

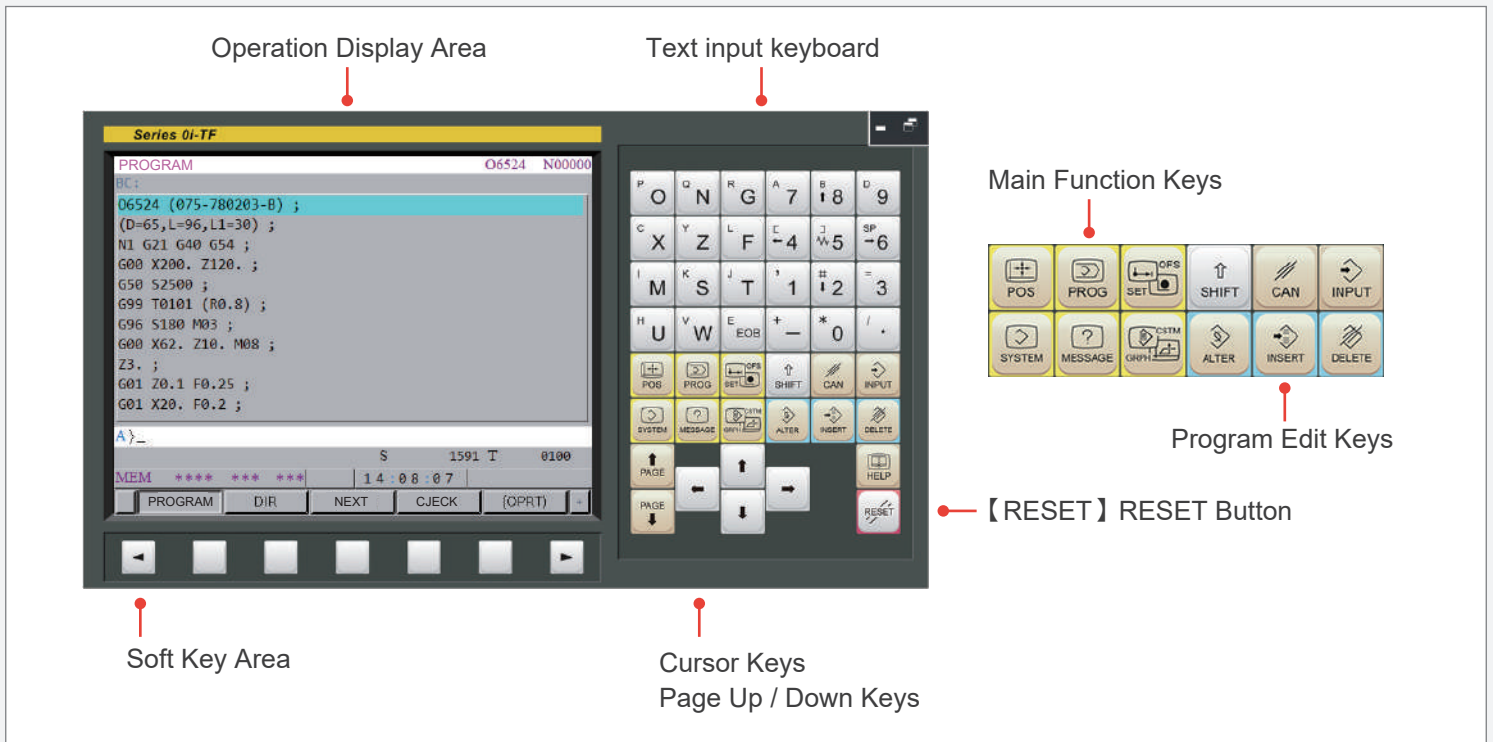
CNC Operation Simulation Software

Fanuc 0i-TF

- ◆ Learn CNC controller and operation in computer lab
- ◆ The Cutting-edge modularized button enables fast learning

Greatly lower the threshold for beginners

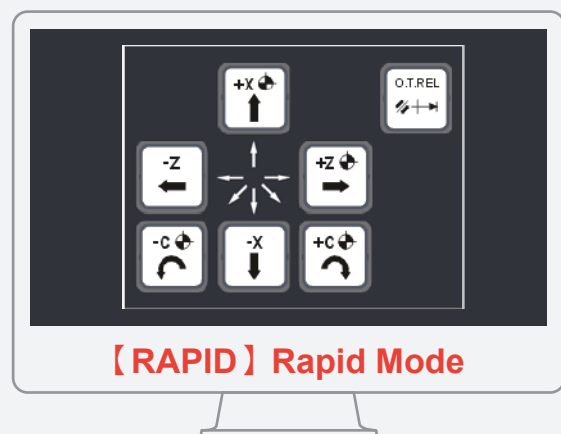
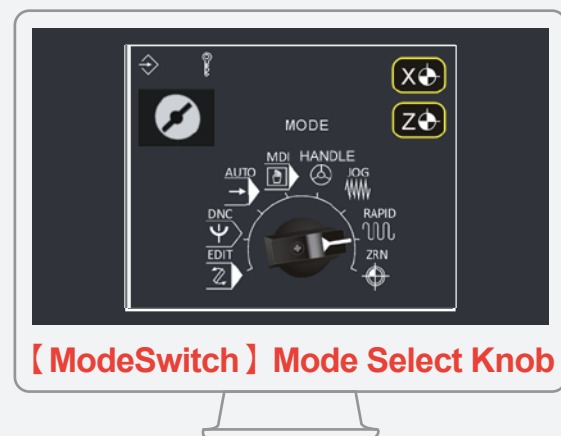
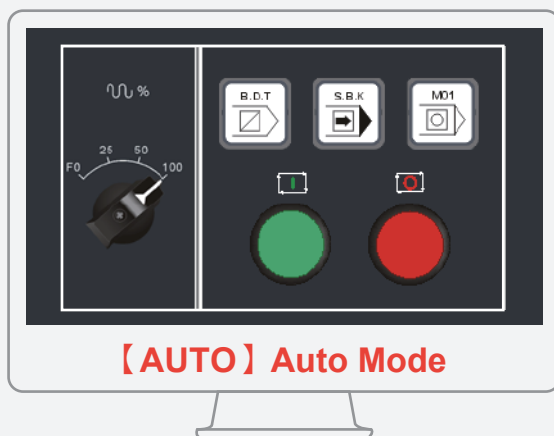
Controller Function Panel Introduction (Fanuc 0i-TF)



Modularized Machine Operation Panel

The panels are equipped with all the buttons, knobs, and keys for controls during operation as well as machine status indication lights.

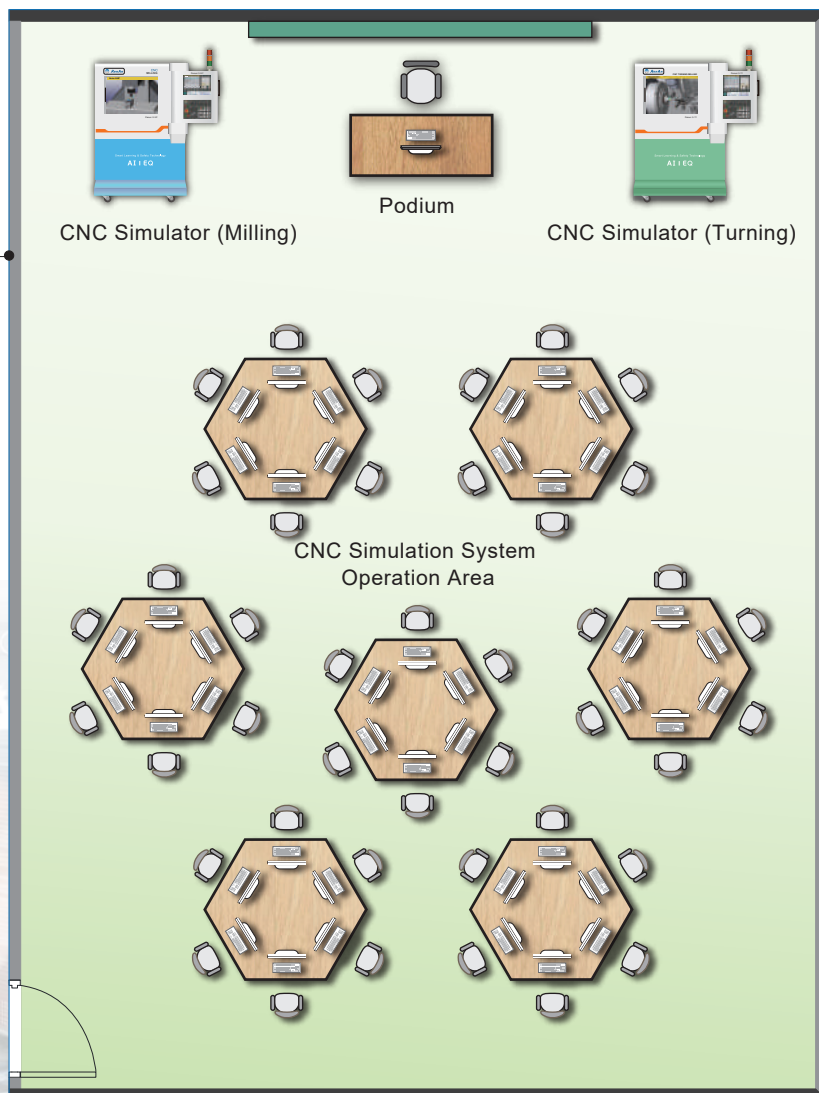
The panels are sectioned according to the operation mode and function type, located on the bottom right corner of the screen in template forms. Displaying the entire function panel for reference during operation is also available.



CNC Simulation Classroom Layout

Advantages of classroom layout:

Diversified teaching methods enable group competitions, project exploration, on-the-spot teacher demonstration or simulation practice for students, making complex and difficult learning no longer boring. Students will improve rapidly in a brainstorming and mutual learning environment.



Innovated Modularized Panel enables fast learning

We have the world's first modularized button group, which makes learning easy and simple. According to the mode users currently select, relevant operation panels will display automatically, and hide irrelevant panels. Such minimizes the complexity of learning, build modular concepts naturally through operation, shorten training time and quickly improve the proficiency of operation.

Simulates the whole CNC machine with lifelike display.

The whole machine simulation system enables exact apprehension of machine buttons. Through operating on the controller interface, students can train by understanding the movement of the CNC machine. The graphics are in aesthetic and realistic 3D animations, combining machine base and tools to achieve an absolute interactive effect.

Description

CNC Controller Function



Specification

- CNC Controller Simulation Fanuc 0i-TF Lathe
- The Operation Panel Function is the complete emulation based on the actual CNC machine operation panel
 - (1) Position Display [POS] : machine coordinate, absolute coordinate, relative coordinate
 - (2) Program function [PROG]
 - (a) Automatic mode [AUTO] : Program content display, check, current block, next block
 - (b) Program Edit [EDIT] : [ALTER][INSERT][DELETE], program lock
 - (c) Background Edit
 - (d) Data Transfer, [F input] ,[F output]
 - (3) Tool compensation[OFS/SET] : work shift, coordinate system, tool geometry, tool wear, MACRO, Metric/Inch mode setting
 - (4) System parameters [SYSTEM] : transmission, machine, edit
 - (5) Alphabetic and Numeric keys, [INPUT], [RESET], [CANCEL]
- Alarm display, the alarm codes show the same codes as in the machine
 - (1) Eg : X axis is over travel, the alarm code indicates: "500 OVER TRAVEL:+X", The way to clear the alarm , move X axis to the proper position and press [RESET] to clear the alarm
 - (2) Eg : 1211 EMG ESTOP, pull up the emergency button to clear alarm
 - (3) System records the time and the error codes whenever the alarm message is displayed
- To transmit the program by using RJ45 interface information transmission function

CNC Machine Operation Panel



- Mode Select
 - (1) [EDIT] : Program edit mode – Edit program content
 - (2) [AUTO] : Auto execution mode – Program executes automatically
 - (3) [MDI] : Manual Data Input – For parameter settings and temporary input program
 - (4) [HANDLE]: Handle mode – Using handwheel move and adjustment position
 - (5) [JOG] : Jog mode – Using axis key to feed
 - (6) [RAPID] : Rapid mode – Using axis key to move rapidly
 - (7) [ZRN] : Zero Point Return – X, Z axis return to Machine Home Position
- Rapid Speed adjustment button, Feed speed adjustment button, Spindle speed adjustment button
- Optional block skip [B.D.T], Single block execution [S.B.K], Optional stop [M01], Start [CYCLE START], Stop [FEED HOLD]
- Spindle forward, Spindle stop, Spindle reversal
- Program lock, Emergency stop, Index(Tool indexing), Coolant fluid
- Axis Buttons : X+ 、 X- 、 Z+ 、 Z- , Collision Reset button, axis return signal
- Physical manual handle, manual handle rate button, manual handle axis button



| Description | Specification | | | | | | | | | | | | |
|--|---|----------------------------|----------------------|-----------------------|--------------------|-----------------------|------------------------|------------------|-------------------|----------------------|--|--|----------------------------|
| <p style="text-align: center;">CNC Machine Simulation for Lathe</p> | <ul style="list-style-type: none"> ● Based on 3D solid simulation. Horizontal Lathe- single Includes, Machine bcd, spindle head tailstock, live center Rapid : X axis 20 m/min \ Z axis 24 m/min Max Feed : X axis 6 m/min \ Z axis 8 m/min ● Simulate whole CNC machine with physical machine controlling panel and dynamic interactive simulation ● Collision detection : tool and material, the contact between the tool and the material will be considered a collision ◦ ● Simulation Speed Adjustment : 50% \ 100% \ 250% \ 500% ● Workpiece material setting, Diameter, Max Diameter= 250mm Length, Max Length = 450mm ● Turning tool setting : Diamond (80°, 55°, 35°), Triangle (60°), Thread, Groove, Round, Drill, Trigon, Radius corner groove, Center drill, Screw tap, End Mill ● Turret setting : Tool install, modify, delete ● Standard view : Top (XY), Front (ZX), Side, (YZ), 3-Dimension (ISO) ● Common zoom view : Material view, Table view, Machine view ● Free operation view : Shift, Rotate, Zoom in/out ● Simulated design including coolant fluid, cutting the workpiece until chips spattering, audio (tool movement, cutting sound effect, spindle rotation, alarm) ● Workpiece linear measurement function: diameter, thickness, length ● Quick defaulting ● CNC Program Import/Export function | | | | | | | | | | | | |
| <p style="text-align: center;">CNC Machine Simulation for Lathe</p> | <ul style="list-style-type: none"> ● G code function : <ol style="list-style-type: none"> (1) Interpolation : G00 \ G01 \ G02 \ G03 (2) Dwell : G04 (3) Plane Selection : G17 \ G18 \ G19 (4) Tool Radius Compensation : G40 \ G41 \ G42 (5) Inch/Metric Conversion: G20 \ G21 (6) Reference Position Return: G28 \ G30 (7) Feed rate command : G98 \ G99 \ Constant surface speed control : G96 \ G97 (8) Workpiece Coordinate : G54 \ G55 \ G56 \ G57 \ G58 \ G59 (9) Support G01 axis right angle of auto Chamfer C, corner R (10) Cutting cycle : G71 \ G72 \ G73 \ G74 \ G75 \ G76 \ G90 \ G92 \ G94 (11) Canned cycle for drilling & tapping : G80 \ G83 \ G84 \ G85 (12) Coordinate system setting or max spindle speed clamp : G50 (13) Chamfer command settings using comma (parameter) (14) Omitting the use of decimal point of address (parameter) (15) Using G Code group setting (parameter) ● M Code auxiliary function <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">(M00)Program stop</td> <td style="width: 33%;">(M03)Spindle forward</td> <td style="width: 33%;">(M08)Coolant fluid on</td> </tr> <tr> <td>(M01)Optional stop</td> <td>(M04)Spindle reversal</td> <td>(M09)Coolant fluid off</td> </tr> <tr> <td>(M02)Program end</td> <td>(M05)Spindle stop</td> <td>(M99) Subprogram end</td> </tr> <tr> <td></td> <td></td> <td>(M30) program end & Rewind</td> </tr> </table> | (M00)Program stop | (M03)Spindle forward | (M08)Coolant fluid on | (M01)Optional stop | (M04)Spindle reversal | (M09)Coolant fluid off | (M02)Program end | (M05)Spindle stop | (M99) Subprogram end | | | (M30) program end & Rewind |
| (M00)Program stop | (M03)Spindle forward | (M08)Coolant fluid on | | | | | | | | | | | |
| (M01)Optional stop | (M04)Spindle reversal | (M09)Coolant fluid off | | | | | | | | | | | |
| (M02)Program end | (M05)Spindle stop | (M99) Subprogram end | | | | | | | | | | | |
| | | (M30) program end & Rewind | | | | | | | | | | | |

Workspace Tour



| | | |
|---|----------------------------------|--|
| 1 | Dropdown Function Menu | Contains a variety of realistic CNC lathe function commands. |
| 2 | Application Toolbar | Displays frequently used basic command options. |
| 3 | Simulation Speed Control Toolbar | Adjust simulation speed. |
| 4 | View Toolbar | Quick switch between frequently used view angles. |
| 5 | Machine Simulation Area | Displays the entire machine and workpiece graphics during operation. |
| 6 | Controller Function Panel | Displays the function panel of simulation controller. |
| 7 | Assistance Button Toolbar | Control the hiding and display of the mode buttons on the modularized operation panel. |
| 8 | Operation Mode Selection Knob | Select Modularized Operation Panel |
| 9 | Machine Control Buttons | Shows relevant buttons in the selected mode. |



RenAn Information Technology Co., Ltd.

5F-3, No.1 Keji Road, Dali District, Taichung City 412025, Taiwan

+886(4)24918777
 service@renan.com.tw
 www.renan.com.tw



RenAn Website
 April. 2022