrial Internet of Things (IoT) technologies. Its industry-leading Open CNC development platform makes the customized development of machine equipment electrical controls more cost-effective and simpler. With seven core technologies embedded (motion control, HMI, PLC, machine vision, CAD/CAM, IoT, and 3D simulation), Finger Technology provides customers with the best one-stop solutions.

Leveraging its outstanding open product architecture and diverse technology integration capabilities, Finger Technology has accumulated extensive product experience and a solid customer base in industries such as lathes, milling machines, grinding machines, spring machines, tool machines, woodworking machinery, winding machines, pipe bending machines, and 3C electronics, continuously achieving excellence.

Devotion to excellence, innovation with craftsmanship, pursuit of precision, symbiosis and win-win, and integrity are the core business philosophy and values upheld by Finger Technology since its establishment. We have always remained true to our original intention, striving forward with determination, and continuously working towards becoming the world's leading open CNC system brand, ensuring that Chinese manufacturing and Chinese services resonate globally.

Company Vision

Make automation development simpler.

Company Mission

Build more open, convenient, and inclusive controller products.
Strive to help customers gain support from products
grow rapidly, and create value
Become the world's leading brand in open CNC systems
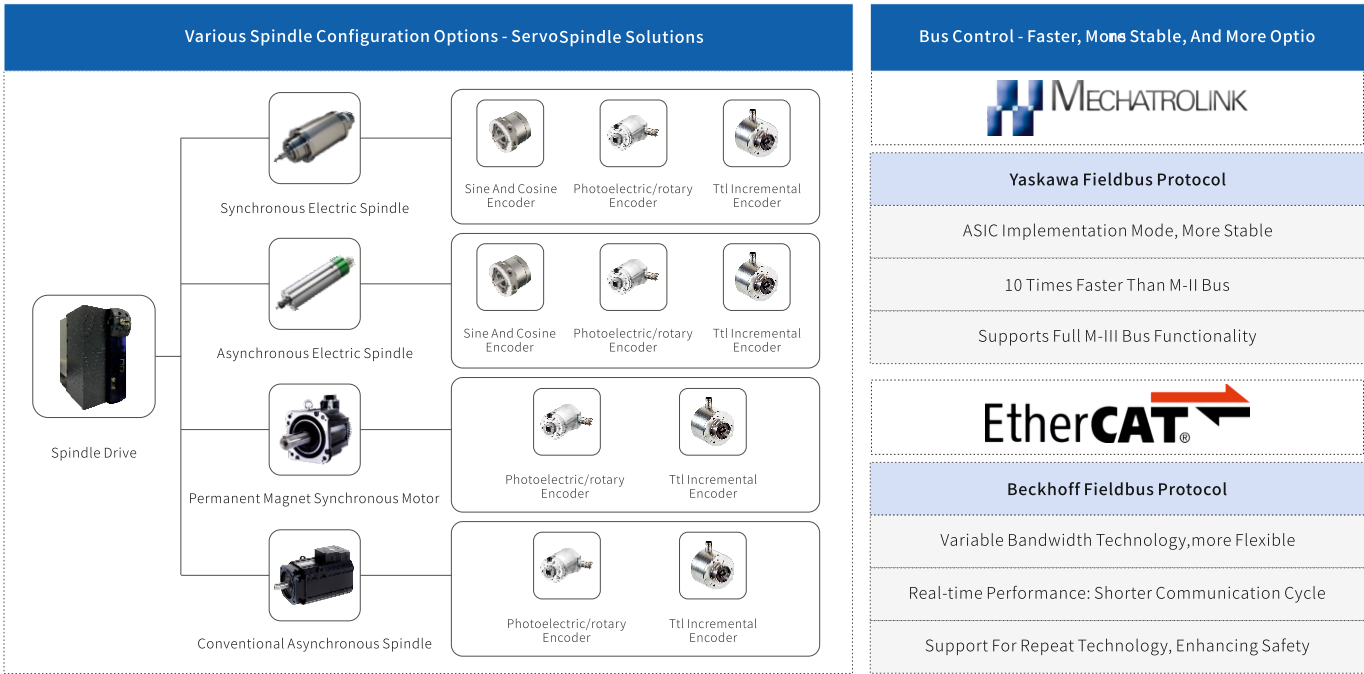
Core Values

Practical Integrity | Stay True to the Original Intention | Break Tradition, Embrace Newness
Pursue Excellence | Progress Together

Directory

Complete Bus
Solution for Lathe Machine Controller

MECHATROLINK-III/EtherCAT/Generic Axis Port

Controller	Driver	Driver
8-inch Controller	Bus-based Spindle Drive	Servo Drive Servo Drive Servo Drive

EtherCAT Communication

I/O Module	Accessories	Motor	Motor
32-Input/32-Output I/O Module	Tool Presetter	Spindle Motor	Servo Motor Servo Motor Servo Motor
16-Input/16-Output I/O Module			
24-Input/16-Output I/O Module	Linear Scale (SSI)	Electric Spindle	Linear Motor DD Motor
6-Axis Motion Control Module			
DAC Module	Handwheel		

Various Spindle Configuration Options - ServoSpindle Solutions	Bus Control - Faster, More Stable, And More Options

MECHATROLINK

Spindle Drive

Synchronous Electric Spindle
Sine And Cosine Encoder Photoelectric/rotary Encoder Ttl Incremental Encoder

Asynchronous Electric Spindle
Sine And Cosine Encoder Photoelectric/rotary Encoder Ttl Incremental Encoder

Permanent Magnet Synchronous Motor
Photoelectric/rotary Encoder Ttl Incremental Encoder

Conventional Asynchronous Spindle
Photoelectric/rotary Encoder Ttl Incremental Encoder

Yaskawa Fieldbus Protocol
ASIC Implementation Mode, More Stable
10 Times Faster Than M-II Bus
Supports Full M-III Bus Functionality

EtherCAT®

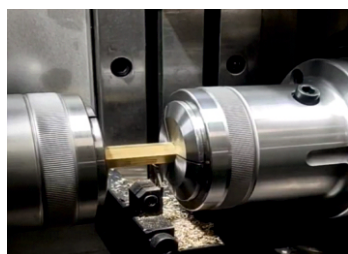| Beckhoff Fieldbus Protocol |
|---|
| Variable Bandwidth Technology,more Flexible |
| Real-time Performance: Shorter Communication Cycle |
| Support For Repeat Technology, Enhancing Safety |

• The entire series of servo axes and spindles support MECHATROLINK-III/EtherCAT bus communication with built-in Repeat technology, ensuring more stable bus communication.
MECHATROLINK-III: It allows a maximum of 63 slave devices, does not have IO modules, and offers simplified development.EtherCAT: It provides high transmission efficiency, strong scalability for future development, and supports a maximum of 65,536 slave devices with IO modules. Servo, spindle, and IO communication can be achieved using a single Ethernet cable.

Lathe Machine Controller
Series Products

	300TA Series		400TA Series
Product Benefits			
Installation Method	Horizontal Installation	Horizontal/Vertical Installation	
Product Positioning	Standard Two-Axis Lathe		Dual-Channel Lathe Without Y-Axis, e.g., Dual-Channel Shared Spindle, Lathe + Gantry
Applicable Machine Models	XZ + AC + Turret Axis	(XZAC + Turret Axis + Positioning Axis)	Single Channel: (XZABC + Axis-Controlled Turret + Positioning) Dual Channel: (XZC + Turret Axis + Positioning Axis) + (X1Z1 + Turret Axis + Turret Positioning Axis) Dual Channel: (XZAC + Axis-Controlled Turret + Positioning Axis) + XYZ Gantry
Common Configurations	1-Channel, 5-Axis	1-Channel, 6-Axis	2-Channel, 9-Axis
Maximum Expansion	I32/O32		I64/O64
Standard Accessories	Standard 5-meter Wiring, Standard 16-input/16-output I/O Module(I/O Module Part Number: ESC-IO16)		
Common Models	300TA1-H	300TA2-H(V)/300TA3-H(V)/300TA4-V	400TA2-H(V)/400TA3-H(V)/400TA4-V

|	400TB Series	600TC Series	800TC Series
Product Benefits			
Installation Method	Horizontal/Vertical Installation		
Product Positioning	Turn-Mill Compound Lathe with Y-Axis, e.g., Dual-Channel Spindle Docking for Workpiece Processing / Lathe with Gantry	600T is an upgraded version of the 400T series, supporting turn-mill compound machining and interpolation of the Y-axis	The 800T series is the high-end version, supporting Y-axis interpolation and dual turn-mill compound machining
Applicable Machine Models	Single Channel: (XYZABC + Turret Axis + Servo Tailstock + Positioning Axis) Dual Channel: (XZC + Turret Axis + Positioning Axis) + (X1Z1 + Turret Axis + Turret Positioning Axis) Dual Channel: (XZC + Turret Axis + Positioning Axis) + (X1Z1C1 + Turret Axis) Dual Channel: (XZAC + Axis-Controlled Turret + Positioning Axis) + XYZ Gantry	Single Channel:(XYZABC + Turret Axis + Servo Tailstock + Positioning Axis) Dual Channel:(XZC + Turret Axis + Positioning Axis) + (X1Z1C1 + Turret Axis + Positioning Axis) Dual Channel:(XZAC + Turret Axis + Positioning Axis) + (X1Z1A1C1 + Turret Axis) Dual Channel:(XZAC + Turret Axis + Positioning Axis) + (X1Y1Z1A1 Gantry)	Dual Channel:(XYZABC + Turret Axis + Positioning Axis) * 2 Triple Channel:(XYZABC + Turret Axis + Positioning Axis) * 2 + X3Y3Z3A3 (Dual Turn + Robot Arm)
Common Configurations	2-Channel, 9-Axis	2-Channel, 11-Axis	3-Channel, 20-Axis
Maximum Expansion	I64/O64	I128/O128	I256/O256
Standard Accessories	Standard 5-meter Wiring, Standard 16-input/16-output I/O Module(I/O Module Part Number: ESC-IO16)		
Common Models	400TB2-H(V)/400TB3-H(V)/400TB4-V	600TC2-H(V)/600TC3-H(V)/600TC4-V	800TC2-H(V)/800TC3-H(V)/800TC4-V

Special Features

01 High-speed Spindle Material Docking

High-speed spindle material docking. Using the principle of relative stillness, the spindle operates at a certain speed and phase synchronization is achieved. Once synchronized, the workpiece can be joined at the beginning and end, thereby improving processing efficiency and reducing accuracy errors caused by manual workpiece clamping.


02 Independent Channel Control of Robotic Arm

Robotic Arm Control Module, capable of independent control using a single channel, supports teach pendant programming for easier programming, more flexible process adjustments, and enhanced safety protection.
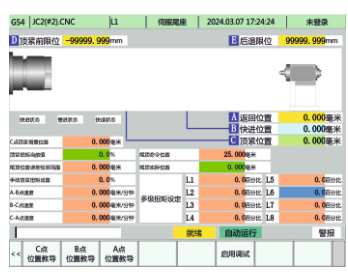
03 Servo Tailstock Function

In traditional methods, hydraulic or pneumatic systems are used to control the vertical movement of the tailstock along the guide rail, but the precision is not high. On the other hand, a servo tailstock allows for quick and precise adjustment to the desired position accuracy and torque accuracy as per the user's requirements.
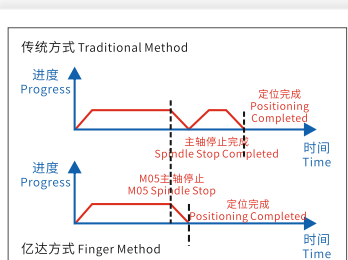
04 Dynamic Spindle Positioning

Traditional Approach: The spindle rotates at high speed, slows down, and then stops before performing spindle positioning.
Finger Approach: The spindle is directly positioned during the deceleration and stop process of high-speed rotation, resulting in higher efficiency.
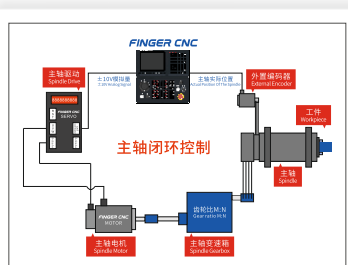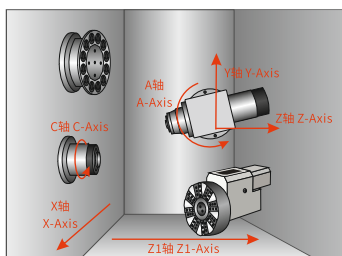

05 Full Closed-loop Control Of The Main Spindle

V-belt spindle closed-loop positioning:1.Accurate positioning with V-belt connection；2.Low noise and shock absorption with V-belt connection；3.Increased indexing efficiency without the need for mode switching；4.Positioning of the main spindle with variable gearbox connection, allowing for positioning at any gear ratio；5.High positioning accuracy, with higher resolution of the encoder resulting in higher precision.

06 | Coolant-Temperature Compensation Function

Temperature compensation function resolves the issue of dimensional variations in workpieces caused by thermal expansion and contraction of the machine tool axes. This function enables the system to automatically compensate for the changes in each axis, thereby improving machining accuracy and preventing the influence of temperature fluctuations on workpiece dimensions.

07 | Turning-Milling Compound - RTCP Function

The RTCP function provides three-dimensional tool length compensation, allowing customers to calculate the coordinates of the workpiece contour points in CAM software. The system then automatically calculates the tool tip position to ensure that the tool tip remains on the machining contour surface. This feature guarantees accurate and precise cutting along complex workpiece profiles.


08 | Safety Zone Function

This function is primarily used for collision protection on machine tools. Customers can set the collision protection zone based on the actual position of the machine tool. When there is axial movement, the system automatically detects the position of the safety zone and provides prompts.
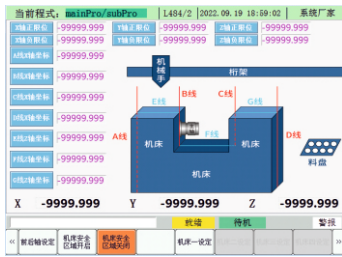

09 | High-speed G31 Probing

The high-speed G31 function is mainly used in applications such as automatic compensation and tool setting. With a frequency response speed of up to 20kHz, it provides an effective solution for high-speed probing tasks, significantly reducing issues such as low tool setting efficiency and lack of precision caused by slow response speeds.
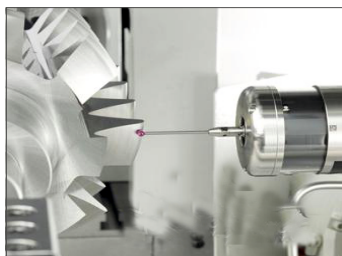

10 | Cylindrical Interpolation Function

The angular instruction is used to convert the rotational movement of the rotary axis into linear axis distances on the outer surface. This enables smooth interpolation with other axes, whether it's for linear or circular tool path generation. This feature greatly simplifies the programming for cylindrical surface machining operations.
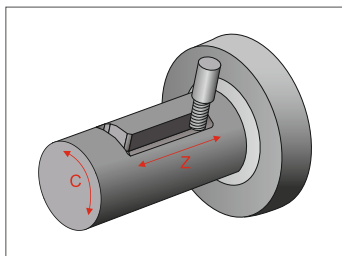

11 | Closed-Loop Control Function

By utilizing two encoders, the machine axes are controlled in a closed-loop manner, addressing positioning accuracy issues caused by thermal deformation of the machine and errors in the transmission mechanism. It supports closed-loop control of digital-type velocity control and analog-type velocity control via the bus.
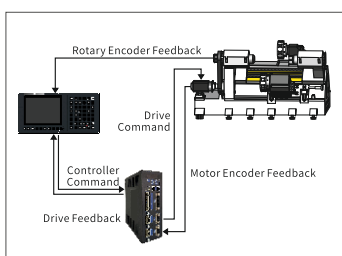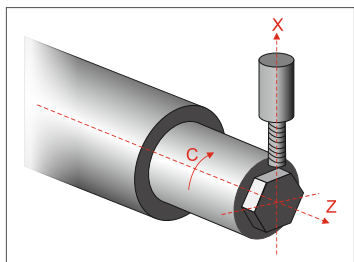
12 Polar Coordinate Interpolation

Contour control of linear axes and rotary axes interpolation is achieved by editing commands in the Cartesian coordinate system. For example: cam machining, outer diameter milling of workpieces, milling of irregular workpieces, etc.
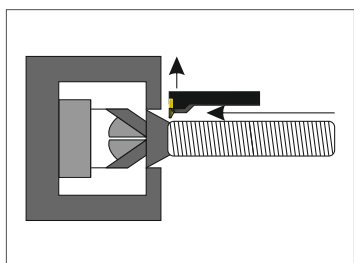

13 Rapid Thread Retraction

The tool can be retracted at the thread back-off position at the fastest speed, reducing the thread pitch deviation in the back-off portion of the threading process. (The acceleration can be adjusted appropriately based on the machine's actual load capacity.)
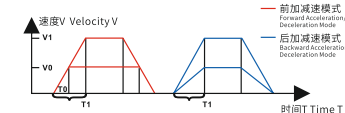
14 High-speed High-precision Control Mode

Front acceleration/deceleration mode: In the acceleration and deceleration phase, the acceleration is consistent, and the time is not fixed.
Back acceleration/deceleration mode: In the acceleration and deceleration phase, the time is consistent, and the acceleration is not fixed.
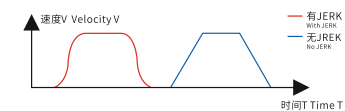
JERK Explanation:
Backward acceleration mode: In the acceleration and deceleration phase, the acceleration is instantly reached. When the acceleration is high, it creates a significant impact on the machine, resulting in uneven axial movement. (Blue color indicates no JERK functionality)
Forward acceleration mode: In the acceleration and deceleration phase, the acceleration changes linearly. When the acceleration is high, the JERK functionality ensures smooth axial movement and eliminates machine shaking. (Red color indicates JERK functionality)
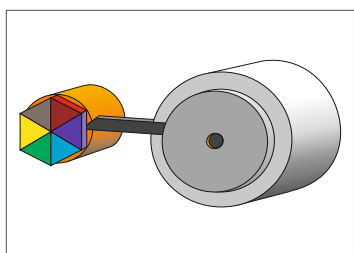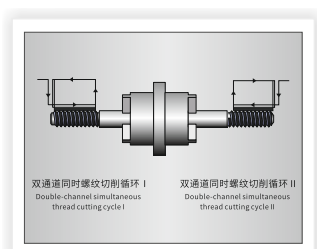

15 Polygon Machining

Multi-spindle enables rapid polygon turning, with automatic phase synchronization of the spindles. Closed-loop control ensures no loss of spindle phase, allowing for repeated polygon cutting even after program interruptions.


16 Remote Tool Compensation

Remote tool compensation allows for the modification of tool offsets based on real-time measurement data through a connection to the controller within a local area network (LAN). This enables more efficient equipment management and safer operations.

双通道同时螺纹切削循环 I
Double-channel simultaneous thread cutting cycle I

双通道同时螺纹切削循环 II
Double-channel simultaneous thread cutting cycle II

17　Dual-Channel Thread Cutting with Main Spindle Function

Dual-Channel Thread Cutting with Main Spindle Function allows both channels to share a common main spindle for thread cutting operations.
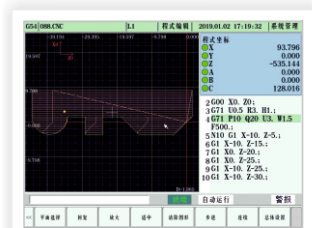

18　Concave and Convex Path Machining

The G71/G72 commands enable automatic rough turning and finish turning cycles for contour machining, greatly simplifying programming complexity and providing more convenient operation.

19　Tilt Axis Control

The tilt axis system function primarily addresses the execution of programs written in an imaginary coordinate system (Cartesian coordinate system) within a tilted machine coordinate system. The system automatically handles the conversion between coordinates and movements internally.
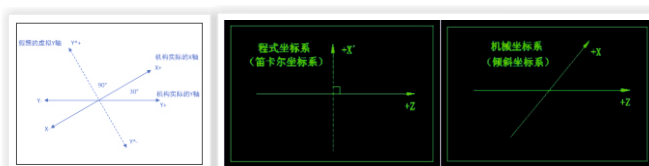
20　Spindle Oscillation Control (SSV Technology)

During lathe machining, SSV spindle oscillation control technology continuously varies the spindle speed to reduce turning vibrations. This effectively addresses cutting vibrations when machining long bar stock without tailstock support, ensuring surface finish quality and minimizing tool wear.
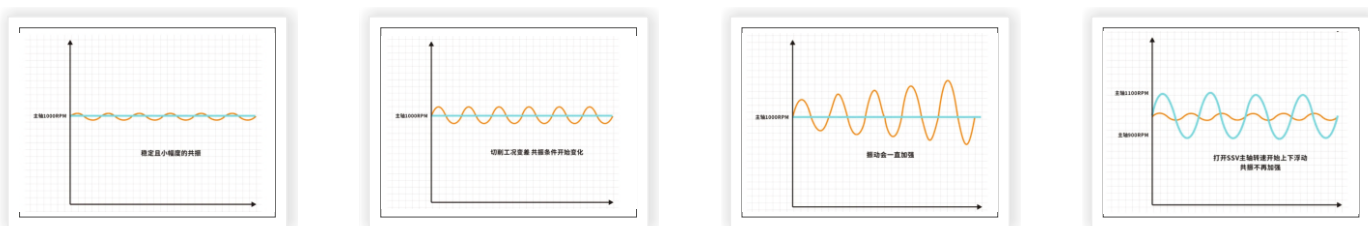
21　Full Synchronous Chip Breaking

It enables the feed axis to synchronously follow the main spindle for precise chip breaking (with equal lengths in each segment). This results in smoother chip breaking, reduces impact on the machine tool and cutting tool, and improves the tool life and machine tool life during chip breaking operations.

Schematic Diagram

Cutting Axis (mm)

0.03
0.02
0.01
0

180　　360

Spindle Phase (degrees)

Applicable Scenarios

Horizontal plane　　Vertical plane　　Conical Surface

Arc　　Drilling　　Thread Cutting
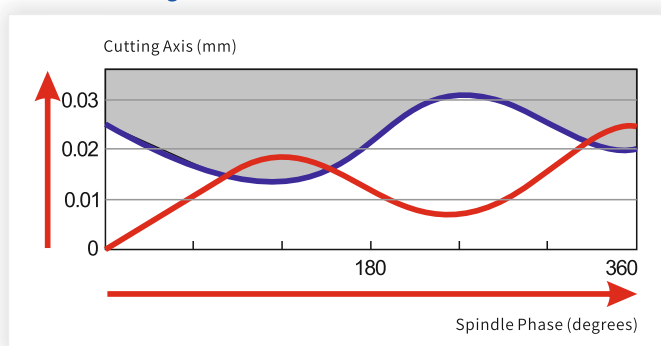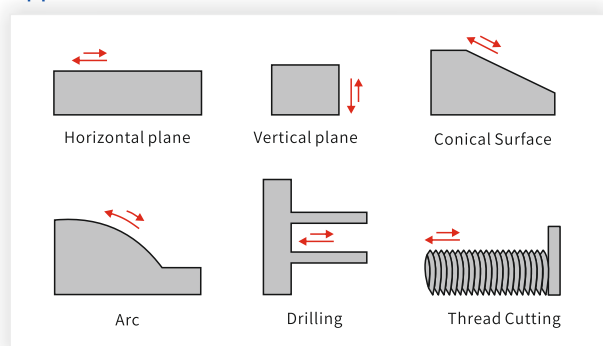
Appearance Display
Installation Dimensions

▶ 7-inch Lathe Machine Controller

Product Model: 300TA1-H (7-inch Horizontal Type)
Note: Defaulted as Customer's Option

Auxiliary Board

Window Size
385×240

Window Size 382×63
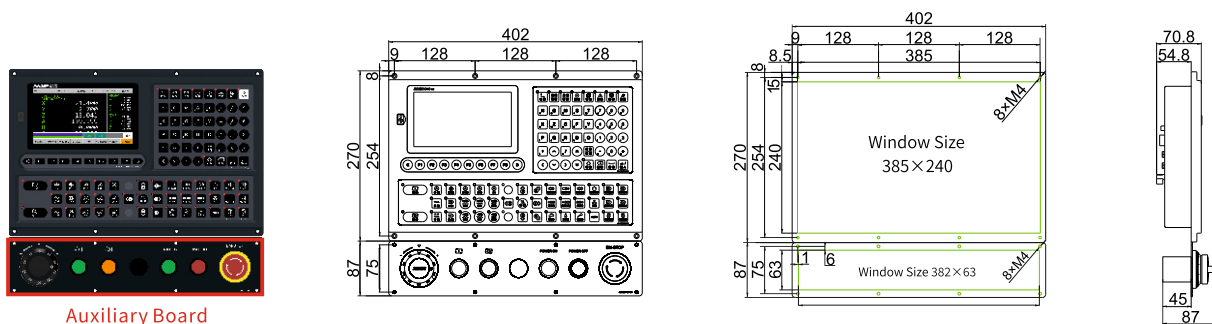
▶ 8-inch Lathe Machine Controller

Product Model: 300TA2-H/400TA2-H/400TB2-H/600TC2-H/800TC2-H (8-inch Horizontal Type)

Window Size
388×181

Window Size
380×180
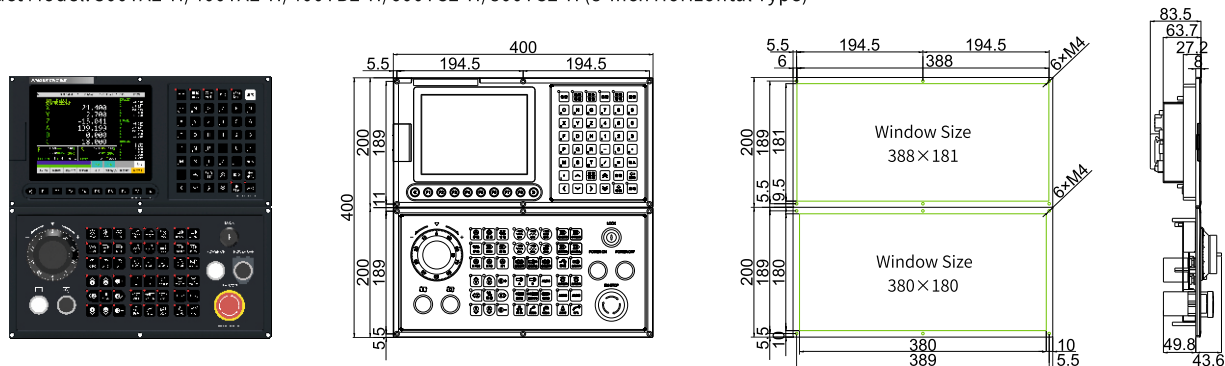
Product Model: 300TA2-V/400TA2-V/400TB2-V/600TC2-V/800TC2-V (8-inch Horizontal Type)

Window Size
230×230
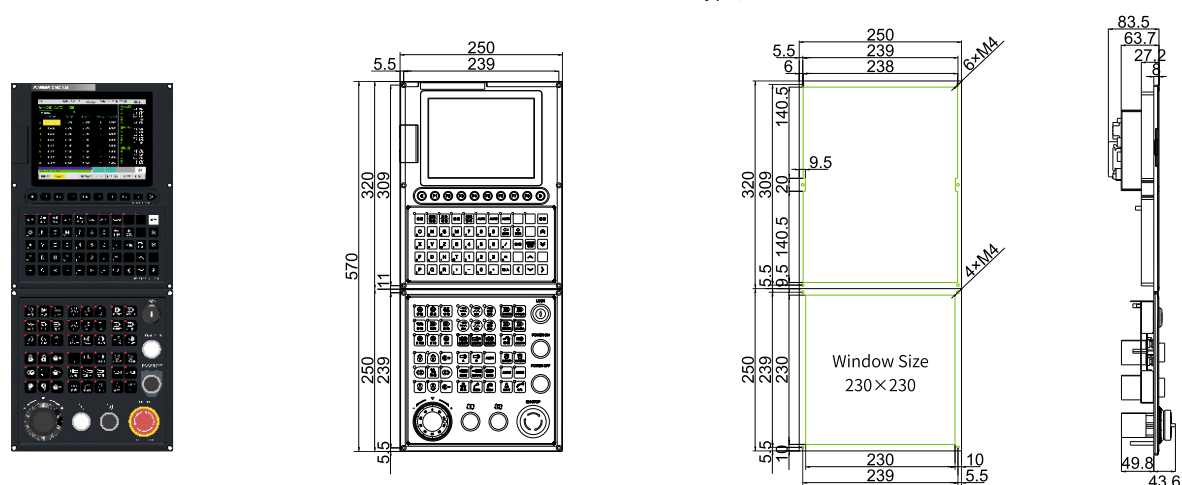
▶ 10.4-inch Lathe Machine Controller

Product Model: 300TA3-H/400TA3-H/400TB3-H/600TC3-H/800TC3-H (10.4-inch Horizontal Type)

Window Size
388×216

Window Size
380×215
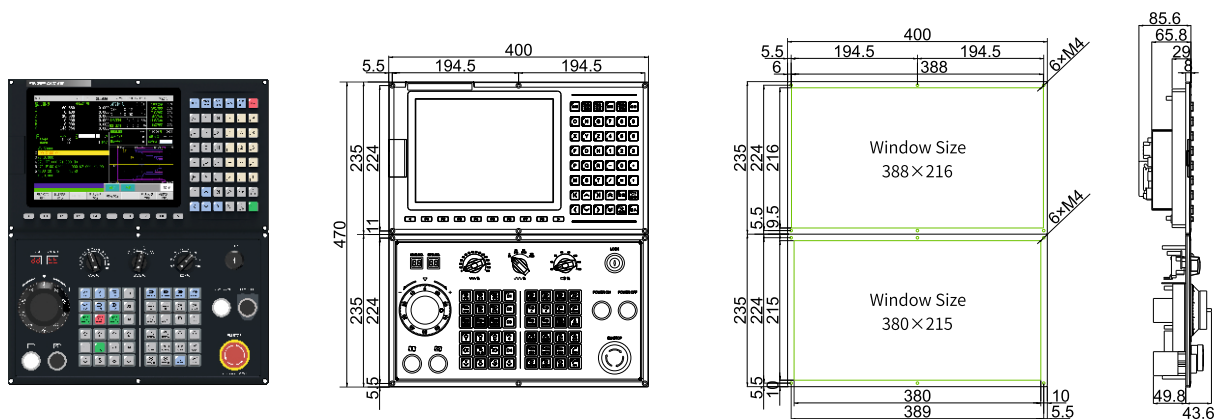
Product Model: 300TA3-V/400TA3-V/400TB3-V/600TC3-V/800TC3-V (10.4-inch Horizontal Type)

开窗尺寸
Window Size
270×260
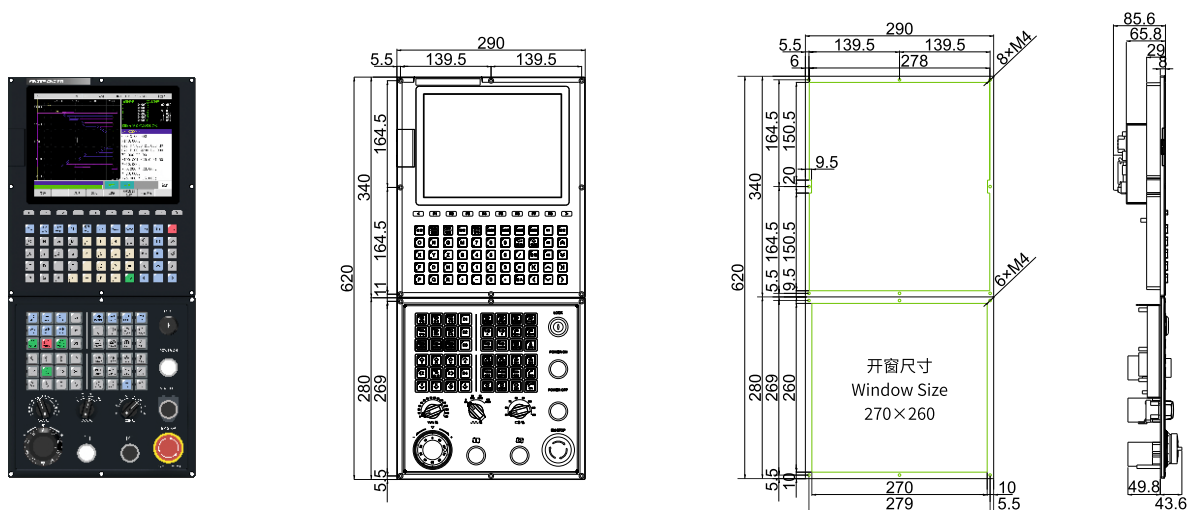
▶ 15-inch Lathe Machine Controller

Product Model: 300TA4-V/400TA4-V/400TB4-V/600TC4-V/800TC4-V (15-inch Horizontal Type)

Window Size
388×115

Window Size
380×215
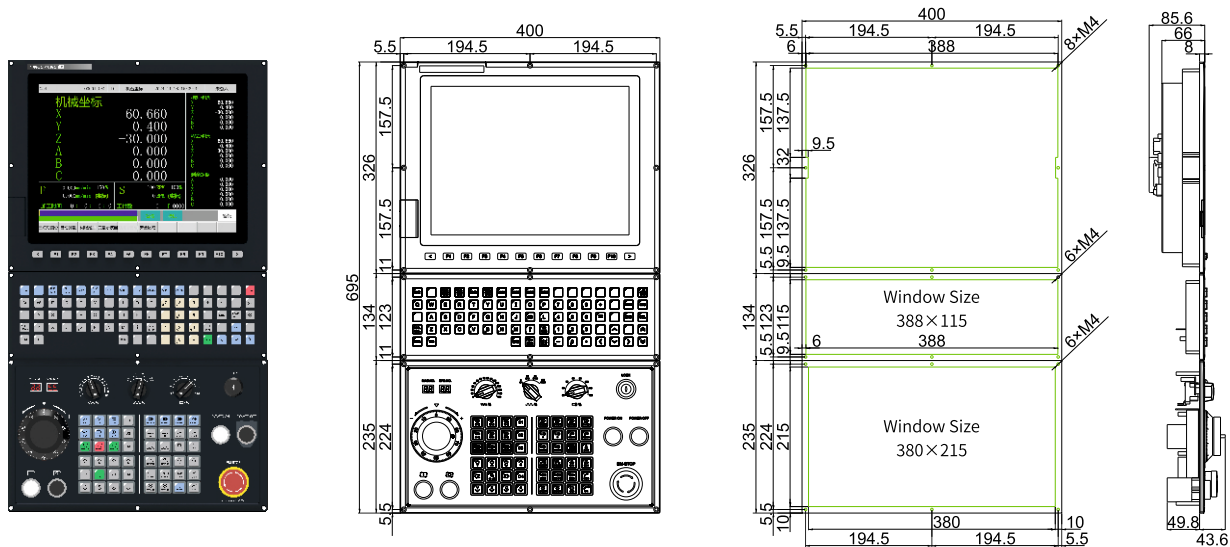
Product Naming Rules and Accessory Specifications

▶▶ Product Part Number

B① 0x② — T③ X3④ A⑤ H⑥ — T⑦ 200⑧ — F0⑨ A⑩ A1⑪ P0⑫

①	Product Series	B: B Series

②	Communication Method	00:NO 01:EtherCAT 02:Mechatrolink-III ··· 05:Mobile EtherCAT Controller

③	Touch Control Indication	N: No Touch Control T: Resistive Touch Screen C: Capacitive Touch Screen

④	System Screen Size	X0: No Screen X1: 7-inch Screen X2: 8-inch Screen X3: 10.1-inch Screen X4: 10.4-inch Screen X5: 15-incah aScreen X6: 15.6-inch Screen X7: 17-inch Screen X8: 19-inch Screen X9: 21.5-inch Screen

⑤	System Style	A: A Series Plastic Panel B: A Series Metal Enclosure C: A Series Aluminum Alloy Panel A1: B Series Plastic Panel B1: B Series Metal Enclosure C1: B Series Aluminum Alloy Panel

⑥	System Button Style	A2: B Series Plastic Panel (Lathe-Mill New Faceplate) B2: B Series Iron Shell (Lathe-Mill New Faceplate) C2: B Series Aluminum Alloy Panel (Lathe-Mill New Faceplate) N: No Buttons H: Horizontal V: Vertical C: Iron Enclosure

⑦	Industry Code	T:Lathe M: Milling W: Woodworking SP: Spring Machine ST:Compact Lathe

⑧	Industry Subcode	T2: 200 Lathe M2: 200 Milling Machine SP1: Spring Machine ST4: Compact 400 Lathe

⑨	General Axis Quantity	F0: No General-Purpose Axis (ECAT) F1: F2: Includes 2 General-Purpose Axes (MIII)

⑩	Number of Channels	A: 1-Channel B: 2-Channel C: 3-Channel D: 4-Channel E: 5-Channel F: 6-Channel

⑪	Number of Axes	G: 7-Channel H: 8-Channel L: 9-Channel J: 10-Channel K: 11-Channel Z: 26-Channel A1: 1-Axes A2: 2-Axes ··· B0: 10-Axes B1: 11-Axes C0: 20-Axes C1: 21-Axes M0: 120-Axes M1: 121-Axes ··· M8: 128-Axes ···

⑫	Auxiliary Panel Information	P0: Without Auxiliary Panel P1: With Auxiliary Panel

▶▶ Product Model

400 T A 1 - H

- [Product Specifications] H: Horizontal   V: Vertical
- [Screen Size] 1: 7-inch   2: 8-inch   3: 10.4-inch   4: 15-inch
- [Function Type] A: Standard   B: Enhanced   C: Special
- [Industry Type] T: Lathe   M: Milling Machine
- [Product Series] 300 Series   400 Series   600 Series   800 Series

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EtherCAT/16IN_16OUT/IO Module

▶ESC-IO16

※ (L)105mm*(W)122mm*(H)55mm

※ DC24V power supply input (5.08 PITCH)
※ Provides reverse power protection
※ 16 INPUT / 16 OUTPUT
※ Single-point maximum output of 2A
※ Removable European standard 5.08 PITCH terminal block
※ INPUT (8PIN) / OUTPUT (4PIN) foolproof design

EtherCAT/32IN_32OUT/IO Module
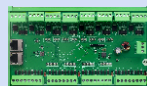
▶ESC-IO32

※ (L)210mm*(W)122mm*(H)55mm

※ DC24V power supply input (5.08 PITCH)
※ Provides reverse power protection
※ 32 INPUT / 32 OUTPUT
※ Single-point maximum output of 2A
※ Removable European standard 5.08 PITCH terminal block
※ INPUT (8PIN) / OUTPUT (4PIN) foolproof design

EtherCAT 24-point input / 16-point output (transistor) / 2-axis control IO Motion Module

▶ESC-I24O16A2

※ (L)136mm*(W)124mm*(H)41mm

※ DC24V power input (5.08 PITCH)
※ Provides reverse power protection
※ 24 INPUT / 16 OUTPUT
※ 2-axis general-purpose axis control
※ Supports DC clock synchronization / Supports Repeat
※ Single-point maximum output of 2A
※ Removable European-style 5.08 PITCH terminal block
※ INPUT (8PIN) / OUTPUT (4PIN) foolproof design

EtherCAT 6-axis control (Pulse/Analog) Motion Module

▶ESC-AXES6

※ (L)153mm*(W)121mm*(H)42mm

※ DC24V power input (5.08 PITCH)
※ Provides reverse power protection
※ 6-Axis control
※ Output points optically isolated, FET output, maximum continuousoutput of 1A per point (maximum instantaneous allowable 9A)
※ Single-point maximum output of 100mA
※ Removable European-style 5.08 PITCH terminal block

Series	300T Series	400T Series		600T Series	800T Series
Model	300TA	400TA	400TB	600TC	800TC
Commonly Ordered Models	300TA1-H　300TA2-H (V) 300TA3-H (V) 300TA4-V	400TA2-H(V) 400TA3-H(V) 400TA4-V	400TB2-H(V) 400TB3-H(V) 400TA4-V	600TC2-H(V) 600TC3-H(V) 600TC4-V	800TC2-H(V) 800TC3-H(V) 800TC4-V

▶ System Specifications

Installation Method	Horizontal	Horizontal/Vertical				
Standard Number of Axes (Maximum Expansion, Optional)	5 (5)	6 (6)	9 (9)		11 (11)	20 (20)
Standard Channel (Maximum Channel, Optional)	1 (1)		2 (2)		2 (2)	3 (3)
Maximum Number Of Linked Axes Per Single Channel	3 (XZC)	3 (XZC)	4 (XYZC)		4 (XYZC)	5 (XYZAC)
Standard Number of Spindles(Maximum Channel, Optional)	2 (2)	3 (3)			4 (4)	6 (9)
Display Screen Size	7 inch	8 inch/10.4 inch/15 inch				
Application Scenarios (Axis Distribution)	Single Channel: (XZAC + Turret Axis)	Single Channel: (XZAC + Turret Axis + Positioning Axis)	Single Channel:(XZABC + Axis-Controlled Turret + Positioning Axis) Dual Channel:(XZC + Turret Axis + Positioning Axis) + (X1Z1C1 + Turret Axis) Dual Channel:(XZAC + Axis-Controlled Turret + Positioning Axis) + XYZ Gantry	Single Channel:(XYZABC + Turret Axis + Servo Tailstock + Positioning Axis) Dual Channel:(XZC + Turret Axis + Positioning Axis) + (X1Z1C1 + Turret Axis) Dual Channel:(XZAC + Axis-Controlled Turret + Positioning Axis) + XYZ Gantry	Single Channel:(XYZABC + Turret Axis + Servo Tailstock + Positioning Axis) Dual Channel:(XZC + Turret Axis + Positioning Axis) + (X1Z1C1 + Turret Axis + Positioning Axis) Dual Channel:(XZAC + Turret Axis + Positioning Axis) + (X1Z1A1C1 + Turret Axis) Dual Channel:(XZAC + Turret Axis + Positioning Axis) + (X1Y1Z1A1 Gantry)	Dual Channel:(XYZABC + Turret Axis + Positioning Axis) * 2 Triple Channel:(XYZABC + Turret Axis + Positioning Axis) * 2 + X3Y3Z3A3 (Dual Turning + Robot Arm)
DA/AD	Optional Expansion					
Operating System	RT Linux					
Memory	2GB					
Program Capacity	8GB					
Number Of Pre-read Units	1000 Block/S	2000 Block/S			4000 Block/S	8000 Block/S
Maximum Number Of Tool Compensation Groups	40组 40 Groups	160组 160 Groups				
Transmission	USB/RS232/RS485/LAN/WIFI					
Bus Servo	MECHATROLINK-III (Optional), EtherCAT Bus					
Bus Spindle	●					
Standard I/O	Bus I/O (excluding pulse input): I16/O16					
Maximum Expandable I/O	I32/O32	I64/O64			I128/O128	I256/O256
Absolute Value Function	ModbusTcp、RS232、RS485			Modbus TCP, RS485, SSI Absolute Value (Optional)		

▶ Program function

Programming instructions (G-codes)	Complies with international standards				
Macro programming standards	Supports (Macro B, Macro C)				
Background programming	●	●	●	●	●
Conversational intelligence	●	●	●	●	●
Program transfer via USB drive	●	●	●	●	●
Automatic program error checking	●	●	●	●	●
Program lock function	Program Editing Limitation (Optional)				

▶ Synchronous Axis Control

Thread Turning with the Same Spindle Simultaneously	○	●	●	●	●
Dual-Channel Spindle Synchronization	○	○	●	●	●
Axis Coupling/Exchange/Mixing	○	○	●	●	●

Product Feature Configuration Parameter Specifications

Series	300T Series	400T Series		600T Series	800T Series
Model	300TA	400TA	400TB	600TC	800TC
Commonly Ordered Models	300TA1-H 300TA2-H(V) 300TA3-H(V) 300TA4-V	400TA2-H(V) 400TA3-H(V) 400TA4-V	400TB2-H(V) 400TB3-H(V) 400TA4-V	600TC2-H(V) 600TC3-H(V) 600TC4-V	800TC2-H(V) 800TC3-H(V) 800TC4-V

▶ Robotic arm

	300TA	400TA	400TB	600TC	800TC
Independent channel control of robotic arm	○	●	●	●	●

▶ Turret

Turret	Electric Turret, Hydraulic Turret, Servo Turret, Axis-Controlled Turret				

▶ High-speed High-precision

	300TA	400TA	400TB	600TC	800TC
Dynamic Positioning Of The Main Spindle (c-axis)	No need to stop switching, direct positioning execution (requires servo spindle)				
Rapid Retraction of Tool for Tapping	●	●	●	●	●
Continuous Mode Without Stopping Between Sections	●	●	●	●	●
Closed-loop Control Function	○	●	●	Speed Control Full Closed Loop (AB Phase Feedback, SSI Feedback - Optional)	

▶ Compensation function

	300TA	400TA	400TB	600TC	800TC
Taper compensation	●	●	●	●	●
Backlash compensation	●	●	●	●	●
Corner radius compensation	●	●	●	●	●
Bidirectional screw error compensation	●	●	●	●	●
Feedforward compensation	●	●	●	●	●
Thermal compensation for cold/hot machines	○	○	●	●	●

▶ Programmable Tailstock (Servo Tailstock)

	300TA	400TA	400TB	600TC	800TC
Programmable Tailstock (Servo Tailstock)	○	○	●	●	●

▶ Cutting Function

	300TA	400TA	400TB	600TC	800TC
Parabolic Interpolation	●	●	●	●	●
Ellipse Interpolation	●	●	●	●	●
Cylinder Interpolation	●	●	●	●	●
3d Circular Arc Interpolation	○	● Space Spherical Interpolation In Arbitrary Three-axis Cartesian Coordinate System			
Polygon Cutting (fly Cutting)	●	●	●	●	●
Polar Coordinate Interpolation	●	●	●	●	●
Thread Tapping	G84/G88	G84/G88 (● Inclined Thread Tapping)			
Thread Cutting	● Support For Thread Cycle Turning, Multi-start Threads, Helical Threads, Variable Pitch Threads, And Other Thread Cutting Operations.				
Chipping Breakage Turning	● Generation 2 (linear, Circular, Chip-breaking For Threading)				

▶ Common Axis

	300TA	400TA	400TB	600TC	800TC
Common Spindle	○	●	●	●	●

▶ Spindle SSV

	300TA	400TA	400TB	600TC	800TC
Spindle SSV Control	○	○	●	●	●

Series	300T Series		400T Series		600T Series	800T Series
Model	300TA		400TA	400TB	600TC	800TC
Commonly Ordered Models	300TA1-H	300TA2-H (V) 300TA3-H (V) 300TA4-V	400TA2-H(V) 400TA3-H(V) 400TA4-V	400TB2-H(V) 400TB3-H(V) 400TA4-V	600TC2-H(V) 600TC3-H(V) 600TC4-V	800TC2-H(V) 800TC3-H(V) 800TC4-V

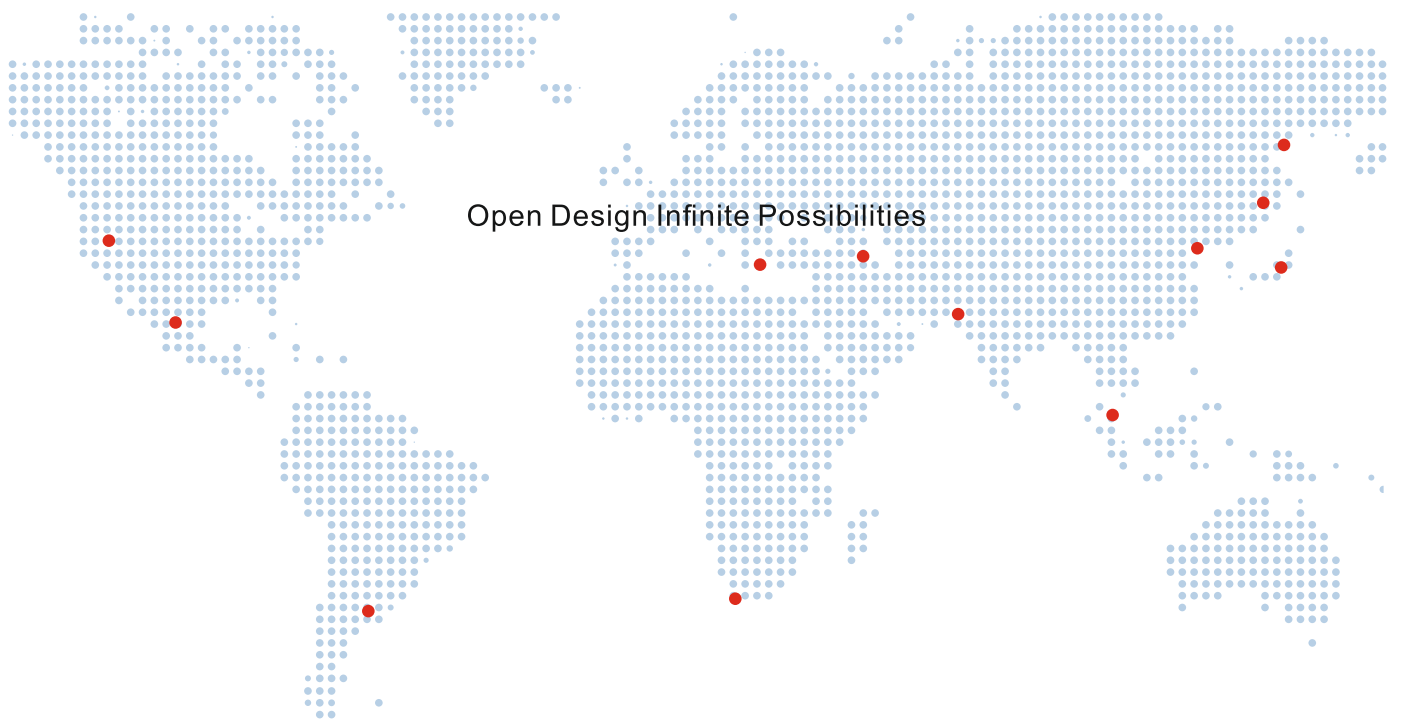▶ Auxiliary functions

	300TA1-H	300TA	400TA	400TB	600TC	800TC
Custom startup screen	○	●	●	●	●
Custom M-code	○	●	●	●	●
Custom G-code	○	●	●	●	●
Mixing bus axes and generic axes	○	●	●	●	●
IO redefinition function	○	●	●	●	●
Tilted axis machining	○	○	○	●	●
Tilted plane machining	○	○	○	●	●
DNC machining	○	●	●	●	●
Proportional scaling	○	●	●	●	●
Acceleration/Deceleration Type	Linear Type (Constant Acceleration), S-Type (Constant Jerk)					
Tool Life Management	Time Limit/Count Limit Management					
Protection Functions	Safety Door, Hard Limit, Soft Limit, Unclamped Chuck Detection, Tool Change Detection					
Program Prediction	● Program Prediction / Program Backtracking Function					
Handwheel Interrupt	●	●	●	●	●
Restart Function	Automatic Program Breakpoint Searching and Restart, Customized Restart					
Multi-function Handwheel	●	●	●	●	●
Graphical Simulation	Program Preview Before Execution, Dynamic Plotting During Program Execution					
Authority management	Parameter Access Management					
Calendar Lock	●	●	●	●	●
Axis Load Monitoring	●	●	●	●	●
Oscilloscope Monitoring	Real-time Monitoring of System Commands and Servo Feedback Waveforms					
Following Error Detection	●	●	●	●	●
Spindle Speed Reach Detection	●	●	●	●	●
Data Backup	Program Backup, Parameter Backup, Tool Compensation Backup					

▶ Five-Axis Simultaneous Control with RTCP

	300TA	400TA	400TB	600TC	800TC
RTCP	○	○	○	Optional	Optional

▶ Tool Kit

Industrial Internet of Things (IIoT)	Optional				
Vision Inspection	Optional				

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