

# CNC B Series Controller System Screen Programming

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# B Series Controller

- [Software installation & How to use](#)
- [Firmware upgrade & Screen download/upload](#)
- [Screen programming](#)
- [Security Level and Expiration](#)
- [How to transit from A series to B series](#)

## Software installation & How to use?



# Software installation

## DOPSoft 4.0.0.24

- Execute [CNCSoft-B.exe](#) to install all the software for B series



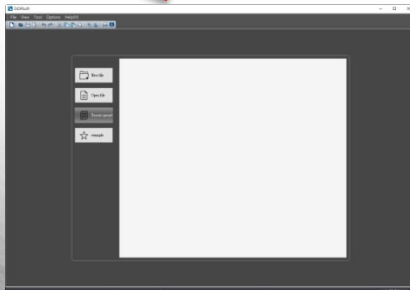


# How to use DOPSoft?

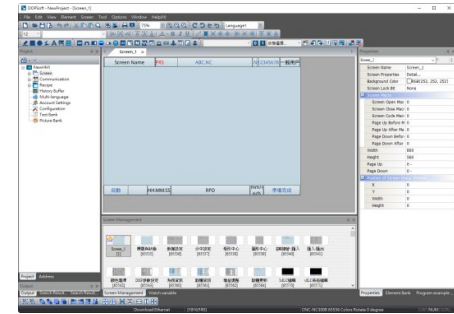
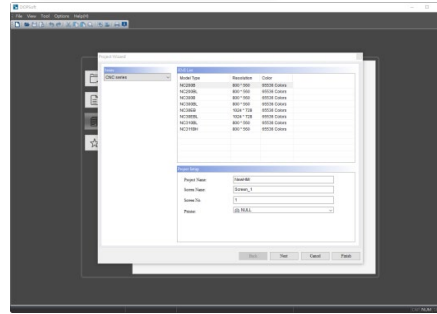
Open project



Execute DOPSoft



New file



New file will include system screens and base screen.

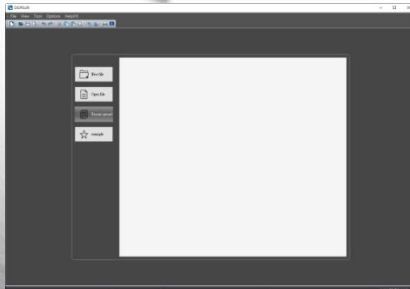
- 1
- 65535 (base screen)
- 65536 ~ 65572 (system screens)

# How to use DOPSoft?

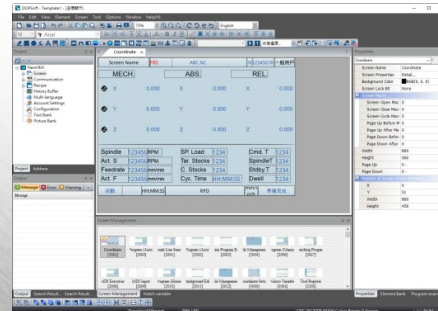
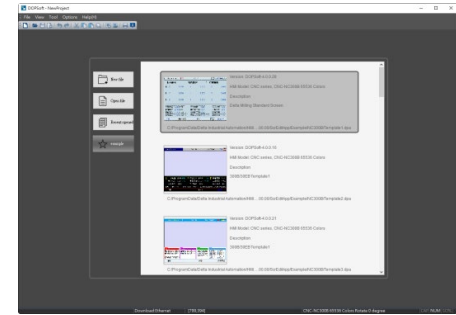
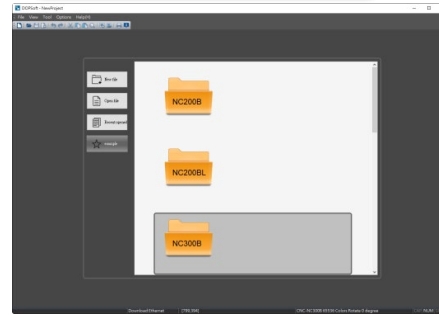
Open project



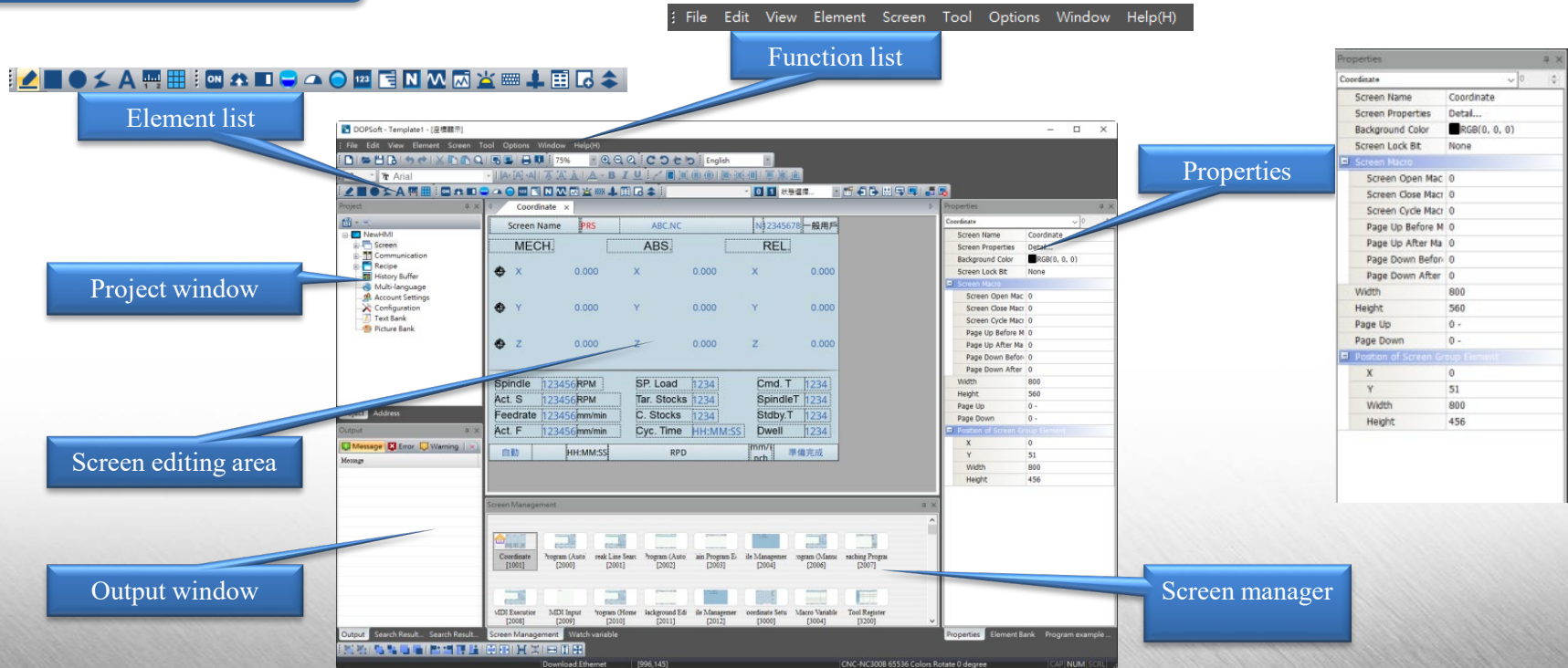
Execute DOPSoft



Select an example



## Software layout

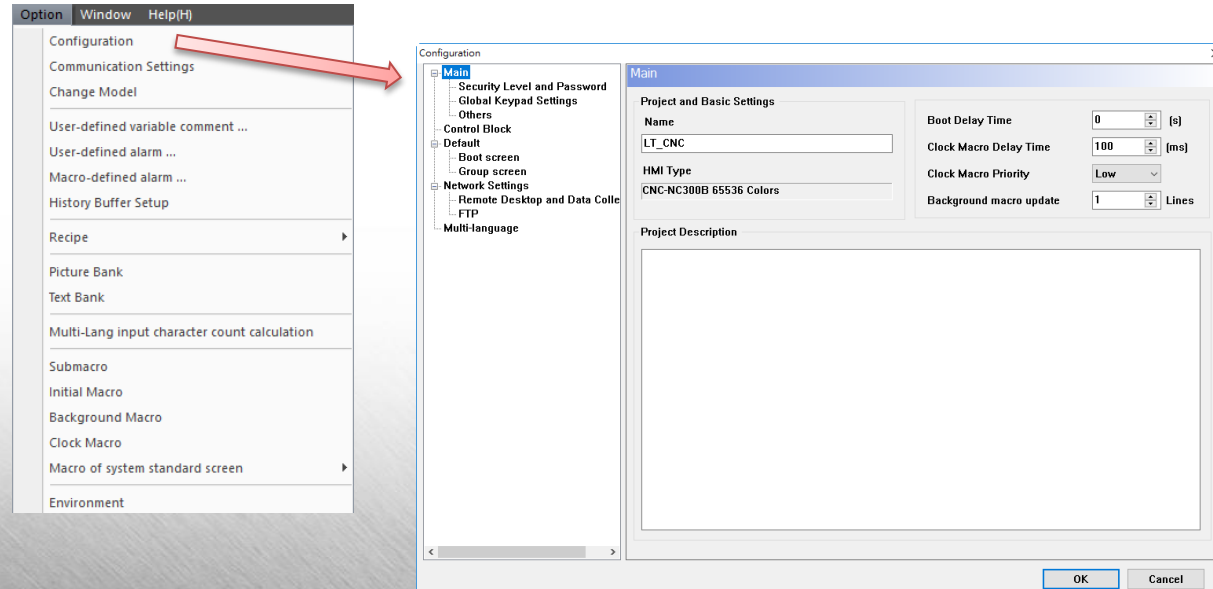


The screenshot shows the DOPSoft software interface with the following components labeled:

- Function list**: Located at the top of the main window, containing menu items: File, Edit, View, Element, Screen, Tool, Options, Window, Help(H).
- Element list**: A toolbar on the left side of the main window containing various icons for screen elements.
- Project window**: A panel on the left side showing a tree view of the project structure, including folders like New-Build, Screen, Communication, Recipe, History Buffer, Multi-language, Account Settings, Configuration, Text Bank, and Picture Bank.
- Screen editing area**: The central workspace where the screen is being edited, showing a coordinate system and various data fields.
- Output window**: A panel at the bottom left showing the output of the software, including messages and warnings.
- Screen manager**: A panel at the bottom right showing a list of screens and their properties, including Screen Name, Screen Properties, Background Color, Screen Lock Bit, and Screen Macro.
- Properties**: A panel on the right side showing the properties of the selected screen, including Screen Name, Screen Properties, Background Color, Screen Lock Bit, Screen Macro, and Position of Screen Group Element.

## Configuration

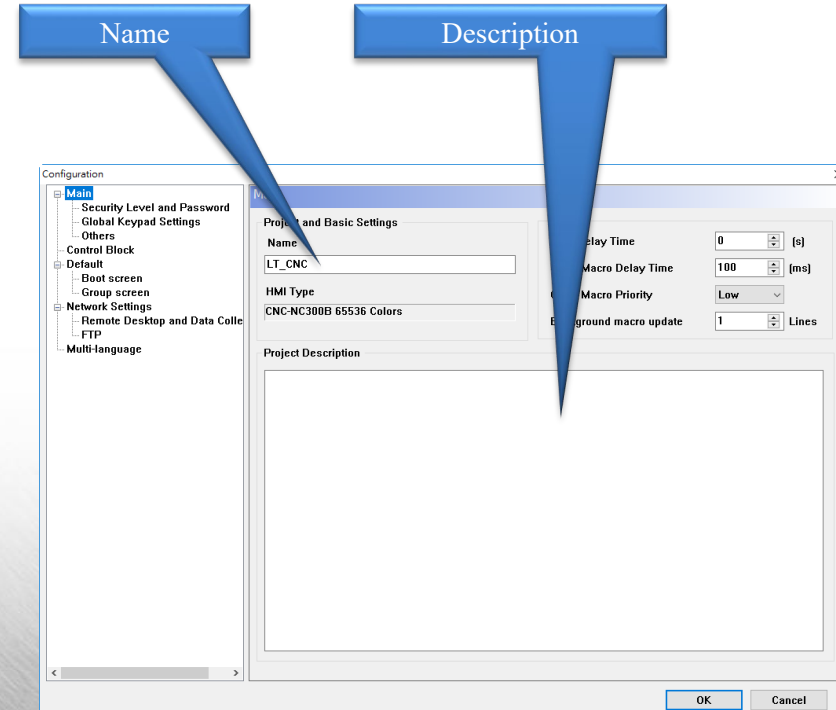
- Basic setting such as the project name, control block, boot & group screens, and aux. keys, can be set in 【 Configuration 】 .



# How to use DOPSoft?

## Configuration: Main

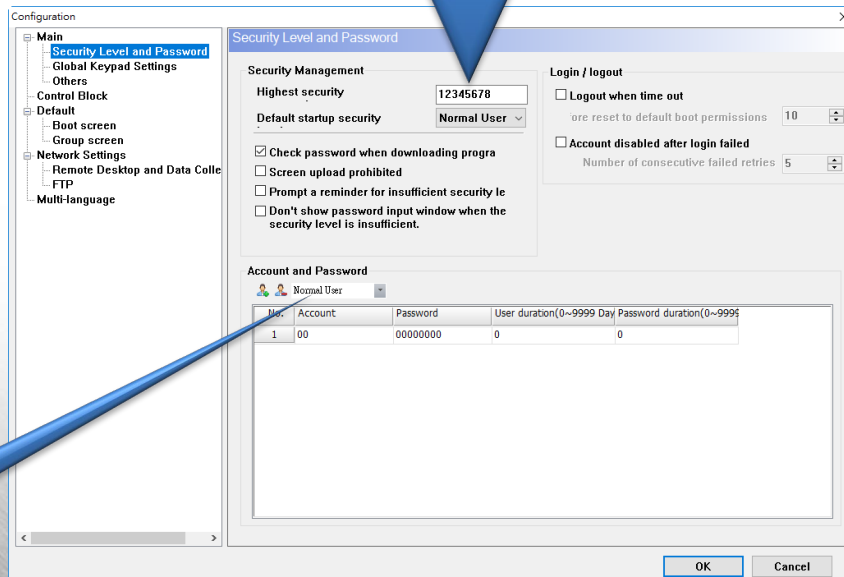
- Set the project name and its description.



## Configuration: Security Level and Password

- Highest security
  - Protect upload/download screens and system formatting, etc.
  - Password format is hexadecimal. (max. 8 digits)
- Security level for users
  - Normal user 、 User permission 1 、 User permission 2 、 Device permission
  - Account/ password
    - Account format is ASCII code. (max. 24 digits)
    - Password format is hexadecimal (max. 24 digits).

Upload/download password  
(default: 12345678)



Configuration

Security Level and Password

Security Management

Highest security: 12345678

Default startup security: Normal User

☒ Check password when downloading program  
☐ Screen upload prohibited  
☐ Prompt a reminder for insufficient security level  
☐ Don't show password input window when the security level is insufficient.

Account and Password

No.	Account	Password	User duration(0~9999 Day)	Password duration(0~9999)
1	00	00000000	0	0

OK Cancel

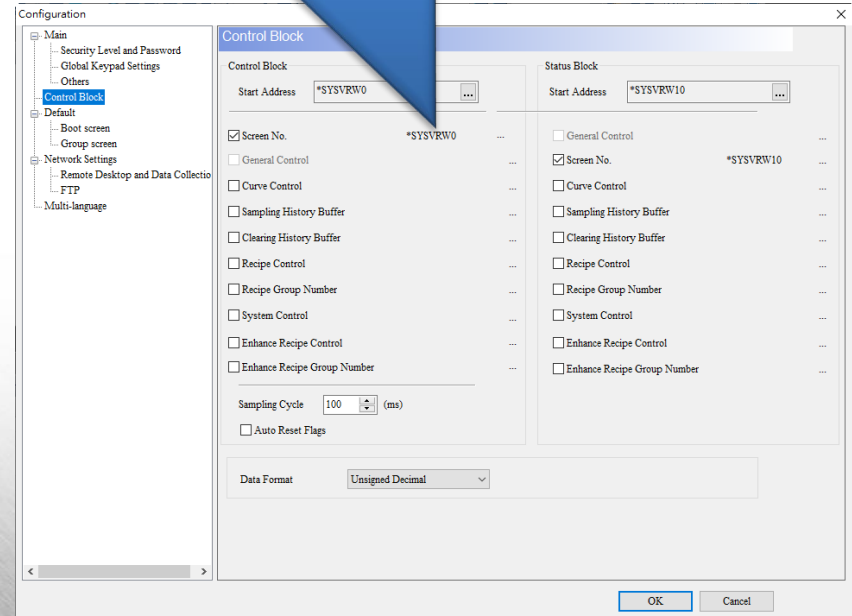
Account level



## Configuration: Control Block

- Switch screen

If \*SYSVRW0 equals to a certain screen ID, the system switches to the corresponding screen display.

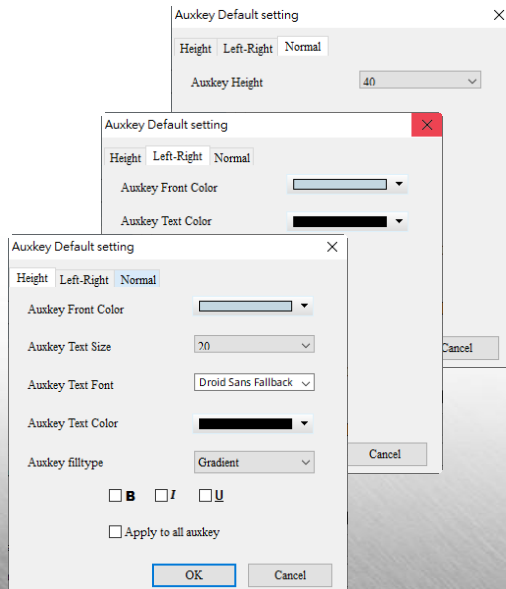




# How to use DOPSoft?

## Configuration: Default

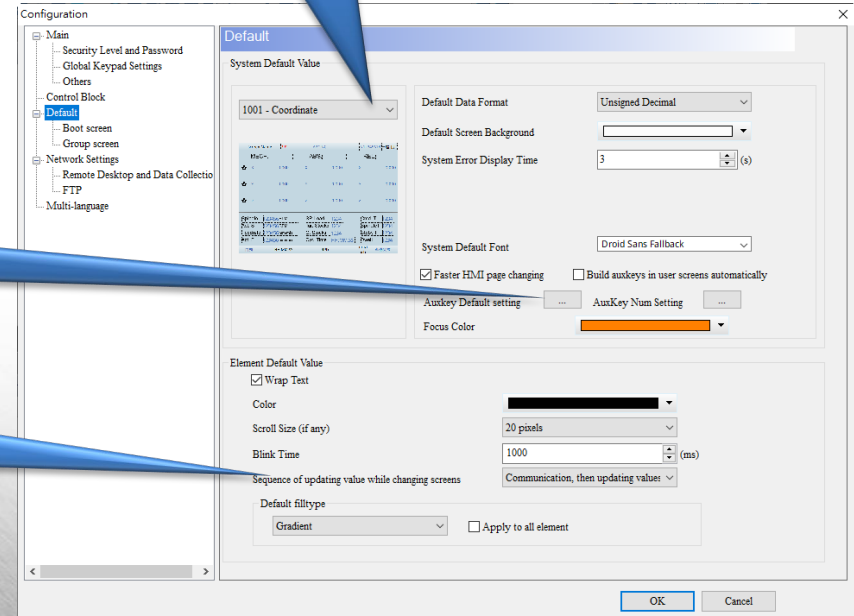
- System default screen settings
- Aux. key display setting



Change text font, text color and button color of aux. keys in all screens.

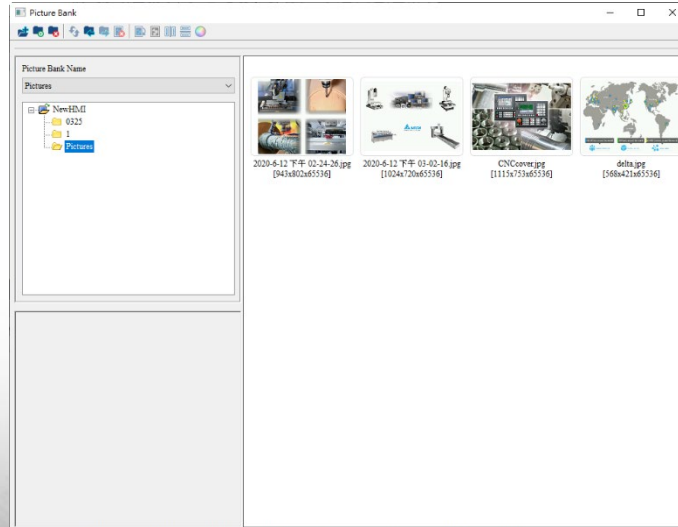
Avoid previous incorrect display while screen switching.

Default screen ID

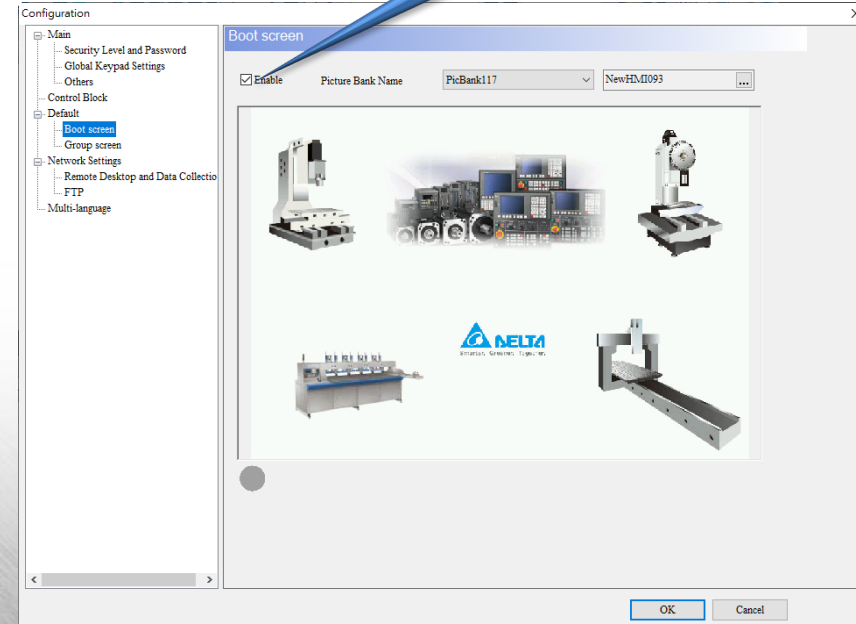


## Configuration: Boot screen

- Sets the screen display while booting the system

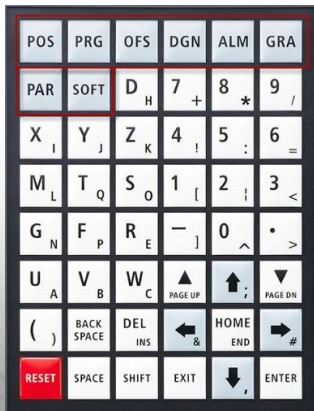


Boot screen



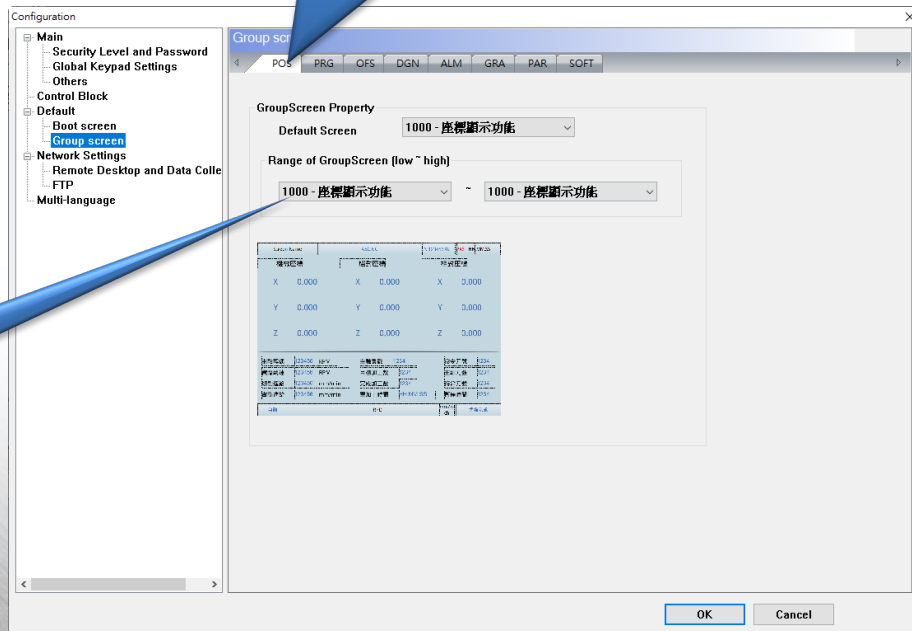
## Configuration: Group screen

- 8 sets of Group screen
  - Sets the initial screen for each group
  - Each group remembers its final screen
  - Range setting of each group



Set the initial screen ID for each group

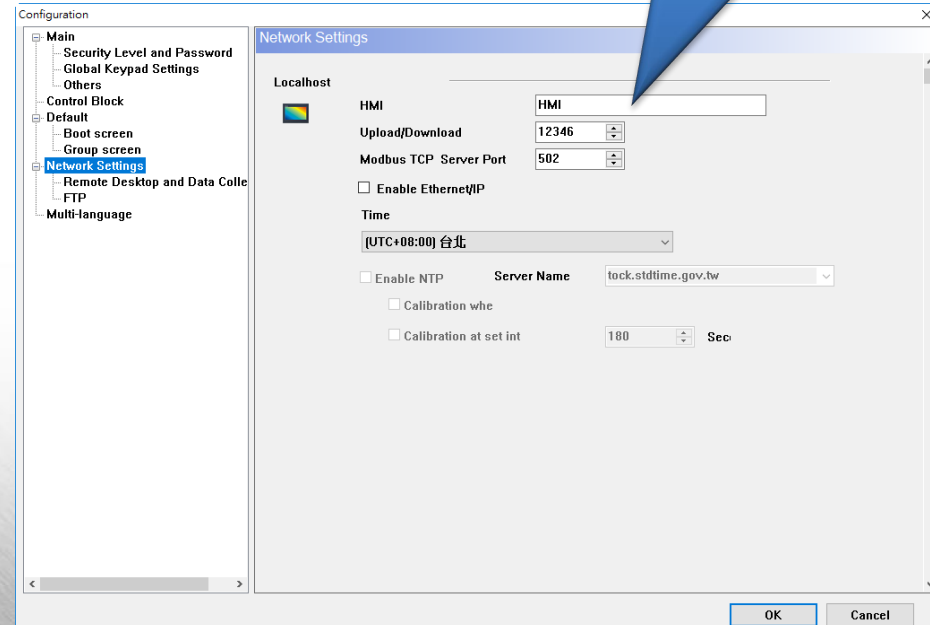
Set screen range of each group



# How to use DOPSoft?

## Configuration: Network settings

Set the Network name of CNC



The screenshot shows the 'Configuration' window with the 'Network Settings' tab selected. The left sidebar lists various configuration categories, with 'Network Settings' highlighted. The main panel displays the following settings:

- Localhost**
  - HMI**: HMI
  - Upload/Download**: 12346
  - Modbus TCP Server Port**: 502
  - ☐ **Enable Ethernet/IP**
  - Time**: [UTC+08:00] 台北
  - ☐ **Enable NTP** **Server Name**: tock.stdtime.gov.tw
  - ☐ **Calibration whe**
  - ☐ **Calibration at set int**: 180 Sec

At the bottom right, there are 'OK' and 'Cancel' buttons.

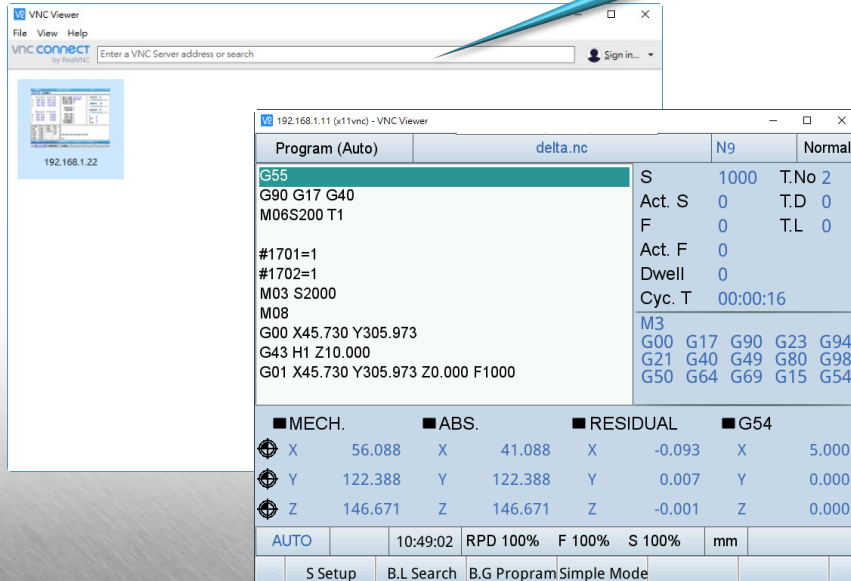
# How to use DOPSoft?

## Configuration: Remote control

- Supports third-party VNC software.

Enter the CNC IP address and the password before starting the remote control.

Enable the VNC function  
Default port: 5900  
Password: 12345678



VNC Viewer

VNC connect

192.168.1.22

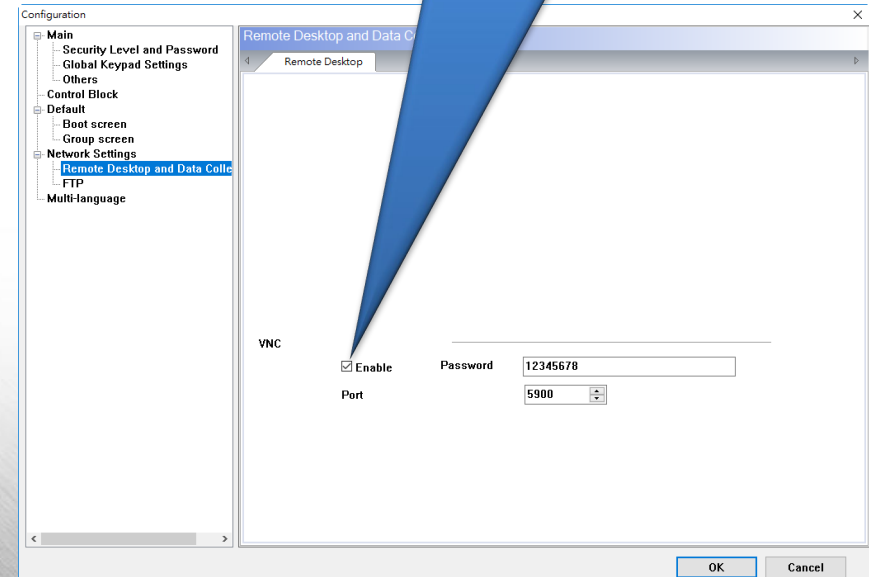
192.168.1.11 (x11vnc) - VNC Viewer

Program (Auto)	delta.nc	N9	Normal
G55	S	1000	T.No 2
G90 G17 G40	Act. S	0	T.D 0
M06S200 T1	F	0	T.L 0
#1701=1	Act. F	0	
#1702=1	Dwell	0	
M03 S2000	Cyc. T	00:00:16	
M08			
G00 X45.730 Y305.973	M3		
G43 H1 Z10.000	G00 G17 G90 G23 G94		
G01 X45.730 Y305.973 Z0.000 F1000	G21 G40 G49 G80 G98		
	G50 G64 G69 G15 G54		

MECH.		ABS.		RESIDUAL		G54	
X	56.088	X	41.088	X	-0.093	X	5.000
Y	122.388	Y	122.388	Y	0.007	Y	0.000
Z	146.671	Z	146.671	Z	-0.001	Z	0.000

AUTO 10:49:02 RPD 100% F 100% S 100% mm

S Setup B.L Search B.G Program Simple Mode



Configuration

- Main
  - Security Level and Password
  - Global Keypad Settings
  - Others
  - Control Block
  - Default
    - Boot screen
    - Group screen
  - Network Settings
    - Remote Desktop and Data Collection
    - FTP
    - Multi-language

Remote Desktop and Data Collection

Remote Desktop

VNC

☒ Enable

Port 5900

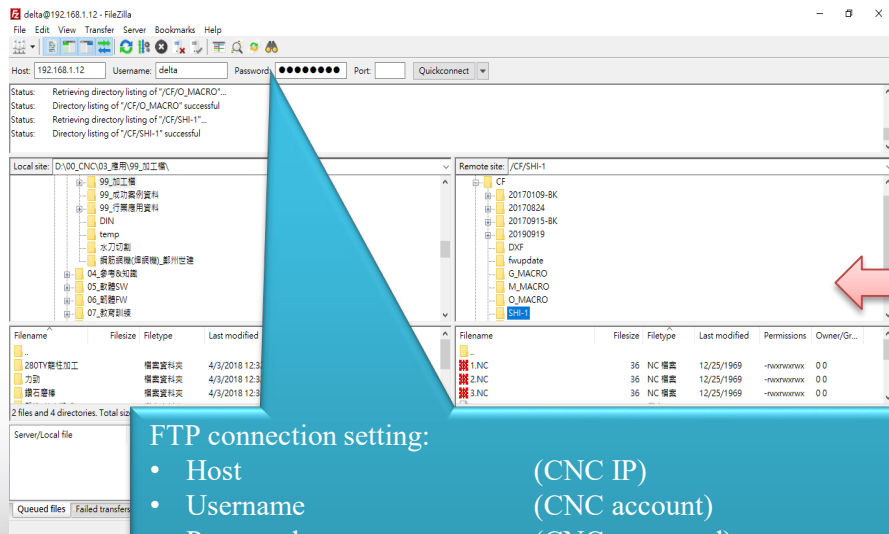
Password 12345678

OK Cancel



## Configuration: FTP

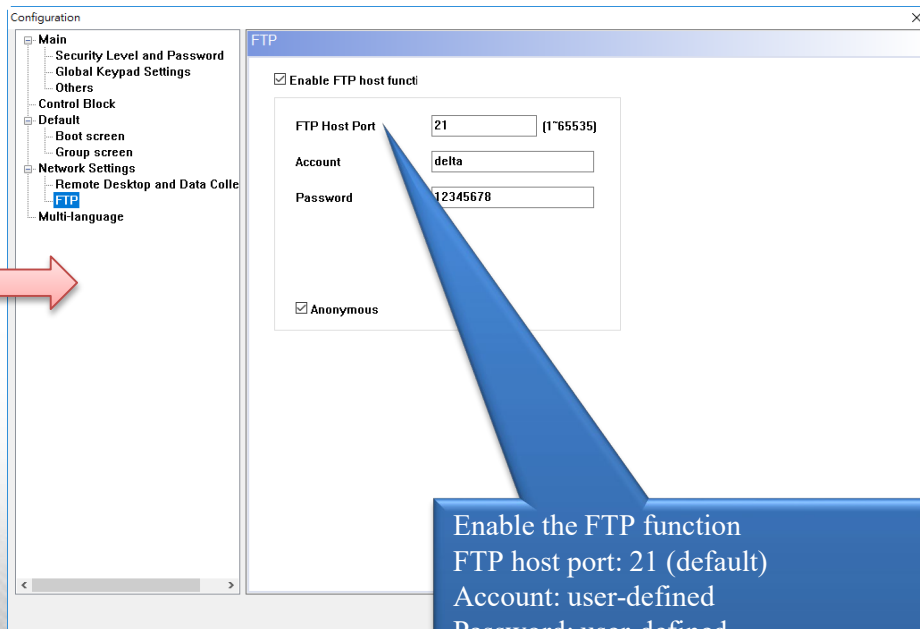
- Supports third-party FTP Client software.



### FTP connection setting:

- Host (CNC IP)
- Username (CNC account)
- Password (CNC password)
- Port (CNC host port)

Click **【Quickconnect】** to start connecting, and you can upload/download files to or from PC/CNC.

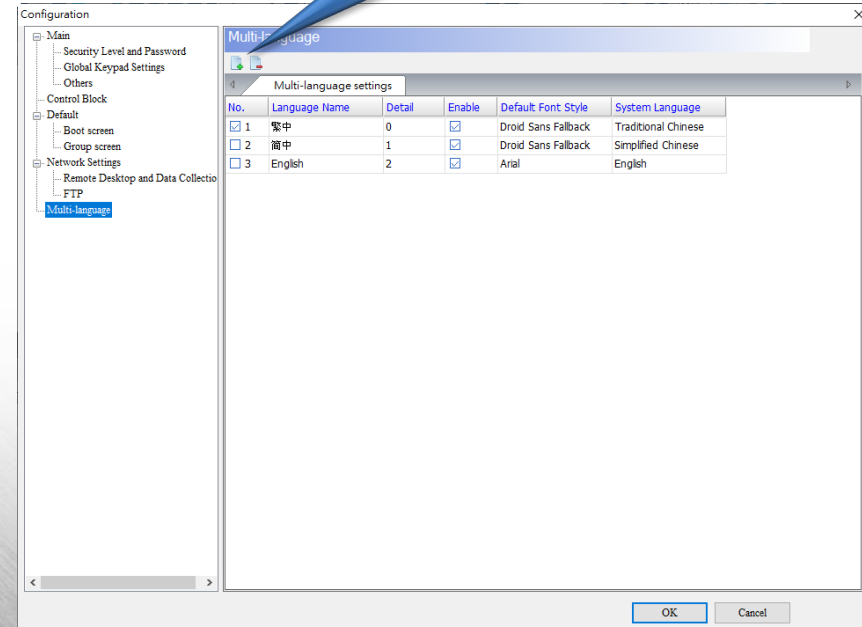
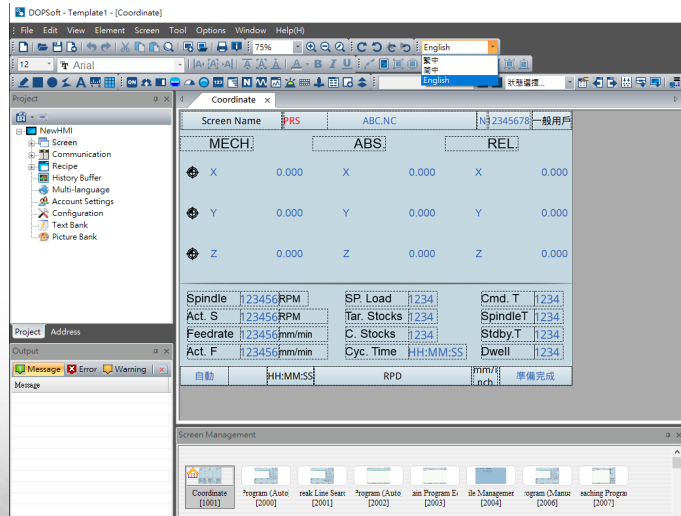


Enable the FTP function  
FTP host port: 21 (default)  
Account: user-defined  
Password: user-defined

## Configuration: Multi-language

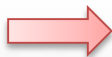
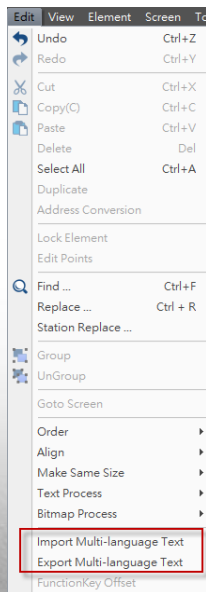
- Use Pr.10004 to switch the system language.

Add and remove languages

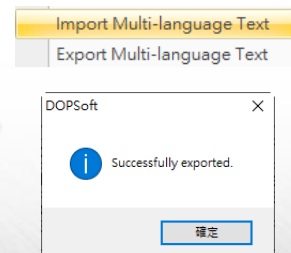
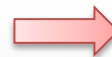


## Configuration: Multi-language

- Export the system descriptions as an excel file for translation.
- Import the excel file after translating the descriptions.

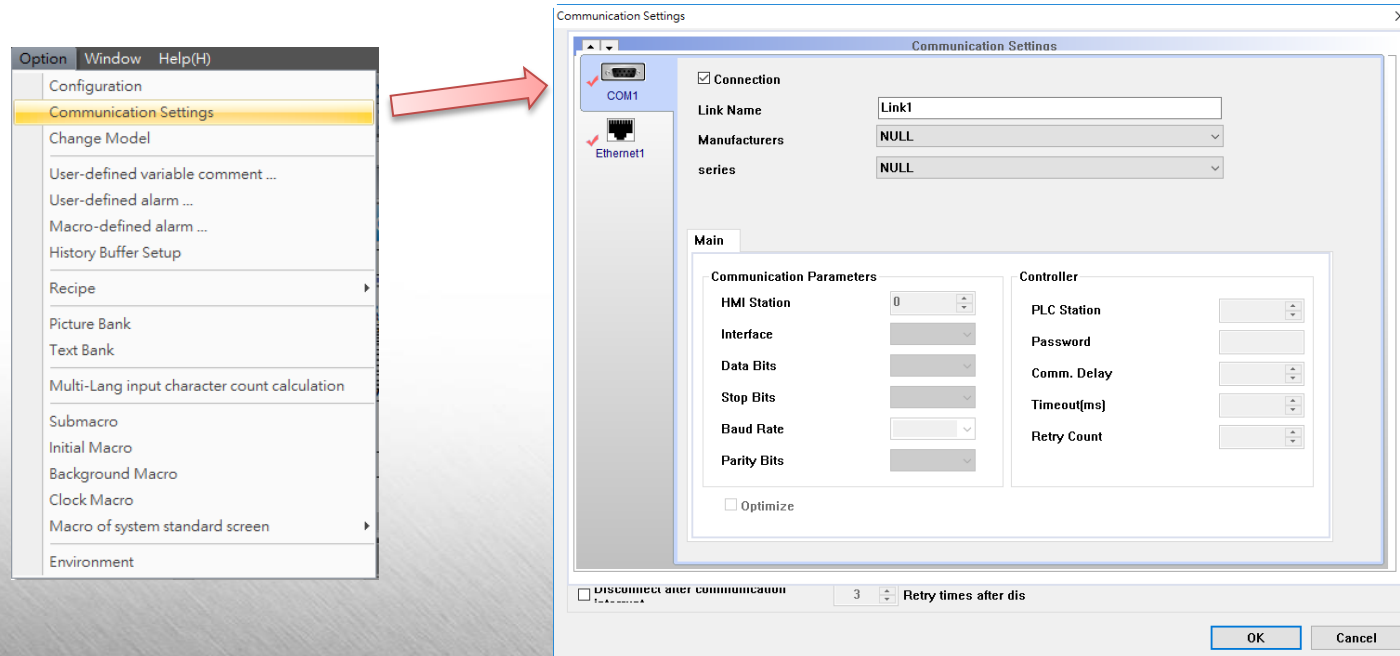


	F	G	H	I
1	繁中	簡中	English	Screen ID
2	主軸轉速	主轴转速	Spindle	1001
3	實際轉速	实际转速	Act. S	1001
4	主軸刀號	主轴刀号	SpindleT	1001
5	RPM	RPM	RPM	1001
6	切削進給	切削进给	Feedrate	1001
7	實際進給	实际进给	Act. F	1001
8	mm/min	mm/min	mm/min	1001



## Communication Settings: Device

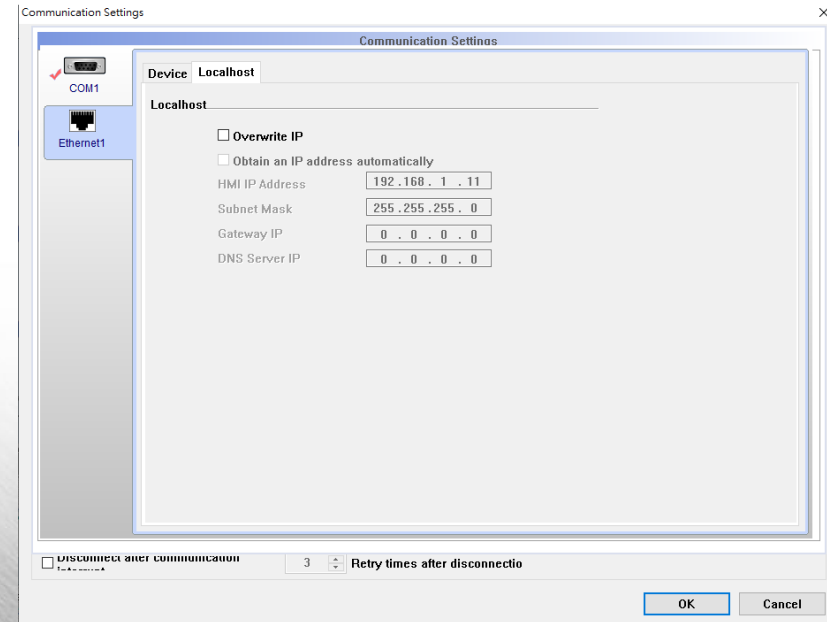
- In the Communication Settings, set the communication protocols for the external devices.



# How to use DOPSoft?

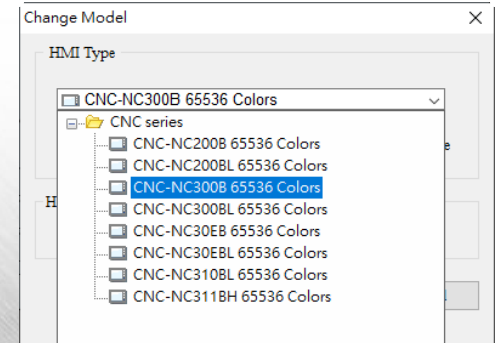
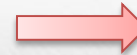
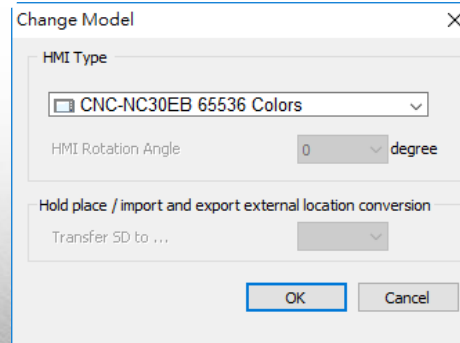
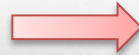
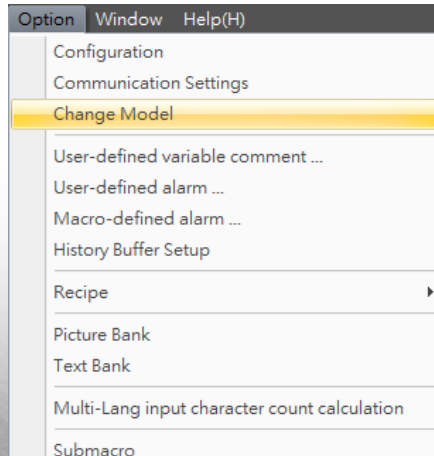
## Communication Settings: Localhost

- Sets whether to overwrite the Ethernet IP address when downloading screens to the controller.



## Change Model

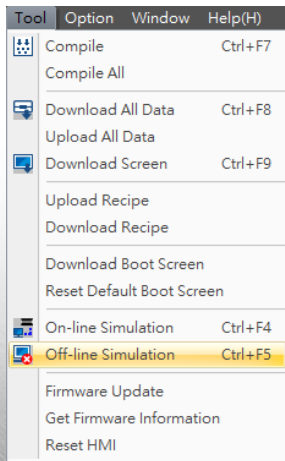
- You can change the screen project model with simple steps.
- The system checks the model type of the project before downloading screens to the CNC controller.





## Off-line simulation

- You can do off-line simulation in DOPSoft on your PC without the actual controller.
- There is no MLC logical action in off-line simulation, so you cannot read or write the MLC registers using special D and M.



Delta NC3008 Emulator, V1.00.18.48T22, Offline Mode

座標顯示		FACE1.NC		N1	一般用戶
機械座標		絕對座標		相對座標	
X	0.000	X	0.000	X	0.000
Y	0.000	Y	0.000	Y	0.000
Z	0.000	Z	0.000	Z	0.000
A	0.000	A	0.000	A	0.000
主軸轉速 0		RPM	主軸負載 0	命令刀號 0	
實際轉速 0		RPM	目標加工數 0	主軸刀號 0	
切削進給 0		mm/min	完成加工數 0	待命刀號 0	
實際進給 0		mm/min	單加工時間 00:00:00	暫停時間 0	
寸動		11:19:30	RPD 0% JOG 0 S 0%	mm	準備完成
相對清除					

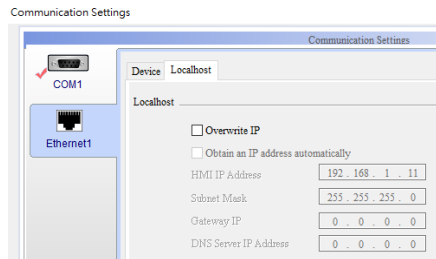


## B Series Controller

# Firmware Upgrade & Screen Download/Upload

## Connection between PC and CNC

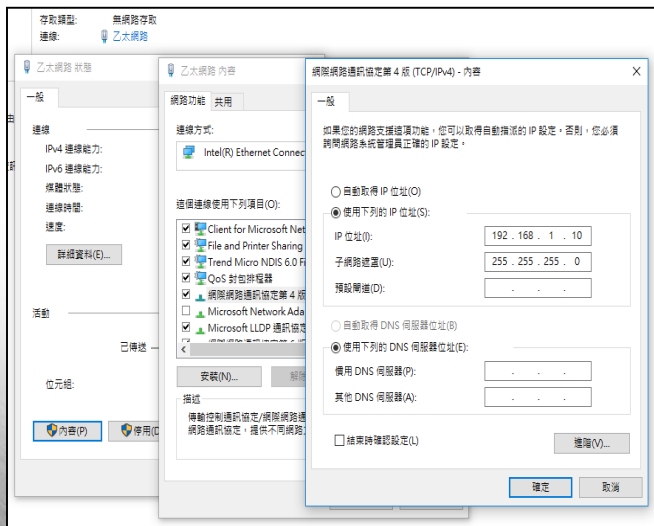
- Before screen download/upload or FW upgrade by Ethernet, set up the correct IP address of the PC and CNC controller.



Default IP address:

DHCP (System)

192.168.1.11 (Standard screen)

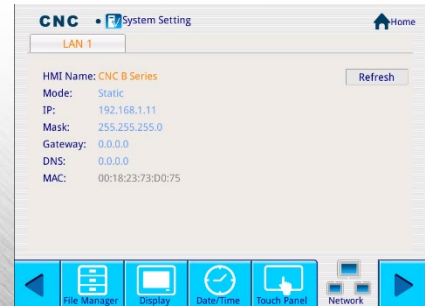
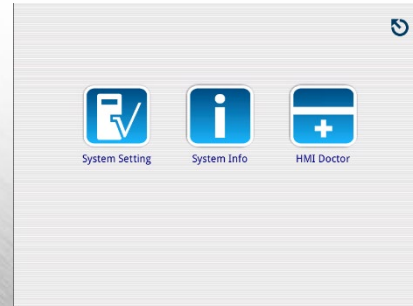
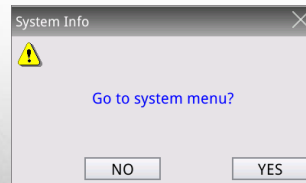


Parameter	delta.nc	N9	Normal
ParID	Param Name	PRS	Param Value
10030	Host name		CNC000
10031	IP address	P	192.168. 1. 11
10032	Subnet mask	P	255.255.255. 0
10033	Default gateway	P	0. 0. 0. 0
10034	Network function	P	1
	Network function switch (0: off; 1: on)	P	1
	Disable the limits of peer IP addresses	P	0
10035	DHCP switch (0: off; 1: on)	P	0
10036	Remote PC IP address 1		192.168. 1. 10
10037	Remote PC IP address 2		0. 0. 0. 0
10038	Remote PC IP address 3		0. 0. 0. 0
10039	Remote PC IP address 4		0. 0. 0. 0
10040	Remote PC IP address 5		0. 0. 0. 0
10041	Shared remote directory IP address		1
10055	FTP setting	P	21
	FTP Enable	P	1
Range : 1~8			
AUTO	11:22:48	RPD 100%	F 100% S 100%
<=	Default		

## System directory: Current IP address

- Connect the mouse to the controller
- Left-click the blank area in the screen and hold for 3 seconds, and the system menu displays will on the upper left corner.
- Click **【System menu】** to enter the system menu.
- Click **【System setting】** and enter the **【Network】** function page.
- You can see the current network setting and change the IP address setting.

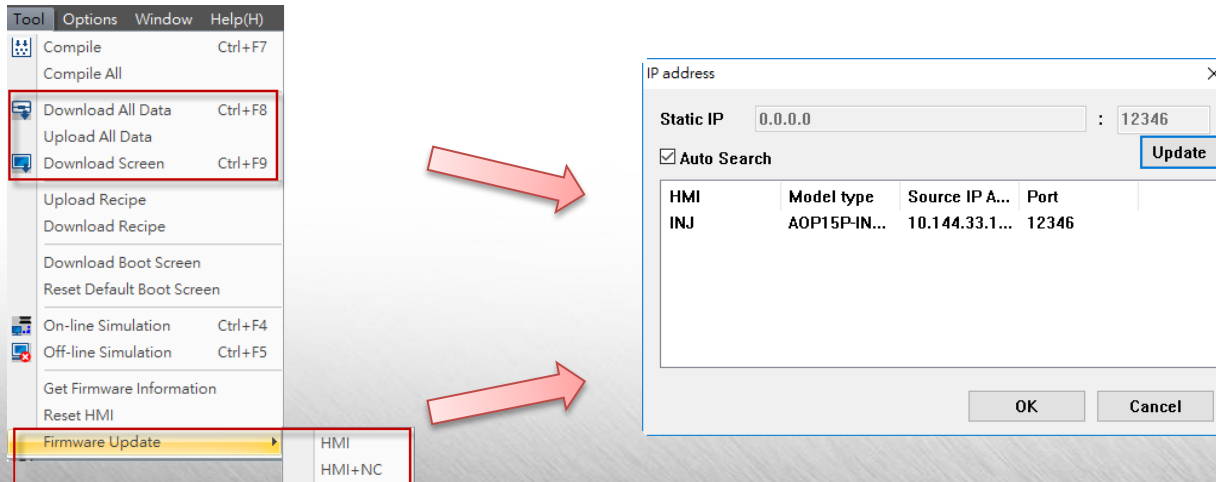
coordinate	delta.nc		N9	Normal
MECH.	ABS.	REL.		
K	56.088	X	41.088	X 56.088
J	122.388	Y	122.388	Y 122.388
Z	146.671	Z	146.671	Z 146.671
Spindle	1000 RPM	SP. Load	0	Cmd. T 0
Act. S	0 RPM	Tar. Stocks	500	SpindleT 0
Feedrate	0 mm/min	C. Stocks	0	Stdb.T 0
Act. F	0 mm/min	Cyc. Time	00:00:16	Dwell 0
AUTO	11:25:53	RPD 100%	F 100%	S 100%
REL. CLR				



# Firmware Update & Screen Download/Upload

## Connecting between DOPSoft and CNC

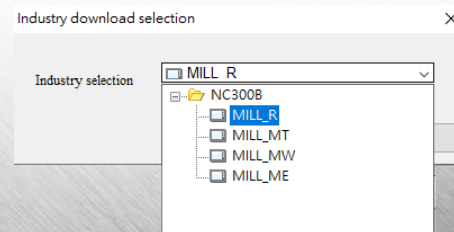
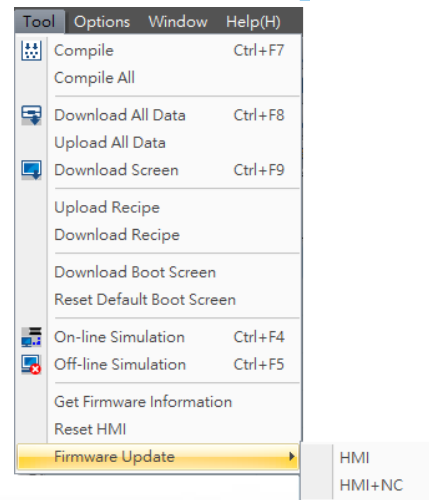
- Before downloading/uploading screens or updating the firmware by Ethernet, set up the correct IP address of the controller and your PC.
- The system automatically searches the CNC controllers in the same network domain.



# Firmware Update & Screen Download/Upload

## Firmware update

- Firmware update
  - HMI → only update HMI firmware.
  - HMI + NC → update HMI and Motion firmware. (select the application)
- Firmware file type
  - The files with .pkt extension are Motion firmware.
  - The files with .nk extension are HMI firmware.
- Your CNC controller must be equipped with a CF card to perform firmware update.







# Firmware Update & Screen Download/Upload

## Firmware update 1: Ethernet

- Connect the PC to the CNC controller with DOPSoft.
- Update the FW by executing 【Firmware Update】 .

IP address

Static IP: 0.0.0.0 : 12346

☒ Auto Search Update

HMI	Model type	Source IP Address	Port
CNC B Series	NC300B	192.168.1.11	12346

OK Cancel

# Firmware Update & Screen Download/Upload

## Firmware update 2: USB drive

- Put firmware files into the USB drive and insert it to the controller.
- Press **【Burn Mode】** function key on the screen to active the burning function.
  - Function key : DGN → Sys.Info. → FW Info. → FW Update
- Restart the system and enter the Burn mode screen.
- Select the firmware file and press **【F1 SYS UPG】** key to update the firmware.

FW Information		delta.nc	N1	Normal
Number	Firmware Item	Status		
1	Version 1	01.009		
2	Version Date	2019-10-30		
3	Version 2	00.040		
4	CP Version	00.004		
5	PA Version	00.000		
6	HMI Version	1.00.18.48T23[M]		
7	Motion Version	05.153		
8	MLC Version	00.009		
9	FPGA Version	00.002		
10	API Version	53		
11	Historical FW 1	NC300B_V1001848T23_5153R		
12	Historical FW 2	NC300B_V1001848T22		
13	Historical FW 3	NC300B_V1001848T22_5153R		

AUTO	13:11:28	RPD 100%	F 100%	S 100%	mm	Ready
<=	Sys. Info.	FW Info.				FW Update

名前	大小	種類	修改日期
CF		Folder	1 Jan 1970 08:00:00
INTER		Folder	4 Feb 2020 20:14:14
MLC		Folder	10 Feb 2020 18:12:11
NETDRIVE		Folder	11 Feb 2020 13:06:53
USB		Folder	1 Jan 1970 08:00:00
300s300AH.pkt	4.3 MB	pkt File	19 Sep 2017 15:16:12
N00EH_3073_5144MT01.pkt	10.2 MB	pkt File	13 Dec 2019 13:47:30
N200L_V3073_5143T24.pkt	11.4 MB	pkt File	3 Dec 2019 16:33:26
N300AH_3073_5126MT27.pkt	10.3 MB	pkt File	10 Dec 2019 14:07:32
N300AH_3073_5144MT01.pkt	10.4 MB	pkt File	13 Dec 2019 13:46:18
N300M_3073_5144MT01.pkt	10.4 MB	pkt File	13 Dec 2019 13:45:02
N311AH_3073_5144MT01.pkt	10.2 MB	pkt File	13 Dec 2019 13:48:38
NC30EB_V1001848T01_5143T25_8.nk	56.2 MB	nk File	23 Dec 2019 15:27:42
NC30EB_V1001848T01_5143T25_9.nk	56.2 MB	nk File	25 Dec 2019 20:10:00
NC30EB_V1001848T02_5146T2.nk	56.2 MB	nk File	26 Dec 2019 19:46:04
NC30EB_V1001848T03_5146T2.nk	56.0 MB	nk File	7 Jan 2020 17:43:40
NC300B_V1001848T04_5144R.nk	56.0 MB	nk File	3 Feb 2020 10:10:28
NC30EB bin	15.9 MB	bin File	7 Jan 2020 17:43:30
0106		Folder	8 Jan 2020 18:55:52
0122		Folder	22 Jan 2020 14:33:20
1231		Folder	1 Jan 1980 00:00:00
1231_0347		Folder	31 Dec 2019 15:46:14
1231_error		Folder	31 Dec 2019 14:44:40
1231_error - 複製		Folder	31 Dec 2019 14:44:40
2019T224		Folder	24 Dec 2019 10:00:10
B3		Folder	16 Jan 2020 17:51:54
CF-NC300AH-20191203		Folder	12 Dec 2019 09:12:00
RAM.MMM		Folder	8 Jan 2020 15:14:33

F1	F2	F3	F4		
SYS UPG	NAME SR	SIZE SR	DATE SR		



# B Series Controller

## Screen Programming



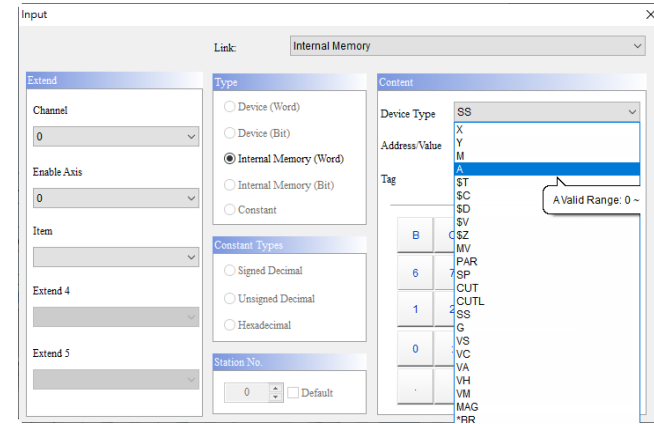
# Screen Programming

1. Device & Address
2. Function key
3. Macro
4. Screen and Element

## Internal device

- Internal memory
- Internal Status

Every device corresponds to some specific elements.



Input

Link: Internal Memory

Extend

Channel: 0

Enable Axis: 0

Item:

Extend 4:

Extend 5:

Type

☐ Device (Word)

☐ Device (Bit)

☒ Internal Memory (Word)

☐ Internal Memory (Bit)

☐ Constant

Constant Types

☐ Signed Decimal

☐ Unsigned Decimal

☐ Hexadecimal

Station No.:

0 ☐ Default

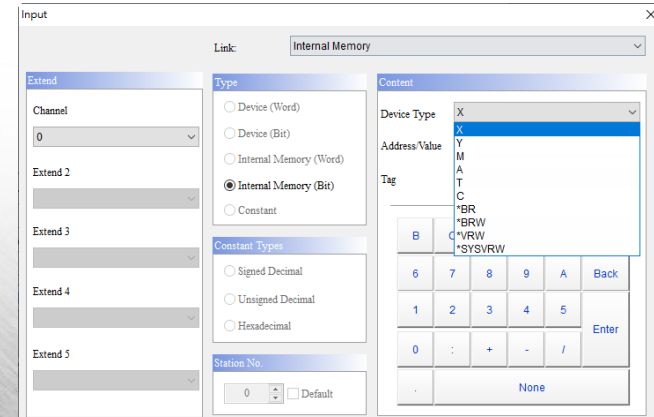
Content

Device Type: SS

Address/Value:

Tag:

A Valid Range: 0 ~ 9



Input

Link: Internal Memory

Extend

Channel: 0

Extend 2:

Extend 3:

Extend 4:

Extend 5:

Type

☐ Device (Word)

☐ Device (Bit)

☐ Internal Memory (Word)

☒ Internal Memory (Bit)

☐ Constant

Constant Types

☐ Signed Decimal

☐ Unsigned Decimal

☐ Hexadecimal

Station No.:

0 ☐ Default

Content

Device Type: X

Address/Value:

Tag:

\*BR  
\*BRW  
\*VRW  
\*SVSRW

6 7 8 9 A Back

1 2 3 4 5 Enter

0 . + - /

None

## Internal memory

Device	Description	Range	Related elements
X	PLC Variable (Bit)	0~511	
Y	PLC Variable (Bit)	0~511	
M	PLC Variable (Bit)	0~3071	
A	PLC Variable (Bit)	0~511	
T	PLC Variable (Bit)	0~255	
C	PLC Variable (Bit)	0~77	
\$T	PLC Variable (Word)	0~255	
\$C	PLC Variable (Word)	0~77	
\$D	PLC Variable (Word)	0~1535	
\$V	PLC Variable (Word)	0~7	
\$Z	PLC Variable (Word)	0~7	
ST	System and FW status	1~15	
SS	Servo status	0~7	Parameter
SP	Servo parameter		Parameter
PAR	System parameter	0~14999	Parameter

ST (System status)		
Number	System	FW ver
1	The last O file Number	Version 1
2	The Last Line Number	Version 1 Date
3	Batty Power	Version 2
4	Check Code	Serial number 1_(CP)
5	Check Time	Serial number 1_(PA)
6	CF Card Capacity	Serial number 1_(HM)
7	CF Card Check	Serial number 1_(MO)
8	CF Block Size	Serial number 1_(ML)
9	IP address	Serial number 1_(FP)
10	Subnet mask	Serial number 1_(API)
11	Default gateway	
12	MAC Address	
13	Ethernet Status	

SS(Servo Status)
Ave. Load
Peak Load
DC Bus Volt.
Inertia Ratio
Drive Status
Motor Speed

# Device and Address

## Internal memory

Device	Description	Range	Related elements
MAG	Tool magazine	0~49	Magazine and tool
CUT	Milling cutter	1~100	
CUTL	Lathe cutter	1~64	
MV	# variable	0~11000	
P	Coordinate		Axis coordinate
G	G group		
H	Graphic edit argument	1~52	Graphic edit
*BR	HMI latch R variable	0~1023	
*BRW	HMI latch R/W variable	0~1023	
*VRW	HMI volatile R/W variable	0~2047	
*SYSVRW	HMI system volatile R/W variable	0~1023	

MAG (tool magazine)
M (cutter no. in magazine)
SpindleT (spindle tool no.): <i>actual tool no. (like change #2500)</i>
StandbyT (standby tool no.)
CmdT (command tool no.) <i>actual tool no. (like change #2500)</i>
StandbyM (standby cutter no.)

CUT (milling cutter)
Length
Radius
Length Wear
Radius Wear
Life

CUTL (lathe Cutter)
Length
Length Wear
Nose Radius
Nose Radius Wear
Nose Point Type

## Internal memory

Device	Description	Range	Related elements
MAG	Tool magazine	0~49	Magazine and tool
CUT	Milling cutter	1~100	
CUTL	Lathe cutter	1~64	
MV	# variable	0~11000	
P	Coordinate		Axis coordinate
G	G group		
H	Graphic edit argument	1~52	Graphic edit
*BR	HMI latch R variable	0~1023	
*BRW	HMI latch R/W variable	0~1023	
*VRW	HMI volatile R/W variable	0~2047	
*SYSVRW	HMI system volatile R/W variable	0~1023	

P (Coordinate)
Offset Coordinate
G54
G55
G56
G57
G58
G59
G54P01 ~ G54P64
Mechanical Coordinate
Absolute Coordinate
Relative Coordinate
Residual Coordinate

G Group
G (G code)
M (M code)
T (tool number) : from T code
S (spindle command speed)
S-Act (spindle actual speed)
F (command feedrate)
F-Act (actual feedrate)
D (tool radius compensation number)
H (tool length compensation number)
T (halt time)
L (executing G command number)





# Device and Address

## System variable

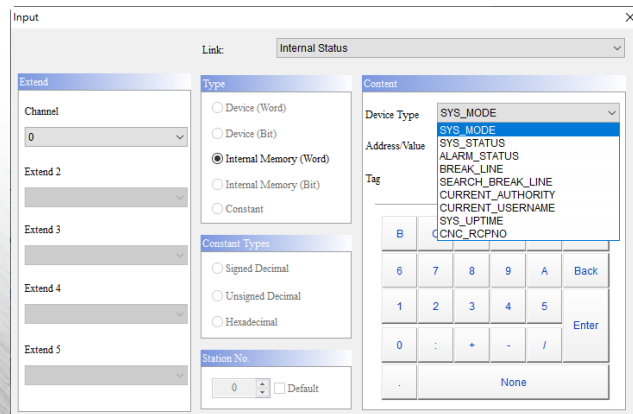
No.	Device Name	Device Name
60000	MPG Pulse	R:VS_0_0 1234
60003	Max. Axes	R:VS_0_3 1234
61100	Tapping Error um	R:VC_0_100 23.4567
61101	Spindle Angle	R:VC_0_101 23.4567
61102	Spindle Speed rpm	R:VC_0_102 2345.67
64008	MLC Scan Time	R:VM_0_8 1234
64009	MLC Min. Scan Time	R:VM_0_9 1234
64010	MLC Max. Scan Time	R:VM_0_10 1234

Number	System Item	Status
1	Last O Macro	R:ST_0_Sys_1 ABCDEFGHIJKLMNOPQRST
2	Last Line	R:ST_0_Sys_2 ABCDEFGHIJKLMNOPQRST
3	Battery Capacity	R:ST_0_Sys_3 ABCDEFGHIJKLMNOPQRST
4	CF Card Capacity	R:ST_0_Sys_4 ABCDEFGHIJKLMNOPQRST
5	IP Appress	R:ST_0_Sys_5 ABCDEFGHIJKLMNOPQRST
6	Subnet Mask	R:ST_0_Sys_6 ABCDEFGHIJKLMNOPQRST
7	Default Gateway	R:ST_0_Sys_7 ABCDEFGHIJKLMNOPQRST
8	MAC Address	R:ST_0_Sys_8 ABCDEFGHIJKLMNOPQRST
9	Ethernet Status	R:ST_0_Sys_9 ABCDEFGHIJKLMNOPQRST
10	System Serial Number	R:ST_0_Sys_10 ABCDEFGHIJKLMNOPQRST

1	Version 1	R:ST_0_Ver_1	ABCDEFGHIJKLMNOPQRST
2	Version Date	R:ST_0_Ver_2	ABCDEFGHIJKLMNOPQRST
3	Version 2	R:ST_0_Ver_3	ABCDEFGHIJKLMNOPQRST
4	CP Version	R:ST_0_Ver_4	ABCDEFGHIJKLMNOPQRST
5	PA Version	R:ST_0_Ver_5	ABCDEFGHIJKLMNOPQRST
6	HMI Version	R:ST_0_Ver_6	ABCDEFGHIJKLMNOPQRST
7	Motion Version	R:ST_0_Ver_7	ABCDEFGHIJKLMNOPQRST
8	MLC Version	R:ST_0_Ver_8	ABCDEFGHIJKLMNOPQRST
9	FPGA Version	R:ST_0_Ver_9	ABCDEFGHIJKLMNOPQRST
10	API Version	R:ST_0_Ver_10	ABCDEFGHIJKLMNOPQRST
11	Historical FW 1	R:ST_0_File_11 ABCDEF	FGHIJKLMNOPQRSTUWVWXYZABCDEF
12	Historical FW 2	R:ST_0_File_12 ABCDEF	FGHIJKLMNOPQRSTUWVWXYZABCDEF
13	Historical FW 3	R:ST_0_File_13 ABCDEF	FGHIJKLMNOPQRSTUWVWXYZABCDEF

## Internal Status

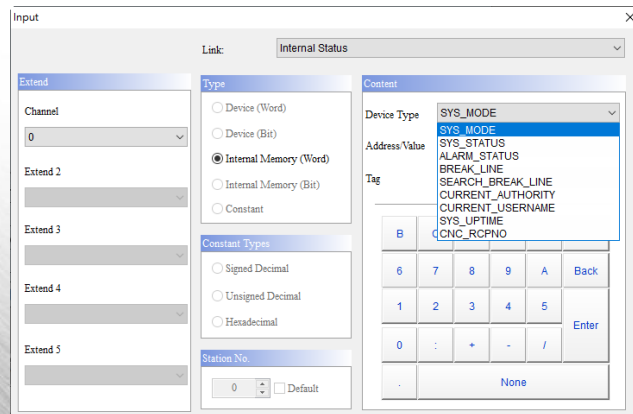
- SYS\_MODE (system current mode)
  - 0:Auto, 1:Edit, 2:MDI, 3:MPG, 4:Jog, 5:Rapid, 6:Home
- SYS\_STATUS (system current status)
  - 0:Ready, 1:Stop, 2:Executing, 3:Processing, 4:EMG, 5:Servo not ready, 6:MLC stop
- ALARM\_STATUS (alarm status)
  - 0:No alarm, 1:Alarm occurred
- BREAK\_LINE (breakpoint block no.)
- SEARCH\_BREAK\_LINE (search breakpoint block no.)



The screenshot shows a software interface for configuring an 'Internal Status' input. The 'Link' dropdown is set to 'Internal Status'. The 'Extend' section on the left has five channels, with 'Channel 0' selected. The 'Type' section in the middle has four radio buttons: 'Device (Word)', 'Device (Bit)', 'Internal Memory (Word)' (which is selected), 'Internal Memory (Bit)', and 'Constant'. Below these are 'Constant Types' with three radio buttons: 'Signed Decimal', 'Unsigned Decimal', and 'Hexadecimal'. At the bottom, there is a 'Station No.' field with a value of '0' and a 'Default' checkbox. The 'Content' section on the right shows a 'Device Type' dropdown set to 'SYS\_MODE', a list of available addresses including 'SYS\_MODE', 'SYS\_STATUS', 'ALARM\_STATUS', 'BREAK\_LINE', 'CURRENT\_BREAK\_LINE', 'CURRENT\_AUTHORITY', 'CURRENT\_USERNAME', 'SYS\_UPTIME', and 'CNC\_RCPNO', and a numeric keypad for entering values.

## Internal Status

- CURRENT\_AUTHORITY (current login authority)
  - 0:Normal user 、 1:User permission 1 、 2:User permission 2 、 3:Device permission
- CURRENT\_USERNAME (current login user name)
- SYS\_UPTIME (system operating time: minute)
- CNC\_RCPNO (current using RCP number)



The screenshot shows a software interface titled 'Input' with a 'Link' dropdown set to 'Internal Status'. The interface is divided into three main sections: 'Extend', 'Type', and 'Content'.

- Extend:** Contains five dropdown menus labeled 'Channel', 'Extend 2', 'Extend 3', 'Extend 4', and 'Extend 5'. The 'Channel' dropdown is currently set to '0'.
- Type:** Contains radio button options: 'Device (Word)', 'Device (Bit)', 'Internal Memory (Word)' (which is selected), 'Internal Memory (Bit)', and 'Constant'. Below these are 'Constant Types' with radio buttons for 'Signed Decimal', 'Unsigned Decimal', and 'Hexadecimal'. At the bottom is a 'Station No.' section with a dropdown set to '0' and a 'Default' checkbox.
- Content:** Features a 'Device Type' dropdown set to 'SYS\_MODE'. Below it is a list of system variables: 'SYS\_MODE', 'SYS\_STATUS', 'ALARM\_STATUS', 'BREAK\_LINE', 'SEARCH\_BREAK\_LINE', 'CURRENT\_AUTHORITY', 'CURRENT\_USERNAME', 'SYS\_UPTIME', and 'CNC\_RCPNO'. The 'CNC\_RCPNO' item is highlighted. To the right of this list is a numeric keypad with buttons for digits 0-9, 'A', 'Back', 'Enter', and 'None'.



# Screen Programming

1. Device & Address
2. Function key
3. Macro
4. Screen and Element

## Feature

- Function keys (F1 - F6 or F1 - F8) of the controller can correspond to user defined functions.

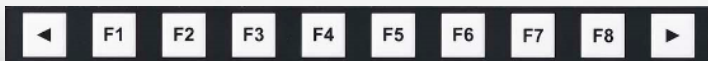
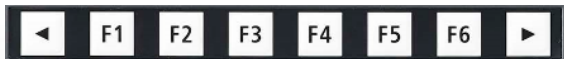
Coordinate	delta.nc		N1	Normal
MECH.	ABS.		REL.	
X	56.088	X	41.088	X 56.088
Y	122.388	Y	122.388	Y 122.388
Z	146.671	Z	146.671	Z 146.671
Spindle 1000	RPM	SP. Load 0	Cmd. T 0	
Act. S 0	RPM	Tar. Stocks 500	SpindleT 0	
Feedrate 0	mm/min	C. Stocks 0	Stdby.T 0	
Act. F 0	mm/min	Cyc. Time 00:00:00	Dwell 0	
AUTO	14:46:39	RPD 100%	F 100%	S 100%
<= CLR ALL		CLR X	CLR Y	CLR Z



Absolute	2. NC		N15	
ABSOLUTE	REL			
X	0.000	X	0.000	
Y	0.000	Y	0.000	
Z	0.000	Z	0.000	
		MECH		
		X	0.000	
		Y	0.000	
		Z	0.000	
Spindle 24000	Feedrate 0	Spind load		
Act. spind 0	Act. feed 0	Dwell time 0		
CMD T 2	Spindle T 2	STDBY T 1		
JOG	RPD 100%	JOG 1000	S 0%	
ABS	REL	MECH		

## Level and group

- Maximum 3 levels
- Up to 40 keys in each level.
- Automatic grouping keys depending on the model. (one group has 8 keys or 6 keys)



## Function Key

3 levels

Key	Select
<<	None
F1_{}	Next
F1_{}	Next
F1	None
F2	None
F3	None
F4	None
F5	None
F6	None
>>	None
F2	None
F3	None
F4	None
F5	None
F6	None
>>	None
F2	None
F3	None
F4	None
F5	None
F6	None
>>	None
F7_{7}	調整對比亮度
F8	None

Up to 40 keys within a level

Key	Select
F26	None
F27	None
F28	None
F29	None
F30	None
>>	Next
F31	None
F32	None
F33	None
F34	None
F35	None
F36	None
>>	Next
F37	None
F38	None
F39	None
F40_{40}	Next
F1_{時間}	系統時間日期
F2	None
F3	None
F4	None
F5	None
F6	None
>>	None

## Key: <<

- None
  - Go to the previous group.
- Goto Screen
- Previous Page

Key	Select
<<	None
F1	Goto Screen
F2	Previous Page
F3	None
F4	None
F5	None
F6	None
>>	None

## Key: >>

- None
- Next
  - Group extension

Key	Select
<<	None
F1	None
F2	None
F3	None
F4	None
F5	None
F6	None
>>	Next
F7	None
F8	None
F9	None
F10	None
F11	None
F12	None
>>	None

## Key: F1 - F6 (F8)

- Next
  - Activate the next level
- Set to On
- Set to Off
- ...
- Set Constant
- ...
- Goto Screen
- Previous Page
- ...

Key	Select
<<	None
F1	None
F2	Next
F3	Set to On
F4	Set to Off
F5	Momentary
F6	Maintained
>>	Multistate
	Set Value
	Set Constant
	Increment
	Decrement
	Goto Screen
	Previous Page
	System Date and Time
	Password Table Setup
	Enter Password
	Contrast Brightness
	Set Low Security
	Screen Capture
	Remove Storage
	Language Change
	Absolute reset
	System Recipe
	Recipe
	Funkey
	MFunkey

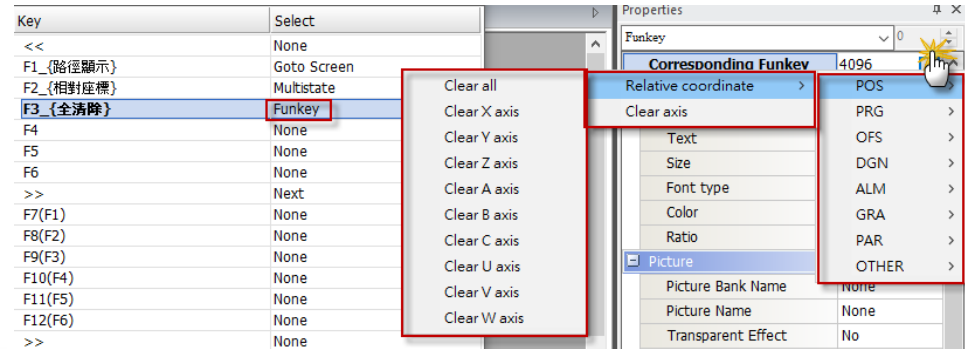
## Function Key

Key	Select
<<	None
F1_{}	Next
F1	None
F2	None
F3	None
F4	None
F5	None
F6	None
>>	None
F2	None
F3	None
F4	None
F5	None
F6	None
>>	None



## Key: F1 - F6 (F8)

- Funkey
  - All functions works the same as that of the A series.
  - Corresponding funkey
    - Select specific function



The screenshot shows the Delta CAD software interface. On the left, a table lists various function keys and their corresponding actions. The 'F3\_全清除' key is highlighted, and its 'Funkey' is set to 'Funkey'. A context menu is open over this key, listing various clearing options. On the right, the 'Properties' window is open, showing the 'Funkey' section. The 'Corresponding Funkey' is set to '4096'. A sub-menu is open for 'Relative coordinate', showing options like 'POS', 'PRG', 'OFS', 'DGN', 'ALM', 'GRA', 'PAR', and 'OTHER'.

Key	Select
<<	None
F1_ {路徑顯示}	Goto Screen
F2_ {相對座標}	Multistate
F3_ {全清除}	Funkey
F4	None
F5	None
F6	None
>>	Next
F7(F1)	None
F8(F2)	None
F9(F3)	None
F10(F4)	None
F11(F5)	None
F12(F6)	None
>>	None

Context Menu Options:

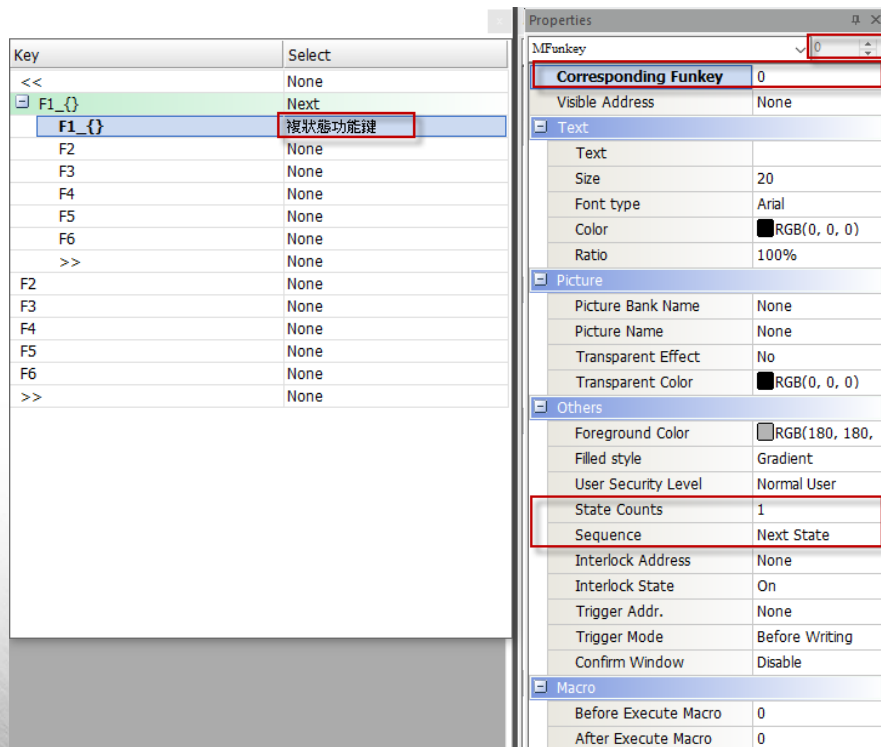
- Clear all
- Clear X axis
- Clear Y axis
- Clear Z axis
- Clear A axis
- Clear B axis
- Clear C axis
- Clear U axis
- Clear V axis
- Clear W axis

Properties Window - Funkey Section:

- Funkey: 4096
- Corresponding Funkey: 4096
- Relative coordinate: POS
- Clear axis: PRG
- Text: OFS
- Size: DGN
- Font type: ALM
- Color: GRA
- Ratio: PAR
- Picture: OTHER
- Picture Bank Name: None
- Picture Name: None
- Transparent Effect: No

## Key: F1 - F6 (F8)

- MFunkey
  - One function key can have multiple display and function key features.
  - Status counts
  - Sequence (status switching way)
    - Next status/ Previous status
  - Corresponding funkey



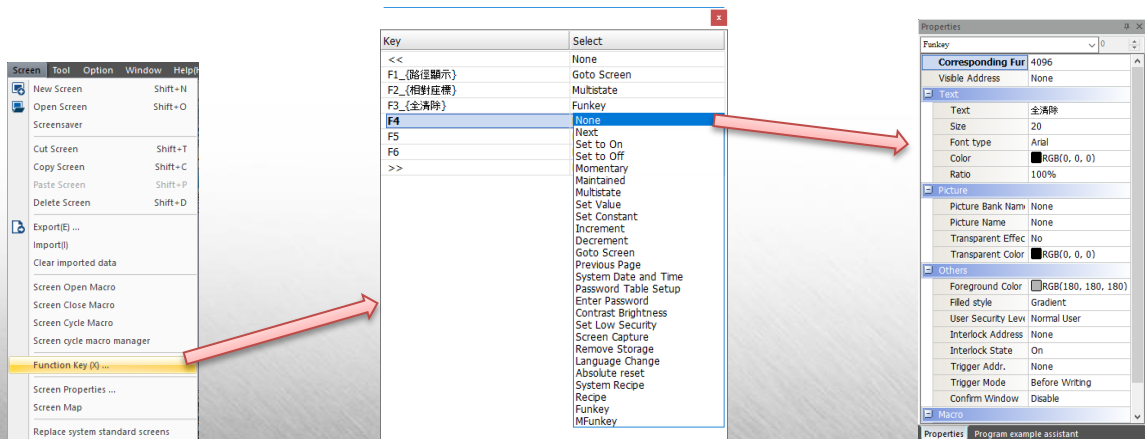
Key	Select
<<	None
F1_{}	Next
F1_{}	複狀態功能鍵
F2	None
F3	None
F4	None
F5	None
F6	None
>>	None
F2	None
F3	None
F4	None
F5	None
F6	None
>>	None

Properties	
MFunkey	0
Corresponding Funkey	0
Visible Address	None
Text	
Text	
Size	20
Font type	Arial
Color	RGB(0, 0, 0)
Ratio	100%
Picture	
Picture Bank Name	None
Picture Name	None
Transparent Effect	No
Transparent Color	RGB(0, 0, 0)
Others	
Foreground Color	RGB(180, 180, 180)
Filled style	Gradient
User Security Level	Normal User
State Counts	1
Sequence	Next State
Interlock Address	None
Interlock State	On
Trigger Addr.	None
Trigger Mode	Before Writing
Confirm Window	Disable
Macro	
Before Execute Macro	0
After Execute Macro	0

## Properties

- Each screen has independent function key settings
  - Function key priority: **subscreen** > **base screen** > **screen**
  - Function keys are invalid when they are on the **embedded screen**.
- You can set the properties such as text or color of the function key.
- You can set as various function like **【Next】** , **【Funkey】** , **【Goto screen】** , **【Set value】** , and **【Multistate】** for the function key.

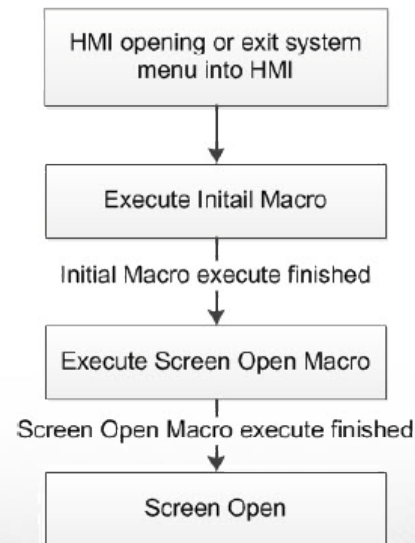
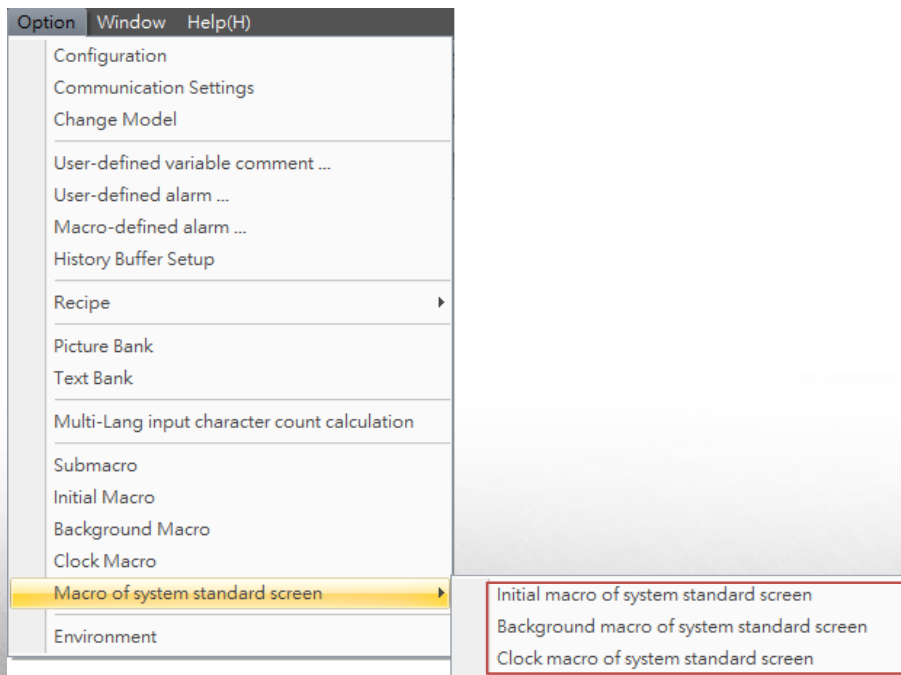




# Screen Programming

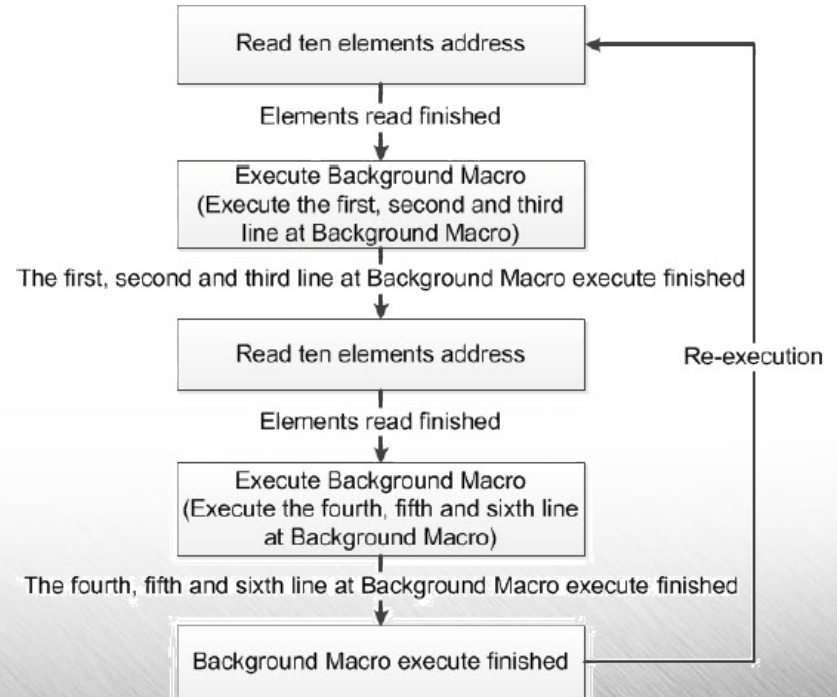
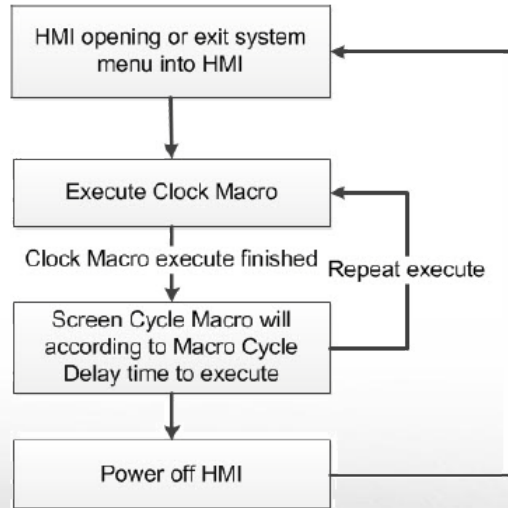
1. Device & Address
2. Function key
3. Macro
4. Screen and Element

## System macro: Initial



Macro of system standard screens are used for screen templates.

## System macro: Clock / Background

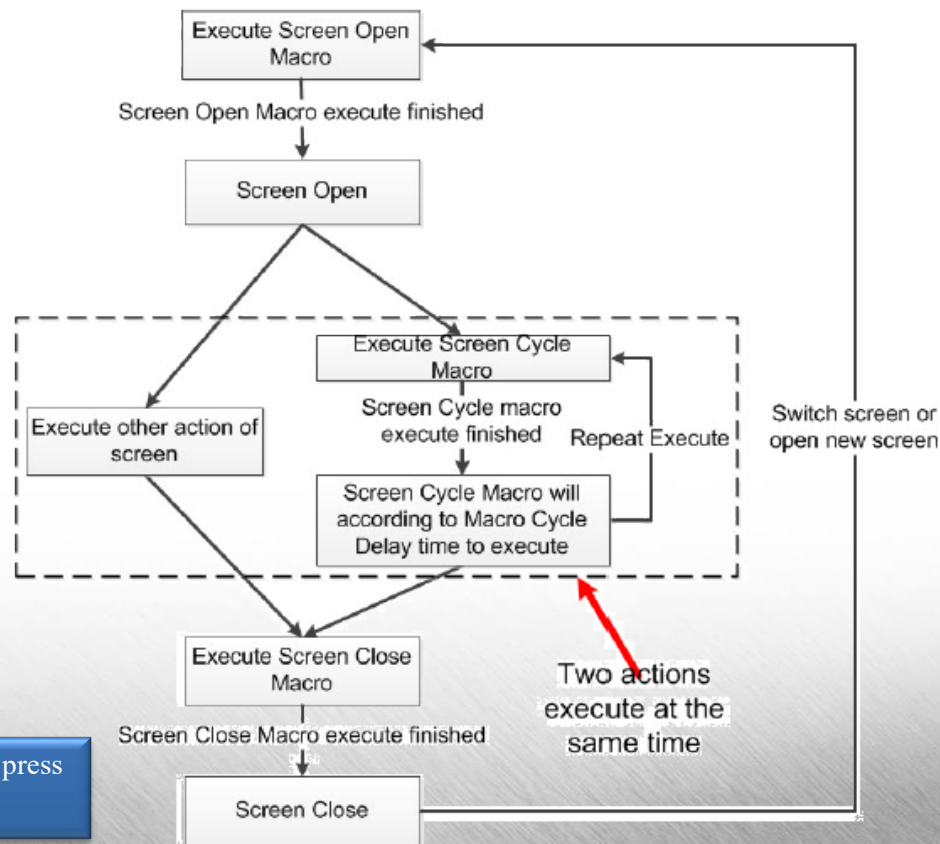


## Screen macro

Properties	
Screen_3	0
Screen Name	Screen_3
Screen Properties	Detail...
Background Color	<input type="checkbox"/> RGB(252, 252,
Screen Lock Bit	None
Screen Macro	
Screen Open Macro	0
Screen Close Macro	0
Screen Cycle Macro	0
Page Up Before Macro	0
Page Up After Macro	0
Page Down Before Macro	0
Page Down After Macro	0
Width	800
Height	560
Page Up	0 -
Page Down	0 -

Go to screen when press  
【Page Up】 or 【Page Down】

Macro will be executed when you press  
【Page Up】 or 【Page Down】

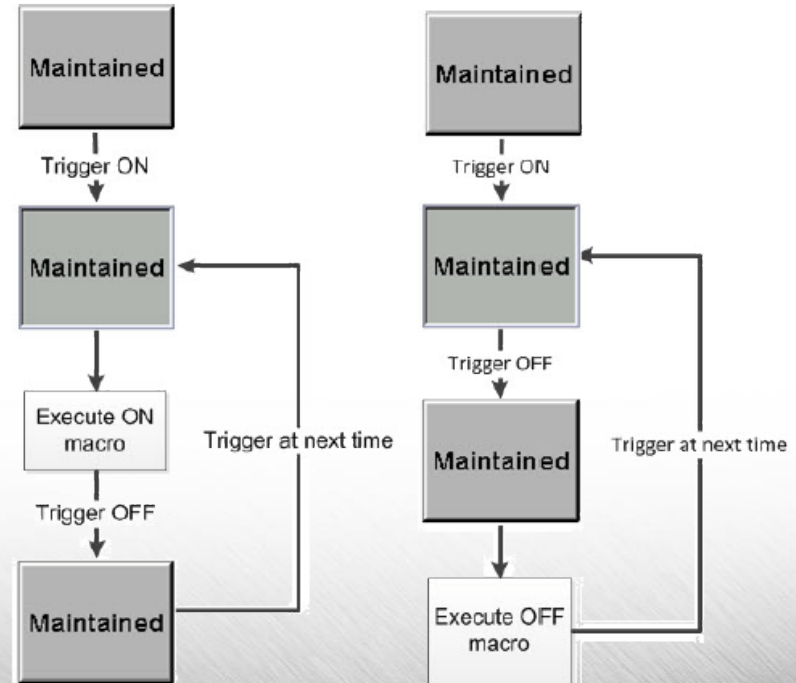


## Element macro

Properties

Maintained\_001 {} 0

Write Address	None
Read Address	None
Visible Address	None
FunctionKey	1, 1, 1
Offset Address	
Text	
Picture	
<b>Others</b>	
Macro	
Before Execute Macro	0
After Execute Macro	0
On Macro	0
Off Macro	0
Coordinates	



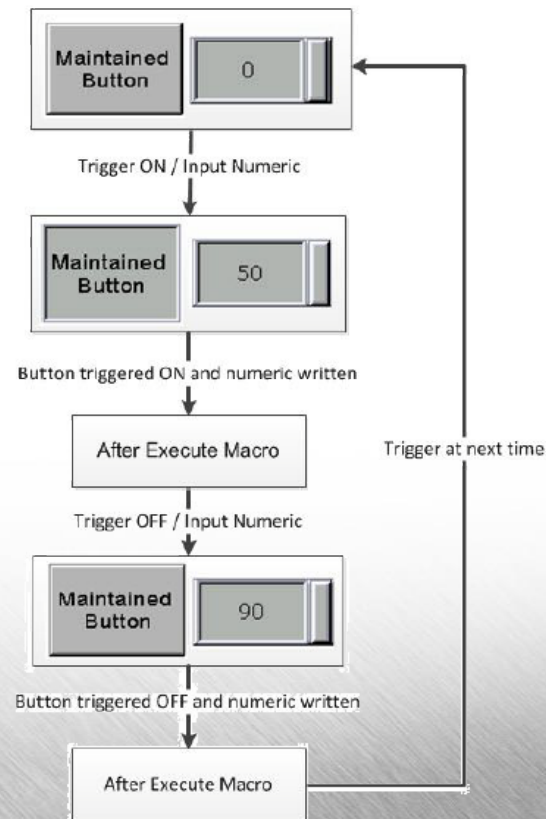
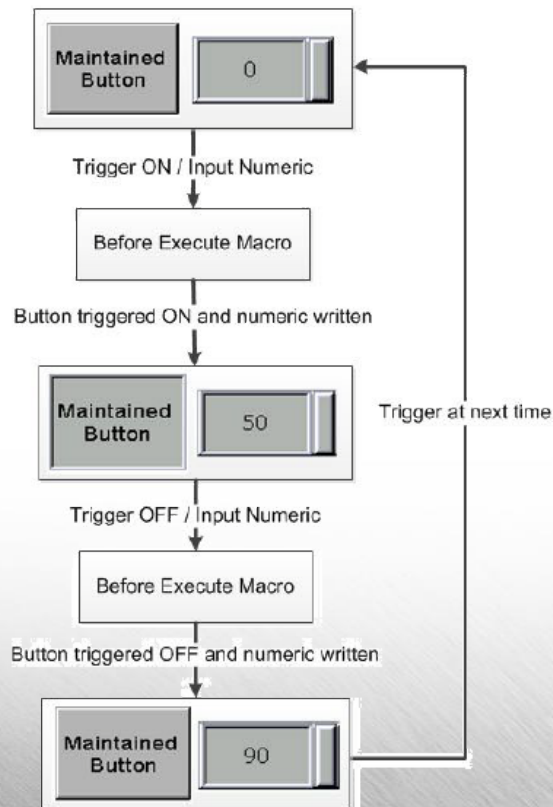


## Element macro

Properties

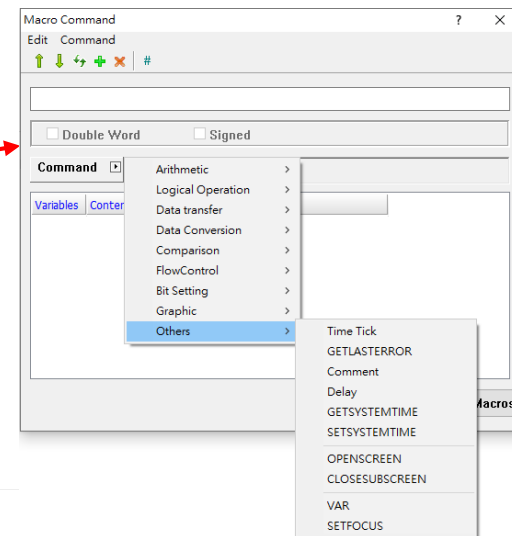
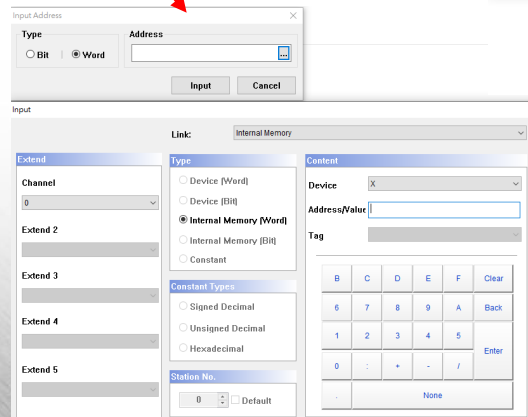
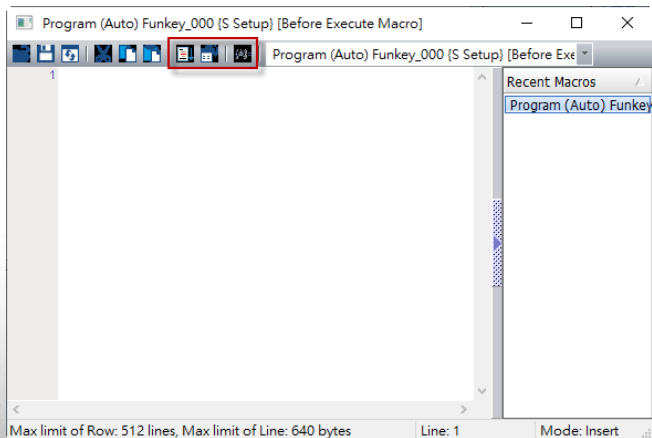
Maintained\_001 {} 0

Write Address	None
Read Address	None
Visible Address	None
FunctionKey	1, 1, 1
Offset Address	
Text	
Picture	
<b>Others</b>	
Macro	
Before Execute Macro	0
After Execute Macro	0
On Macro	0
Off Macro	0
Coordinates	



## Macro edit window

- Syntax check: Check the current marco syntax correctness.
- Macro Wizard: Open the editing window and command menu.
- Input address: Open the address input window.



## Macro command

- QADD/QSUB/QMUL/QDIV/QMOD: 64 bits floating calculation
- QMOV: move the 64-bit floating point number
- QBMOV: move the 64-bit floating block
- QArrayCopy: move the 64-bit floating block and assign the starting address by offset
- FTOQ/QTOF: 64-bit floating and 32-bit floating conversion
- QCMP: compare the 64-bit floating number

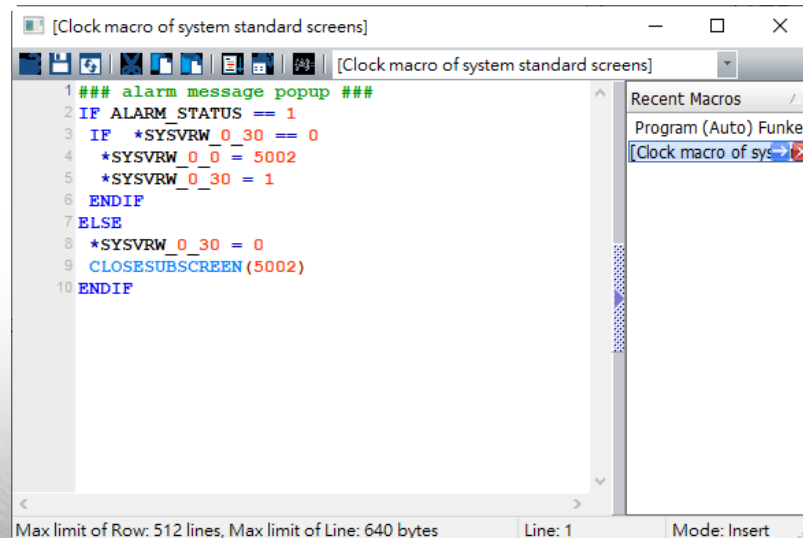
Q... commands are used for double-precision floating variables (64-bit) such as MV(#).  
F... commands are used for single-precision floating variables (32-bit).

## Macro command

- SSMOV: read servo status to variables
- DEVMOV: read any data such as parameter, system variable or tool value to variables  
(Each data has its own format length, so the data length of this command is not fixed)
- OPENSREEN: open a specified main screen
- CLOSESUBSCREEN: close a specified subscreen
- SETFOCUS: directly focus on a specified element on the specified screen to operate

## Macro example

- When system alarm occurs, the alarm message window will popup.
- When system alarm is released, the alarm message window will disappear.

A screenshot of a macro editor window titled '[Clock macro of system standard screens]'. The window contains a list of 10 lines of macro code. The code is as follows:

```
1 ### alarm message popup ###
2 IF ALARM_STATUS == 1
3   IF *SYSVRW_0_30 == 0
4     *SYSVRW_0_0 = 5002
5     *SYSVRW_0_30 = 1
6   ENDIF
7 ELSE
8   *SYSVRW_0_30 = 0
9   CLOSESUBSCREEN(5002)
10  ENDIF
```

The status bar at the bottom indicates 'Max limit of Row: 512 lines, Max limit of Line: 640 bytes', 'Line: 1', and 'Mode: Insert'. On the right side of the window, there is a 'Recent Macros' panel showing a list of macros: 'Program (Auto) Funkey' and '[Clock macro of sys→]'. The second macro is highlighted with a blue selection bar.

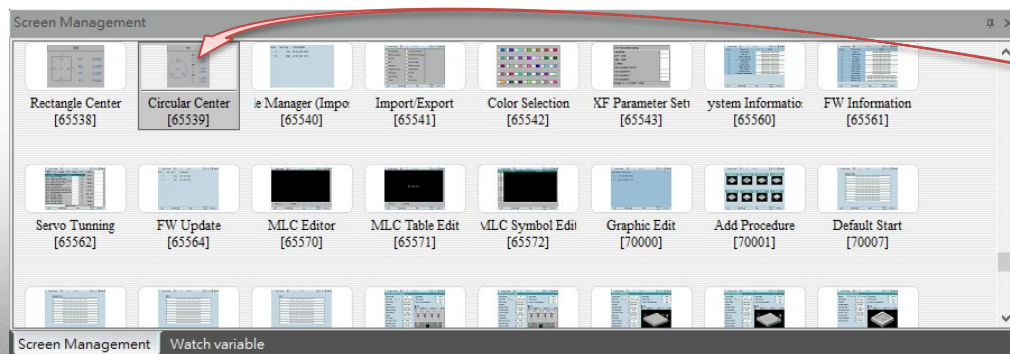
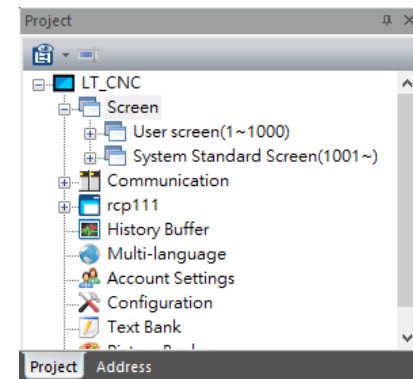


# Screen Programming

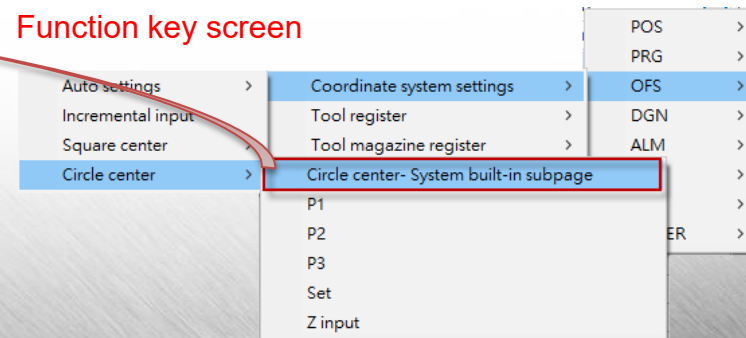
1. Device & Address
2. Function key
3. Macro
4. Screen and Element

## Screen ID definition

- Screen ID:
  - 1 ~ 1000 : Soft Panel (compatible with A series)
  - 1001 ~ 65534 : Standard screens
  - 65535 : Default base screen
  - 65536 ~ : System screens and function key screens (these screens are fixed)



## Function key screen



## CNC elements

- ON Set to On
- OFF Set to Off
- ... Momentary
- G Maintained
- M Multistate
- P Set Value
- Y Set Constant
- ++ Increment
- Decrement
- Goto Screen
- System Date and Time
- Password Table Setup
- Enter Password
- Contrast Brightness
- Set Low Security
- Screen Capture
- Remove Storage
- Language Change
- Absolute reset
- System Recipe
- Recipe
- DXF transform

- Multistate Indicator
- Range Indicator
- Simple Indicator
- Servo monitor indicator

- 123 Numeric Display
- ABC Alphanumeric Display
- Date Display
- Time Display
- Week Display
- General Message Display
- Moving Sign
- Window name display
- PRS status display
- Metric/Imperial system display
- Magnification display
- Axis name display
- Axis coordinate display
- Teach programming current coordinate
- Teach programming current flat
- Exe. file name
- Parameter name
- Parameter range display
- IO monitor
- Workpiece Coordinate Display
- Input display
- Axis coordinate summarydisplay

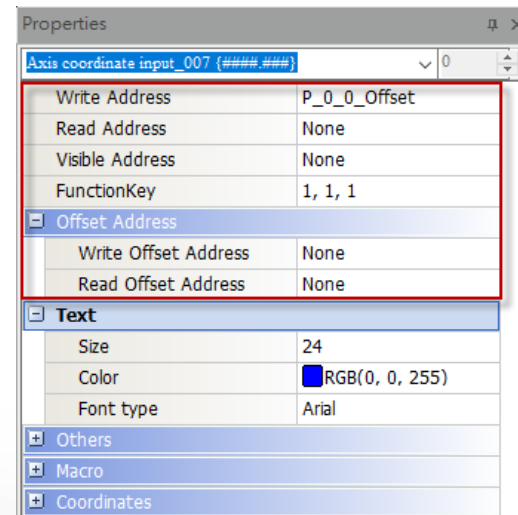
- N Numeric input
- A Character Entry
- Barcode Input
- Tool magazine/register input
- Axis coordinate input
- Axis coordinate input table

- Channel settings
- RIO settings
- Ladder Monitor
- MLC Device Monitor
- File management
- Text Editor
- G code runtime display
- MDI text editor
- Parameter group
- Account variable monitoring
- Machining path
- Parameter manager
- NC File List
- MLC Table (WORD)
- MLC Table (BIT)
- Servo Monitor table
- Macro Variable table
- Knife Tool table
- Variable Monitor table
- Tool Magazine table
- MLC editing
- MLC table editing
- MLC symbol editing
- Servo gain
- Teaching Setting
- Half input
- Square center
- Circle center
- Im/Export item
- Color select item
- DXF parameter



## Address setting

- Address properties:
  - 【Write address】 :
    - Actual write address = 【Write address】 + 【Write offset address】
  - 【Read address】 :
    - Default value is “None” and it will refer to the actual write address.
    - Actual read address = 【Read address】 + 【Read offset address】
  - 【Visible address】 :
    - When this flag is ON, this element is invisible.

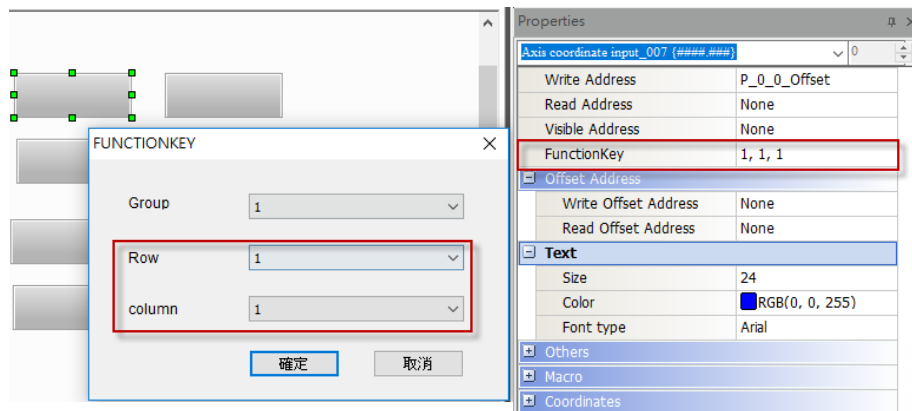
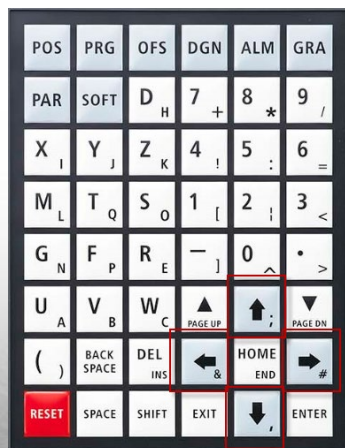


Properties window for 'Axis coordinate input\_007 (####.###)'

Write Address	P_0_0_Offset
Read Address	None
Visible Address	None
FunctionKey	1, 1, 1
Offset Address	
Write Offset Address	None
Read Offset Address	None
Text	
Size	24
Color	RGB(0, 0, 255)
Font type	Arial
Others	
Macro	
Coordinates	

## Function key

- Use the Up, Down, Left, and Right keys to select an element on a screen.





# Screen and Element

- Base screen
- POS screens
- PRG screens
- OFS screens
- DGN screens
- GRA screens
- PAR screens
- Others

## Base screen

MECH		ABS		REL	
X	0.000	X	0.000	X	0.000
Y	0.000	Y	0.000	Y	0.000
Z	0.000	Z	0.000	Z	0.000

Spindle	123456RPM	SP. Load	1234	Cmd. T	1234
Act. S	123456RPM	Tar. Stocks	1234	SpindleT	1234
Feedrate	123456mm/min	C. Stocks	1234	Stdbv.T	1234
Act. F	123456mm/min	Cyc. Tin		Screen Name	PRS

ABC.NC	N12345678	一般用戶
--------	-----------	------

自動	HH:MM:SS	RPD	mm/min	準備完成
----	----------	-----	--------	------

## Base screen

Screen Name		PRS	ABC.NC		N12345678	一般用戶
-------------	--	-----	--------	--	-----------	------

MECH		ABS		REL	
X	0.000	X	0.000	X	0.000
Y	0.000	Y	0.000	Y	0.000
Z	0.000	Z	0.000	Z	0.000

Spindle	123456RPM	SP. Load	1234	Cmd. T	1234
Act. S	123456RPM	Tar. Stocks	1234	SpindleT	1234
Feedrate	123456mm/min	C. Stocks	1234	Stdbv.T	1234
Act. F	123456mm/min	Cyc. Time	HH:MM:SS	Dwell	1234

自動	HH:MM:SS	RPD	mm/min	準備完成
----	----------	-----	--------	------

## Base screen

Screen Properties

Screen No.  ☒ General View Screen / ☐ Apply Print Screen

Screen

Width   
Height

☐ Place at screen center  
☒ Set position X  Y

☒ Show Border


☒ Display Title Bar

Language	Screen Name
繁體中文	座標顯示
簡體中文	坐标显示
English	Coordinate

Font: Arial Size: 12

Hard Copy  
Top-Left    
Right-Bottom    
X Y

☒ Base Screen  
☒ Single   
☐ Multiple



Macro Cycle Delay  ms  
Screen Lock Bit

## Base screen

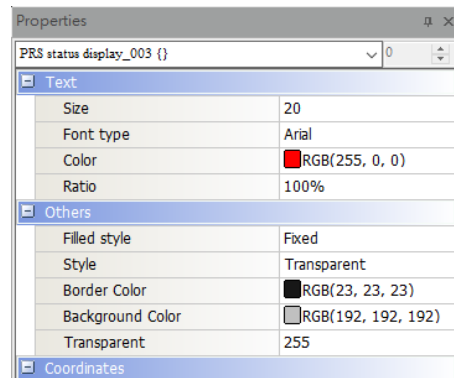
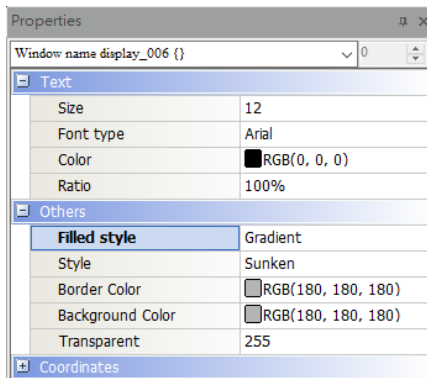


## Window name display

- Display the current screen name.

## PRS status display

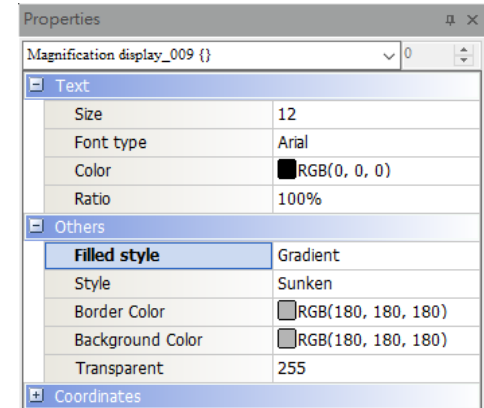
- Reminder for validating the setting after parameter modification
  - P: Reboot controller system
  - R: Reset the controller system
  - S: Reboot the servo drive



## Magnification display

- Display the relevant override or speed according to mode type
  - **【Auto/MDI】** : RPD override, feedrate override and spindle speed override.
  - **【Edit】** : Show blank.
  - **【Jog】** : RPD override, jog speed and spindle speed override.
  - **【MPG】** : MPG magnification and spindle speed override.
  - **【Home】** : RPD override.

## Base screen





## Execute file name

- Display the current program name in execution.

## Metric/Imperial system display

- Display the current unit in the system
  - mm: metric system
  - inch: imperial system

## Base screen

Properties	
Exe. file name_014 {}	
0	
<b>Text</b>	
Size	12
Font type	Arial
Color	RGB(0, 0, 0)
Ratio	100%
<b>Others</b>	
Filled style	Gradient
Style	Sunken
Border Color	RGB(180, 180, 180)
Background Color	RGB(180, 180, 180)
Transparent	255
<b>Coordinates</b>	

Properties	
Metric/Imperial system display_008 {}	
0	
<b>Text</b>	
Size	12
Font type	Arial
Color	RGB(0, 0, 0)
Ratio	100%
<b>Others</b>	
<b>Filled style</b>	Gradient
Style	Sunken
Border Color	RGB(180, 180, 180)
Background Color	RGB(180, 180, 180)
Transparent	255
<b>Coordinates</b>	






# Screen and Element


- Base screen
- POS screens
- PRG screens
- OFS screens
- DGN screens
- GRA screens
- PAR screens
- Others

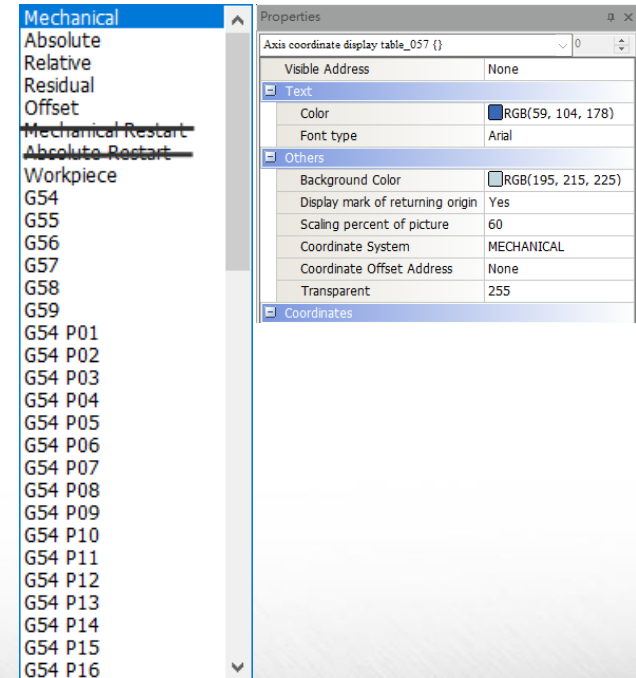
## POS screens

Axis coordinate display table


Screen Name		PRS	ABC.NC		N# 2345678	Normal
MECH			ABS			REL
	X	0.000	X	0.000	X	0.000
	Y	0.000	Y	0.000	Y	0.000
	Z	0.000	Z	0.000	Z	0.000
Spindle		23456 RPM	SP. Load		1234	Cmd. T 1234
Act. S		23456 RPM	Tar. Stocks		1234	SpindleT 1234
Feedrate		123456 mm/min	C. Stocks		1234	Stdb.T 1234
Act. F		23456 mm/min	Cyc. Time		HH:MM:SS	Dwell 1234
AUTO		HH:MM:SS	RPD		mm/min	Ready

## Axis coordinate display table

- Displays the axes names and position values of specific coordinate.
- Properties:
  - 【Display mark of returning origin】 :
    - Display origin mark or not. 
  - 【Scaling percent of picture】 :
    - Adjust the origin mark size
  - 【Coordinate System】 :
    - Display coordinate type.
    - Mechanical 、 Absolute 、 Relative 、 ... 、 G54P64
  - 【Coordinate Offset Address】 :
    - Display coordinate = Coordinate System + Coordinate Offset Address
- Precaution:
  - Axes information display is according to channel parameter setting.
  - Text size will change automatically by active axes number.



## Axis name display

- Displays the axis name.
- Properties:
  - 【Read address】 :
    - Device : 0 means X axis, 1 means Y axis and so on.
  - 【Display mark】 : 
    - This origin mark will show when axis homing is done.

## POS Screens

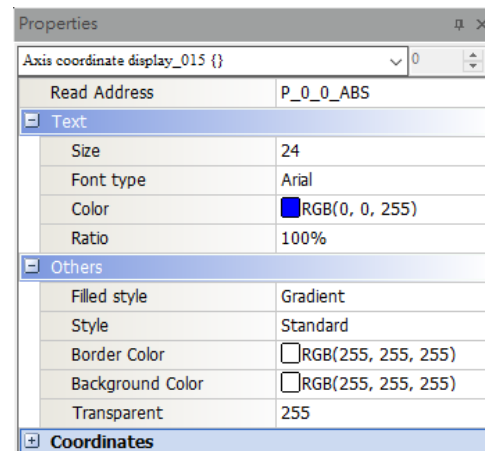
Properties	
Axis name display_010 {}	
Read Address	None
Text	
Size	12
Font type	Arial
Color	RGB(0, 0, 0)
Ratio	100%
Others	
Filled style	Gradient
Style	Sunken
Border Color	RGB(180, 180, 180)
Background Color	RGB(180, 180, 180)
Display mark of returning c	No
Transparent	255
Coordinates	

【Axis coordinate display table】 element can replace this element function!

## Axis coordinate display

- Displays the current axis position with the specified coordinate system.
- Properties:
  - **【Read address】** :
    - Device : 0 means X axis, 1 means Y axis and so on.
    - Coordinate system: select the display coordinate such as offset, G54, and so on.

## POS Screens



The screenshot shows a 'Properties' window for an element named 'Axis coordinate display\_015'. It has a dropdown menu set to '0' and a 'Read Address' field set to 'P\_0\_0\_ABS'. The window is divided into sections: 'Text' and 'Others'. The 'Text' section includes 'Size' (24), 'Font type' (Arial), 'Color' (blue, with a color picker showing RGB(0, 0, 255)), and 'Ratio' (100%). The 'Others' section includes 'Filled style' (Gradient), 'Style' (Standard), 'Border Color' (white, with a color picker showing RGB(255, 255, 255)), 'Background Color' (white, with a color picker showing RGB(255, 255, 255)), and 'Transparent' (255). At the bottom, there is a 'Coordinates' section with a plus icon.

Axis coordinate display_015 {}	
Read Address	P_0_0_ABS
Text	
Size	24
Font type	Arial
Color	RGB(0, 0, 255)
Ratio	100%
Others	
Filled style	Gradient
Style	Standard
Border Color	RGB(255, 255, 255)
Background Color	RGB(255, 255, 255)
Transparent	255
Coordinates	

**【Axis coordinate display table】** element can replace this element function!

## POS screen function key

POS	>	Relative coordinate	>	Clear all
PRG	>	Clear axis		Clear X axis
OFS	>			Clear Y axis
DGN	>			Clear Z axis
ALM	>			Clear A axis
GRA	>			Clear B axis
PAR	>			Clear C axis
OTHER	>			Clear U axis
				Clear V axis
				Clear W axis

Function key	Description
Clear all	Clear all relative coordinate values
Clear X axis	Clear X axis relative coordinate value
Clear Y axis	Clear Y axis relative coordinate value
Clear Z axis	Clear Z axis relative coordinate value
Clear A axis	Clear A axis relative coordinate value
Clear B axis	Clear B axis relative coordinate value
Clear C axis	Clear C axis relative coordinate value
Clear U axis	Clear U axis relative coordinate value
Clear V axis	Clear V axis relative coordinate value
Clear W axis	Clear W axis relative coordinate value
Clear axis	Automatically create clear relative coordinate value key in next level for every existed axis.



# Screen and Element

- Base screen
- POS screens
- PRG screens
- OFS screens
- DGN screens
- GRA screens
- PAR screens
- Others



## PRG screens

G code runtime display

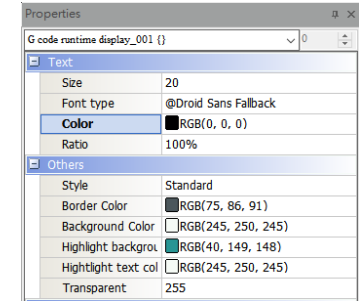
Screen Name		PRS	ABC.NC		N 2345678	一般用戶	
Text		S 2345 T.No 123					
Highlight Text		Act. S 2345 T.D 123					
		F 2345 T.L 123					
		Act. F 2345					
		Dwell 2345					
		Cyc. T HH:MM:SS					
		M 23					
		GXX GXX GXX GXX GXX					
		GXX GXX GXX GXX GXX					
		GXX GXX GXX GXX GXX					
		GXX GXX GXX GXX GXX					
MECH.		ABS.		RESIDUAL		Coordinate	
X	0.000	X	0.000	X	0.000	X	0.000
Y	0.000	Y	0.000	Y	0.000	Y	0.000
Z	0.000	Z	0.000	Z	0.000	Z	0.000
自動	HH:MM:SS	RPD		mm/	nch	準備完成	

G code group display table

Workpiece coordinate display

## G code runtime display

- Displays the executing program content and highlights the executing block.
- Properties:
  - 【Highlight background color】
  - 【Highlight text color】
- Precaution:
  - When the system is in MDI mode, it shows the MDI program.
  - When the system is not in the MDI mode, it shows the main program.



Program (Auto)		4567	N1	Normal		
G00G17G54G40		S	0	T.No 0		
F1000		Act. S	0	T.D 0		
G00 Z0.0000		F	0	T.L 0		
G00 X0.0000 Y10.0000		Act. F	0			
G01 Z0.0000		Dwell	0			
G03 X0.0289 Y10.0111 Z0.0000 I-0.0261 J0.1117		Cyc. T	00:00:00			
G00 Z0.0000		M0				
G00 X0.3720 Y9.6649		G00	G17	G90	G23 G94	
G01 Z0.0000		G21	G40	G49	G80 G98	
G02 X0.3439 Y9.6679 Z0.0000 I0.0144 J0.2686		G50	G64	G69	G15 G54	
G02 X0.2984 Y9.6798 Z0.0000 I0.0349 J0.2186						
G00 Z0.0000						
G00 X-7.9323 Y10.5536						
G01 Z0.0000						
■ MECH.		■ ABS.		■ RESIDUAL		
X	0.000	X	0.333	X	0.000	
Y	0.000	Y	-7.918	Y	0.000	
Z	0.000	Z	-1.501	Z	0.000	
■ G54		-0.333				
X		3.959				
Z		1.501				
AUTO Alarm 11:32:16 RPD 100% F 150% S 120% mm Servo not Ready						
S Setup		B.L Search B.G Program Simple Mode				

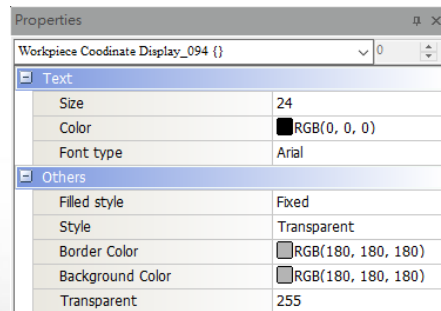
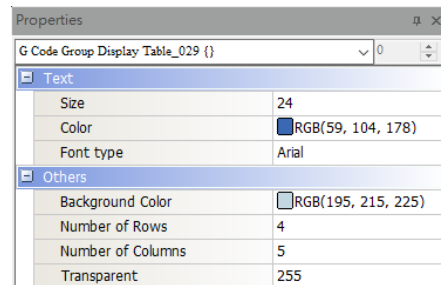
## G Code Group Display Table

- Displays the G code group status.
- Properties:
  - 【Number of Rows】
  - 【Number of Columns】
- Precaution:
  - It doesn't include M code status.

## Workpiece coordinate display

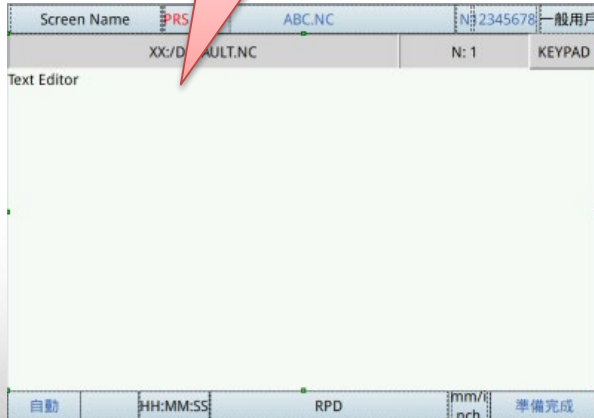
- Display the current workpiece coordinates, such as G54 and G55.

## PRG screens



## PRG screens (EDIT, MDI)

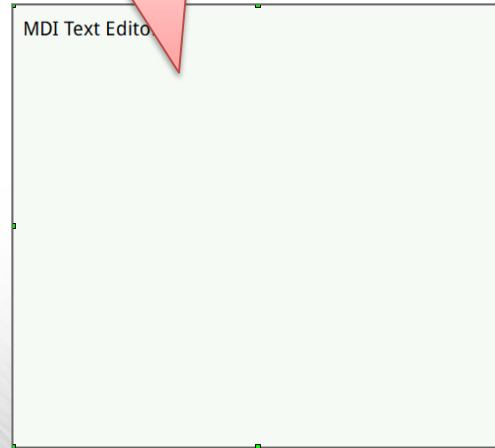
### Text Editor



### File management

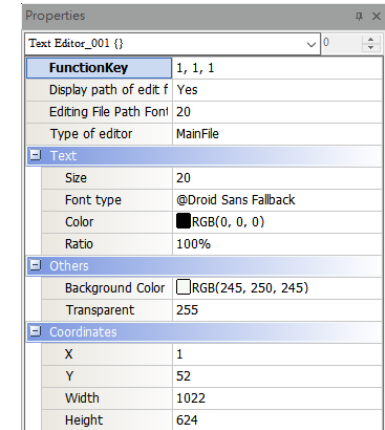
Name	Size	Type	Data Modified
> C:		Drive	2018/10/23 06:00
> D:		Drive	2018/10/26 17:29

### MDI mode text editor



## Text editor

- Open an NC program with the File management element, and the program content will be displayed and can be edited with this Text editor element.
- Properties:
  - **【Display path of edit file】** :
    - YES/ NO
  - **【Editing File Path FrontSize】**
  - **【Type of editor】** :
    - Normal: loads the opened program with the file management element.
    - MainFile: loads the main program only.
- Precaution:
  - Editing is allowed in all modes.
  - When the program is running, editing the main program is not allowed.
  - When the program is running, loading another program as main program is not allowed.



## File management

- For file display and selection. You can use the function keys to open, delete, and copy the files in File management.
- Properties:
  - 【File type】 :
    - Support: Gcode, DXF, parameter, GraphEdit
    - Reserved: MLC, XML
  - 【File Extension】 :
    - Support filename extension: NC, ANC, CNC, PIM, TAP, PTP, UOO, and DEMO.
    - Empty value in it means only supporting **.NC** and **none** extension files.
  - 【Open file goto screen】 :
    - Switch to the specified screen after selecting and opening a file.
  - 【Load to main file after opening】

Properties	
File management_002 {}	
FunctionKey	1, 1, 1
File Type	Gcode
File Extension	NC;ANC;CNC
Open file goto screen	2003 - 主檔編輯
Load to main file after opening	Yes
Open double-side file manager	Yes
Default disk	CF
Default disk-2	USB
Text	
Size	18
Color	RGB(0, 0, 0)
Ratio	100%
Others	
User Security Level	Normal User
Background Color	RGB(153, 189, 213)
Transparent	255

## File management

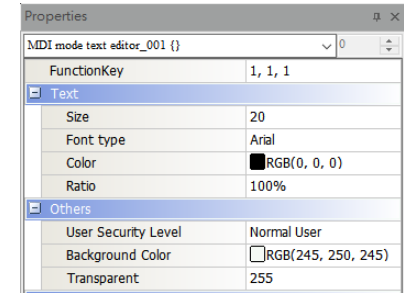
- Properties:
  - 【Open double-side file manager】 :
  - 【Default disk】 :
    - NONE、CF、INTER、USB
  - 【Default disk-2】 :
    - NONE、CF、INTER、USB
- Precaution:
  - 【Default disk-2】 property will active when double-side file manager is enable.

Name	Size	Type	Date Modified
+ CF		Folder	4 Mar 2015 04:52:14
+ INTER		Folder	18 Sep 2020 11:28:16
+ NETDRIVE		Folder	4 Mar 2015 08:55:58

主權編輯		22	N1	18:23:18								
(**Main File**) CF/22			N: 1	KEYPAD								
名稱	大小	類型	名稱	大小	類型	停						
CF		Folder	CF		Folder	13						
3.NC	42 bytes NC File		INTER		Folder	13						
2019.NC	101 bytes NC File		3.NC	80 bytes NC File		54						
2222.NC	3 KB NC File		2019.NC	101 bytes NC File		12						
111111.NC	578 bytes NC File		11111111.NC	580 bytes NC File		12						
1111111.NC	575 bytes NC File		DEFAULT.NC	2 bytes NC File		7F						
11111111.NC	580 bytes NC File		MLC		Folder	10						
DK+4+GY.NC	3 KB NC File		O_MACRO		Folder	18						
FACE_M99.NC	24.4 MB NC File		NETDRIVE		Folder	16						
XXMICKY.NC	11 KB NC File											
20170109-BK		Folder										
20170824		Folder										
20170915-BK		Folder										
20190919		Folder										
編輯	★ 密碼 *			mm	伺服器備妥							
<=	左視窗	F2	右視窗	F3	檔案搬移	F4	選取/取消	F5	全部取消	F6	全部選取	>>

## MDI mode text editor

- It is for editing the MDI program contents in MDI mode.
- Precaution:
  - The MDI program contents are non-volatile.
  - Editing MDI program only in MDI mode.
  - In MDI mode, “G code runtime display” element will show MDI program and MDI program can be executed.





## PRG screens

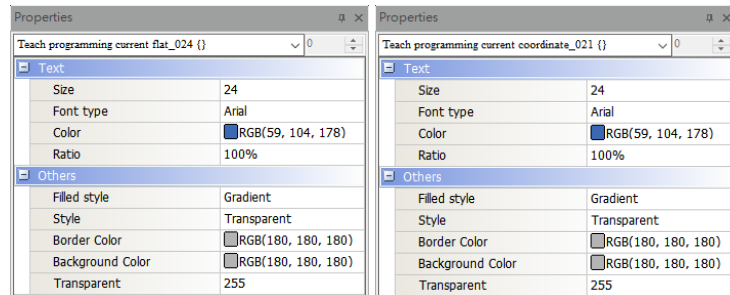
Teach programming  
current flat

Teach programming  
current coordinate

Screen Name	PRS	ABC.NC	N 12345678	一般用戶
XX:/DEFAULT.NC		N: 1	KEYPAD	<input checked="" type="checkbox"/> MECH. X 0.000 Y 0.000 Z 0.000  <input checked="" type="checkbox"/> ABS. X 0.000 Y 0.000 Z 0.000
Text Editor			Panel Select <input checked="" type="checkbox"/> TeachPlane Cur. Coordinate <input checked="" type="checkbox"/> TeachCoord Pr.10044 must active	
自動	HH:MM:SS	RPD	mm/in ch	準備完成

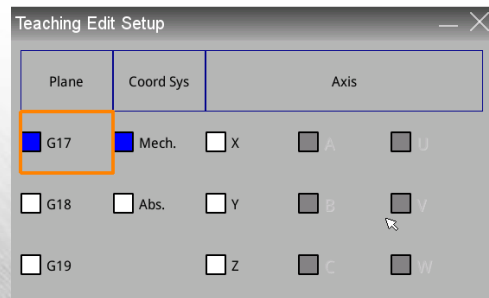
## Teach programming current coordinate

- While using teaching program function, it can display the using coordinate of generating teach instructions like absolute or mechanical coordinate.

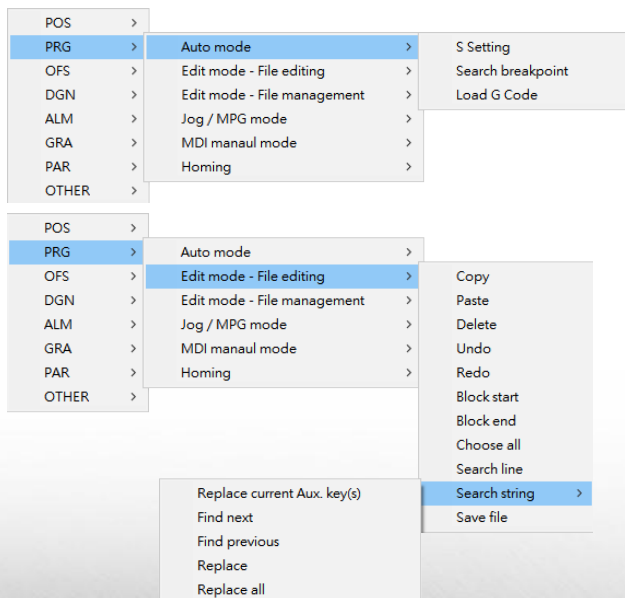


## Teach programming current flat

- While using teaching program, it can display the using flat of generating teach instructions like G17, G18 or G19.

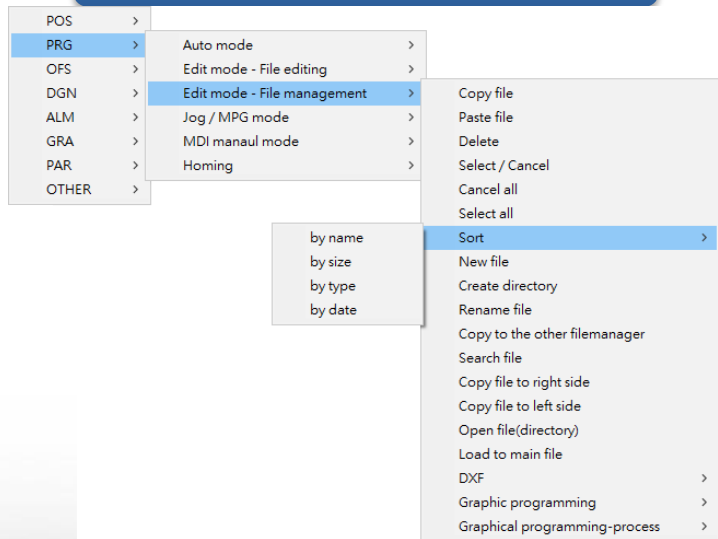


## PRG screen function key



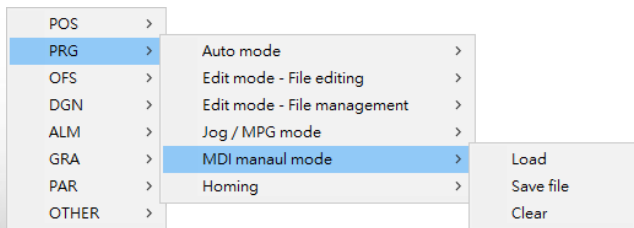
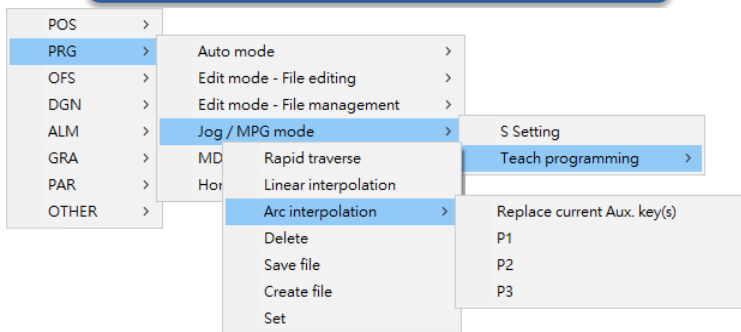
Function key	Description
S Setting	Call out system window for S setting
Search breakpoint	Execute breakpoint search according to 【SEARCH_BREAK_LINE】 number
Load G Code	Set the opened file in text editor as main program
Copy	Copy the G code block content or selected text
Paste	Paste the copied content
Delete	Delete the G code block content or selected text
Undo	Undo previous operation (20 steps)
Redo	Redo next operation (20 steps)
Block start	Select start point of text area
Block end	Select end point of text area
Choose all	Select all content
Search line	Popup "Search Line number" window and execute line jumping
Replace current Aux. key(s)	Popup "Test Search" window, and execute text finding and replacing
Find previous	Backward finding the specific text
Find next	Forward finding the specific text
Place	Replace the specific text with another one
Place all	Replace every specific text with another one
Save file	Save the current content in text editor

## PRG screen function key



Function key	Description
Copy file	Copy files or directories
Paste file	Paste files or directories
Delete	Delete files or directories
Select/Cancel	Select/Cancel files or directories
Cancel all	Cancel all selected files or directories
Select all	Selected all files or directories
By name	Sort files or directories by name
By size	Sort files or directories by size
By type	Sort files or directories by type
By date	Sort files or directories by date
New file	Create a new file by popup window operation
Create directory	Create a new directory by popup window operation
Rename file	Rename the file or directory
Copy to the other filemanager	If there are 2 filemanager elements on a screen, it will copy and paste files or directories from one filemanager element to another one.
Search file	Popup "Search File" window and find out the file
Copy file to right side	Copy selected files or directories from left side and paste them to right side in the double side file manager element.
Copy file to left side	Copy selected files or directories from right side and paste them to left side in the double side file manager element.
Open file(directory)	Open the file or directory
Load to main file	Open the file and set it as main program

## PRG screen function key



Function key	Description
S Setting	Popup "spindle speed setting" window
Rapid traverse	Create G00 command according current coordinates in teach programming function.
Linear interpolation	Create G01 command according current coordinates in teach programming function.
Replace current Aux. key(s)	Generate P1, P2 and P3 function keys of arc command in teach programming function.
P1	Set current position as 1st point of arc command
P2	Set current position as 2nd point of arc command
P3	Set current position as 3rd point of arc command and create G02/G03 command
Delete	Delete the current command or selected content
Save file	Save the current teaching program
Create file	Rapidly create a new file in CF device
Set	Popup "Teaching Edit Setup" window

Function key	Description
Load	Load the content of "MDI mode text editor" into "G code runtime display" (Automatic executing while "MDI mode text editor" exiting)
Save file	Save the content of "MDI mode text editor" (Automatic executing while "MDI mode text editor" exiting)
Clear	Clear the content of "MDI mode text editor"



# Screen and Element

- Base screen
- POS screens
- PRG screens
- **OFS screens**
- DGN screens
- GRA screens
- PAR screens
- Others

## OFS screens

Axis coordinate  
input table

Input display

Screen Name		PRS	ABC.NC		N: 2345678	一般用戶
OFFSET			G54	G55	MECH.	
X	0.000	X	0.000	X	0.000	0.000
Y	0.000	Y	0.000	Y	0.000	0.000
Z	0.000	Z	0.000	Z	0.000	0.000
G56			G57	G58	ABS.	
X	0.000	X	0.000	X	0.000	0.000
Y	0.000	Y	0.000	Y	0.000	0.000
Z	0.000	Z	0.000	Z	0.000	0.000
					REL.	
X	0.000	X	0.000	X	0.000	0.000
Y	0.000	Y	0.000	Y	0.000	0.000
Z	0.000	Z	0.000	Z	0.000	0.000
自動	HH:MM:SS	Input	mm/	nch	準備完成	

## Axis coordinate input table

- Displays the axis name and position value of the selected coordinate system. You can also set the coordinates with relevant function keys.
- Properties:
  - 【Coordinate System】 :
    - Select the coordinate system to use
    - Machine, Absolute, Relative, ..., and G54P64.
  - 【Coordinate Offset Address】 :
    - Displayed coordinate system = 【Coordinate System】 + 【Coordinate Offset Address】
- Precaution:
  - The content is displayed based on the channel configuration setup.
  - The text size will automatically adjust to fit display area.

RELATIVE  
OFFSET  
G54  
G55  
G56  
G57  
G58  
G59  
G54P01  
G54P02  
G54P03  
G54P04  
G54P05  
G54P06  
G54P07  
G54P08  
G54P09  
G54P10  
G54P11  
G54P12  
G54P13  
G54P14  
G54P15  
G54P16  
G54P17  
G54P18  
G54P19  
G54P20  
G54P21  
G54P22

X	0.000
Y	0.000
Z	0.000
A	0.000

Properties	
Axis coordinate input table_020 (####)	
Visible Address	None
FunctionKey	1, 1, 1
<b>Text</b>	
Color	RGB(59, 104, 178)
Font type	@Droid Sans Fallback
<b>Others</b>	
Border Color	RGB(195, 215, 225)
Background Color	RGB(195, 215, 225)
Style	Standard
Prefix Zero	No
User Security Level	Normal User
Set Low Security	No
<b>Input Mode</b>	General input
Mark as Asterisk(*)	No
Trigger Addr.	None
Trigger Mode	Before Writing
Interlock Address	None
Interlock State	On
Save the Recipe	No
Show overrange message	Yes
Show #### when overrang	Yes
Unit Conversion Settings	Detail...
Coordinate System	Offset
Coordinate Offset Address	*SYSVRW_0_301
Transparent	255
Element Description	軸座標輸入總表_013
<b>Macro</b>	
Before Execute Macro	0
After Execute Macro	0



## Axis coordinate input

- You can set the coordinates value of the selected coordinate system with this element and function keys.
- Properties:
  - **【Write address】** : P
    - Axis: 0 means X axis, 1 means Y axis, and so on.
    - Coordinate: G54, G55, ...

**【Axis coordinate input table】** element can replace this element function!

## OFS screens

Properties

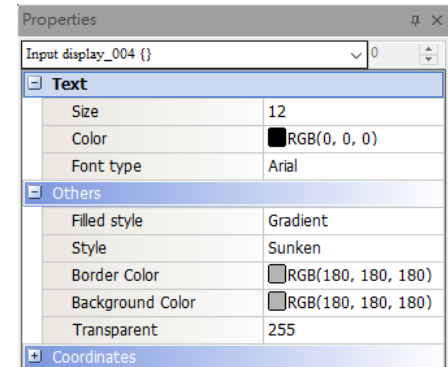
Axis coordinate input\_006 {#####.###} 0

<b>Write Address</b>	None
Read Address	None
Visible Address	None
FunctionKey	1, 1, 1
<b>Offset Address</b>	
Write Offset Address	None
Read Offset Address	None
<b>Text</b>	
<b>Others</b>	
Filled style	Gradient
Border Color	RGB(180, 180, 18)
Background Color	RGB(180, 180, 18)
Style	Raised
Prefix Zero	No
Detail..	Detail..
User Security Level	Normal User
Set Low Security	No
Input Mode	General input
Mark as Asterisk(*)	No
Trigger Addr.	None
Trigger Mode	Before Writing
Interlock Address	None
Interlock State	On
Save the Recipe	No

## Input display

- It displays the value you input. You must press ENTER to write this input value to the specified address of the selected element.

## OFS screens

A screenshot of a 'Properties' window in a software application. The window title is 'Properties'. The main content area shows a table of properties for an element named 'Input display\_004 {}'. The table has two columns: the property name and its value. The properties are grouped into sections: 'Text', 'Others', and 'Coordinates'. The 'Text' section includes 'Size' (12), 'Color' (RGB(0, 0, 0)), and 'Font type' (Arial). The 'Others' section includes 'Filled style' (Gradient), 'Style' (Sunken), 'Border Color' (RGB(180, 180, 180)), 'Background Color' (RGB(180, 180, 180)), and 'Transparent' (255). The 'Coordinates' section is currently expanded, showing a single row with the property name 'Coordinates' and an empty value field.

Input display_004 {}	
<b>Text</b>	
Size	12
Color	RGB(0, 0, 0)
Font type	Arial
<b>Others</b>	
Filled style	Gradient
Style	Sunken
Border Color	RGB(180, 180, 180)
Background Color	RGB(180, 180, 180)
Transparent	255
<b>Coordinates</b>	

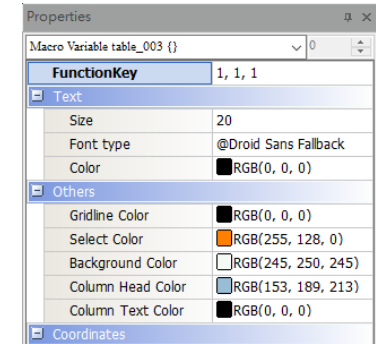


## Macro Variable table

Delta Confidential

## Macro Variable table

- It shows the macro variables and you can use function keys to switch showing different types of macro.
- You can use the function key to write a variable value as current machine coordinate or absolute coordinate.



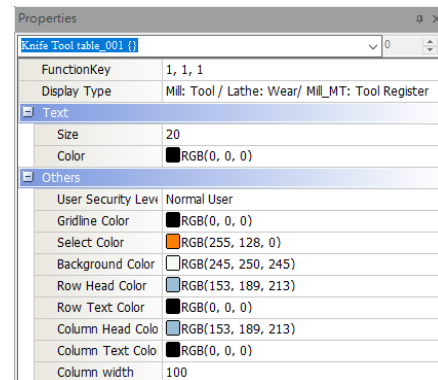
Macro		XXMICKY.NC		N1	09:45:18	
Num.	Value	Num.	Value			
1	0.0000	16	0.0000			
2	0.0000	17	0.0000			
3	0.0000	18	0.0000			
4	0.0000	19	0.0000			
5	0.0000	20	0.0000			
6	0.0000	21	0.0000			
7	0.0000	22	0.0000			
8	0.0000	23	0.0000			
9	0.0000	24	0.0000			
10	0.0000	25	0.0000			
11	0.0000	26	0.0000			
12	0.0000	27	0.0000			
13	0.0000	28	0.0000			
14	0.0000	29	0.0000			
JOG		RPD 100% JOG 2000 S 120%		mm		
<=	F1 Local Var.	F2 Global Var.	F3 Hold Var.	F4 Extend Var.	F5 MECH. Set	F6 ABS. Set

## Knife Tool table

- It can show tool data such as length, radius, wear, and life. You can clear and set the data with function keys.
- The table displays the content according to system application type (milling, lathe or multi-tool).
- Properties:
  - 【Display Type】 :

	Tool/Wear/Tool Register	Tool/Length/Tool Life
Mill	length 、 radius 、 length wear 、 radius wear 、 life	length 、 radius 、 length wear 、 radius wear 、 life
Lathe	X/Y/Z cut length 、 nose radius 、 nose type 、 life	X/Y/Z cut length wear 、 radius wear
Mill_MT	Z target 、 Z finish 、 Z tolerance	radius 、 X/Y/Z offset

## OFS screens



Mill: Tool / Lathe: Wear / Mill\_MT: Tool Register  
 Mill: Tool / Lathe: Length / Mill\_MT: Tool Life

Tool Register (Mag.1)		XXMICKY.NC		N1	09:54:34
Cutter Num	Length	Radius	Length Wear	Radius Wear	Life
1	10.2300	0.0000	0.0000	0.0000	0
2	12.3000	0.0000	0.0000	0.0000	0
3	26.1666	0.0000	0.0000	0.0000	0
4	139.8998	0.0000	0.0000	0.0000	0
5	0.0000	0.0000	0.0000	0.0000	0
6	0.0000	0.0000	0.0000	0.0000	0
7	0.0000	0.0000	0.0000	0.0000	0
8	0.0000	0.0000	0.0000	0.0000	0
9	0.0000	0.0000	0.0000	0.0000	0
10	0.0000	0.0000	0.0000	0.0000	0
11	0.0000	0.0000	0.0000	0.0000	0
12	0.0000	0.0000	0.0000	0.0000	0
13	0.0000	0.0000	0.0000	0.0000	0

Mech Z: 111.9845

JOG \*Alarm\* RPD 100% JOG 2000 S 120% mm Servo not Ready

F1 Inc. Input F2 Set H F3 Clear F4 Leng. Offset F5 ABS. Offset F6 >>

## Tool magazine table

- Displays and manages the tools in the tool magazine.
- You can reset, lock and unlock tools with function keys.
- Properties:
  - 【Tool magazine number】: magazine 1 or magazine 2.

## OFS screens

Properties

Tool Magazine table\_008 {}

FunctionKey 1, 1, 1

**Text**

Size 20

Color RGB(0, 0, 0)

**Others**

User Security Level Normal User

Gridline Color RGB(0, 0, 0)

Select Color RGB(255, 128, 0)

Background Color RGB(245, 250, 245)

Row Head Color RGB(153, 189, 213)

Row Text Color RGB(0, 0, 0)

Column Head Color RGB(153, 189, 213)

Column Text Color RGB(0, 0, 0)

Tool magazine number 1

Tool Magazine(1)			6mm平刀粗.NC			N1		Normal		
Magazine 1		CMD. T 11		STDBY. T 11		STDBY. No 3				
Spindle T 5										
Mag No	Tool No	Mag No	Tool No	Mag No	Tool No	Mag No	Tool No	Mag No	Tool No	*
1	9	21		41		61		81		
2	10	22		42		62		82		
3	11	23		43		63		83		
4	12	24		44		64		84		
5	13	25		45		65		85		
6	14	26		46		66		86		
7	6	27		47		67		87		
8	7	28		48		68		88		
9	8	29		49		69		89		
10	0	30		50		70		90		
11		31		51		71		91		
12		32		52		72		92		*
Main axis tool No. 5										
JOG	Alarm	04:26:39	RPD 0%	JOG 0	S 0%	mm	Servo not Ready			
<=	Reset All	Lock	Unlock	Magazine 2						

## Tool magazine/register input

- Displays and manages the tools in the tool magazine.
- Properties:
  - **【Write/Read address】** : Cutter no. of MAG device.
- Precaution:
  - Use the numeric display element to access the addresses for the following devices in the magazine.
    - Tool no. in spindle (SpindleT)
    - Standby tool no. (StandbyT)
    - Command tool no. (CmdT)
    - Standby pocket no. (StandbyM)

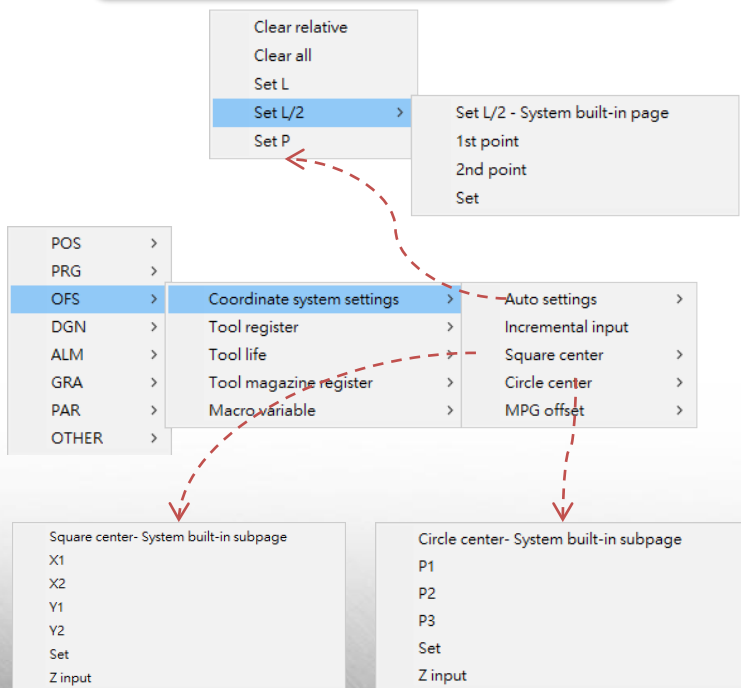
**【Tool magazine table】 element can replace this element function!**

## OFS screens

Properties	
Tool magazine/register input_009 (###)	
Write Address	MAG_0_1_M_1
Read Address	None
Visible Address	None
FunctionKey	1, 1, 2
Offset Address	
Write Offset Address	None
Read Offset Address	None
Text	
Others	
Filled style	Gradient
Border Color	RGB(180, 180, 180)
Background Color	RGB(180, 180, 180)
Style	Raised
Prefix Zero	No
Detail..	Detail...
User Security Level	Normal User
Set Low Security	No
Input Mode	General input
Mark as Asterisk(*)	No
Trigger Addr.	None
Trigger Mode	Before Writing
Interlock Address	None
Interlock State	On
Save the Recipe	No

Input																															
Task: Internal Memory																															
Channel	0																														
Tool Magazine	1																														
Item	M																														
Extend 4																															
Extend 5																															
Type	<input type="radio"/> Device (Word) <input type="radio"/> Device (Bit) <input checked="" type="radio"/> Internal Memory (Word) <input type="radio"/> Internal Memory (Bit) <input type="radio"/> Constant																														
Content	Device Type: MAG Address/Value: 0 Tag:																														
Custom Type	<input type="radio"/> Signed Decimal <input type="radio"/> Unsigned Decimal <input type="radio"/> Hexadecimal																														
Relative To	0 - Default																														
<table border="1"> <tr> <td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>Clear</td> </tr> <tr> <td>0</td><td>7</td><td>8</td><td>9</td><td>A</td><td>Back</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>Enter</td> </tr> <tr> <td>0</td><td>.</td><td>-</td><td>-</td><td>/</td><td></td> </tr> <tr> <td colspan="6">None</td> </tr> </table>		B	C	D	E	F	Clear	0	7	8	9	A	Back	1	2	3	4	5	Enter	0	.	-	-	/		None					
B	C	D	E	F	Clear																										
0	7	8	9	A	Back																										
1	2	3	4	5	Enter																										
0	.	-	-	/																											
None																															

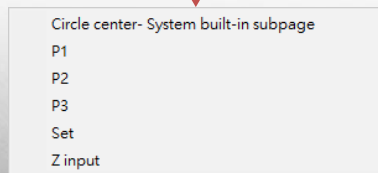
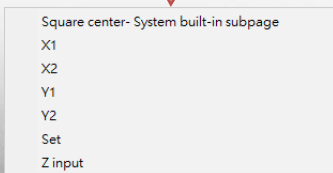
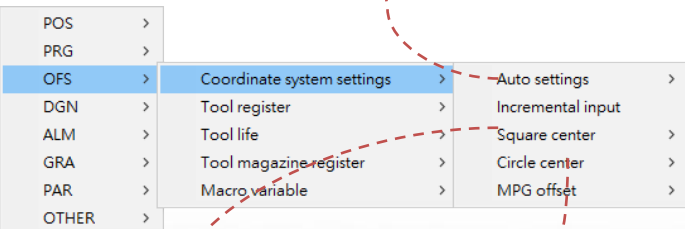
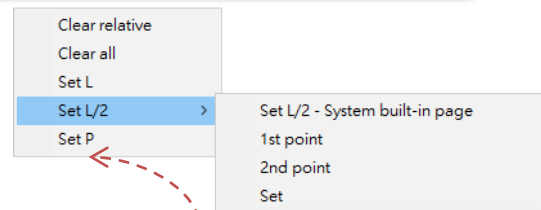
## OFS screen function key



Function key	Description
Clear relative	Clear the relative coordinate of selected axis
Clear all	Clear all coordinates of selected coordinate system
Set L	Set the selected axis coordinate as current mechanical coordinate
Set P	Set the all axes coordinates as current mechanical coordinates
Set L/2- System built-in page	Popup "Set L/2" window to set center point (Set the center according to 2 points.)
1st point	Record 1st point
2nd point	Record 2nd point
Set	Calculate the average point of recording ones and write it into selected coordinate axis
Incremental input	Add the input value to the selected coordinate axis value, and write it into the selected coordinate axis.

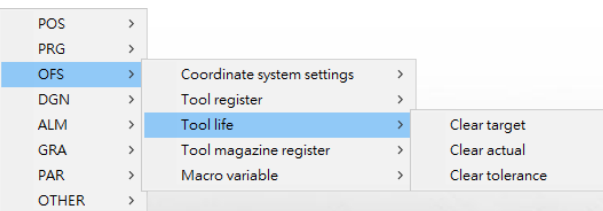
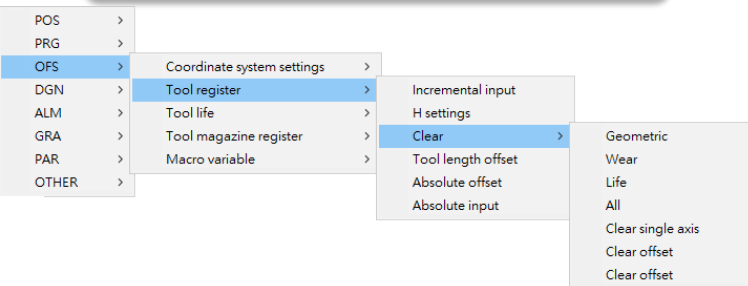


## OFS screen function key



Function key	Description
Square center- System built-in subpage	Popup "Set Square center" window to set center point (Set the center according to points of 4 sides.)
X1	Record 1st point of X axis
X2	Record 2nd point of X axis
Y1	Record 1st point of Y axis
Y2	Record 2nd point of Y axis
Set	Calculate the average point of recording ones and write them into X axis and Y axis of the selected coordinate
Z input	Write the current mechanical Z position into the selected coordinate Z axis
Circle center-System built-in subpage	Popup "Set Circle center" window to set circle center point (Set the center according to 3 points of a circle.)
P1	Record 1st point of a circle
P2	Record 2nd point of a circle
P3	Record 3rd point of a circle
Set	Calculate the center point of recording points and write them into X axis and Y axis of the selected coordinate
Z input	Write the current mechanical Z position into the selected coordinate Z axis

## OFS screen function key

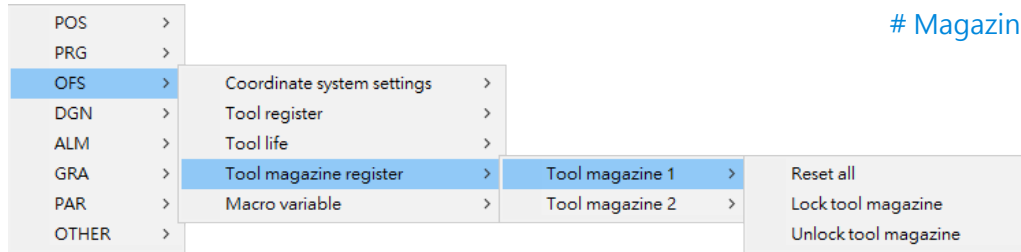


Function key	Description
Incremental input	After adding the input value of selected tool value, write it to the selected value
H setting	Write the current Z-axis mechanical coordinate value into the selected tool length
Geometric	Clear all tool length and radius values
Wear	Clear all tool wear values
Life	Clear all tool life values
All	Clear all tool values
Clear single axis	Clear the selected tool values
Clear offset	Clear all tool radius values
Clear offset	Clear all tool offset values
Tool length offset	After subtracting the input value from the current axis mechanical coordinate value, write it to the selected tool length
Absolute offset	Write the current axis absolute coordinate value into the selected tool length
Clear target	Clear all tool target values
Clear actual	Clear all tool actual values
Clear tolerance	Clear all tool tolerance values

## OFS screen function key

Tool function keys	Milling	Lathe-Wear	Lathe-Length	MT-Register	MT-Life
Incremental input	V	V	V	V	V
H setting	V	-	-	V	-
Geometric	V	-	-	-	-
Wear	V	-	-	-	-
Life	V	-	-	-	-
All	V	V	-	V	V
Clear single axis	-	V	V	-	-
Clear offset	-	-	-	V	-
Clear offset	-	-	-	V	-
Tool length offset	-	-	V	-	-
Absolute offset	-	-	V	-	-
Clear target	-	-	-	-	V
Clear actual	-	-	-	-	V
Clear tolerance	-	-	-	-	V

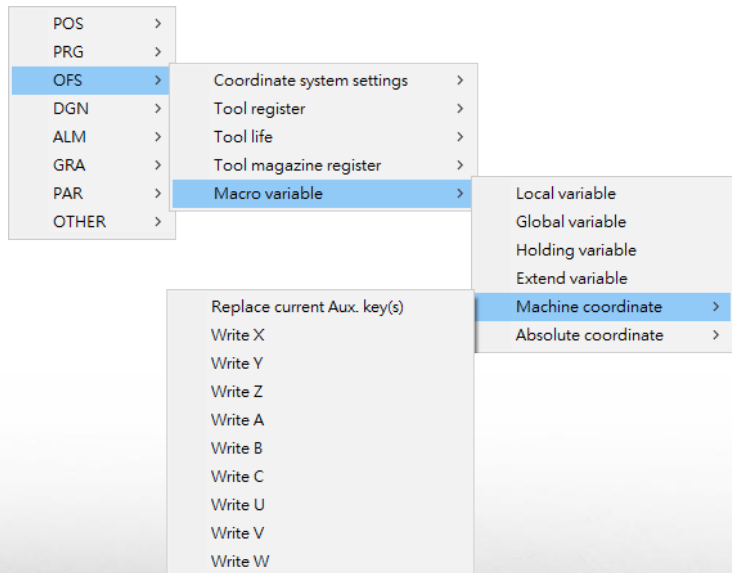
## OFS screen function key



Function key	Description
Reset all	Reset tool magazine
Lock tool magazine	Lock selected tool and block locked tool exchange
Unlock tool magazine	Unlock selected tool

# Magazine 1 and magazine 2 have similar functions

## OFS screen function key



Function key	Description
Local variable	Display local variable on Macro variable table
Global variable	Display global variable on Macro variable table
Holding variable	Display holding variable on Macro variable table
Extend variable	Display extend variable on Macro variable table
(Machine) Replace current Aux. key(s)	According to the number of axes enabled, the function keys for writing mechanical coordinate values are dynamically created in the next function key layer
Write X	Write X axis mechanical position to the macro value
Write Y	Write Y axis mechanical position to the macro value
Write Z	Write Z axis mechanical position to the macro value
Write A	Write A axis mechanical position to the macro value
Write B	Write B axis mechanical position to the macro value
Write C	Write C axis mechanical position to the macro value
Write U	Write U axis mechanical position to the macro value
Write V	Write V axis mechanical position to the macro value
Write W	Write W axis mechanical position to the macro value

# There are similar functions for machine coordinate and absolute coordinate.



# Screen and Element

- Base screen
- POS screens
- PRG screens
- OFS screens
- **DGN screens**
- GRA screens
- PAR screens
- Others

## DGN screens

Servo Monitor  
table

Screen Name		PRS		ABC.NC		N32345678		一般用戶		
Date		yy/mm/dd		Target Stocks		1234				
Time		HH:MM:SS		Comp. Stocks		1234				
Total Time		HH:MM:SS								
Cycle Time		HH:MM:SS								
Ch	Axis	Connect	Ready	Load	Peak	JL/Jm	Dist. to Z P	Mech	Home	Abs. Reset
0	X	Off	Off	0 %	0 %	0.0	0.0000	0.000	Off	
0	Y	Off	Off	0 %	0 %	0.0	0.0000	0.000	Off	
0	Z	Off	Off	0 %	0 %	0.0	0.0000	0.000	Off	
自動		HH:MM:SS		RPD		mm/minch		準備完成		

## Servo Monitor table

- It shows states such as connection, load, distance to Z phase, machine coordinates, and origin.
- When using the absolute motor, you can use this element to set the current position as origin.

Diagnosis		XXMICKY.NC						N1		09:33:30	
Date		2020/03/23						Target Stocks		200	
Time		09:33:30						Comp. Stocks		0	
Total Time		15:17:22									
Cycle Time		00:00:00									
Ch	Axis	Connect	Ready	Load	Peak	JL/Jm	Dist. to Z P.	Mech	Home	Abs. Reset	
0	X			0 %	2 %	0.1	0.0000	513.531			
0	Y			0 %	0 %	3.5	0.0000	25.900		1	
0	Z1			0 %	0 %	1.0	0.0000	111.984			
JOG				RPD 100%		JOG 2000		S 120%		mm	
<<	F1 Stock Setup	F2 User Var.	F3 MLC	F4 Sys. Monitor	F5 Sys. Info.	F6 Authority	>>				

Properties		0
Servo Monitor table_015 {}		0
FunctionKey	1, 1, 1	
Text		
Size	20	
Font type	@Droid Sans Fallback	
Color	RGB(0, 0, 0)	
Ratio	100%	
Others		
Background Color	RGB(195, 215, 225)	
Transparent	255	
Column Head Color	RGB(153, 189, 213)	
Column Text Color	RGB(0, 0, 0)	
Coordinates		



## Servo monitor indicator

- Displays the servo status such as ready, connect and home.
- Properties:
  - 【Axis】 : 0 means X axis, 1 means Y axis, 2 means Z axis, and so on.
  - 【Type of indicator】 :
    - Ready
    - Connect
    - Home

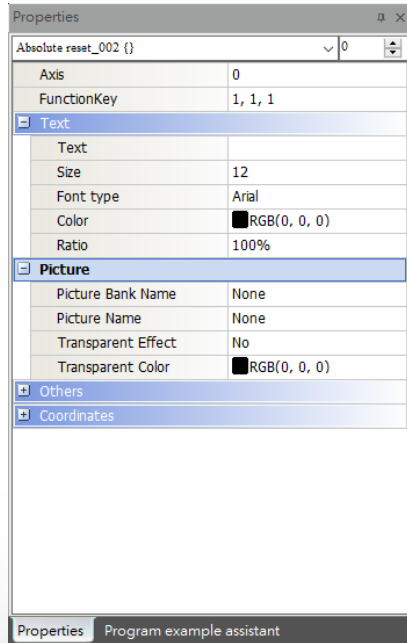
## DGN screens

Properties	
Servo monitor indicator_005 {}	
Axis	0
Visible Address	None
Type of indicator	Ready
Text	Connect
Text	Home
Size	12
Font type	Arial
Color	RGB(0, 0, 0)
Ratio	100%
Picture	
Picture Bank Name	None
Picture Name	None
Transparent Effect	No
Transparent Color	RGB(0, 0, 0)
Others	
Foreground Color	RGB(180, 180, 180)
Style	Standard
Blink	No
Transparent	255
Coordinates	

【Servo monitor table】 element can replace this element function!

## Absolute reset

- When using the absolute motor, you can use this element to set the current axis position as the machine origin.
- Properties:
  - **【Axis】** : 0 means X axis, 1 means Y axis, 2 means Z axis and so on.
- Precaution:
  - This element is available only when you set Pr616 to 5 (set the “absolute motor” for the origin search mode of the axis), .
  - The action is active while the axis is in the Servo On status.



**【Servo monitor table】 element can replace this element function!**

## I/O monitor

- Shows the status of all remote I/O modules.

Port	Enable	RIO Type	RIO Status
0	V	I/O	<input type="button" value="On"/>
1	V	I/O	<input type="button" value="On"/>
2	V	I/O	<input type="button" value="On"/>
3			
4			
5			
6			
7			

## DGN screens

Properties
IO monitor\_002 {}
0

Text

Size12
ColorRGB(0, 0, 0)
Font typeArial

Others

Filled styleGradient
StyleSunken
Border ColorRGB(180, 180, 180)
Background ColorRGB(180, 180, 180)
Transparent255

Coordinates

## Account variable monitoring

- You can use this element to monitor the values of registers (D512 –D1023) you need. There are 2 monitoring types available, which are specifically for users and equipment providers.
- Properties:
  - **【Element type】** :
    - User Var: for users
    - Mech Var: for equipment providers

## DGN screens

Properties	
Account variable monitor_001 {}	
FunctionKey	1, 1, 1
Display Type	Unsigned Decimal
Element Type	User Var
Text	
Size	20
Color	RGB(0, 0, 0)
Others	
User Security Level	Normal User
Gridline Color	RGB(181, 203, 214)
Select Color	RGB(255, 128, 0)
Background Color	RGB(195, 215, 225)
Row Head Color	RGB(153, 189, 213)
Row Text Color	RGB(0, 0, 0)
Column Head Color	RGB(153, 189, 213)
Column Text Color	RGB(0, 0, 0)

## MLC device monitor

- You can monitor the MLC registers and relays by entering the their addresses in this element.
- Properties:
  - 【Display Type】 :
    - Unsigned Decimal
    - Hexadecimal
    - Signed Decimal
    - Floating

MLC Dev. (U.Dec.)		1-OK.NC		N1	Normal
Device	Value	Status	Comment		
1	D100	0	##		
2	M99	####	0	RESET觸發後一次點	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
EDIT		08:20:02		mm	
<=	U.S Dec.	Hex.	Signed Dec.	Floating	

Properties

MLC Device Monitor\_001 {}

FunctionKey 1, 1, 1

Display Type Unsigned Decimal

Text

Size 12

Font type Arial

Color RGB(0, 0, 0)

Others

Gridline Color RGB(0, 0, 0)

Select Color RGB(0, 0, 255)

Background Color RGB(180, 180, 180)

Column Head Color RGB(0, 139, 139)

Column Text Color RGB(255, 255, 255)

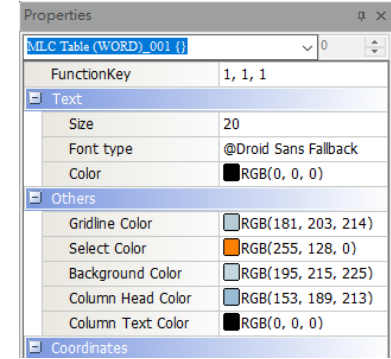
Row Head Color RGB(211, 211, 211)

Row Text Color RGB(0, 0, 0)

Coordinates

## MLC Table (WORD)

- This table displays the MLC registers and you can switch to different device type with the function key.
- You can directly change the device value.
- You can directly find the device by entering the device name. For example, enter T100 and press **ENTER**, you are directed to the field of T100.



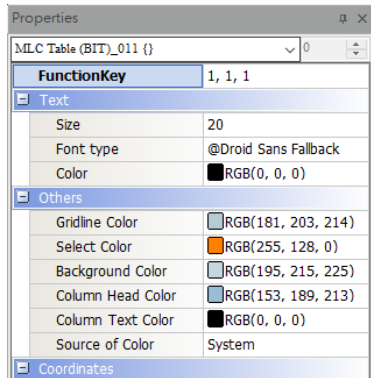
MLC Register		1-OK.NC		N1	Normal
Device	Value	Device	Value		
T100	0	T101	0		
T102	0	T103	0		
T104	0	T105	0		
T106	0	T107	0		
T108	0	T109	0		
T110	0	T111	0		
T112	0	T113	0		
T114	0	T115	0		
T116	0	T117	0		
T118	0	T119	0		
T120	0	T121	0		
T122	0	T123	0		
T124	0	T125	0		
T126	0	T127	0		
T128	0	T129	0		

EDIT	08:21:55	mm
<=	[ T ]	[ C(16) ] [ C(32) ] [ D ] [ V ] [ Z ] >>

## MLC Table (BIT)

- This table displays the MLC relays and you can switch to different device type with the function key.
- You can directly change the device value.
- You can directly find the device by entering the device name. For example, enter M200 and press **ENTER**, you are directed to the field of M200.



MLC 位元		22								N1	16:06:17
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	
M150	0	0	1	0	1	0	0	0	0	0	
M160	0	0	0	0	0	0	0	0	0	0	
M170	0	0	0	0	1	1	0	1	0	0	
M180	0	0	0	0	0	0	0	0	0	0	
M190	0	0	0	0	0	0	1	0	0	0	
M200	0	0	0	0	0	0	0	0	0	0	
M210	0	0	0	0	0	0	0	0	0	0	
M220	0	0	0	0	0	0	0	0	0	0	
M230	0	0	0	0	0	0	0	0	0	0	
M240	1	0	0	0	0	0	0	0	0	0	
M250	0	0	0	0	0	0	0	0	0	0	
M260	0	0	0	0	0	0	0	0	0	0	
M270	0	0	0	0	0	0	0	0	0	0	

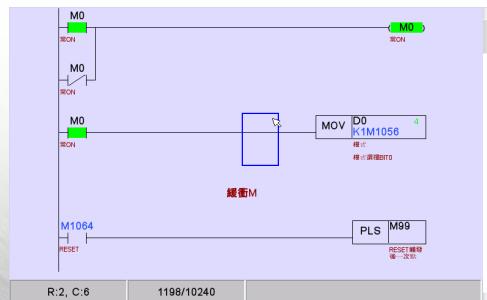
  

寸動	RPD 75 %		JOG 2000		S 100 %		mm
<=	[X]	[Y]	[M]	[A]	[T]	[C]	>>

## Ladder monitor

- MLC ladder status display.
- Properties:
  - 【Source of color】 :
    - System: Display the colors based on the system parameters.
    - Software: Display the colors based on the software element setting.
- Precaution:
  - Use Par 12003 & 12004 to enable the comment display.
  - Use Par 12005 - 12015 to set the displaying colors.

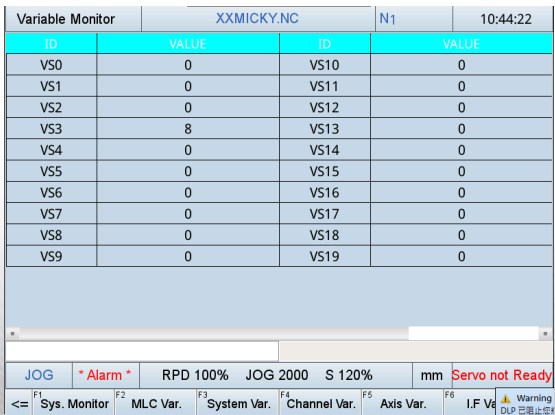
Properties	
Ladder Monitor_001 {}	
FunctionKey	1, 1, 1
Text	
Size	20
Font type	Droid Sans Fallback
Color	RGB(0, 0, 0)
Ratio	100%
Others	
Source of Color	Software
Ladder Color	RGB(60, 180, 190)
Ladder Text Color	RGB(0, 0, 0)
Ladder Symbol Color	RGB(0, 0, 0)
Ladder Cursor Color	RGB(0, 0, 255)
Ladder Monitor Color	RGB(0, 255, 0)
Ladder Device Comment Color	RGB(128, 0, 0)
Ladder Segment Comment Color	RGB(128, 0, 0)
Ladder Row Comment Color	RGB(128, 0, 0)
Ladder Monitor Value Color	RGB(255, 0, 0)
NC Special Device Color	RGB(0, 128, 190)
MLC Special Device Color	RGB(50, 50, 50)
Transparent	255
Coordinates	





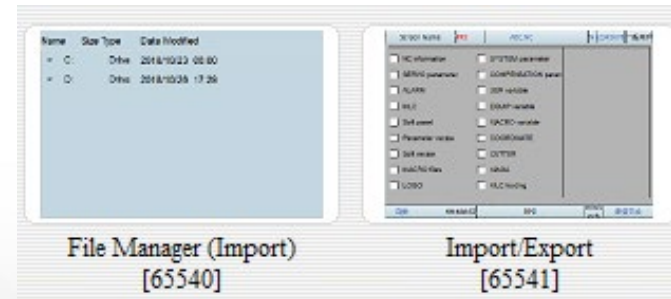
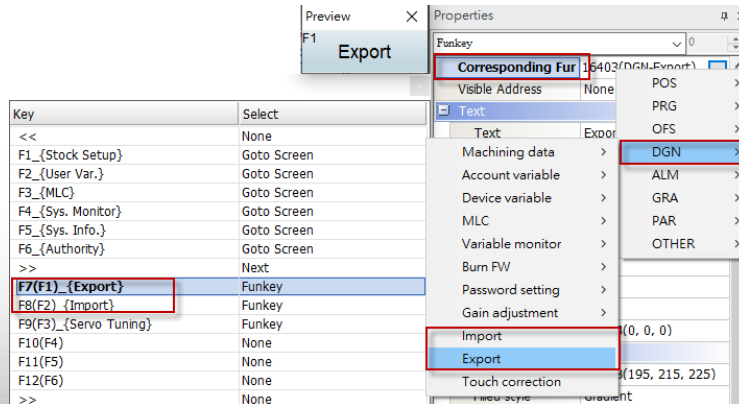


- It shows the system internal variables.
- You can use function keys to switch to different types of variables and displaying format.
  - MLC variable (VM)
  - System variable (VS)
  - Channel variable (VC)
  - Axis variable (VA)
  - HMI variable (VH)



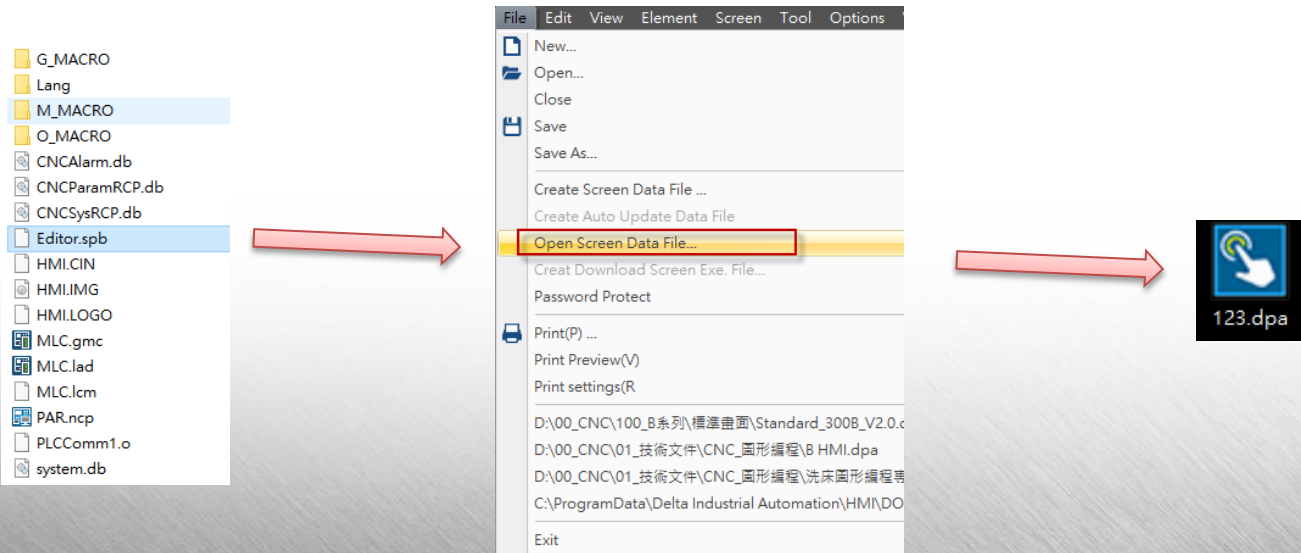
## Export/Import

- Use function key to call related system screens, and do import and export operating.
- Precaution:
  - Operate on system screens 65540 and 65541.

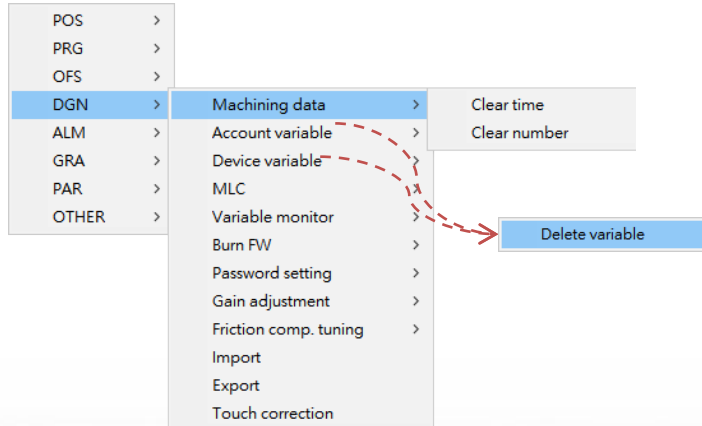


## Export/Import

- Below files are exported from B series system.
- We can open the screen data by “Open Screen Data File” function and save it as a screen project file (.dpa) like below steps.



## DGN screen function key



Function key	Description
Clear time	Clear machining total time
Clear number	Clear finishing stock number (D1022)
Delete variable	Delete the monitoring variables in "Account variable monitor"

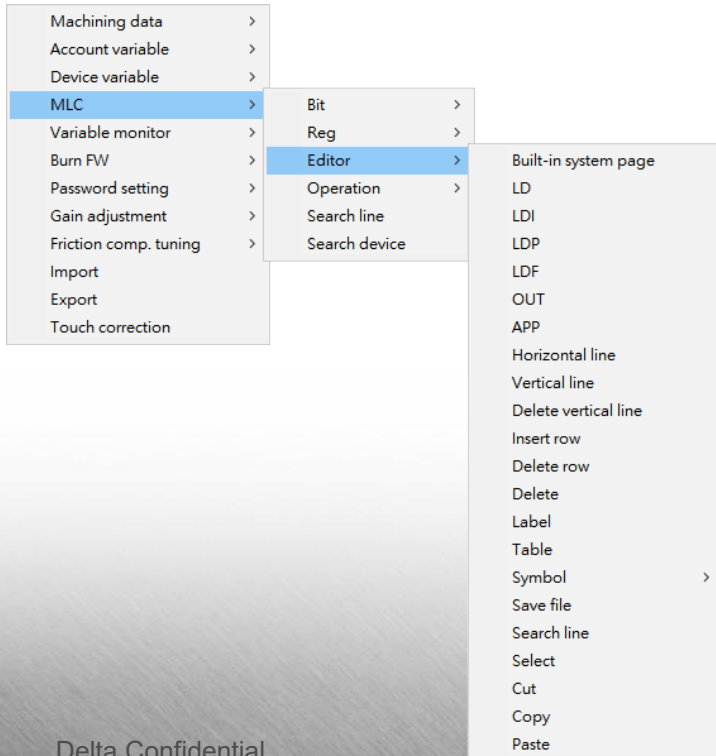
## DGN screen function key

Machining data	>	
Account variable	>	
Device variable	>	
MLC	>	Bit > [X]
Variable monitor	>	Reg > [Y]
Burn FW	>	Editor > [M]
Password setting	>	Operation > [A]
Gain adjustment	>	Search line > [T]
Friction comp. tuning	>	Search device > [C]
Import		
Export		
Touch correction		

Machining data	>	
Account variable	>	
Device variable	>	
MLC	>	Bit > [X]
Variable monitor	>	Reg > [Y]
Burn FW	>	Editor > [M]
Password setting	>	Operation > [A]
Gain adjustment	>	Search line > [T]
Friction comp. tuning	>	Search device > [C]
Import		
Export		
Touch correction		

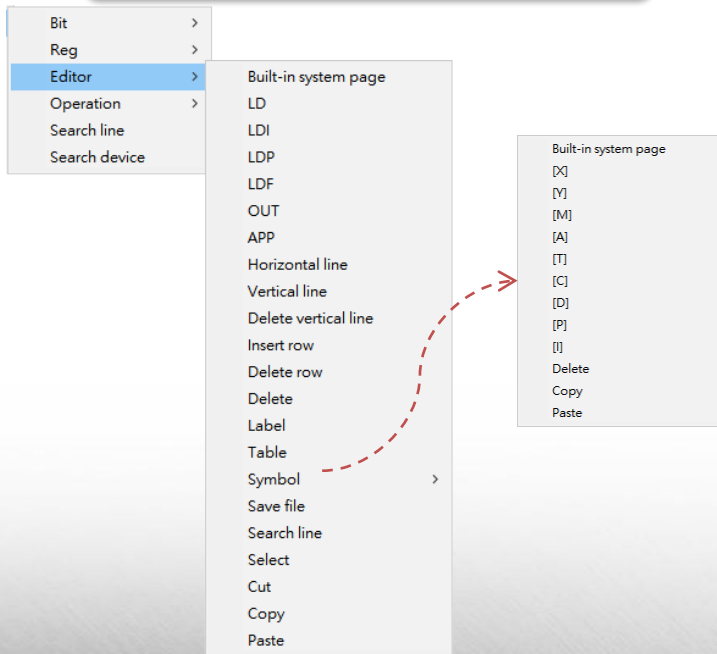
Function key	Description
[X]	Display X device in "MLC table (Bit)"
[Y]	Display Y device in "MLC table (Bit)"
[M]	Display M device in "MLC table (Bit)"
[A]	Display A device in "MLC table (Bit)"
[T]	Display T device in "MLC table (Bit)"
[C]	Display C device in "MLC table (Bit)"
[T]	Display T device in "MLC table (Word)"
[C(16)]	Display C(16) device in "MLC table (Word)"
[C(32)]	Display C(32) device in "MLC table (Word)"
[D]	Display D device in "MLC table (Word)"
[V]	Display V device in "MLC table (Word)"
[Z]	Display Z device in "MLC table (Word)"
Unsigned decimal	Change display format as unsigned decimal in "MLC table (Word)"
Signed decimal	Change display format as signed decimal in "MLC table (Word)"
Hexadecimal	Change display format as hexadecimal in "MLC table (Word)"
Float	Change display format as float in "MLC table (Word)"

## DGN screen function key



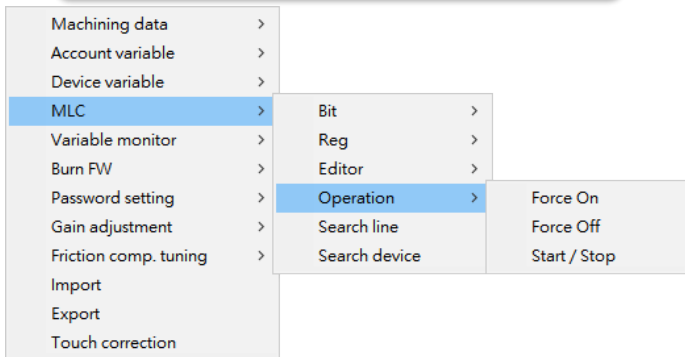
Function key	Description
(Editor)Built-in system page	Switch to system editor screen (ID:65570)
LD	Application instruction in MLC ladder
LDI	Application instruction in MLC ladder
LDP	Application instruction in MLC ladder
LDF	Application instruction in MLC ladder
OUT	Application instruction in MLC ladder
APP	Application instruction in MLC ladder
Horizontal line	Application instruction in MLC ladder
Vertical line	Application instruction in MLC ladder
Delete vertical line	Application instruction in MLC ladder
Insert row	Application instruction in MLC ladder
Delete row	Application instruction in MLC ladder
Delete	Application instruction in MLC ladder
Label	Application instruction in MLC ladder
Table	Application instruction in MLC ladder

## DGN screen function key



Function key	Description
(Symbol)Built-in system page	Switch to system editor screen (ID:65572)
[X]	Switch to X device in "MLC Symbol Edit"
[Y]	Switch to Y device in "MLC Symbol Edit"
[M]	Switch to M device in "MLC Symbol Edit"
[A]	Switch to A device in "MLC Symbol Edit"
[T]	Switch to T device in "MLC Symbol Edit"
[C]	Switch to C device in "MLC Symbol Edit"
[D]	Switch to D device in "MLC Symbol Edit"
[P]	Switch to P device in "MLC Symbol Edit"
[I]	Switch to IX/IC/IT/IR device in "MLC Symbol Edit"
Delete	Delete a comment in "MLC Symbol Edit"
Copy	Copy a comment in "MLC Symbol Edit"
Paste	Paste a comment in "MLC Symbol Edit"
Save file	Save the edited MLC ladder
Search line	Input the line number then pressing it to jump in specific line position in MLC ladder
Select	Start selecting MLC ladder content
Cut	Cut the selecting MLC ladder content
Copy	Copy the selecting MLC ladder content
Paste	Paste the selecting MLC ladder content

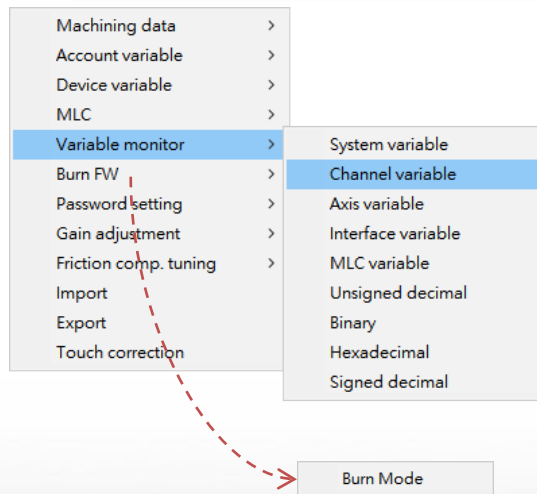
## DGN screen function key



Function key	Description
Force ON	Set the selected relay as ON in MLC ladder
Force OFF	Set the selected relay as OFF in MLC ladder
Start/Stop	Start or stop MLC execution
Search line	Jumping to the line in MLC ladder according to input line number
Search device	Jumping to the specific device in MLC ladder according to input device

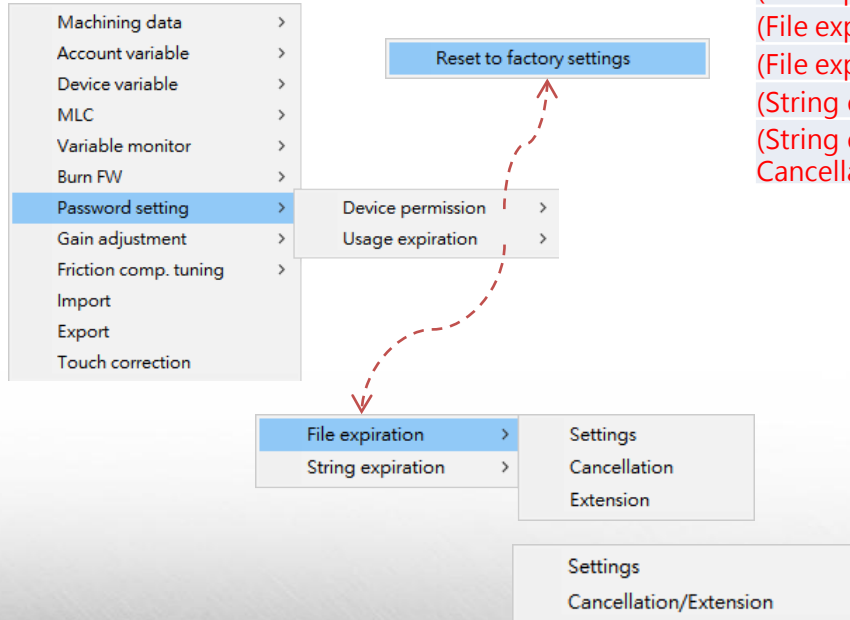


## DGN screen function key



Function key	Description
System variable	Display VS variables in "Variable Monitor table"
Channel variable	Display VC variables in "Variable Monitor table"
Axis variable	Display VA variables in "Variable Monitor table"
Interface variable	Display VH variables in "Variable Monitor table"
MLC variable	Display VM variables in "Variable Monitor table"
Unsigned decimal	Change display format as unsigned decimal in "Variable Monitor table"
Binary	Change display format as binary in "Variable Monitor table"
Hexadecimal	Change display format as hexadecimal in "Variable Monitor table"
Signed decimal	Change display format as Signed decimal in "Variable Monitor table"
Burn Mode	Enter burn mode for FW upgrade when reboot system

## DGN screen function key



Function key	Description
Reset to factory setting	Switch to "reset factory setting" screen
(File expiration) Settings	Switch to "file expiration setting" screen
(File expiration) Cancellation	Switch to "file expiration cancellation" screen
(File expiration) Extension	Switch to "file expiration extension" screen
(String expiration) Settings	Switch to "string expiration setting" screen
(String expiration) Cancellation/Extension	Switch to "string expiration cancellation/extension" screen

## DGN screen function key

Machining data	>	
Account variable	>	
Device variable	>	
MLC	>	
Variable monitor	>	
Burn FW	>	
Password setting	>	
Gain adjustment	>	Built-in system page
Friction comp. tuning	>	Next axis
Import		Read servo
Export		Gain calculation
Touch correction		Write gain
		Write resonance
		Start/Stop
		Jog left
		Jog right
		Positioning 1
		Positioning 2
		Tapping adjustment >
		Servo Par-Read servo
		Built-in system page
		SP1 tapping (1)
		SP1 tapping (2)
		SP2 tapping (1)
		SP2 tapping (2)

Function key	Description
(Gain adjustment) Built-in system page	Switch to system gain adjustment screen (ID:65562)
Next axis	Switch to next axis operation
Read servo	Read the gain parameters of the current axis
Gain calculation	Calculate the gain values according settings
Write gain	Write current gain values into the axis servo
Write resonance	Write current resonance values into the axis servo
Start/Stop	Start or stop the back and forth movement between point1 and point 2
Jog left	Forth jogging
Jog right	Back jogging
Positioning 1	Set the current position as point 1
Positioning 2	Set the current position as point 2
(Tapping) Built-in system page	Switch to system gain adjustment screen (ID:65563)
SP1 tapping (1)	Adjust tapping parameters about servo spindle 1
SP1 tapping (2)	Adjust tapping parameters about inverter spindle 1
SP2 tapping (1)	Adjust tapping parameters about servo spindle 2
SP2 tapping (2)	Adjust tapping parameters about inverter spindle 2
Servo Par-Read servo	Read all parameters from the current axis servo

## DGN screen function key

POS	>	
PRG	>	
OFS	>	
DGN	>	<div> <div>Machining data</div> <div>Account variable</div> <div>Device variable</div> <div>MLC</div> <div>Variable monitor</div> <div>Burn FW</div> <div>Password setting</div> <div>Gain adjustment</div> <div>Friction comp. tuning</div> <div>Import</div> <div>Export</div> <div>Touch correction</div> </div>
ALM	>	
GRA	>	
PAR	>	
OTHER	>	

Function key	Description
Import	Switch to system import screen (ID:65540 & 65541)
Export	Switch to system export screen (ID:65540 & 65541)
Touch correction	Switch to system touch correction screen



# Screen and Element

- Base screen
- POS screens
- PRG screens
- OFS screens
- DGN screens
- **GRA screens**
- PAR screens
- Others

## System recipe

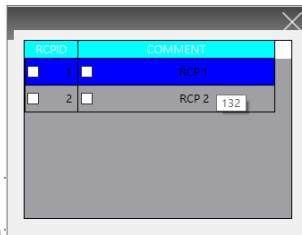
- Use this element to switch the processing parameter group and it works with 【Parameter group】 function.
- Properties:
  - 【System recipe】: set 0 to use parameter group 1, set 1 to use parameter group 2, and so on.
- Precaution:
  - The system only has 20 parameter groups.

參數群組配方

Properties	
System Recipe_001 {}	
<b>System Recipe</b>	0
FunctionKey	1, 1, 1
<b>Text</b>	
Text	
Size	12
Font type	Arial
Color	RGB(0, 0, 0)
Ratio	100%
<b>Picture</b>	
Picture Bank Name	None
Picture Name	None
Transparent Effect	No
Transparent Color	RGB(0, 0, 0)
<b>Others</b>	
Foreground Color	RGB(180, 180, 180)
Filled style	Gradient
Style	Standard
<b>Coordinates</b>	

## Recipe

- You can save current values of the specific elements as a recipe with the Write function, and load the saved values to these elements with the Read function.
- Properties:
  - 【Action】:
    - Export
    - Import
    - Read (load from recipe) (double clicking)
    - Write (save to recipe)
    - Delete (double clicking)
- Precaution:
  - You must enable the **Save the Recipe** function before using the element for saving the content.



配方

Recipe\_003 {}
0

Action	
FunctionKey	Export
Text	
Text	Import
Size	Read
Font type	Write
Color	Delete
Ratio	IZ
Picture	
Picture Bank Name	None
Picture Name	None
Transparent Effect	No
Transparent Color	RGB(0, 0, 0)
Others	
Foreground Color	RGB(180, 180, 180)
Filled style	Gradient
Style	Standard
Coordinates	

Interlock State	On
<b>Save the Recipe</b>	No
Show overrange message	Yes
Show #### when overra	Yes
Unit Conversion Settings	Detail...

## DXF transform

- Converts the fixed CAD file to the NC file.
- Properties:
  - 【Default disk】 : CF/ INTER/ USB
  - 【Default file name】 : the CAD file name (.dxf) to be converted
- Precaution:
  - Process steps:
    1. Press this element to select the default DXF file and enter the 【DXF parameters setup】 page.
    2. After setting the parameters, press the 【Convert】 function key to start the conversion.
    3. The system generates the NC program from this DXF file and automatically set it as the main machining program.

Properties	
DXF transform_001 {B.DXF}	
FunctionKey	1, 1, 1
Default disk	CF
Default file name	B.DXF
<b>Text</b>	
Text	B.DXF
Size	20
Font type	@Droid Sans Fallback
Color	RGB(0, 0, 0)
Ratio	100%
<b>Picture</b>	
Picture Bank Name	PicBank77
Picture Name	NewHMI020
Transparent Effect	No
Transparent Color	RGB(0, 0, 0)
<b>Others</b>	
Foreground Color	RGB(180, 180, 180)
Filled style	Gradient
Style	Raised
<b>Coordinates</b>	



## DXF transform



## Teach programming current coordinate

- Displays the current coordinate system such as machine or absolute for the teaching program.

## Teach programming current plane

- Displays the current plane such as G17, G18, or G19 for the teaching program.

TeachPlane

Properties □ ×

Teach programming current flat\_013 {}

0

Text	
Size	12
Font type	Arial
Color	■ RGB(0, 0, 0)
Ratio	100%
Others	
Filled style	Gradient
Style	Sunken
Border Color	■ RGB(180, 180, 180)
Background Color	■ RGB(180, 180, 180)
Transparent	255
Coordinates	

TeachCoord

Properties □ ×

Teach programming current coordinate\_012 {}

0

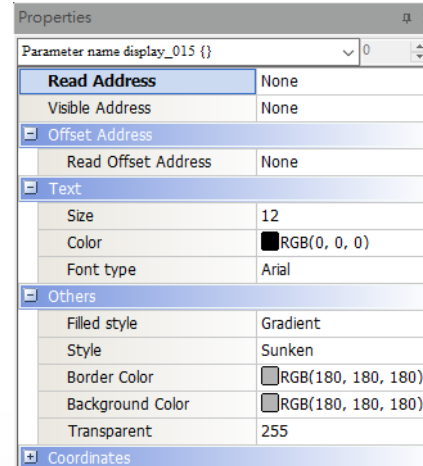
Text	
Size	12
Font type	Arial
Color	■ RGB(0, 0, 0)
Ratio	100%
Others	
Filled style	Gradient
Style	Sunken
Border Color	■ RGB(180, 180, 180)
Background Color	■ RGB(180, 180, 180)
Transparent	255
Coordinates	

Plane	Coord Sys	Axis			
<input type="checkbox"/> G17	<input type="checkbox"/> Mech.	<input type="checkbox"/> X	<input type="checkbox"/> A	<input type="checkbox"/> U	
<input type="checkbox"/> G18	<input type="checkbox"/> Abs.	<input type="checkbox"/> Y	<input type="checkbox"/> B	<input type="checkbox"/> V	
<input type="checkbox"/> G19		<input type="checkbox"/> Z	<input type="checkbox"/> C	<input type="checkbox"/> W	

## Parameter name display

- Displays the corresponding parameter name.
- Properties:
  - **【Read address】** :
    - “PAR” is the system parameter type.
    - “SP” is the servo parameter type.
    - “ST” is the system status and version.

**【Parameter manager】** element can replace this element function!



## Parameter range display

- When you select a parameter on screen, this element shows the input range of this parameter.

FACE1.NC		1	2019/07/09	16:04:40
號碼	參數名稱		數值	
309	圓弧半徑進給率	R	1500	
310	圓弧最小進給率	R	100	
311	轉角最大進給率	R	500	
312	轉角速度調整準位	R	6	
313	平滑調整準位	R	0	
314	預設切削進給率	F	0	
315	G00倍率0%進給速度		100	
316	G00進給速度	F	6000	
317	G00加減速時間常數	R	200	
318	切削最大進給率	F	5000	
319	切削加減速時間常數	R	200	

範圍: 0~20000

就緒 自動執行 啟動 暫停 復位

## Data Display

XX ~ XX

Properties

Parameter range display\_001 {} 0

**Visible Address** None

**Text**

Size 12

Color RGB(0, 0, 0)

Font type Arial

**Others**

Filled style Gradient

Style Sunken

Border Color RGB(180, 180, 180)

Background Color RGB(180, 180, 180)

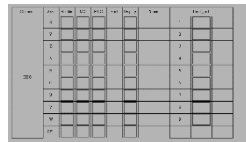
Transparent 255

**Coordinates**

【Parameter manager】 element can replace this element function!

## Channel settings

- Integrated channel configuration functions.
  - Enable/disable the axis
  - NC axis / MLC axis selection
  - DMCNET station port number setting
  - Display /not to display the axis information
  - Axis name setup
  - Display the DMCNET port in use



通道	軸	啟用	NC	MLC	埠	顯示面板	名稱	已使用埠
CH 0	X	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		1	<input checked="" type="checkbox"/>	X	1 <input checked="" type="checkbox"/> X
	Y	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		2	<input checked="" type="checkbox"/>	Y	2 <input checked="" type="checkbox"/> Y
	Z	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		3	<input checked="" type="checkbox"/>	Z	3 <input checked="" type="checkbox"/> Z
	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	<input checked="" type="checkbox"/>	A	4 <input checked="" type="checkbox"/> A
	B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	B	5 <input checked="" type="checkbox"/> B
	C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		6 <input checked="" type="checkbox"/>
	U	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		7 <input checked="" type="checkbox"/>
	V	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		8 <input checked="" type="checkbox"/>
	W	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		9 <input checked="" type="checkbox"/>
	SP1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		

通道	軸	啟用	NC	MLC	埠	顯示面板	名稱	已使用埠
CH 0	X	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		1	<input checked="" type="checkbox"/>	X	1 <input checked="" type="checkbox"/> X
	Y	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5	<input checked="" type="checkbox"/>	Y	2 <input checked="" type="checkbox"/> Y
	Z	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		3	<input checked="" type="checkbox"/>	Z	3 <input checked="" type="checkbox"/> Z
	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	<input checked="" type="checkbox"/>	A	4 <input checked="" type="checkbox"/> A
	B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	B	5 <input checked="" type="checkbox"/> B

Channel 0 Axis Y

Port Num:

離開 Enter

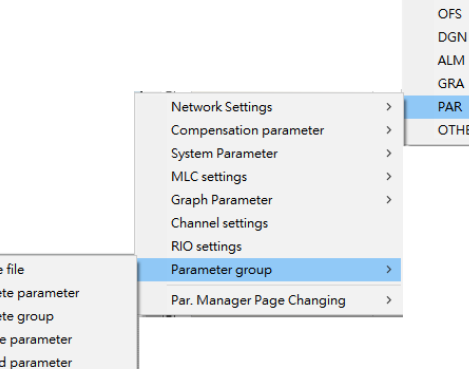
## RIO settings

- Integrated Remote module setting function.
  - Enable/disable the module
  - RIO type setup
  - Polarity setting (NC/NO)
  - Remain the output status while disconnected
  - Home dog and limit sensor setup
  - Filter level

RIO Port Status	enable	RIO Type	Polarity	Disc.	output level
1	OFF	0	00000000		
2	OFF	0			
3	OFF	0			
4	OFF	0			
5	OFF	0			
6	OFF	0			
7	OFF	0			
8	OFF	0			

RIO Port Status	啟用	RIO型態	Polarity	Disc.	原點極限設定		
1	OFF	0	00000000		埠	啟用	軸
2	OFF	0			1	<input type="checkbox"/>	X
3	OFF	0			2	<input type="checkbox"/>	Y
4	OFF	0			3	<input type="checkbox"/>	Z
5	OFF	0			4	<input type="checkbox"/>	A
6	OFF	0			5	<input type="checkbox"/>	
7	OFF	0			6	<input type="checkbox"/>	
8	OFF	0			7	<input type="checkbox"/>	
9	OFF	0			8	<input type="checkbox"/>	
					9	<input type="checkbox"/>	
					濾波等級		
					0		

- You can edit machining parameters as a group to optimize various machining applications. The CNC has the function for dynamically switching the machining parameters.

[illegible]

Parameter Manager

Parameter group

PAR

OTHER

Network Settings

Compensation parameter

System Parameter

MLC settings

Graph Parameter

Channel settings

RIO settings

Save file

Delete parameter

Delete group

Write parameter

Read parameter

Sort parameter

Distribute evenly

Par. Manager Page Changing

POS

PRG

OFS

DGN

ALM

GRA

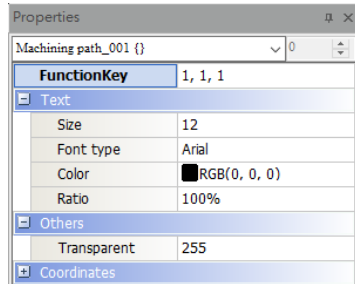
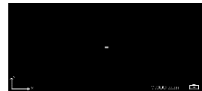
Properties

Parameter group\_001 { } 0

FunctionKey	1, 1, 1
<b>Text</b>	
Size	12
Font type	Arial
Color	RGB(0, 0, 0)
Ratio	100%
<b>Others</b>	
Transparent	255
<b>Coordinates</b>	

## Machining path

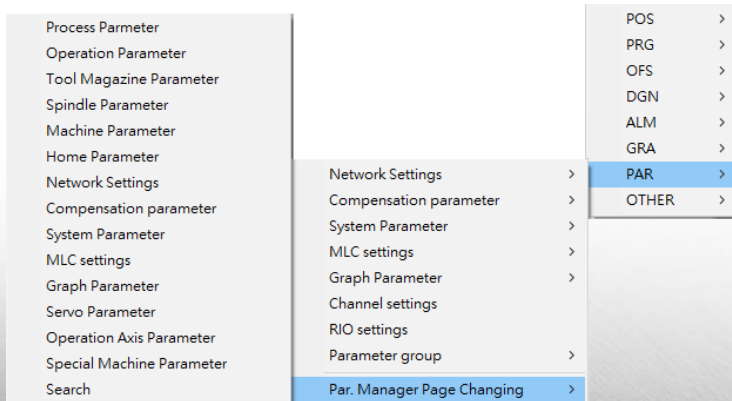
- It shows the current machining contour or the complete contour preview of the current main program.
- You can set the color, drawing plane, contour line width, and other properties of this element display.





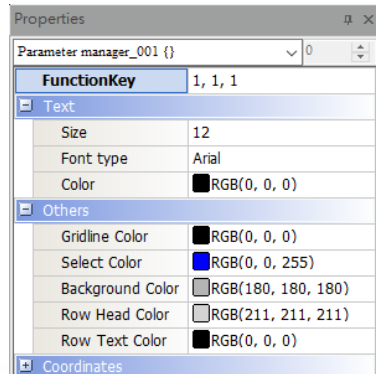
## Parameter manager

- This is for parameter display and setting (sorted by group). You can switch between groups with the function key.
- Enter "S+ parameter number" to go to the specified parameter setting.



ParID	參數名稱	Param Value
309	圓弧半徑進給率	0
310	圓弧最小進給率	0
311	轉角速度限定值	0
312	切削速度調整率	0
313	平滑調整率	0
314	預設切削進給率	0
315	F0 速度	0
316	G00 Rapid speed	0
317	G00 Rapid ACC/DEC time	0
318	最大切削移動速度	0
319	切削加速時間常數	0
320	切削S曲線時間常數	0
321	切削減速時間常數	0
322	切削S曲線時間常數	0
323	圓弧半徑誤差設定	0

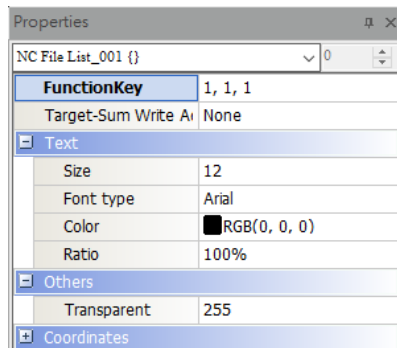
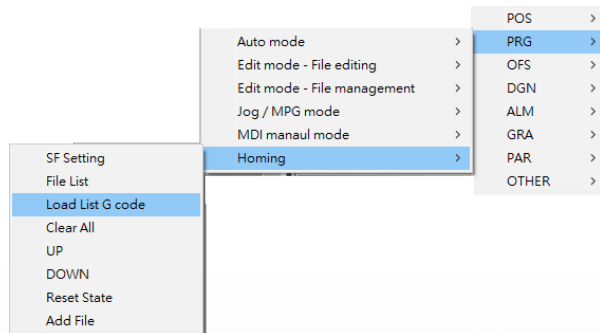
Range : 10-50000 (mm/min)



## NC file list

- We can select multiple files and sort them, and the system will execute them in order with specific MLC control.

檔案序列		22	N1	18:16:25																									
G4X5. G1X20.Y20. X0 Y0 M30		<table><tr><th>編號</th><th>NC檔</th><th>次數</th><th>狀態</th></tr><tr><td>1</td><td>22</td><td>1</td><td>未加工</td></tr><tr><td>2</td><td>333</td><td>1</td><td>開料</td></tr><tr><td>3</td><td>0728-1</td><td>1</td><td>加工完成</td></tr><tr><td>4</td><td>0803</td><td>1</td><td>加工完成</td></tr><tr><td>5</td><td>0810</td><td>1</td><td>加工完成</td></tr></table>				編號	NC檔	次數	狀態	1	22	1	未加工	2	333	1	開料	3	0728-1	1	加工完成	4	0803	1	加工完成	5	0810	1	加工完成
編號	NC檔	次數	狀態																										
1	22	1	未加工																										
2	333	1	開料																										
3	0728-1	1	加工完成																										
4	0803	1	加工完成																										
5	0810	1	加工完成																										
■絕對座標		<table><tr><td>X1</td><td>0.0000</td><td>切削倍率 150</td></tr><tr><td>Y</td><td>0.0000</td><td>快速倍率 75</td></tr><tr><td>Z1</td><td>0.0000</td><td>主軸倍率 100</td></tr><tr><td></td><td></td><td>0 120</td></tr></table>				X1	0.0000	切削倍率 150	Y	0.0000	快速倍率 75	Z1	0.0000	主軸倍率 100			0 120												
X1	0.0000	切削倍率 150																											
Y	0.0000	快速倍率 75																											
Z1	0.0000	主軸倍率 100																											
		0 120																											
		上一頁		下一頁																									
寸動	* 警報 *	RPD 75 %	JOG 2000	S 100 %	mm 伺服未備妥																								
<= F1	序列清除 F2	程序選擇 F3	程序載入 F4	狀態重置 F5	程序上移 F6																								
			程序下移 F6	>>																									

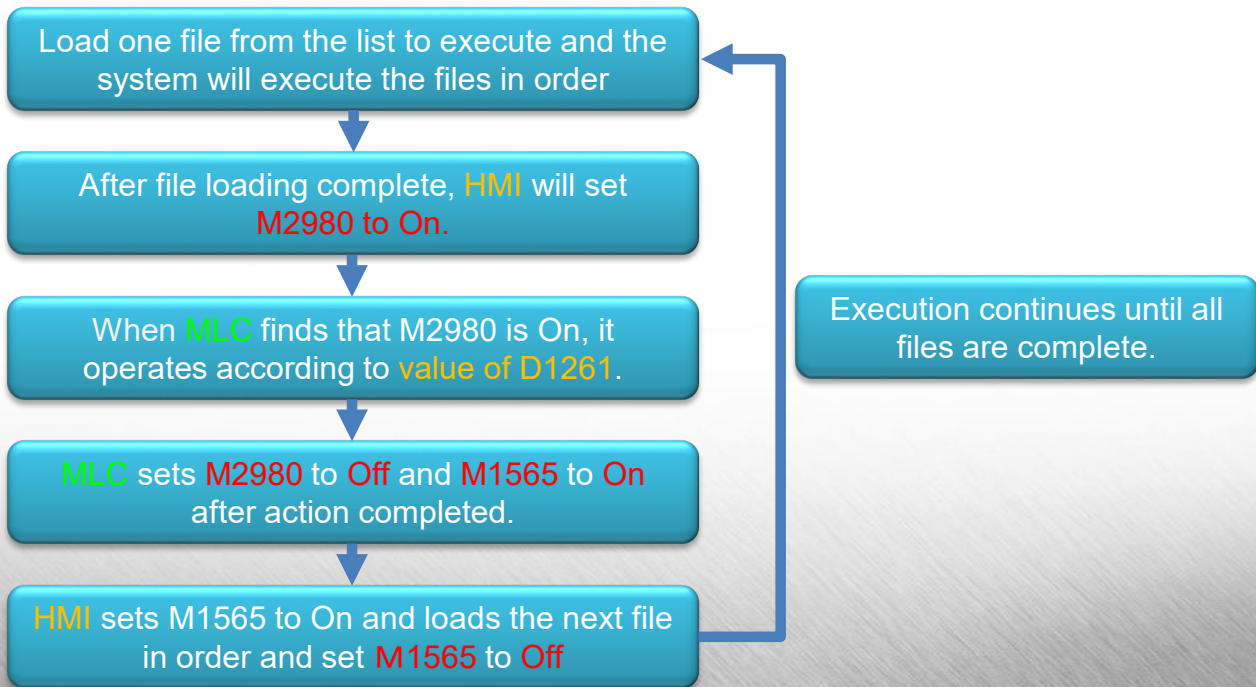


### Function keys

- File list (Put selected files into this list in file manager)
- Load list G code (Load the selected file on this element to execute)
- Clear all (Clear all files in this element)
- Up (Move the selected file up in the file list)
- Down (Move the selected file down in the file list)
- Reset state (Reset the status and the counter of every file as default)
- Add file (Add a file into the file list)

## NC file list

- Control procedure with special M & D



## NC file list

- Description of special M & D:
  - D1261: HMI reads the setting status and write the corresponding value to D1261.  
0: Unprocessed; 1: Load; 2: Processing; 3: Printing; 4: Complete

When the HMI starts to load a new NC file, the HMI first writes the status value to D1216. Next, the MLC assigns the D1261 value to change the displaying text of the current file status.

- M2980 : After the HMI finishes loading a new file, HMI notifies the MLC with this flag.  
HMI sets M2980 to on, and then the MLC will set it to off while MLC receives this trigger flag.
- M1565 : When MLC finishes machining, MLC will notify HMI to load the next file in order.  
MLC sets M1565 to on, and then the HMI sets it to off.
- #9500: Using coordinate (HMI will write 54 or 55 in this macro variable)

If there is coordinate information in the filename, HMI will write the value 54 or 55 to #9500. Then, you can use the macro function to switch the machining coordinate system with #9500.



## B Series Controller

# Security Level and Expiration

# Security Level and Expiration

## Security Management

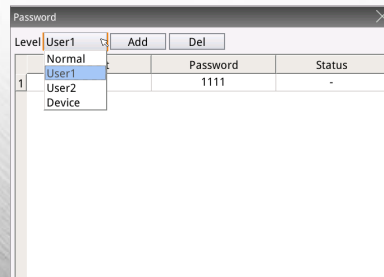
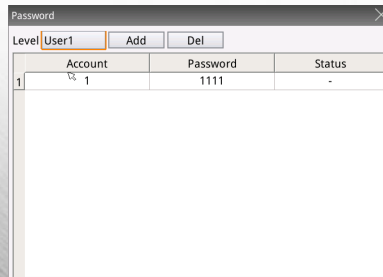
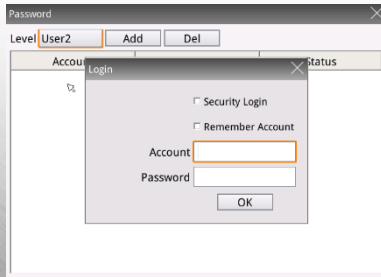
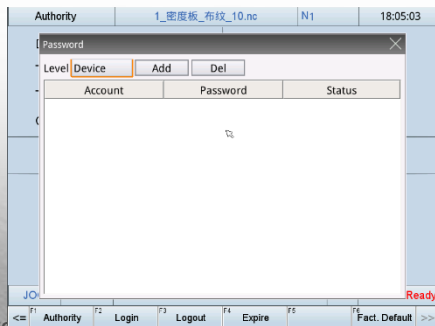
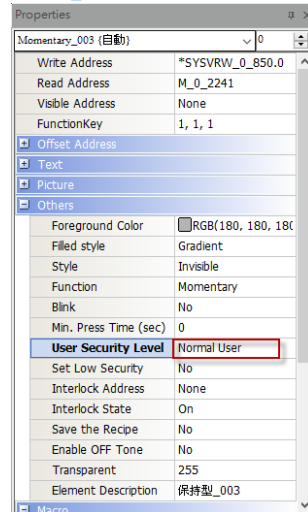
- Security level:
  - Highest security : the default password is 12345678, and it allow to do important operation such as download or upload screens.
  - Device permission: default account is 1234 and password is 1234.
  - User permission 2: default account is 2 and password is 2222.
  - User permission 1: default account is 1 and password is 1111.
  - Normal user: default account is 0 and password is 0000.
- Login:
  - Enter the account and its password to activate corresponding security level.
- Logout

Authority	1_密度板_布纹_10.nc	N1	13:41:17
Date	2020/03/23	Target Stocks	200
Time	13:41:17	Comp. Stocks	0
Total Time	<div> <div>Login</div> <div> <input type="checkbox"/> Security Login           <input type="checkbox"/> Remember Account         </div> <div>           Account <input type="text"/> </div> <div>           Password <input type="password"/> </div> <div>OK</div> </div>		
Cycle Time			
Expired Date			

JOG	* Alarm *	RPD 100%	JOG 2000	S 120%	mm	Servo not Ready
<=	F1 Authority	F2 Login	F3 Logout	F4 Expire	F5	F6 Fact. Default >>

## Security Management

- Security setup:
  - Users can set the security level about elements like button or input element.
- Security management:
  - Select the level then key in the account and password to active authority.
  - Check all accounts and their passwords of the same or lower level.
  - Add , delete or modify the account data of lower level.



## Expiration

1. Click the Expire Setup, Expire Release, or Expire Extend function key to show the dialog.
2. Insert the USB drive to the controller and press “G” to create the TP.hex file in the USB drive.
3. Upload the TP.hex file to the website, <https://172.29.72.7/Account/Login/?ReturnUrl=%2fHome%2fLock> , and modify it on the website.
4. Save the TP.hex in the USB drive and press “R” in the dialog box.



Result				
機身序號	延長天數	電池	Timestamp	註解
WC30EETN190700001	30	100	1550833189	<a href="#">Download</a>   <a href="#">Details</a>



# Differences in HMI DOPSoft

## Elements not available on CNC

- Button
  - System date and time
  - Screen capture
  - Remove storage
- Curve
  - Trend graph
  - X-Y chart
  - X-Y distribution
  - Curve input
- Sampling
  - Historical trend graph
  - Historical data table
  - Historical event table
  - Historical overview table
- Keypad



# Difference with HMI DOPSoft

## Removed elements

- Graph display
  - Real-time image
- Sampling
  - Operation log setup
- List
  - PDF view
  - Text viewer
- Multimedia
  - Camera

## How to transit from A series to B series

# Transit from A series to B series

## Screen definition

- Screen ID:
  - 1 - 1000 : Soft Panel (compatible with A series)
  - 1001 - 65534 : Standard screens
  - 65535 : Default base screen
  - 65536 - : System and function key screens (Fixed)

A series screen (Soft Panel)



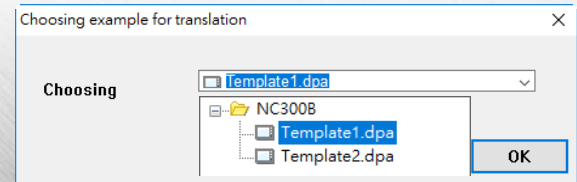
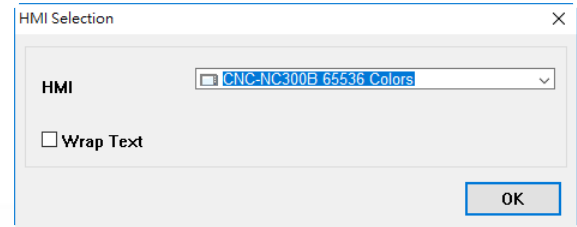
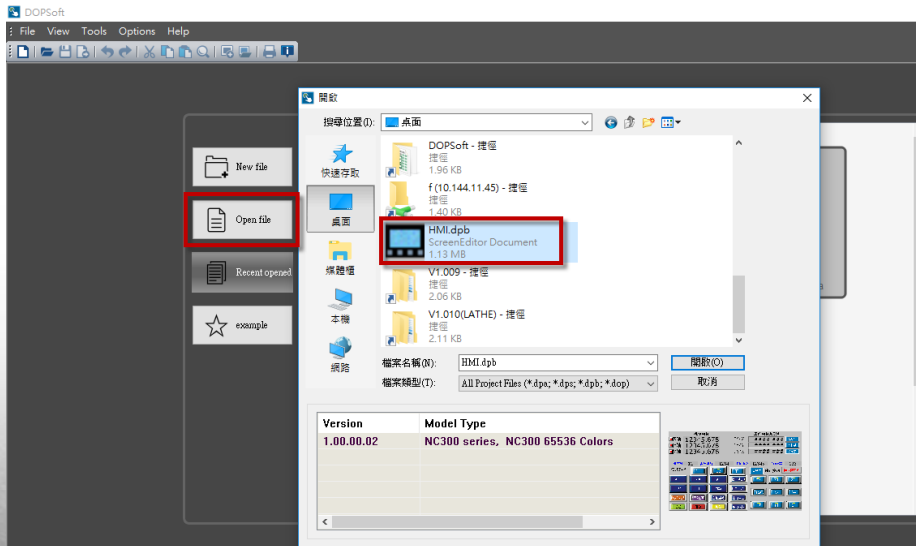
B series screen (screen: 1 - 1000)



# Transit from A series to B series

## Steps

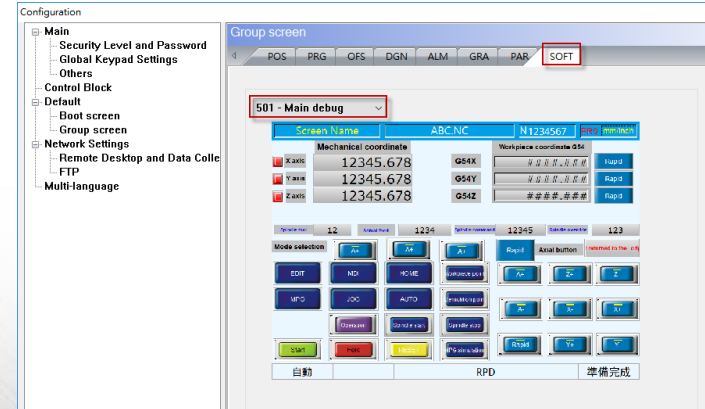
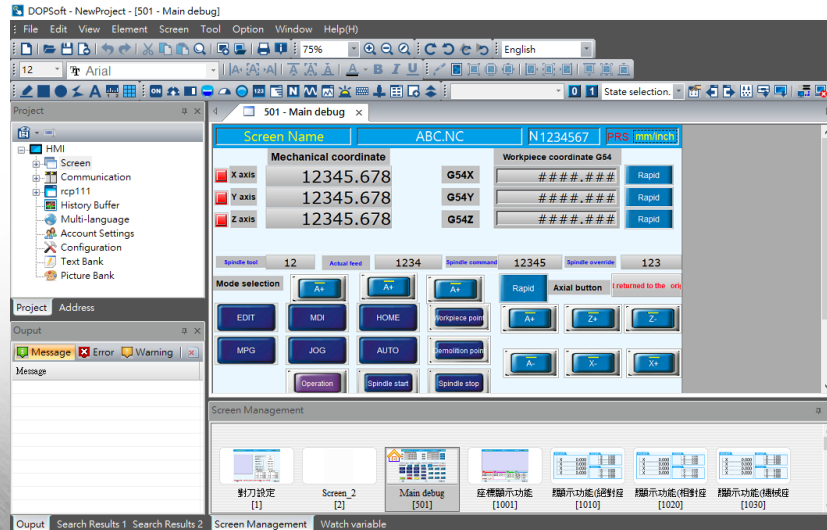
1. Open the project file (.dpb) of A series in the DOPSOFT.
2. Select the B series model to convert to.
3. Select the system project (.pda) to be combined as the template for B series.



# Transit from A series to B series

## Steps

4. The screen ID remains the same after the transition.
5. In **【Option】** → **【Configuration】** → **【Group screen】** , change the initial screen setting of group key **【SOFT】** .



Smarter. Greener. Together.

