

988T TURNING CENTER CNC SYSTEM

Brief Introduction

988T, a new CNC product (esp. for slant bed CNC turning center), adopts micro processor of 400MHz, controls five feeding axes (including Cs axis), two analog spindles, and can achieve real-time communication between GSKCAN serial bus and servo unit, the adapted servo motor adopts absolute encoder with high resolution, realizes 0.1 μ m position precision, and satisfies the requirements of combined processing of turning and milling in high precision. Equipped with internet interface, GSK988T supports remote monitor and file transmission, meets the requirements of internet education and workshop management. GSK988T is the best choice for slant bed CNC turning center.



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Characteristics

- Five feeding axes (including Cs axis), any three axes linkage, two analog spindles, support combined processing of turning and milling.
- Command unit: 1 μ m or 0.1 μ m can be selected, max. rapid speed is 60m/min; when it is 0.1 μ m, and the max. rapid traverse speed is 24m/min.
- Adapted with GSK-CAN servo unit, it can realize servo parameter setting and servo unit real-time monitor.
- Built-in many PLC programs, PLC ladder diagram is edited on-line, real-time monitor.
- Background edit part program .
- Supports internet interface, support file transmission and remote monitor .
- With USB interface, it supports file operation, system configuration and software upgrade in flash disk.
- 8.4 " true color LCD, it supports 2D traverse path graph.

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Technical Specification



◆ Control axes

- Maximum axes: 5 axes (including Cs axis)
- Maximum linkage axes: 3 axes
- Number of PLC control axes: 5 axes

◆ Feeding axis function

- Min. command unit: 0.001 mm or 0.0001 mm is selected.
- Position command range: 99999999 min. command unit
- Rapid traverse speed unit: when the command unit is 0.001 mm, the maximum speed is 60m/min; When the precision is 0.0001 mm, the maximum speed is 24m/min.
- Rapid override: total 4 levels: F0, 25%, 50% and 100%, real-time adjusting
- Feeding override: total 16 levels: 0~150%, real-time adjusting
- Interpolation mode: linear, arc, spiral and polar coordinate interpolation and rigid tapping

◆ Thread function

- Common thread (following the spindle)/rigid thread
- Single-headed/multiple thread of straight, taper and terminal surface in metric system/inch system, equal and variable pitch thread
- Thread retraction length, angle and speed characteristics can be set
- Thread pitch: 0.01mm~500mm or 0.01inch~9.99inch

◆ Acceleration and deceleration function

- Cutting feeding: Linear type or index type is selectable.
- Rapid traverse: Linear type
- Thread cutting: Linear type or index type is selectable.
- The starting speed, finishing speed and time of acceleration and deceleration are set by the parameter.

◆ Spindle function

- Analog voltage 0V~10V output in two channels, spindle encoder feedback in two channels and two-spindle control
- Spindle speed: It is set by S code or PLC signal, the speed range is 0rpm~20,000rpm
- Spindle override: Total 8 levels: 50%~120%, real-time adjusting
- Spindle constant surface speed control
- Rigid tapping

◆ Tool function

- Tool length compensation: 99 sets
- Tool wearing compensation: 99 sets of data
- Tool nose radius compensation (C type)
- Tool life management
- Methods of setting tools: fixed position, trial cutting, reference point return.
- Tool offset mode: rewriting coordinate mode, tool traverse mode

◆ Precision compensation

- Backlash compensation: range (-9999~+9999) × detection unit
- Pitch error compensation in memory type: 1024 compensation points in total, the number of points of each axis is determined by the parameter, and the compensation range of each point (-700~+700) × detection

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◆ PLC function

- 13 types of basic commands, 30 types of function commands
- PLC ladder diagram edit on-line, real-time monitor
- PLC program in two levels, maximum 5,000 steps, the refresh cycle of the 1st level program: 8ms.
- Support PLC warning and PLC alarm
- Support many PLC programs (maximum 16), the current running PLC program can be selected by parameter

◆ I/O unit

- Basic I/O: Input in 40 points/output in 32 points
- Operational panel I/O: input in 96 points/output in 96 points

◆ Human machine interface

- Display in Chinese and English, etc.
- Display in 2D tool path graph
- Servo state monitor
- Servo parameter configuration on-line
- Many system configurations can be selected
- Real-time clock
- Help on-line
- 8.4" colored LCD

◆ Operation management

- Operation mode: Auto, Manual, Edit, MDI, DNC, MPG and reference point return
- Multiple levels password management
- Alarm record
- Multi-turn off management

◆ Editing program

- Program memory capacity: 36MB, 10,000 programs (including subprograms, macro programs)
- Editing function: Edit in full screen, support the background edit of part program
- Editing function: Program/block/character research, rewriting, deleting, block copy/block deleting
- Program format: ISO codes, it supports the commands without space, hybrid programming of relative coordinate and absolute coordinate.
- Macro command: Support macro command programming in sentence type
- Calling program: Support the macro program calling with parameter, subprogram nesting of 12 layers
- Grammar check: Check grammar after editing the programs. (without running program)

◆ Communication function

- RS232: Transmit the files of part program and parameter, etc, DNC processing, support PLC program and software serial port upgrade.
- USB: File operation, directly process files and support PLC programs and software upgrade.
- LAN: Remote monitor, internet DNC processing, file transmissions, support part program, system parameter, servo parameter of PLC program

◆ Safety function

- Emergency stop
- Hardware travel limit
- Travel limit in many memory types
- Data backup and recovering

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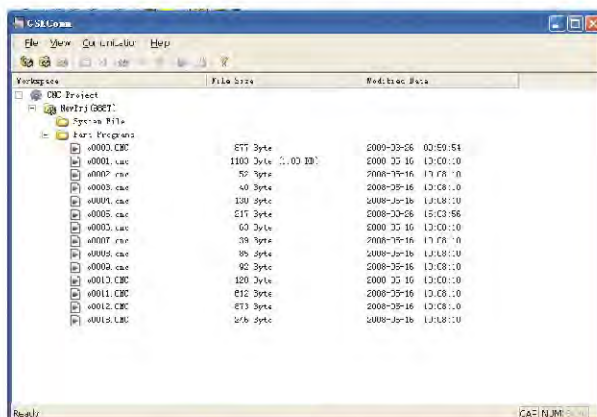
List of G codes

CODE	FUNCTION
G00	Rapid traverse
G01	Linear interpolation
G02	CW arc interpolation
G03	CCW arc interpolation
G04	Dwell, exact stop
G12.1	Polar coordinates interpolation
G13.1	Cancel polar coordinates interpolation
G17	Select XpYp plane
G18	Select ZpXp plane
G19	Select YpZp plane
G20	Input system inch
G21	Input system metric
G22	Check memory travel
G23	Cancel memory travel check
G28	Reference point return
G30	Reference points of 2nd, 3rd and 4th return
G31	Jumping function
G32	Cut in equal thread pitch
G34	Cut in variable thread pitch
G40	Cancel tool nose radius compensation
G41	Tool nose radius left compensation
G42	Tool nose radius right compensation
G50	Set work piece coordinate system
G52	Set part coordinate system
G53	Set machine coordinate system
G54	Select work piece coordinate system 1

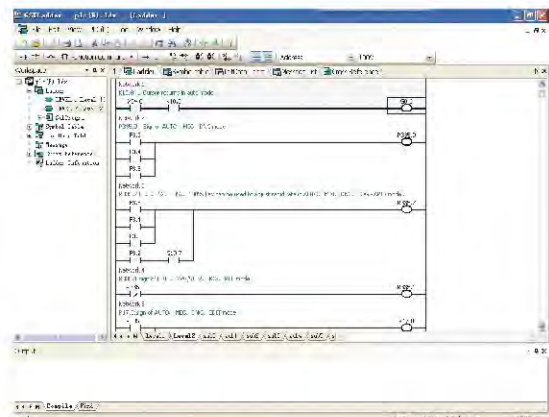
CODE	FUNCTION
G55	Select work piece coordinate system 2
G56	Select work piece coordinate system 3
G57	Select work piece coordinate system 4
G58	Select work piece coordinate system 5
G59	Select work piece coordinate system 6
G65	Macro program non-mode calling
G66	Macro program mode calling
G67	Cancel macro program mode calling
G70	Finishing cycle
G71	Axial roughing cycle
G72	Radial roughing cycle
G73	Close cutting cycle
G74	Axial grooving cycle
G75	Radial grooving cycle
G76	Multiple thread cutting cycle
G80	Cancel tapping cycle
G84	Tapping cycle on face
G88	Tapping cycle on side
G90	Axial cutting cycle
G92	Thread cutting cycle
G94	Radial cutting cycle
G96	Constant surface speed control
G97	Cancel constant surface speed control
G98	Feeding/min
G99	Feeding/rev

Communication Software GSKComm and PLC Ladder Diagram Editing Software GSKLadder

988T adopts GSKComm and GSKLadder. They both run under WIN98/2000/XP. Through GSKComm, the programs files, parameter, tool compensation, and pitch error compensation, etc., can be edited on PC and transmitted between PC and CNC by users, and the DNC real-time processing can be realized as well. Through GSKLadder, the ladder diagram can be edited on PC by machine manufacturers. Also, the PLC programs can be uploaded and downloaded between PC and CNC.



Communication software GSKComm



PLC Ladder diagram editing software GSKLadder

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Remote Monitor Software: GSKMonitor



GSKMonitor runs under WIN98/2000/XP, and supports remote assistance and monitor and five transmission through GSK988T LAN interface.



Servo State Diagnosis and Monitor



Through GSK-CAN, GSK988T realizes diagnosis and monitor of servo state (command position, feedback position, motor speed and motor current, etc).



Servo state diagnosis interface



Servo parameter configuration interface

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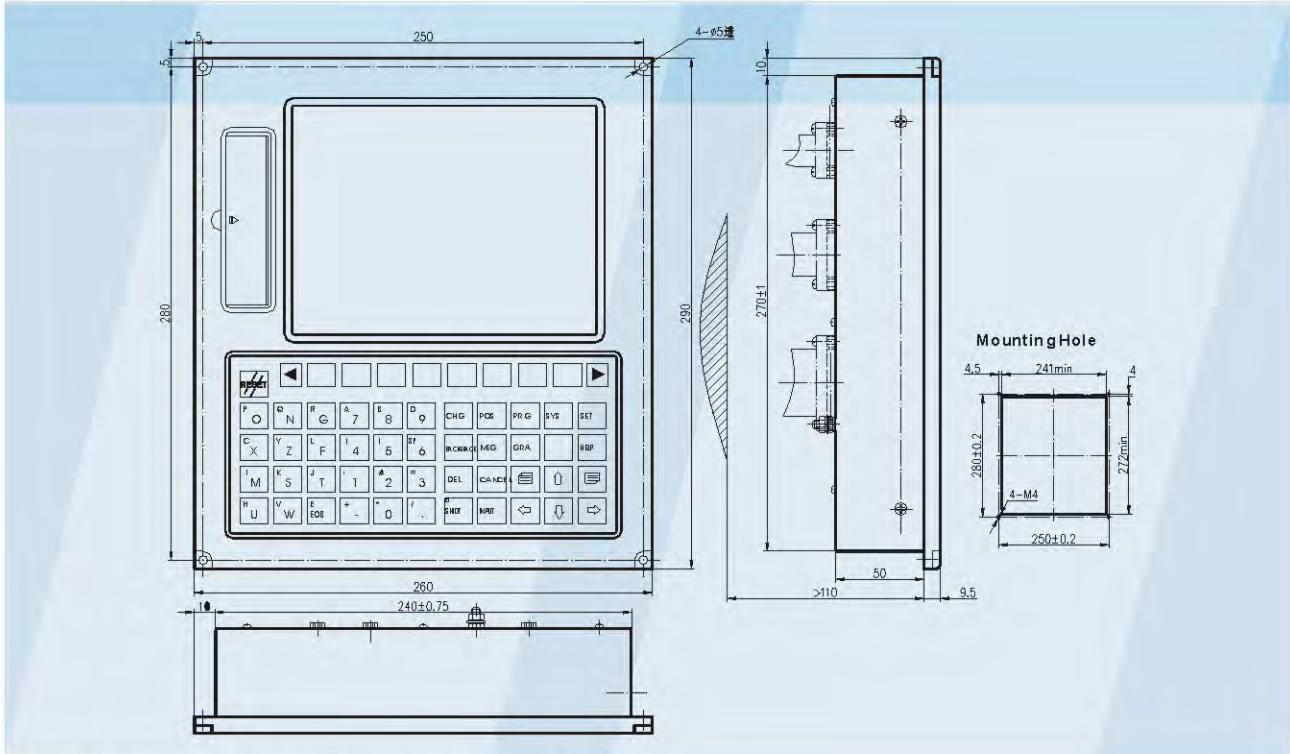
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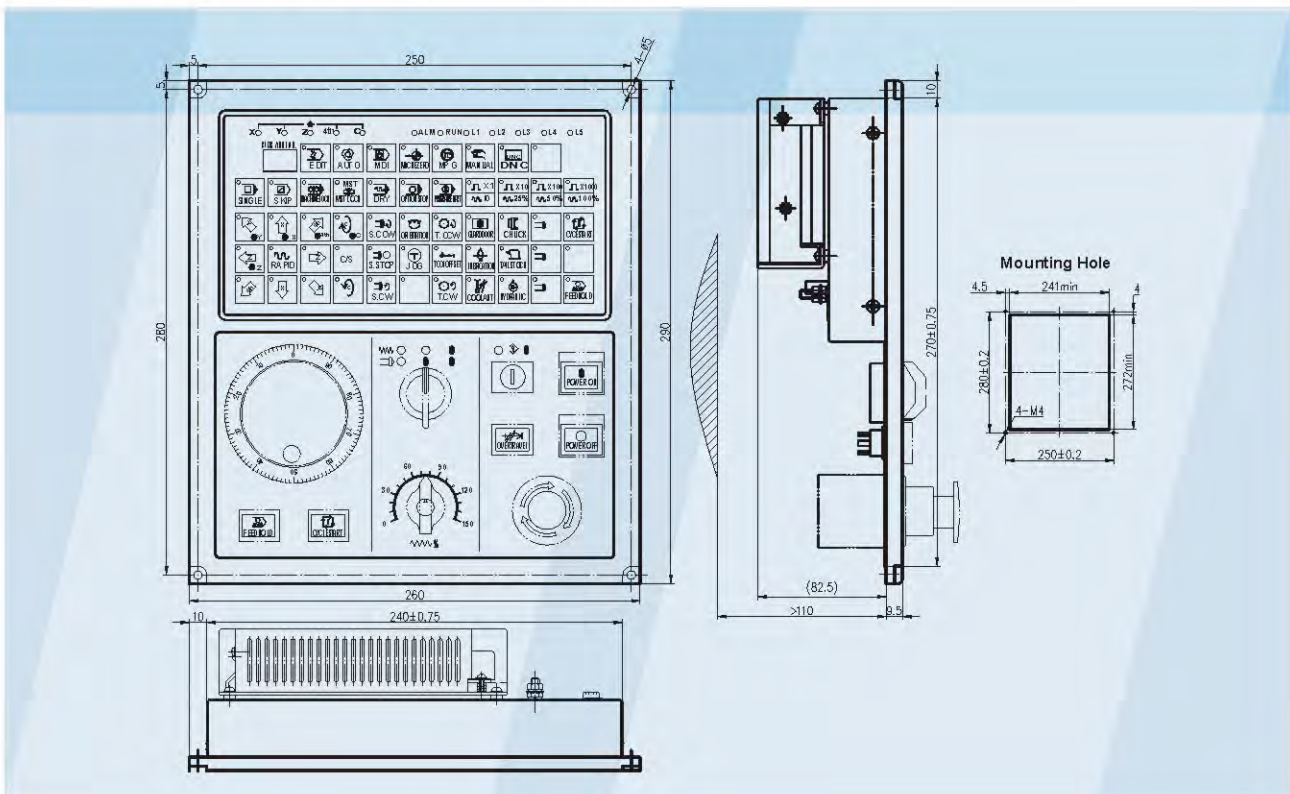
Overall Installation Dimension



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Additional panel MPU02A (for GSK988T)



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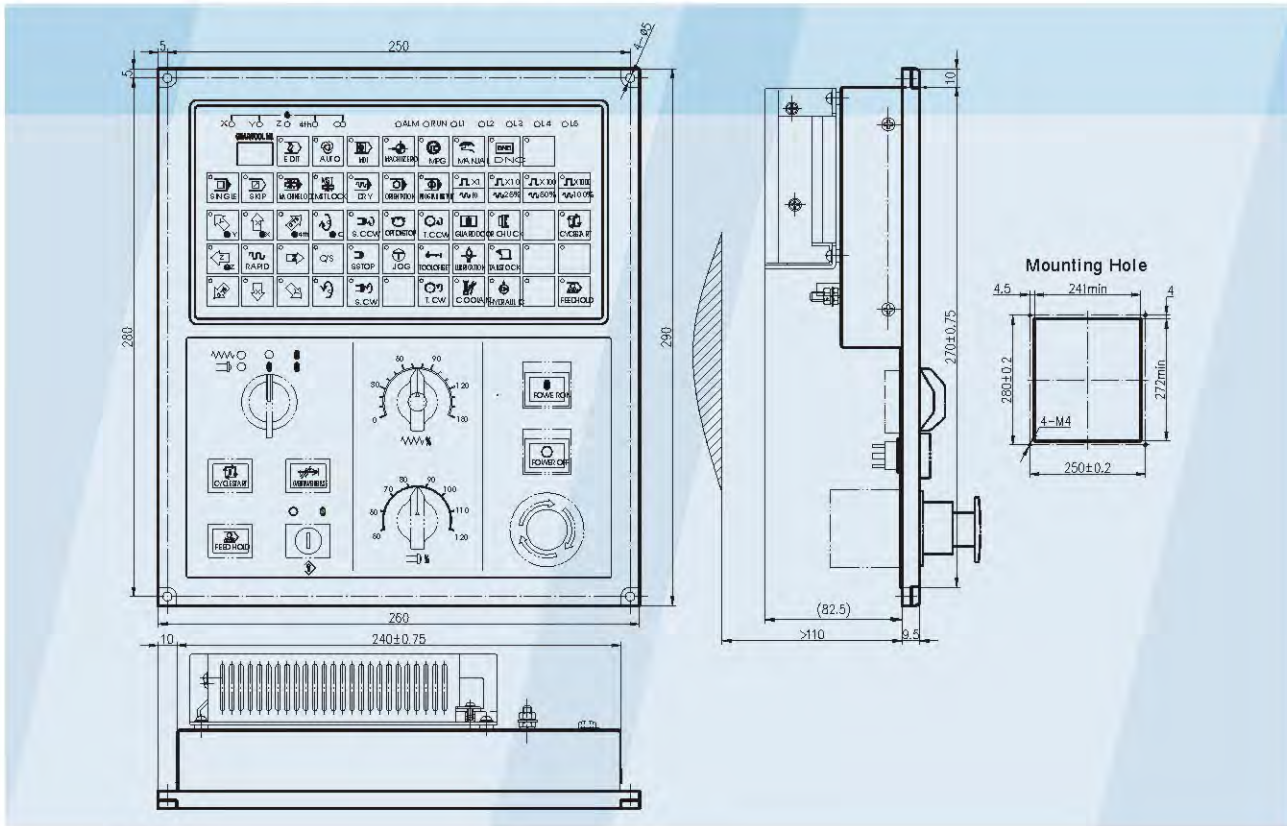
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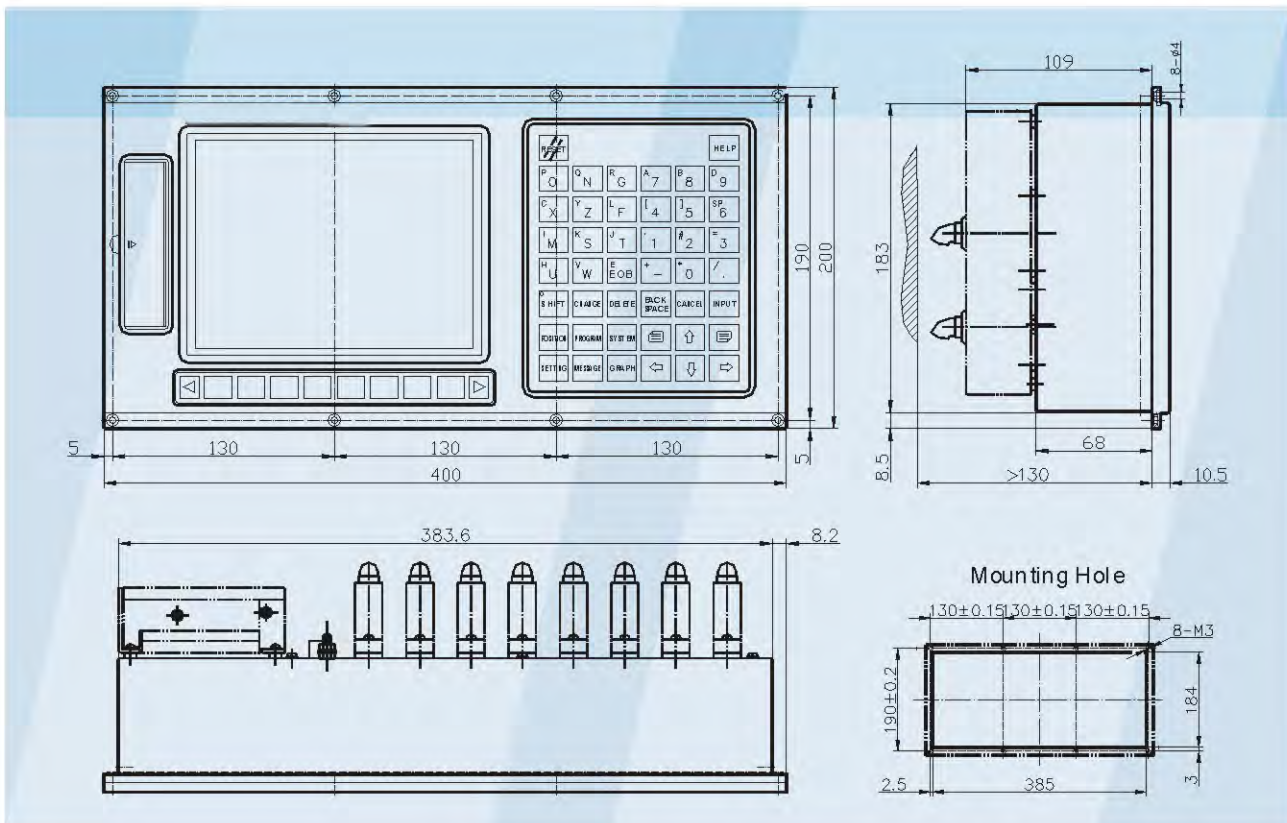
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Additional panel MPU02B (for GSK988T)



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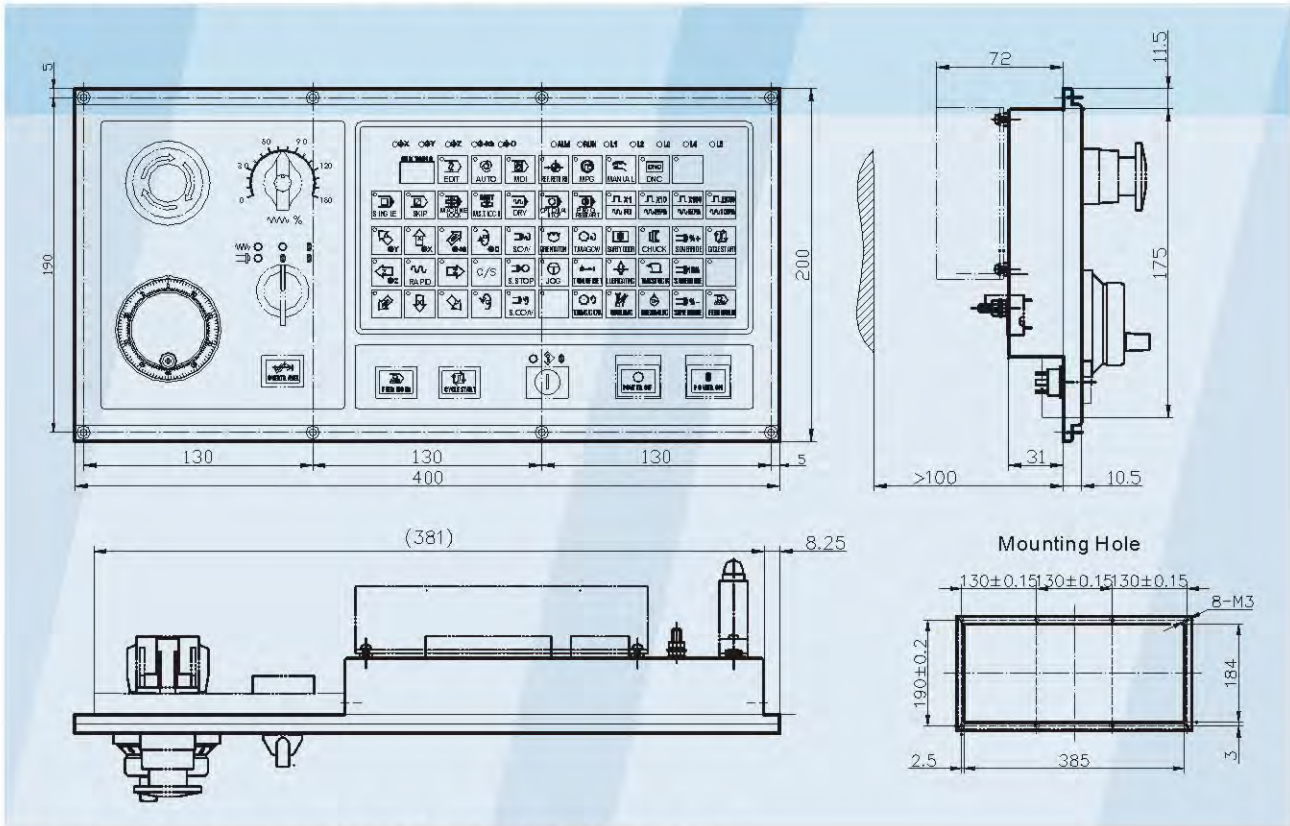
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Additional panel: MPU03A (for GSK988T-H)



Additional panel: MPU03B (for GSK988T-H)

