Machining Simulation Quick Start For Mill

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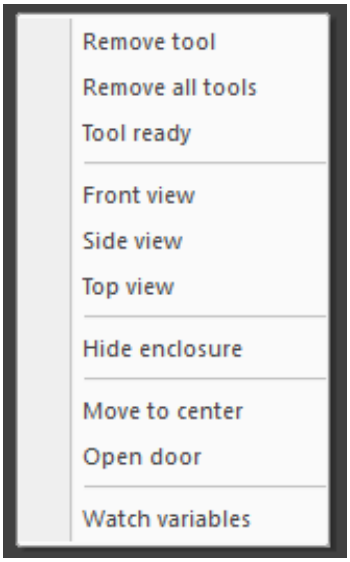
1. Right Mouse Button Menu:



1) **Remove tool:** Select a tool shank on the turret with mouse cursor, when it is selected or when the mouse cursor rolls over it, the selected tool is displayed with green color, then selecting the item "Remove tool" will remove the tool from the turret.

2) **Remove all tools: Selecting the item "Remove all tools" will remove all the tools from the turret.**

3) **Tool ready:** Select a tool shank on the turret with the mouse cursor, when it is selected or when the mouse cursor rolls over it, the selected tool is displayed with green color, then selecting the item "Tool ready" will turn the tool into the position for cutting.

4) **Front view:** Change to the front view

5) **Side view:** Change to the side view

6) **Top view:** Change to the top view

7) **Hide/Show enclosure:** Hide/Show machine enclosure.

8) **Move to center/external:** Move the tool to touch the center or external circle of the workpiece

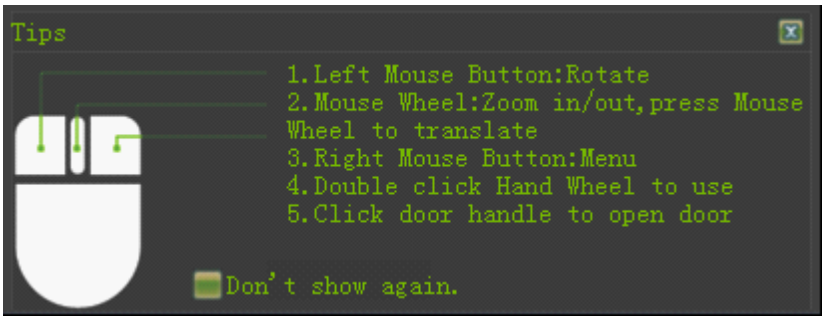
9) **Open/Close door:** To open/close door, release Emergency button and power on, then select "Open door" or "Close door"

10) **Watch variables:** To observe the values of all MACRO variables with the

watch window on which local, common and system variables are displayed.

2. 3D CNC machine model transformation

1) To rotate machine model, press and hold the left mouse button and drag it.
2) To zoom in and out machine model, roll mouse wheel to zoom.
3) To pan machine model, press and hold the mouse wheel and drag it.
4) Click the door handle to open/close the door



3. Main menu introduce.

1) Measure

a) Select face: Select the face to be measured.

b) Trace and time: Import a NC program to estimate automatically its cycle time for a real CNC machine and generate the tool path.

c) Export report: Export the report of "Trace and time".

d) Quit estimate: Quit the mode of "Trace and time".

2) File

a) Import: Import a NC program from local disks to the simulator under which EDIT mode is available and the NC program is opened or created. The formats of TXT, CNC and NC are supported.

b) Export: Export a NC program under which EDIT mode is available and then the NC program is exported to as a TXT, CNC or NC from the simulator to local disks.

c) Save workpiece: Save machined workpiece.

d) Read workpiece: Read saved workpiece.

3) Options

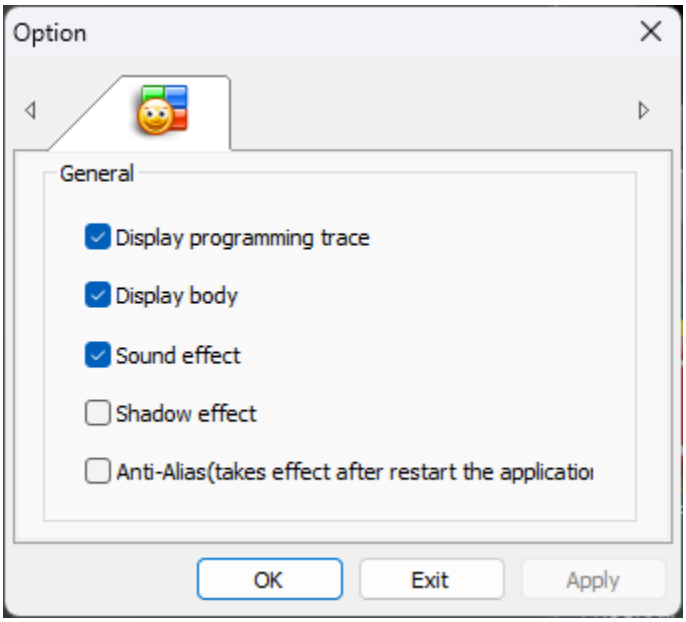
a) Displaying programming trace: When on, show programming trace during auto run. When off, hide programming trace.

b) Display enclosure: When on, show enclosure, when off, hide enclosure.

c) Sound effect: When on, enable sound, when off, disable sound.

d) Shadow effect: When on, enable shadow effect, when off, disable shadow effect. If some obsolete display adapters cause several types of problems, such as running slowly, the option better be disabled.

e) Anti-Alias: To smooth the 3D machine models, tool paths.



4) View

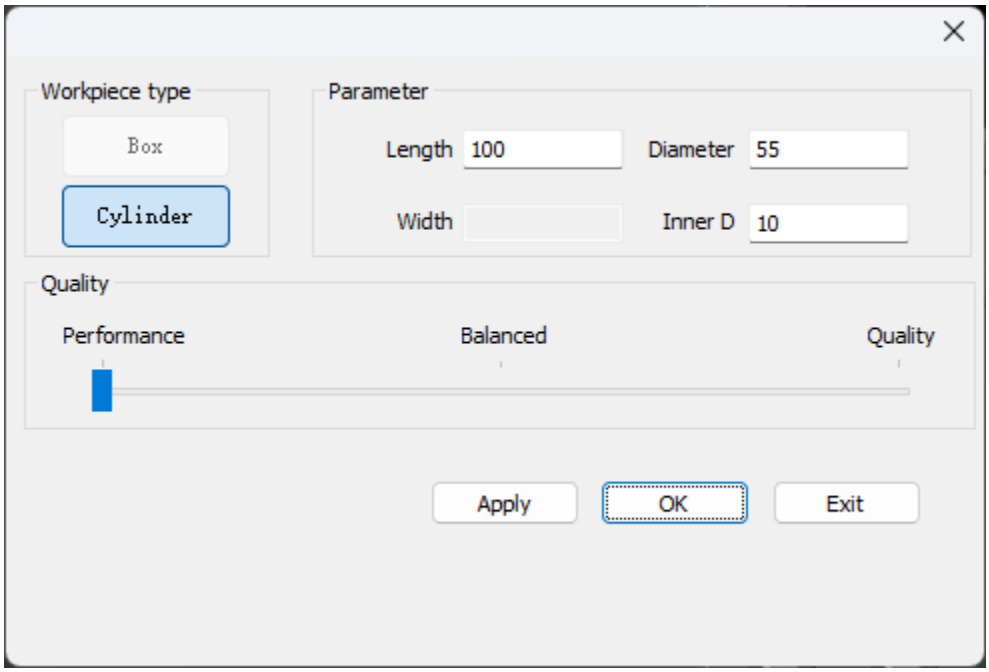
a) View panels: When CNC panel is closed, use the menu to reopen CNC panel.

b) Show in dual monitors: Separately show panels and 3D model in dual monitors. It's only available when two monitors are connected.

5) Switch panel

a) Switch CNC system and panel to one another.

6) Workpiece---Settings



a) There are two options for box and cylinder workpieces.

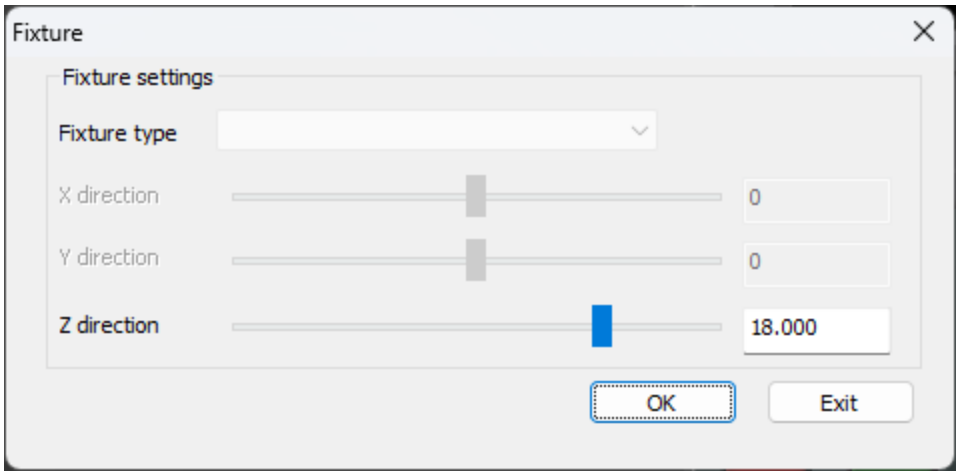
b) Quality: Improve the smoothness of workpiece you can see on the screen:

c) Performance: Jaggies

d) Balance: Less jaggies

e) Quality: Smooth, you will experience a decrease in performance with the high value. It is recommended to select a value based on how your display adapter can perform.

7) Workpiece---Clamps setting

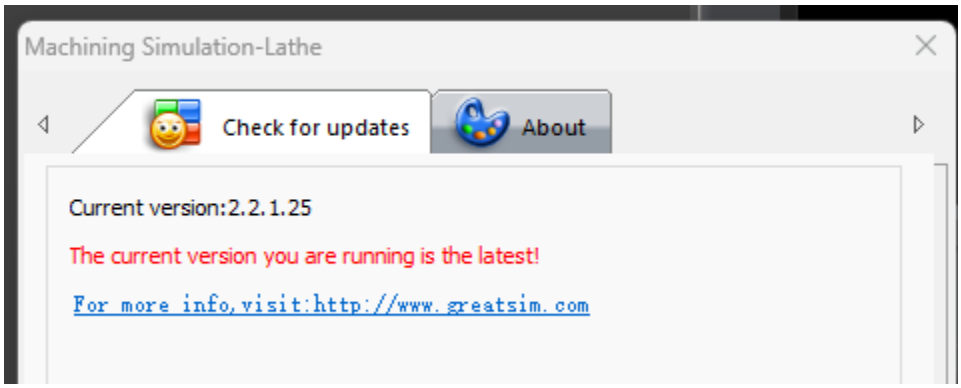


a) X direction: Adjust the position of the stock on the work table in X-axis position.

b) Y direction: Adjust the position of the stock on the work table in Y-axis position.

8) Check for update

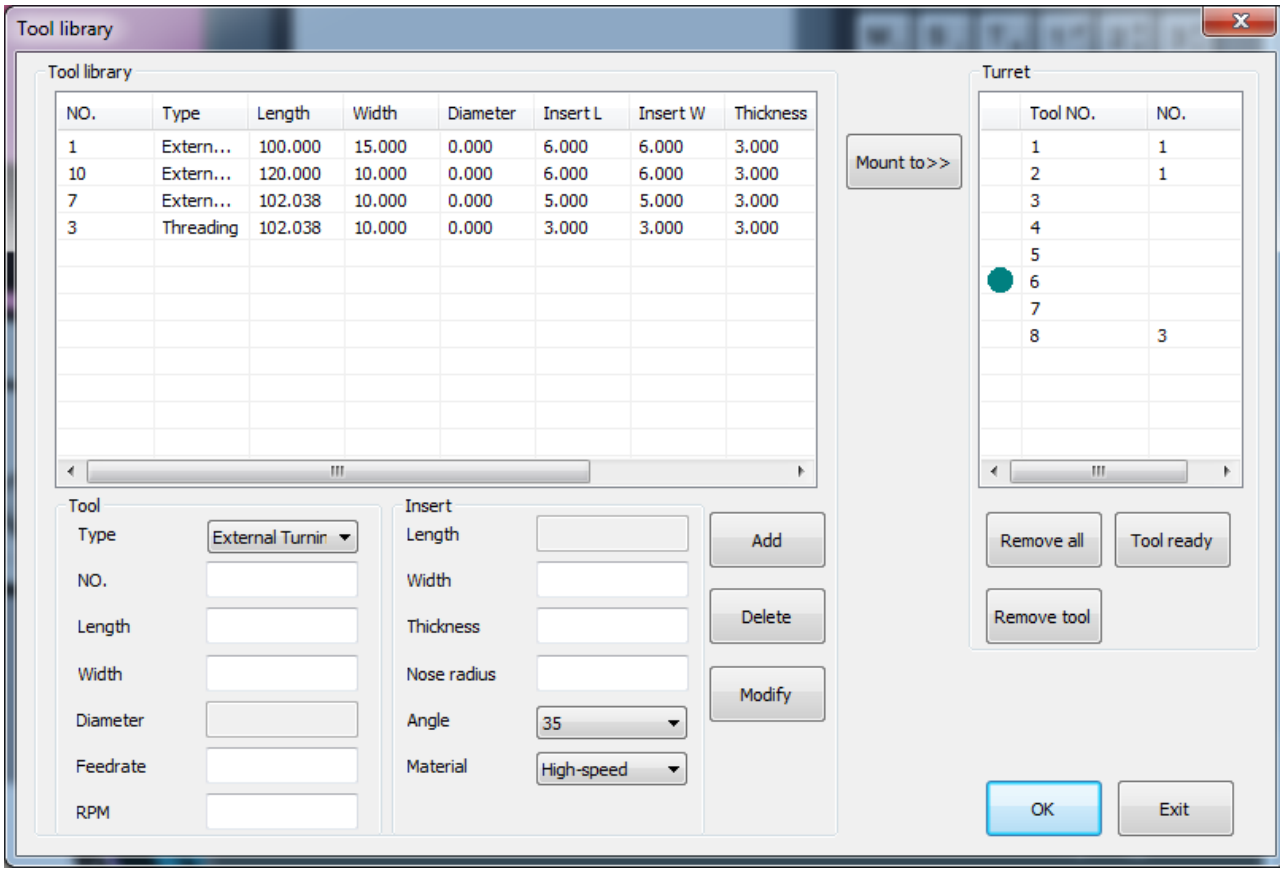
a) Check if a newer version, internet connection is required.



9) Help, click for a quick start manual.

4. Tool library

1) Click the icon to open the tool library.

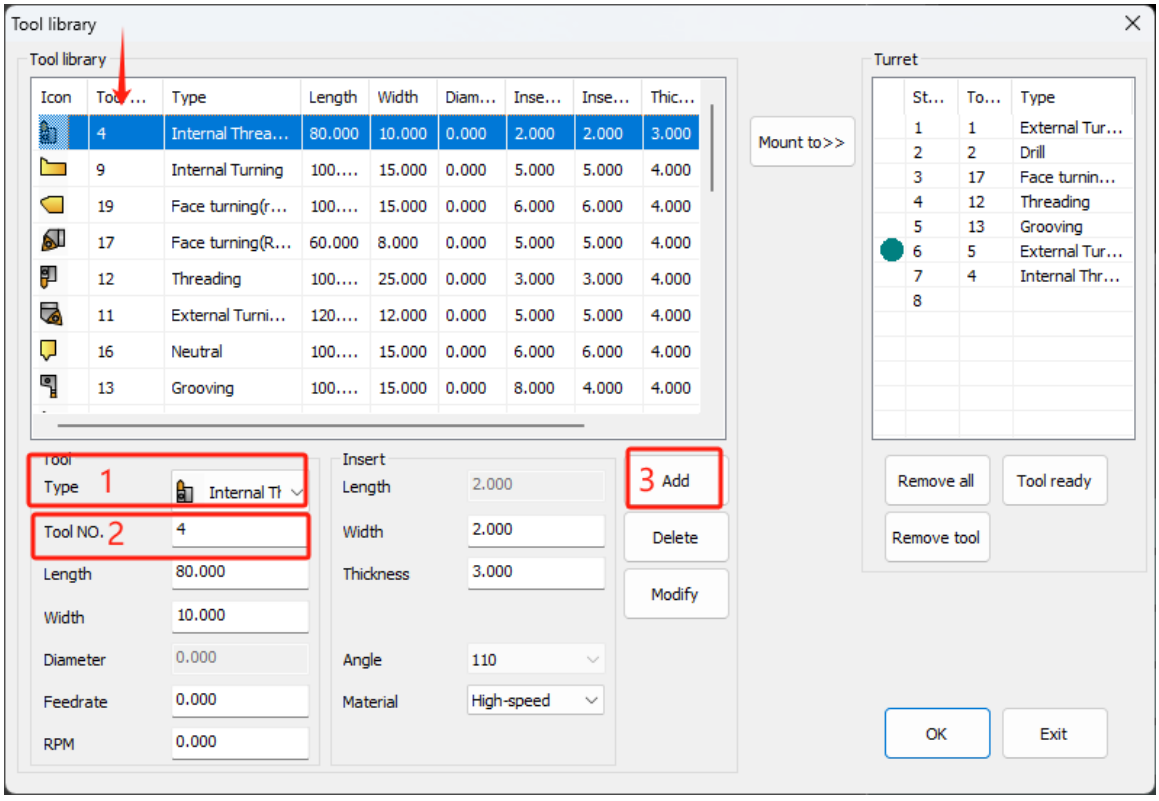


2) New Tool:

a) Select a tool type.

b) Input a tool number and other parameters for the tool, please note that the new tool number must be differ from those existing in the tool library.

c) Press the Add button, the steps for creating a new tool as the screenshot below.



3) Modify Tool:

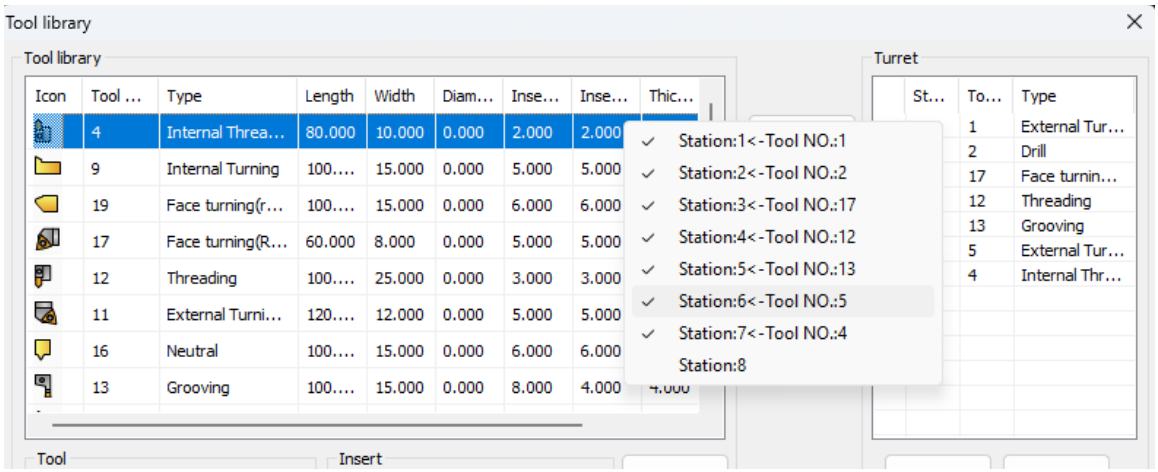
a) Select a tool from the tool list, its parameters are displayed below for modification, then edit the parameters, press "Modify" button to finish the modification.

4) Delete Tool:

a) Select a tool from the tool list, press "Delete" button to delete a tool from the library.

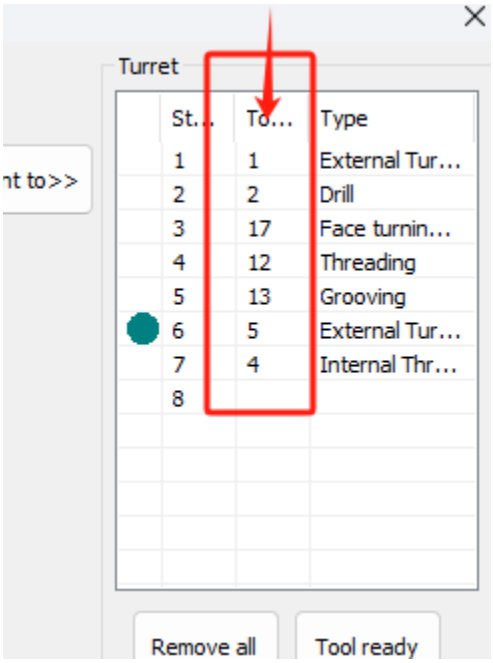
5) Mount Tool:

Right-click an item of a tool from the tool library list, the menu popping up as the picture below, select a tool station to mount or press "Mount to" button to do so, the mounted tool will be displayed in the turret list. The green circle indicates which tool has been indexed into the position for cutting.

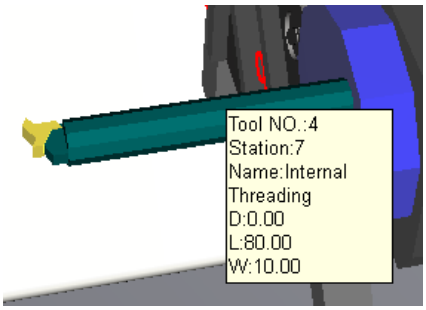


6) Important for calling T command:

a) Always specify a tool number in the T code , instead of the tool station number , in the NC programs, see the picture below.



7) Check Tool Number: Select a tool with the mouse cursor, if selected, the selected tool is displayed with green color, the details of the tool are displayed.



5. Machine panel introduce

1) CNC machine panel

 Emergency stop

Power on

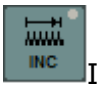
Power off

Cycle start

Cycle stop

Auto mode 

Edit mode 

MDI mode 

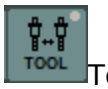
INC mode

MPG mode 

REF mode 

JOG mode

Coolant system on/off



Tool changing. Allowing tool changer to automatically swap out tools , it should be used in JOG mode.

Main spindle CW，Stop，CCW

Rapid jog

Incremental feeds for INC mode, X1(0.001), X10(0.01), X100(0.1), X1000(1.0)

Spindle override

Feed rate override

Program protect, to edit a NC program, unlock is required.

2) Edit program

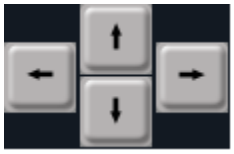
a) Switch to EDIT mode, unlock the program protect before edit.

Press 

EDIT button，then press PORG button 

and DIR softkey button

b) Open a NC program: Input a NC program name that exists in the system, such as "O0001", press "Arrow Down" button on the system panel to open the NC program



c) New a NC program: Enter a CNC program name that doesn't exist in the system, such as "O0001", press "Insert" button.

d) Edit a NC program: Use the three buttons to edit a program: Alter, Insert, Delete. Edit is not available until program protect is unlocked.

e) Delete a NC program: Enter a CNC program name, press "Delete" button.

f) Import a NC program from your disk:

- Switch to EDIT mode in the Simulation, and then either create or open a CNC program.
- New a Notepad text file.
- Enter or paste CNC program into the text file.
- Select "Save as" and select "Save as type:" as "All files".
- Enter a file name, such as "XXXX.cnc" or "XXXX.nc".
- Use Import menu in the Simulation to select the file, click "Open".
- The file is imported.

3) **Auto run**

Open an existing NC program or import a NC program, then press 

and 

Cycle start, the NC program will be executed.

Press 

to enable Single Block mode, it helps to check and test your NC program before you hit cycle start and have a problem. When on, the NC program will be executed block by block, one block a time, when off, the function is disabled.

4) MDI

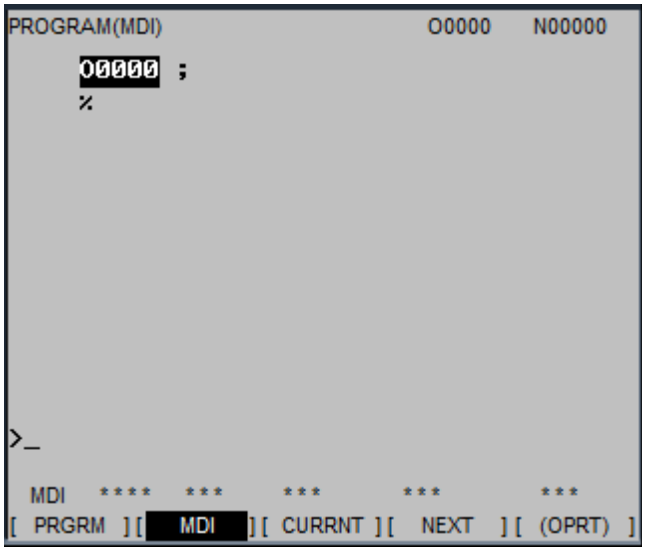
a) Press 

button, press 

button, an image shown as following.

b) Enter a block, such as "G54X0Y0Z0", press to execute the block you enter.

c)

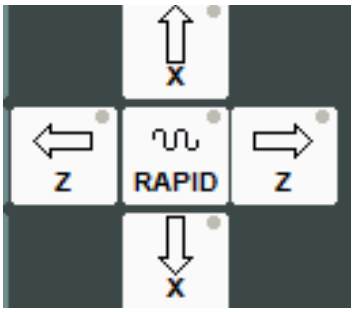


5) Return to reference point.

a) Press REF button 

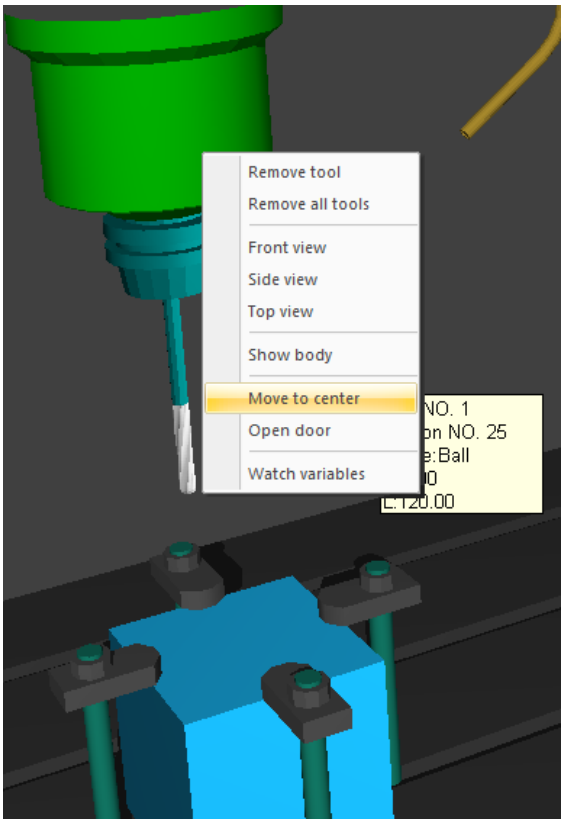
to REF mode.

b) Press the positive direction button for each axis one after the other until each LED is on.

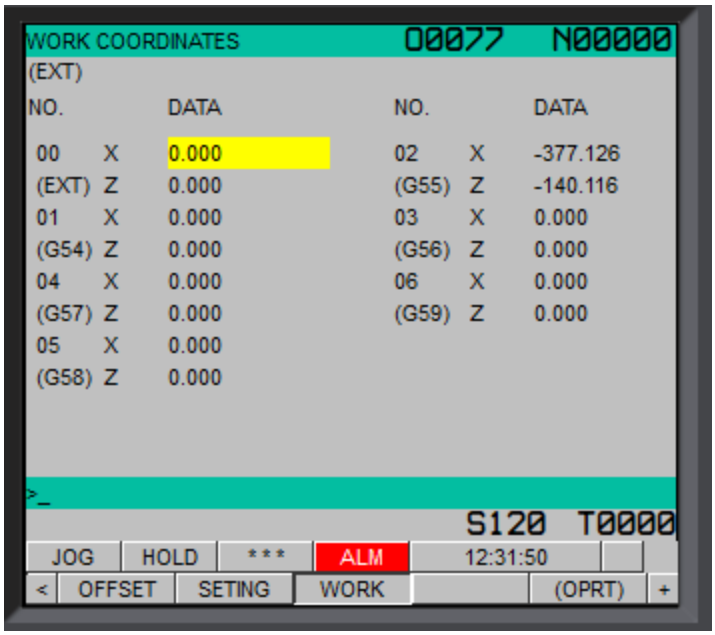


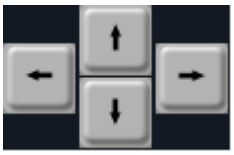
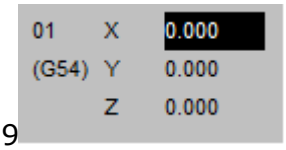
6. Tool presetting

1) Select "Move to center", the tool tip is located to the center of end face of workpiece



Press "OFFSET SETTING"  button, press "WORK" soft key,

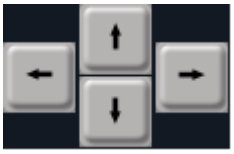


2) Press  arrow buttons to select a desired work coordinate between G54 to G59 

,

3) Input X0, press "Measure" soft key to finish the input for X-axis, the operations for Y and Z axis are the same as for X axis.

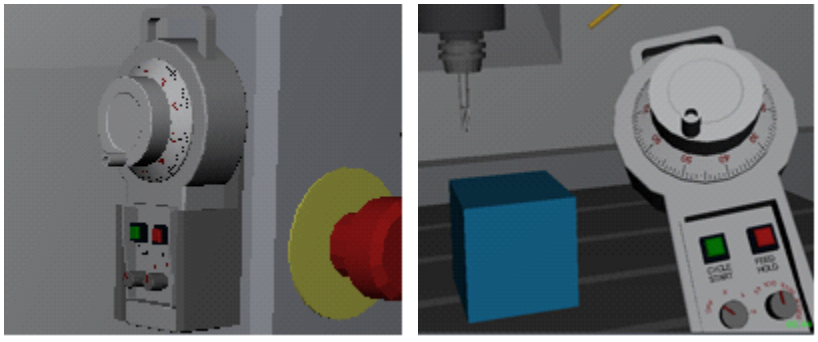
7. Tool Offset

1) Press  arrow buttons to select a desired H (Length Compensation) No.

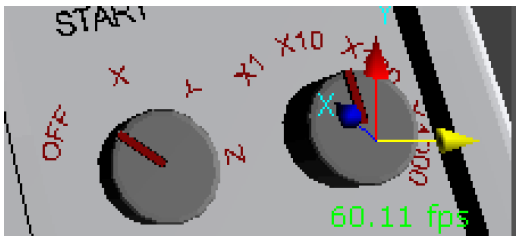
2) Input a value of the actual position, press "INPUT" or "+INPUT" soft key to finish the input.

8. Use MPG

1) Switch to WHEEL or HND mode on the operator panel, To use it by double clicking on the MPG. To close Hand Wheel, Double Click on it again.



2) Select the axis from OFF, X, Y, Z on the axis selector knob.
3) Select the rate from X1 to X1000 on the rate selector knob.
4) Use the hand wheel to jog the machine.



9. Note

1) **A few of computers may have a problem with displaying the 3D machine model due to one of following reasons:**

   a) **AMD graiphics card : please download the latest graphic driver from AMD website and update your AMD graphic driver to the latest .**

   b) **Dual graiphics cards : please select the high preformance NVIDIA processor for the simulators.**

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