

LNC woodworking Machine Series

Operation Manual

Version : V1.1

Enable Intelligent Machine

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LNC Technology Co., Ltd.

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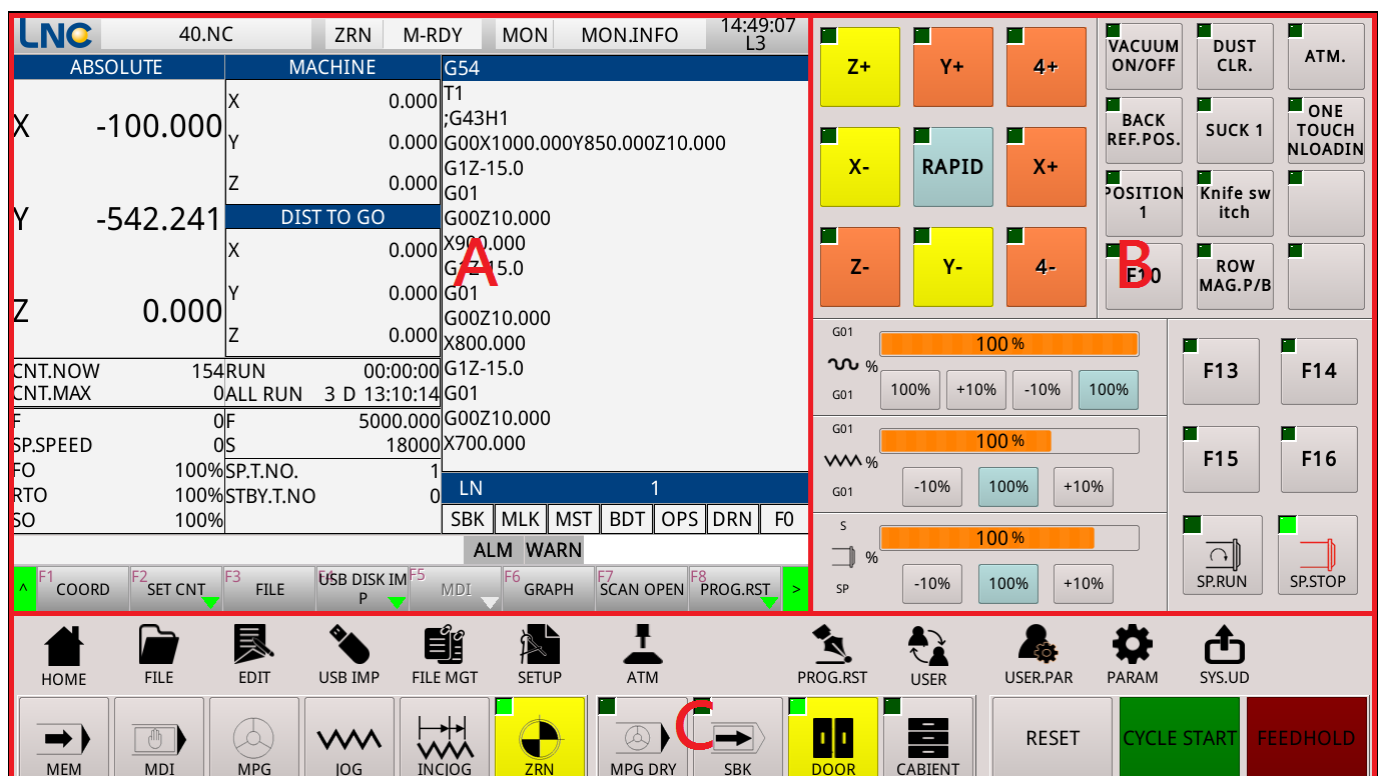
1. Operation Panel

At present, the woodworking machine system is divided into four major systems: MW2200, MW2800, MW2900 and MW5800. Among them, MW2800 and MW2900 are the same series. Therefore, they are only divided into three series actually, and each series has some differences with others. The following is the introduction of each series.

1.1. MW2200 Series

The MW2200 screen is shown in the figure below and is divided into three major areas. The instructions for each area are as follows:

- **A** : Main screen area Please refer to 1.1.1. MW2800 is similar or identical to this part of MW5800.
- **B** : Mode area Please refer to 1.1.2, and this part is the exclusive screen of MW2200.
- **C** : Operating area Please refer to 1.1.3, and this part is the exclusive screen of MW2200.



1.1.1. Main screen area

LNC		40.NC	ZRN	M-RDY	MON	MON.INFO	15:06:45 L3										
ABSOLUTE		MACHINE		G54													
X	-100.000	X	0.000	T1 ;G43H1 G00X1000.000Y850.000Z10.000 G1Z-15.0 G01 G00Z10.000 X900.000 G1Z-15.0 G01 G00Z10.000 X800.000 G1Z-15.0 G01 G00Z10.000 X700.000													
		Y	0.000														
		Z	0.000														
Y	-542.241	DIST TO GO															
		X	0.000														
		Y	0.000														
Z	0.000	Z	0.000														
CNT.NOW	154	RUN	00:00:00														
CNT.MAX	0	ALL RUN	3 D 13:10:14														
F	0	F	5000.000														
SP.SPEED	0	S	18000														
FO	100%	SP.T.NO.	1														
RTO	100%	STBY.T.NO	0	LN 1													
SO	100%			SBK	MLK	MST	BDT	OPS	DRN	F0							
ALM WARN																	
^	F1	COORD	F2	SET CNT	F3	FILE	F4	USB DISK IM	F5	MDI	F6	GRAPH	F7	SCAN OPEN	F8	PROG.RST	>

The main screen area is mainly divided into three parts, as explained below:

- **Caption:** display the currently selected processing file, system mode, system status, selected page, time, and user level.

LNC	00001_Z.NC	ZRN	M-RDY	MON	MON.INFO	14:20:51 L7
-----	------------	-----	-------	-----	----------	----------------

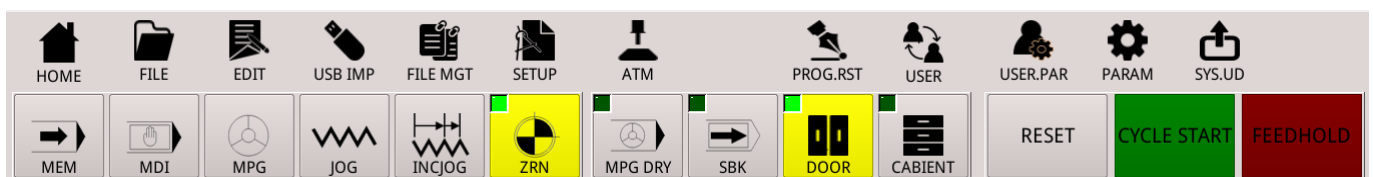
- **Page:** : display the content information of the currently selected page, which will have different content as the selection of different pages.

ABSOLUTE		MACHINE		G54								
X	-100.000	X	0.000	T1								
		Y	0.000	;G43H1								
		Z	0.000	G00X1000.000Y850.000Z10.000								
Y	-542.241			G1Z-15.0								
				G01								
		DIST TO GO			G00Z10.000							
Z	0.000	X	0.000	X900.000								
		Y	0.000	G1Z-15.0								
		Z	0.000	G01								
CNT.NOW		154	RUN	00:00:00	G00Z10.000							
CNT.MAX		0	ALL RUN	3 D 13:10:14	X800.000							
F	0	F	5000.000	G1Z-15.0								
SP.SPEED	0	S	18000	G01								
FO	100%	SP.T.NO.	1	G00Z10.000								
RTO	100%	STBY.T.NO	0	X700.000								
SO	100%											
				LN 1								
				SBK	MLK	MST	BDT	OPS	DRN	F0		
				ALM WARN								

- **Button menu:** : available for page switching and function selection. The left ^ (up arrow) represents the previous menu; the right > (right arrow) represents the next menu.



1.1.2. Mode area

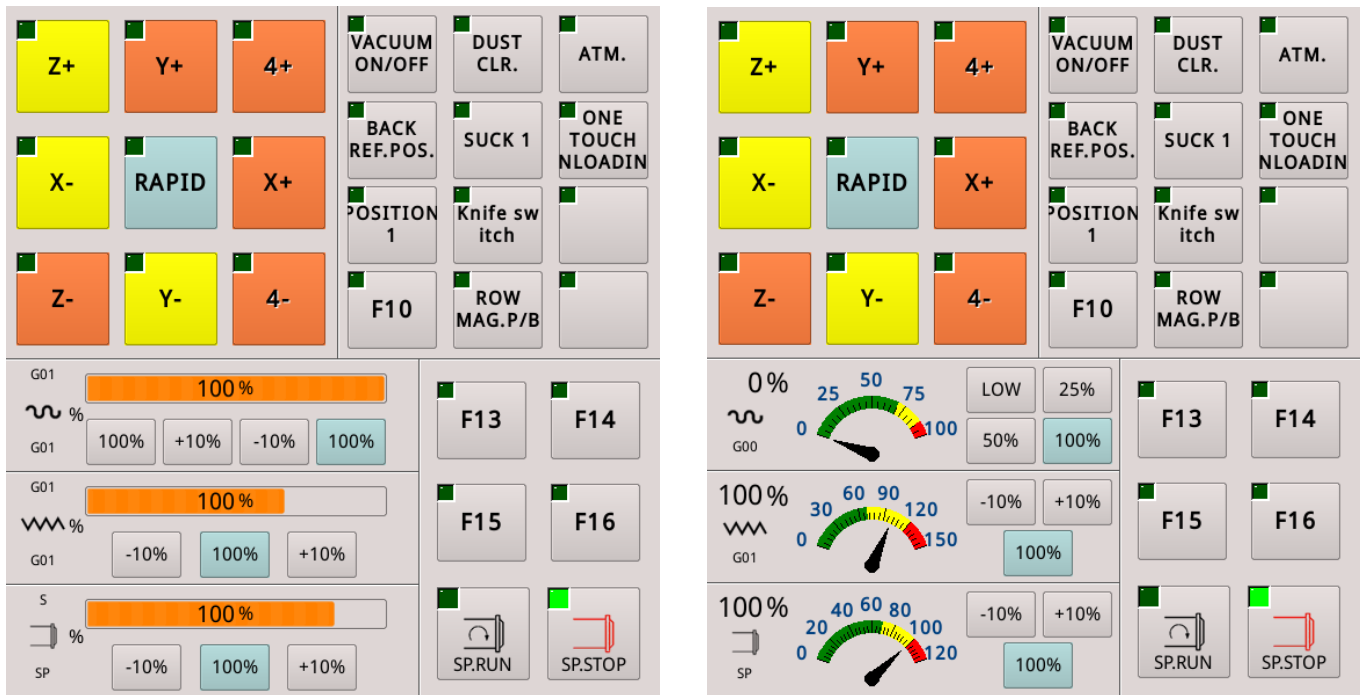


The mode area is divided into 4 parts

- **Mode switch:** Supply 6 modes could be used, including MEM(Memory mode)., MDI(Manual input mode), MPG(Hand wheel mode), JOG(Continuous jog mode), INCJOG(Incremental jog mode).
- **Supplementary function:** Supply 4 functions, including MPG DRY(hand wheel mode),SBK(single block execution),Door Mode, Cabient Mode.
- **Operation button:** Supply three operation buttons, including RESET, CYCLE START and FEED HOLD.
- **Short-cut button:** Supply thirteen common functions, including HOME, Open File, Program Edit, Import from USB, File Management, Tool Offset Coordinate system, Automatic tool

alignment, Scheduling machining, Program Restart, User Switch, User Parameter, Parameter, System Update, click the button to switch to the function page directly.

1.1.3. Operating area

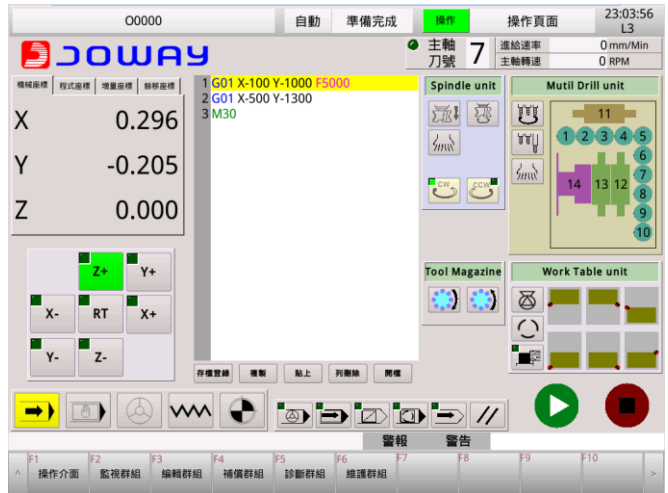


The operation area divide into four parts.

- Direction Key: When manual operation (JOG/INCJOG), the selection buttons for each axial movement. The middle button is RAPID mode selection button. In JOG mode, press once it will turn to rapid mode, press again then it will turn to JOG mode.
- Magnification adjustment: Supply three magnification adjustment method, Rapid Magnification, Feed rate, Spindle magnification, and supply two display types including progress bar and indicator.
 - Change display type: Level 7> Rapid Magnification display icon
- Selectable type function key: F1-F16 are customize operation menu. The appropriate function selection could be made according to the actual machine configuration.
 - Select setting path: Maintenance group>Next >Project Setting
- Fixed type key: Supply two fix function button, divide into SPINDLE RUN and SPINDLE STOP.

1.2. MW2800 / MW2900 Series

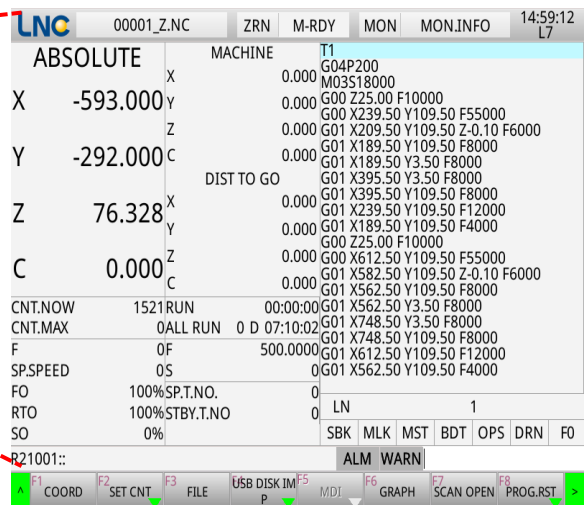
The MW2800 / MW2900 series is a model that provides a customized operation interface for the machinery factories, so it will have one more operation interface than other models; the following figure shows different operation screens designed for the needs of various manufacturers:



Since there will be one more page of operation screen developed by the mechanical manufacturer, there will be a button for the operation interface in the button menu part of the bottom, which is convenient for the user to switch back to the main operation screen quickly. The other operating parts are basically similar to the MW2200, which are operated by a keyboard and mouse. The only difference is that the MW2800 series does not have a software operation panel resident on the screen.

1.3. MW5800 Series

The MW5800 series is a model with standard screen. The appearance and screen of the system are as follows. It is identical to the main screen area of the MW2200. Also the button positions for all functions are the same.



2. Group Description

The system is divided into five groups, which are monitoring group, editing group, compensation group, diagnosis group and maintenance group, which are described as follows:

2.1. Monitoring Group

RELATIVE		ABSOLUTE	G54
X	0.000	X -100.000	T1
		Y -542.241	G43H1
		Z 0.000	G00X1000.000Y850.000Z10.000
Y	0.000		G1Z-15.0
			G01
Z	0.000		G00Z10.000
		MACHINE	
		X	0.000
		Y	0.000
		Z	0.000
		DIST TO GO	
		X	0.000
		Y	0.000
		Z	0.000
		LN 1	
		SBK	MLK
		MST	BDT
		OPS	DRN
		F0	
		LOAD AX.	
		X	0 %
		Y	0 %
		Z	0 %
		S1	0 %
CNT.NOW	154	RUN	00:00:00
CNT.MAX	0	ALL RUN	3 D 13:10:14
F	0	F	5000.000
SP.SPEED	0	S	18000
FO	100%	SP.T.NO.	1
RTO	100%	STBY.T.NO	0
SO	100%		
R1181012		ALM WARN	
F1	COORD	F2	SET CNT
F3	FILE	F4	USB DISK IM
F5	P	F6	MDI
F7	GRAPH	F8	SCAN OPEN
F9		F10	PROG.RST

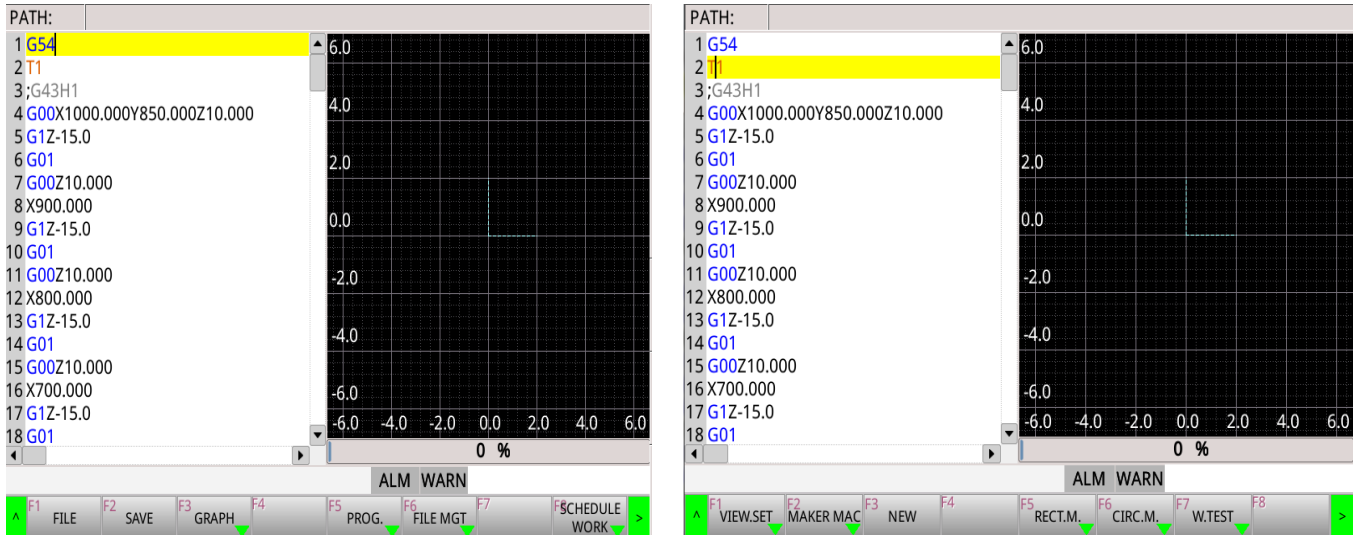
This group is mainly used to monitor the machining information, motor load, program restart, MDI program input, machining settings of the machine and execution status of the machining program. All buttons in this group are listed as follows:

- **Switch coordinates:** Switch the displayed coordinates, which are displayed as program coordinates → relative coordinates → machine coordinates → residual movements, and repeat the cycle.
- **Machining setting:** Provides machining time accumulation clearing, machining parts accumulation clearing, setting the current machining workpieces and setting the maximum machining workpieces.
- **Open old files:** Open the machining program existing in the system for editing and processing, which is the same as the opened files in the edit mode.
- **U-disk import:** The processing program is imported into the system through the U-disk, which is the same as the U-disk import in the edit mode.
- **MDI:** Opens the simple programming interface of MDI mode.
- **Graph:** Displays a graphical preview of the current machining program.
- **Scan code to open files:** Display the input box to open files by of scanning code. For detailed instructions, please refer to 3.1.
- **Program restart:** Open the setting interface of the breakpoint restart of the machining program. For detailed instructions, please refer to 3.2.
- **Variables:** Displays the current values of # variables and @ variables used in the machining

program.

- **Processing information:** Display the current system G code status, MST code status and the cutter compensation and cutter number in use.
- **Load:** Displays the current motor load status. This function is limited to bus drives.

2.2. Edit Group



This group is mainly used for machining program editing, macro program editing, processing program file management and machining program preview. All buttons in this group are listed below:

- **Open old files:** Open the machining program existing in the system for editing and processing.
- **Archive:** Save the modified machining program.
- **Graphics:** A graphical preview of the machining program.
- **Editing:** Perform editing actions related to the machining program, such as copying, pasting, replacing, etc.
- **File management:** Import and export of machining programs. Please refer to 3.3 for detailed instructions.
- **Sorting processing:** Provides the user to process the machining program after scheduling. For detailed instructions, please refer to 3.4.
- **Graphic setting:** Set the relevant parameters when the program graphics are previewed.
- **Manufacturer Macro:** Edit the macros used inside the system.
※This button needs to be switched to level 5 to appear.
- **Open new files:** Open a new processing program on the system for users to write.

2.3. Compensation Group

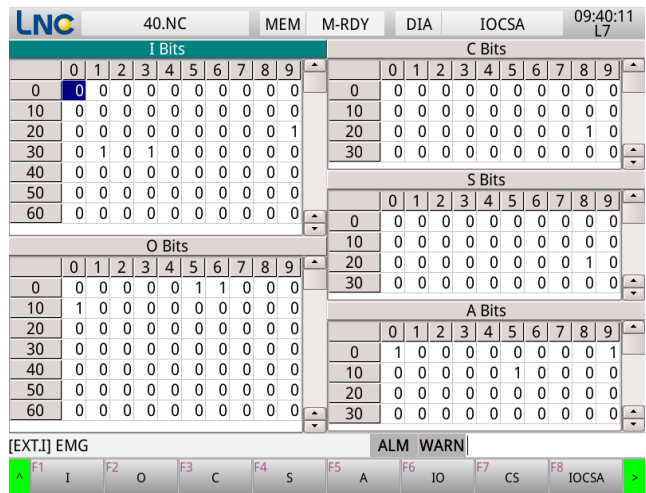
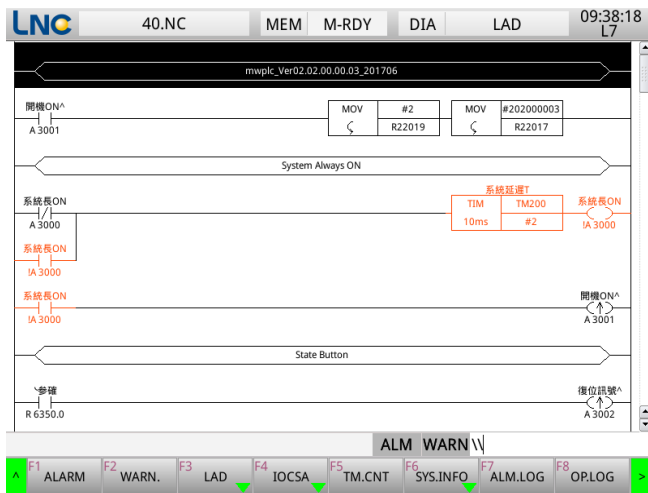
LNC		40.NC	MEM	M-RDY	COM	COORD	09:13:56 L7	
BASE		G54		G55		G56		
X	0.000	X	100.000	X	0.000	X	0.000	
Y	0.000	Y	542.241	Y	0.000	Y	0.000	
Z	0.000	Z	0.000	Z	0.000	Z	0.000	
ABSOLUTE		MACHINE		RELATIVE				
F	5000.000	X	-100.000	X	0.000	X	0.000	
S1	0	Y	-542.241	Y	0.000	Y	0.000	
T	1	Z	0.000	Z	0.000	Z	0.000	
R3094000::X						ALM WARN		
F1	F2	F3	F4	F5	F6	F7	F8	
TOOL MGT		TEACH IN	REL CLR		WORK COO RD.		ATM	

LNC		40.NC		MEM		M-RDY		COM		COORD		09:16:13 L7			
BASE				G54				G55				G56			
X		0.000	X			100.000	X			0.000	X			0.000	
Y		0.000	Y			542.241	Y			0.000	Y			0.000	
Z		0.000	Z			0.000	Z			0.000	Z			0.000	
ABSOLUTE				MACHINE				RELATIVE							
F	5000.000	X		-100.000	X			0.000	X					0.000	
S1	0	Y		-542.241	Y			0.000	Y					0.000	
T	1	Z		0.000	Z			0.000	Z					0.000	
R3094000::X												ALM WARN			
F1	F2	ROW TOOL	F3	HATS	F4	ROW TOOL SET	F5	F6	F7	F8					

This group is mainly used for coordinate system setting, tool compensation setting, automatic tool setting, centering function and tool changer setting. All buttons in this group are listed below:

- **Tool management:** Set the tool length compensation and wear compensation, that is, set the tool compensation table.
- **Teaching input:** Set the mechanical coordinate of the corresponding axis into the selected coordinate system.
- **Relative Clearing:** Clear relative coordinates.
- **Centering function:** Set the origin position of the system coordinate system by finding the optical edge of the workpiece.
- **Automatic tool setting:** Automatic tool setting function is performed according to the parameters set on the page. For detailed instructions, please refer to 3.5.
- **Gang tool setting:** Set the relevant parameters for the gang tool changer. For detailed instructions, please refer to 3.6.1.
- **Bamboo hat type type tool magazine:** Set the relevant parameters for the bamboo hat type type tool magazine. For detailed instructions, please refer to 3.6.2.
- **Drilling setting:** Set the offset of the drilling tool magazine. For detailed instructions, please refer to 3.6.3.

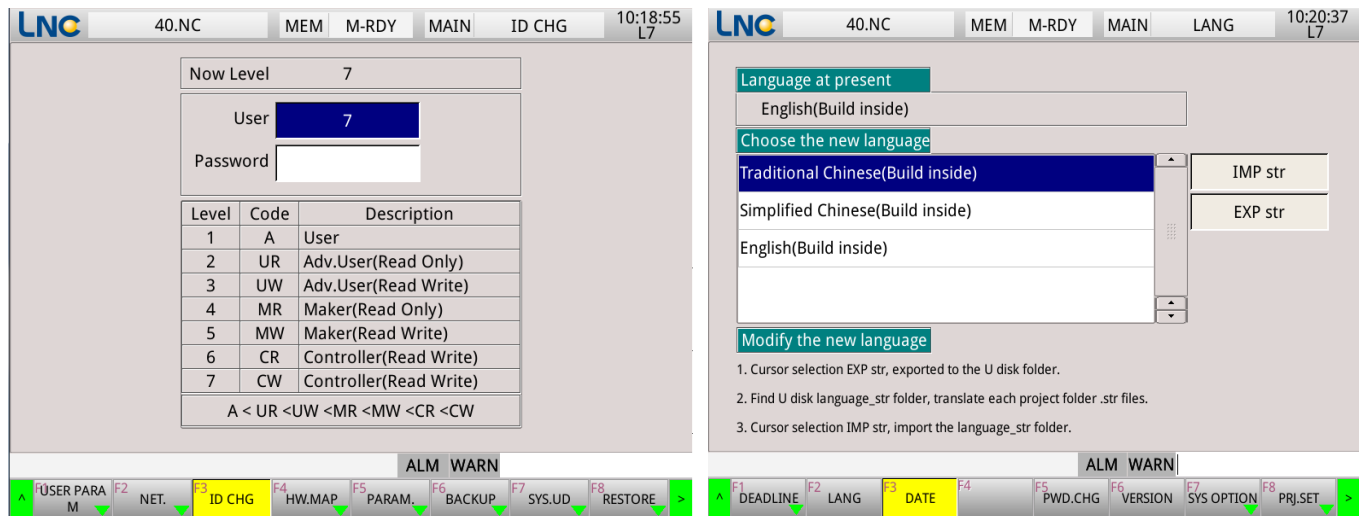
2.4. Diagnosis Group



This group is mainly used to view system warnings, alarms, PLC ladder diagrams, IO point status, system information and operation history. All buttons in this group are listed below:

- **Alarm:** Displays the current alarm status of the system.
- **Warning:** Displays the current warning status of the system.
- **Ladder Diagram:** Displays PLC ladder diagram that is currently running of the system.
- **IOCSA:** Displays the status of each point of I, O, C, S, and A used in the PLC of current system.
- **Timer and counter:** Displays the status of the timer and counter used internally by the system PLC.
- **System Information:** Display internal current information about the system. Currently, it provides mechanical coordinates, encoder values, servo error values, origin grille quantity, system final output commands and handwheel encoder values.
- **Alarm history:** Displays the alarm process that has occurred in the system.
- **Operation history:** Display the relevant operation process of the user's operating system.

2.5. Maintenance Group



This group is mainly used to set system parameters, system backup, system upgrade, IO point setting, network setting, language setting and quick restore. All buttons in this group are listed below:

- **User parameters:** Set the relevant parameters of the PLC writing function. For detailed instructions, please refer to 5.1.
- **Network setting:** Set the IP related information for the system to connect with external devices.
- **Identity change:** User level change, the password of level 3 defaults to 7777.
- **Hardware Contact:** Set the corresponding address of the system and I/O board card and display the current I/O usage status.
※This button needs to be switched to level 5 to appear.
- **Parameters:** Set the system built-in standard parameters, such as: processing effect debugging, hardware usage, axial motion function, etc., please refer to 5.2 for detailed instructions.
- **Backup:** Perform system data backup operation. For details, please refer to 3.7.
- **System update:** Perform system software version update operation. For details, please refer to 3.8.
- **Quick Restore:** Perform quick backup and quick restore of system data. For detailed instructions, please refer to 3.9.
※This button needs to be switched to level 5 to appear.
- **Service life:** Set up and cancel the installment of the machinery factory and the agent.
- **Language setting:** Switch the language system. For details, please refer to 3.10.
- **Password change:** User level password modification.
- **Version information:** View the software version number and version information used in the current system.

- **System function:** View the internal functions that are currently open in the system.
※This button needs to be switched to level 5 to appear.
- **Project setting:** Set the internal parameters corresponding to each type of system according to different system types.
※This button needs to be switched to level 5 to appear.

3. Screen Function Description

3.1. Scanning Code to Open Files

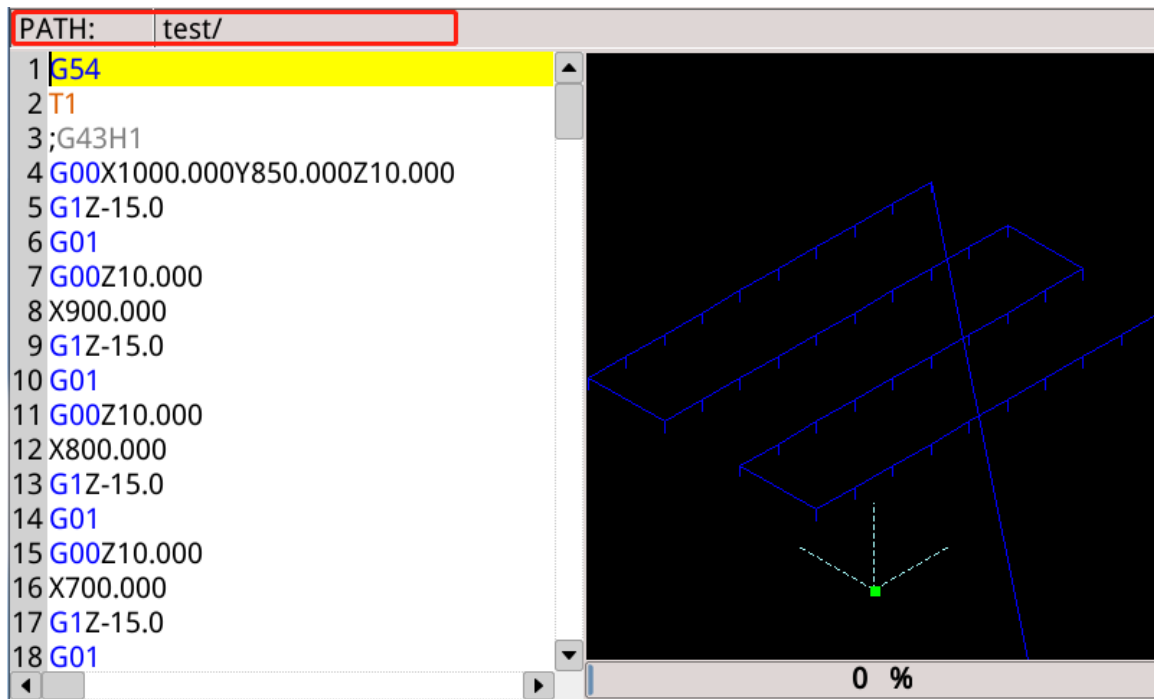
➤ Function path: monitoring group > scanning code to open files

LNC		40.NC	MEM	M-RDY	MON	MON.INFO		10:26:20 L7		
ABSOLUTE		MACHINE		G54						
X	-100.000	X	0.000	T1 ;G43H1 G00X1000.000Y850.000Z10.000 G1Z-15.0 G01 G00Z10.000						
		Y	0.000							
		Z	0.000							
Y	-542.241	DIST TO GO		G00Z10.000						
		X	0.000							
Z	0.000	Y	0.000	LN1						
		Z	0.000	SBK	MLK	MST	BDT	OPS	DRN	F0
		SCAN OPEN								
CNT.NOW		154	RUN	00:00:00	1.					
CNT.MAX		0	ALL RUN	3 D 13:10:14	2.					
F		0	F	5000.000	3.					
SP.SPEED		0	S	18000	4.					
FO		100%	SP.T.NO.	1	5.					
RTO		100%	STBY.T.NO	0						
SO		100%								
R1181012					ALM WARN					
F1	COORD	F2	SET CNT	F3	FILE	F4	USB DISK IM	F5	MDI	
							P			
								F6	GRAPH	
								F7	SCAN OPEN	
								F8	PROG.RST	

1. The function of scanning code to open files provides 5 sets of temporary storage functions for pre-scanning files.
2. Use the up and down buttons to select the name of the program files to be executed. Press the Enter key (Enter) to open the corresponding files.
3. If there is no corresponding file, the system will issue a "Processing program does not exist" alarm.
4. If it's required to delete the file name already entered, press the Backspace button on the keyboard or the CAN button on the MDI (Operation Panel) to delete the entered file name.
5. The max. supported file name is 96 characters.

※ Note:

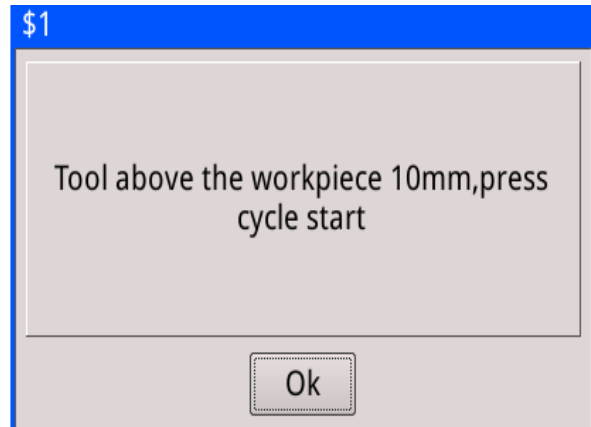
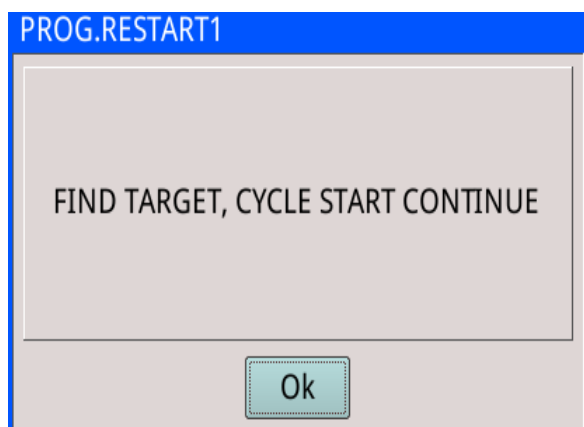
- i. If the file is placed in a folder, the current document path must be in the same folder to open the file.
- ii. Solution: Edit Group> Open Old File(select one of the file in the same folder to set the reading path to the current folder) and the below image red column.
- iii. At present, the system only support one layer file tray, does not support multi-layer tray.



3.2. Breakpoint Re-start

➤ Function Path: Monitoring Group > Program Re-start

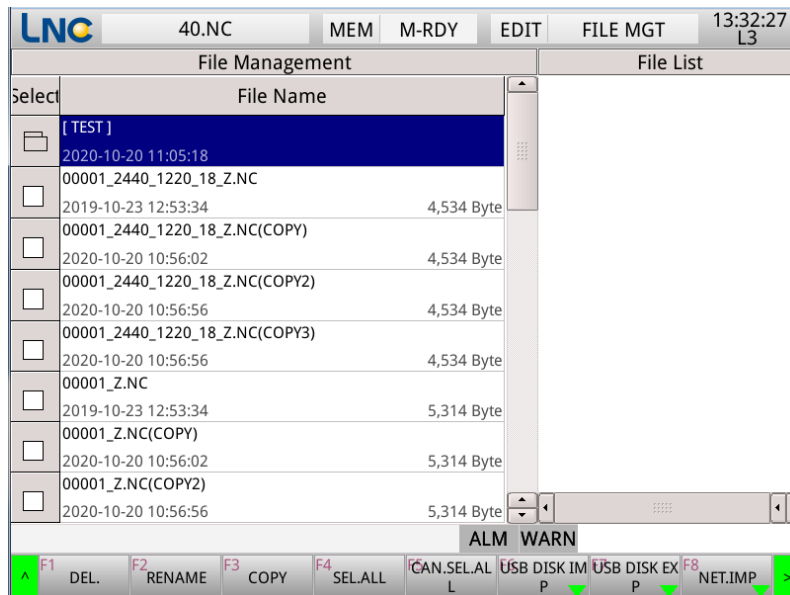
1. The breakpoint re-start function is divided into 5 ways to search for the restarting point.
 - i. Line number search: Search for the breakpoint based on the line number of the machining program entered by the user.
 - ii. Number search: The tool breakpoint search is performed according to the machining program N number input by the user.
 - iii. Breakline search: The breakpoint search is performed according to the breakpoint recorded by the system.
 - iv. M code search: The breakpoint search is performed according to the M code input by the user.
 - v. T code search: The breakpoint search is performed according to the T code input by the user.
2. After searching for the specified position, press the **start machining** to start the breakpoint position recovery action, and the system will move to the top of the breakpoint.



3. The height above the breakpoint is set by user parameter 8052.
4. After moving to the top of the breakpoint, machining startup is pressed again, and the program processing will start.
5. Note:
 - i. Before using the breakpoint to restart, it must be confirmed that the machine has returned to the origin, otherwise the function will not take effect (the set breakpoint cannot be found).
 - ii. When restarting with a breakpoint, it's required to switch the operating mode to automatic (MEM) mode.

3.3. File Management

➤ Function Path: Edit Group > File Management



This function is used to manage the machining procedures in the system, which mainly divided into three parts.

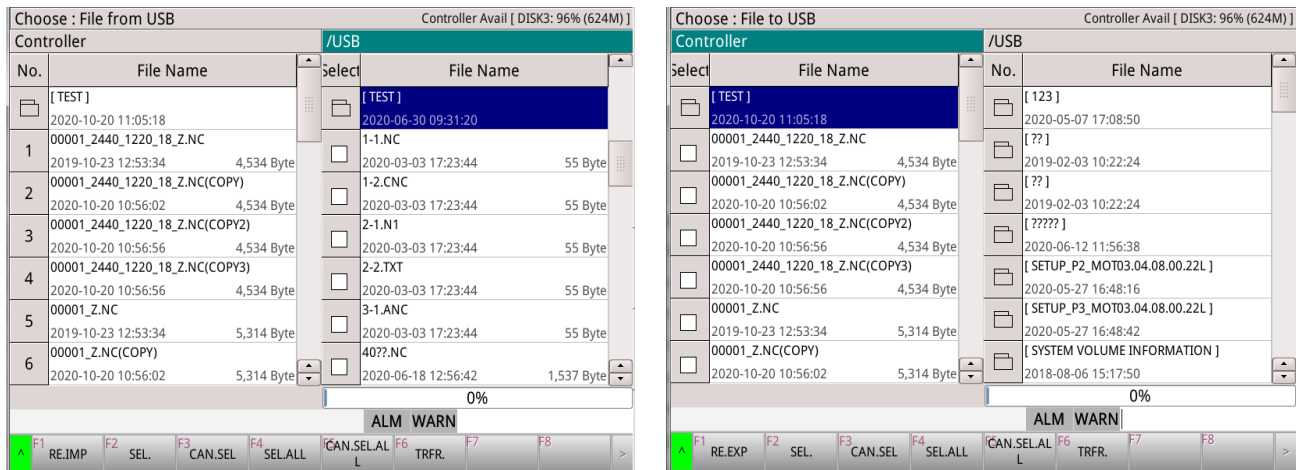
3.3.1. Delete / rename / copy / select all / cancel select all



- Delete: Used to delete the machining program owned by the system. There are three ways to select files: single selection, multiple selection and select all.
- Rename: Rename the file name of the selected program in the system.
- Copy: Copy the selected machining program into a new file, and the new machining program needs to be named during the copying process.
- Select All: Select all machining programs in the system.
- Deselect All: Cancels all selected machining programs.

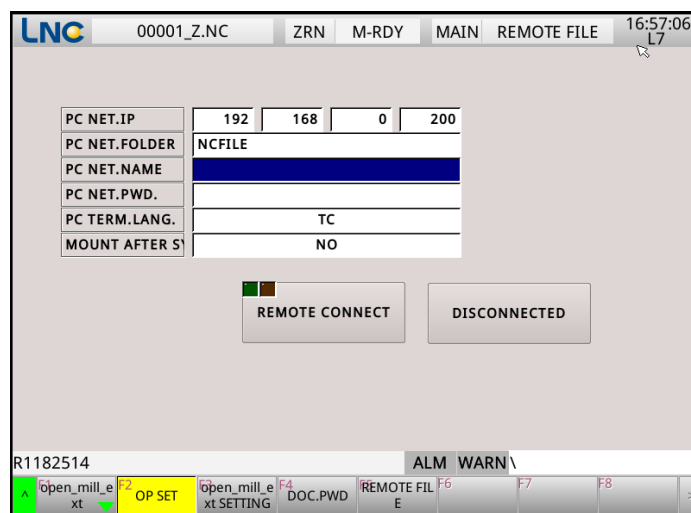
3.3.2. U-disk import / export

- i. After the user inserts the U-disk into the USB port of the system, the U-disk internal processing program is imported into the system through the U-disk import and export function, or the processing program in the computer is exported to the U-disk.
 - ii. As shown in the figure below, the left side of the screen is all the machining programs in the system, and the right side is all the machining programs in the folder selected in the U disk. .
- ※ Note: Folder import only supports one level, like : Test/

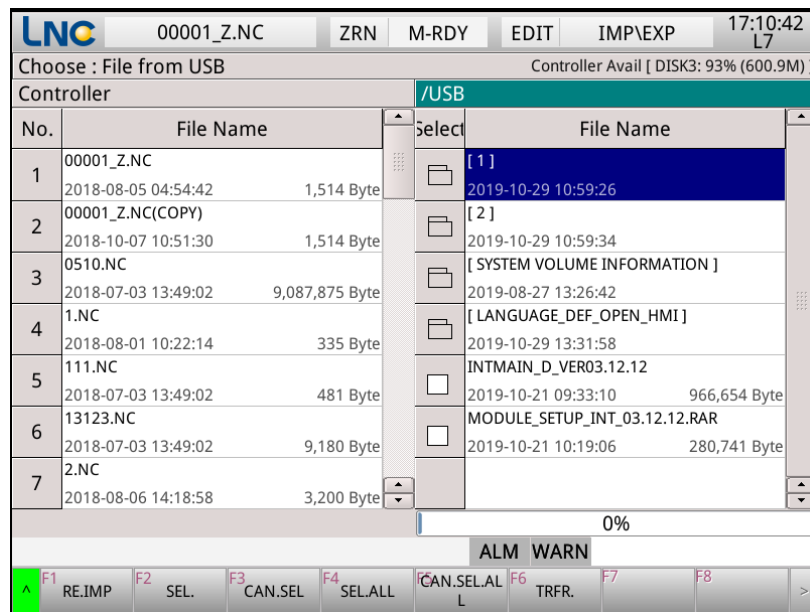


3.3.3. Network disk import / export

- i. Users can directly import the machining program from the computer to the system or export the machining program in the system to the computer through the sharing method of network disk.
- ii. It's required to set the computer IP and computer folder name to provide the shared folder on the system. The parameter setting path is: Maintenance Group > Project Settings > Shared Document (require to switch to level 5).
- iii. The user name and passwords of the PC may not be input (the shared folder on the computer side cannot be set to use the passwords).



- iv. When the network disk import/network disk export is pressed, the system will automatically online. After the connection is successful, an  icon will appear in the system title bar, indicating that both parties have completed online.
- v. As shown in the figure below, the left side of the screen is all the machining programs in the system, and the right side is all the machining programs in the shared folder of the computer.



3.4. Scheduling Machining

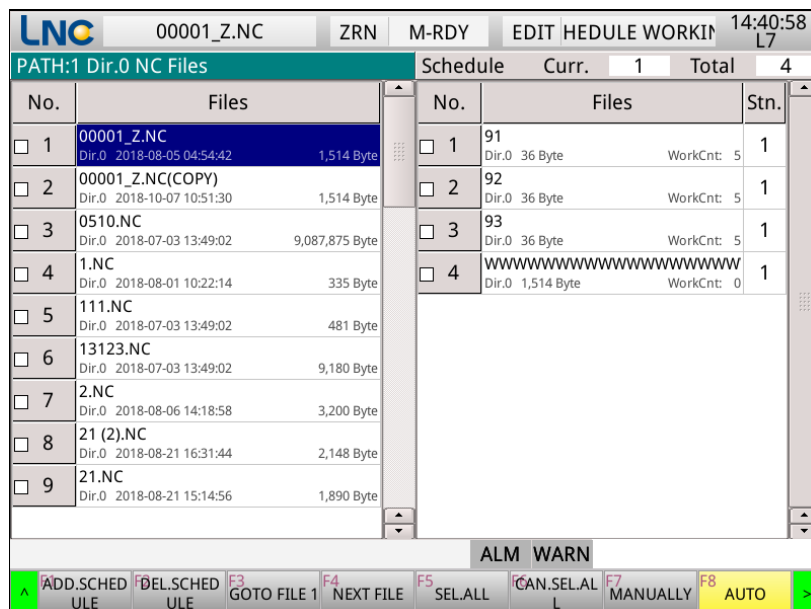
➤ Function Path: Edit Group > Scheduling machining

Scheduling Machining could be divided into standard version and item version.

It could be switched through parameter, user could modify the parameter according to the required.

■ Parameter path: Maintenance group> Instruction argument (must be level 7)

3.4.1. Standard version

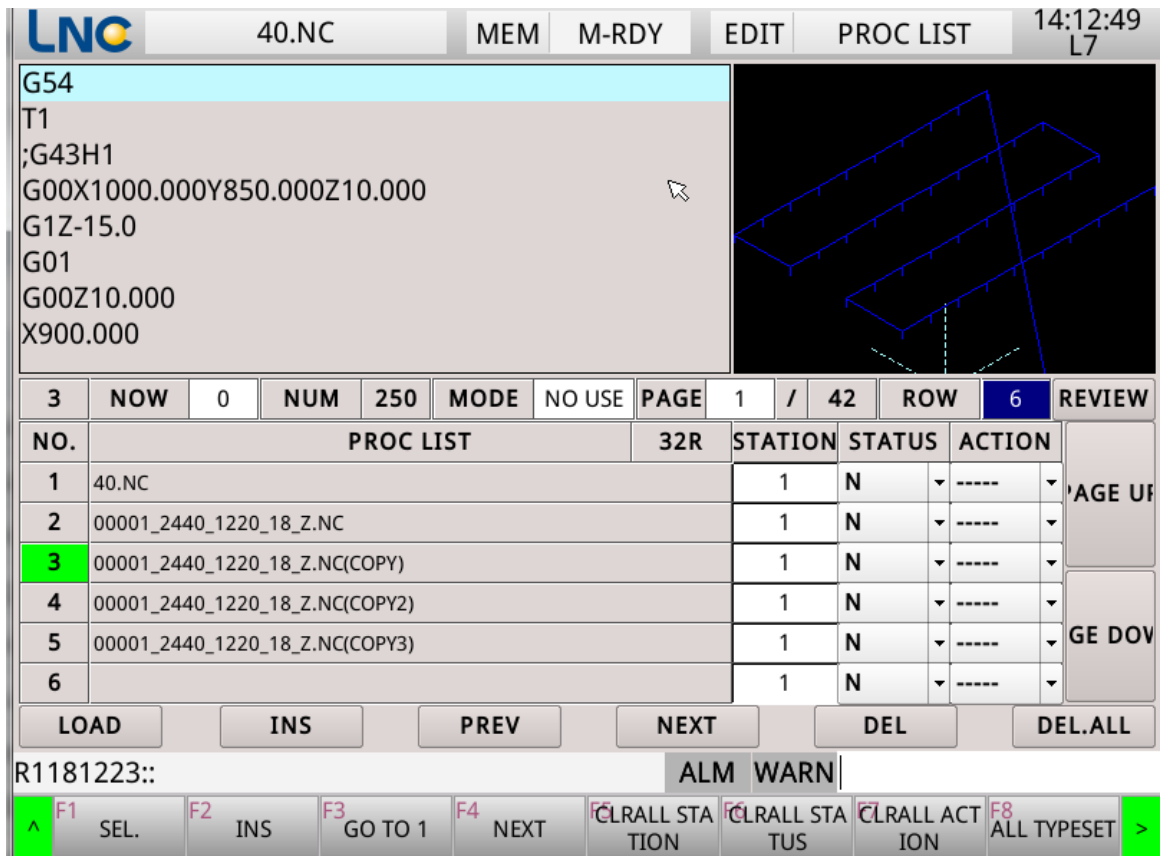


1. Scheduling Machining screen as below, divide into two screens, left side screen display all current processing programs of the system, right side screen display the selected processing program and scheduling sequence.
2. Scheduling Machining has three modes, the introduction as below:

- Not use the scheduling: Do not use this function.
 - Manual Start: When use scheduling machining function, the system will automatically open the next processing program in the schedule, after each execution of the processing program. But the use must manually press to start processing.
 - Auto. Start: When use the scheduling machining function, the system will automatically open the next processing program in the schedule and automatically start processing, after each execution of the processing program. It would not stop processing until the user presses reset or program pause.
3. Click any number in the schedule list to open the program and start scheduling from the number.

3.4.2. **Project version**

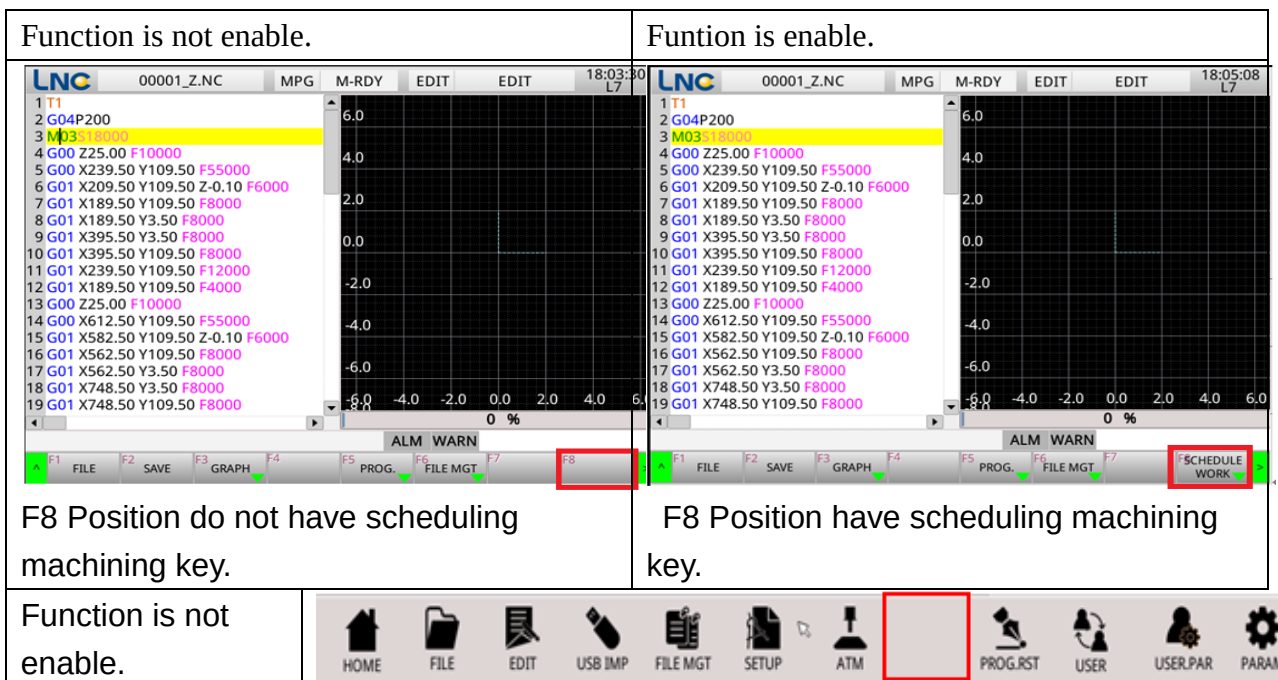
1. Scheduling machining screen is dividing into upper screen and down screen, the upper screen display the current machining program content, coordinate and drawing pre-view. The down screen display all processing program and function of the ongoing schedule.
2. There are three startup modes of scheduling machining, the introduction as below:
 - Do not use: Do not use the scheduling machining function.
 - Manual Start: When use scheduling machining function, the system will automatically open the next processing program in the schedule, after each execution of the processing program. But the use must manually press to start processing.
 - Auto. Start: When use the scheduling machining function, the system will automatically open the next processing program in the schedule and automatically start processing, after each execution of the processing program. It would not stop processing until the user presses reset or program pause.
3. There are five additional action of the scheduling machining, the introduction as below:
 - No action: Only process the scheduling machining program content.
 - Feeding: Processing feeding, before processing scheduling machining.
 - Blanking: Processing blanking, before processing scheduling machining.
 - Feeding & Blanking: Including feeding and blanking.
 - Not processed: Do not process this function.



- Startup mode could be modified on screen, as the above image. (0:Not use, 1: Manual, 2: Automatic)

※ Note:

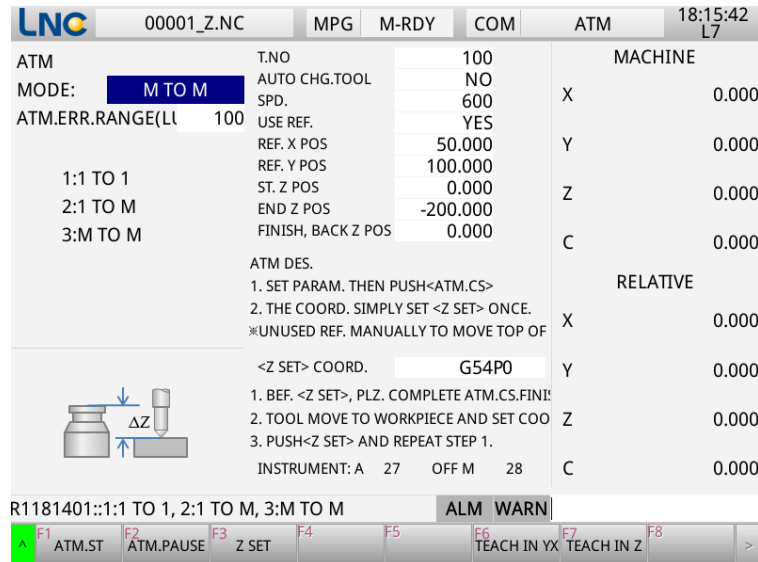
This function need to be enabled, then the usage path will appear (show as below image), same for short-cut key.



Function is enable.



3.5. Automatic Tool Setting



➤ Function Path: Compensation Group > Automatic Tool Setting

1. The automatic tool setting function provides three tool setting modes as follows:
 - Single-tool single workpiece: only one tool and one workpiece are processed during machining.
 - Single-tool multi-tasking workpiece: Only one tool is used for machining, but there are different machining workpieces.
 - Multi-tool multi-tasking workpiece: tool change will be carried out during machining, and there will be a variety of different machining workpieces. Generally, woodworking machines are of this type.
2. Multi-tool multi-tasking tool-setting steps:
 - i. Perform the tool-setting first (press the tool-setting on the screen to start).
 - ii. The tool-setting operation is started for the parameters set on the screen.
 - iii. Manually move the tool to the workpiece surface (or the machining platform) after the tool-setting is completed.
 - iv. Set the Z drop (press the Z drop on the screen, only the first tool needs to be set).
3. Note:
 - i. The Z drop of the first tool must be set, and the user can modify the coordinate system of the Z drop (The preset is G54).
 - ii. It is not necessary to set the Z drop from the second tool, and only the tool-setting action is required.

- iii. When using the tool compensation, the machining program must use the coordinate system set by the Z drop (The preset is G54).
- iv. If different workpiece surfaces are used, the corresponding Z-drop coordinate system needs to be modified.

3.6. Tool Magazine Setting

3.6.1. Gang tool setting

LNC 00001_Z.NC MEM M-RDY COM ROW.TOOL 20:10:10 L7			
ROW.TOOL.TYPE SET	FIXED		SP.T.NO. 0
1st F(LU/min)	0		2nd F 0
SETTING OFFSET	X OFFSET	Y OFFSET	Z OFFSET
T.CHG.OFFSET	0.000	0.000	0.000
RETURN TOOL C	0.000	0.000	0.000
MAG PUSH&BACK CHECK	NUL	T.NUM	12
T.NO	XCOORD	YCOORD	ZCOORD
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
R3312032::T1 XCOORD		ALM WARN	
F1 ROW.TOOL1	F2 ROW.TOOL2	F3 SRCH.T.NO.	F4 TEACH IN
F5 FAST.SET	F6 CLR.	F7 CLR.ALL	F8 >

➤ Function Path: Compensation Group > Next Page> Gang Tool Setting

1. If the gang tool magazine is used, the related settings of tool magazine can be performed via this page.
 2. The tool-changing coordinate of gang tool is the actual tool-changing position. If it is necessary to perform the tool-changing offset, it needs to be set in the offset parameters.
 3. Support double row tool magazine.
- ※ **Note:** The first speed and second speed of tool take and return must be set the value, otherwise the alarm will pop up when the tool is changed.

3.6.2. Carousel style tool magazine setting

LNC		00001_Z.NC		NC JOG	M-RDY	COM	HATS	20:40:04 L7
HATS	SP.NO	0	MAG.NO	10	MAG Z SAFE COORD(LU)			-10000
HATS MAG TYPE		MOVABLE	MAG HOME OFFSET(LU)		0	T.NUM		12
CHG.TOOL AXIAL		MAG X COORD.		MAG Y COORD.		MAG Z COORD		
AX.X		0.000		0.000		-109.498		
SETTING OFFSET		X OFFSET(LU)		Y OFFSET(LU)		Z OFFSET(LU)		
MAG.GET		0.000		0.000		0.000		
MAG.PUT		0.000		0.000		0.000		
PUSH&BACK CHECK		NUL		MAG DOOR DEC.		NUL		
1st F(LU/min)		0		2nd F		0		
MANUALLY CHG.T SPD(KLU/		10000		MANUALLY CHG.T DIS(LU/TC		30000		
T.NO		C.S2MAG.M.COORD(DEG)				MACHINE		
1		0.000		X	0.000			
2		0.000		Y	0.000			
3		0.000		Z	-10.000			
4		0.000		C	0.000			
5		0.000						
R9008::[0~3] ALM WARN								
F1	HATS1	F2	HATS2	F3	F4	F5	F6	F7
F8								

➤ Function Path: Compensation Group > Next Page> Carousel style tool magazine

1. If the Carousel style tool magazine is used, the related settings of tool magazine can be performed via this page.
2. The bamboo hat type tool-changing coordinates are the actual tool-changing positions. If the tool-changing offset is required, it needs to be set in the offset parameters.
3. Note: The value of the first speed and second speed of the tools must be set, otherwise the system will give an alarm when the tool is changed.

※ Note:

- i. The first speed and second speed of tool take and return must be set the value, otherwise the alarm will pop up when the tool is changed.
- ii. The magazine type must be same.

3.7. Backup

- Function Path: Maintenance Group > Backup

Select	No.	File Name	Output	Input
☐	1	Backup All machine	L3	L3
☐	2	DI/DO Map (iomap_di.dat;iomap_do.dat;iomap_ai.dat;ior	L3	L3
☐	3	Hard Parameter (param_hwif.dat)	L3	L3
☐	4	Com Parameter (param_com.dat)	L3	L3
☐	5	Path Parameter (param_int.dat)	L3	L3
☐	6	Axis Parameter (param_mot.dat;param_mot2.dat)	L3	L3
☐	7	HMI Parameter (param_hmi.dat)	L3	L3

0%

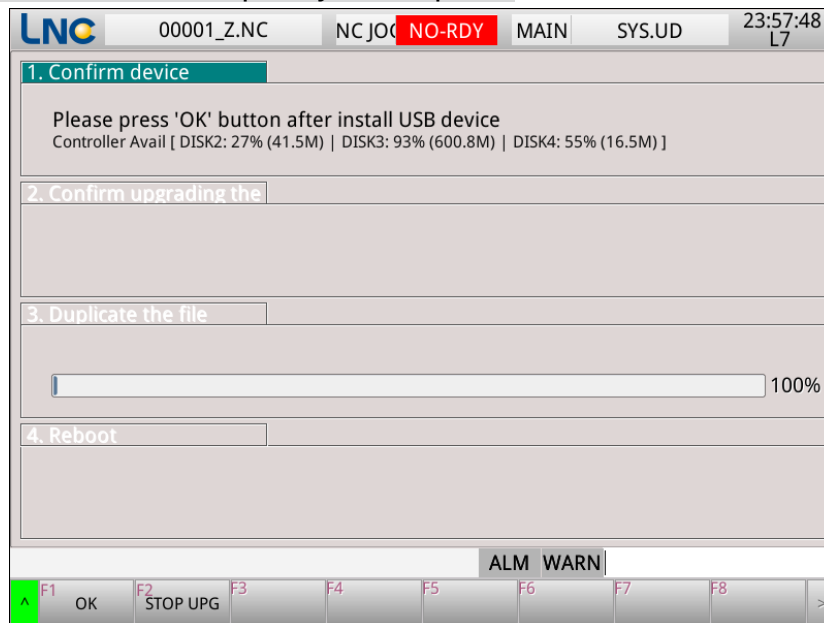
ALM WARN

F1 IMP.USB F2 EXP.USB F3 F4 F5 F6 F7 F8

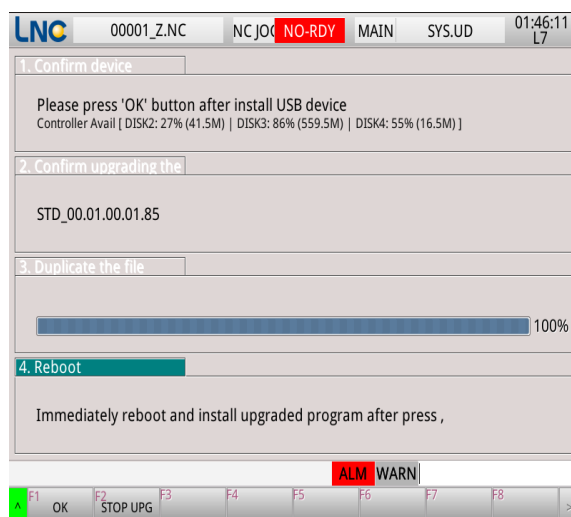
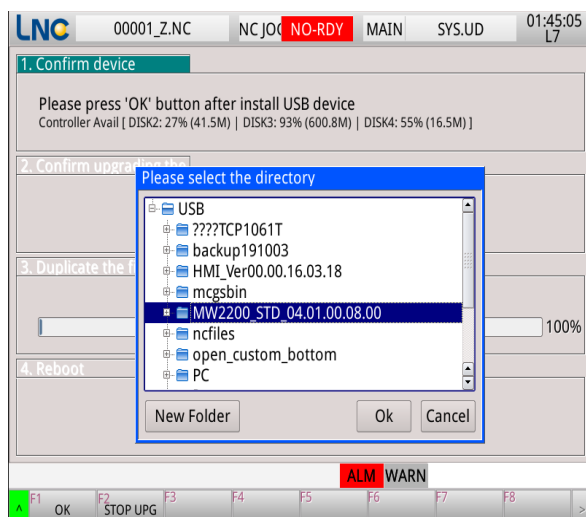
1. Use U-disk for system backup and restore actions:
 - i. Backup: After inserting the USB flash drive, check **the export to USB**, select **all data backup**, press the **transfer** and select the U-disk folder. After selecting it, press **OK** to start the backup and wait for a few seconds until the system prompts the transfer to complete. After the backup is completed, the backup folder will appear, and the files inside will be the backup files.
 - ii. Restore: After inserting the USB-disk, check the **USB import**, select the upper layer folder where the backup folder is placed in the USB-disk, and press the **transfer** to start restoring the system data after the selection. After the restoring is complete, you must restart the system to restore the original backup state.
2. Note: This feature must be performed after an emergency stop has been pressed to prevent the machine from unpredictable conditions during the backup process.

3.8. System Update

➤ Feature Path: Maintenance Group > System Update



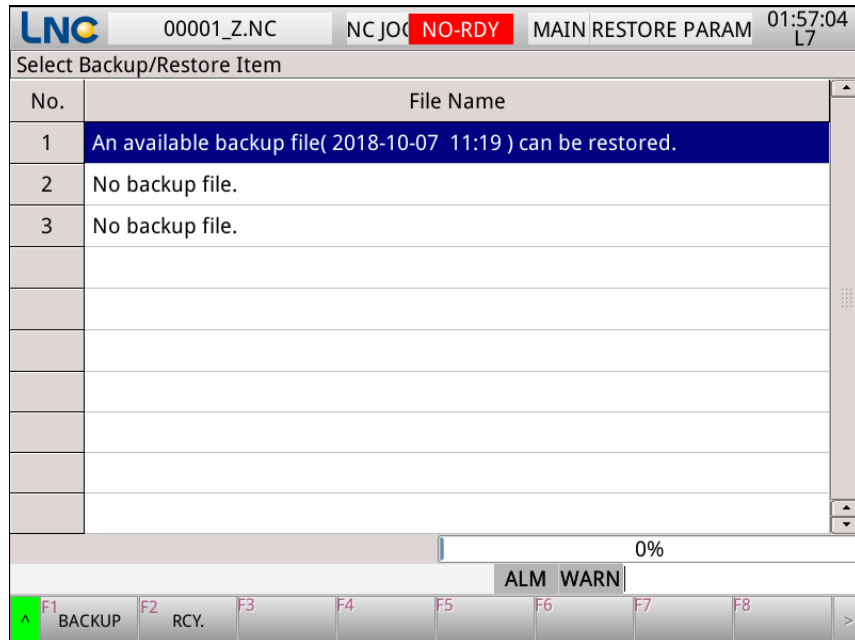
1. Use a U-disk to update the system. Insert the U-disk into the system and press **OK**. The system will immediately mount the U-disk. After the mounting is successful, the U-disk content will appear. If not, the system will display a prompt of **failure to mount the USB**.
2. After selecting the folder where the upgrade package is placed, press **OK**.
3. Confirming the location of the upgrade version will result in the software version to be upgraded. The upgrade file will be copied after **OK** is pressed again.
4. After the copy is complete, press **OK** to automatically restart the system and complete the system update.



5. Note: This function must be performed by pressing the emergency stop to prevent the machine from unpredictable conditions during the system update process.

3.9. Quick Restore

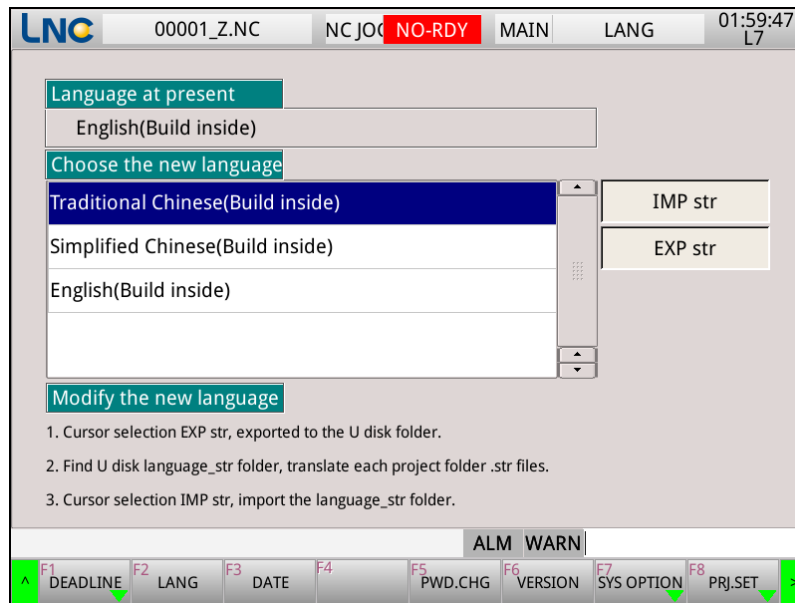
- Function Path: Maintenance Group > Quick Restore (It's required to switch the system level to 5)



1. The system provides quick restore and backup functions, allowing the machinery factory to set the factory default value when the machine is shipped. When the user is in operation error, it can quickly restore the factory default value of the machinery factory, reducing the need for personnel to be on-site for after-sales service.
2. Select the number to backup/restore, press the Backup/Restore button, and wait a few seconds for the operation to complete.
3. Note: This function must be performed by pressing the emergency stop to prevent the machine from unpredictable conditions during the backup/restore process.

3.10. Language Setting

- Function Path: Maintenance Group > Next Page> Language Settings



There are three languages in the system, which are Traditional Chinese, Simplified Chinese, and English. Select according to your needs. Use the up and down buttons on the keyboard to select the language and press ENTER. After waiting for 10 seconds, the language will be changed immediately without restarting the system.

4. Built-in Function Description

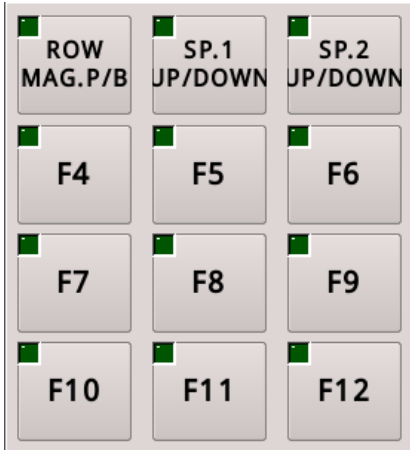
4.1. Automatic Loading And Unloading

1. The system provides three operating procedures of standard automatic loading, automatic uploading and automatic loading and unloading.
2. There are two ways to use automatic loading. The first type is M-code calling, the M-code number is M15, and the second type is one-key loading.
3. There are two ways to use automatic uploading. The first type is M-code calling, the M-code number is M17, and the second type is one-key uploading.
4. There are two ways to use automatic loading and unloading. The first type is M-code calling, the M-code number is M16; the second type is one-key loading and unloading.
5. The relevant parameters setting of the loading and unloading are located in the project parameters of the user parameters.

Parameter No.	Parameter Content
8319	[Unloading function] Feeding machine detection time (seconds)
8324	[Unloading/dusting function] Pushing the dusting cylinder up and down in-place to check (0: no inspection, 1: up in-place, 2: down in-place, 3: up and down in-place)
8331	[Unloading function] Uploading movement speed (KLU/MIN)
8332	[Unloading function] Mechanical coordinate (LU) of the starting point of the uploading
8333	[Unloading function] Machine coordinate (LU) at the end point of the uploading
8334	[Loading / unloading function] Loading and unloading direction (0:X axis, 1:Y axis)
8335	[Loading function] Loading movement speed (KLU/MIN)
8337	[Loading function] Mechanical coordinate (LU) of the starting point of loading of the first stage
8338	[Loading function] Mechanical coordinate (LU) of the end point of loading of the first stage
8339	[Loading function] Mechanical coordinate (LU) of the starting point of loading of the second stage
8340	[Loading function] Mechanical coordinate (LU) of the end point of loading of the second stage

8341	[Loading function] Loading cylinder up and down in-place to check (0: no check, 1: up in-place, 2: down in-place, 3: up and down in-place)
8342	[Loading function] Loading and unloading in-place to check (0: no inspection, 1: loading inspection, 2: uploading inspection, 3: loading and uploading inspection)

6. Note: When using the one-key operation function, you need to select the relevant function in the **optional function buttons**, as shown below.



4.2. Spindle Function

4.2.1. Spindle speed correlation

- The system provides the judgment method of the spindle speed arrival and zero speed arrival. The parameter setting method can be used to select the method of calculating the number of seconds or the system spindle speed arrival and zero speed arrival can be notified by using the external signal.
- The parameter setting is located in the system value of the user parameters.

Parameter No.	Parameter Content
8312	Waiting time for arrival of first spindle speed (seconds, -1: external signal notification)
8313	Waiting time for arrival of second spindle speed (seconds, -1: external signal notification)
8314	Waiting time for arrival of third spindle speed (seconds, -1: external signal notification)
8315	Waiting time for arrival of forth spindle speed (seconds, -1: external signal notification)
8343	[Spindle function] Waiting time for arrival of zero speed of

	first spindle (seconds, -1: external signal notification)
8344	[Spindle function] Waiting time for arrival of zero speed of second spindle (seconds, -1: external signal notification)
8345	[Spindle function] Waiting time for arrival of zero speed of third spindle (seconds, -1: external signal notification)
8346	[Spindle function] Waiting time for arrival of zero speed of forth spindle (seconds, -1: external signal notification)

3. The M-code setting of the spindle speed related is located in the M-code setting in the user parameters.

Parameter No.	M-code Content	Default Value
9421	[M-code Setting] The second spindle rotates forward	103
9422	[M-code Setting] The seond spindle reverses	104
9423	[M-code Setting] The second spindle stops	105
9428	[M-code Setting] The third spindle rotates forward	113
9429	[M-code Setting] The third spindle reverses	114
9430	[M-code Setting] The third spindle stops	115
9431	[M-code Setting] The forth spindle rotates forward	123
9432	[M-code Setting] The forth spindle reverses	124
9433	[M-code Setting] The forth spindle stops	125

4.2.2. Spindle cylinder

1. The system provides the function of judging whether the inspection is in-place when using the spindle cylinder. If there is no inspection mechanism, the function can be turned off by parameters.
2. The parameter setting is located in the system value in the user parameters.

Parameter No.	Parameter Content
8070	Inspection form of the first spindle up and down in-place (0: no inspection, 1: up in-place, 2: down in-place, 3: up and down in-place)
8071	Inspection form of the second spindle up and down in-place (0: no inspection, 1: up in-place, 2: down in-place, 3: up and down in-place)
8072	Inspection form of the third spindle up and down in-place (0: no inspection, 1: up in-place, 2: down in-place, 3: up and down in-place)
8073	Inspection form of the forth spindle up and down in-place (0: no inspection, 1: up in-place, 2: down in-place, 3: up and down in-place)

3. The M-code setting of spindle cylinder related is located in the M-code setting in the user parameters.

Parameter No.	M-code Content	Default Value
9424	[M-code Setting] First spindle up	26
9425	[M-code Setting] First spindle down	25
9426	[M-code Setting] Second spindle up	41
9427	[M-code Setting] Second spindle down	40
9434	[M-code Setting] Third spindle up	43
9435	[M-code Setting] Third spindle down	42
9436	[M-code Setting] Forth spindle up	45
9437	[M-code Setting] Forth spindle down	44

4.2.3. Spindle Suction Hood

- The system provides the function of judging whether the inspection is in-place when using the spindle suction hood. If there is no inspection mechanism, the function can be turned off by parameters.
- The parameter setting is located in the system value in the user parameters.

Parameter No.	Parameter Content
8320	Spindle 1 suction hood up and down in-place inspection (0: no inspection, 1: up in-place, 2: down in-place, 3: up and down in-place)

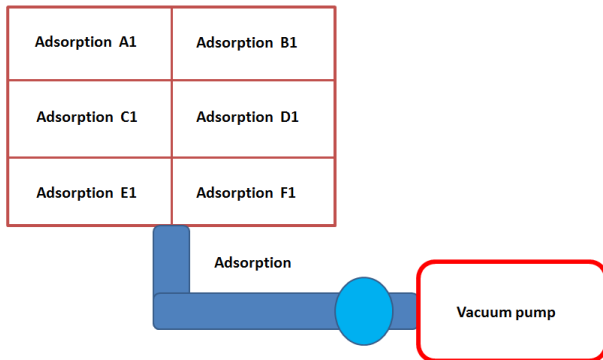
8321	Spindle 2 suction hood up and down in-place inspection (0: no inspection, 1: up in-place, 2: down in-place, 3: up and down in-place)
8322	Spindle 3 suction hood up and down in-place inspection (0: no inspection, 1: up in-place, 2: down in-place, 3: up and down in-place)
8323	Spindle 4 suction hood up and down in-place inspection (0: no inspection, 1: up in-place, 2: down in-place, 3: up and down in-place)

3. The M-code setting of spindle suction hood related is located in the M-code setting in the user parameters.

Parameter No.	M-code Content	Default Value
9438	[M-code Setting] First spindle suction hood up	140
9439	[M-code Setting] First spindle suction hood down	141
9440	[M-code Setting] Second spindle suction hood up	142
9441	[M-code Setting] Second spindle suction hood down	143
9442	[M-code Setting] Third spindle suction hood up	144
9443	[M-code Setting] Third spindle suction hood down	145
9444	[M-code Setting] Forth spindle suction hood up	146
9445	[M-code Setting] Forth spindle suction hood down	147

4.3. Adsorption Function

- The system provides two types of adsorption, one is the partition adsorption control on the worktable surface; the other is the adsorption control of the entire worktable, as shown in the following diagram:



- The adsorption related parameter setting is located in the system value in the user parameters.

Parameter No.	Parameter Content
8309	Maintenance time (ms) of vacuum destruction 1
8310	Maintenance time (ms) of vacuum destruction 2

- The adsorption related M-code setting is located in the M-code setting in the user parameters.

Parameter No.	M-code Content	Default Value
9408	[M-code Setting] Adsorption 1 on	90
9409	[M-code Setting] Adsorption 1 off	91
9410	[M-code Setting] Adsorption 2 on	96
9411	[M-code Setting] Adsorption 2 off	97
9412	[M-code Setting] Vacuum pump 1 on	10
9413	[M-code Setting] Vacuum pump 1 off	11
9414	[M-code Setting] Vacuum pump 2 on	20

9415	[M-code Setting] Vacuum pump 2 off	21
------	---------------------------------------	----

4.4. Positioning

1. The system provides a total of 6 sets of positioning controls, which can be used by the user for related positioning, or for side pushing or back pushing during the loading and unloading actions.
2. The adsorption-related M-code setting is located in the M-code setting in the user parameters.

Parameter No.	M-code Content	Default Value
9400	[M-code Setting] Positioning 1 on	8
9401	[M-code Setting] Positioning 1 off	9
9402	[M-code Setting] Positioning 2 on	18
9403	[M-code Setting] Positioning 2 off	19
9404	[M-code Setting] Positioning 3 on	61
9405	[M-code Setting] Positioning 3 off	62
9406	[M-code Setting] Positioning 4 on	63
9407	[M-code Setting] Positioning 4 off	64
9456	[M-code Setting] Positioning 5 on	36
9457	[M-code Setting] Positioning 5 off	37
9458	[M-code Setting] Positioning 6 on	38
9459	[M-code Setting] Positioning 6 off	39

4.5. Dust-removal

4.5.1. Dust-removal of single station

1. The dust-removal actions in the single-station system is the same as the uploading actions. When used, it is to call M17 or trigger one-key uploading button.
2. The related parameters setting of single-station dust-removal is located in the project parameters in the user parameters.

Parameter No.	Parameter Content
8324	[Unloading/dust-removal function] Pushing dust-removal cylinder up and down in-place inspection (0: no inspection, 1: up in-place, 2: down in-place, 3: up and down in-place)
8325	[Dust-removal function] Dust-removal speed (KLU/MIN)
8332	[Unloading function] Mechanical coordinates of the starting point of uploading (LU)
8333	[Unloading function] Mechanical coordinates of the end point of uploading (LU)
8334	[Loading / unloading function] Loading and unloading direction (0:X axis, 1:Y axis)
8336	[Dust-removal function] Dust-removal direction (0: X axis, 1: Y axis)

4.5.2. Double-station dust-removal

4. There are two modes for double-station dust-removal.
 - i. When the machine is standby, the dust-removal of the station will be performed immediately after pressing the dust-removal button corresponding to the station.
 - ii. When machining, press the dust-removal button corresponding to the non-machining station, and wait until the tool lifting during machining (Z-axis position is greater than the set value), the dust-removal action will be performed in the non-machining zone. After the dust-removal is completed, the original state will be restored to continue the unfinished machining.
5. The setting of the relevant parameters of the double station dust-removal is located in the project parameters in the user parameters.

Parameter No.	Parameter Content
8324	[Unloading/dust-removal function] Pushing dust-removal cylinder up and down in-place inspection (0: no inspection, 1: up in-place, 2: down in-place, 3: up and down in-place)

8325	[Dust-removal function] Dust-removal speed (KLU/MIN)
8326	[Dust-removal function] Allow dust-removal Z-axis coordinates (LU) during machining
8327	[Dust-removal function] Machine coordinate (LU) of the dust-removal starting point of station 1.
8328	[Dust-removal function] Machine coordinate (LU) of the dust-removal end point of station 1.
8329	[Dust-removal function] Machine coordinate (LU) of the dust-removal starting point of station 2.
8330	[Dust-removal function] Machine coordinate (LU) of the dust-removal end point of station 2.
8336	[Dust-removal function] Dust-removal direction (0: X axis, 1: Y axis)

5. Parameters Setting

5.1. User Parameters

- Function Path: Maintenance Group > User Parameters (it's required to switch the system level to 5)

Note: The contents of the user parameters will vary depending on the model version, but not all models of the woodworking machine are the same.

User parameters are divided into 6 items, respectively, as follows:

- **Project parameters:** The parameters in this area include loading and unloading parameters, tool magazine-related parameters, etc.

No.	SetValue	Description
1000000	1600	User Parameter ON/OFF Count[0~1600]
1000001	1950	User Parameter Value Count[0~1950]
8319	60	[UNLOADING FUN] UNLOADING CHECK TIME(SEC.)[0~120]
8324	0	[UNLOADING FUN] PUSH MATERIAL/DUST COVER UP/DOW
8331	10000	[UNLOADING FUN] UNLOADING MOVING SPEED(KLU/MIN)
8332	2810000	[UNLOADING FUN] UNLOADING START POINT MECHANICA
8333	290000	[UNLOADING FUN] UNLOADING END POINT MECHANICAL
8334	1	[LOADING/UNLOADING FUN] LOADING/UNLOADING MOVI
8335	10000	[LOADING FUN] LOADING MOVING SPEED(KLU/MIN)[0~99
8337	3125000	[LOADING FUN] THE 1ST STAGE LOADING START POINT ME
8338	5000	[LOADING FUN] THE 1ST STAGE LOADING END POINT MEC
8339	0	[LOADING FUN] THE 2ND STAGE LOADING START POINT M
8340	0	[LOADING FUN] THE 2ND STAGE LOADING END POINT ME
8341	0	[LOADING FUN] LOADING VALVE UP/DOWN IN PLACE CHE
8342	0	[LOADING FUN] SUCK MATERIAL/PUT MATERIAL UP/DOWN

User Parameter ON/OFF Count[0~1600] ALM WARN

F1 PRJ.PARAM F2 SYS.SW F3 SYS.VAL F4 SPD.SET F5 LIM.SET F6 M CODE SET F7 SRCH F8 SHOW DES.

- **System switch:** switch setting of related functions in the system, for example: whether it's priority to return to the origin after power on, whether the Z axis is preferentially returned to the origin, whether to use air pressure detection, etc.

No.	SetValue	Description
8000.0	0	RETURN HOME FIRST(0:YES,1:NO)[0~1]
8000.1	1	Z AXIS RETURN HOME FIRST(0:YES,1:NO)[0~1]
8000.2	0	SET ABS HOME SWITCH(0:OFF,1:ON)[0~1]
8000.3	0	MPG DRY BACK(0:NO, 1:YES)[0~1]
8000.20	0	VACUUM PUMP NO USING WARNING(0:NO,1:YES)[0~1]
8000.21	1	USE AIR PRESSURE CHECK(0:NO,1:YES)[0~1]
8000.25	0	RETURN HOME SPEED RESTRICTED BY OVERRIDE(0:YES,1:N
8001.0	0	MULTI-SPINDLE INVERTER TYPE(0:INDEPENDENT,1:SHARE)[
8001.1	0	FOUR SPINDLE SHARE INVERTER TYPE(0:SINGLE,1:DUAL)[0~
8010.0	1	WHETHER TO ENABLE HIDDEN MODE(0:NO,1:YES)[0~1]
8010.4	0	THE 6TH AXIS SYNCHRONIZE X AXIS(0:NO,1:YES)[0~1]
8010.5	1	THE 6TH AXIS SYNCHRONIZE Y AXIS(0:NO,1:YES)[0~1]

RETURN HOME FIRST(0:YES,1:NO)[0~1] ALM WARN

F1 PRJ.PARAM F2 SYS.SW F3 SYS.VAL F4 SPD.SET F5 LIM.SET F6 M CODE SET F7 SRCH F8 SHOW DES.

- **System value:** The setting of the relevant function value in the system, for example: the

waiting time of the spindle speed arrival, the waiting time of the spindle zero speed arrival, the inspection type of the spindle up and down in-place, etc.

LNC		00001_Z.NC	ZRN	M-RDY	MAIN	U.Param3	13:39:03 L7
No.	SetValue	Description					
8052	10000	PROGRAM RESTART,Z AXIS SAFETY POS.(LU)[-999999999~999999999]					
8053	2	USE WORKING SCHEDULE FUNCTION(0:NO,1:MANUAL,2:AUTO)					
8067	50	Z AXIS SERVO OFF DELAY TIME(MS)[0~100000]					
8070	0	SP.#1 UP/DOWN IN PLACE CHECK TYPE(0:NOT CHECKED,1:CHECKED)					
8071	0	SP.#2 UP/DOWN IN PLACE CHECK TYPE(0:NOT CHECKED,1:CHECKED)					
8072	0	SP.#3 UP/DOWN IN PLACE CHECK TYPE(0:NOT CHECKED,1:CHECKED)					
8073	0	SP.#4 UP/DOWN IN PLACE CHECK TYPE(0:NOT CHECKED,1:CHECKED)					
8078	20	Z AXIS BRAKE CANCELED DELAY TIME(MS)[0~10000]					
8098	5	LUBRICATION ENABLE MAINTAIN TIME(SEC.)[0~60]					
8099	3600	LUBRICATION ENABLE INTERVAL TIME(SEC.)[0~86400]					
8130	10	X AXIS INC-JOG DISTANCE(LU)[1~99999999]					
8131	10	Y AXIS INC-JOG DISTANCE(LU)[1~99999999]					
8132	10	Z AXIS INC-JOG DISTANCE(LU)[1~99999999]					
8210	1	OPERATION MODE TYPE(0:KNOB,1:KEY)[0~1]					
8211	1	G01 OVERRIDE TYPE(0:KNOB,1:KEY)[0~1]					
8212	1	G00 OVERRIDE TYPE(0:KNOB,1:KEY,2:ADD/SUB)[0~2]					
8213	1	SP.SPEED OVERRIDE TYPE(0:KNOB,1:KEY)[0~1]					
8214	0	RAPID KEY TYPE(0:PRESSING IS RAPID MODE,RELEASING IS STOP)					
8309	1000	VACUUM BREAK 1 MAINTAIN TIME(MS)[0~10000]					
PROGRAM RESTART,Z AXIS SAFETY POS.(LU)[-999999999] ALM WARN							
F1	F2	F3	F4	F5	F6	F7	F8
PRJ.PARAM	SYS.SW	SYS.VAL	SPD.SET	LIM.SET	M CODE SET	SRCH	SHOW DES.

- **Speed:** The related speed setting of the manual mode in the system, for example: F0 speed, JOG speed, fast forward speed, etc.

LNC

00001_Z.NC

ZRN

M-RDY

MAIN

U.Param4

13:44:57
L7

No.	SetValue	Description
8050	100000	MPG DRY OVERRIDE[1~99999999]
8051	0	RAPID 0%(F0)SPEED(KLU/MIN)[0~99999]
8100	15000	X AXIS JOG SPEED(KLU/MIN)[0~99999]
8101	15000	Y AXIS JOG SPEED(KLU/MIN)[0~99999]
8102	6000	Z AXIS JOG SPEED(KLU/MIN)[0~99999]
8105	45000	X AXIS RAPID SPEED(KLU/MIN)[0~99999]
8106	45000	Y AXIS RAPID SPEED(KLU/MIN)[0~99999]
8107	8000	Z AXIS RAPID SPEED(KLU/MIN)[0~99999]
8135	500	X AXIS INC-JOG SPEED(KLU/MIN)[1~99999]
8136	500	Y AXIS INC-JOG SPEED(KLU/MIN)[1~99999]
8137	500	Z AXIS INC-JOG SPEED(KLU/MIN)[1~99999]
8301	1000	MPG OVERRIDE(0.01%)[0~10000]
8316	10000	SET MPG MAGNIFICATION 1(0.0001%)[0~999999999]
8317	100000	SET MPG MAGNIFICATION 10(0.0001%)[0~999999999]
8318	1000000	SET MPG MAGNIFICATION 100(0.0001%)[0~999999999]

MPG DRY OVERRIDE[1~99999999]

ALM WARN

F1 PRJ.PARAM

F2 SYS.SW

F3 SYS.VAL

F4 SPD.SET

F5 LIM.SET

F6 M CODE SET

F7 SRCH

F8 SHOW DES.

- **Limit:** Set the limit type of the system hardware and the set value of the software limit of each axis.

LNC

00001_Z.NC

ZRN

M-RDY

MAIN

U.Param5

13:51:44
L7

No.	SetValue	Description
8061	0	X AXIS HARDWARE LIMIT TYPE(0:NOT USED,1:SINGLE,2:DOUBLE)[0~2]
8062	0	Y AXIS HARDWARE LIMIT TYPE(0:NOT USED,1:SINGLE,2:DOUBLE)[0~2]
8063	0	Z AXIS HARDWARE LIMIT TYPE(0:NOT USED,1:SINGLE,2:DOUBLE)[0~2]
8110	1675000	[SOFT.LIMIT] X AXIS POSITIVE SOFTWARE LIMIT VALUE(LU)[-2000]
8111	-2000	[SOFT.LIMIT] X AXIS NEGATIVE SOFTWARE LIMIT VALUE(LU)[3155000]
8112	3155000	[SOFT.LIMIT] Y AXIS POSITIVE SOFTWARE LIMIT VALUE(LU)[-2000]
8113	-2000	[SOFT.LIMIT] Y AXIS NEGATIVE SOFTWARE LIMIT VALUE(LU)[10000]
8114	10000	[SOFT.LIMIT] Z AXIS POSITIVE SOFTWARE LIMIT VALUE(LU)[-250000]
8115	-250000	[SOFT.LIMIT] Z AXIS NEGATIVE SOFTWARE LIMIT VALUE(LU)

X AXIS HARDWARE LIMIT TYPE(0:NOT USED,1:SING

ALM

WARN

F1

PRJ.PARAM

F2

SYS.SW

F3

SYS.VAL

F4

SPD.SET

F5

LIM.SET

F6

M CODE SET

F7

SRCH

F8

SHOW DES.

- **M-code setting:** The M-code value setting of the woodworking machine related functions, for example: positioning on and off, vacuum pump on and off, adsorption on and off, etc. If the user forgets the M-code of related function, it can also be viewed on this page.

LNC

00001_Z.NC

ZRN

M-RDY

MAIN

U.Param6

13:52:49
L7

No.	SetValue	Description
9400	8	[M CODE SET] POSITION 1 ON[-1~299]
9401	9	[M CODE SET] POSITION 1 OFF[-1~299]
9402	18	[M CODE SET] POSITION 2 ON[-1~299]
9403	19	[M CODE SET] POSITION 2 OFF[-1~299]
9404	61	[M CODE SET] POSITION 3 ON [-1~299]
9405	62	[M CODE SET] POSITION 3 OFF[-1~299]
9406	63	[M CODE SET] POSITION 4 ON[-1~299]
9407	64	[M CODE SET] POSITION 4 OFF[-1~299]
9408	90	[M CODE SET] SUCKER 1 ON[-1~299]
9409	91	[M CODE SET] SUCKER 1 OFF[-1~299]
9412	10	[M CODE SET] VACUUM PUMP 1 ON[-1~299]
9413	11	[M CODE SET] VACUUM PUMP 1 OFF[-1~299]
9418	27	[M CODE SET] TOOL SETTER AIR BLOW ON[-1~299]
9419	28	[M CODE SET] TOOL SETTER AIR BLOW OFF[-1~299]
9420	30	[M CODE SET] COUNT OF WORKPIECES[-1~299]
9421	103	[M CODE SET] SP.#2 CW[-1~299]
9422	104	[M CODE SET] SP.#2 CCW[-1~299]
9423	105	[M CODE SET] SP.#2 STOP[-1~299]
9424	26	[M CODE SET] SP.#1 UP[-1~299]

[M CODE SET] POSITION 1 ON[-1~299]

ALM WARN

F1

F2

F3

F4

F5

F6

F7

F8

PRJ.PARAM

SYS.SW

SYS.VAL

SPD.SET

LIM.SET

M CODE SET

SRCH

SHOW DES.

5.2. System Parameters

- **Function Path:** Maintenance Group > Parameters (It's required to switch the system level to 5)

The parameter setting is divided into 2 major parts and a total of 9 items, which are described as follows:

Part 1: Common parameter settings; this part sorts out the common parameters inside the system, which is convenient for machine debugging.

Part 2: Servo parameters and advanced parameters; this part is the drive parameters and all

LNC 00001_Z.NC ZRN M-RDY MAIN AXIS BASE 14:04:29 L7

SOFT.AX	X (1)	Y (2)	Z (3)	C.S2 (4)	(5)	(6)	S1 (7)
PATH	1	1	1	1	0	0	1
AX.NAME	100	200	300	2600	0	0	1000
HW.PORT	1	2	3	4	0	0	6

AXIS: O O O O	x000 Ex: 1000=S, 2000=S2	0x00:AXIS NAME 1 2 3 4 5 6 7 8 9 SHOW X Y Z A B C U V W 00xx:1~32 Ex: 101:X1, 202:Y2, 308:Z8, 603:C3
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R70532::

ALM WARN

F1 OP PARAM F2 SYS.PARAM F3 **AXIS BASE** F4 AX.SV F5 E.GEAR SET F6 SPD.SET F7 HSHP F8 >

- **Setting of each axis:** Set the relevant parameters of each axial direction, for example: whether to use encoder, drive command format, origin searching method, etc.

LNC 00001_Z.NC ZRN M-RDY MAIN AX.SV 14:06:52 L7

NO.	DESCRIPTION	X	Y
70501	Absoulte Encoder Type of 02nd Axis(0::N/A,1:Multi-Turn Used,2:0		0
71533	02nd Axis Motion Type(0:Linear Axis,1~7:Rotary Axis 1~7)	0	0
70033	02nd Axis Command Type in Position Mode(0:A/B,1:CW/CCW,2:0		0
70096.1	02nd Axis Command Reversion in Position Mode(0:No,1:Reverse		0
70101	02nd Axis Position Loop Gain in Position Mode(0.1/s)	500	500
70201	02nd Axis Command Type in Speed Mode(0:A/B,1:CW/CCW,2:P		0
70097.1	02nd Axis Command Reversion in Speed Mode(0:No,1:Reverse		0
70365	02nd Axis Encoder Signal Type(0:A/B,1:CW/CCW,2:Pulse/Dir,3:N		3
70098.1	02nd Axis Encoder Signal Reversion(0:No,1:Reverse)	0	0
70401	Corresponding Hardware Number of 02nd Axis MPG(0:N/A,1~5		7
70099.1	02nd Axis Corresponding MPG Signal Reversion(0:No,1:Reverse		0
77001	02nd Axis Reference Position Return Method(0:Force,1:DOG,2:I		0
77197.1	02nd Axis Retry Method of Reference Position Return(0:Machin		0
77097.1	02nd Axis Reference Position Return Direction(0:+,1:-)	1	1

R70501::Absoulte Encoder Type of 02nd Axis(0::N/A,1:Multi-Turn Used,2:0

ALM WARN

F1 OP PARAM F2 SYS.PARAM F3 **AXIS BASE** F4 **AX.SV** F5 E.GEAR SET F6 SPD.SET F7 HSHP F8 >

- **Gear ratio setting:** Set parameters such as gear ratio and screw pitch for each axial direction. The parameter page is divided into two parts, one for the servo axis and the other for the spindle.

LNC

00001_Z.NC

ZRN

M-RDY

MAIN

E.GEAR SET

14:10:20
L7

E.GEAR CMR\DMR SERVO SET

AX.	X (1)	Y (2)	Z (3)
CMR(NUM)	10000	10000	10000
CMR(DEN)	10000	10000	10000
DMR(NUM)	10000	10000	10000
DMR(DEN)	10000	10000	10000
MOTOR ENCODER(P/REV)	2500	2500	2500
PITCH(LU)	10.000	10.000	10.000
GEAR(NUM)	1	1	1
MOTOR.GEAR(DEN)	1	1	1

R1182005::

ALM WARN

F1

SETX

F2

SETY

F3

SETZ

F4

SETC

F5

F6

F7

F8

>

LNC

00001_Z.NC

ZRN

M-RDY

MAIN

E.GEAR SET

14:13:24
L7

E.GEAR CMR\DMR SP.SET

AX.	C.S2(4)	S1 (7)	
CMR(NUM)	4	10000	
CMR(DEN)	360000	24000	
DMR(NUM)	360000	360000	
DMR(DEN)	4	1	
SP.V(mV)	1	10000	
SP.SPD(rpm)	1	24000	
ENCODER POS	MOTOR	MOTOR	
MOTOR ENCODER(P/REV)	1	1	
MOTOR.GEAR	1	1	
SP.GEAR	1	1	

R1182161::

ALM WARN

F1	SETS2	F2	SETS1	F3	F4	F5	F6	F7	F8	>
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- **Speed setting:** Set the speed-related parameters for each axial direction, such as acceleration/deceleration time, G00 maximum speed, G01 maximum speed, and so on. The parameter page is divided into two parts, one for the servo axis and the other for the spindle.

LNC

00001_Z.NC

ZRN

M-RDY

MAIN

SPD.PARAM

14:21:20
L7

SERVO SPEED PARAM SETTING

SERVO AX.	X (1)	Y (2)	Z (3)
G00 MAX.FEEDRATE(KLU/min)	40000	40000	10000
G00 LINEAR ACC/DEC(ms)	600	600	600
G00 BELL ACC/DEC(ms)	20	20	20
G01 MAX.FEEDRATE(KLU/min)	20000	20000	5000
G01 LINEAR AFTER ACC/DEC(ms)	80	80	80
G01 BELL AFTER ACC/DEC(ms)	0	0	0
MPG ACC/DEC(ms)	100	100	100
MPG MAX.FEEDRATE(KLU/min)	50000	50000	50000
SERVOLAG RANGE(LU)	50000	50000	50000
STATIC SERVOLAG RANGE(LU)	500	500	500
JOG SPD.(KLU/min)	15000	15000	6000
FAST POS.SPD.(KLU/min)	45000	45000	8000
INC MOVE DIS.(LU)	10	10	10
JNC MOVE SPD.(KLU/min)	500	500	500

R60286::01st Axis Rapid Max. Feedrate(KLU/min)

ALM WARN

F1

SERVO AX.

F2

SP.

F3

F4

F5

F6

F7

F8

>

LNC

00001_Z.NC

ZRN

M-RDY

MAIN

SPD.SET

14:23:08
L7

SPSPEED PARAM SETTING

SP.	C.S2 (4)	S1 (7)	
LINEAR ACC/DEC(ms/1000rpm)	0	100	
S CURVE ACC/DEC(ms)	0	50	
MAX.CLAMP SPD.(MLU/min)	0	24000	
MIN.CLAMP SPD.(MLU/min)	0	0	
S CODE DEF.VALUE	0	18000	
F.SHOW MODE(0:CMD ,1:FBK)	0	0	

R72132::01st Axis Linear Acc/Dec Time in Speed Mode

ALM WARN

F1SERVO AX.

F2SP.

F3

F4

F5

F6

F7

F8

>

- **High-speed & high-precision:** Set the relevant parameters of the machining effect. The parameter page is divided into two parts, one is the path parameters and the other is the axis parameters.

LNC 00001_Z.NC ZRN M-RDY MAIN PATH PARAM 14:25:32 L7		
NO.	SET VAL.	DESCRIPTION
60100	600	1st Path Cutting Feed Linear Acc/Dec Time(ms)
60106	50	1st Path Cutting Feed Bell Acc/Dec Time(ms)
60112	2000	1st Path Cutting Feed 5mm Arc Max. Feedrate(KLU/min)
60118	1	1st Path Cutting Feed Arc Clamping Min. Feedrate(KLU/min)
60130	1000	1st Path Cutting Feed Corner Referential Feedrate(KLU/min)
60172	20000	1st Path Max. Cutting Feedrate(KLU/min)
60178	0	1st Path Tolerance for Curve Fitting(LU,0:No Use)
60184	0	1st Path NC Program Correction(LU,0:No Use)
60322	0	1st Path High Precision Level(0:OFF,1:Lowest Precision Level,10:Highest Pr

R60100::1st Path Cutting Feed Linear Acc/Dec Time ALM WARN

PATH PARAM AX.PARAM F3 F4 F5 F6 F7 F8

LNC 00001_Z.NC ZRN M-RDY MAIN AX.PARAM 14:26:44 L7			
NO.	DESCRIPTION	X	Y
70100	01st Axis Position Loop Gain in Position Mode(0.1/s)	500	500
71500	01st Axis Rapid Traverse Acc/Dec Type in Position Mode(0:Line; 2	2	
71132	01st Axis Rapid Traverse Linear Acc/Dec Time in Position Mode(600	600	
71164	01st Axis Rapid Traverse Bell shaped Acc/Dec Time in Position M 20	20	
71200	01st Axis Cutting Feed Linear Acc/Dec Time in Position Mode(n 80	80	
71232	01st Axis Cutting Feed S Curve Acc/Dec Time in Position Mode(r 0	0	
60414		0	0

R70100::01st Axis Position Loop Gain in Position M ALM WARN

PATH PARAM AX.PARAM F3 F4 F5 F6 F7 F8

- **Servo parameters:** This is used for the bus driver, and the driver can be adjusted directly on the system. The pulse driver is not suitable (the MW2200A is a driver equipped with pulse).
- **Advanced parameters:** Advanced parameters: all parameters inside the system, if not required, it's unnecessary to use. All parameters of the system are divided into six categories, namely hardware parameters, system, axis, path, man-machine interface and macro parameters.

