

# CNC Controller catalogue V1.0



- AC servo      ■ Stepping drive motor      ■ Induction asynchronous servo
- Linear motor drive      ■ Industry-specific servo
- Control product integration customization
- VFD      ■ CNC Controller      ■ Gearbox

# Serving customers and adding value to customers

## Company Profile

Hangzhou Bergerda Automation Technology Co., Ltd. is located in a beautiful paradise on earth - Hangzhou, China. It is a high-tech enterprise that provides global customers with servo, stepping, frequency conversion, brushless motor drive control products, and industrial drive control solutions. Excellence in product development, efficient and high-quality production, enthusiastic and caring service. Always take the customer's needs as its responsibility.

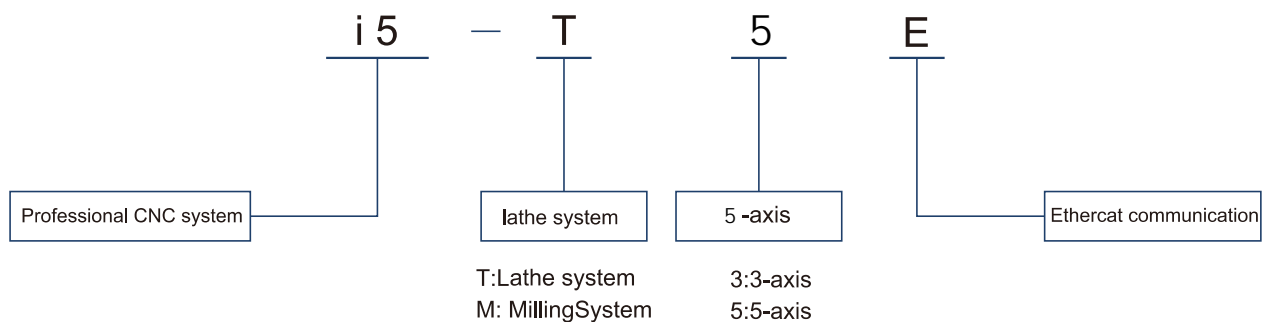
Bergerda's motor control products include AC servo drives and servo motors, stepping drives and stepping motors, inductive asynchronous servo drives and motors, Brushless motor and drive, and custom control solutions for all types of industries. Widely used in textile packaging, CNC machine tools, printing, embroidery, sculpture, advertising, laser, electronics and other automated machinery. At present, there are twelve types of stepping systems, including B D E F four series, nearly 30 kinds of specifications servo systems, NS digital series and LS closed loop series. S series induction asynchronous servo, Brushless motor and drive (B L D C), T-series CNC turret-dedicated servos and P-series plastic machinery-specific servos and so on which include control and control integrated industrial solutions. We have become a professional company with a complete product line in Chinese motion control industry. Perfect pre-sale, sales, after-sales service, from customer design machine selection, equipment debugging, post-maintenance, always with patience, enthusiasm, professional service to return customers.

The company fully implements the concept of "professional, quality, and service". With high-tech products, excellent quality, and high-quality services, customers can be assured of their ease of use, adding value to customers and realizing the long-term development of the company.

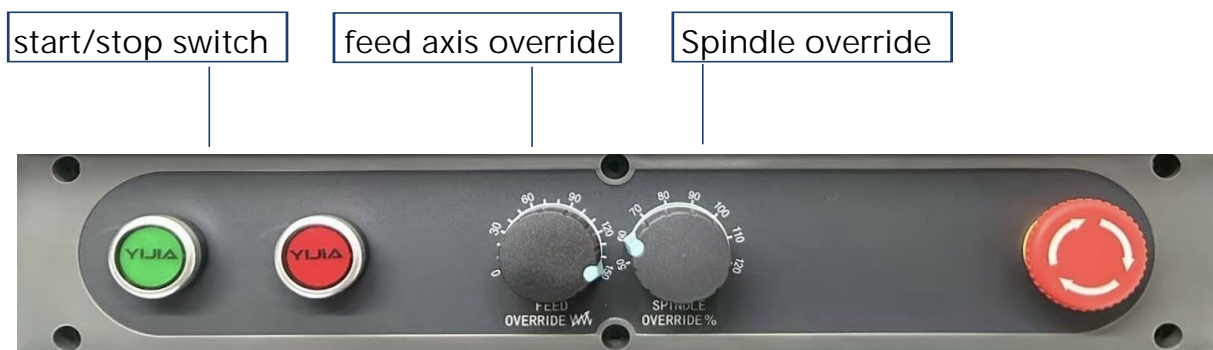
Based in the domestic market, Bergerda has established sales and service networks in Zhejiang, Jiangsu, Guangdong, Fujian, Shandong, Hunan and Guangxi. In foreign markets, products are exported to the United States, Brazil, Colombia, Russia and other countries and regions.



## Model Description



## Additional Panel



## i5T3 3-axis lathe CNC system



The system uses a new 32-bit high-performance CPU processor with a main frequency of 600MHz and a large-scale programmable device FPGA, 128M large running memory, 256M storage space, high-end hardware platform and advanced control algorithm to ensure the high efficiency of the system under um-level precision, and the editable PLC makes the logic control function more flexible and powerful. Support 23-bit absolute encoder servo motor , support power-off memory real-time mechanical position function, high precision, no need to return to zero.

### Product function:

- Controlled axes: 3 feed axes, 1 channel 0V~10V analog voltage
- Linked axes: 3 linear axes, 2 arc axes
- 8-inch widescreen LCD, resolution 800X600, 8 soft function keys
- Spindle magnification 50%~120%, 4 levels of real-time adjustment
- Fast magnification F0 25%50%100%, 4 levels of real-time adjustment
- PLC program online display, real-time monitoring, support PLC warning and PLC alarm
- Program preprocessing, can achieve smooth and seamless connection between program segments
- Maximum fast moving speed can reach 60m/min
- 430M program storage space, can store 400 programs
- Screw pitch compensation, maximize machining accuracy

### Applications

Automobile manufacturing, aerospace industry, mold manufacturing, precision machining, electronic product manufacturing, stone and wood processing, medical device manufacturing, small batch customization and prototyping, etc.

## System interface

PMON I    ESP    Z axis driver alarm. (BITPAR P9.1)    PROG:B

(REM DIST)	(ABSOLUTE)	CURRENT MODAL:
X 0.000	X 0.000	M05 M09 M33
Z 0.000	Z 0.000	M13 M41 M30
Y 0.000	Y 0.000	G00 G97 G98
		G40 G50 G21

PROGRAM    Ln:1

00038 :  
M3 S500 ;  
G0 X65 Z5 ;  
#1 =0 ;  
N10 #2 =25 \* SIN [ #1 ] #2 ;  
#3 =40 \* COS [ #1 ] ;  
#4 = #2 \*2 ;  
#5 = #3 -40 ;

F 0 ATC  
0 PRG  
MFD: 100% SPD: 100%

S 0 ATC  
0 PRG  
MFD: 100% Z: 0

T0000

Input:    AUTO    CUT TIME: 00:00:00

REL    ABS    ALL    MONI    MDI    FINISH CLR    DOWN MENU

Simple interface design,  
easy for customers to check system status

WEAR&OFFSET    ESP    X axis driver alarm. (BITPAR P9.0)    PROG:B

No.	X	Z	Y	R	T	(MACHINE)
00 EXT	0.000	0.000	0.000	0.000	0	X 0.000
						Z 0.000
01 OFT	0.000	0.000	0.000	0.000	0	Y 0.000
01 WEAR	0.000	0.000	0.000	0.000		(ABSOLUTE)
02 OFT	0.000	0.000	0.000	0.000	0	X 0.000
02 WEAR	0.000	0.000	0.000	0.000		Z 0.000
03 OFT	0.000	0.000	0.000	0.000	0	Y 0.000
03 WEAR	0.000	0.000	0.000	0.000		
04 OFT	0.000	0.000	0.000	0.000	0	
04 WEAR	0.000	0.000	0.000	0.000		

Input:    AUTO    CUT TIME: 00:00:00

POFFSET    Work Coord    MACRO VAR    SYSTEM VA    hit[H] he

Tool setting help,  
more convenient for customers

PROGRAM    ESP    PROG:B

00038 :  
M3 S500 ;  
G0 X65 Z5 ;  
#1 =0 ;  
N10 #2 =25 \* SIN [ #1 ] #2 ;  
#3 =40 \* COS [ #1 ] ;  
#4 = #2 \*2 ;  
#5 = #3 -40 ;  
G01 X#4 Z#5 F2000 ;  
#1 = #1 +0.1 ;  
IF [ #1 LE 90 ] G0 T010 ;  
X65 ;  
G0 X100 Z100 ;  
M30 ;  
%

(REM DIST)

X	0.000
Z	0.000
Y	0.000

(ABSOLUTE)

X	0.000
Z	0.000
Y	0.000

Ln:1

Input:    AUTO    CUT TIME: 00:00:00

New    Open...    Save    Save as...    USB FILE    Select    DOWN MENU

The program displays many lines,  
showing the program,coordinates and running status

Debug    ESP    PROG:B

NO.	Parameter meaning	DATA
001	Check that the emergency stop signal (0:YES 1:NO)	Yes
002	XALM is valid at (1:low 0:high) level	high
003	YALM is valid at (1:low 0:high) level	high
004	ZALM is valid at (1:low 0:high) level	high
005	SPDALM is valid at (1:low 0:high) level	high
006	Each axis overtravel valid/invalid	invalid
007	Check travel when power	Yes
008	External cycle start signal (0: Valid 1: Invalid)	Valid
009	External pause signal (0: Valid 1: Invalid)	Valid
010	Max. speed of spindle in gear 1 (rpm)	6000
011	Backlash comp. of X ax. (mm)	0.0000
012	Backlash comp. of Z ax. (mm)	0.0000

M. Coord.    X:0.000    Z:0.000    Y:0.000

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Input:    AUTO    CUT TIME: 00:00:00

Debug    Spindle    Servoaxis    Tool    Chuck    Zero    DOWN MENU

Arrange parameters by category,  
easy for operators to find parameters

## Technical Specifications

Technical Item	Specification
Control axis	Maximum number of controlled axes: 3 axes Maximum number of linked axes: 3 axes
Feed axis function	Metric input (G21): -9999.9999mm~9999.9999mm, minimum command unit: 0.0001mm Inch input (G20): -999.9999inch~999.9999inch, minimum command unit: 0.0001inch Electronic gear: command multiplication factor 1~65536, command division factor 1~65536 Fast moving speed: maximum 60m/min Fast rate: F0, 25%, 50%, 100% four-level real-time adjustment Feed rate: 0~150% sixteen-level real-time adjustment Handwheel feed: 0.001mm, 0.01mm, 0.1mm, 1mm four-speed Single step feed: 0.001mm, 0.01mm, 0.1mm, 1mm four-speed Interpolation mode: linear interpolation, circular interpolation
G code	G code: G00、G01、G02、G03、G04、G10、G17、G18、G19、G28、G30、G31、G32、G33、G34、G40、G41、G42、G50、G54、G55、G56、G57、G58、G59、G71、G72、G73、G74、G75、G76、G90、G92、G94、G96、G97、G98、G99、G185
C-axis function	Speed and position switching, spindle position control, any angle indexing
Thread function	Ordinary thread (following the spindle), rigid thread Single-start/multi-start metric and inch straight thread, taper thread and end thread, equal pitch thread and variable pitch thread Thread tail length, angle and speed characteristics can be set Thread pitch: 0.01mm~500mm or 0.06 teeth/inch~2540 teeth/inch
Spindle function	1 channel 0~10V analog voltage output Spindle encoder: encoder line number can be set (100p/r~5000p/r) Encoder and spindle transmission ratio: (1~255): (1~255) Spindle ratio: 50%~120%, a total of 8 levels of real-time adjustment
Tool function	Tool length compensation (32 groups); tool tip radius compensation (C type); tool wear compensation (32 groups); Tool setting method: fixed-point tool setting, trial cutting tool setting, reference point tool setting Tool deviation execution method: modify coordinate method, tool movement method Support 4-station tool holder, tool arrangement
PLC function	Two-level PLC program, processing speed is 1.5μs/step basic instruction; up to 4700 steps, 8ms for the first-level program cycle, online editing PLC function PLC program online display, real-time monitoring, support PLC warning and PLC alarm Support multiple PLC programs (up to 20), the currently running PLC program can be selected Number of instructions: 45 (including 10 basic instructions and 35 functional instructions)
M code	M00, M02, M20, M30, M03, MD4, M05, M08, M09, M10, M11, M12, M13, M14, M15, M32, M33, M41, M42, M43, M44, M80 Pn, M90 Pn, M98, M99; User-defined M command: M80 Pn~M90 Pn realizes special function control
Program editing	Program capacity: 435MB, can store up to 400 programs (including subroutines and macro programs) Editing function: program/program segment/word search, modification, deletion, copy, paste Program format: supports statement-based macro code programming, supports relative coordinates, absolute coordinates and mixed coordinates programming Program call: supports macro program/subroutine call, allows 4-fold subroutine nesting
Communication function	USB: copy U disk files to system operation, support PLC program, system software U disk upgrade
Reliability and safety functions	Emergency stop; data backup and recovery; hardware travel limit; software travel check
Simplified programming function	Fixed cycle, compound cycle, drilling cycle, automatic chamfering, support macro A, macro B programming

## i5T5 5-axis lathe CNC system



The system uses a new 32-bit high-performance CPU processor with a main frequency of 600MHz and an ultra-large-scale programmable device FPGA, 128M ultra-large running memory, 256M storage space, and a high-end hardware platform plus advanced control algorithms to ensure high efficiency of the system at um-level precision. The editable PLC makes the logic control function more flexible and powerful. It supports 23-bit absolute encoder servo motors and supports power-off memory real-time mechanical position function, with high precision and no need to return to zero.

### Product function:

- Controlled axes: 5 feed axes, 1 channel 0V~10V analog voltage, 1 pulse spindle
- Linked axes: 5 linear axes, 2 arc axes
- 8-inch widescreen LCD, resolution 800X600, 8 soft function keys
- G10 command online modification of tool compensation, parameters and other operations
- G165 linear chip breaking processing
- Macro programs A and B, allowing 4 nesting
- Program preprocessing, can achieve smooth and seamless connection between program segments
- Maximum rapid moving speed can reach 60m/min
- 430M program storage space, can store 400 programs
- Screw pitch compensation, maximize machining accuracy

### Applications

Automobile manufacturing, aerospace industry, mold manufacturing, precision machining, electronic product manufacturing, stone and wood processing, medical device manufacturing, small batch customization and prototyping, etc.

## Technical Specifications

Technical Item	Specification
Control axis	Maximum number of controlled axes: 5 axes Maximum number of linked axes: 5 axes
Feed axis function	Metric input (G21): -9999.9999mm~9999.9999mm, minimum command unit: 0.0001mm Inch input (G20): -999.9999inch~999.9999inch, minimum command unit: 0.0001inch Electronic gear: command multiplication factor 1~65536, command division factor 1~65536 Fast moving speed: maximum 60m/min Fast rate: F0, 25%, 50%, 100% four-level real-time adjustment Feed rate: 0~150% sixteen-level real-time adjustment Handwheel feed: 0.001mm, 0.01mm, 0.1mm, 1mm four-speed Single step feed: 0.001mm, 0.01mm, 0.1mm, 1mm four-speed Interpolation mode: linear interpolation, circular interpolation
G code	G code: G00、G01、G02、G03、G04、G10、G17、G18、G19、G28、G30、G31、G32、G33、G34、G40、G41、G42、G45、G46、G50、G54、G55、G56、G57、G58、G59、G71、G72、G73、G74、G75、G76、G83、G84、G87、G88、G90、G92、G94、G96、G97、G98、G99、G185
Car square function	Polygonal car square
Thread function	Ordinary thread (following the spindle), rigid thread Single-start/multi-start metric and inch straight thread, taper thread and end thread, equal pitch thread and variable pitch thread Thread tail length, angle and speed characteristics can be set Thread pitch: 0.01mm~500mm or 0.06 teeth/inch~2540 teeth/inch
Spindle function	1 channel 0~10V analog voltage output, 1 channel pulse spindle output, CS spindle function Spindle encoder: encoder line number can be set (100p/r~5000p/r) Encoder and spindle transmission ratio: (1~255): (1~255) Spindle ratio: 50%~120%, a total of 8 levels of real-time adjustment
Tool function	Tool length compensation (32 groups); tool tip radius compensation (C type); Tool setting method: fixed-point tool setting, trial cutting tool setting, reference point tool setting Tool deviation execution method: modify coordinate method, tool movement method Support hydraulic turret, servo turret, electric turret
PLC function	Two-level PLC program, processing speed is 1.5μs/step basic instruction; up to 4700 steps, 8ms for the first-level program cycle, online editing PLC function PLC program online display, real-time monitoring, support PLC warning and PLC alarm Support multiple PLC programs (up to 20), the currently running PLC program can be selected Number of instructions: 45 (including 10 basic instructions and 35 functional instructions)
M code	M00, M02, M20, M30, M03, M04, M05, M08, M09, M10, M11, M12, M13, M14, M15, M20, M21、M24, M25, M32, M33, M41, M42, M43, M44, M63, M64, M65, M80 Pn, M90 Pn, M98, M99; User-defined M command: M80 Pn~M90 Pn realizes special function control
Program editing	Program capacity: 256MB, can store up to 1000 programs (including subroutines and macro programs) Editing function: program/program segment/word search, modification, deletion, copy, paste Program format: supports statement-based macro code programming, supports relative coordinates, absolute coordinates and mixed coordinates programming Program call: supports macro program/subroutine call, allows 4-fold subroutine nesting
Communication function	USB: copy U disk files to system operation, support PLC program, system software U disk upgrade
Reliability and safety functions	Emergency stop; data backup and recovery; hardware travel limit; software travel check
Simplified programming function	Fixed cycle, compound cycle, drilling cycle, automatic chamfering, support macro A, macro B programming

## i5T5E EtherCAT lathe CNC system



The system uses a new 32-bit high-performance CPU processor with a main frequency of 600MHz and an ultra-large-scale programmable device FPGA, 128M ultra-large running memory, 256M storage space, and a high-end hardware platform plus advanced control algorithms to ensure high efficiency of the system at um-level precision. The editable PLC makes the logic control function more flexible and powerful. It supports 23-bit absolute encoder servo motors and supports power-off memory real-time mechanical position function, with high precision and no need to return to zero.

### Product function:

- Support EtherCAT control function
- Controlled axes: 5 feed axes, 1 channel 0V~10V analog voltage, 1 pulse spindle
- Linked axes: 5 linear axes, 2 arc axes
- 8-inch widescreen LCD, resolution 800X600, 8 soft function keys
- G10 command online modification of tool compensation, parameters and other operations
- G165 linear chip breaking processing
- Macro programs A and B, allowing 4 nesting
- Program preprocessing, can achieve smooth and seamless connection between program segments
- Maximum rapid moving speed can reach 60m/min
- 430M program storage space, can store 400 programs
- Screw pitch compensation, maximize machining accuracy

### Applications

Automobile manufacturing, aerospace industry, mold manufacturing, precision machining, electronic product manufacturing, stone and wood processing, medical device manufacturing, small batch customization and prototyping, etc.

## Technical Specifications

Technical Item	Specification
Control axis	Maximum number of controlled axes: 5 axes Maximum number of linked axes: 5 axes
Feed axis function	Metric input (G21): -9999.9999mm~9999.9999mm, minimum command unit: 0.0001mm Inch input (G20): -999.9999inch~999.9999inch, minimum command unit: 0.0001inch Electronic gear: command multiplication factor 1~65536, command division factor 1~65536 Fast moving speed: maximum 60m/min Fast rate: F0, 25%, 50%, 100% four-level real-time adjustment Feed rate: 0~150% sixteen-level real-time adjustment Handwheel feed: 0.001mm, 0.01mm, 0.1mm, 1mm four-speed Single step feed: 0.001mm, 0.01mm, 0.1mm, 1mm four-speed Interpolation mode: linear interpolation, circular interpolation
G code	G code: G00、G01、G02、G03、G04、G10、G17、G18、G19、G28、G30、G31、G32、G33、G34、G40、G41、G42、G45、G46、G50、G54、G55、G56、G57、G58、G59、G71、G72、G73、G74、G75、G76、G83、G84、G87、G88、G90、G92、G94、G96、G97、G98、G99、G185
Car square function	Polygonal car square
Thread function	Ordinary thread (following the spindle), rigid thread Single-start/multi-start metric and inch straight thread, taper thread and end thread, equal pitch thread and variable pitch thread Thread tail length, angle and speed characteristics can be set Thread pitch: 0.01mm~500mm or 0.06 teeth/inch~2540 teeth/inch
Spindle function	1 channel 0~10V analog voltage output, 1 channel pulse spindle output, CS spindle function Spindle encoder: encoder line number can be set (100p/r~5000p/r) Encoder and spindle transmission ratio: (1~255): (1~255) Spindle ratio: 50%~120%, a total of 8 levels of real-time adjustment
Tool function	Tool length compensation (32 groups); tool tip radius compensation (C type); Tool setting method: fixed-point tool setting, trial cutting tool setting, reference point tool setting Tool deviation execution method: modify coordinate method, tool movement method Support hydraulic turret, servo turret, electric turret
PLC function	Two-level PLC program, processing speed is 1.5μs/step basic instruction; up to 4700 steps, 8ms for the first-level program cycle, online editing PLC function PLC program online display, real-time monitoring, support PLC warning and PLC alarm Support multiple PLC programs (up to 20), the currently running PLC program can be selected Number of instructions: 45 (including 10 basic instructions and 35 functional instructions)
M code	M00, M02, M20, M30, M03, M04, M05, M08, M09, M10, M11, M12, M13, M14, M15, M20, M21、M24, M25, M32, M33, M41, M42, M43, M44, M63, M64, M65, M80 Pn, M90 Pn, M98, M99; User-defined M command: M80 Pn~M90 Pn realizes special function control
Program editing	Program capacity: 256MB, can store up to 1000 programs (including subroutines and macro programs) Editing function: program/program segment/word search, modification, deletion, copy, paste Program format: supports statement-based macro code programming, supports relative coordinates, absolute coordinates and mixed coordinates programming Program call: supports macro program/subroutine call, allows 4-fold subroutine nesting
Communication function	USB: copy U disk files to system operation, support PLC program, system software U disk upgrade
Reliability and safety functions	Emergency stop; data backup and recovery; hardware travel limit; software travel check
Simplified programming function	Fixed cycle, compound cycle, drilling cycle, automatic chamfering, support macro A, macro B programming

## i5M5 5-axis Milling CNC system



This system uses a new 32-bit high-performance CPU processor with a main frequency of 600MHz and a large-scale programmable device FPGA, 256M large running memory, 512M storage space, high-end hardware platform and advanced control algorithm to ensure the high efficiency of the system under um-level precision, and the editable PLC makes the logic control function more flexible and powerful. Support 23-bit absolute encoder servo motor, support power-off memory real-time mechanical position function, high precision, no need to return to zero.

### Product function:

- Controlled axes: 5 feed axes, 1 channel 0V~10V analog voltage, 1 pulse spindle
- Linked axes: 5 linear axes, 3 arc axes
- Support any tool magazine function,
- Open PLC, support secondary development
- G10 command online modification of tool compensation, parameters and other operations
- Support fixed cycle, drilling cycle, rigid tapping
- Program preprocessing, can achieve smooth and seamless connection between program segments
- Maximum fast moving speed can reach 60m/min, maximum cutting speed can reach 30m/min
- 430M program storage space, can store 400 programs, one program maximum 10M

### Applications

Automobile manufacturing, aerospace industry, mold manufacturing, precision machining, electronic product manufacturing, stone and wood processing, medical device manufacturing, small batch customization and prototyping, etc.

## Technical Specifications

Technical Item	Specification
Control axis	Maximum number of controlled axes: 5 axes Maximum number of linked axes: 5 axes
Feed axis function	Metric input (G21): -9999.9999mm~9999.9999mm, minimum command unit: 0.0001mm Inch input (G20): -999.9999inch~999.9999inch, minimum command unit: 0.0001inch Electronic gear: command multiplication factor 1~65536, command division factor 1~65536 Fast moving speed: maximum 60m/min Fast rate: F0, 25%, 50%, 100% four-level real-time adjustment Feed rate: 0~150% sixteen-level real-time adjustment Handwheel feed: 0.001mm, 0.01mm, 0.1mm, 1mm four-speed Single step feed: 0.001mm, 0.01mm, 0.1mm, 1mm four-speed Interpolation mode: linear interpolation, circular interpolation
G code	G code: G00, G01, G02, G03, G04, G10, G15, G16, G17, G18, G19, G20, G21, G22, G23, G24, G25, G26, G27, G28, G29, G30, G31, G32, G33, G34, G35, G36, G37, G38, G40, G41, G42, G50, G54, G55, G56, G57, G58, G59, G73, G74, G80, G81, G82, G83, G85, G87, G90, G92, G94, G95, G96, G97, G98, G99,
Tapping function	Normal tapping (following the spindle), rigid tapping
Spindle function	1 channel 0~10V analog voltage output Spindle encoder: encoder line number can be set (100p/r~5000p/r) Encoder and spindle transmission ratio: (1~255): (1~255) Spindle ratio: 50%~120%, a total of 8 levels of real-time adjustment
Tool function	Tool length compensation (32 groups); tool wear compensation (32 groups); tool tip radius compensation (C type); G54-G59 coordinate system
PLC function	Two-level PLC program, processing speed is 1.5μs/step basic instruction; up to 4700 steps, 8ms for the first-level program cycle, online editing PLC function PLC program online display, real-time monitoring, support PLC warning and PLC alarm Support multiple PLC programs (up to 20), the currently running PLC program can be selected Number of instructions: 45 (including 10 basic instructions and 35 functional instructions)
Simplified programming function	Supports row tool magazine, bamboo tool magazine, disc robot tool magazine, servo bamboo tool magazine, umbrella tool magazine, chain tool magazine
M code	M00, M02, M20, M30, M03, M04, M05, M06, M07, M08, M09, M10, M11, M12, M13, M18, M19, M28, M32, M33, M41, M42, M43, M44, M63, M64, M65, M80 Pn, M90 Pn, M98, M99; User-defined M command: M80 Pn~M90 Pn realizes special function control
Program editing	Program capacity: 435MB, can store up to 400 programs (including subroutines and macro programs) Editing function: program/program segment/word search, modification, deletion, copy, paste Program format: supports statement-based macro code programming, supports relative coordinates, absolute coordinates and mixed coordinates programming Program call: supports macro program/subroutine call, allows 4-fold subroutine nesting
DNC online processing	Supports online processing with USB flash drive, supports programs less than 10M
Communication function	USB: copy U disk files to system operation, support PLC program, system software U disk upgrade
Reliability and safety functions	Emergency stop; data backup and recovery; hardware travel limit; software travel check
Simplified programming function	Fixed cycle, compound cycle, drilling cycle, rigid tapping, automatic chamfering, statement-type Macro Programming
Practical operation	Handwheel test cutting, graphic simulation, automatic tool setting, three-point tool setting

## i5M5E EtherCAT Milling CNC system



This system uses a new 32-bit high-performance CPU processor with a main frequency of 600MHz and a large-scale programmable device FPGA, 256M large running memory, 512M storage space, high-end hardware platform and advanced control algorithm to ensure the high efficiency of the system under um-level precision, and the editable PLC makes the logic control function more flexible and powerful. Support 23-bit absolute encoder servo motor, support power-off memory real-time mechanical position function, high precision, no need to return to zero.

## Product function:

- Support EtherCAT control function
- Controlled axes: 5 feed axes, 1 channel 0V~10V analog voltage, 1 pulse spindle
- Linked axes: 5 linear axes, 3 arc axes
- Support any tool magazine function,
- Open PLC, support secondary development
- G10 command online modification of tool compensation, parameters and other operations
- Support fixed cycle, drilling cycle, rigid tapping
- Program preprocessing, can achieve smooth and seamless connection between program segments
- Maximum fast moving speed can reach 60m/min, maximum cutting speed can reach 30m/min
- 430M program storage space, can store 400 programs, one program maximum 10M

## Applications

Automobile manufacturing, aerospace industry, mold manufacturing, precision machining, electronic product manufacturing, stone and wood processing, medical device manufacturing, small batch customization and prototyping, etc.

## Technical Specifications

Technical Item	Specification
Control axis	Maximum number of controlled axes: 5 axes Maximum number of linked axes: 5 axes
Feed axis function	Metric input (G21): -9999.9999mm~9999.9999mm, minimum command unit: 0.0001mm Inch input (G20): -999.9999inch~999.9999inch, minimum command unit: 0.0001inch Electronic gear: command multiplication factor 1~65536, command division factor 1~65536 Fast moving speed: maximum 60m/min Fast rate: F0, 25%, 50%, 100% four-level real-time adjustment Feed rate: 0~150% sixteen-level real-time adjustment Handwheel feed: 0.001mm, 0.01mm, 0.1mm, 1mm four-speed Single step feed: 0.001mm, 0.01mm, 0.1mm, 1mm four-speed Interpolation mode: linear interpolation, circular interpolation
G code	G code: G00, G01, G02, G03, G04, G10, G15, G16, G17, G18, G19, G20, G21, G22, G23, G24, G25, G26, G27, G28, G29, G30, G31, G32, G33, G34, G35, G36, G37, G38, G40, G41, G42, G50, G54, G55, G56, G57, G58, G59, G73, G74, G80, G81, G82, G83, G85, G87, G90, G92, G94, G95, G96, G97, G98, G99,
Tapping function	Normal tapping (following the spindle), rigid tapping
Spindle function	1 channel 0~10V analog voltage output Spindle encoder: encoder line number can be set (100p/r~5000p/r) Encoder and spindle transmission ratio: (1~255): (1~255) Spindle ratio: 50%~120%, a total of 8 levels of real-time adjustment
Tool function	Tool length compensation (32 groups); tool wear compensation (32 groups); tool tip radius compensation (C type); G54-G59 coordinate system
PLC function	Two-level PLC program, processing speed is 1.5μs/step basic instruction; up to 4700 steps, 8ms for the first-level program cycle, online editing PLC function PLC program online display, real-time monitoring, support PLC warning and PLC alarm Support multiple PLC programs (up to 20), the currently running PLC program can be selected Number of instructions: 45 (including 10 basic instructions and 35 functional instructions)
Simplified programming function	Supports row tool magazine, bamboo tool magazine, disc robot tool magazine, servo bamboo tool magazine, umbrella tool magazine, chain tool magazine
M code	M00, M02, M20, M30, M03, M04, M05, M06, M07, M08, M09, M10, M11, M12, M13, M18, M19, M28, M32, M33, M41, M42, M43, M44, M63, M64, M65, M80 Pn, M90 Pn, M98, M99; User-defined M command: M80 Pn~M90 Pn realizes special function control
Program editing	Program capacity: 435MB, can store up to 400 programs (including subroutines and macro programs) Editing function: program/program segment/word search, modification, deletion, copy, paste Program format: supports statement-based macro code programming, supports relative coordinates, absolute coordinates and mixed coordinates programming Program call: supports macro program/subroutine call, allows 4-fold subroutine nesting
DNC online processing	Supports online processing with USB flash drive, supports programs less than 10M
Communication function	USB: copy U disk files to system operation, support PLC program, system software U disk upgrade
Reliability and safety functions	Emergency stop; data backup and recovery; hardware travel limit; software travel check
Simplified programming function	Fixed cycle, compound cycle, drilling cycle, rigid tapping, automatic chamfering, statement-type Macro Programming
Practical operation	Handwheel test cutting, graphic simulation, automatic tool setting, three-point tool setting

# Application



Lathe CNC system



Milling CNC system



COMMITTED TO MACHINE INTELLIGENCE, FOCUS MOTOR CONTROL

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