

ReCON Series

ReCON-Maintenance Operator's Manual

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Leading Numerical Controller



LNC Technology Co., Ltd.

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1 Introduction

There are three main functions of this software:

- Connected to NC side via internet: Remote monitor of machine information, such as machining information or coordinate information to control the machining progress anytime. Users can do troubleshooting instantly and finish the machining on schedule with the machine's alarm/warning information under surveillance.
- Upload & Download Part Programs: Part programs can be uploaded either from PC side to NC side, or vice versa, for modification, storage, or transmission to other NC machines for machining.
- System upgrade: Via this software, the NC side's system can be upgraded directly from PC side instead of NC side for operational convenience.

2 PREPARATION BEFORE RECON NETWORK SETTING

This Chapter describes the corresponding settings to be made at NC side when the ReCON software is executed.

2.1 Operation for M600 6-axis, M600/T600, M60/T60, M600Mate /T600Mate, M520i/T520i Series:

2.1.1 Settings for the controller

1. Set Pr.0651 to 1 (0 indicates the network connection method with a network drive; 1 indicates the network connection method with ReCON): Switch to the <PARAM> group, press the {CHGUSR} function key and set the user to **MAKER** level. Then enter P651 in the text box, press INPUT to switch to the designated parameter, and set Pr.0651 to 1.
2. Set the network configuration of the controller: After switching to <PARAM> group, press the {NET SET} function key, and start to set the controller's network configuration as shown in the figure below.

O0000		N000000		JOG	M-RDY	LNC
IP :	172.	23.	139.	10		
NETMASK :	255.	255.	255.	0		
GATEWAY :	172.	23.	139.	253		
NUM	LEV	IP				
1	R/W	0.	0.	0.	0	
2	R/W	0.	0.	0.	0	
3	R/W	0.	0.	0.	0	
4	R/W	0.	0.	0.	0	
5	R/W	0.	0.	0.	0	
CONNECT						
REQUEST						
1:R 2:R/W 3:EXCLUDE						
NC-SYS	USROPT	TLIM	NET SET			

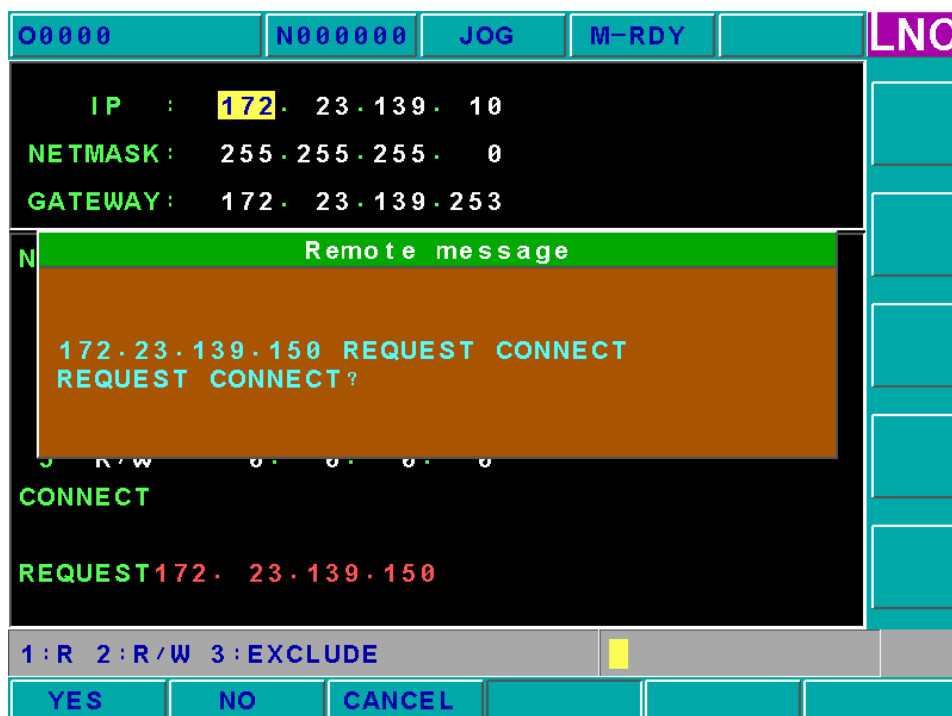
PREPARATION BEFORE RECON NETWORK SETTING

3. Use the UP, DOWN, LEFT, & RIGHT direction keys to move the cursor to the field to be set, enter the values you need in the text box, and press INPUT to input the values to the designated field.
Below are the fields that should be set:
 - IP address : The address of this field must not repeat or it will cause network disconnection.
 - Subnet mask
 - Default gateway
4. After finishing the setting, reboot the system to validate the new configuration.

2.1.2 Network settings of the controller & ReCON

Initial connection of the controller & ReCON software: When ReCON software at PC side connects to the controller for the first time, a pop-up window as shown in the diagram below will appear. This window shows the information of the controller's IP address that is to be connected. Choose to dis/connect the controller by pressing one of the 3 options below.

- Press {YES}: The PC with this IP address is permitted to access this controller.
- Press {NO}: The PC with this IP address is not permitted to access this controller.
- Press {CANCEL}: The request for connection made at PC side is not accepted. When a request for connection from PC side is made next time, this pop-up window will still appear.



PREPARATION BEFORE RECON NETWORK SETTING

1. Change the access right of the connected PC: Move the cursor to the access right field, enter 1 ~ 3 in the input text box, press INPUT to valid the new configuration. The values 1 ~ 3 are defined as below:
 - 1 : Set to 1, and the access right field shows “R” for read-only. The connected PC can only read the data and cannot write to the data.
 - 2 : Set to 2, and the access right field shows “R/W” for read/write. The connected PC can read and write to the data.
 - 3 : Set to 3, and the access right field shows “exclude” for exclusion. The PC with the shown IP address is not allowed to connect to the controller.
2. Cancel the IP address of the connected PC: To cancel an IP address, move the cursor to the IP address field, press INPUT and the original value will become 0. When a request for connection from PC side is made next time, this pop-up window will appear.
3. Check the status of the connected PC: In the field of {CONNECT}, if there is an IP address shown, this means there is a PC that is being connected; if no, there is no connection made.

PREPARATION BEFORE RECON NETWORK SETTING

O0000
N000000
JOG
M-RDY
LNC

IP : 172 . 23 . 139 . 11
NETMASK : 255 . 255 . 255 . 0
GATEWAY : 172 . 23 . 139 . 253

NUM	LEV	IP
1	R/W	172 . 23 . 139 . 150
2	R/W	0 . 0 . 0 . 0
3	R/W	0 . 0 . 0 . 0
4	R/W	0 . 0 . 0 . 0
5	R/W	0 . 0 . 0 . 0

CONNECT 172 . 23 . 139 . 150 (SF)

REQUEST

1:R 2:R/W 3:EXCLUDE

NC.SYS
USROPT
TLIM
NET SET

2.2 Operation for M510i, M510iC, M320i, T510i and T320i Series:

2.2.1 Settings for the controller

1. Set Pr.0651 to 1 (0 indicates the network connection method with a network drive; 1 indicates the network connection method with ReCON): Switch to the <PARAM> group, press the {USER} function key and set the user to **MAKER** level. Then enter P651 in the text box, press INPUT to switch to the designated parameter, and set Pr.0651 to 1.
2. Set the network configuration of the controller: After switching to <PARAM> group, press the {NET} function key, and start to set the controller's network configuration as shown in the figure below.

00000	JOG	MRDY			
IP : 172. 23. 139. 10 NETMASK: 255. 255. 255. 0 GATEWAY: 172. 23. 139. 253 NUM LEV IP 1 R/W 0. 0. 0. 0 2 R/W 0. 0. 0. 0 3 R/W 0. 0. 0. 0 CONNECT: REQUEST: 172. 23. 139. 150 1:R 2:R/W 3:EXCLUDE					
SYS.	USER	SFOP	TLIM	NET	REST

3. Use the UP, DOWN, LEFT, & RIGHT direction keys to move the cursor to the field to be set, enter the values you need in the text box, and press INPUT to input the values to the designated field.
Below are the fields that need to be entered:
 - IP address : The address of this field must not repeat or it will cause network disconnection.
 - Subnet mask
 - Default gateway
4. After finishing the setting, reboot the system to validate the new configuration.

PREPARATION BEFORE RECON NETWORK SETTING

2.2.2 Network settings of the controller & ReCON

1. Initial connection of the controller & ReCON software: When ReCON software at PC side connects to the controller for the first time, a pop-up window as shown in the diagram below will appear. This window shows the information of the controller's IP address that is to be connected. Choose to dis/connect the controller by pressing one of the 3 options below.
 - Press {YES}: The PC with this IP address is permitted to access this controller.
 - Press {NO}: The PC with this IP address is not permitted to access this controller.
 - Press {CANCEL}: The request for connection made at PC side is not accepted. When a request for connection from PC side is made next time, this pop-up window will still appear.

00000	JOG	MRDY			
IP : 172. 23.139. 10 NETMASK: 255.255.255. 0 GATEWAY: 172. 23.139.253					
Remote message					
172.23.139.150 REQUEST CONNECT REQUEST CONNECT?					
CONNECT:					
REQUEST: 172. 23.139.150					
1: R 2: R/W 3: EXCLUDE					
YES	NO	CANC			

2. Change the access right of the connected PC: Move the cursor to the access right field, enter 1 ~ 3 in the input text box, press INPUT to valid the new configuration. The values 1 ~ 3 are defined as below:
 - 1: Set to 1, and the access right field shows "R" for read-only. The connected PC can only read the data and cannot write to the data.
 - 2 : Set to 2, and the access right field shows "R/W" for read/write. The connected PC can read and write to the data.
 - 3 : Set to 3, and the access right field shows "exclude" for exclusion. The PC with the shown IP address is not allowed to connect to the controller.
3. Cancel the IP address of the connected PC: To cancel an IP address, move the cursor to the IP address field, press INPUT and the original value will become 0. When a request for connection from PC side is made next time, this pop-up window will appear.
4. Check the status of the connected PC: In the field of {CONNECT}, if there is an IP address shown, this means there is a PC that is being connected; if not, there is no connection made.

PREPARATION BEFORE RECON NETWORK SETTING

00000	JOG	MRDY		
IP : 172. 23. 139. 10 NETMASK: 255. 255. 255. 0 GATEWAY: 172. 23. 139. 253 NUM LEV IP 1 R/W 172. 23. 139. 150 2 R/W 0. 0. 0. 0 3 R/W 0. 0. 0. 0 CONNECT: 172. 23. 139. 150(SF) REQUEST: 1:R 2:R/W 3:EXCLUDE SYS. USER SFOP TLIM NET REST				

3 Main Window of ReCON-Maintenance

3.1 Operation Window

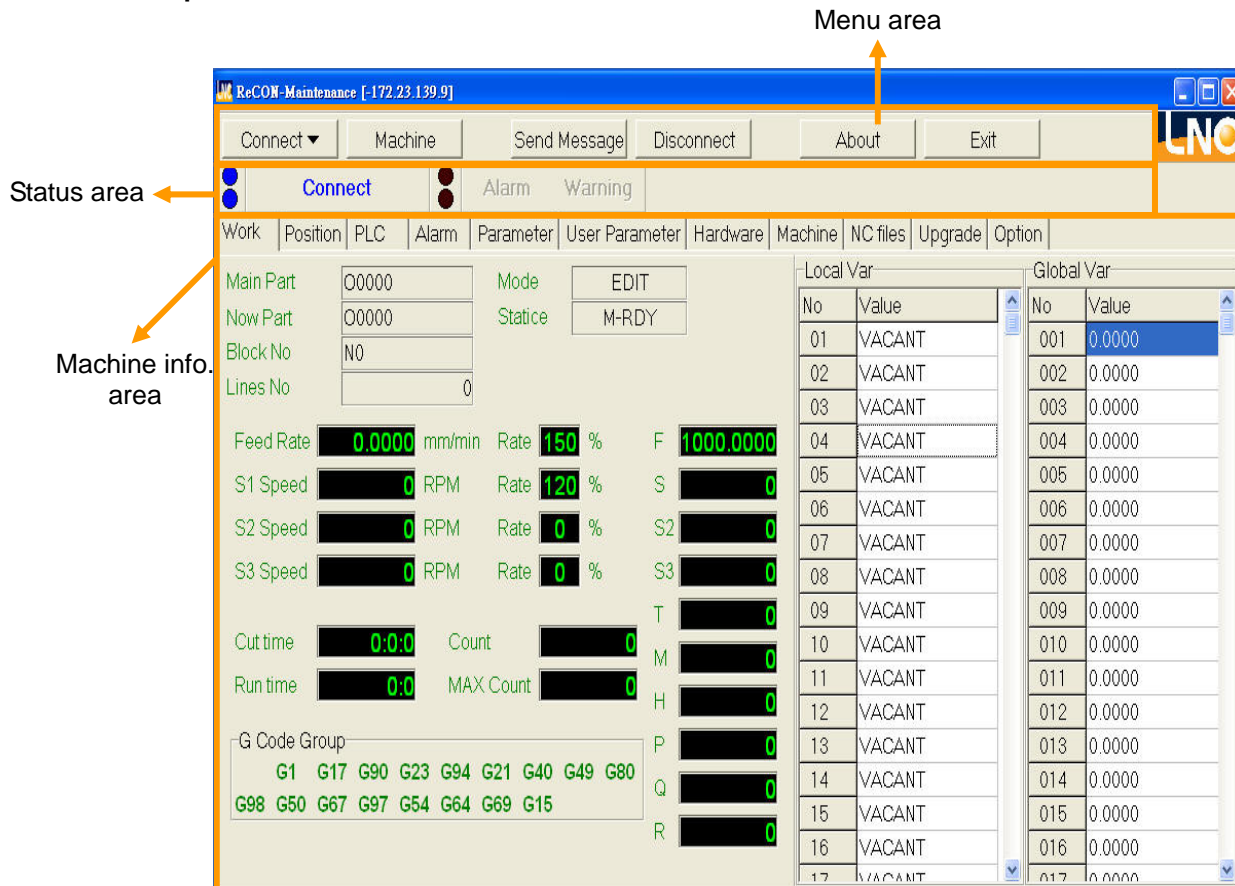


Figure 3.1 Main operation window

As shown in figure 【Main operation window】 , the main window of this software can be divided into three areas:

- Menu area of function buttons: Includes the operational functions of “Connect,” “Machine,” “Send Message,” “Disconnect,” “About,” and “Exit.”
- Status area: Shows the information of 4 statuses: “Connect,” “DisConnect,” “Alarm,” & “Warning.”
- Machine information area: Includes the information of “Work,” “Position,” “PLC,” “Alarm,” “Parameter,” “User Parameter,” “Hardware,” “Machine,” “NC files,” “Upgrade,” & “Option.”

4 Menu Area

This chapter describes the function of each button in the menu area.

4.1 Connect

Press the “Connect” button and select the machine to connect from the list (as shown in figure 【Connect to a machine】). To create a list of machines for connection, please press the “Machine” button and also refer to the descriptions in “3.2 Machine” & “6.2 Create a Machine List.”

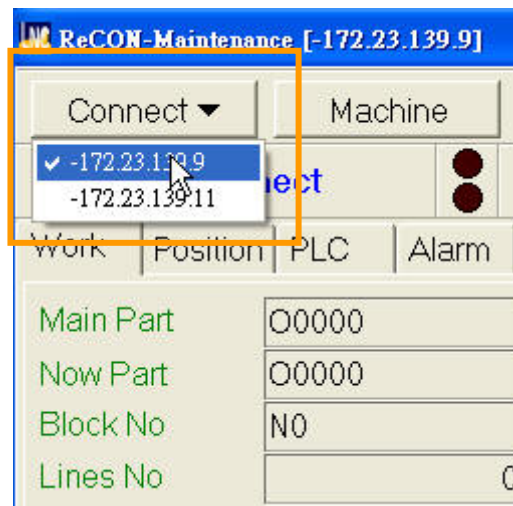


Figure 4.1 Connect to a machine

4.2 Machine

The function of the “Machine” tab is to create and maintain the list of machines to connect (as shown in figure 【Machine Management】).

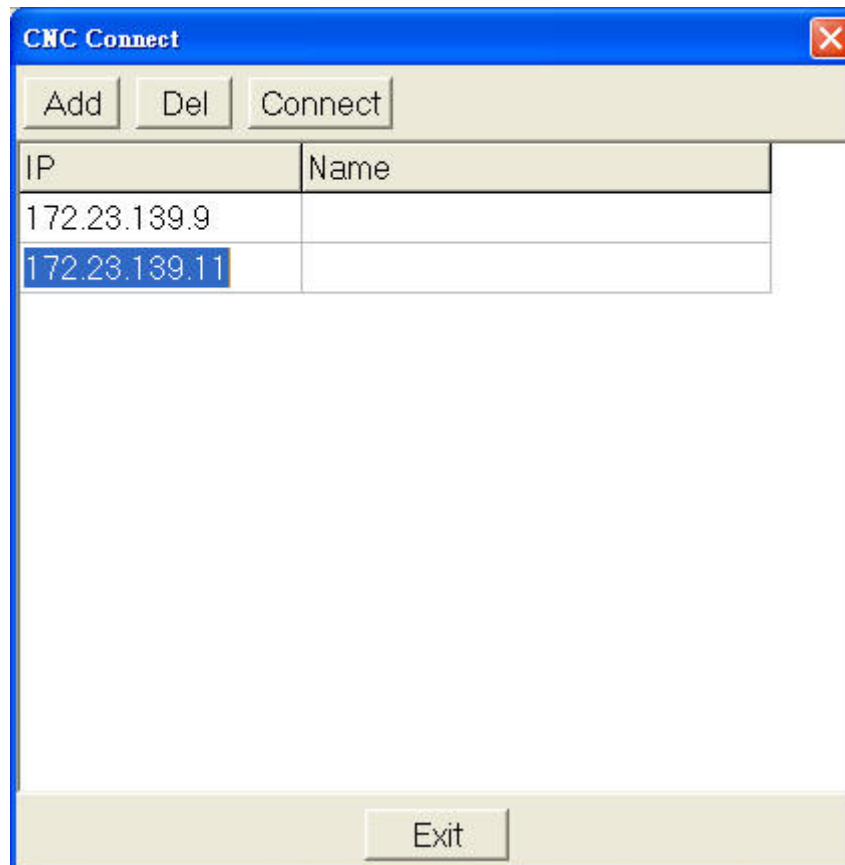


Figure 4.2 Machine Management

The functions are listed below:

- Add: In the “Machine” dialog box, press the “Add” button to add a new machine by entering the information of “IP” & “Name,” respectively, and complete the procedure. “IP” is the address of the machine to connect; this information is essential and must be filled out. The purpose of “Name” is to let users identify a machine more easily; this information is optional and can be left blank.
- Del: Refers to “delete.” Select the machine to delete in the list, and then press “Del” to remove the machine from the list.
- Connect: Select the machine to connect in the list, and then press “Connect” to make the connection.
- Exit: Close the “Machine” dialog box.

4.3 Send Message to NC

Transmit some message from PC to NC side (as shown in figure 【Send a Message to NC】). Caution: This function is only effective when the machine is connected.

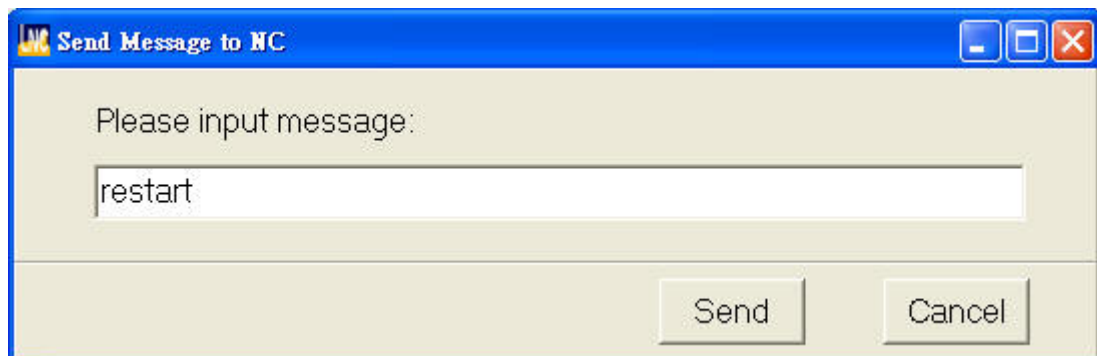


Figure 4.3 Send a Message to NC

- Please input message: Edit the message to be sent to NC side in the text box.
- Send: Send the edited message to NC side.
- Cancel: Close the dialog box.



Figure 4.4 NC side receives a remote message.

4.4 Disconnect, About, Exit



Figure 4.5 Disconnect

- Disconnect: When the machine is in "Connect" or "Connecting" status, press the "Disconnect" button in the "Function area" to abort the connection. Caution: When a machine is disconnected, the functions of sending short messages or uploading/downloading part programs are not available; therefore there is no way to monitor machine status.
- About: Press this button, and the software version of ReCON-Maintenance will be shown.
- Exit: Press this button to exit the software.

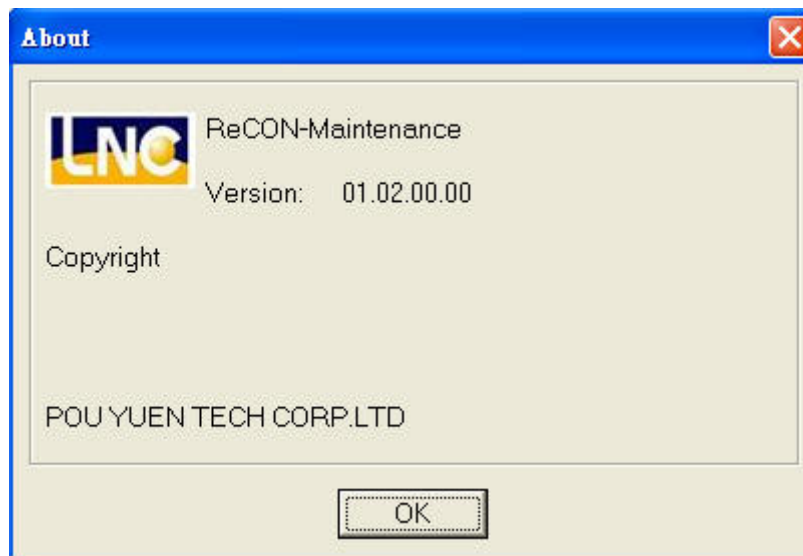


Figure 4.6 ReCON-Maintenance version

5 Status Area

This area shows the information of 4 statuses: connectivity light, alarm/warning light, connectivity status, & machine status.

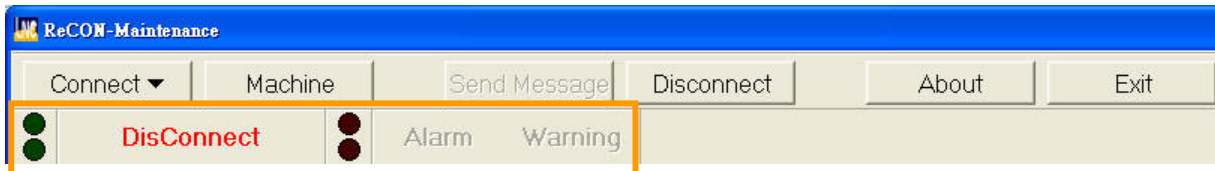


Figure 5.1 Status area

5.1 Connectivity light

Dark-green light indicates “DisConnect,” yellow-green light indicates “Connecting,” & blue light indicates “Connect,” as shown in figure 【Statuses of connectivity lights】.

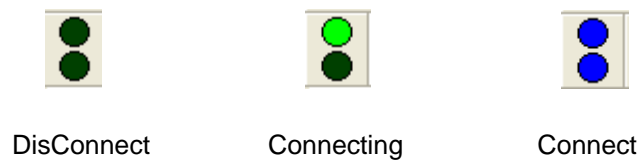


Figure 5.2 Statuses of connectivity lights

5.2 Alarm/warning lights

When there is no alarm/warning, the light is dark-red; when there is an alarm or a warning, the light flashes red, as shown in figure 【Statuses of alarm/warning lights】. For further details about alarms & warnings, please refer to the chapter 5.4.



Figure 5.3 Statuses of alarm/warning lights



Status Area

5.3 Connect Status

Connectivity status: Shows the connectivity status. There are three statuses: “DisConnect,” “Connecting,” and “Connect.”

5.4 Machine Status

Machine status: Shows the status of CNC machine, including: “NO-RDY” (not ready), “M-RDY” (machine ready), “CSTART” (cycle start), “F-HOLD” (feed hold), “B-STOP” (block stop), “W-MEA” (work coordinate measurement), & “T-MEA” (tool measurement).

6 Machine information area

Machine information area: Includes the information of “Work,” “Position,” “PLC,” “Alarm,” “Parameter,” “User Parameter,” “Hardware,” “Machine,” “NC files,” “Upgrade,” & “Option.” Caution: Machine information is available only when the machine is connected.

6.1 Machining information

Press this button and the figure below will appear. Caution: Machine information is available only when the machine is connected. The details are described below:

A Main Part: O0000, Mode: EDIT, Now Part: O0000, Statice: M-RDY, Block No: N0, Lines No: 0

B Feed Rate: 0.0000 mm/min, Rate: 150 %, F: 1000.0000, S1 Speed: 0 RPM, Rate: 120 %, S2 Speed: 0 RPM, Rate: 0 %, S3 Speed: 0 RPM, Rate: 0 %

C Cut time: 0:0:0, Count: 0, Run time: 0:0, MAX Count: 0

D G Code Group: G1 G17 G90 G23 G94 G21 G40 G49 G80 G98 G50 G67 G97 G54 G64 G69 G15

E Local Var table:

No	Value
01	VACANT
02	VACANT
03	VACANT
04	VACANT
05	VACANT
06	VACANT
07	VACANT
08	VACANT
09	VACANT
10	VACANT
11	VACANT
12	VACANT
13	VACANT
14	VACANT
15	VACANT
16	VACANT
17	VACANT
18	VACANT
19	VACANT

F Global Var table:

No	Value
001	0.0000
002	0.0000
003	0.0000
004	0.0000
005	0.0000
006	0.0000
007	0.0000
008	0.0000
009	0.0000
010	0.0000
011	0.0000
012	0.0000
013	0.0000
014	0.0000
015	0.0000
016	0.0000
017	0.0000
018	0.0000
019	0.0000

Figure 6.1 Machining information

Machine information area

A :

- Main Part: Shows the current part program name at NC side.
- Now Part: Shows the part program being executed at NC side. For example: Execute the subroutine O1234, and “Now Part” shows O1234.
- Block No: Shows the block number of the current part program at NC side (preset by users).
- Lines No: Shows the program’s line number that is being executed at NC side.
- Mode: Set the mode based on the OP panel mode of NC side. The modes include EDIT, MEM, MDI, JOG, MPG, RAPID, and HOME.
- Status: M-RDY (machine ready) or NO-RDY (not ready).

B :

- Feed Rate (mm/min.): Feed rate of servo motor
- S1 Speed (RPM): Shows the actual rotation speed of the spindle.
- S2 Speed (RPM): Shows the actual rotation speed of the 2nd spindle.
- S3 Speed (RPM): Shows the actual rotation speed of the 3rd spindle.
- Rate (%): Shows the setting of the feed rate override on the operation panel.
- Rate (%): Shows the spindle override on the operation panel.

C :

- Cut time: Show the cutting time of the machine.
- Run time: Show the operation time of the machine.
- Count: Show the numbers of parts that have been machined.
- MAX count: Set the maximum part count.

D :

- G Code Group: Shows the “PROGRAM CHECK” page at NC side.

E :

- F: Shows feed rate.
- S: Shows spindle rate.
- S2: Shows the 2nd spindle rate.
- S3: Shows the 3rd spindle rate.
- T: Shows the tool number in use.
- M: Shows the M code(s) in use.
- H: Shows the H value(s) applied by the program.
- P: Shows the P value(s) applied by the program.
- Q: Shows the Q value(s) applied by the program.
- R: Shows the R value(s) applied by the program.

F :

- Shows the information of the current local variables and global variables. The values can be modified. For modification, move the cursor to the field that needs to be modified, double-click and an “Input Numeric” on-screen keyboard will pop-up (as shown in figure 【5.2 Change the values of local variables】). Enter the new value and then press “OK” (as shown in figure 【5.3 Change the values of local variables】).

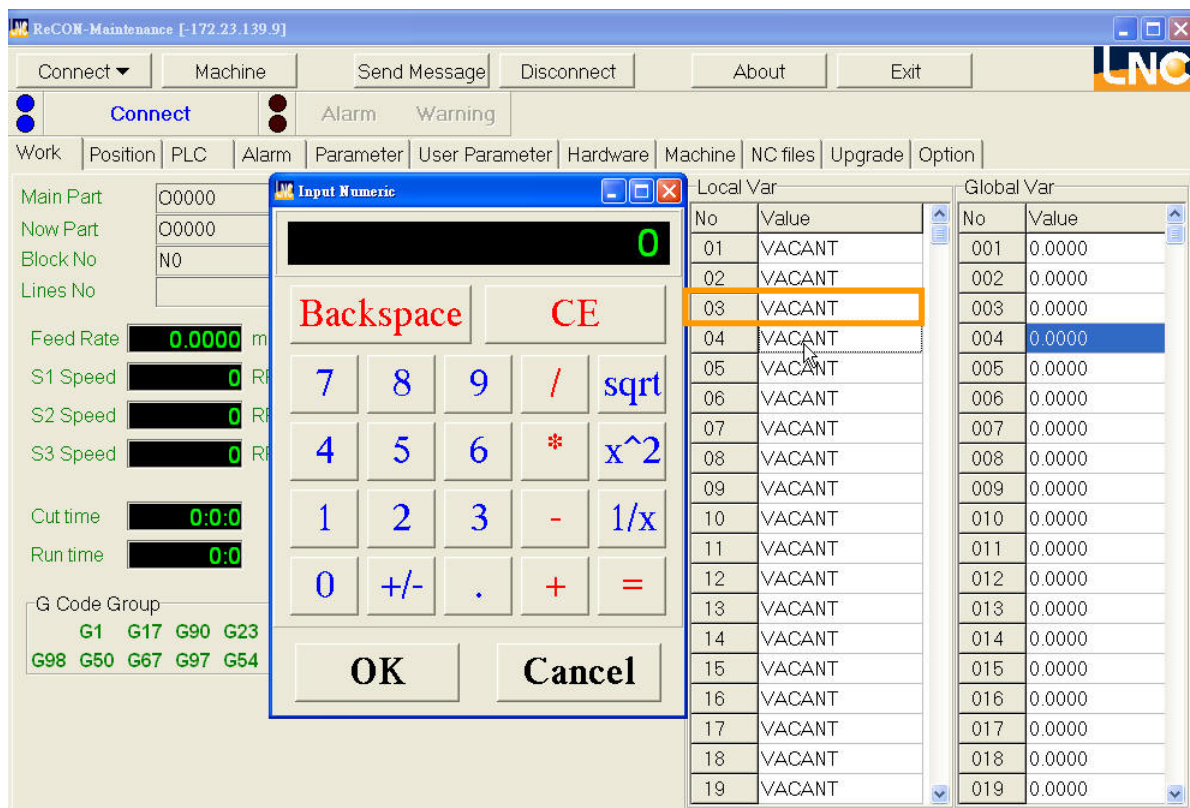


Figure 6.2 Change the values of local variables

Machine information area

Connect

Alarm

Warning

Work

Position

PLC

Alarm

Parameter

User Parameter

Hardware

Machine

NC files

Upgrade

Option

Main Part

Now Part

Block No

Lines No

O0000

O0000

N0

0

Mode

Stative

EDIT

M-RDY

Feed Rate

0.0000

mm/min

Rate

150

%

F

1000.0000

S1 Speed

0

RPM

Rate

120

%

S

0

S2 Speed

0

RPM

Rate

0

%

S2

0

S3 Speed

0

RPM

Rate

0

%

S3

0

Cut time

0:0:0

Count

0

Run time

0:0

MAX Count

0

G Code Group

G1 G17 G90 G23 G94 G21 G40 G49 G80

G98 G50 G67 G97 G54 G64 G69 G15

T

M

H

P

Q

R

0

0

0

0

0

0

Local Var

No	Value
01	VACANT
02	VACANT
03	VACANT
04	66.0000
05	VACANT
06	VACANT
07	VACANT
08	VACANT
09	VACANT
10	VACANT
11	VACANT
12	VACANT
13	VACANT
14	VACANT
15	VACANT
16	VACANT
17	VACANT
18	VACANT
19	VACANT

Global Var

No	Value
001	0.0000
002	0.0000
003	0.0000
004	0.0000
005	0.0000
006	0.0000
007	0.0000
008	0.0000
009	0.0000
010	0.0000
011	0.0000
012	0.0000
013	0.0000
014	0.0000
015	0.0000
016	0.0000
017	0.0000
018	0.0000
019	0.0000

Figure 6.3 Change the values of local variables

6.2 Position

Includes the information of “Position (absolute, relative, & machine coordinates),” “HANDLE (shift amount of MPG interrupt),” “Offset (coordinate system),” “Tools (tool length compensation),” “TDC (temperature compensation).” Caution: The information is available only when the machine is connected.

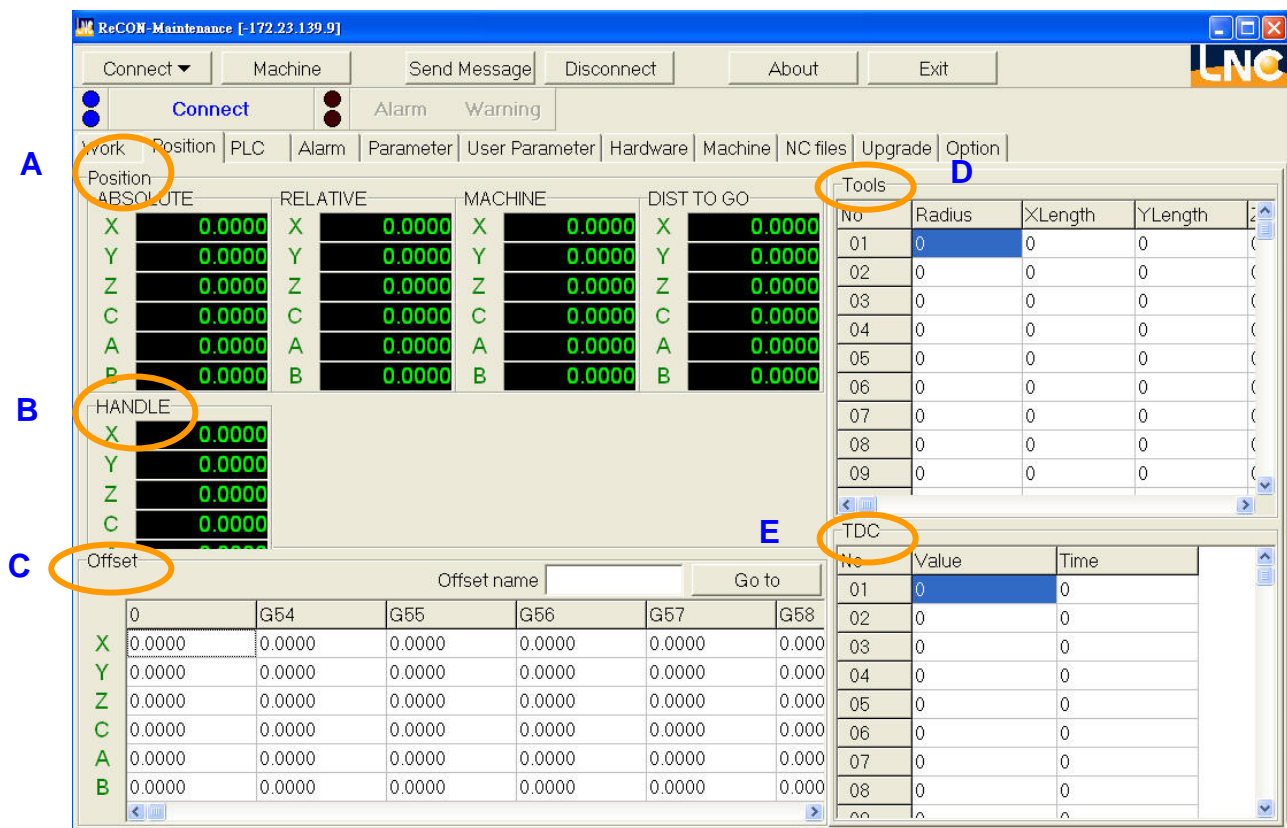


Figure 6.4 Coordinate data (Milling machine)

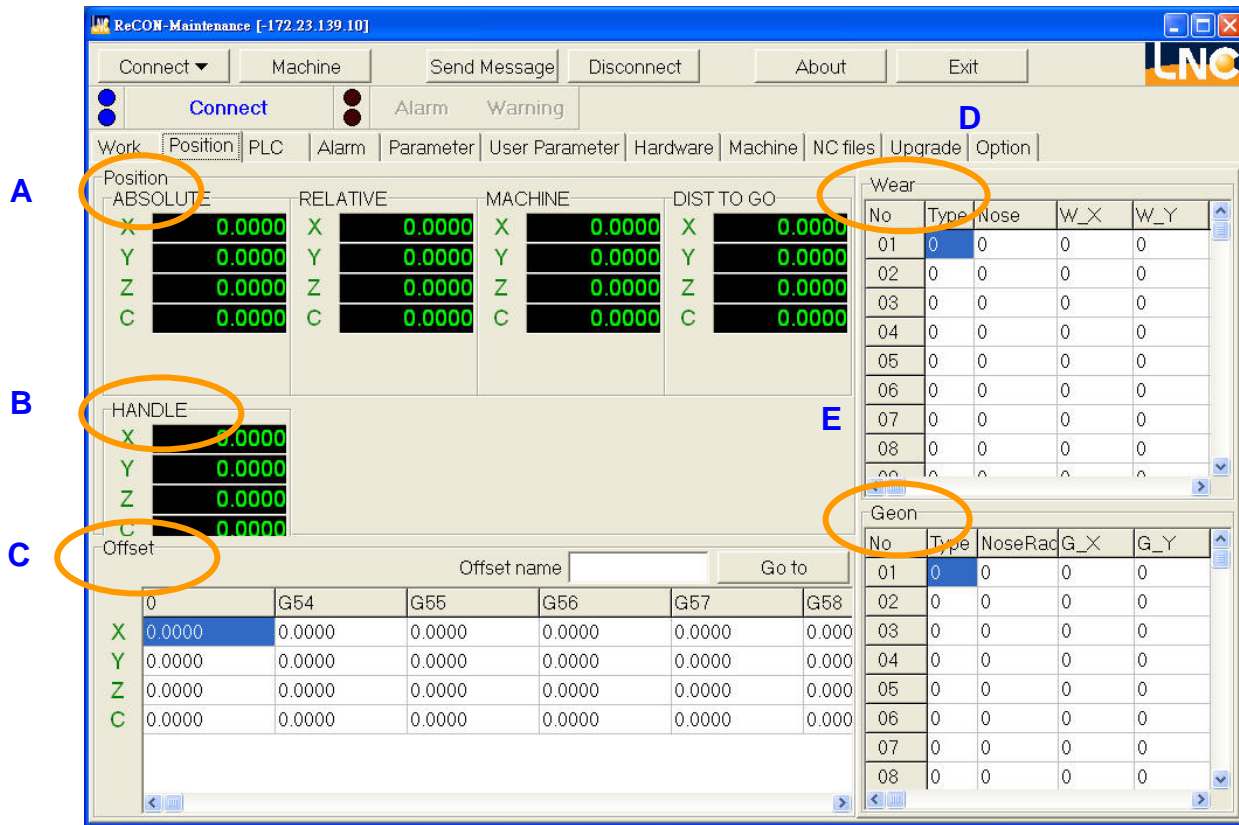


Figure 6.5 Coordinate data (Lathe)

A :

- Position: Shows the current absolute coordinates, relative coordinates, mechanical coordinates, and distance left to travel.
- ABSOLUTE: Shows the current absolute coordinates of XYZABC axis at NC side.
- RELATIVE: Shows the current relative coordinates of XYZABC axis at NC side.
- MACHINE: Shows the current mechanical coordinates of XYZABC axis at NC side.
- DIST TO GO: Shows the remaining travel distance of XYZABC axis at NC side.

B

- MPG shift amount: In MPG mode, this option shows the MPG shift amount of XYZABC axis.

C

- Coordinate system: Shows the current coordinate system data at NC side.
- Coordinate system name: Go to the designated coordinate system. For example: Enter G57 in the field of coordinate system and press “Go to”, and the cursor will go to the designated coordinate system.
- Value modification: Move the cursor to the field that needs to be modified, double-click and an “Input Numeric” on-screen keyboard will appear. Enter the new value and press “OK.” (Please refer to section F in chapter 5.1 for the method to modify this value).

D : The display items for lathes & milling machines are different.

- Milling machine: Shows the tool length compensation data (“Tools”) of X, Y, Z, A, B C axis at NC side (as shown in figure 【Coordinate data (Milling machine)】).
- Lathe: Shows the tool nose wear information of X, Y, Z axis at NC side (as shown in figure 【Coordinate data (Lathe)】).
- Value modification: Move the cursor to the field that needs to be modified, double-click and an “Input Numeric” on-screen keyboard will appear. Enter the new value and press “OK.” (Please refer to section F in chapter 5.1 for the method to modify this value).

E : The display items for lathes & milling machines are different.

- Milling machine: Shows the amount and time of tool temperature compensation at NC side (as shown in figure 【Coordinate data (Milling machine)】).
- Lathe: Shows the tool nose radius and tool length of X, Y, Z axis at NC side (as shown in figure 【Coordinate data (Lathe)】).
- Value modification: Move the cursor to the field that needs to be modified, double-click and an “Input Numeric” on-screen keyboard will appear. Enter the new value and press “OK.” (Please refer to section F in chapter 5.1 for the method to modify this value).

6.3 PLC

Shows the IOCSA Bit information of machines, including Counter, Timer, R Register, and D register (as shown in figure 【PLC data】).

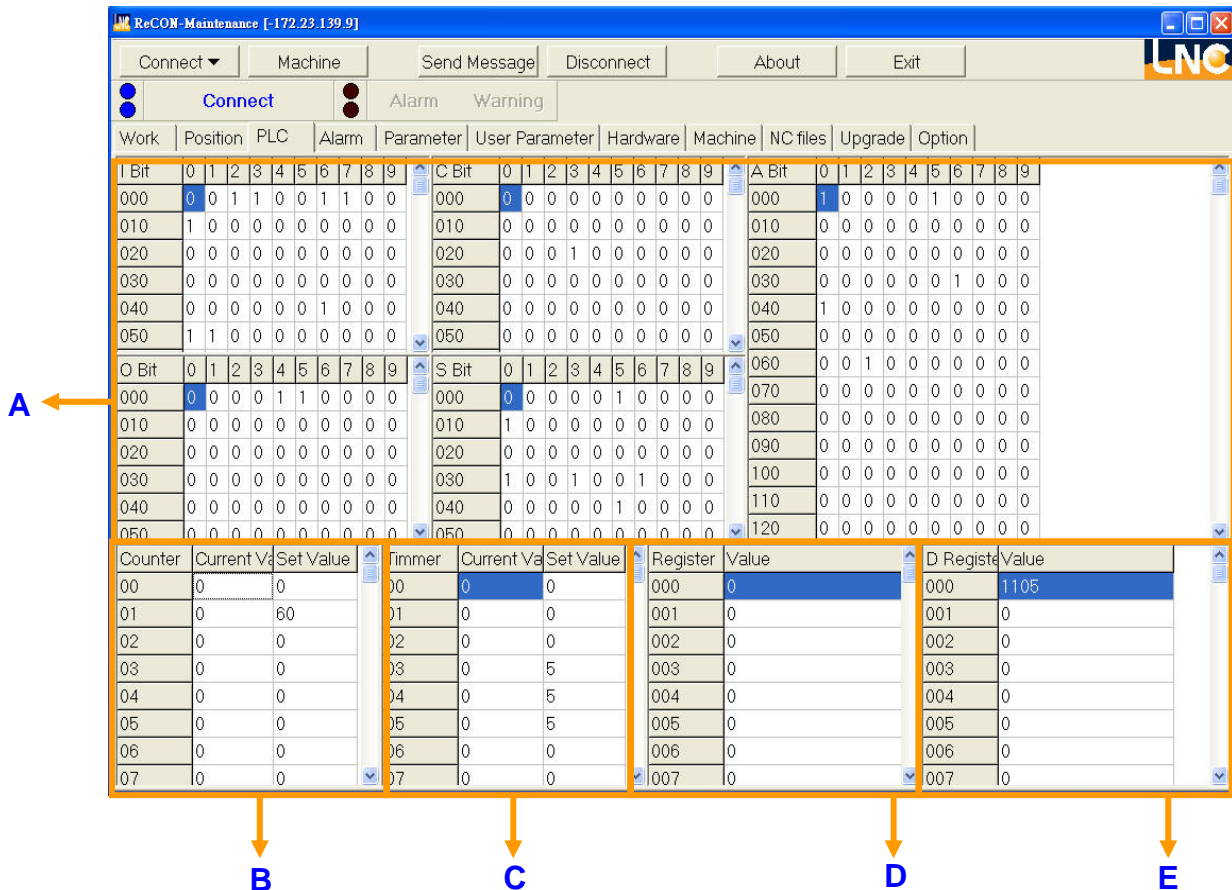


Figure 6.6 PLC data

A

- Shows the IOCSA Bit information at NC side.

B

- Shows PLC counter data at NC side.

C

- Shows PLC timer data at NC side.

D

- Shows PLC R register data at NC side.

E

- Shows PLC D register data at NC side. To modify this value, please refer to section F of chapter 5.1.

6.4 Alarm

Shows the information of “Warning,” “Alarm,” “History,” and “Operate History” (as shown in figure 【Alarm & warning information】). Caution: The above information is available only when the machine is connected.

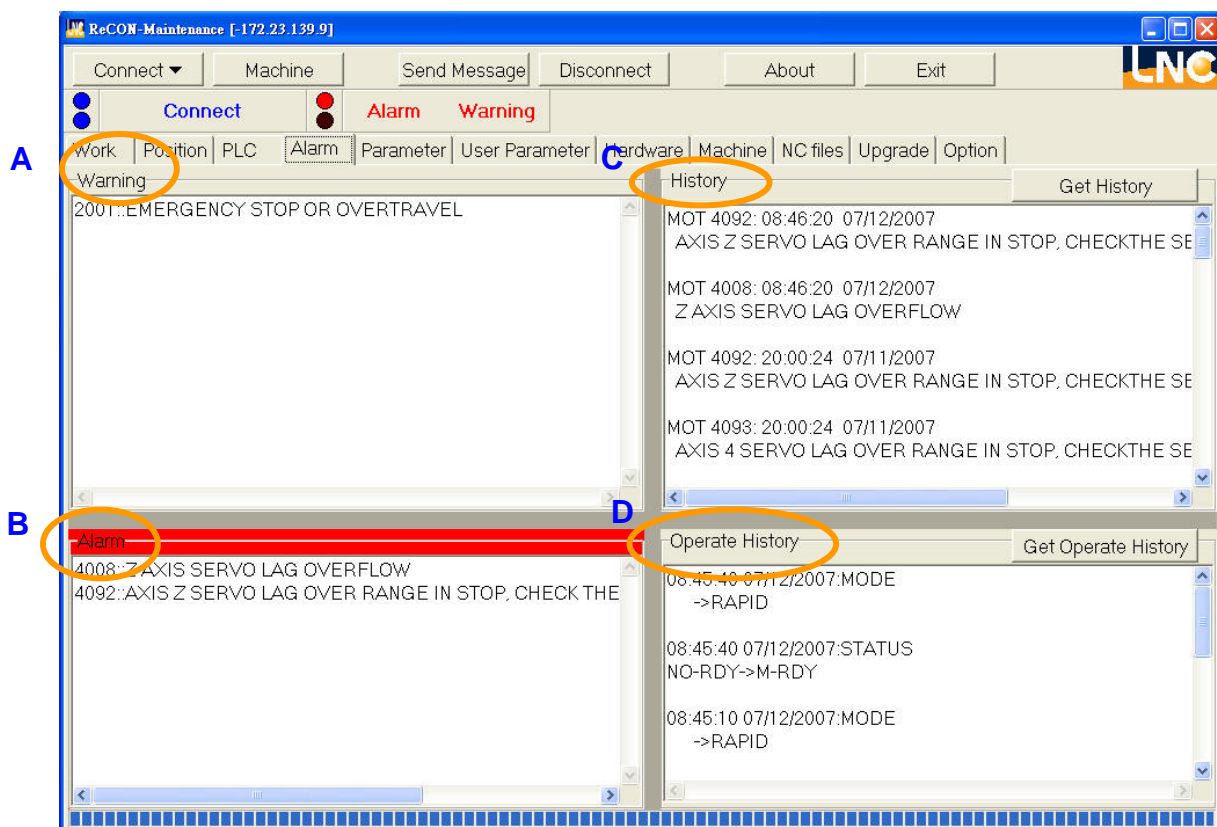


Figure 6.7 Alarm & warning information

- A
 - Warning: Shows the current warning message at NC side.
- B
 - Alarm: Shows the current alarm message at NC side.
- C
 - History: Shows the alarm/warning history of NC side, press “Get History.”
- D
 - Operate History: Shows the operation history at NC side, press “Get Operate History.”

6.5 Parameter

Shows the parameter information at NC side (as shown in figure 【Parameter information】). Caution: The information is available only when the machine is connected. Note: The parameter data for lathes and milling machines are different.

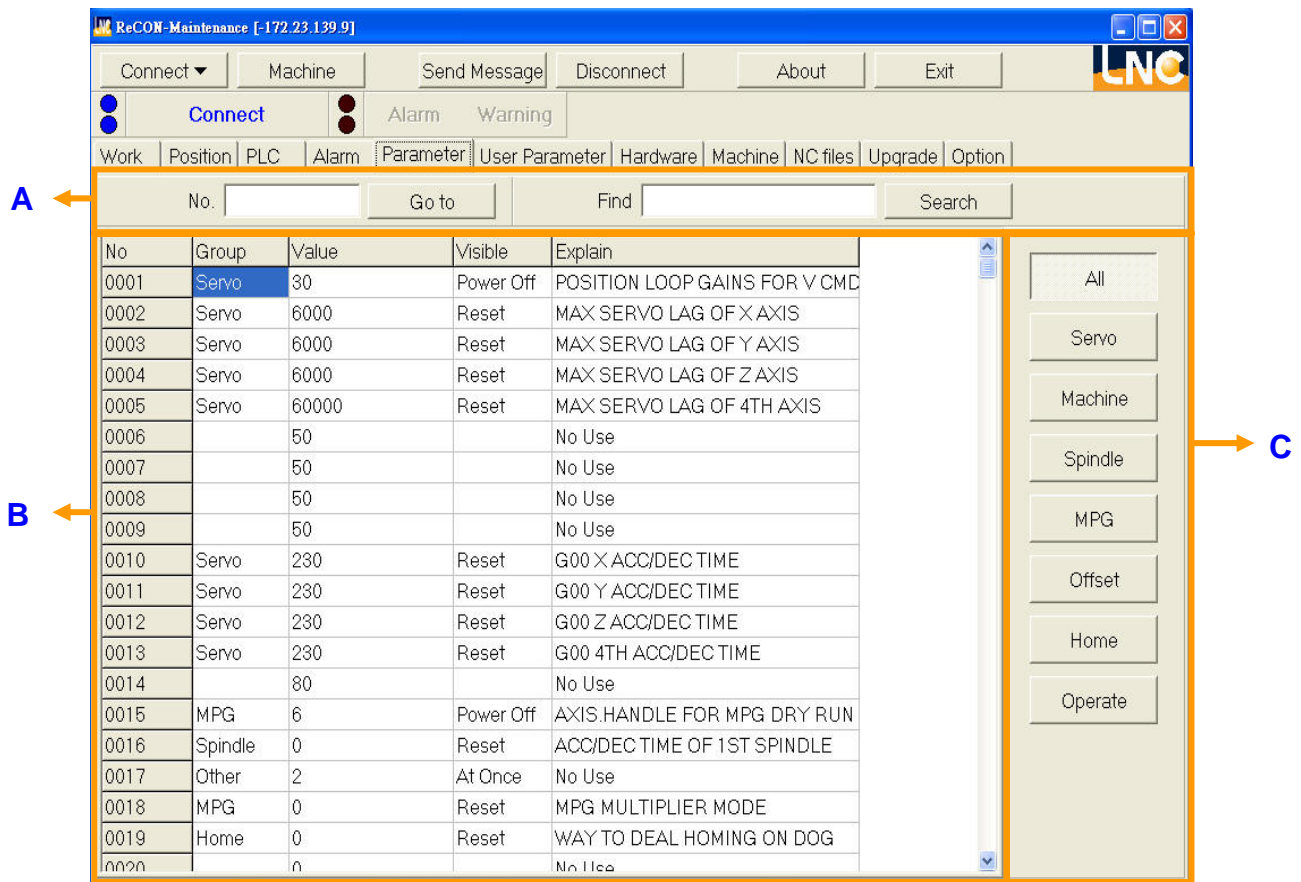


Figure 6.8 Parameter information

A

- No.: To search for a parameter number, enter the number, and press “Go to” to find the designated parameter number.
- Find: To search for some definition, enter the content and press “Search” to find the designated definition.

B

- Show the number (No), group (Group), set value (Value), effective method (Visible), and definition (Explain) of parameters at NC side. Set values can be modified. Move the cursor to the field that needs to be modified, double-click and a “Confirm Password” dialog box will pop-up (as shown in figure 【Enter a password】). Enter the correct password, and an on-screen keyboard will appear. Enter the new value and press “Accept.”

C

- Select the type of parameters: The types include servo (Servo), mechanical (Machine), spindle (Spindle), MPG (MPG), compensation (Offset), zero reference (Home), and operation (Operate) parameters. Click on the parameter type that you need, and the machine’s parameter information of the selected type will be shown in B area.

Machine information area

No	Group	Value	Visible	Explain
0001	Servo	30	Power Off	POSITION LOOP GAINS FOR V CMD
0002	Servo	6000	Reset	MAX SERVO LAG OF X AXIS
0003	Servo	6000	Reset	MAX SERVO LAG OF Y AXIS
0004	Servo	6000	Reset	
0005	Servo	60000	Reset	
0006		50		
0007		50		
0008		50		
0009		50		
0010	Servo	230	Reset	
0011	Servo	230	Reset	G00 Y ACC/DEC TIME
0012	Servo	230	Reset	G00 Z ACC/DEC TIME
0013	Servo	230	Reset	G00 4TH ACC/DEC TIME
0014		80		No Use
0015	MPG	6	Power Off	AXIS.HANDLE FOR MPG DRY RUN
0016	Spindle	0	Reset	ACC/DEC TIME OF 1ST SPINDLE
0017	Other	2	At Once	No Use
0018	MPG	0	Reset	MPG MULTIPLIER MODE
0019	Home	0	Reset	WAY TO DEAL HOMING ON DOG
0020		0		No Use

Confirm Password

Please Input Password

Accept

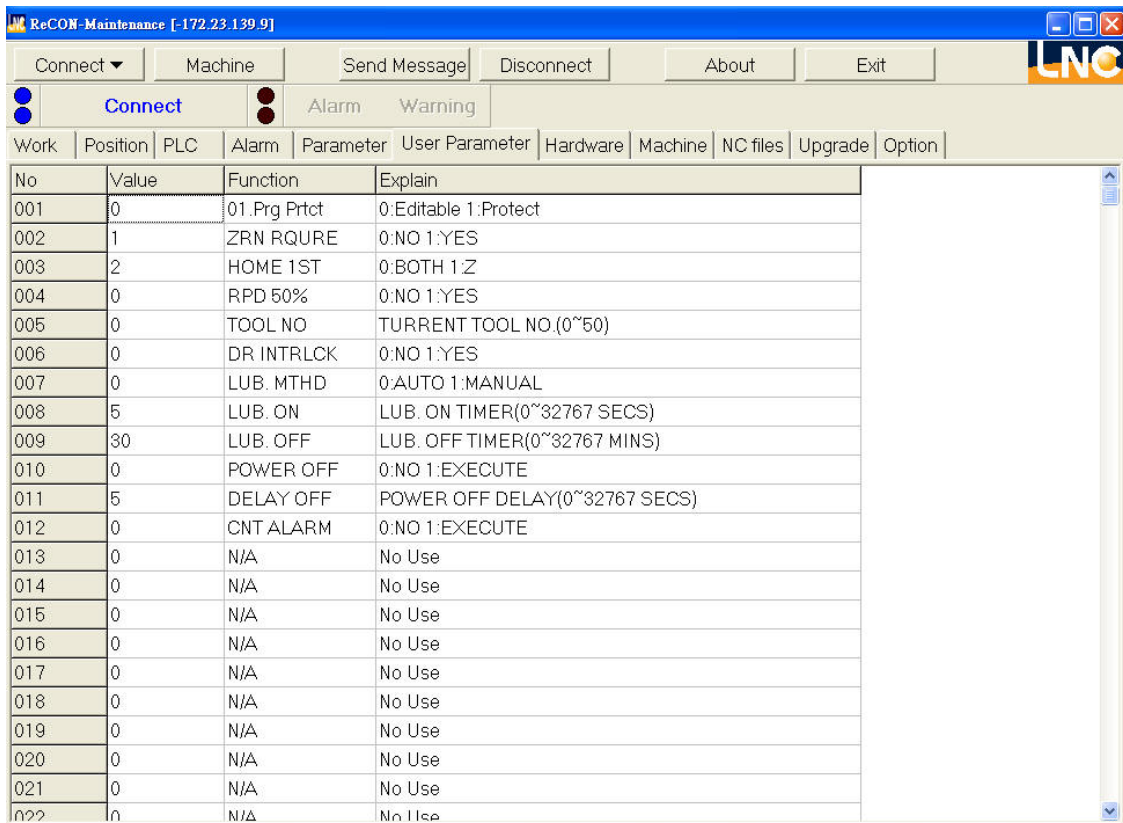
Cancel

☐ Do't Show Next Time

Figure 6.9 Enter a password

6.6 User Parameter

Shows the information of user parameters at NC side (as shown in figure 【User parameter information】). The user parameters that can be modified are relatively fewer for end-users.



No	Value	Function	Explain
001	0	01.Prg Prtct	0:Editable 1:Protect
002	1	ZRN RQUIRE	0:NO 1:YES
003	2	HOME 1ST	0:BOTH 1:Z
004	0	RPD 50%	0:NO 1:YES
005	0	TOOL NO	TURRENT TOOL NO.(0~50)
006	0	DR INTRLCK	0:NO 1:YES
007	0	LUB. MTHD	0:AUTO 1:MANUAL
008	5	LUB. ON	LUB. ON TIMER(0~32767 SECS)
009	30	LUB. OFF	LUB. OFF TIMER(0~32767 MINS)
010	0	POWER OFF	0:NO 1:EXECUTE
011	5	DELAY OFF	POWER OFF DELAY(0~32767 SECS)
012	0	CNT ALARM	0:NO 1:EXECUTE
013	0	N/A	No Use
014	0	N/A	No Use
015	0	N/A	No Use
016	0	N/A	No Use
017	0	N/A	No Use
018	0	N/A	No Use
019	0	N/A	No Use
020	0	N/A	No Use
021	0	N/A	No Use
022	0	N/A	No Use

Figure 6.10 User parameter information

- Shows the numbers (No), set values (Value), functions (Function), and definitions (Explain) of user parameters at NC side. Set values can be modified. Move the cursor to the field that needs to be modified, double-click and an "Input Numeric" on-screen keyboard will appear. Enter the new value and press "OK." (Please refer to section F in chapter 5.1 for the method to modify this value).

6.7 Hardware

Shows the system information of DGNOS page at NC side (as shown in figure 【Hardware diagnosis information】).

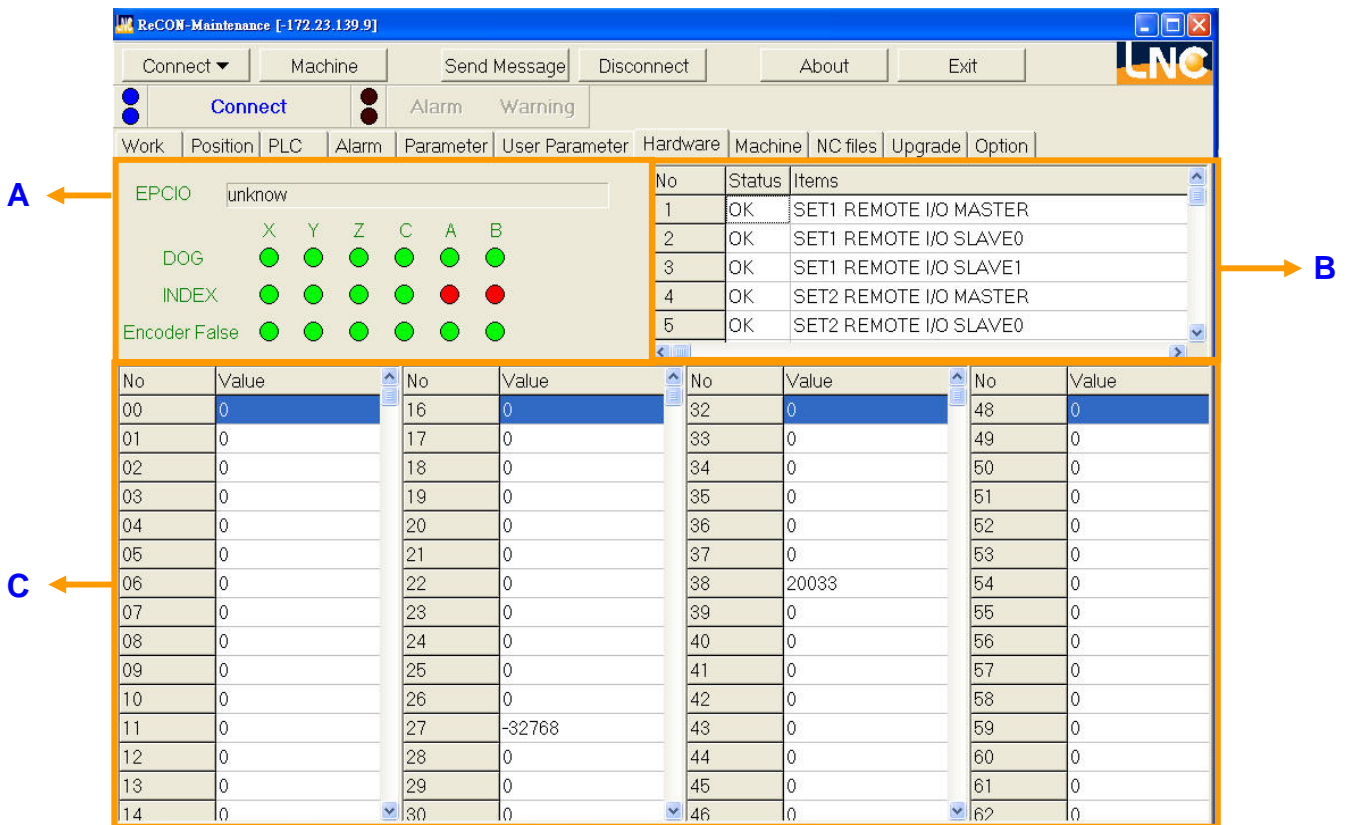


Figure 6.11 Hardware diagnosis information

A

- EPCIO: Shows the type of motion card applied at NC side currently.
- DOG: When DOG is at the zero point, the light of the corresponding axis is red; if not, the light is green.
- INDEX: If the motor is at the zero point, the light of the corresponding axis is red; if not, the light is green.
- Encoder False: If the encoder gets disconnected, the light of the corresponding axis is red; if not, the light is green.

B

- If the diagnosed item is normal, the status field shows **OK**; if not, the status shows **False**.

C

- Shows system data/system pages of the DGNOS page at NC side (Please refer to the **Operation Manual** for the definitions of system data numbers).

6.8 Machine

File uploading & downloading can only be processed when the machine is connected (file types include Ladder, IO, Parameter, Global, D register, PLC Error Message, User Parameter String, Graph, Log, & Mmibase.ini files) (as shown in figure 【Machine information】). The details for each file type are described below, respectively:

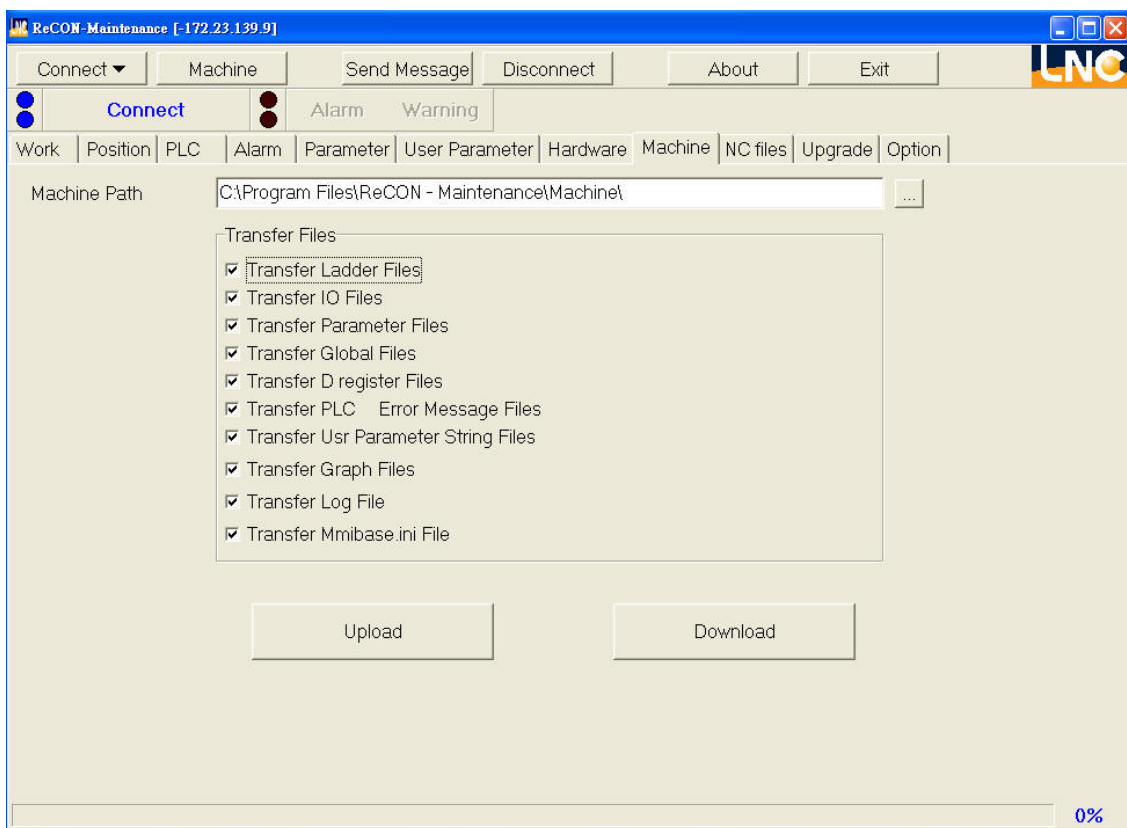


Figure 6.12 Machine information

- MACHINE Path: Select the path to upload/download the files.
- Select files: Check the box of the file to be uploaded/downloaded. Below are the file types for selections.
 - Ladder Files: "CNC.LAD", "CNC.L88", "CNC.PAR"
 - IO Files: "PLCIO.CFG"
 - Parameter Files: "PARAM.BIN", "PARAM.DEF", "PARAM.TXT"
 - Global Files: Milling machine: "GLOBAL6.DAT"; lathe: "GREADY6.BIN", "GRUNH6.BIN", "GRUNL6.BIN"
 - D register Files: "SRAM"

- PLC Error Message Files: "CHI_MLC.ERR", "ENG_MLC.ERR"
- User Parameter String Files: "USRCHI.STR", "USRENG.STR"
- Graph Files: "GRAPH.DAT"
- Log Files: "CNCSYS.LOG", "OPMSG.LOG"
- Mmibase.ini Files: "MMIBASE.INI"
- Upload: Upload the files in the designated path to NC side.
- Download : Download the files at NC side to the designated path.

6.9 NC files

When some machine is connected, click the “NC files” tab (as shown in figure 【NC files】). The left part of the tab window is the file list of PC side. The right part is the file list of NC side.

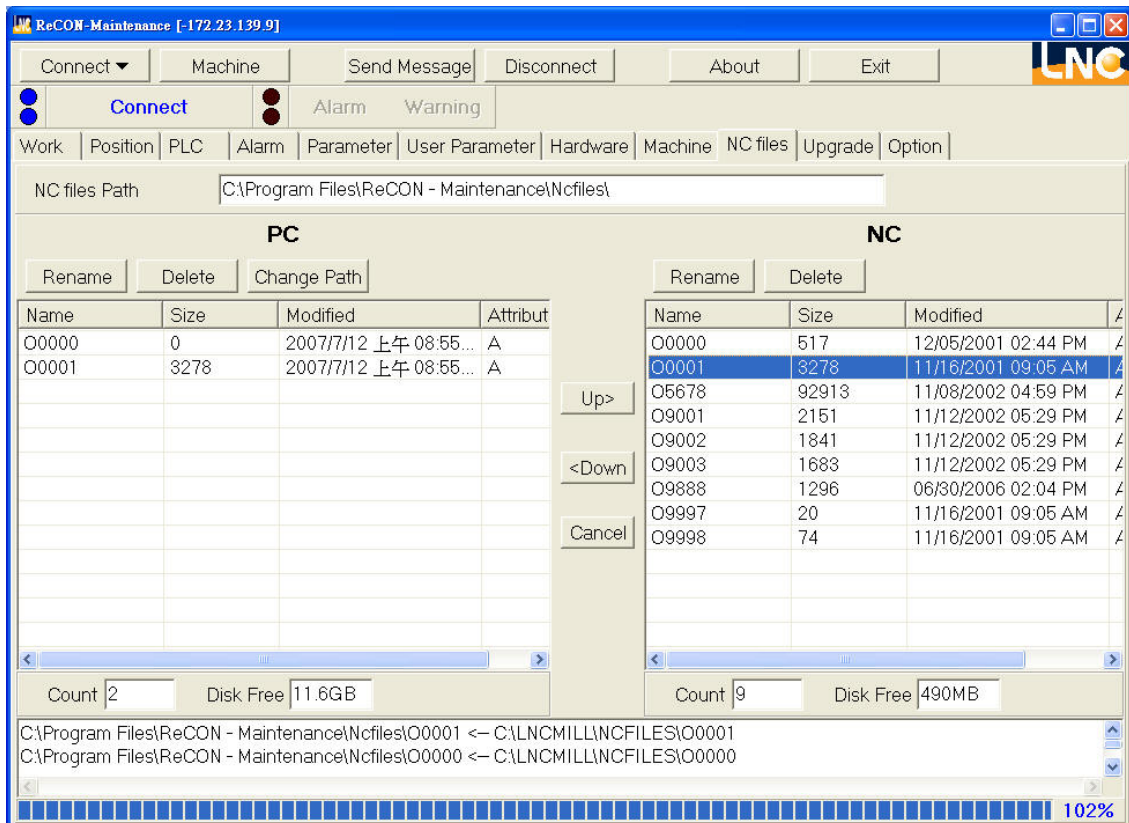


Figure 6.13 NC files

The “File” dialog box contains the functions to upload, download, rename or delete a file, and change a path of PC side, etc. as described below, respectively:

- Up: Please select the file at PC side, and then press “UP” to upload the file to NC side. You can select more than one file to upload at one time.
- Down: Please select the file at NC side, and then press “Down” to download the file to PC side. You can select more than one file to upload at one time.
- Change path: Press this button to change the path of PC side.
- Delete: Please select the file to delete, then press “Delete.”
- Change Path: Press this button to change a path of PC side.
- Cancel: During the transmission of mass files, press this button to cancel the present work when necessary.

6.10 Upgrade

System upgrade is available only when the machine is connected (as shown in figure 5.14). This tab includes the information of the current software version of NC, the path for software installation, and the “Setup” button. The details are described below, respectively:

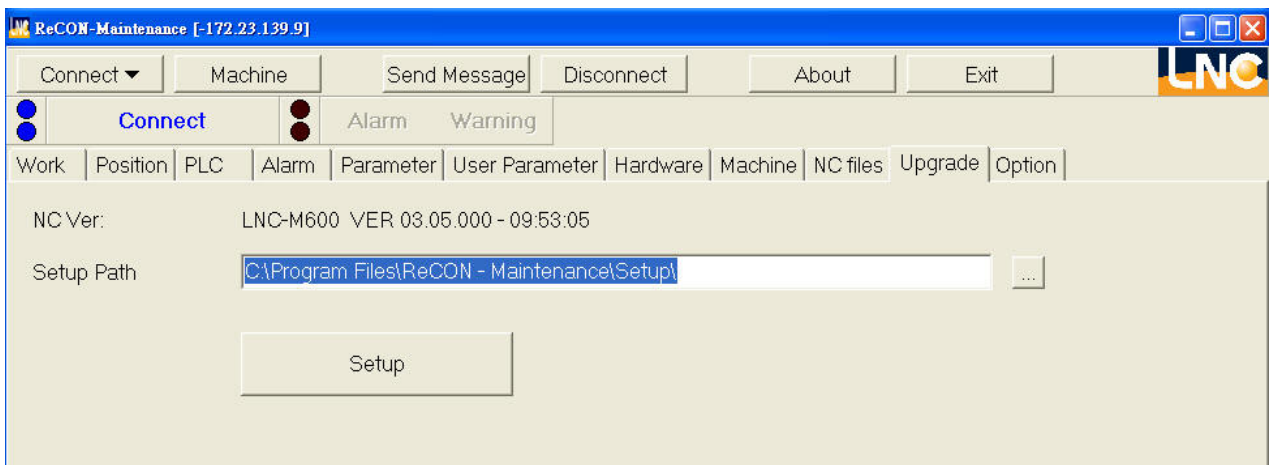


Figure 6.14 System upgrade

- NCVer: Shows the current software version installed at NC side.
- Setup Path: Changes the path to install programs at PC side.
- Setup: Press the button to upgrade the current NC software.
- For more details about operation, please refer to chapter 6.5.

6.11 Option

This tab includes the information of Language, Reconnect function, and Delay Time. The details are described below, respectively:

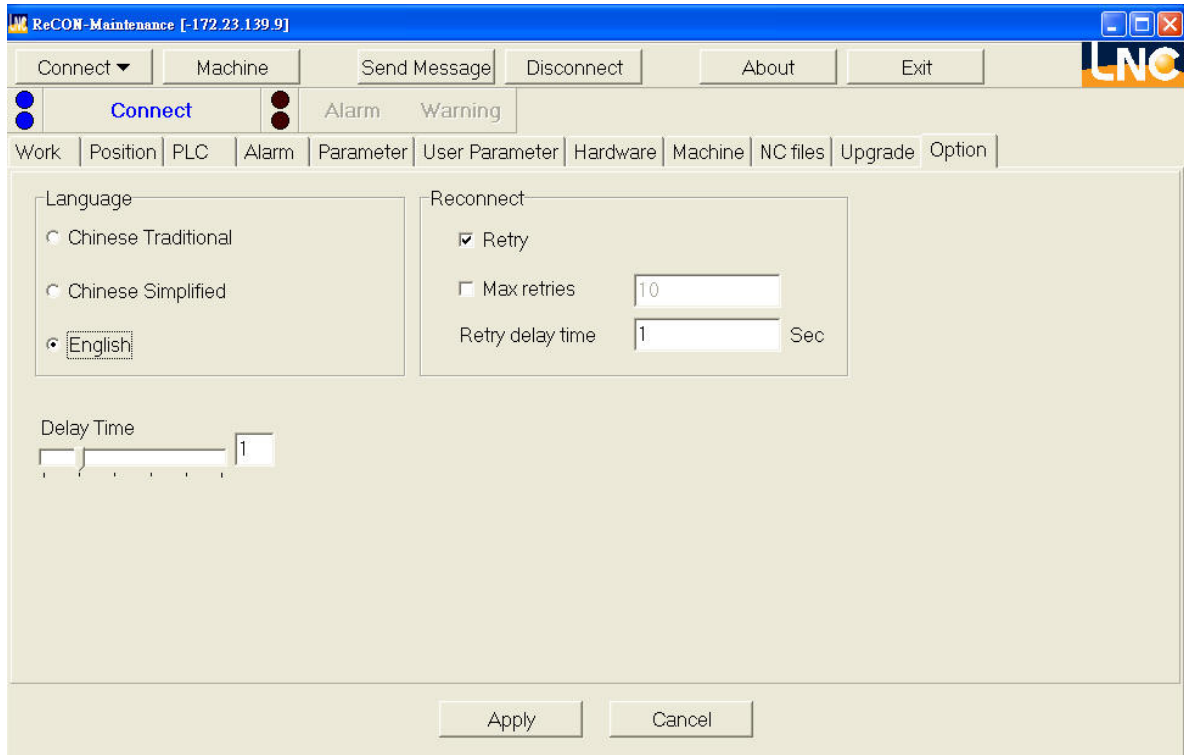


Figure 6.15 Other configurations

- Language: Select the language that you need. The languages include traditional Chinese, simplified Chinese, and English. If a language different from the current language in use is selected, the software must be re-executed.
- Reconnect: Check the box of “Retry” to enable the function of automatic reconnection.
- Delay Time: Set the wait time for PC side to send a message to NC side.

7 Quick Start Guide

7.1 Language Configuration

To prevent garbage characters produced by improper configuration of languages, please follow the steps below for correct setting:

1. Press the “Option” button.

2. Select the language that you need:

- Traditional Chinese
- Simplified Chinese
- English

3. Press the “Apply” button to validate the new configuration.

Press “Exit” to close the dialog box.

After finishing the above settings, please re-execute the software, and the window will be displayed with the selected language interface.

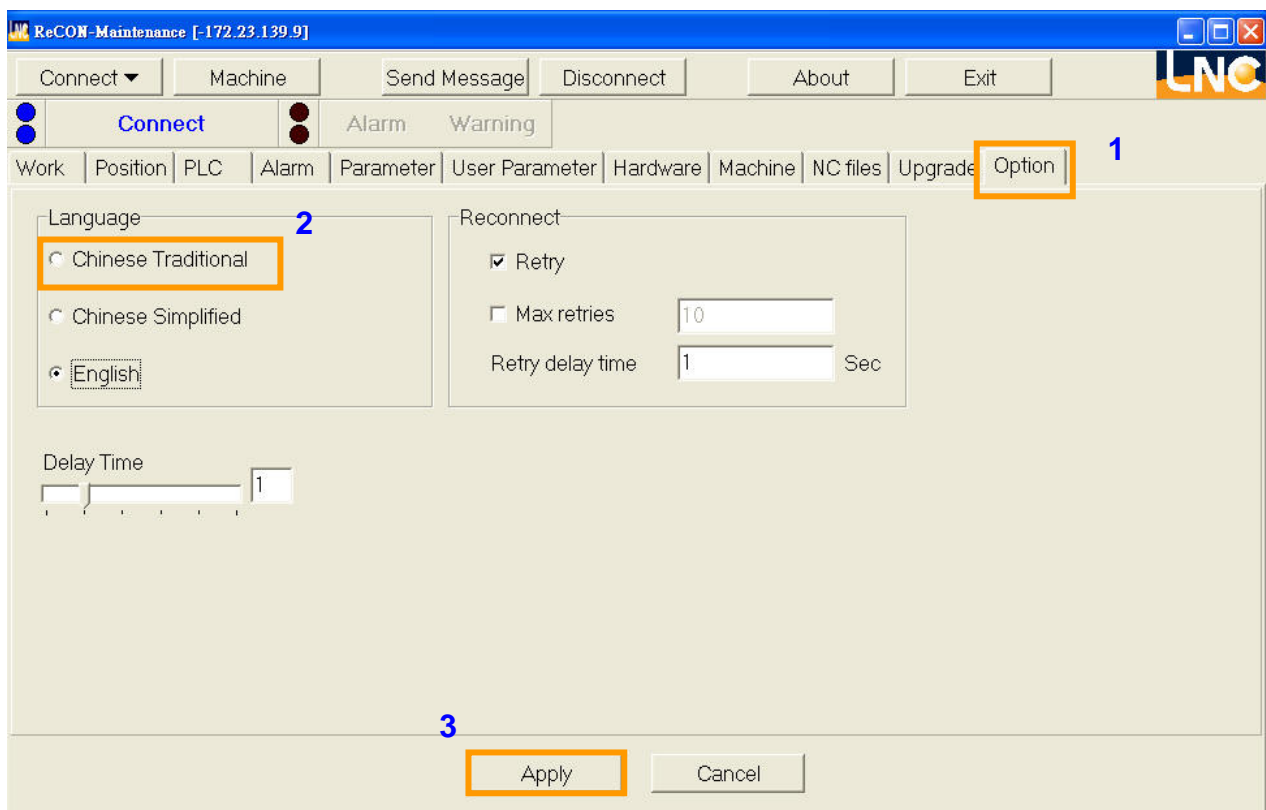


Figure 7.1 Language configuration

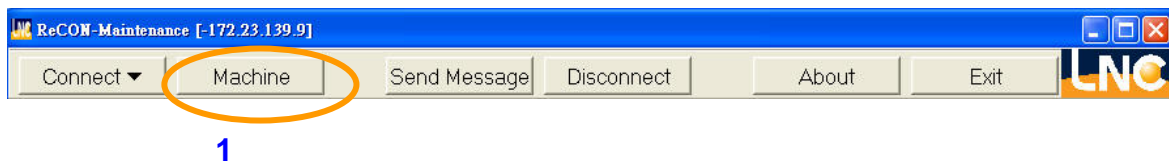
7.2 Create a Machine List

Prior to a machine being connected, a machine list must be created first. Please follow the steps below for setting (as shown in figure 【Create a machine list】 & 【Connect to a machine】):

1. Press the “Machine” button (as shown in figure 【Create a machine list】), and the pop-up “Machine” dialog box will appear.
2. Press the “Add” button.
3. Click the 1st blank text box and enter IP address of the machine to be added.
4. Click the 2nd blank text box and enter the name of the machine.

Please repeat steps above to create a machine list.

5. After finishing the above steps, press the “Exit” button to close the dialog box.



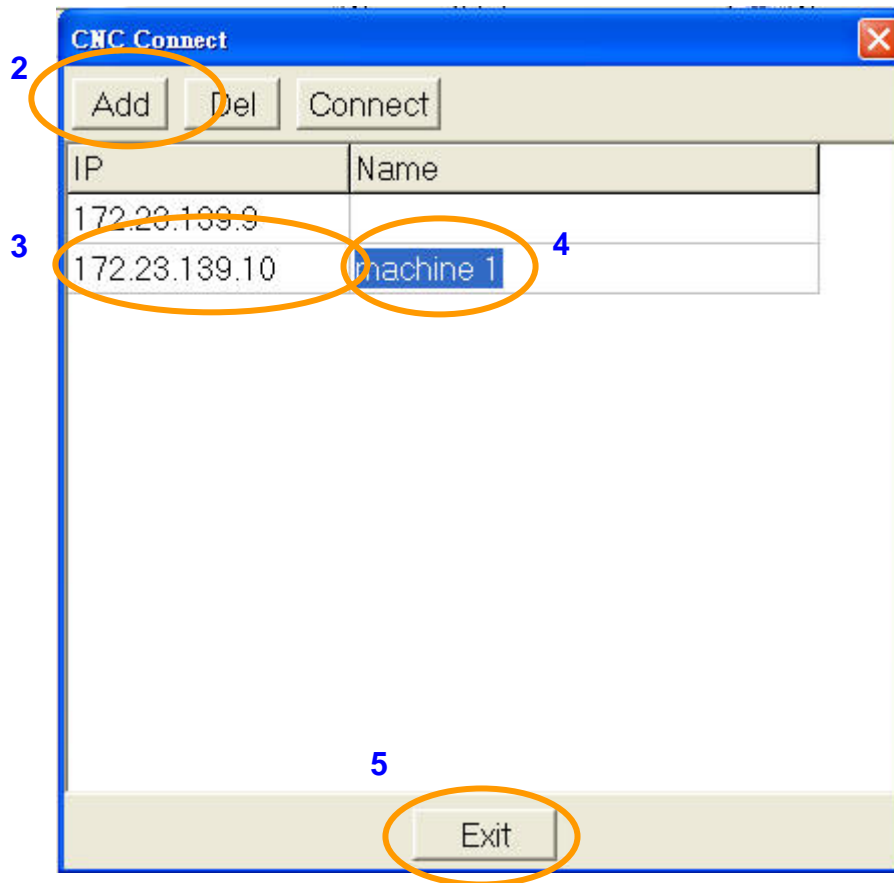


Figure 7.2 Create a machine list

7.3 Connect

1. Press "Connect."
2. Select the IP address to connect. If there is no address to select, please create a machine list first.
Please refer to the chapter "3.2 Machine."

After the above 2 steps are completed, the information of the connected machine will be shown and the machine is connected.

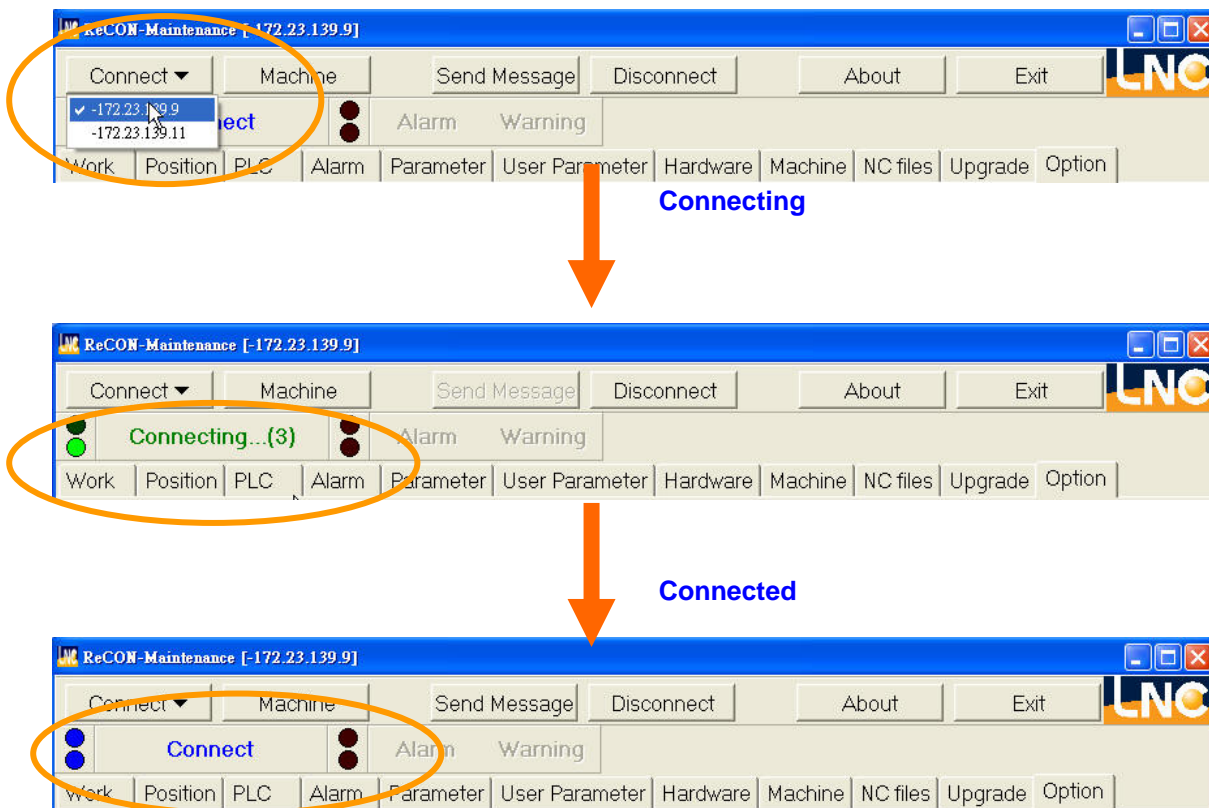


Figure 7.3 Connect to a machine

7.4 NC files transmission

Please follow the steps below for operation (as shown in figure 【Upload part programs】).

1. After some machine is connected, click the “NC files” tab.
2. Select the file at PC side that needs to be uploaded.
3. Press the “Up” button and wait until the transmission is completed.
4. After transmission is completed, a dialog box will appear; press OK to close the dialog box and complete the procedure of uploading a file to the connected machine.

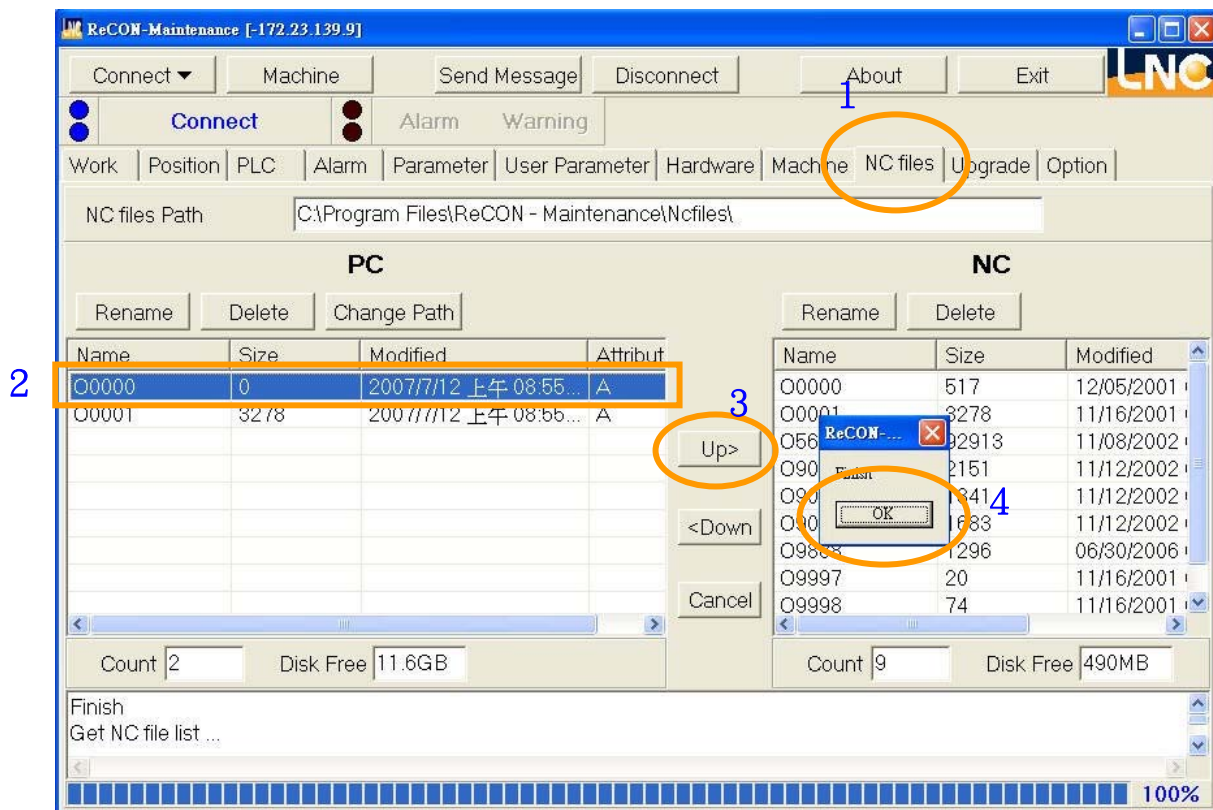


Figure 7.4 Upload part programs

7.5 Upgrade

Please follow the steps below for operation:

1. After some machine is connected, click the “Upgrade” tab (as shown in figure 【System upgrade】).
2. Enter the path to install the software, and press “Setup” (as shown in figure 【System upgrade】).
3. If NC side is not in NOT READY status, a dialog box will appear as a reminder (as shown in figure 【System upgrade】).
4. Meanwhile, a “NC Machine Warning” dialog box will appear at NC side to remind users to press EMG (as shown in figure 【NC Machine Warning” dialog box at NC side】). Press EMG and re-execute step (2) and wait until upgrade is completed.
5. After upgrade is completed, press “OK” to finish the procedure (as shown in figure 【Finish upgrade】).
6. After step (5) is finished, NC side will receive a remote message (as shown in figure 【Remote Message” dialog box】). Press “OK” to complete the upgrade; press “CANCEL” to cancel the upgrade.

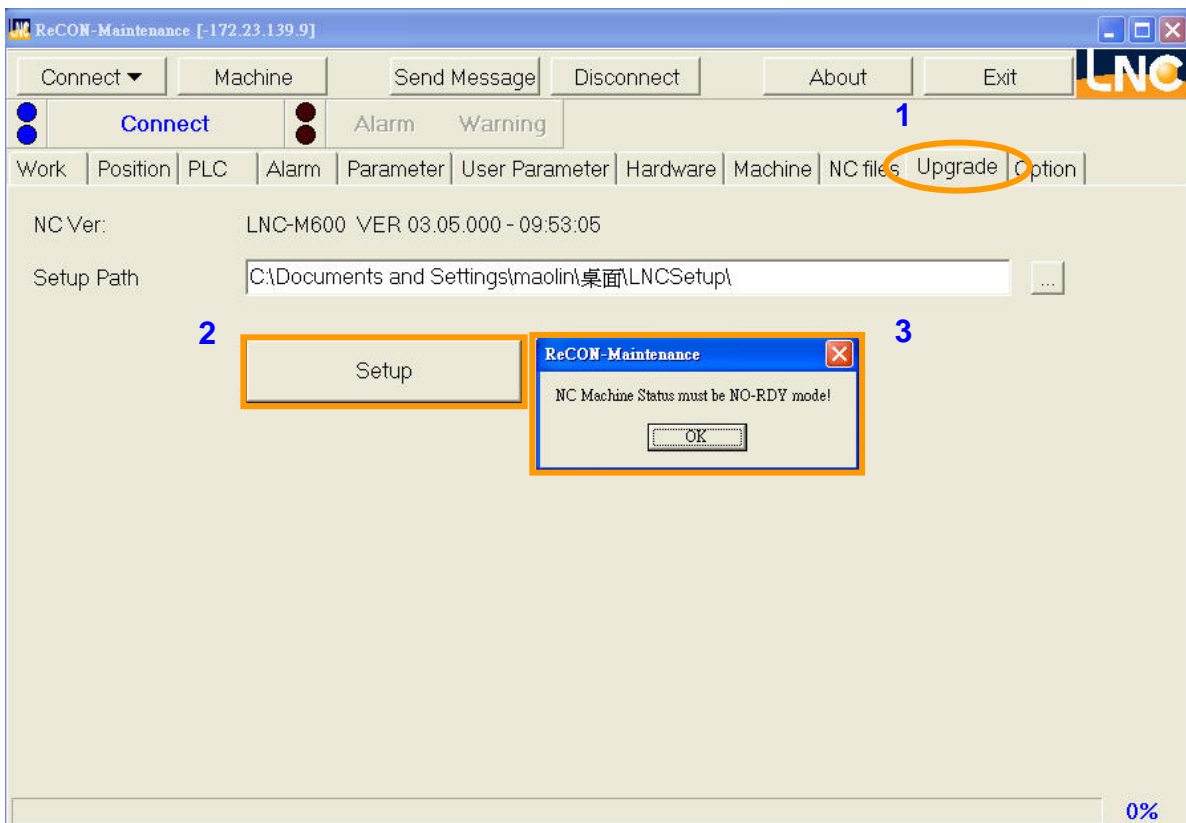


Figure 7.5 System upgrade



Figure 7.6 NC Machine Warning” dialog box at NC side

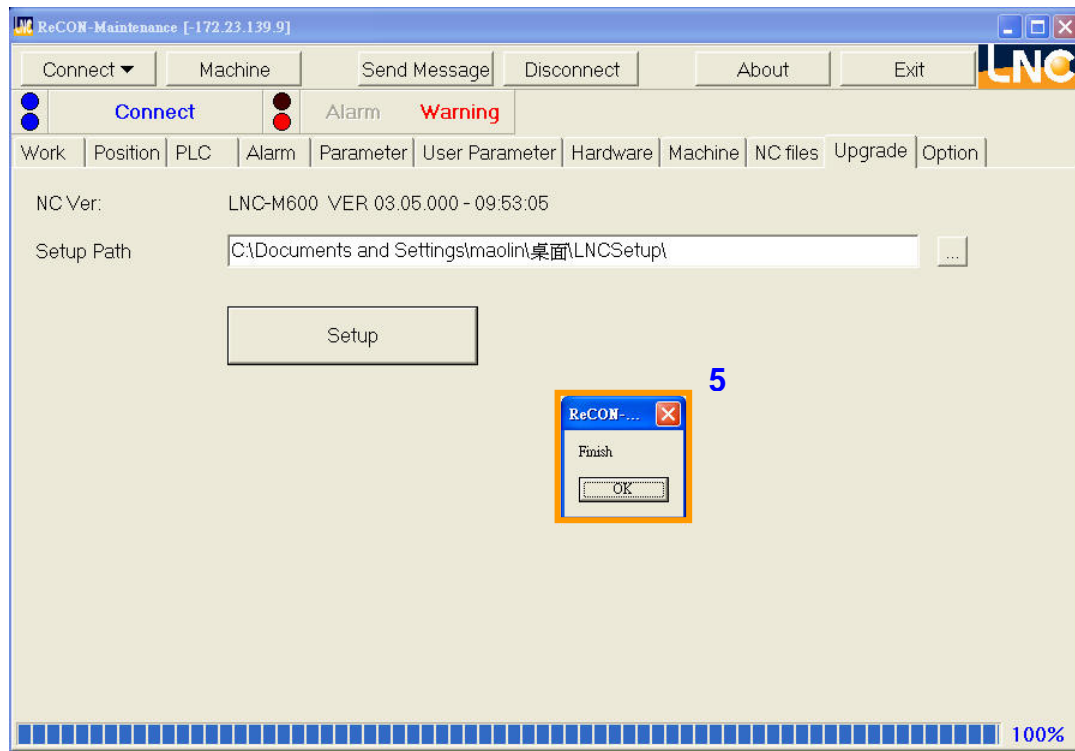


Figure 7.7 Finish upgrade



Figure 7.8 "Remote Message" dialog box