USER'S MANUAL

Program Utility Jr.

STAR MICRONICS CO., LTD.
Machine Tools Division

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Program Utility Jr.

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Introduction

Thank you very much for purchasing “Program Utility Jr. (Hereafter, it is called “PU-Jr.”)”.
This manual explains the minimum method necessary for operating this item on the personal computer.
Please refer to the manuals of each maker issue for details of hardware (main body of the personal computer), basic software (OS), and the initialization of the personal computer.
Thank you very much for purchasing “Program Utility Jr.”.
Please confirm the following before use.

Request

You can use PU-Jr. on the multiple PC without password for 90 days after installation (as for trial period).
For continuous use after trial period, you need to get the password for each PC to be used or purchase USB protection key.
With considering the case that the PC on which this software is installed, can be changed due to the failure of PC etc., Star will issue password up to three times (including the initial issue) per one software. For fourth times (or more), the additional license is supposed to be purchased.
One password is issued per one license. We ask for your kind understanding.
Please fill in the purchase date in the ‘Guarantee conditions sheet’ in the manuals of ‘USB Converter’ and ‘PU-Junior Adapter’.

Note)
The password is not required on a PC with the PU-Jr. USB protection key(#72593).
The password is not required on a PC with the USB protection key for SD-Editor.
The password is not required when e-camo Ver3 or later is installed in the PC, and the USB protection key for e-camo is used.
To get password, copy “PU-Jr. : Password Request Sheet” on the next page and fill in the contents then send it to the maker or the agency by facsimile.

PU-Jr. Password Request Sheet

Please have the following content filled in, and send it to the maker or the agency by e-mail.
(Password Request Sheet: \PasswordRequestSheet\English\PasswordRequestSheetE.pdf)

Note)
- **Please acknowledge beforehand that once the password is issued, the software cannot be returned regardless of any reasons.**
- **The password is not required on a PC with the PU-Jr. USB protection key (#72593).**
- **The password is not required on a PC with the USB protection key for SD-Editor.**

Date	／ ／
Name of your company	
e-mail address	
Operating System	○ Windows 7 ○ Windows 8 ○ Windows 8.1 ○ Windows 10 ○ Other ( )
Manufacturer and model of the PC	
Version of PU-Jr.	

Serial number of PU-Jr.

No. | | | | | | | | |

ID code (Indicated when the password is input. Refer to the clause 3-2.)

				-					-				

Password

Note) Don't fill in this column by users.

A support website for PU-Jr. users

The Star Micronics home page (http://www.star-m.jp/eng/)

provides information that will prove useful when using the PU-Jr. software, other up-to-date information, details on upgrades, examples of process settings, and a wide range of other information.

After accessing the Star Micronics homepage, click on

[Download] > [Automatic Lathes].

Then, enter the following user name and password to display the support page.

User name:	STARWOWS
Password:	ORANGE2001

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CHAPTER 1
Outline

1 Outline

1-1 General Specifications

Target machine	Machine tool manufactured by Star Micronics
PC operating environment	OS Windows Vista® Windows® 7 Windows® 8 Windows® 8.1 Windows® 10 Windows® 11 Hardware (*1) (*2) CPU: Depending on the Windows' requirement (*3)(*4) Memory: Depending on the Windows' requirement (*4) Hard disk: 10MB or more capacity Drive: Optical drive Display: 640x480 or higher resolution (*5) Pointing device: mouse, touch-pad, trackball, etc Communication port; at least one of the following items - Serial port (RS-232C) performing under the standard driver of Windows - USB port (*6) - PC card slot (Type II) - LAN port
	*1) Adequate performance may not be obtained due to the computer specifications and/or the operating conditions. *2) "PU-Jr." and other applications may affect the processing speed of each other. *3) PC with two or more CPU is not applied. *4) Refer to the Windows' specifications. *5) 16 color display mode is not applied. *6) Performance with a USB device not supplied from Star cannot be guaranteed. * This software issues up to 3 passwords. If you want to use it with two or more PCs, please purchase the required sets of the software.

PU-Jr. adapter (Supplied with PU-Jr.)	Attached to the cable between PC and the machine. See PU Junior adapter manual, latter part of this manual, for details. STAR purchase part code: **86910300**
USB Converter (Supplied with PU-Jr.)	Attached to PC USB port. See USB Converter manual, latter part of this manual, for details. STAR purchase part code: **86997112**

RS-232C Cable (Option) *For a PC equipped with a Dsub 9(M) pin connector as serial port.	For Star Machines except ECAS, SI series	Dsub 25(M) pin -- 9(F) pin cross cable; - 3m /STAR purchase part code: **86870102** - 15m /STAR purchase part code: **86870104**
		*For use of the cable other than above By using together the included PU-Jr. adapter, you can use commercially available Dsub 9(F) pin -- 9(F) pin 'straight' cable.
	For ECAS, SI series	* Dsub 9(F) pin -- 9 pin(F) straight cable - 3m STAR purchase part code: **86870101** - 5m STAR purchase part code: **86870106** - 15m STAR purchase part code: **86870105**
		*You can use commercially available Dsub 9(F) pin -- 9(F) pin 'straight' cable.

PU-Jr. USB Protection Key (Option)	The hardware key for using PU-Jr. without needing a password. See USB Protection Key manual, latter part of this manual, for details. STAR purchase part code: **72593**

・Cable specification

Fig.1-1-1　25pin - 9pin cross cable

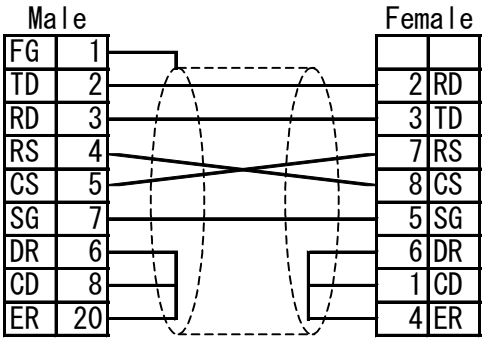
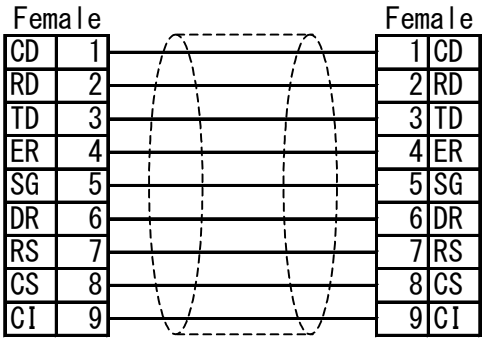


Fig.1-1-2　9pin - 9pin straight cable



When using cable used usually for “Data manager” for AT compatible computer (DOS/V), conversion adaptor Dusb25 (Female) and Dsub9 (Male) or conversion cable is needed.
Please prepare the appropriate adaptor or cable from the following list.

Manufacturer	Products name	Model
SANWA SUPPLY INC.	RS-232C conversion adaptor	D09-9F25F
	RS-232C conversion cable	KRS-9F25F02K(0.2m)
BUFFALO INC.	RS-232C conversion adaptor	AA830

∗ Above information is as of March 2014. Check for the details with Web page or catalog etc. of manufacturer.

1-2 Software

Specifications	Details	Remarks
Main screen	* Program folder management * Managing path 1, 2 and 3 programs as one file is available * Managing 3-channel programs for ECAS as one file is available * Program I/O between PC and machine * About transmission, 3-channel programs and sub programs for ECAS can be sent and received altogether as a batch. * Program list comment display * Printing the list of programs * Deleting, copying and renaming programs in the machine by using a LAN connection	*Operations similar to Windows Explorer
Program editing function	* Simultaneous display of path 1, 2 and 3 programs * The 3-channel programs for ECAS are displayed in one window * Search function * Cut and Paste * Automatic space insert/delete between words changeover * Simultaneous display of multiple programs (overlap, split) * Calling of calculator function * 1-path program two/three column printing * M-Code Hit and Fit display and print * Color setting of Comment, Label and 'M-Code Hit and Fit' * Scroll synchronously the whole channel * M-Code / T-Code / O Number List * Programs created by other applications can be edited * Bookmark function * Template function * Program Check function * Command Help	

Specifications	Details	Remarks
Coordinate calculation function	* Calculation of various intersections and circles * Calculation result copy function * 1, 2, 3, 4 or 5 digit after decimal point changeover * Angle: minute/second unit changeover	
Tooling function	* NC programs and tool information can be controlled collectively * Printing the tooling sheets based on tool information * Printing the process sheets	

CHAPTER 2
Setting

2 Setting

2-1 Installing the software

Note) You need to log-on with a user name (an account name) belongs to the administrators group.

1) Start Windows. (Close all the applications.)

2) Insert the Product disc of PU-Jr. in the optical drive, then the automatic execution program is started.

For Windows 11, Windows 10, Windows 8.1 or Windows 8

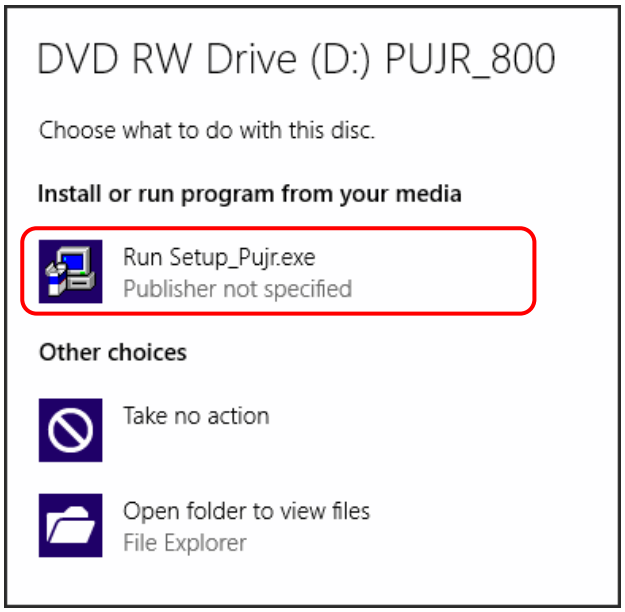
Click on the following screen when it appears.

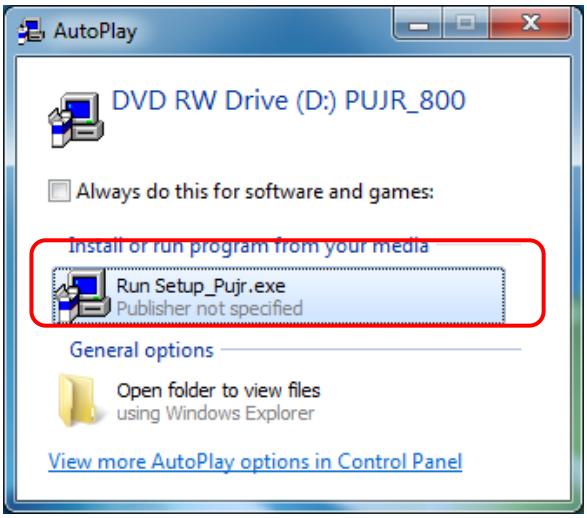
→ go to step 3)

For Windows 7 or Windows Vista → go to step 3)

Note) If the automatic execution program is not started, double click "Setup_Pujr.exe" in the optical drive, using Windows Explorer etc.

3) Following dialog is displayed. Click [Run Setup_Pujr.exe].





The figure on the left is for Windows 8.1, and the figure on the right is for Windows 7.

4) “User Account Control” dialog is displayed. Click [Yes]*1.

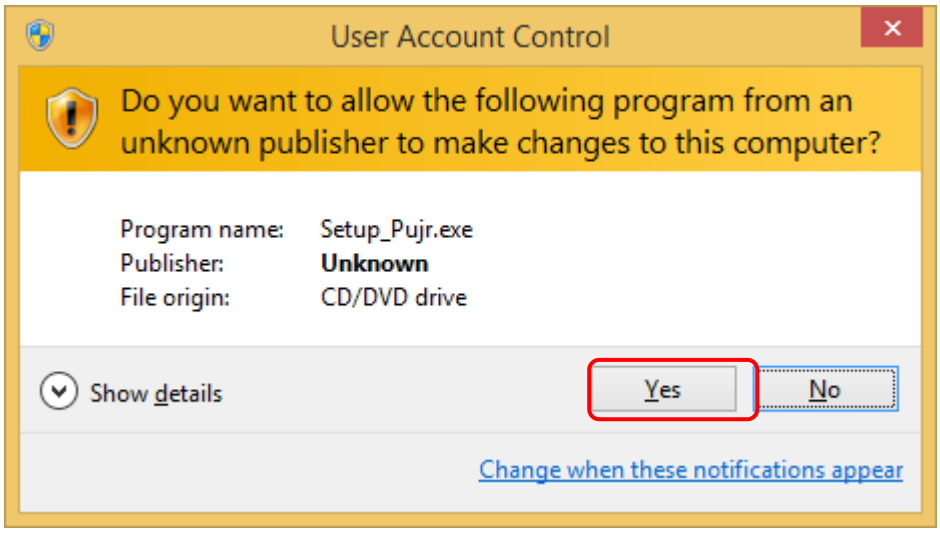
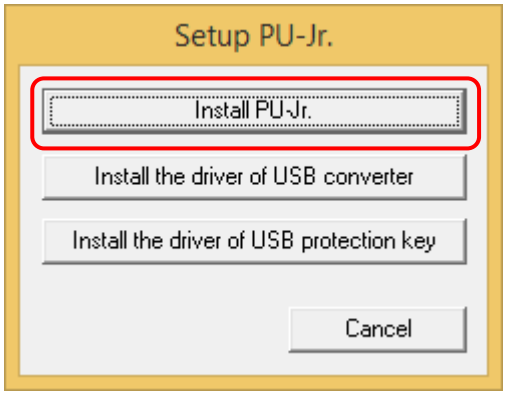


Figure in the case of Windows 8.1

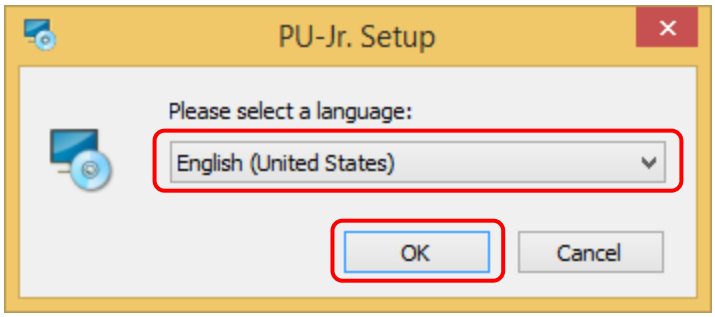
*1) In the case of Windows Vista, click [Allow].

5) Following dialog is displayed. Click [Install PU-Jr.].

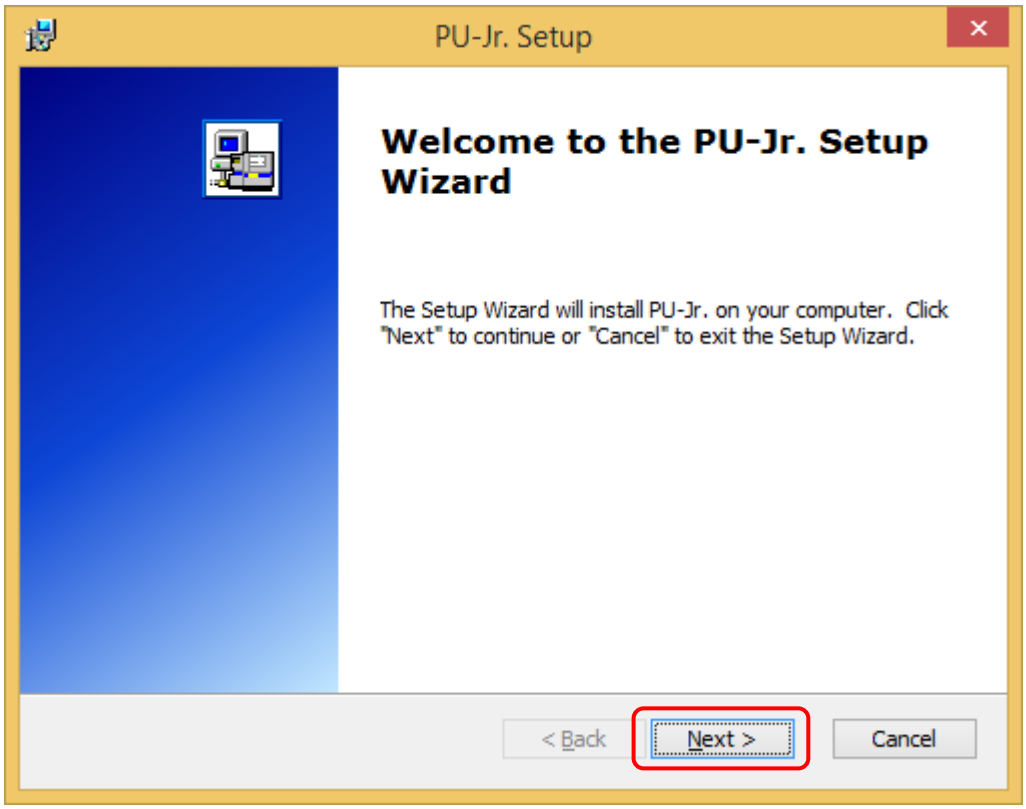


Note) * See "USB Converter manual" for [Install the driver of USB converter].
*** See "USB Protection Key manual" for [Install the driver of USB protection key].**

6) Choose a language from the menu in the “Choose Setup language” dialog, and then click [OK].

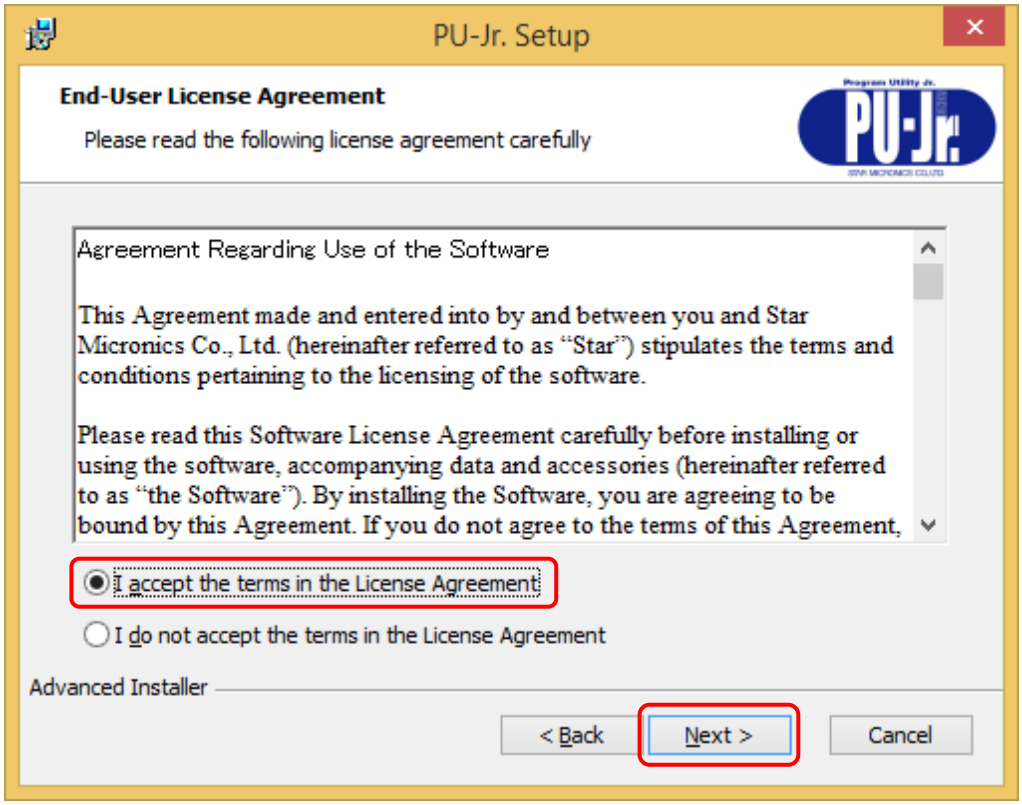


7) Following dialog is displayed. Click [Next >].



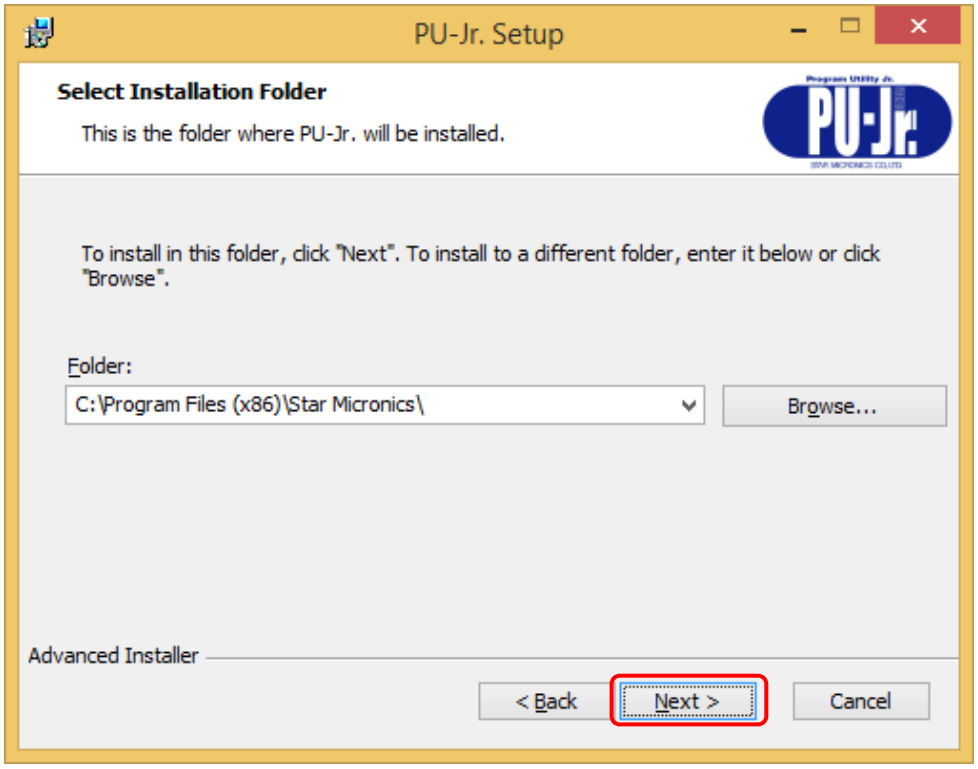
8) Following dialog is displayed.

Select [I accept the terms in the license agreement] if you agree with the contents, and click [Next >].

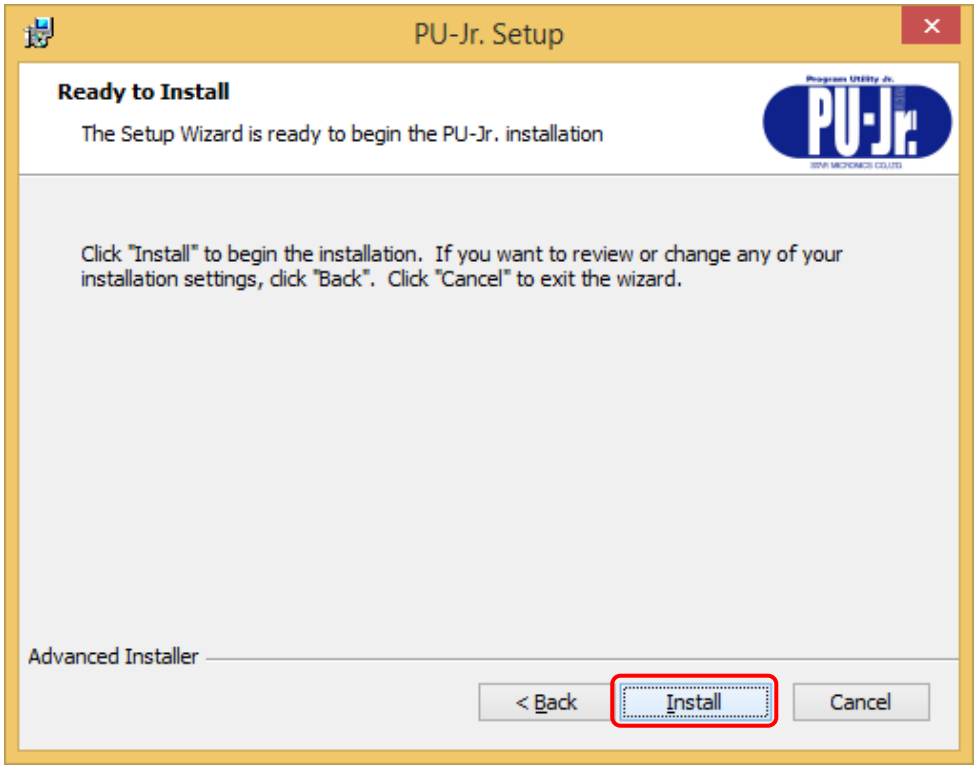


9) Following dialog is displayed.

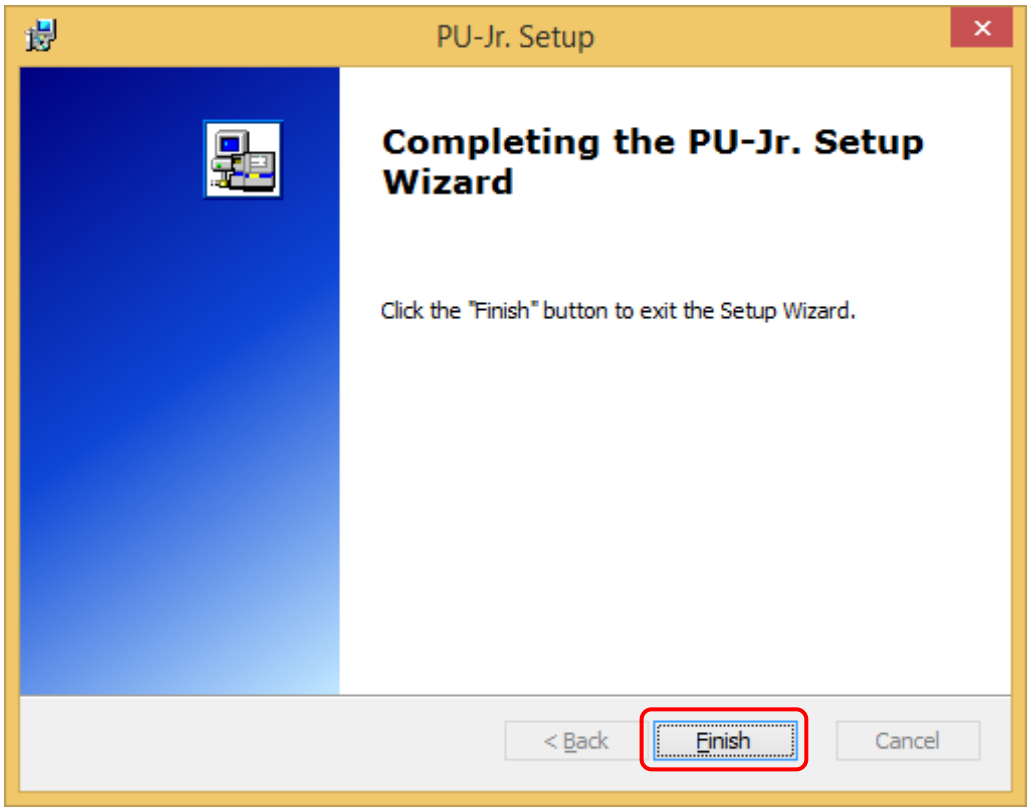
Select the folder where this software will be installed, and click [Next >].



10) Following dialog is displayed. Click [Install], then automatically start installing.



11) Following dialog is displayed. Click [Finish].



2-2 Uninstalling the software

Note) Please perform this operation when you uninstall the software.

1) Displaying [Control Panel]

For Windows 11

[Start] -> [All apps] -> [Windows Tools] -> [Control Panel]

For Windows 10

[Start] -> [Windows System] -> [Control Panel]

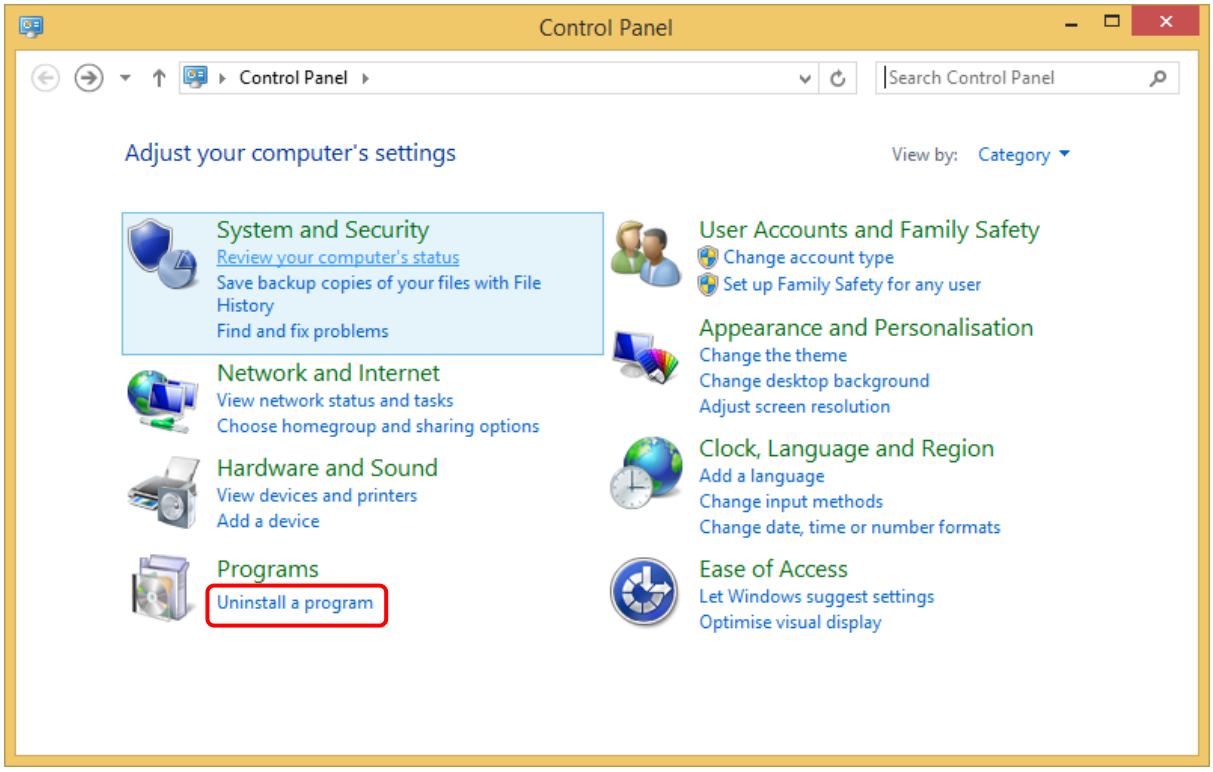
For Windows 8.1 or Windows 8

Click on [Control Panel] menu that appears after clicking on the bottom-left part of the screen.

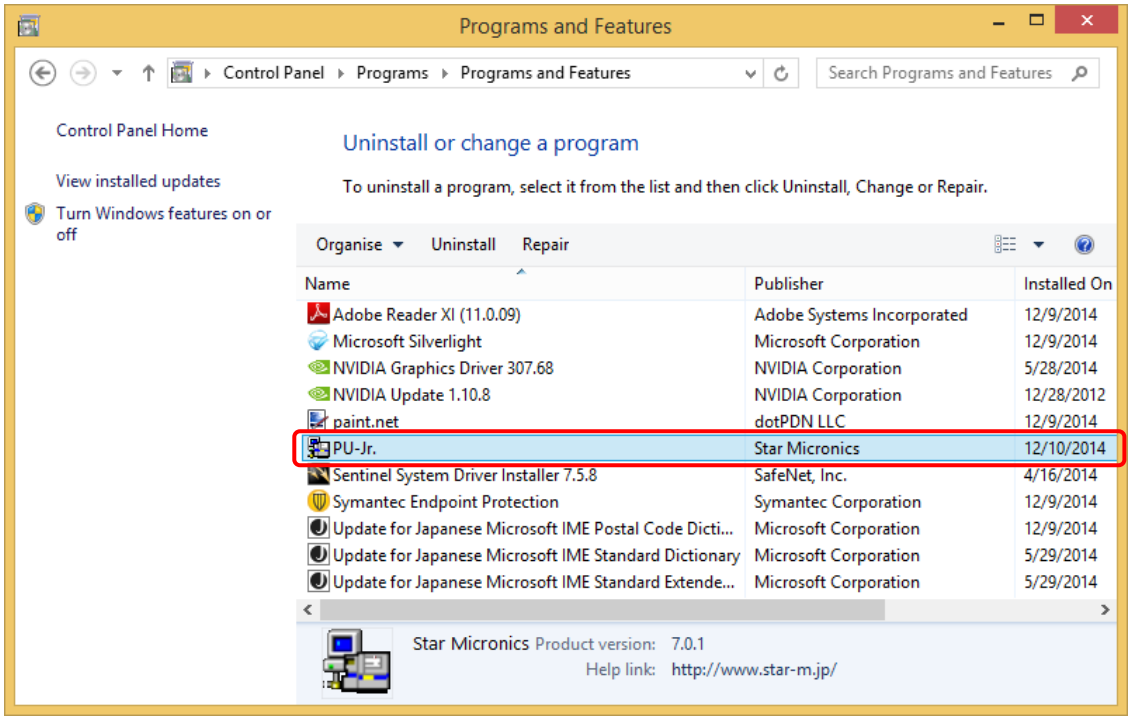
For Windows 7 or Windows Vista

Choose [Control Panel] from [Start].

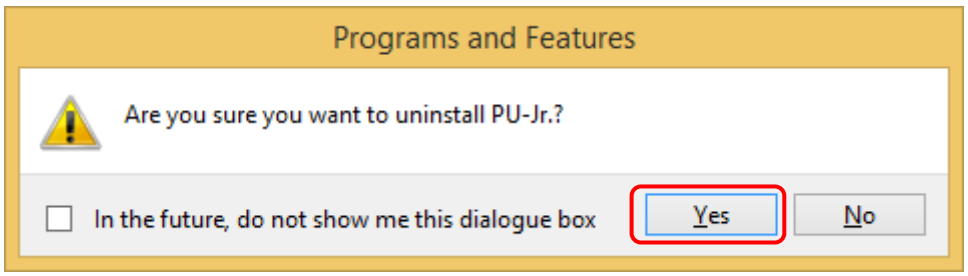
2) Double click the [Uninstall a program].



3) Double click the [PU-Jr.].



4) Following dialog is displayed. Click [Yes].



5) "User Account Control" dialog is displayed. Click [Yes][*1], then automatically start uninstalling.

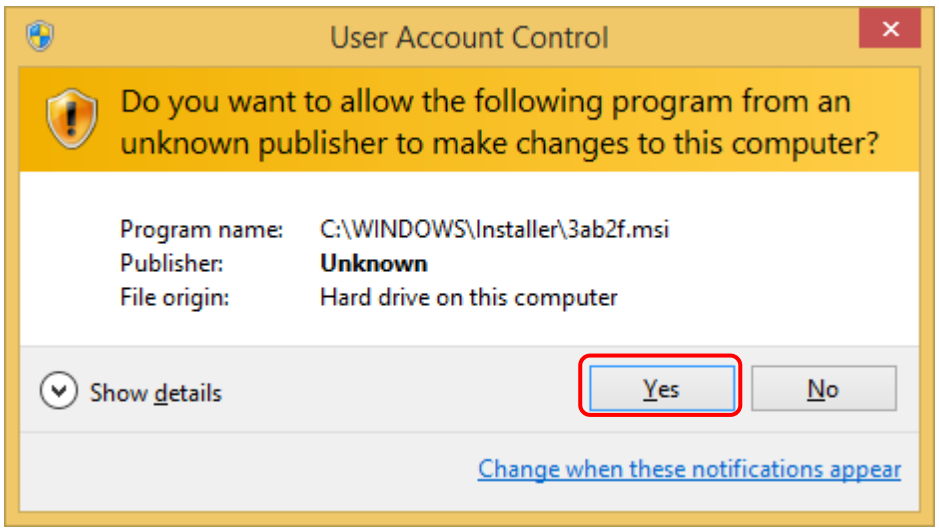


Figure in the case of Windows 8.1

*1) In the case of Windows Vista, click [Allow].

2-3 CNC side setting

It is necessary to set the parameters related to the I/O at the CNC side in order to input and output the programs between PC and the machine. Please refer to the user's manual of CNC for the method of setting the parameters.
Please match a set value of "Baud rate (9600 and 19200, etc.)" and "Stop bit (1 or 2)" between parameters of the communication setup of this software (Refer to the clause "3-8-2 Communication setup dialog") and CNC.
Moreover, please give the code used as "ISO".

2-3-1 FANUC

2-3-1-1 For FS0

In the Setting Display, set up "TVON=**0**", "ISO=**1**", "I/O=**0**".
Set up the following parameters.

No.0002: **1**xxx x**0**x**S**

7	6	5	4	3	2	1	0
NFED 1					ASR33 0		STP2 0: Stop bit1 1: Stop bit2

No.0018: x**0**xx xxxx *) Except FS0T-A/0TT-A

7	6	5	4	3	2	1	0
	TVC 0						

No.0038: **10**xx xxxx

7	6	5	4	3	2	1	0
RSCMD1 1	DEVFL1 0						

No.0552: BRATE0 (Baud rate)
8: 1200 bps
9: 2400 bps
10: 4800 bps
11: 9600 bps

The above-mentioned setting parameter screen and parameter screen will be displayed by pushing [PAGE] key after the [DGNOS PARAM] key is pushed.

2-3-1-2 For FS2/3

In the Setting Display, set up "ISO=**1**", "I/O CHANNEL=**0**".
Set up the following parameters.

No.0005: **1**xxx x**0**x**S**

7	6	5	4	3	2	1	0
NFED 1					ASR33 0		STP2 0: Stop bit1 1: Stop bit2

No.0068: BRATE0 (Baud rate)
1200: 1200 bps
2400: 2400 bps
4800: 4800 bps

The above-mentioned setting parameter screen and parameter screen will be displayed by pushing PAGE key after the PARAM key is pushed.

2-3-1-3 For FS6

In the Setting Display, set up "TV CHECK=**0**", "PUNCH CODE=**1**", "INPUT DEVICE 1=**0**", "INPUT DEVICE 2=**1**".
Set up the following parameters.

No.006: xxxx x**1**xx

7	6	5	4	3	2	1	0
					TVC 1		

No.007: **1**xxx xxxx

7	6	5	4	3	2	1	0
ICR 1							

No.311: **1**x**0**S BBBB

7	6	5	4	3	2	1	0
NFED2 1		RSCB2 0	STP22 0: Stop bit1 1: Stop bit2	BAD2 (Baud rate) 0111: 1200 bps 1000: 2400 bps 1001: 4800 bps 1010: 9600 bps			

No.340: **2** (IDVICE)
No.341: **2** (ODVICE)

The above-mentioned setting screen will be displayed by pushing SET key, parameter screen will be displayed by pushing PARAM key.

2-3-1-4 For FS10

Set up the following parameters.

No.0000: xxx0 1100

7	6	5	4	3	2	1	0
			EIA	NCR	ISP	CTV	TVC
			0	1	1	0	0

No.0020: 1 Interface No. of input device for foreground.

No.0021: 1 Interface No. of output device for foreground.

No.0022: 1 Interface No. of input device for background.

No.0023: 1 Interface No. of output device for background.

No.5001: 1 Device No. to be connected to RS-232C interface 1.

No.5110: 3 Specification No. of the device corresponding to the device No. 1.

No.5111: S Stop bit
1: Stop bit1
2: Stop bit2

No.5112: B Baud rate
8: 1200 bps
9: 2400 bps
10: 4800 bps
11: 9600 bps

The above-mentioned setting screen will be displayed by pushing the soft key SETTING, parameter screen will be displayed by pushing the soft key SERVICE several times.

2-3-1-5 For FS16/18/21

Set up the following parameters.

No.0000: xxxx xx**10**

7	6	5	4	3	2	1	0
						ISO 1	TVC 0

No.0020: **0** (I/O CHANNEL)

No.0100: xxxx **1**x**0**x

7	6	5	4	3	2	1	0
				NCR 1		CTV 0	

No.0101: **1**xxx **0**xx**S**

7	6	5	4	3	2	1	0
NFD 1				ASI 0			SB2 0: Stop bit1 1: Stop bit2

No.0102: **0**

No.0103: **B** (Baud rate)

8: 1200 bps
9: 2400 bps
10: 4800 bps
11: 9600 bps
12:19200 bps

The above-mentioned parameter screen will be displayed by pushing PAGE key after the key SYSTEM is pushed.

2-3-1-6 For FS16i/18i/21i

Setting of RS-232C

Set up the following parameters.

No.0000: xxxx xx**10**

7	6	5	4	3	2	1	0
						ISO 1	TVC 0

No.0020: **I/O CHANNEL**

0: RS-232C

4: Memory card

No.0100: xxxx **100**x

7	6	5	4	3	2	1	0
				NCR 1	CRF 0	CTV 0	

No.0101: **1**xxx **0**xx**S**

7	6	5	4	3	2	1	0
NFD 1				ASI 0			SB2 0: Stop bit1 1: Stop bit2

No.0102: **0**

No.0103: **B** (Baud rate)

8: 1200 bps

9: 2400 bps

10: 4800 bps

11: 9600 bps

12:19200 bps

No.0110: xxxx xxx**0** *1

7	6	5	4	3	2	1	0
							IO4 *2 0

The above-mentioned parameter screen will be displayed by pushing PAGE key after the key SYSTEM is pushed.

*1) Parameter No. of 0110 does not exist on FS16iT-A/18iT-A/21iT-A/

*2) When parameter IO4 is changed, turning off the power is necessary once.

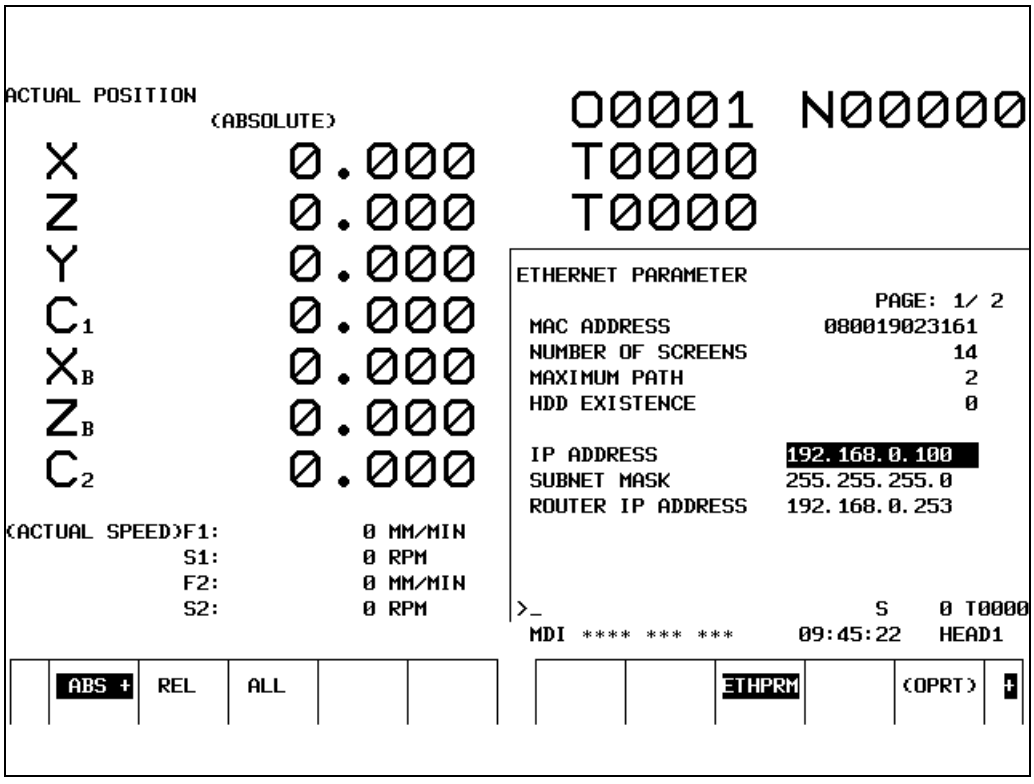
Setting of FOCAS2/Ethernet functions

(Caution) Before performing communication using the FOCAS2/Ethernet functions, consult with your network administrator, carefully set a network address and other items, and conduct communication tests thoroughly. Any error in settings such as a network address setting can lead to an adverse influence such as a communication failure on the entire network. Be very careful about any communication failure. If the FOCAS2/Ethernet functions are used on a network involved with a communication failure, a communication failure intermittently occurs in FOCAS2/Ethernet, which may cause a CNC system error.

Set by the following procedure.

1. Press the SYSTEM key 

.
2. Press the  soft key until the [ETHPRM] soft key appears.
3. Press the [ETHPRM] soft key to display the following screen.
   In the case of FS16iT-B/ 18iT-B/ 21iT-B, press the [ETHPRM] soft key and then the [BOARD] soft key to display the following screen.

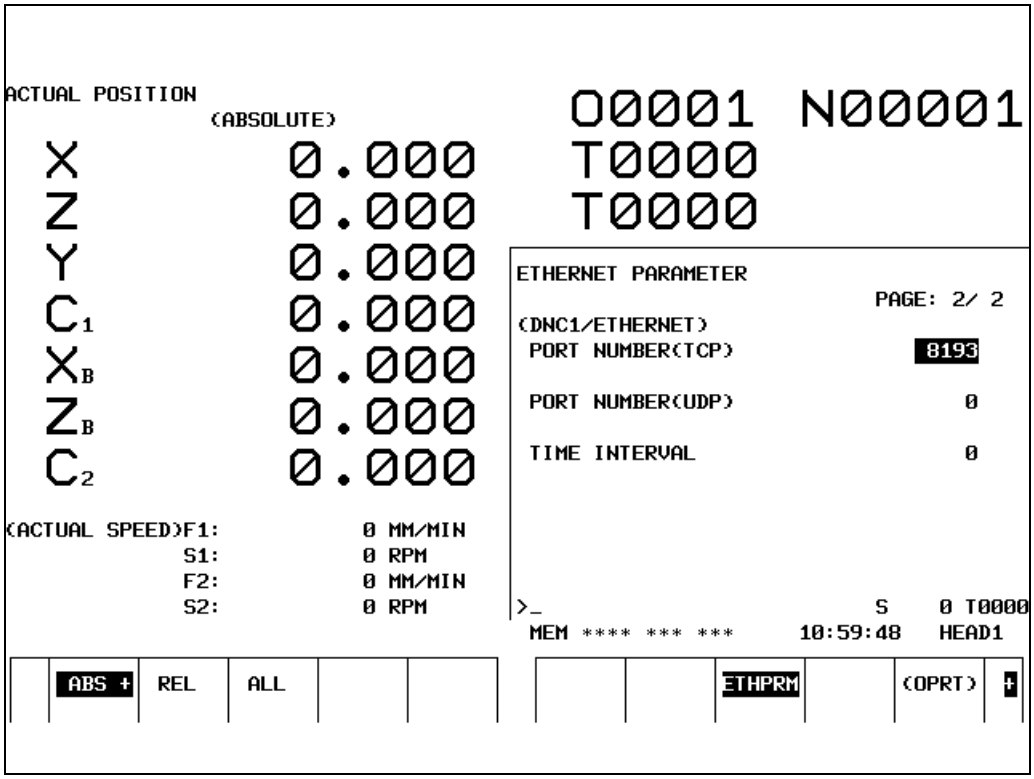


4. In the case of FS16iT-B/18iT-B/21iT-B, change AVAILABLE ETHERNET to EMBEDDED by the following procedure when the AVAILABLE ETHERNET is PCMCIA.
   (1) Press the [OPRT] soft key.
   (2) Press the [CHANGE] soft key.
   (3) Press the [EMBED] soft key.

5. Set the following items.

Item	Description
IP ADDRESS	Specify the IP address of the CNC. Do not specify the IP address setting in the others CNCs and PCs etc. (Example of specification format: “192.168.0.100”)
SUBNET MASK	Specify a mask address for the IP addresses of the network. (Example of specification format: “255.255.255.0”)
ROUTER IP ADDRESS	Specify the IP address of the router. Specify this item when the network contains a router. (Example of specification format: “192.168.0.253”)

6. Press the PAGE key to display the following screen.



7. Set the following items.

Item	Description
PORT NUMBER (TCP)	Specifies the port No. to be used by the FOCAS2/Ethernet functions within a range of 5001 to 65535. Set 8193 if there is no problem.
PORT NUMBER (UDP)	Set 0.
TIME INTERVAL	Set 0.

2-3-1-7 For FS300is/30i/31i/32i

Setting concerning RS-232C

Set up the following parameters.

No.0000: xxxx xx**10**

7	6	5	4	3	2	1	0
						ISO 1	TVC 0

No.0020: **I/O CHANNEL**

0: RS-232C

4: Memory card

9: FTP transfer

17: USB memory (Valid in the machine of Model B)

No.0100: xxxx **100**x

7	6	5	4	3	2	1	0
				NCR 1	CRF 0	CTV 0	

No.0101: **1**xxx **0**xx**S**

7	6	5	4	3	2	1	0
NFD 1				ASI 0			SB2 0: Stop bit1 1: Stop bit2

No.0102: **0**

No.0103: **B** (Baud rate)

8: 1200 bps

9: 2400 bps

10: 4800 bps

11: 9600 bps

12:19200 bps

No.0110: xxxx xxx**0**

7	6	5	4	3	2	1	0
							IO4 *1 0

The above-mentioned parameter screen will be displayed by pushing PAGE key after the key SYSTEM is pushed.

*1) When the I04 parameter is altered, it is required to turn OFF the main power once.

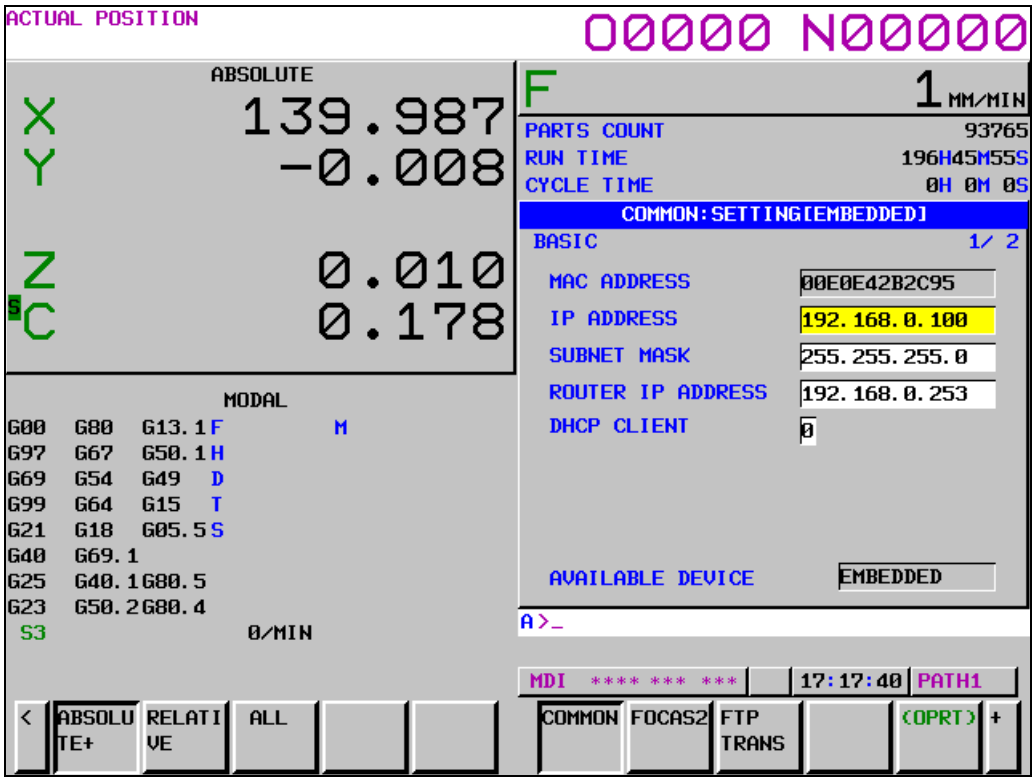
Setting of FOCAS2/Ethernet functions

(Caution) Before performing communication using the FOCAS2/Ethernet functions, consult with your network administrator, carefully set a network address and other items, and conduct communication tests thoroughly. Any error in settings such as a network address setting can lead to an adverse influence such as a communication failure on the entire network. Be very careful about any communication failure. If the FOCAS2/Ethernet functions are used on a network involved with a communication failure, a communication failure intermittently occurs in FOCAS2/Ethernet, which may cause a CNC system error.

Set by the following procedure.

1. Press the SYSTEM key 

.
2. Press the  soft key until the [EMBED PORT] soft key appears.
3. Press the [EMBED PORT] soft key.
4. Press the [COMMON] soft key to display the following screen.

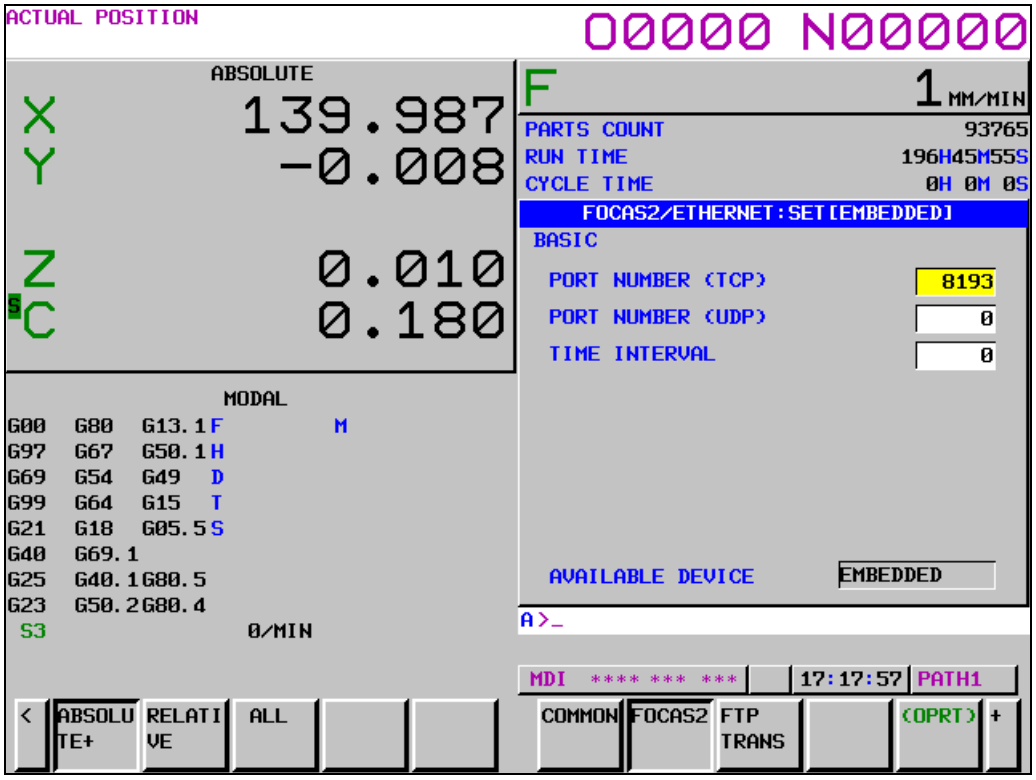


5. When the AVAILABLE DEVICE is PCMCIA, press the [(OPRT)] soft key and then the [EMB/PCMCIA] soft key to change AVAILABLE DEVICE to EMBEDDED.

6. Set the following items.

Item	Description
IP ADDRESS	Specify the IP address of the CNC. Do not specify the IP address setting in the others CNCs and PCs etc. (Example of specification format: “192.168.0.100”)
SUBNET MASK	Specify a mask address for the IP addresses of the network. (Example of specification format: “255.255.255.0”)
ROUTER IP ADDRESS	Specify the IP address of the router. Specify this item when the network contains a router. (Example of specification format: “192.168.0.253”)

7. Press the [FOCAS2] soft key to display the following screen.



8. Set the following items.

Item	Description
PORT NUMBER (TCP)	Specifies the port No. to be used by the FOCAS2/Ethernet functions within a range of 5001 to 65535. Set 8193 if there is no problem.
PORT NUMBER (UDP)	Set 0.
TIME INTERVAL	Set 0.

2-3-1-8 For FS0i-TD

Setting concerning RS-232C

Set up the following parameters.

No.0000 : xxxx xx**10**

7	6	5	4	3	2	1	0
						ISO 1	TVC 0

No.0020 : I/O CHANNEL

0: RS-232C

4: Memory card

9: FTP transfer

17: USB memory (Valid only in the machine which has a USB port on the front side of NC cabinet)

No.0100 : xxxx **100**x

7	6	5	4	3	2	1	0
				NCR 1	CRF 0	CTV 0	

No.0101 : **1**xxx **0**xx**S**

7	6	5	4	3	2	1	0
NFD 1				ASI 0			SB2 0: Stop bit1 1: Stop bit2

No.0102 : **0** (Specification No. of I/O device)

No.0103 : **B** (Baud rate)

8 : 1200 bps

9 : 2400 bps

10 : 4800 bps

11 : 9600 bps

12 : 19200 bps

No.0110 : xxxx xxx**0**

7	6	5	4	3	2	1	0
							IO4 *1 0

The above-mentioned parameter screen will be displayed by pushing PAGE key after the key SYSTEM is pushed.

*1) When the I04 parameter is altered, it is required to turn OFF the main power once.

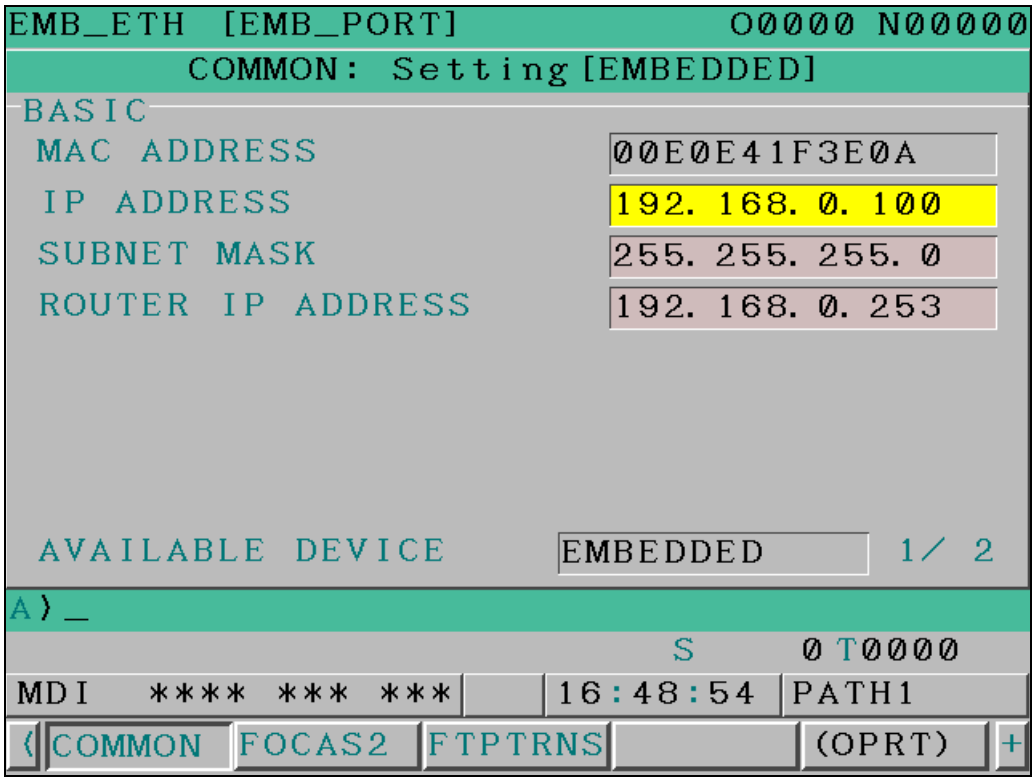
Setting of FOCAS2/Ethernet functions

(Caution) Before performing communication using the FOCAS2/Ethernet functions, consult with your network administrator, carefully set a network address and other items, and conduct communication tests thoroughly. Any error in settings such as a network address setting can lead to an adverse influence such as a communication failure on the entire network. Be very careful about any communication failure. If the FOCAS2/Ethernet functions are used on a network involved with a communication failure, a communication failure intermittently occurs in FOCAS2/Ethernet, which may cause a CNC system error.

Carry out the setting by the following procedure.

1. Press the SYSTEM key 

.
2. Press the  soft key until the [EMBED] soft key appears.
3. Press the [EMBED] soft key.
4. Press the [COMMON] soft key to display the following screen.

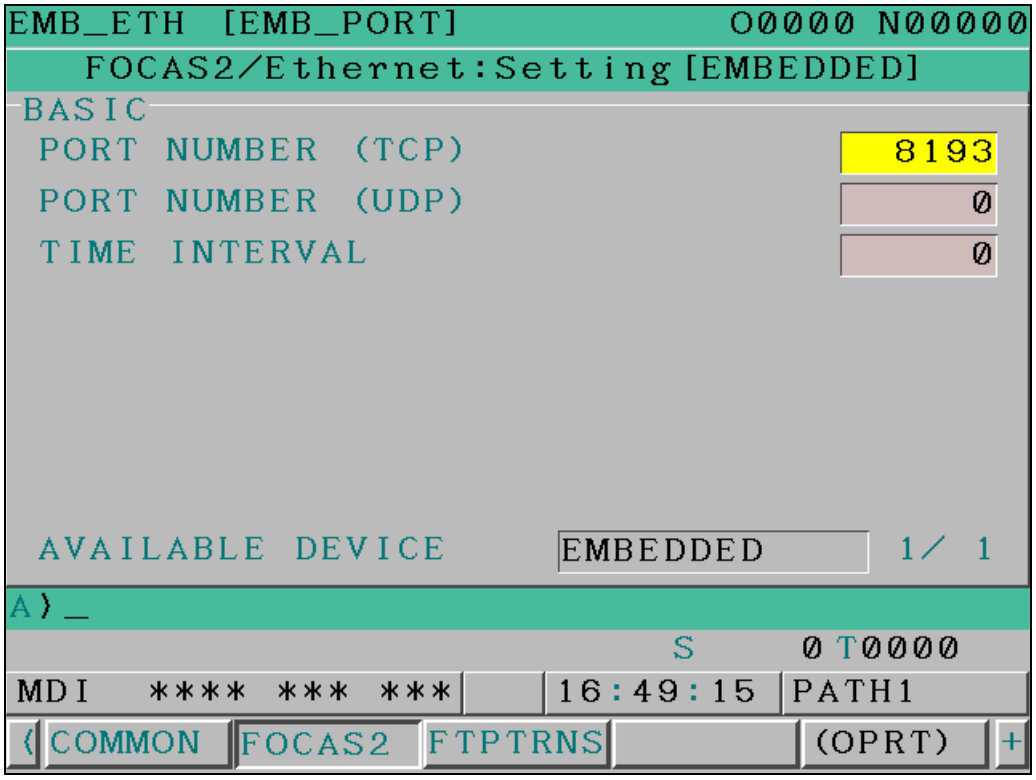


5. When the AVAILABLE DEVICE is “PCMCIA”, press the [(OPRT)] soft key and then the [EMB/PCM] soft key to change AVAILABLE DEVICE to “EMBEDDED”.

6. Set the following items.

Item	Description
IP ADDRESS	Specify the IP address of the CNC. Do not specify the IP address setting in the others CNCs and PCs etc. (Example of specification format: “192.168.0.100”)
SUBNET MASK	Specify a mask address for the IP addresses of the network. (Example of specification format: “255.255.255.0”)
ROUTER IP ADDRESS	Specify the IP address of the router. Specify this item when the network contains a router. (Example of specification format: “192.168.0.253”)

7. Press the [FOCAS2] soft key to display the following screen.



8. Set the following items.

Item	Description
PORT NUMBER (TCP)	Specifies the port No. to be used by the FOCAS2/Ethernet functions within a range of 5001 to 65535. Set 8193 if there is no problem.
PORT NUMBER (UDP)	Set 0.
TIME INTERVAL	Set 0.

2-3-2 MITSUBISHI ELECTRIC

2-3-2-1 For M70V

Set up the following parameters.

Parameter No.	Content	Value
9001	DATA IN PORT	1
9002	DATA IN DEV.	0
9003	DATA OUT PORT	1
9004	DATA OUT DEV.	0
9051	Data I/O port	0
9102	DEV0 BAUD RATE	0 : 19200bps 1 : 9600bps 2 : 4800bps 3 : 2400bps 4 : 1200bps 5 : 600bps 6 : 300bps 7 : 110bps
9103	DEV0 STOP BIT	1 : 1bit 2 : 1.5bit 3 : 2bit
9104	DEV0 PARITY CHECK	0
9105	DEV0 EVEN PARITY	0
9106	DEV0 CHR. LENGTH	3
9108	DEV0 HAND SHAKE	3
9109	DEV0 DC CODE PRTY	1
9111	DEV0 DC2/4 OUTPUT	3
9112	DEV0 CR OUTPUT	1
9114	DEV0 FEED CHR.	1
9115	DEV0 PARITY V	0
9116	DEV0 TIME-OUT (sec)	0

2-3-2-2 For M80

Set up the following parameters.

Parameter No.	Content	Value
9001	DATA IN PORT	1
9002	DATA IN DEV.	0
9003	DATA OUT PORT	1
9004	DATA OUT DEV.	0
9102	DEV0 BAUD RATE	0 : 19200bps 1 : 9600bps 2 : 4800bps 3 : 2400bps 4 : 1200bps 5 : 600bps 6 : 300bps 7 : 110bps
9103	DEV0 STOP BIT	1 : 1bit 2 : 1.5bit 3 : 2bit
9104	DEV0 PARITY CHECK	0
9105	DEV0 EVEN PARITY	0
9106	DEV0 CHR. LENGTH	3
9108	DEV0 HAND SHAKE	3
9109	DEV0 DC CODE PRTY	1
9111	DEV0 DC2/4 OUTPUT	3
9112	DEV0 CR OUTPUT	1
9114	DEV0 FEED CHR.	1
9115	DEV0 PARITY V	0
9116	DEV0 TIME-OUT (sec)	0

2-3-3 YASNAC

2-3-3-1 For LX1/LX3/LX3BS

Set up the following parameters.

No.#6002: **10**xx xxxx

7	6	5	4	3	2	1	0
ISO 1	TVCHK 0						

No.#6003: xx**01** xx**01**

7	6	5	4	3	2	1	0
		ODEVCE1 0	ODEVCE0 1			IDVCE1 0	IDVCE0 1

No.#6021: x**000** 0x**00**

7	6	5	4	3	2	1	0
	MERSIN 0	RSONOF 0	CHKDR 0	O-9999O 0		PRGNO 0	M02M99 0

No.#6022: xxxx **00**xx

7	6	5	4	3	2	1	0
				ISOPO 0	ISOPI 0		

No.#6023: xxxx xx**1**x *) Except LX1

7	6	5	4	3	2	1	0
						CLNO *1 1	

No.#6026: xx**0S BBBB** (Input)

7	6	5	4	3	2	1	0
		SIF1 CI 0	SIF1 SI 0: Stop bit1 1: Stop bit2	Baud rate 0111: 1200 bps 1000: 2400 bps 1001: 4800 bps 1010: 9600 bps			

No.#6028: Same value as #6026 (Output)

*1) Parameter No. of #6023.1 CLNO does not exist on LX1.

2-3-3-2 For i80L

Set up the following parameters.

pm0006: **1100 0000** (I/O data setting for the second port)

D7	D6	D5	D4	D3	D2	D1	D0
EOB 1	ISOEOB 1	ISOPO 0	FEED 0	ISOPI 0	TVCNT 0	TVCHK 0	ISOEIA 0

pm0009: xxx**1** xxx**1**

D7	D6	D5	D4	D3	D2	D1	D0
			OUTPORT 1				INPORT 1

pm0015: **0010 0010** (Designation of the second port device:
generic RS-232C)

D7	D6	D5	D4	D3	D2	D1	D0
Output device				Input device			

pm0016: x**010 SBBB** (Input format for the second port)

D7	D6	D5	D4	D3	D2	D1	D0
	IPS2PB1 0	IPS2PB0 1	IPS2BL 0	IPS2STB 0: Stop bit1 1: Stop bit2	Baud rate 100: 1200 bps 101: 2400 bps 110: 4800 bps 111: 9600 bps		

pm0017: **1**xxx x**001** (Input control for the second port)

D7	D6	D5	D4	D3	D2	D1	D0
IPS2NC 1					IPS2DR 0	IPS2RTS 0	IPS2DCC 1

pm0018: Same value as pm0016 (Output format for the second port)

pm0019: Same value as pm0017 (Output control for the second port)

pm3005: xx**1**x **00**x**0**

D7	D6	D5	D4	D3	D2	D1	D0
		CLNO 1		M02M99 0	PRGNO 0		MERSIN 0

2-3-3-3 For MP920 (SI series)

"Baud rate (19200)" and "Stop bit (1)" are fixed.

It is not necessary to set at the machine side.

2-3-4 Siemens NC

2-3-4-1 For YS840DI (ECAS series)

Selection of Input/Output Interface *1

1) Press the [EDIT] key of MODE to turn the light on.

2) Press the H2 PROGRAM key.

3) Press the V8 Program Manager key.

4) Press the V8 Next key twice.

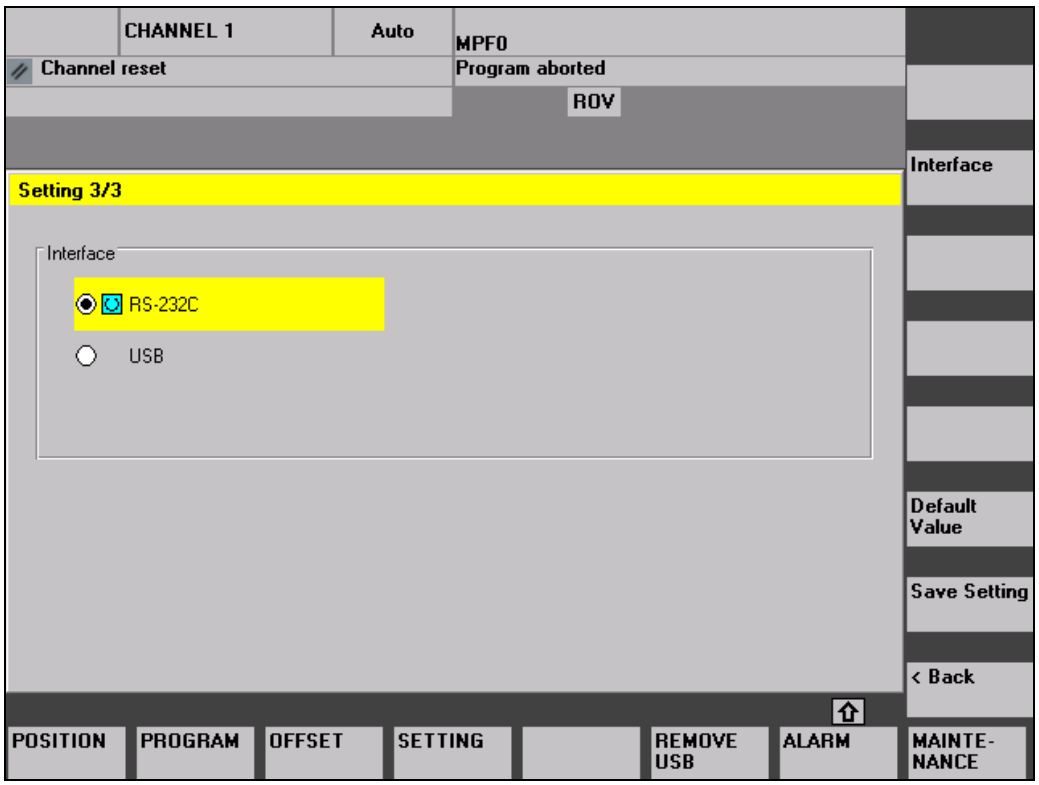
5) Press the V4 Setting key.

6) Press the V1 Next key twice to display selection of Input/Output interface screen.

7) Press the V2 Interface key.

8) Press the CURSOR key and move the cursor to the interface which is to be set. Then press the INPUT key.

Note) When the V6 Default Value key is pressed, data are initialized. (Interface: RS-232C)
When the V7 Save Setting key is pressed, current data are kept for next starting.



*1) The following machines can not apply USB interface, therefore, not executing the corresponding procedures.

ECAS-12/-20 ~ No.343

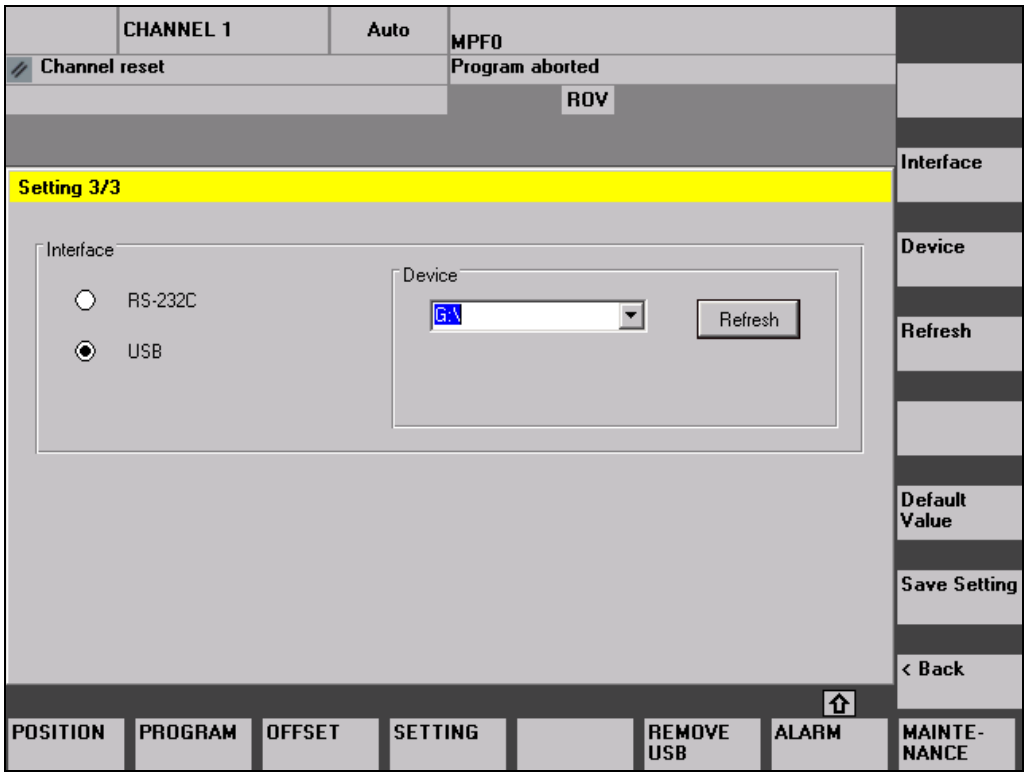
ECAS-32T ~ No.137

Setting parameters for USB memory storage *1

1) Connect the USB memory storage to the machine's front panel.
2) Select "USB interface".
3) Press the V3 Device key.
4) Press the CURSOR key ▲ ▼ and select a drive for the USB memory storage which is being connected. Then press the INPUT key ⏎.

By pressing the V4 Refresh key, you can get the list of USB memory storage.

Note) When the V6 Default Value key is pressed, data are initialized. (Interface: RS-232C)
When the V7 Save Setting key is pressed, current data are kept for next starting.



Setting parameters for RS-232C

1) Select “RS-232C interface”.

2) Press the [EDIT] key  of MODE to turn the light on.

3) Press the H2 PROGRAM key.

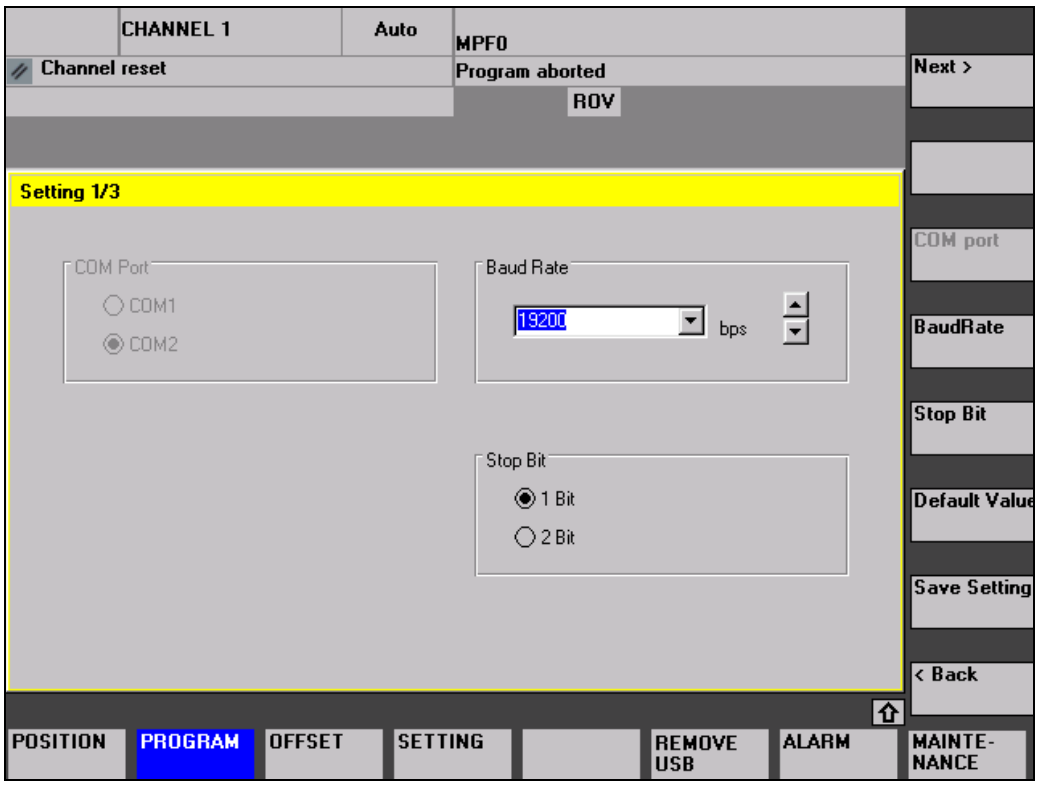
4) Press the V8 Program Manager key.

5) Press the V8 Next key twice.

6) Press the V4 Setting key to display RS-232C setting screen.

7) Press the V4 BaudRate and V5 Stop Bit keys to match a set value of Baud Rate and Stop Bit of the PU-Jr.

Note) When the V6 Default Value key is pressed, data are initialized. (BaudRate:4800, Stop Bit:2bits)
When the V7 Save Setting key is pressed, current data are kept for next starting.



2-4 RS-232C cable

A spare ferrite core is delivered on some Star machines (e.g. SR-32J).
The ferrite core needs to be attached on the RS-232C cable prepared by users.
Please refer to the “INSTALLATION MANUAL” of the machine for details.

2-5 Import from other software to PU-Jr.

2-5-1 Import from "STAR NC DATA BANK", "STAR NC DATA Manager" by Star

If the NC program file can be loaded, the NC program file can be used as it is.
Refer to the section "2-5-4 NEC 1.25MB (2HD)/ 640KB (2DD) format Floppy Disk" for details on the format of floppy disk.

2-5-2 Import from the software by other manufacturer

NC program file does not display on PU-Jr. thus extension of the files need to be changed by [Rename] function of windows explorer. Extension of path 1(main) should be ".M" and path 2 (back) should be ".S".

(Example)

Current		Way of change	
Path	Extension	Before	After
1	.1	01000.1	01000.M
1	without extension	01000	01000.M
2	.2	01001.2	01001.S
2	.P-2	01001.P-2	01001.S

Refer to the section "2-5-3 FANUC original format Floppy Disk" and "2-5-4 NEC 1.25MB (2HD)/ 640KB (2DD) format Floppy Disk" for details on the format of floppy disk.

2-5-3 FANUC original format Floppy Disk

NC program files stored in the floppy disk of FANUC original format (P-G format) cannot be loaded by Windows operating system.
Carry out conversion by any of “purchase the software with conversion function”, “convert the format with hardware” or “send the program files then receive them with PU-Jr.”.

software with conversion function		
Manufacturer	Product Name	Model
Pailsystem Co., Ltd.	FANUC converter	FanucoV-3 (Ⅲ)
http://www.pailsys.co.jp/		

Hardware to deal with the floppy disk of FANUC original format		
Manufacturer	Product Name	Model
Is-tail Co., Ltd.	NC data transmission system	Handy HEIJI F-144 (discontinued)
http://www.is-tail.com/		
KYORITSU SYSTEM MACHINE LTD.	NC data input/output device	D-V (End of sales)
http://www.kyoritsu-s.co.jp/		
Godo System Machine Corporation.	NC recorder	TM-22A (End of sales)
http://www.godosystem.com/		
TACTX Co., Ltd.	Portable input/output device	M-220 (End of sales)
http://www.tactx.co.jp/		
ADDO-Japan Corporation	Portable NC data input/output device	N1060 (scheduled to be discontinued)
http://www.addo-japan.com/		

* Above information is as of March 2014. Check for the details with Web page or catalog etc. of manufacturer.
* Star cannot guarantee of the products above.

2-5-4 NEC 1.25MB (2HD)/ 640KB (2DD) format Floppy Disk

When NC program files were stored in the floppy disk of 1.25MB (2HD)/ 640KB (2DD) format by using PC-98x1/FC-98x1 (by NEC), those program files cannot be loaded by other PC in some case.

Depending on the model of your PC, NC program files can be loaded in some case by installing 3-mode FDD driver software. Refer to the user's manual of your PC for details.

Some USB 3.5″ external floppy disk drive of commercially available can load floppy disks of 1.25 MB (2D). Refer to the column "Available media" of the table in the section "2-5-5 USB 3.5″ External Floppy Disk Drive".

2-5-5 USB 3.5″ External Floppy Disk Drive

Following table is the list of USB 3.5″ external floppy disk drive.

Manufacturer	Model	Available media
Logitec Corp. http://www.logitec.co.jp/	LFD-31UEF	1.44MB(2HD) 1.25MB(2HD) 720KB(2DD)
Owltech Co., Ltd http://www.owltech.co.jp/	OWL-EFD/U(B)	1.44MB(2HD)
	OWL-EFD3/U(B)	1.44MB(2HD) 1.25MB(2HD) 720KB(2DD) 640KB(2DD)
TIMELY Co, LTD http://timely.ne.jp/	FDD-U02B	1.44MB(2HD)
	FDD-U03B	

* Above information is as of March 2014. Check for the details with Web page or catalog etc. of manufacturer.
* Star cannot guarantee of the products above.
* Check the corresponding OS on the Web page of each manufacturer.
* Manufacturing of floppy disk and its drive unit have been discontinued therefore their procurement is expected to be difficult in the future.

CHAPTER 3

File Management / Communication function

3 File Management / Communication function

PU-Jr. is a program rationalization software by which the programs of two or more machines are intensively controlled with general-purpose PC and having a program edit function using the dedicated editor, a one to one serial data transfer (RS-232C) function and a LAN function of a one to many communication between PC and the machine.

Main functions of PU-Jr. are as follows:

- Creating / Editing NC program files (activates editor)
- Management of NC program files (copy, move, delete, rename)
- Management of folders (new, move, delete, rename)
- Displaying NC program property (file size, modified date, comment)
- Printing property list of NC program
- Sending NC program for the machine
- Receiving NC program from the machine
- Deleting NC program in the machine
- Copying NC program in the machine
- Renaming NC program in the machine
- Collecting communication history

3-1 Starting

・For Windows 8.1 or Windows 8

a) When starting from the Start screen

Click [PU-Jr.] tile on the Start screen to start up.

If the Start screen is not displayed, move the mouse pointer to the top-right corner or bottom-right corner to display the Charms bar, and then click on [Start].

b) When starting from the "Apps" screen

1) Right-click on an empty area in the Start screen.
2) Select [All apps] from the displayed application bar.
3) "Apps" screen is displayed. Click on [PU-Jr.] to start up.

・For Windows 7 or Windows Vista

a) When starting from short cut

Double click the short cut [PU-Jr.] to start PU-Jr.

b) When starting from the start menu

1) Select Windows' [Start] menu.
2) Select [Program] command.
3) Select [Star Micronics].
4) Select [PU-Jr.].
5) Select [PU-Jr.] to start PU-Jr.

・For Windows 11 or Windows 10

a) When starting from short cut

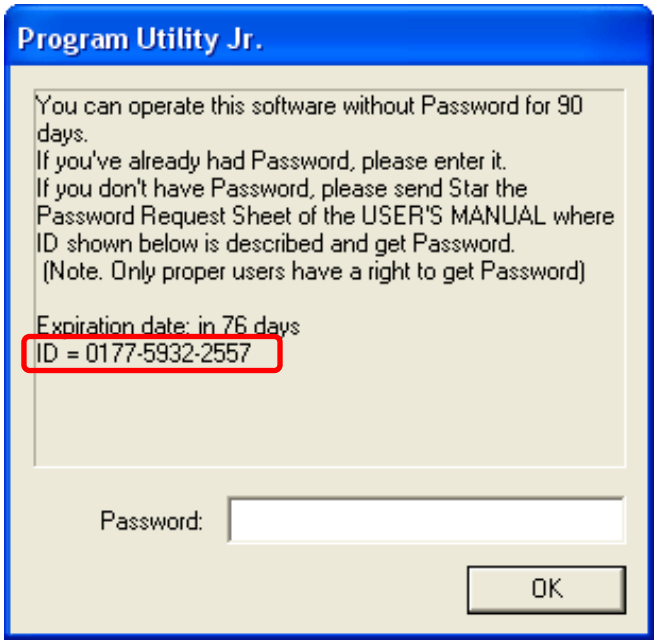
Double click the short cut [PU-Jr.] to start PU-Jr.

b) When starting from the start menu

1) Select Windows' [Start] menu.
2) Select [All apps]. <- For Windows 11
3) Select [Star Micronics].
4) Select [PU-Jr.] to start PU-Jr.

3-2 Input the Password

The Password prompt dialog box appears, when booting PU-Jr., until the password is input.
Acquire the password from Star and input the password into the password field.
After inputting the correct password, this dialog will not display hereafter.



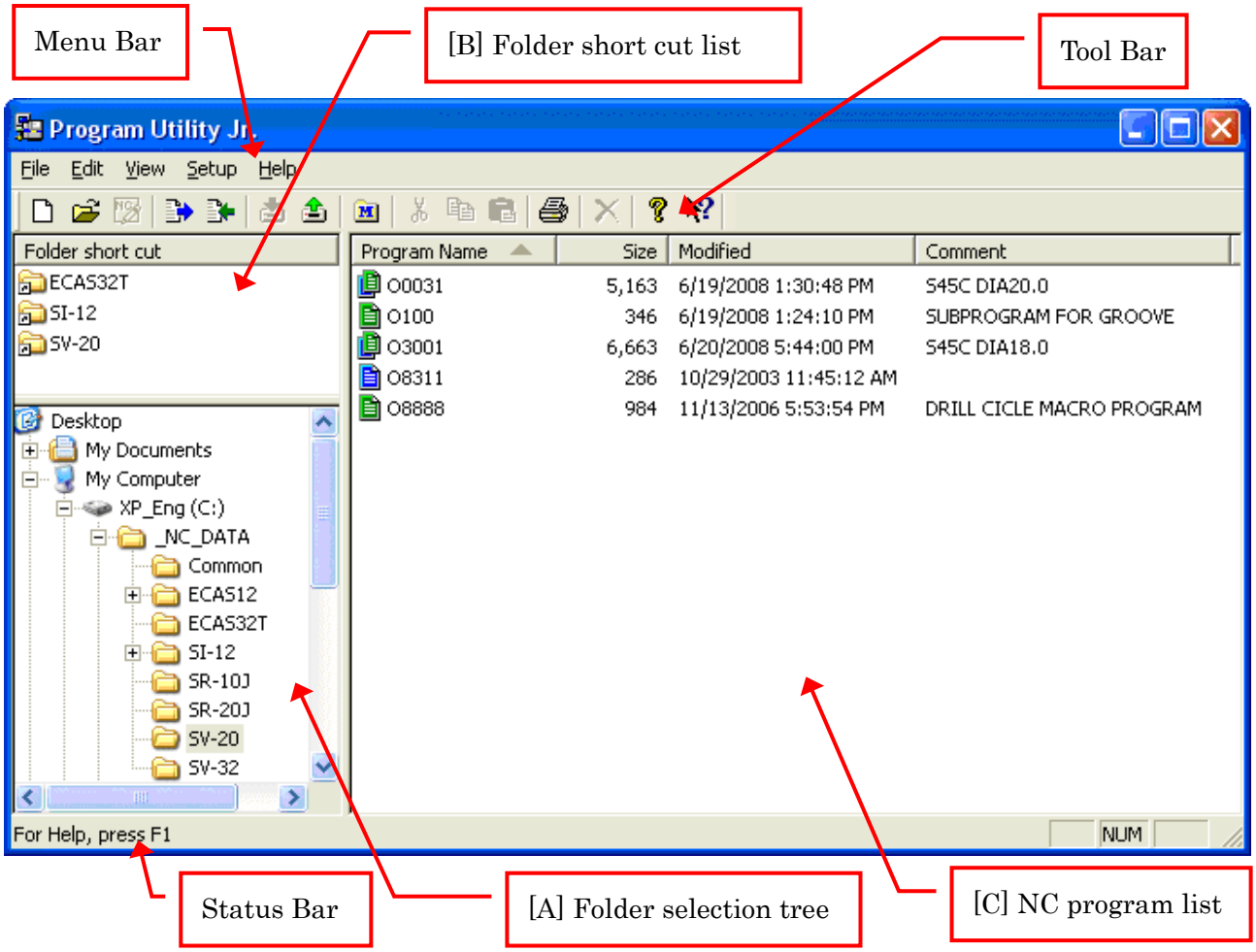
Note)

- Please acquire the password by reporting the ID code indicated in the above mentioned screen to Star Micronics using the User registration sheet contained in this manual.
- One password per PC is issued.
- You can acquire passwords three times. From the forth, please request a password after purchase PU–Jr. additional license (code: 932ZZZZZ).
- You need to log-on with a user name (an account name) belonged to the administrators group.
- The password prompt dialog box will not appear when attaching a protection key for SD-Editor, or PU-Jr.
- The password prompt dialog box will not be displayed when the PC is installed with e-camo Ver3 or later, and the USB protection key for e-camo is used.

3-3 Main Screen

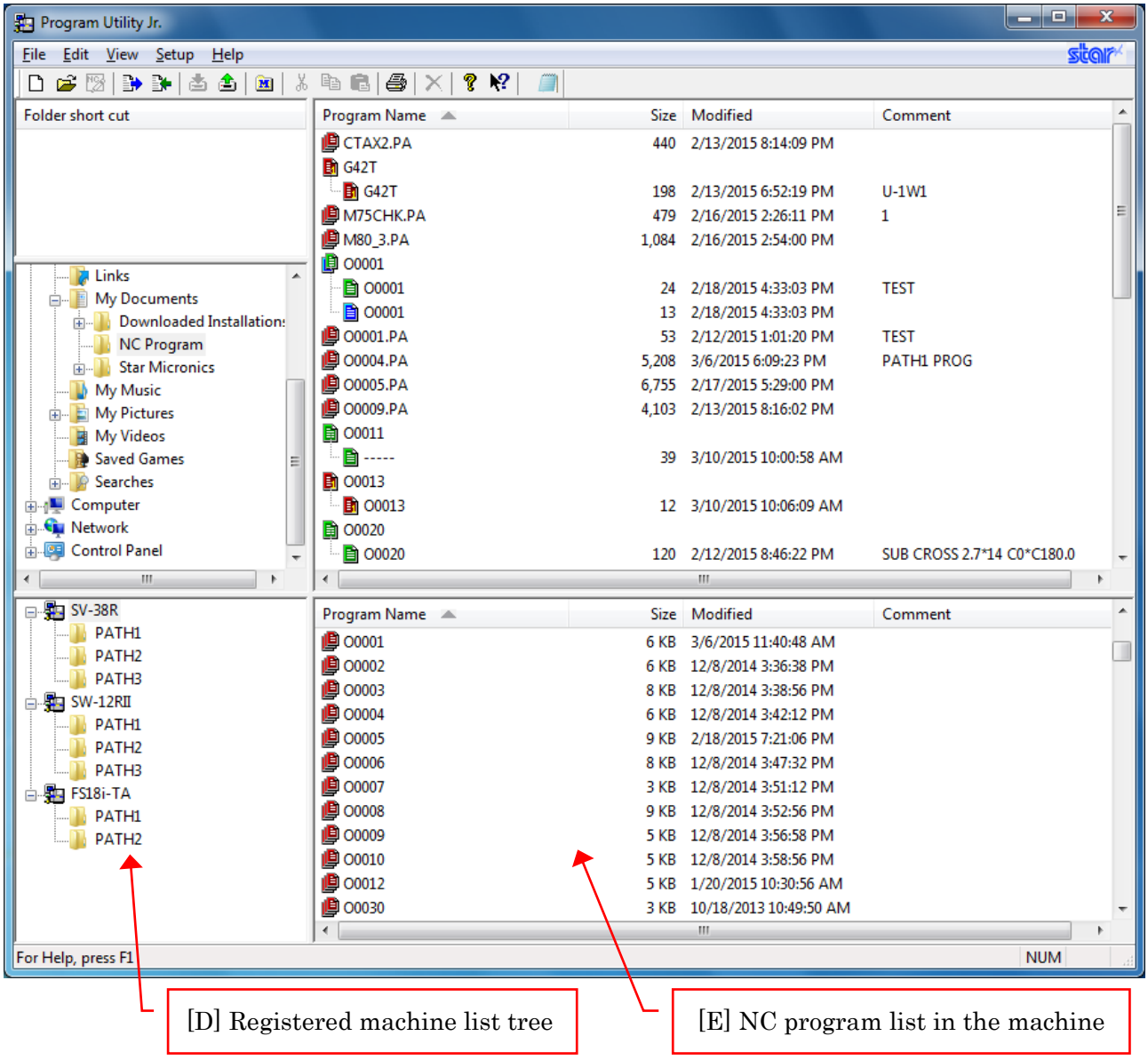
When PU-Jr. is started, following Main Screen appears:

・In the case that a function “Connect the machine to a LAN” on the environment setup dialog is disabled



The Main Screen is composed of three panes, tool bar, menu bar and status bar.

・In the case that a function “Connect the machine to a LAN” on the environment setup dialog is enabled



The Main Screen is composed of five panes, tool bar, menu bar and status bar.

3-3-1 Folder selection tree [A]

Folders can be created and managed in the same ways as the Windows Explorer, so even if the number of handled machining programs increases, they can be easily managed and searched for.

3-3-2 Folder short cut list [B]

When a frequently used folder is set as a short cut, it will be possible to access the set folder easily. By double-clicking on the short cut icon of the folder, the corresponding folder will be selected at the “Folder selection tree [A]”, and the “NC program list [C]” display will be renewed.

3-3-3 NC Program list [C]

This section displays the list of NC programs that are included in the folder which was selected in the Folder selection tree [A] or the Folder short cut list [B].
PU-Jr. is designed for the machine by Star Micronics.

・The machine equipped with FANUC/YASNAC CNC

For the machine in 2-path, 2 NC programs are needed for machining 1 part. 2 programs (path 1 side and path 2 side) are displayed as a pair. Each program is identified by extension "*.M" (path 1) and "*.S" (path 2).

However, in the program list, only the file names are displayed, and the files with both path 1 side program and path 2 side program, the files with only path 1 side program, and the files with only path 2 side program are identified visually with icons.

* Files with both path 1 and path 2 programs: Icon with Green and Blue sheets layered ( )
* Files with only path 1 program: Icon with Green sheet ( )
* Files with only path 2 program: Icon with Blue sheet ( )

Program files are displayed in the tree hierarchy. The state that the program tree is open is called “Channel display function”.

Program tree is close

Program Name	Size	Modified	Comment
Star0001	5,171	6/30/2008 11:01:04 AM	O1001MAIN
Star0002	5,405	6/30/2008 11:01:26 AM	O1002MAIN
Star0003	334	6/30/2008 11:01:46 AM	O1003MAIN
Star0004	3,423	6/30/2008 11:02:12 AM	O2001MAIN
Star0005	1,355	6/30/2008 11:02:22 AM	O2002
Star0006	330	6/30/2008 11:02:36 AM	O2003

Program tree is open (Channel display function)

Program Name	Size	Modified	Comment
Star0001			
O0001	4,010	6/30/2008 11:01:04 AM	O1001MAIN
O0001	1,161	6/30/2008 11:01:04 AM	O1001BACK
Star0002			
O1998	3,973	6/30/2008 11:01:26 AM	O1002MAIN
O1998	1,432	6/30/2008 11:01:26 AM	O1002BACK

When the file name (Example: Star0001) is double-clicked, the Program Edit function is activated with the screen in which 2 paths (path 1 and path 2) are displayed.

When the O Number (Example: O1001) is double-clicked during the "Channel display function" is ON, Program Edit function is activated with the screen in which 1 path (path 1 or path 2) is displayed.

・FANUC 3-path

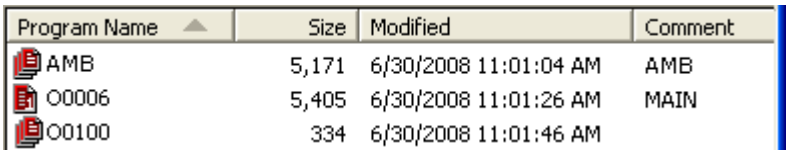
3 NC programs are needed for machining 1 part. 3 programs (path 1, path 2 and path 3) are displayed as a pair. Each program is identified by extension "*.P1" (path 1), "*.P2" (path 2) and "*.P3" (path 3).

However, in the program list, only the file names are displayed, and the files with multiple path program, the files with only path 1 side program, and the files with only path 2 side program, and the files with only path 3 side program are identified visually with icons.

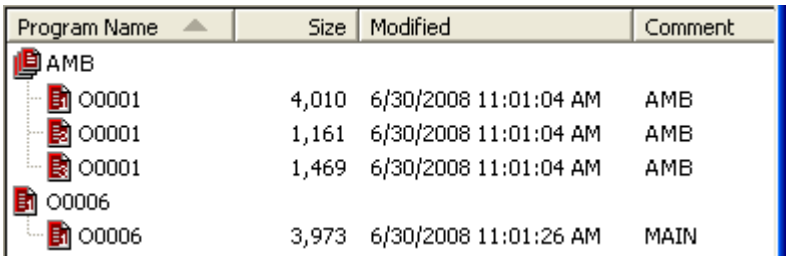
* Files with multiple programs : Icon with Brown sheets layered ( )
* Files with only path 1 program : Icon with Brown sheet ( )
* Files with only path 2 program : Icon with Brown sheet ( )
* Files with only path 3 program : Icon with Brown sheet ( )

Program files are displayed in the tree hierarchy. The state that the program tree is open is called “Channel display function”.

Program tree is close



Program tree is open (Channel display function)



When the file name (Example: AMB) is double-clicked, the Program Edit function is activated with the screen in which 3 paths (path 1, path 2 and path 3) are displayed.

When the O Number (Example: O0001) is double-clicked during the "Channel display function" is ON, Program Edit function is activated with the screen in which 1 path (path 1, path2 or path 3) is displayed.

・FANUC multi-path program file

The multi-path program file is created by combining the programs with the same “O” number (program name) of all paths. Extension [*.PA] is suffixed to the multi-path program.

* Multi-path program files: Icon with Brown sheets layered ()

The file format of the multi-path program is as follows:

```
%
&F=/Program number (name)/
<Program number (name).P1>……PATH1 program
;
 ⋮
<Program number (name).P2>……PATH2 program
;
 ⋮
<Program number (name).P3>……PATH3 program
;
 ⋮
%
```

When the multi-path program file is double clicked, the Program Edit function is activated.

・FANUC multi-path program data file

The multi-path program data file is a multi-path program file with offset data added.

Extension [*.PD] is suffixed to the multi-path program data.

* Multi-path program data files: Icon with Orange sheets layered ()

The offset data is the following data.

Unit data
Geometry offset data
Tool nose radius compensation value

・The machine equipped with MITSUBISHI ELECTRIC CNC

For machines equipped with MITSUBISHI ELECTRIC CNC, programs that have the same name in all paths are managed as one file. MITSUBISHI program files do not have extensions.

MITSUBISHI program files： Icon with Black sheets layered ()

The file format of the MITSUBISHI program files is as follows:

・2-path
(empty)
$1・・・・・・・$1 program starting position
⋮
$2・・・・・・・$2 program starting position
⋮
%

・1-path
(empty)
⋮
%

The program name to be registered at NC input is the same as the inputted file name.

When MITSUBISHI program files are double-clicked, the Program Edit function is activated.

・SI Series

When you use the SI series, the files whose extension is '*.SM1' are displayed.

*SI files: Icon with Purple sheet ()

If you double-click on the SI files, you can open the file with Program Edit function but cannot edit.

*ECAS Series

When machining a work-piece, it's composed of maximum 3-channel main programs and several subprograms.

The file name of main program is ******_n.MPF (****** are within 22 characters, n=1,2,3). The figure of n indicates the number of channel. The file name of sub program is ******.SPF (****** are within 22 characters).

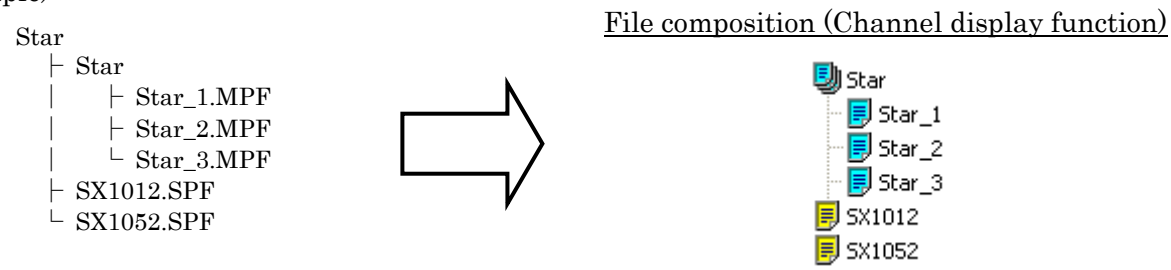
Note) About the folder name and the file name, two characters from the head must be an alphabetic character or underscore "_".

Example) When the main program name is "Star", refer to the following.

Star_1.MPF (Main program: Channel1)
Star_2.MPF (Main program: Channel2)
Star_3.MPF (Main program: Channel3)
SX1012.SPF (Sub program)
SX1052.SPF (Sub program)

Storing several files into one folder, it's managed as if one file. However, the folder name must be the same as the file name of main program. A sub program name is arbitrary.

Example)



It is possible to make above-mentioned composition automatically by using <Take in MPF> function. (Refer to the section "3-4 Take in MPF")

The sending and receiving between machine and PC is possible by the folder unit.

* ECAS 3-channel file: Icon with 3 Light-blue sheets layered ( )
* ECAS Main program file: Icon with Light-blue sheet ( )
* ECAS Sub program file: Icon with Yellow sheet ( )

When the extension '*.MPF' for the ECAS files is double-clicked, Program Edit function is activated in 3 channels. When the extension '*.SPF' of ECAS files is double-clicked, it is activated in 1 channel.

Following table shows the items included in the list:

* The machine equipped with FANUC/YASNAC CNC and FANUC 3-path

Item	Contents
Program Name	File name O number when the “Channel display function” is activated
Size	Total file size of path 1, path 2 and path 3 programs Individual file size when the “Channel display function” is activated
Modified	Recent modified date for path 1, path 2 or path 3 programs Individual modified date when the “Channel display function” is activated
Comment	The first comment in the NC program Comment in the path 1 program when exists Individual comment when the “Channel display function” is activated

* FANUC multi-path program file

Item	Contents
Program Name	File name
Size	File size
Modified	Modified date
Comment	The first comment in the NC program

* The machine equipped with MITSUBISHI ELECTRIC CNC

Item	Contents
Program Name	File name
Size	File size
Modified	Modified date
Comment	The first comment in the NC program

* SI Series

Item	Contents
Program Name	File name
Size	File size
Modified	Modified date
Comment	Program name

* ECAS Series

Item	Contents
Program Name	File name
Size	Total file size Individual file size when the “Channel display function” is activated
Modified	Recent modified date for program Individual modified date when the “Channel display function” is activated
Comment	

When each item is clicked, the contents are sorted and displayed. The ascending order and the descending order change whenever the item is clicked, are displayed “ “(ascending order) and “ “(descending order) marks behind the item name at that time, and show visually by which item to be sorted.

3-3-4 Registered machine list tree [D]

Registered machine list tree is only displayed when a function “Connect the machine to a LAN” is enabled.
The list of machines, which has been registered on “Add machine to connect” dialog, is displayed in a tree hierarchy in the same way as the Windows Explorer
Refer to the section “3-8-3 Add machine to connect dialog” for details

3-3-5 NC program list in the machine [E]

NC program name list selected in registered machine list tree pane is displayed.
When the machine name in registered machine list tree pane is selected, the program (the multi-path program) name with the same program number (name) on all paths is displayed.
Also, when the each path is selected, a program (single-path program) other than the multi-path program is displayed.
However, the folders are not displayed.
During the display of the multi-path program, each operation; input/ output, delete, copy, rename can be collectively performed on all paths.

The following table shows the items included in NC program list in the machine:

・Multi-path program

Item	Contents
Program Name	NC program name
Size	Program size of all paths
Modified	Modified data of PATH1
Comment	The first comment in the NC program. The priority order of the comment is PATH1 > PATH2 > PATH3

・Single-path program

Item	Contents
Program Name	NC program name
Size	Program size
Modified	Modified data
Comment	The first comment in the NC program

● Drag and drop operation

Effective functions by performing drag and drop operation among the Folder selection tree [A], the NC Program list [C] and the NC program list in the machine [E] are as follows

・NC program list [C] -> Folder selection tree [A]

Copy / move NC programs to the specified folder

・Folder selection tree [A] -> Folder selection tree [A], NC program list [C]

Copy / move each folder containing NC programs

・NC program list [C] -> NC program list in the machine [E]

Send NC programs to the specified machine.

・NC program list in the machine [E] -> Folder selection tree [A], NC program list [C]

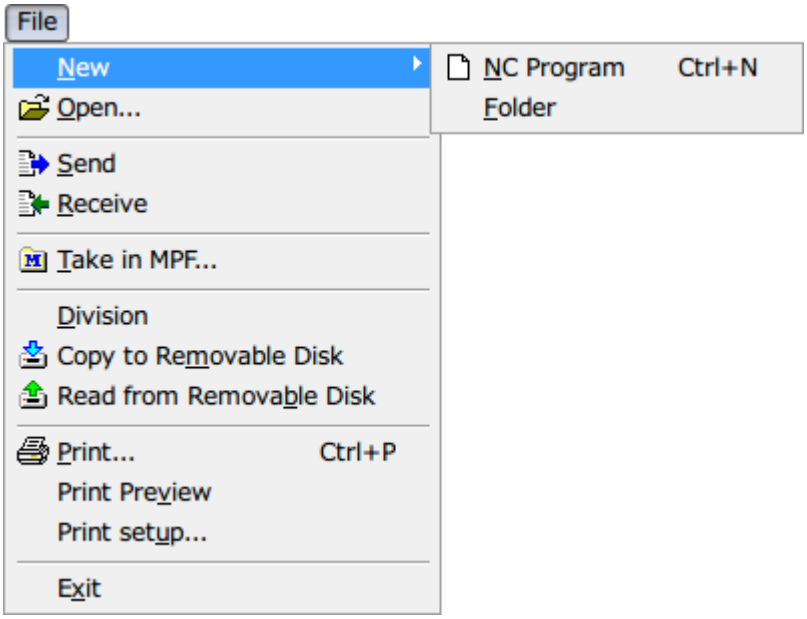
Receive NC programs in the specified machine.

During the display of the multi-path program, NC programs are received as a multi-path program.

During the display of the single-path program, NC programs are received as each path program.

3-3-6 Menu bar

・[File] menu



New

a) NC Program

Program Edit function is activated.

b) Folder

The dialog box to input the new folder name is displayed, then the new folder is created.

Note) In the folder name and the file name, the first two characters from the head must be alphabetic characters or underscore "_".

Open...

The file selection dialog box is displayed. The file (NC program) to edit is selected, then Program Edit function is activated.

Send

The dialog box by which the file (NC program) forwarded from PC to the machine is selected, is displayed. Afterwards, input (read) operation will be performed from the machine.

Receive

The dialog by which the file (NC program) forwarded from the machine to PC is selected is displayed. Afterwards, output (punch) operation will be performed from the machine.

Take in MPF

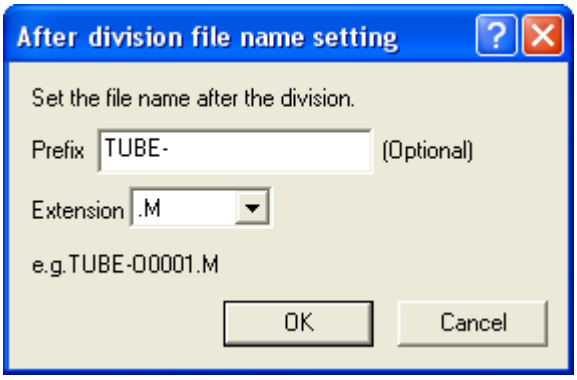
Draw up a new folder, and move selected ECAS file under the new folder. (Refer to the section "3-4 Take in MPF")

Note) It mainly utilizes to simplify the management of program created by e-camo system or SD editor.

Division

The file containing multiple O numbers can be segmented into files according to the each O number. (This function is applicable for the multi-path program files.)

When dividing a file, set the file name after the division in cases other than the multi-path program file.



The file name after the division will be Prefix + "O number" + Extension. The prefix can be omitted. This function is only valid for FANUC files.

(E.g.)

Original file

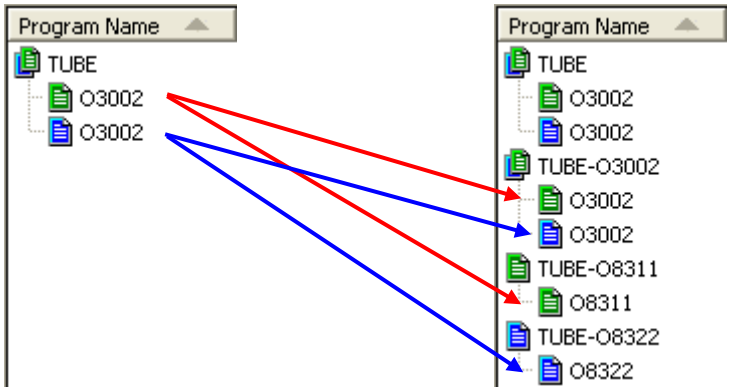
TUBE.M(O3002,O8311)

TUBE.S(O3002,O8322)

Segmented file

TUBE-O3002.M(O3002), TUBE-O8311.M(O8311)

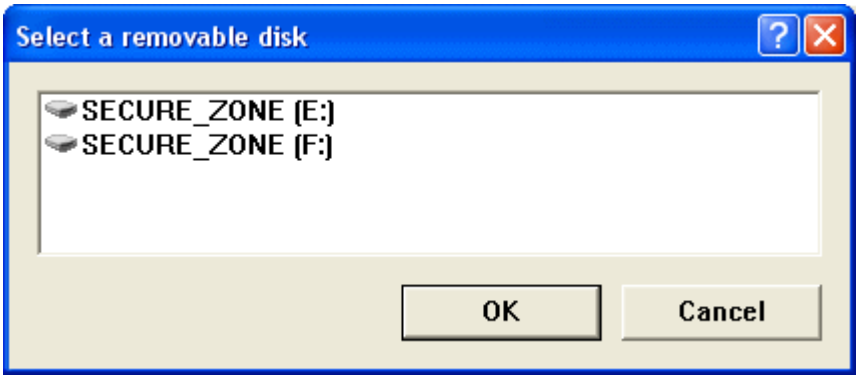
TUBE-O3002.S(O3002), TUBE-O8322.S(O8322)



Copy to Removable Disk

The file and folder are copied to removable disk.

If there are more than one removable disks, a selection dialog box will be displayed.



When the multi-path file (or) is copied, they are copied after being combined with a multi-path program file. A multi-path program file can be read from [Multi-path program manager] screen of machine side.

Read from Removable Disk

The selected file in a removable disk is copied to the current folder.

When a multi-path program file is selected, the dialog box will be displayed to check whether to divide the selected file into each program and copy them.

Print...

The NC program list [C] is printed.

Print Preview

Print preview of the above selected list is displayed.

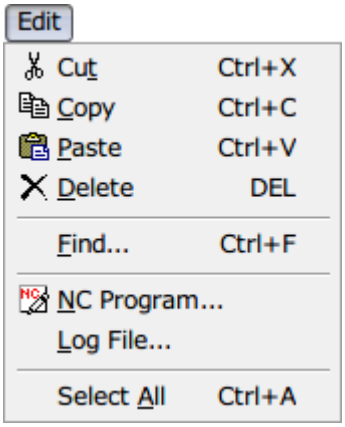
Print Setup

The standard printer setting dialog box is displayed.

Exit

PU-Jr. is terminated.

・[Edit] menu



Cut

Files or folder is registered to be moved.

Copy

Files or folder is registered to be copied.

Paste

Files or Folder is moved or copied.

Delete

A file in the NC Program list [C] is deleted.

Find

The specified file is found. (Refer to section “3-8 Find dialog”)

NC Program

The specified file is opened with Program Edit function.

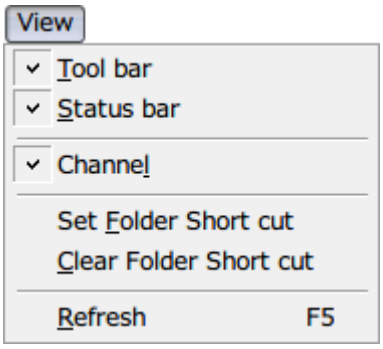
Log File

The specified logged file is opened with Program Edit function.

Select All

All files are selected.

・[View] menu



Toolbar

Select whether toolbar is displayed or not.

Status Bar

Select whether status bar is displayed or not.

Channel

Select the display method of the NC program list in the developing shape.

Set Folder Short cut

The short cut of the selected folder will be set in the “Folder short cut list [B]”. There is no limit on the number of short cuts that can be set.

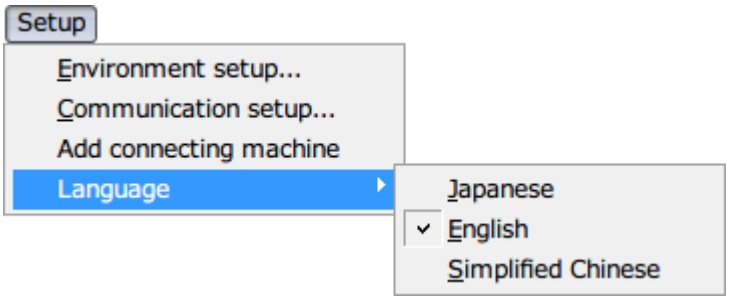
Clear Folder Short cut

This deletes the short cut of the selected folder.

Refresh

The all view is updated.

・[Setup] menu



Environment setup

The environment setup dialog box is displayed. (Refer to section "3-8-1 Environment setup dialog")

Communication setup

The communication setup dialog box is displayed. (Refer to section "3-8-2 Communication setup dialog")

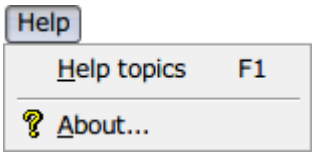
Add machine to connect

Add machine to connect dialog box is displayed. (Refer to section "3-8-3 Add machine to connect dialog")

Language

Switch to the display language that selected in the submenu. (It will be changed after restart.)

・[Help] menu



Help topics

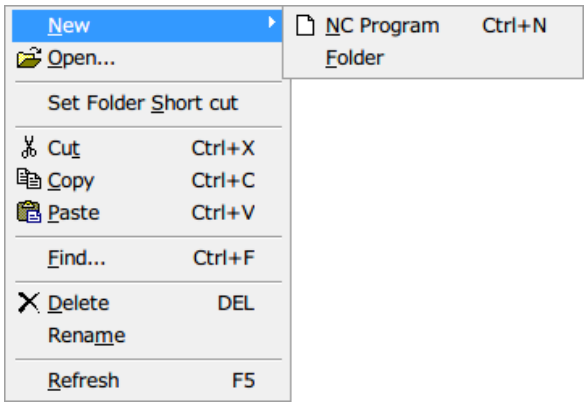
The topic searching dialog box is displayed.

About Program Utility Jr...

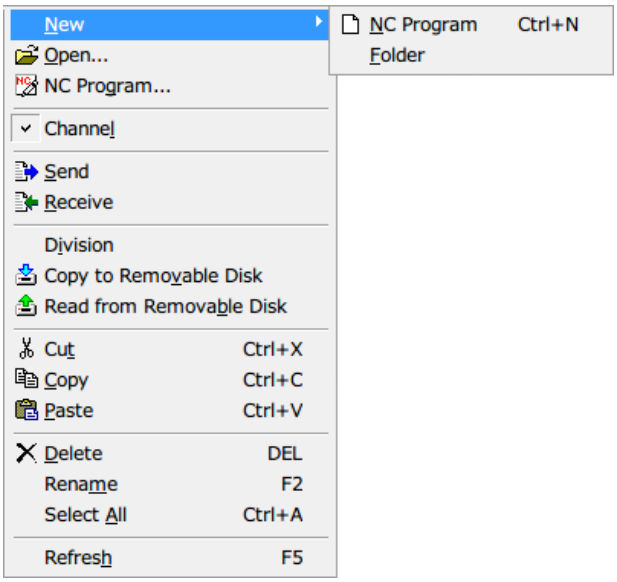
The About PU-Jr. dialog box is displayed.

・Right click menu bar ([A], [B], [C], [D], [E] in each section)

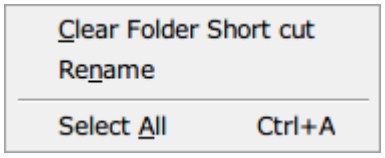
Folder selection tree [A]



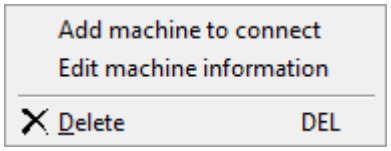
NC Program list [C]



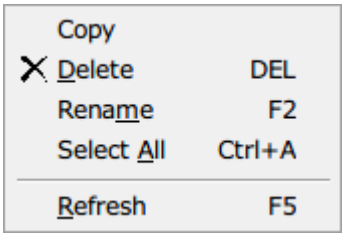
Folder short cut list [B]



Registered machine list tree [D]



NC program list in the machine [E]



3-3-7 Toolbar

Refer to the sections “3-3-3 Menu Bar”, “3-4 Take in MPF”, “3-5 Send operation of NC program”, “3-6 Receive operation of NC program”.

Toolbar appears (disappears) by check (uncheck) of ‘Toolbar’ on the View menu.

New
Open
NC Program edit
Send
Receive
Copy to Removable Disk
Read from Removable Disk
Take in MPF
Cut
Copy
Paste
Print
Delete
About Program Utility Jr...
Help topics

3-3-8 Status Bar

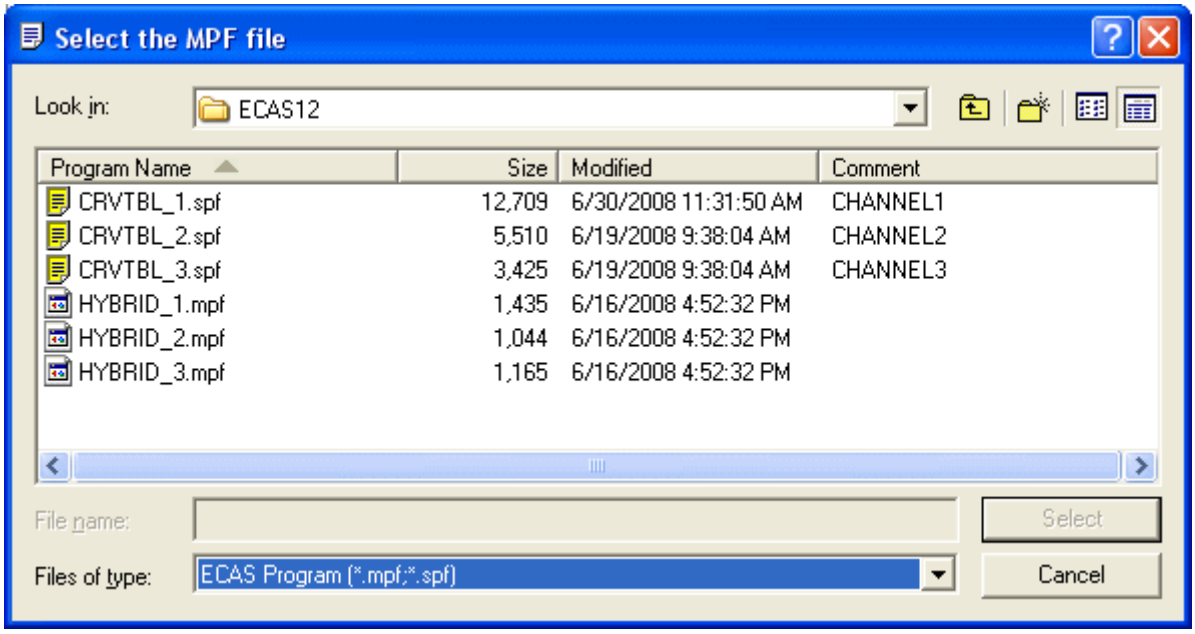
Status Bar indicate the status of [Caps Lock], [Num Lock] and [Scroll Lock]. A help message for the item at which the mouse cursor points is also displayed in this bar.

Status Bar appears (disappears) by check (uncheck) of ‘Status bar’ on the View menu.

3-4 Take in MPF

It mainly utilizes to simplify the management of program created by e-camo system or SD editor. Draw up a MPF management folder, and move the ECAS file which is selected under the MPF management folder.

File selection dialog box is displayed.



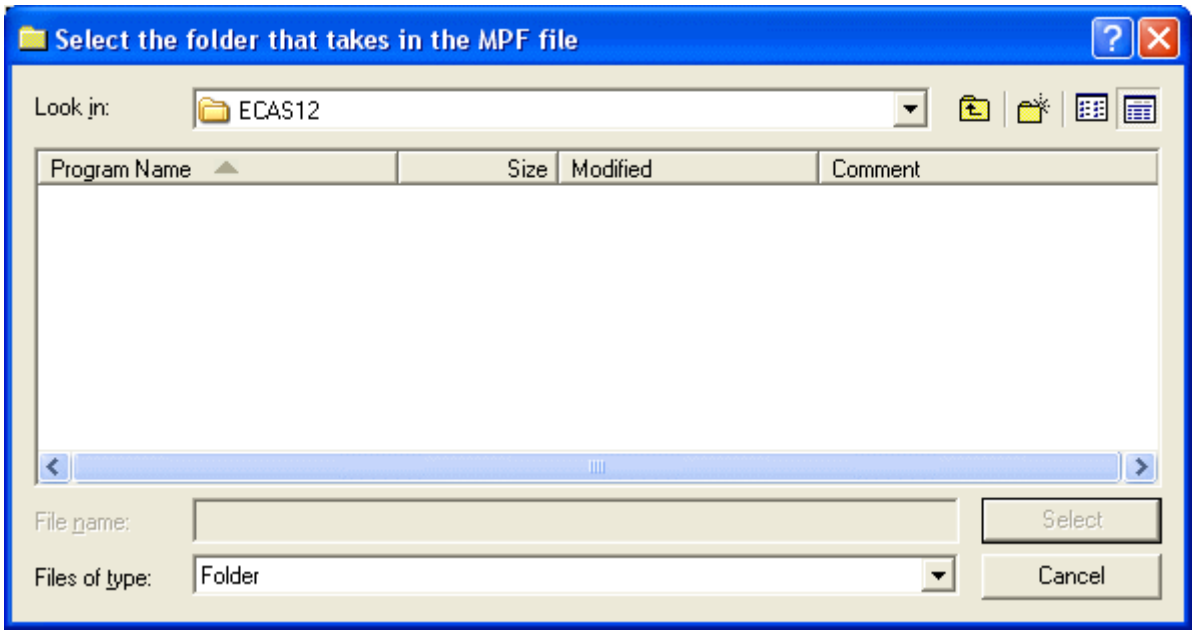
Select the file to move.

Main program file name: Management folder name+"_n"+".MPF" (n=1-3 channel number)

Sub program file name: "*.SPF"

Note) The illegal file name can't be selected and main program with different management folder name cannot also be selected.

When the <Select> button is pressed, the folder selection dialog box appears as shown below.



Select the folder to move. The folder when selecting files is in the condition of default. Select the folder at this time, and click on < Select> button to proceed movement.　When the folder for the management folder name does not exist under the selected folder, a new folder is created.

Note) In the folder name and the file name, the first two characters from the head must be alphabetic characters or underscore "_".

3-5 Send operation of NC program

3-5-1 The machine equipped with FANUC/YASNAC/MITSUBISHI ELECTRIC CNC

The Sending of the NC program is performed through the following two-stage step.

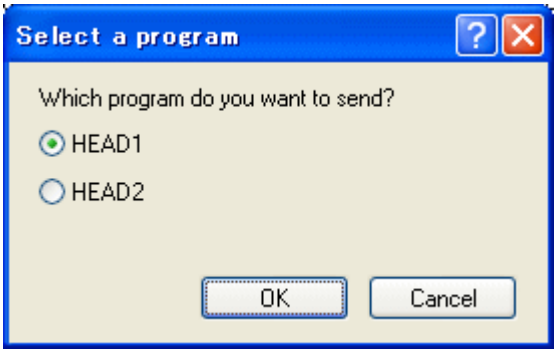
1) The file to send from the PC is specified.

2) The input (read) operation is performed on the machine.

Hereafter, the operation method is explained.

In the NC program list, if the NC program (Example: IMTS) or the icon which is independently displayed is selected and the send operation is performed, the PC immediately enters the waiting state for sending.

In the NC program list, if the NC program that both path 1 and path 2 are displayed is selected and the send operation is performed, the following dialog box will appear.



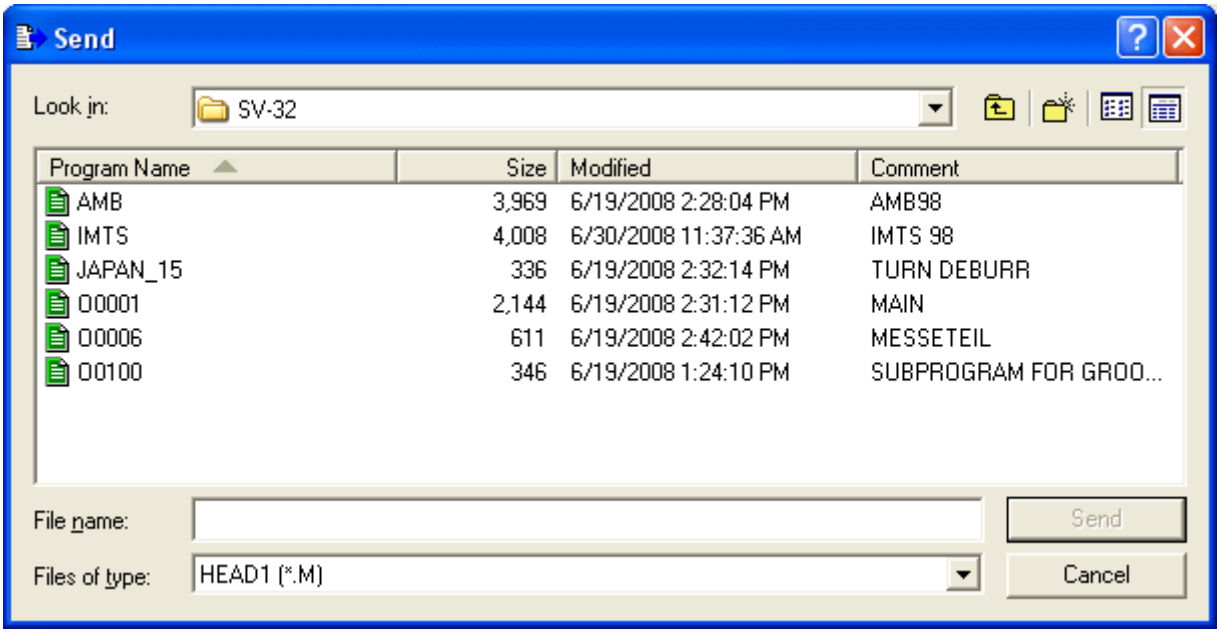
Click on <Cancel> to return to the main screen.

If [PATH1] is selected and [OK] is clicked, the operation will wait for program sending on PATH1.

If [PATH2] is selected and [OK] is clicked, the operation will wait for program sending on PATH2.

If [PATH3] is selected and [OK] is clicked, the operation will wait for program sending on PATH3.

If performing the send operation without selecting a file, the following dialog box will appear.



Select the file type to be sent from the [Files of type] list box.

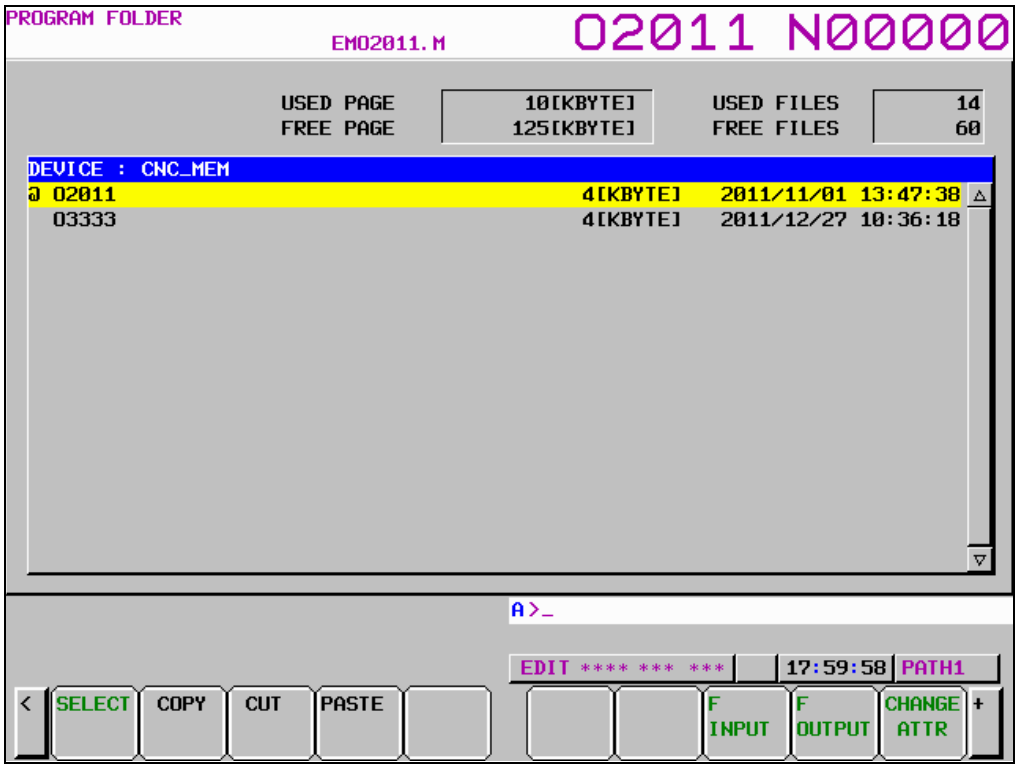
Select a file name from the list, or input an existing name in the [File Name] box, and click <Send>.

Then the PC will enter the waiting state for sending.

(If the inputted file name does not exist, a message will appear and return to the main screen.)

When the PC enters the waiting state for sending, the following dialog box appears to make the NC enter the waiting for input (read) operation.

Next, perform the input (read) operation on the machine.



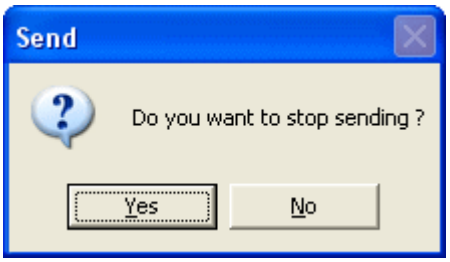
Press the [READ] key or [F INPUT] key and the [EXEC] key to start the sending. The following dialog box appears on PC.

When the sending of the NC program is completed, the sending dialog box closes and returns to the main screen.

To send two or more files, repeat the above-mentioned operation (from the file selection).

To cancel the waiting state for sending, click on <Cancel> in the sending dialog box.

Then the following confirmation box appears.

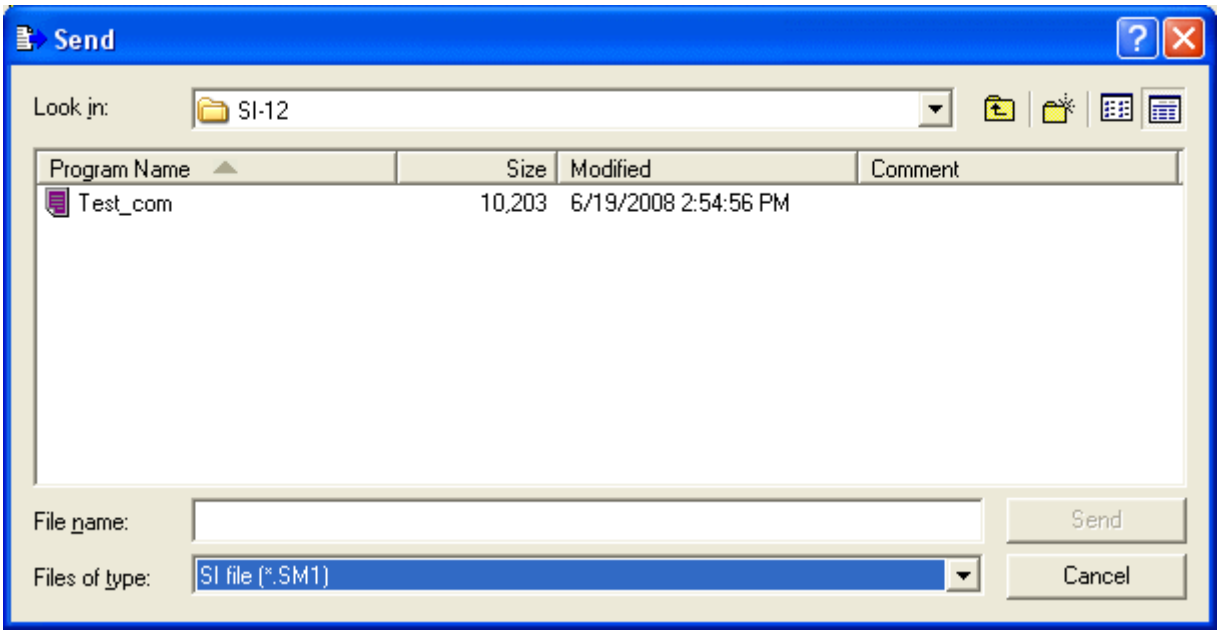


Click on <Yes> to return to the main screen.

Click on <No> to return to the dialog box with sending waiting state.

3-5-2 SI Series

In the NC program list, if you select the SI files and perform the send operation (can be selected from [File] menu, right-click on menu or toolbar), the PC enters the waiting state for sending.
If the send operation is performed without selecting a file, the following dialog box will appear.

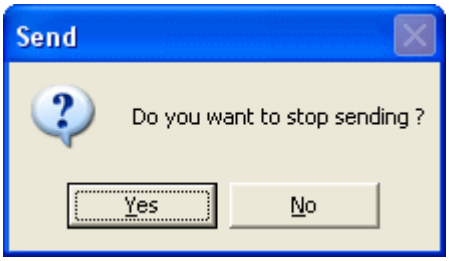


Please select “SI file (*.SM1)” or “All files (*.*)” from the [Files of type] list box.
Select a file name from the list, or input an existing name in the [File Name] box, and click on <Send>. Then the PC will enter the waiting state for sending.
(If inputted file name does not exist, a message will appear and return to the main screen.)

When the PC enters the waiting state for sending, the following dialog box appears.

When the sending of the program is completed, the above-mentioned dialog box closes and returns to the main screen.

To interrupt the sending, click on <Cancel>.
The following confirmation dialog box appears.



Click on <Yes> to return to the main screen.

If the PC is incorrectly connected with the machine, the following dialog box will appear.
Please confirm the connection with the machine (refer to section "1-1 General Specifications") and communication setup (refer to section "3-8-2 Communication setup dialog").

3-5-3 ECAS Series

The Sending of the NC program is performed through the following two-stage step.

1) Specifying the folder or file to send on PC.

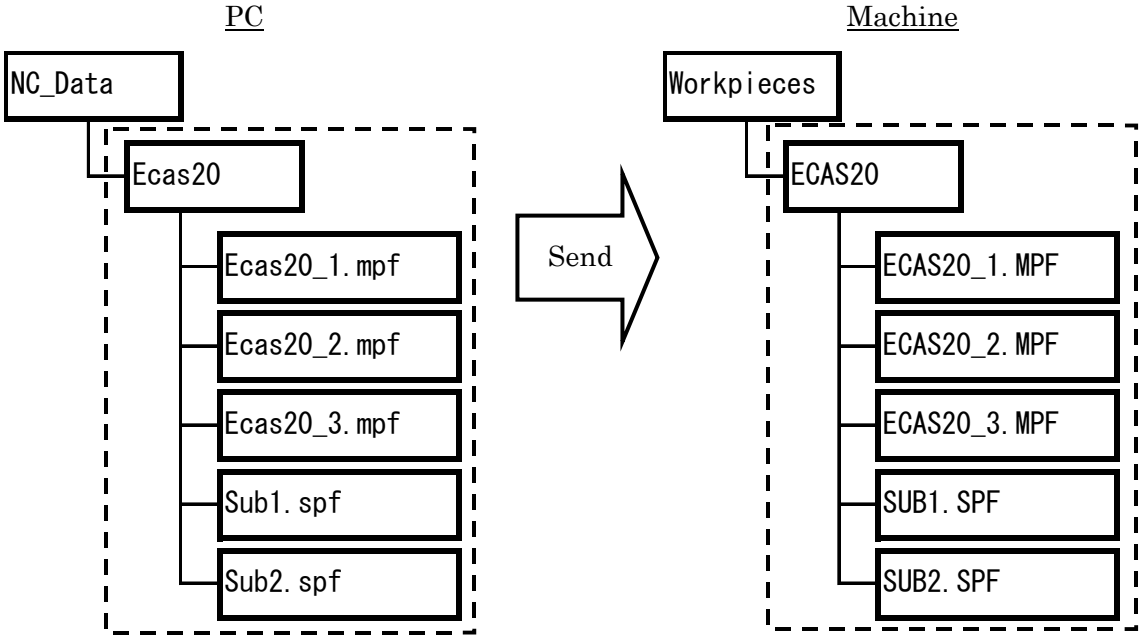
2) Performing the input (read) operation on the machine.

Hereafter, the operation method is explained.

Note) About the folder name and the file name, two characters from the head must be an alphabetic character or underscore "_". The length of a file name should be 22 characters or less.

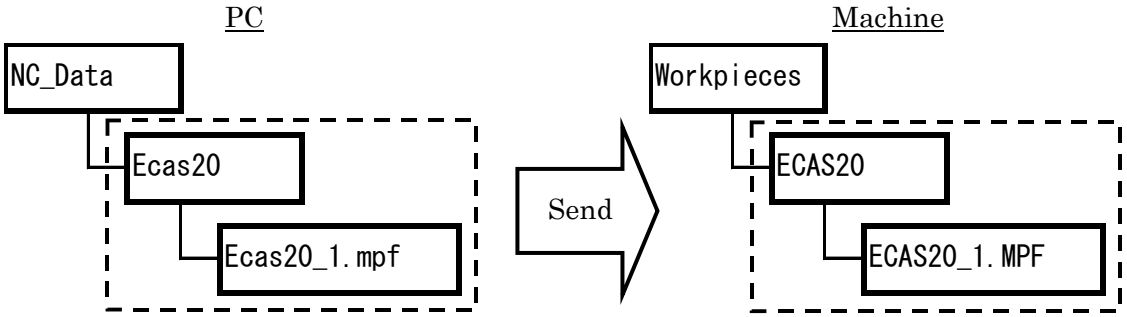
Example) When sending each folder containing NC programs.

A new folder is automatically created on the machine. The folder name is the same as that of the specified folder on PC.

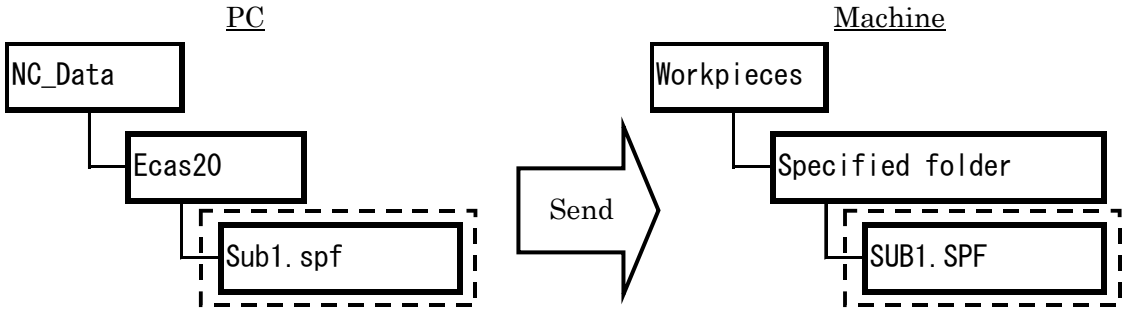


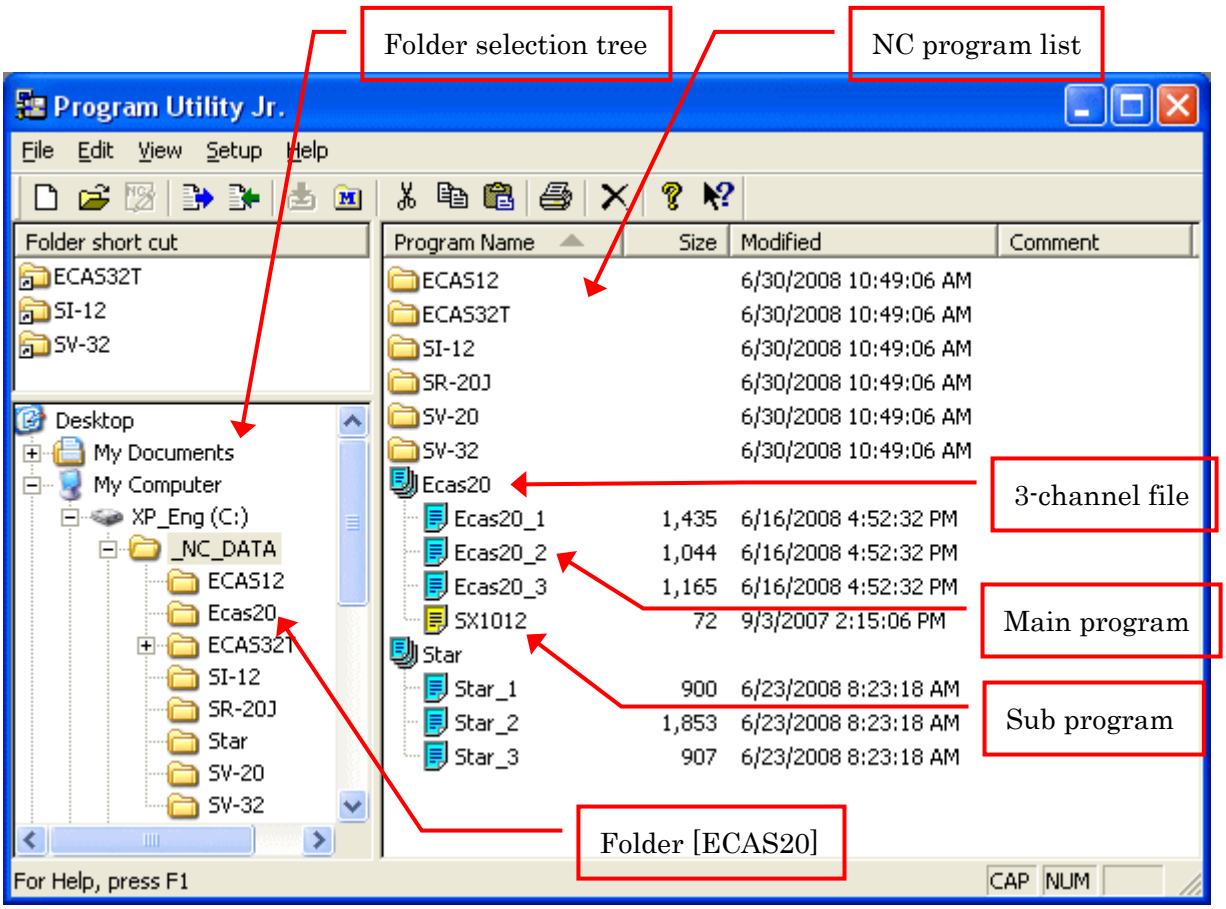
Example) When sending a main program file (.MPF) individually.

(When sending main program file individually, the file will be accompanied by its folder.)



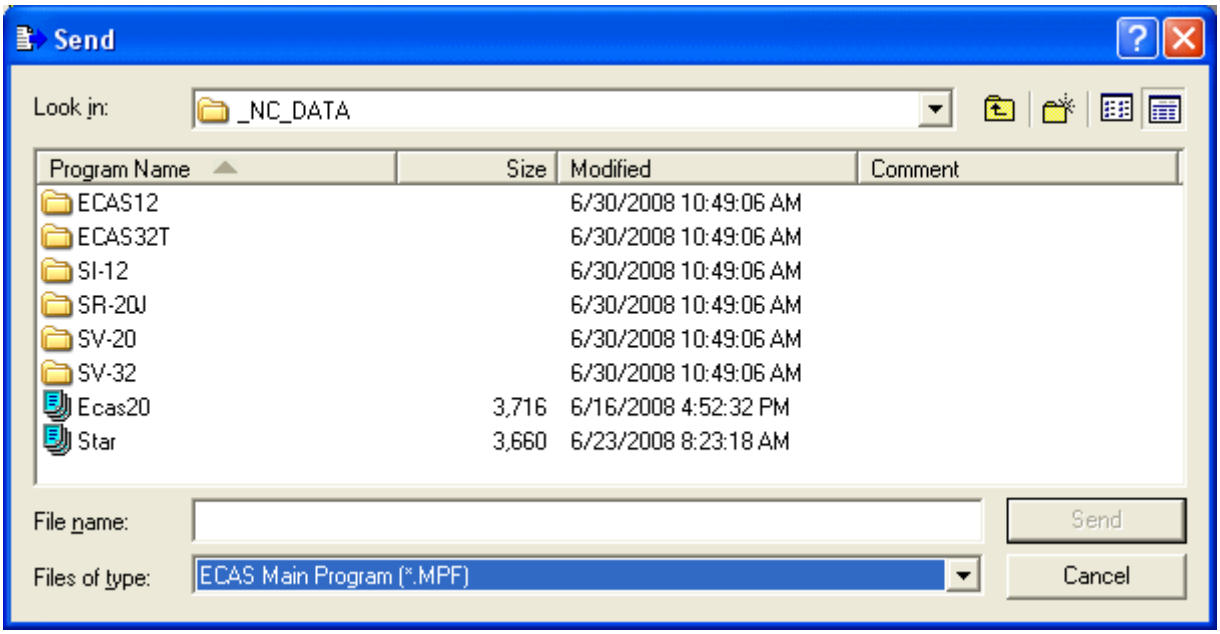
Example) When sending a sub program file (.SPF) individually.





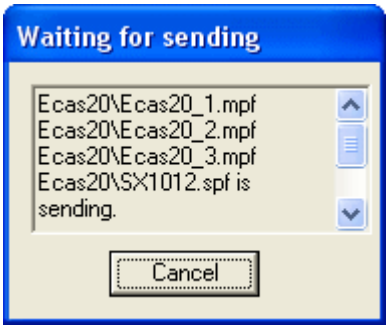
When selecting the folder at which NC program for ECAS series is registered from the folder selection tree, or when the 3 channel file (Ex: ECAS20), main program file of ECAS (Ex: ECAS20_1.MP) or sub program is selected individually, and the sending operation is performed, the PC will immediately enter the waiting state for sending.

If the send operation is performed without selecting a file, the following dialog box will appear.

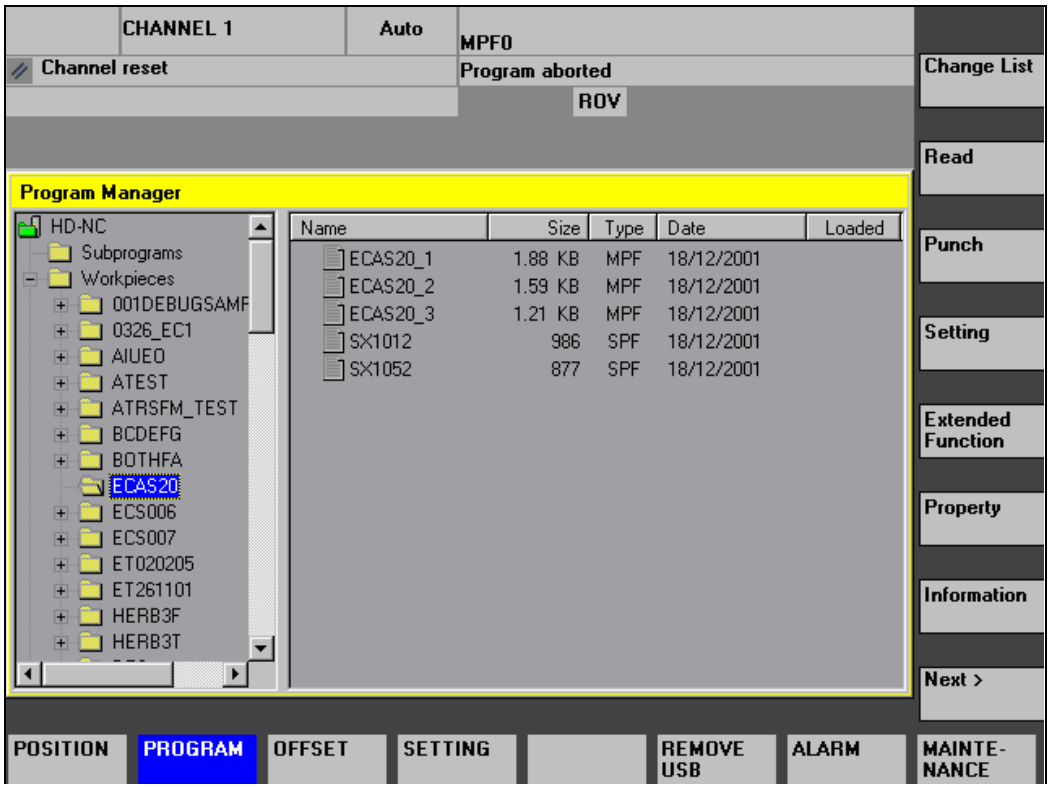


Please select “ECAS Main Program (*.MPF)”, “ECAS Sub Program (*.SPF)” from the [Files of Type] list box or “All files (*.*)”. Select a file name from the list, or input an existing name in the [File Name] box, and click <Send>. Then the PC will enter the state for sending.
For sending the folder individually, select 3 channel file and press <Send> button. Then the PC will enter the state for sending.
(If you input the file name which does not exist, a message appears and returns to the main screen.)

When the PC enters the waiting state for sending, the following dialog box appears.

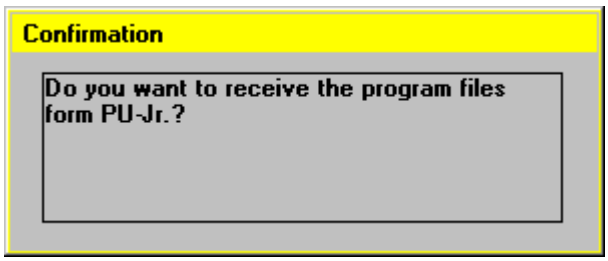


Next, the input (read) operation is performed on the machine.



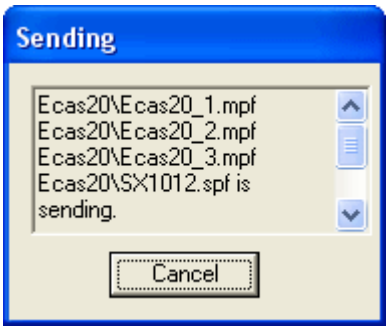
Note1) When sending a main program file (.MPF) individually; if a folder specified in the left pane is either 'Workpieces' or 'Subprograms', the received file cannot be recognized on a machine.
Note2) When sending a sub program file (.SPF) individually; if a folder specified in the left pane is 'Workpieces', the received file will forcibly be saved in the 'Subprograms' folder on a machine.

When [Read] key is pressed, the following confirmation dialog box appears.



Press [Yes] key to start sending. To release sending condition, press [No] key.

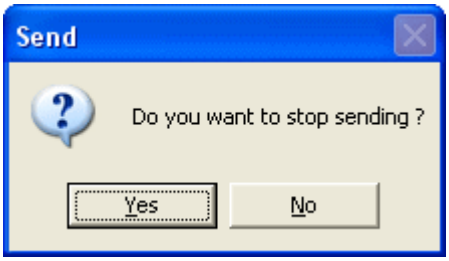
The sending dialog box appears on PC during sending.



When the sending of the NC program is completed, the sending dialog box closes and returns to the main screen.

To interrupt sending, click on <Cancel> of the above-mentioned dialog box.

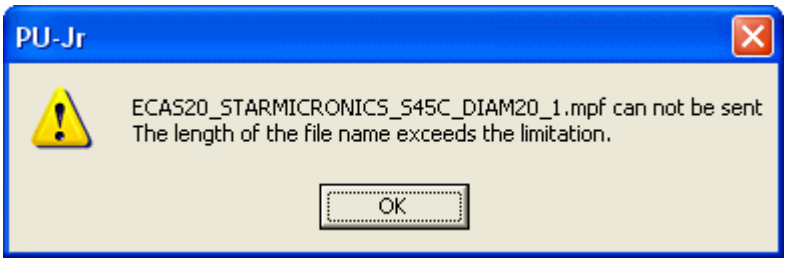
Then the following confirmation box appears.



Click on <Yes> to return to the main screen.

Reference) The number of the characters of the file name for ECAS series is limited up to '22'.

If the number exceeds the limitation, the following dialog box will appear.



Click on <OK> to return to the main screen.

3-6 Receive operation of NC program

Note) Program files cannot be received from SI series.

3-6-1 The machine equipped with FANUC/YASNAC/MITSUBISHI ELECTRIC CNC

The receiving of the NC program is performed through the following two-stage step.

1) Specifying the file to receive (stored) on PC.

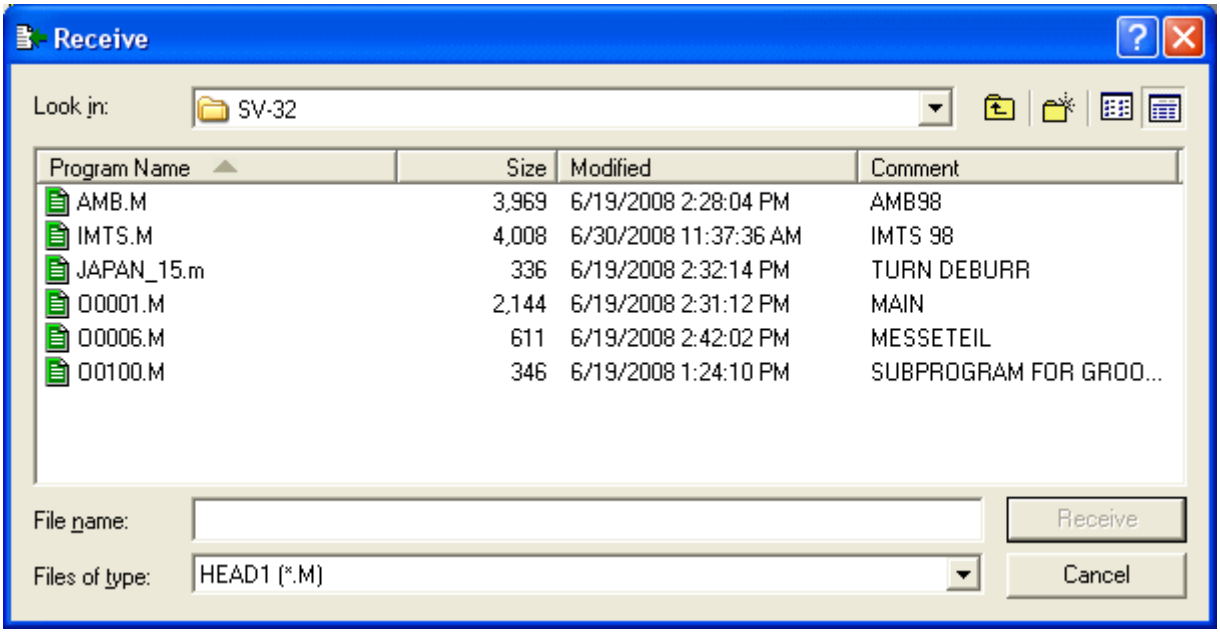
2) Performing the output (punch) operation on the machine.

Hereafter, the operation method is explained.

a) At new preservation

When you select the receive operation (from either of [File] menu, right click menu, toolbar), the following dialog box will appear.

Note) If the receive operation is performed after the NC program is selected while 'Channel display function' is ON, the received program will be overwritten on the selected program. (Refer to the clause b)



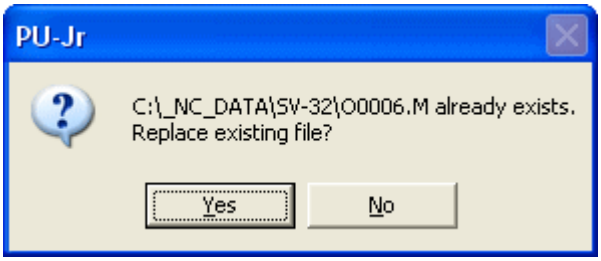
In the above dialog box, select the file type to be received from the [Files of type] list box.

Input a new file name in the [File Name] box, and click on <Receive> to make the PC enter the waiting state for receiving.

Note) When you select the file name from the list, or you input the file name which is already exist, the received program will be overwritten on the specified file. (Refer to the clause b)

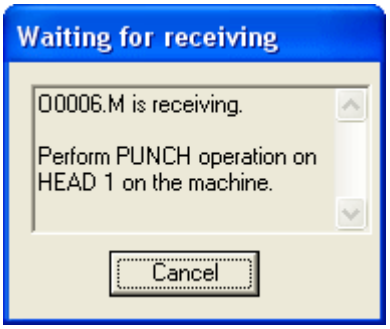
b) At the overwrite storage

If the receive operation is performed after the NC program (example: O0006) is selected while "Channel display function" is ON (refer to the section "3-3-3 NC Program list [C]"), or if the specified program name already exists, the following dialog box will appear.

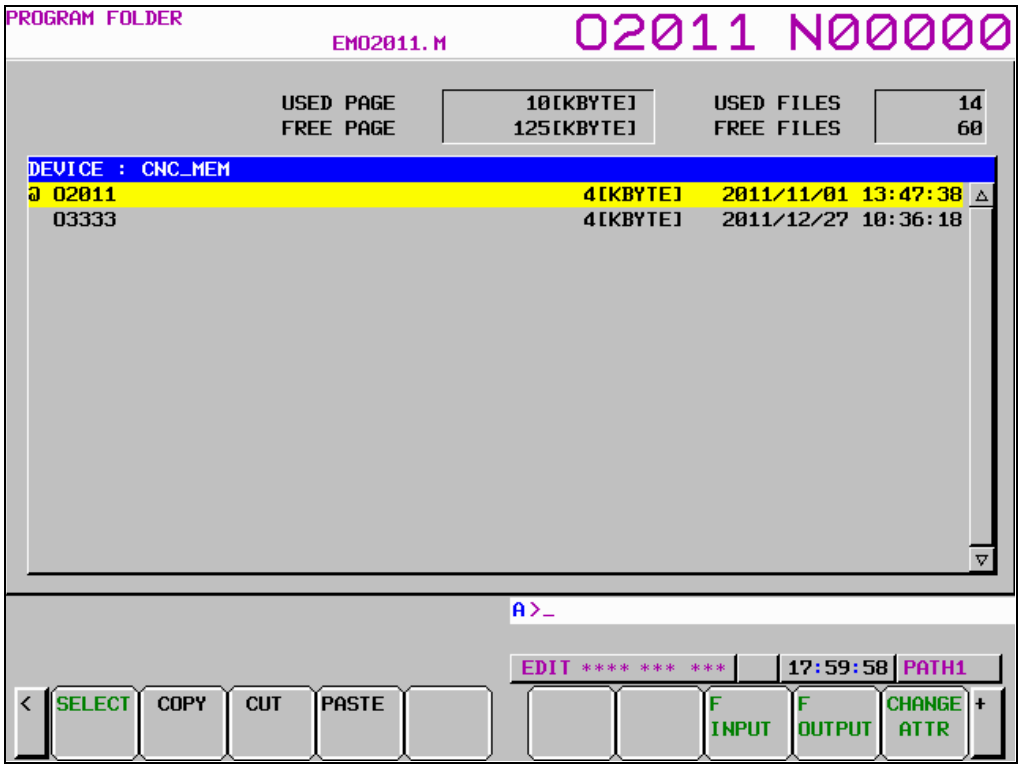


Click on <Yes> to proceed to the waiting state for receiving.
Click on <No> to return to the new preservation dialog box.

When the PC enters the waiting state for receiving, the following dialog box appears to make the NC enter the waiting state for output (punch) operation.



Next, perform the output (punch) operation on the machine.

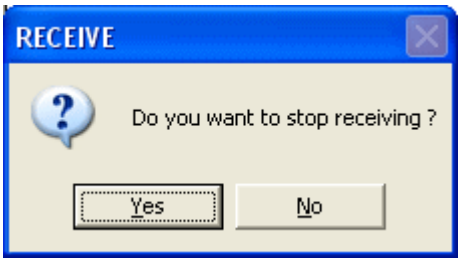


When starting receiving, the following dialog box appears on the PC.

When the receiving of the NC program is completed, the receiving dialog box closes and returns to the main screen.

To receive two or more files, repeat the above-mentioned operation (from the file selection).

To cancel the waiting state for receiving, click on <Cancel> in the receiving dialog box.
Then the following confirmation box appears.



Click on <Yes> to return to the main screen.
Click on <No> to return to the dialog box with receiving waiting state.

3-6-2 ECAS Series

The receiving of the NC program is performed through the following two-stage step.

1) Specifying the file to receive (stored) on PC.

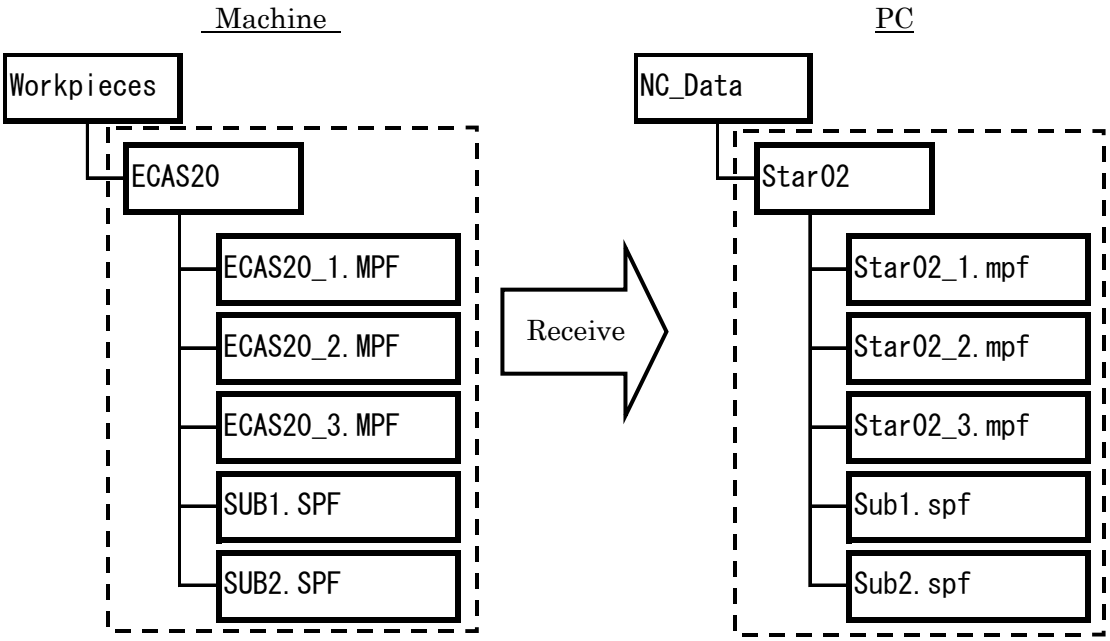
2) Performing the output (punch) operation on the machine.

Hereafter, the operation method is explained.

Note) The length of a file name should be 22 characters or less.
Two characters from the top of the file name should be alphabets.

When receiving each folder containing NC programs.

Example) When proceeding the receive operation as the file name of [Star02] on the PC side, and the output (punch) operation as the file name of [Ecas20] on the machine side. (Regardless of the name of a folder specified on the machine, the received file is saved with a name typed on PC.)

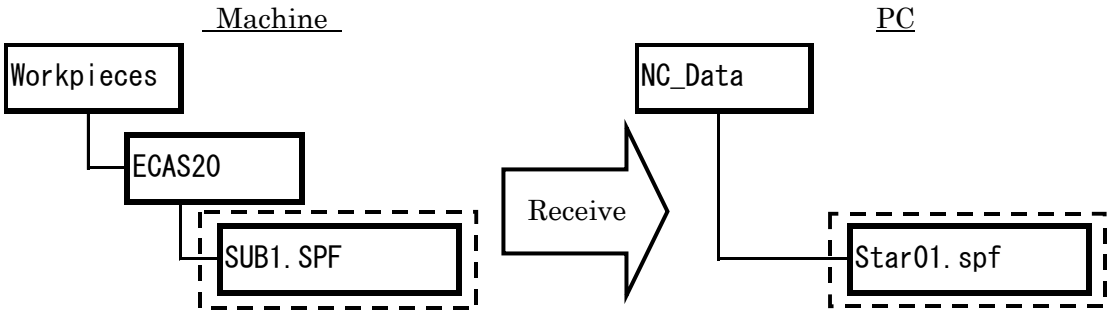


Note) Although the name of a main program file (.MPF) will be what you typed in the file name field, the name of a sub program file (.SPF) will be the same as that of the folder on a machine.

When receiving a file individually

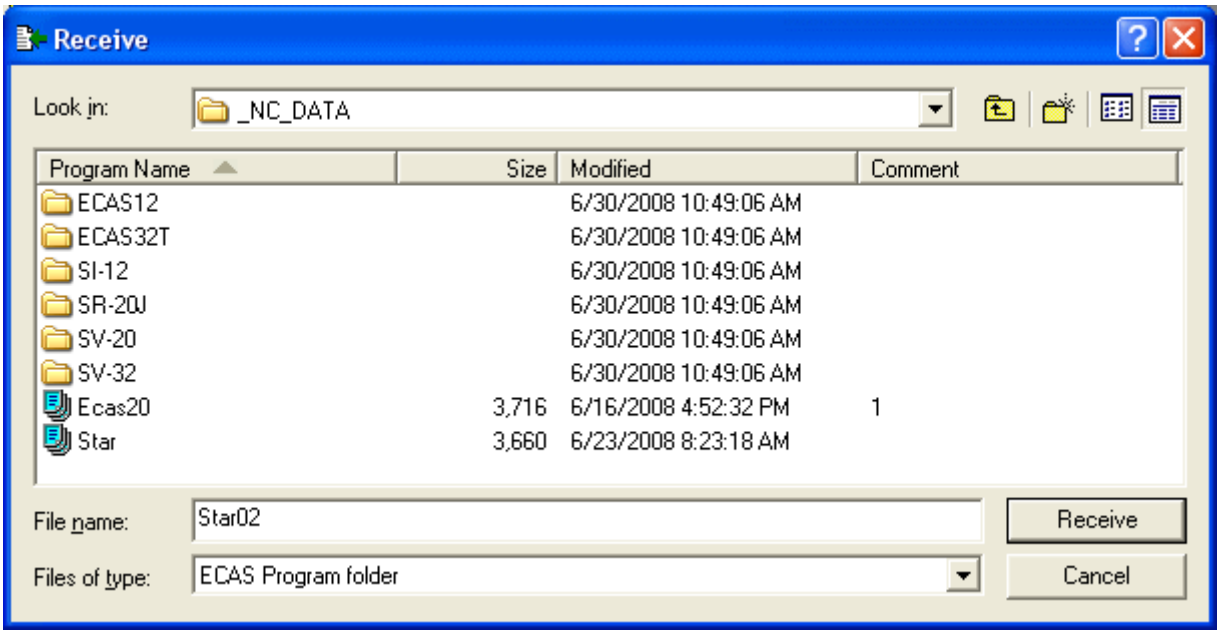
Example) When selecting or specified only the [SUB1.SPF] file and proceeding the output (punch) operation on the machine side.

(Regardless of the file name specified on the machine, the received file is saved with a name typed on PC.)



Note) Receiving main program files should be executed only if overwriting an existing file on PC. If PC receives a file as a new file, a basic Windows folder is automatically created, but the folder cannot be available on PU-Jr. In this case, you need to delete the created folder and retry receiving to the existing file on PC.

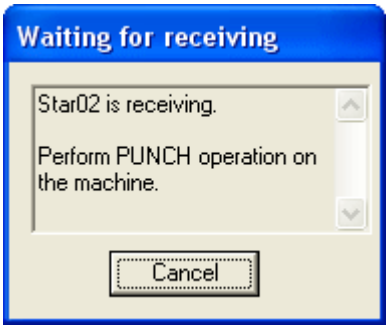
When you select the receive command (from either of [File] menu, right click menu and toolbar) on the PC, the following dialog box will be displayed.



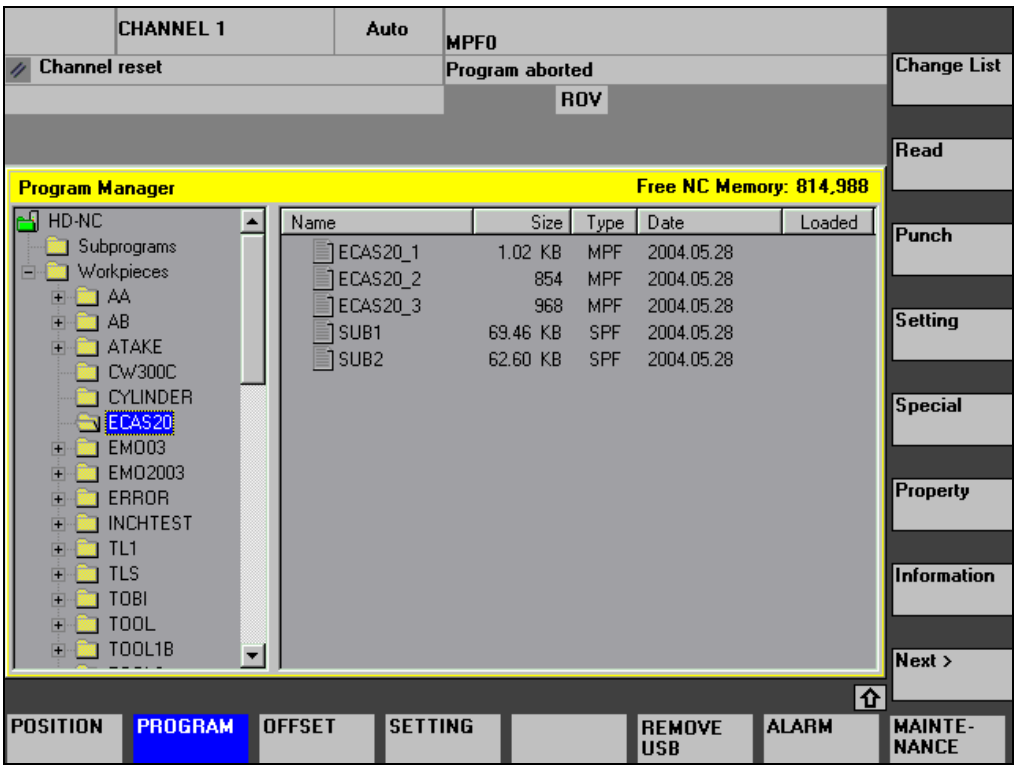
When you select file type “ECAS Program folder”, input file name (Ex:Star02) and click on <Receive> button, the PC will enter the waiting state for receiving.

Note) The file is overwritten when the file name to receive already exists.
The length of a file name should be 22 characters or less.
Two characters from the top of the file name should be alphabets.

When the PC enters the waiting state for receiving, the following dialog box appears.



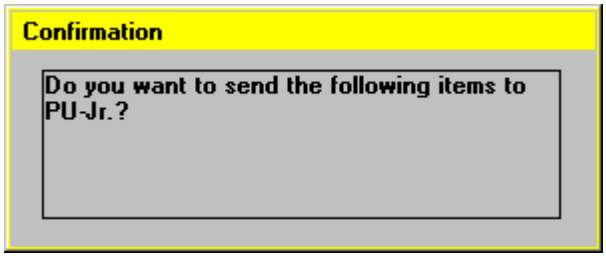
Next, perform the output (punch) operation on the machine.



When receiving each folder containing NC programs.
When selecting the folder by left pane and pressing [Punch] key, all files of its folder are received on the PC.

When receiving a file individually.
(When receiving main program file, all associated channel main program files are to be received together.)
Press [Change List] key and specify a sub program file (.SPF) in the right pane, and then press [Punch] key. Consequently, only specified sub program file will be received on PC.

When the [Punch] key is pressed, the following confirmation box appears.



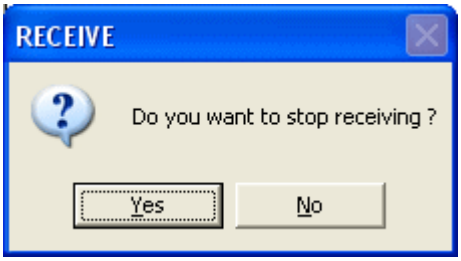
Press [Yes] key to start receiving on the PC.
To release receiving condition, press [No] key.

When the PC starts receiving, the following dialog box appears.

When the receiving of the NC program is completed, the receiving dialog box closes and returns to the main screen.

To release receiving, click on <Cancel>.

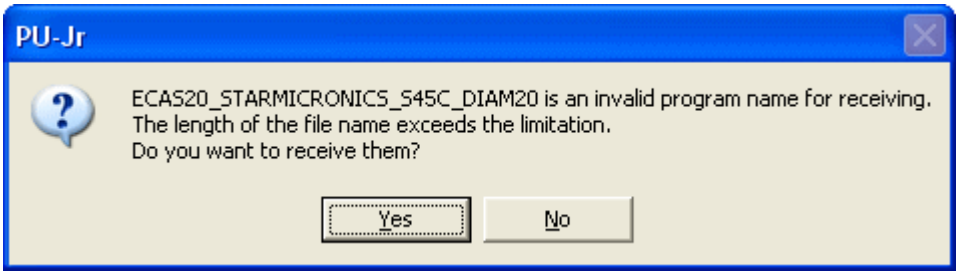
Then the following confirmation box appears.



Click on <Yes> to return to the main screen.

Click on <No> to return to the receiving dialog box.

Reference) If the length of the file name exceeds the limitation (within 22 characters), the following dialog box appears.

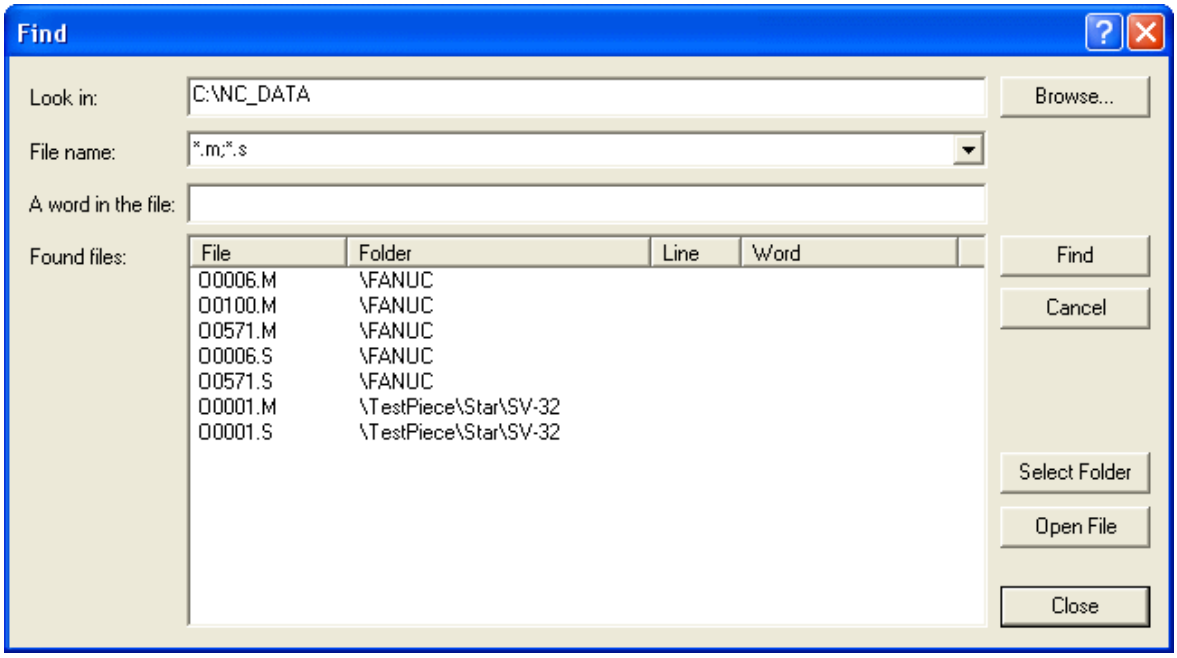


Click on <Yes> to proceed to the waiting state for receiving.

Click on <No> to return to the main screen.

3-7 Find dialog

The Find dialog can search files by specifying a file name and a word in the file.



Look in: Input the folder which searches. A default value is the folder selected by PU-Jr. when opening the Find dialog.

File name: Input a part of the file name or whole name to search. When two or more file names are inputted, divide with the semicolon ";".

Ex:	O0006.m	File:O0006.m is found.
	O0006.*	File:O0006.m, O0006.s are found.
	O*1.m	File:O0001.m, O0571.m... etc are found.
	.m;.s	All the main(*.m) and sub(*.s) files are found.

A word in the file: Input a word to search in searching the file containing a specific word.

Found files: The file name and folder which were found are displayed. When the word is inputted into [A word in the file], the line number and the contents in which the word was found are displayed.

Browse: Open the Browse for Folder dialog box.

Find: Search is started.

Cancel: Search is stopped.

Select folder: When the item is selected in the list, PU-Jr. opens the folder.

Open file: When the item is selected in the list, Program Edit function is activated.

Close: The Find dialog is closed.

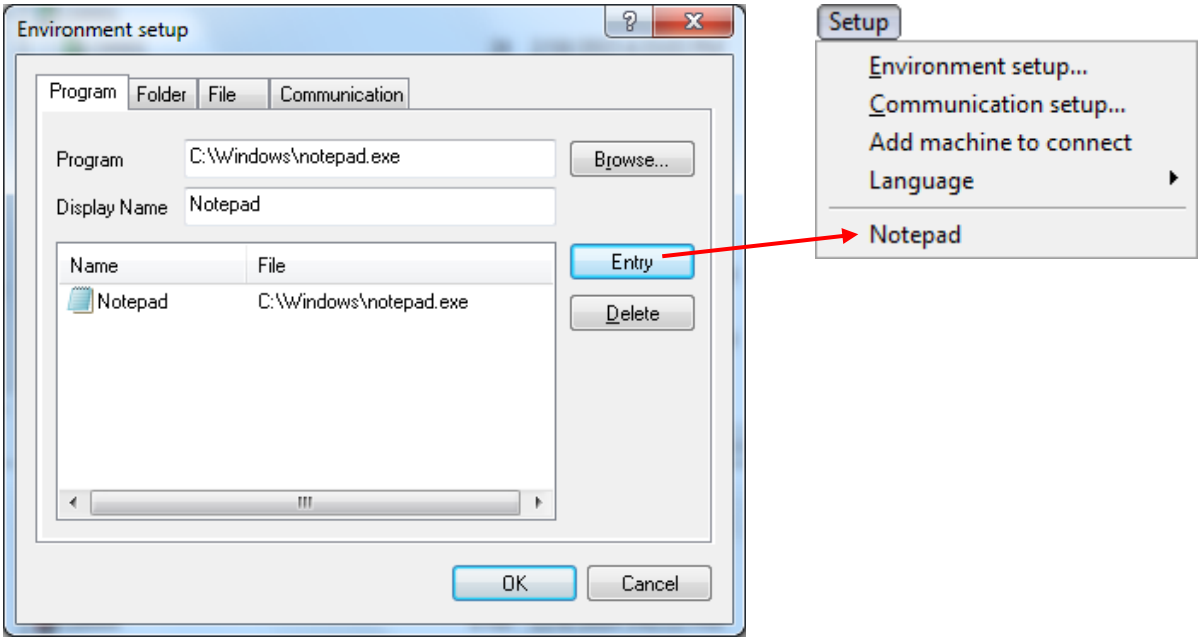
3-8 Setup dialog

3-8-1 Environment setup dialog

The following items can be set on the Environment setup screen.

・External Program

When registering an external program, it will be possible to start the external program from the [Setup] menu.

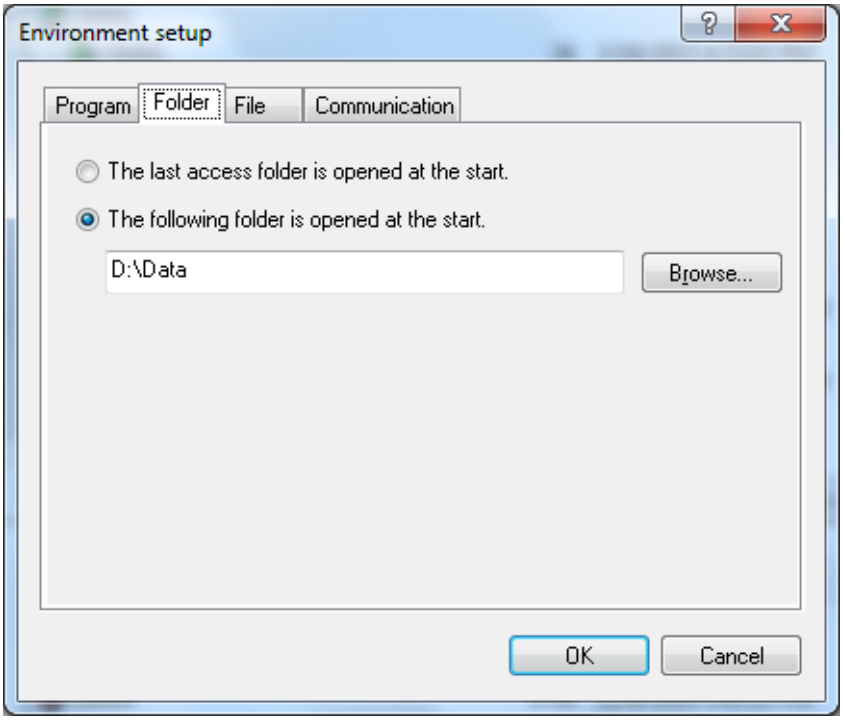


1) Click on [Browse] to display the file selection dialog box.
2) Select program on the file selection dialog box, then input the location of the external program into the “Program” column.
3) Input the name displayed in the [Setup] menu into the “Display Name” column.
4) Click on [Entry] button, and add the external program into the registration list.
5) To delete, select the program on the registration list, then click on [Delete].
6) Click on [OK] button to close the environment setup screen.

Up to 10 external programs can be registered.

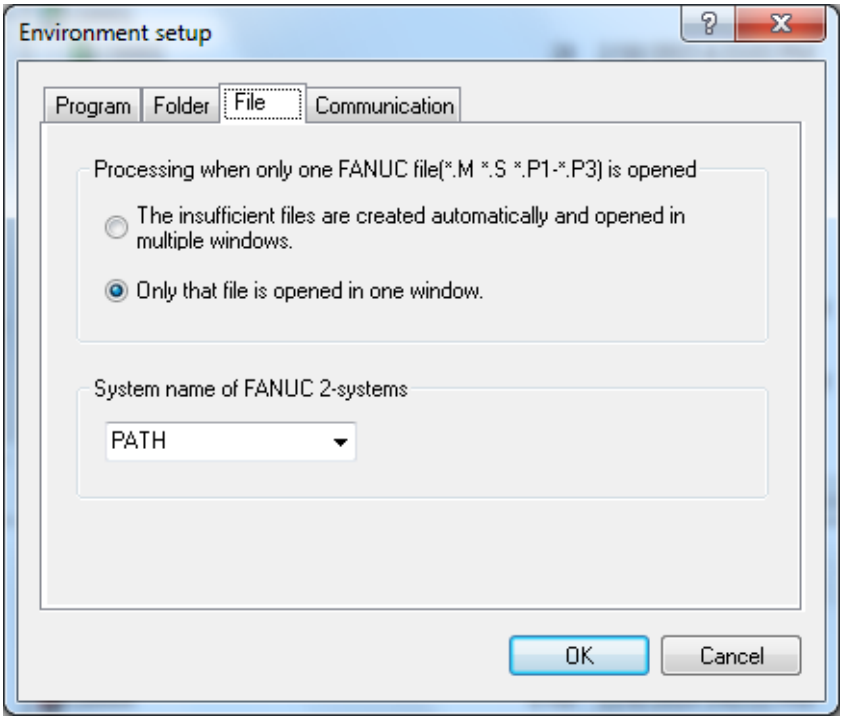
・Folder

Open the specified folder when starting PU-Jr.



・File

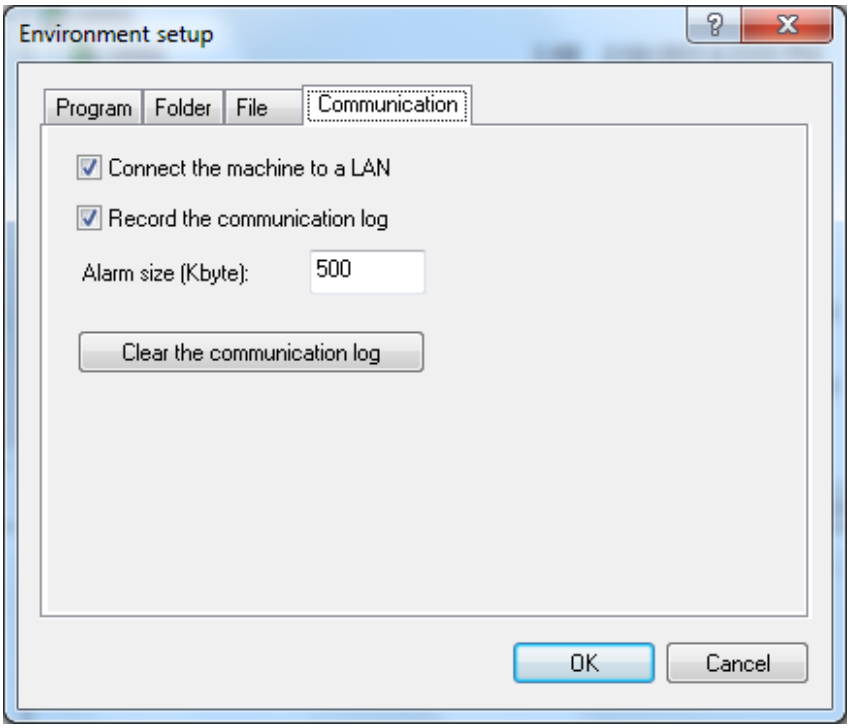
The method of opening a file by PUE in case there is only one program file is selected.



When "The insufficient files ..." is selected, empty files are automatically created to a path without a file. (When "STAR001.M" exists, if this file is opened by PUE, "STAR002.S" will be created automatically.)

The name of FANUC 2-systems can be selected from "HEAD" and "PATH". The selected name is displayed on the [Send] dialog box or the [Receive] dialog box.

・Communication



When the check box of “Connect the machine to a LAN” is selected, a LAN function is enabled. After rebooting PU-Jr., the registered machine list tree and NC program list in the machine are displayed.

When the check box of “Record the communication log” is selected, the communication log will be recorded.

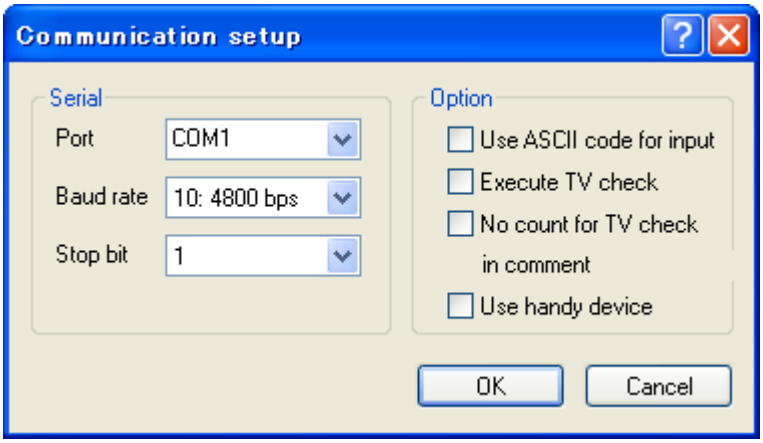
Input the maximum file size of the communication log file into the “Alarm size (Kbyte)” column. The initial value is 500K bytes.
The full path of the communication log file is as follows:
<My Documents.> \Star Micronics\PU-Jr.\PUJrLog.txt

▪ Log file example

```
09/28/1999 05:33:35 192.168.23.67 Path#=1 SEND    D:\star\NC_Data\bbbxxx\\Sample2.M
09/28/1999 05:33:35 192.168.23.67 Path#=1 ERROR (5)
09/28/1999 05:33:37 192.168.23.67 Path#=2 SEND    D:\star\NC_Data\bbbxxx\\Sample2.S
09/28/1999 05:34:50 192.168.23.67 Path#=1 SEARCH O11
09/28/1999 05:34:53 192.168.23.67 Path#=2 SEARCH O3001
09/28/1999 05:35:58 192.168.23.67 Path#=1 SEND    D:\star\NC_Data\bbbxxx\\Sample2.M
09/28/1999 05:35:58 192.168.23.67 Path#=2 SEND    D:\star\NC_Data\bbbxxx\\Sample2.S
```

3-8-2 Communication setup dialog

The necessary parameters for the communication protocol through RS-232C are set.



The data should be set as the machine to communicate.

Please set communication port number (COMx) displayed on the device manager to “Port”.
Please match “Baud rate” setting to the baud rate on the machine side.
Please match “Stop bit” setting to the stop bit on the machine side.
Please refer to section “2-3 CNC side setting” for the setting of the machine side.
Please set “Baud rate” to 19200 and “Stop bit” to 1 for SI series.

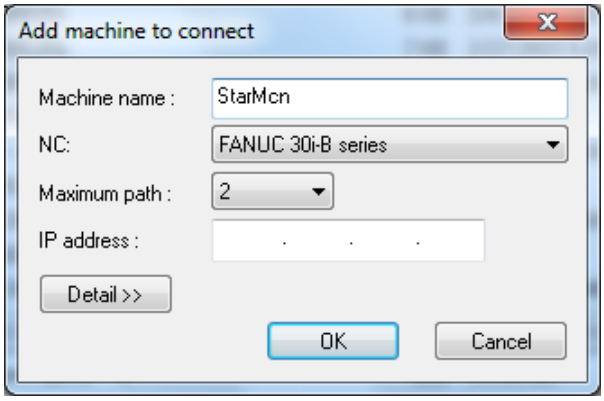
Please check off all check boxes in “Option” normally.
*When using handy communication device, check “Use handy device”

Refer to section “7-1-6 The NC programs cannot be input and output between machine and PC” if communication cannot be performed properly

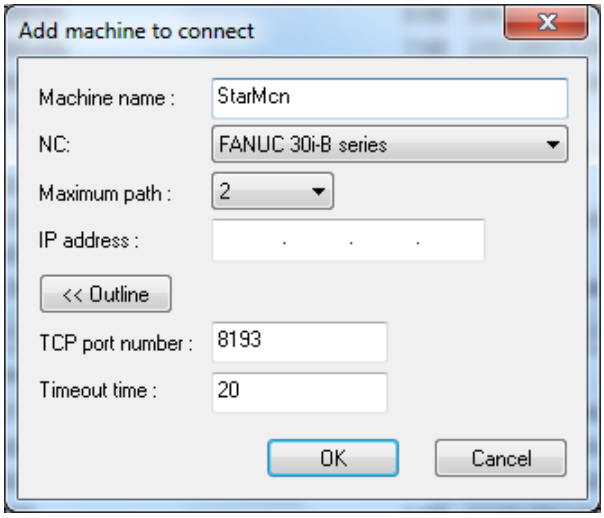
3-8-3 Add machine to connect dialog

(Note) When LAN function is disabled, this dialog cannot be used.

The necessary parameters to connect the machine to a LAN are set.



Outline



Detail

The data should be set depending on the machine to connect.
“Machine name” should be set the desired name to easily identify the machine.
“NC” should be set as CNC type of the machine to connect.
“Maximum path” should be set as the maximum path of the machine to connect.
“IP address” should be set as the IP address of the machine to connect.
“TCP port number” should be changed, when TCP port number of the machine to connect is changed.
“Timeout time” should be set depending on the network environment.

3-9 LAN function

(Note) LAN function is only supported on FANUC NC from FS16i/18i/21i series.

When LAN function is enabled, PC can connect to the machine.
Please register the machine to connect in section “3-8-3 Add machine to connect dialog” to connect to the machine.

To edit the registered machine information, right-click on the program to edit on the registered machine list tree, then click on [Edit machine information].
To delete the registered machine information, right-click on the program to delete on the registered machine list tree, then click on [Delete].

3-9-1 Send operation of NC program

In the NC program list, if selecting the FANUC NC program and performing drag and drop to the NC program list in the machine, PC will immediately send selected program.

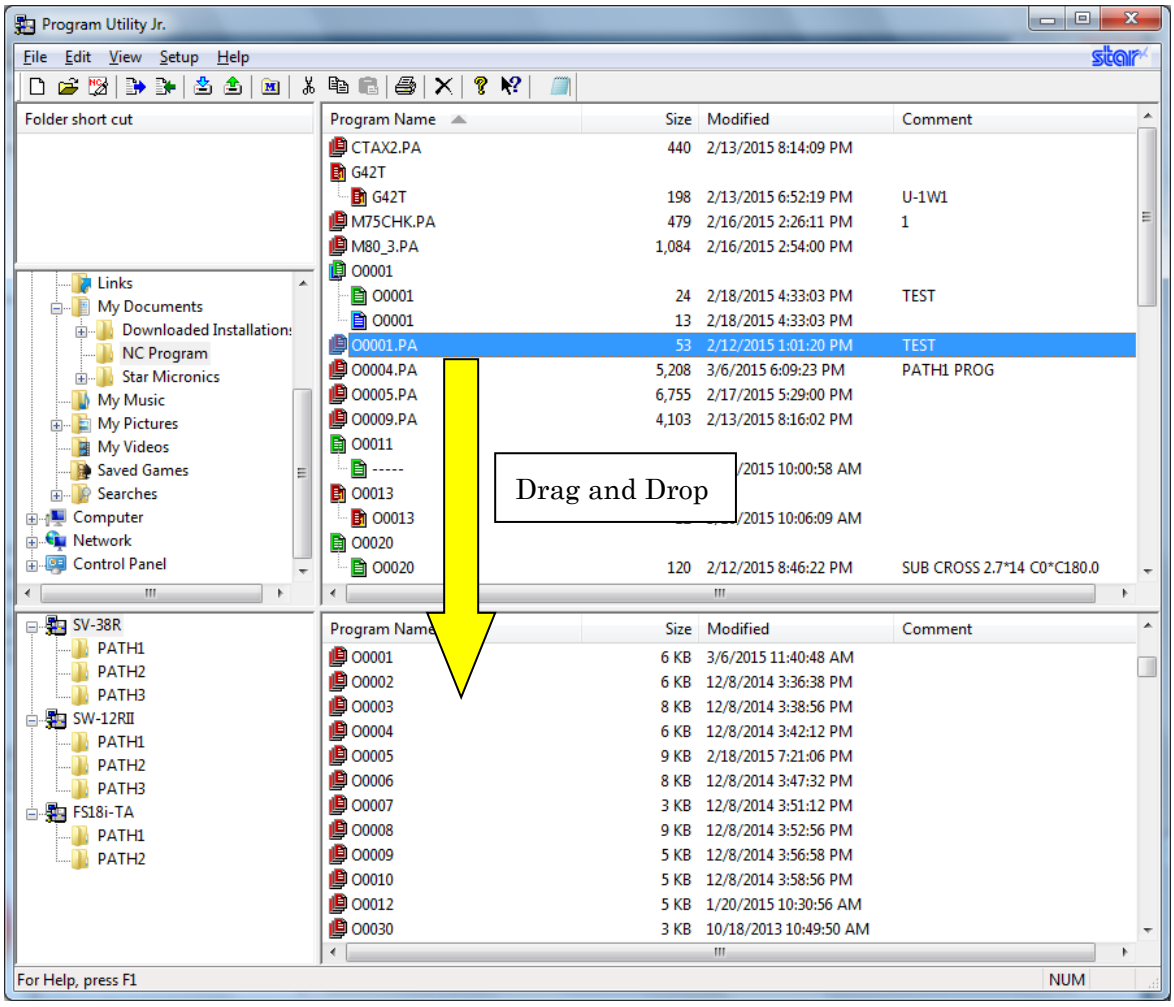
The save locations of the machines on the machine are shown below.

- When selecting machine name on the registered machine list tree

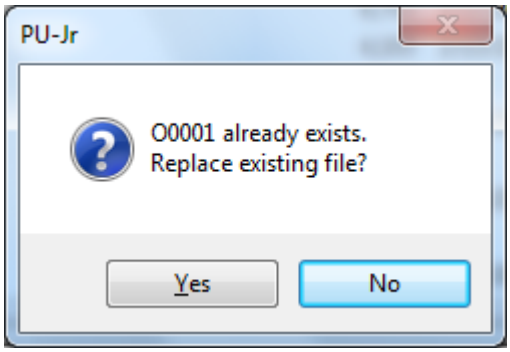
Extension	Save location
M、P1	PATH 1
S、P2	PATH 2
P3	PATH 3
PA	All Path

- When selecting any of the control systems on the registered machine list tree

Extension	Save location
M, S, P1, P2, P3	Control system selected on the registered machine list tree
PA	All Path



When the specified program already exists, the following dialog box appears.



Click on <YES> and the existing program in the machine is replaced the specified program.

Click on <NO> to cancel the send operation.

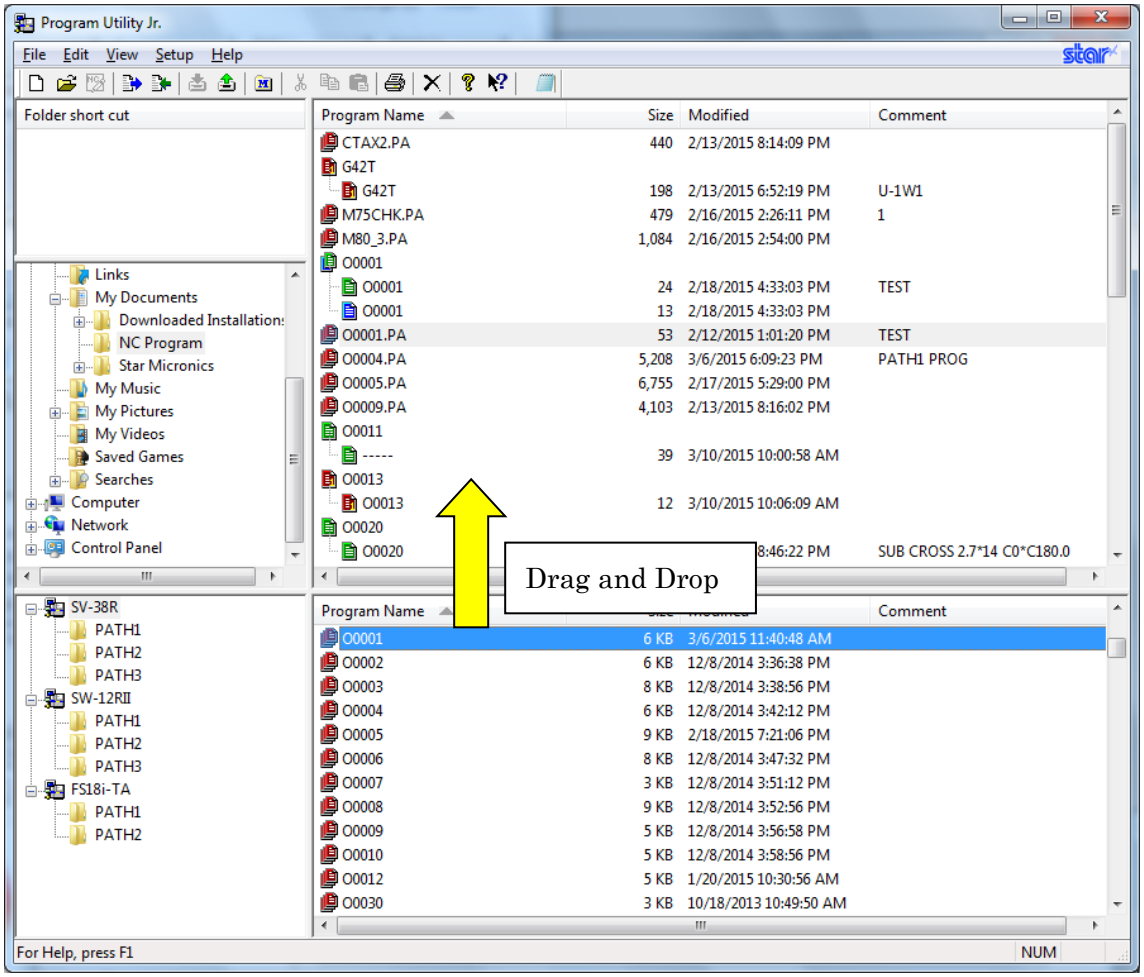
3-9-2 Receive operation of NC program

(Note) <For the CNC series of 16i, 18i, 21i>

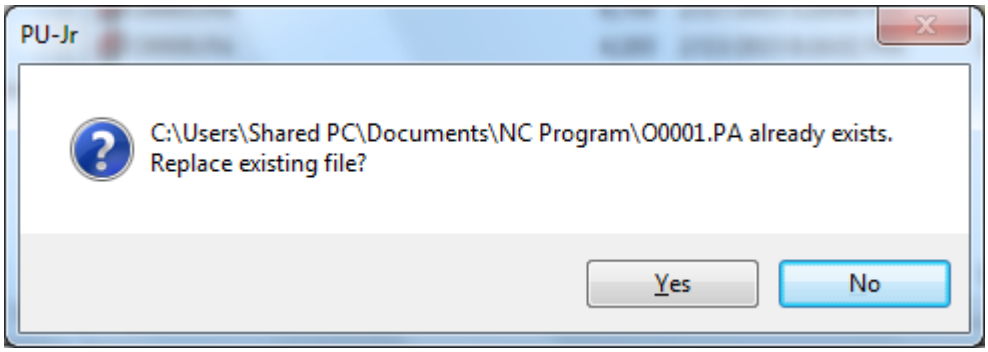
- Switch the machine mode to other than MDI mode.
  In addition, stop the background edit. Otherwise, an error will be generated.

In the NC program list in the machine, if selecting the NC program in the machine and performing drag and drop to the NC program list, PC will immediately receive the selected program.
The extension of the file is decided depending on the specified item in the registered machine list.

Specified item	Extension
Machine name	PA
PATH1	M (Maximum path is 1 or 2) P1 (Maximum path is 3)
PATH2	S (Maximum path is 1 or 2) P2 (Maximum path is 3)
PATH3	P3



When the specified program already exists on PC, the following dialog box appears.

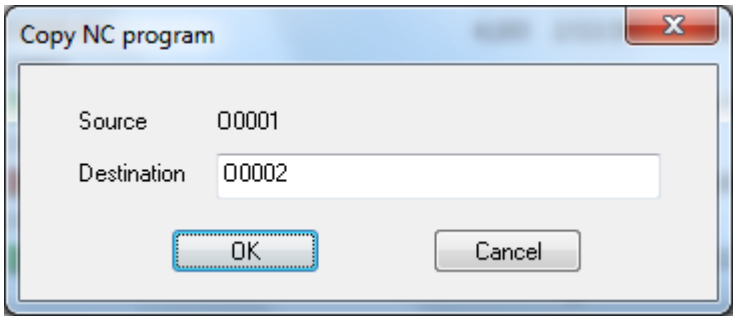


Click on <YES> and the existing file in the PC is replaced with the specified program.
Click on <NO> to cancel the receive operation.

3-9-3 Copy NC program in the machine

(Note) FS16i/18i/21i cannot copy NC program.

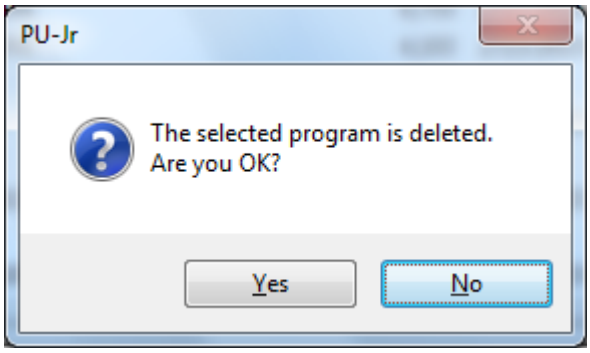
In the NC program list in the machine, when the program to copy is right-clicked and selected <Copy>, the following dialog box appears.



When the Destination is inputted and <OK> is clicked, the selected program is copied with the specified program name.
Click on <Cancel> to cancel the copy operation.

3-9-4 Delete NC program in the machine

In the NC program list in the machine, when the program to delete is right-clicked and selected <Delete>, the following dialog box appears.



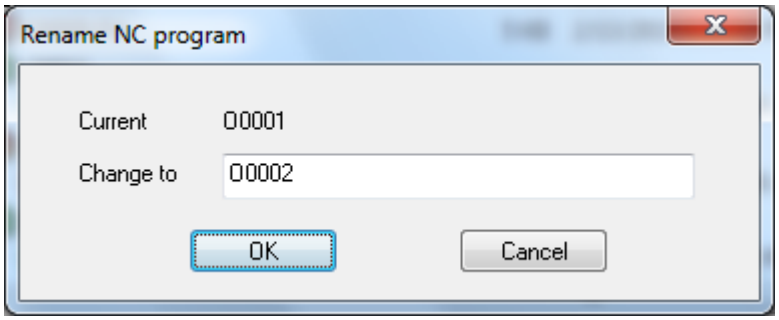
Click on <Yes> and the specified program is deleted.

Click on <No> to cancel the delete operation.

3-9-5 Rename NC program in the machine

(Note) FS16i/18i/21i cannot rename NC program.

In the NC program list in the machine, when the program to rename is right-clicked and selected <Rename>, the following dialog box appears.



The program name after the change is inputted and then, <OK> is clicked to rename the selected program to the specified program.
Click on <Cancel> to cancel the rename operation.

CHAPTER 4
Program Edit function

4 Program Edit function

The Program Edit function is a function which facilitates making editing of the program.

4-1 Starting Program Edit function

・For Windows 8.1 or Windows 8

a) When starting from PU-Jr.

・New program

When creating a new program, select [New] from the menu bar [File], or click the [New] button  on the toolbar.

・Existing program

When opening the existing program, double click the desired program name in the NC program list [B], or select [Edit NC Program] from the right-click menu.

b) When starting from the Start screen

Click on [Program Edit Function] tile on the Start screen to start up.

If the Start screen is not displayed, move the mouse pointer to the top-right corner or bottom-right corner to display the Charms bar, and then click on [Start].

c) When starting from the “Apps” screen

1) Right-click on an empty area in the Start screen.

2) Select [All apps] from the displayed application bar.

3) “Apps” screen is displayed. Click on [Program Edit function] to start up.

・For Windows7 or Windows Vista

a) When starting from PU-Jr.

・New program

When creating a new program, select [New] from the menu bar [File], or click the [New] button  on the toolbar.

・Existing program

When opening the existing program, double click the desired program name in the NC program list [B], or select [Edit NC Program] from the right-click menu.

b) When starting from the start menu.

1) Select Windows's [Start] menu.

2) Select [Program] command.

3) Select [Star Micronics].

4) Select [Common].

5) Select [Program Edit] to start Program Edit function.

・For Windows11 or Windows 10

a) When starting from PU-Jr.

・New program

When creating a new program, select [New] from the menu bar [File], or click the [New] button  on the toolbar.

・Existing program

When opening the existing program, double click the desired program name in the NC program list [B], or select [Edit NC Program] from the right-click menu.

b) When starting from the start menu.

1) Select Windows's [Start] menu.

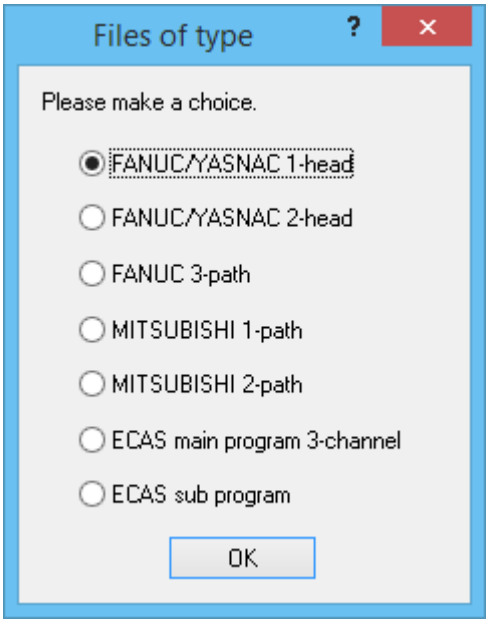
2) Select [All apps].　<- For Windows 11

3) Select [Star Micronics].

4) Select [PUE] to start Program Edit function.

・**When starting on a new program**

When starting up [Program Edit Function] on a new program, the following dialog box is displayed.



Select 'FANUC/YASNAC 1-head' to display the program edit screen for path 1.

Select 'FANUC/YASNAC 2-head' to display the program edit screen of 2-path.

Select 'FANUC 3-path' to display the program edit screen of 3-path for the FANUC.

Select 'MITSUBISHI 1-path' to display the program edit screen of path 1 for the MITSUBISHI.

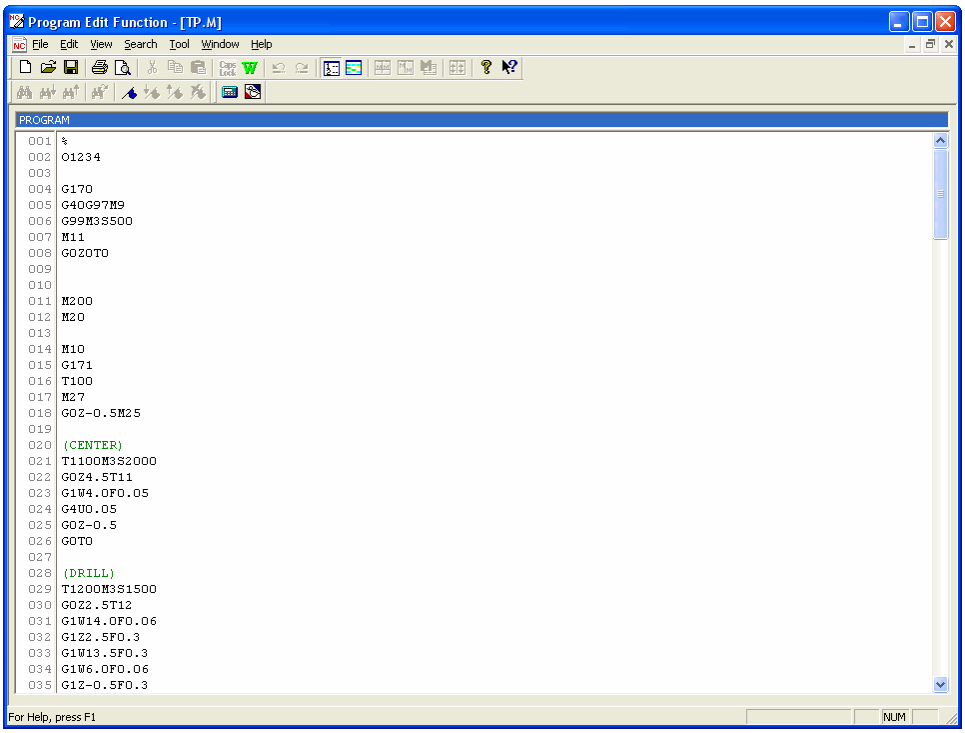
Select 'MITSUBISHI 2-path' to display the program edit screen of 2-path for the MITSUBISHI.

Select 'ECAS main program 3-channel' to display the program edit screen of 3-channel (3-path) for the ECAS.

Select 'ECAS sub program' to display the subprogram edit screen for the ECAS.

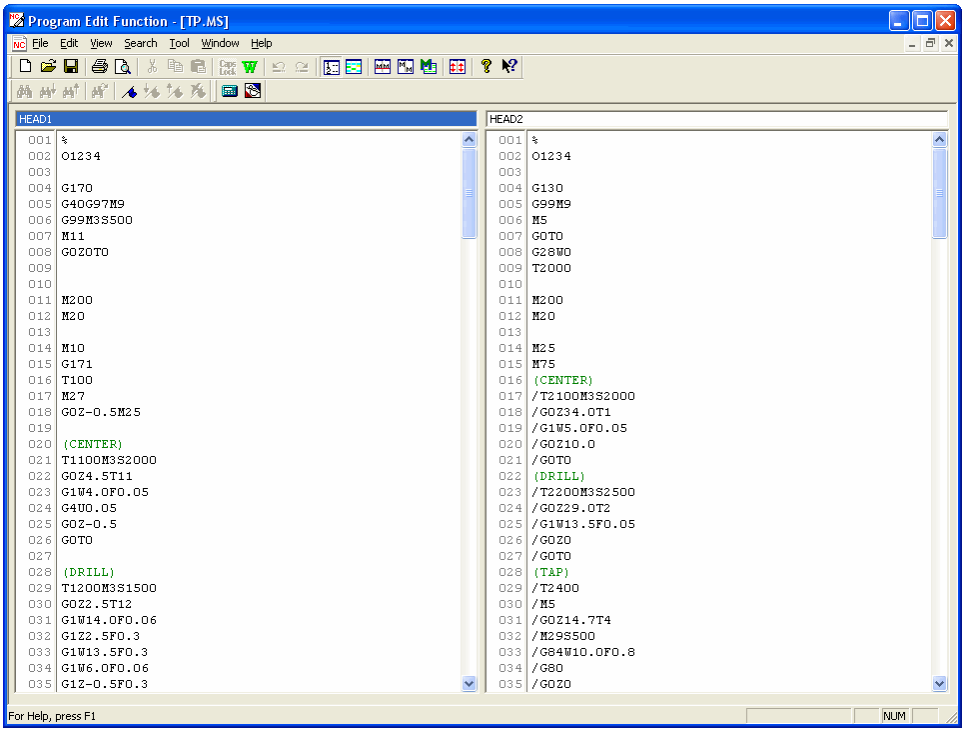
4-1-1 FANUC/YASNAC 1-head

A program is displayed individually.



4-1-2 FANUC/YASNAC 2-head

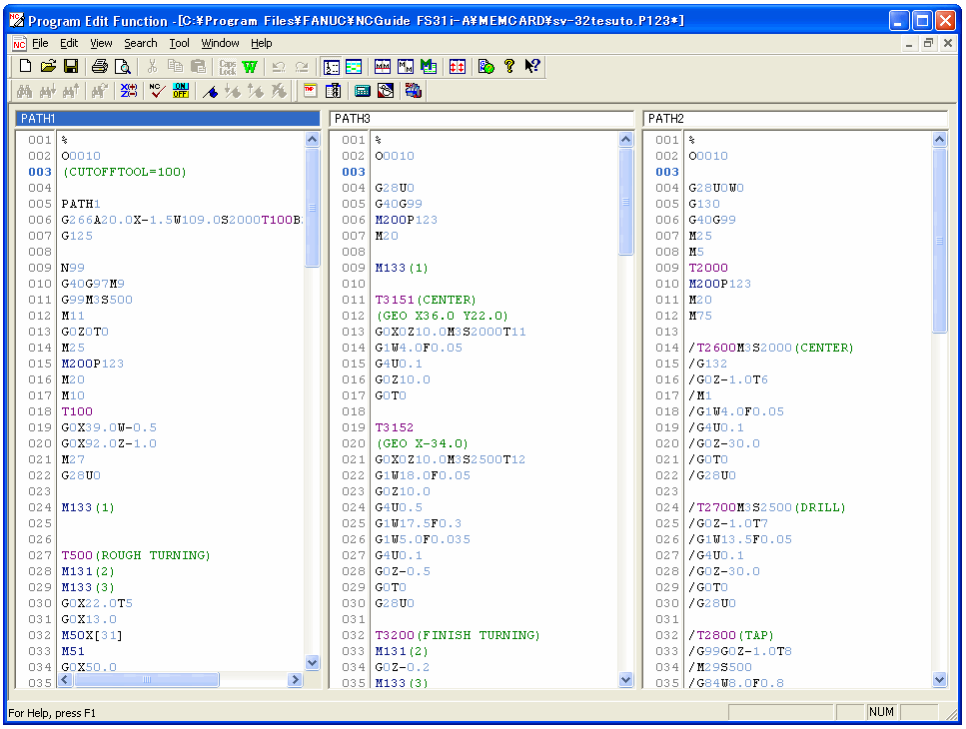
The programs for 2-path, path 1 and path 2 are displayed in one screen as follows:
The left pane is for path 1 and the right pane is for path 2.



4-1-3 FANUC 3-path

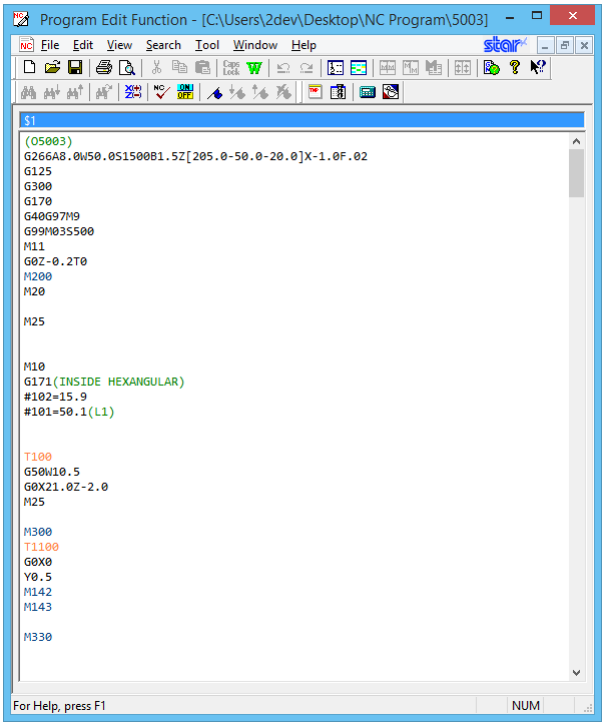
The programs of 3-path for the FANUC are displayed on one screen.

The left, center and right panes are for PATH1, PATH3 and PATH2 respectively.



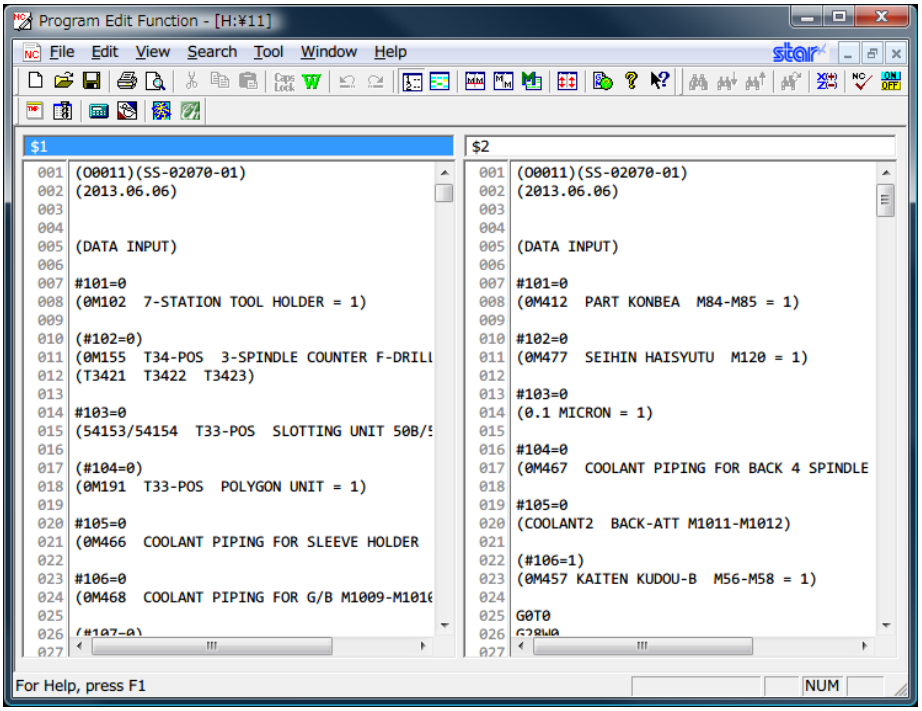
4-1-4 MITSUBISHI 1-path

The programs of 1-path for the MITSUBISHI are displayed on one screen.



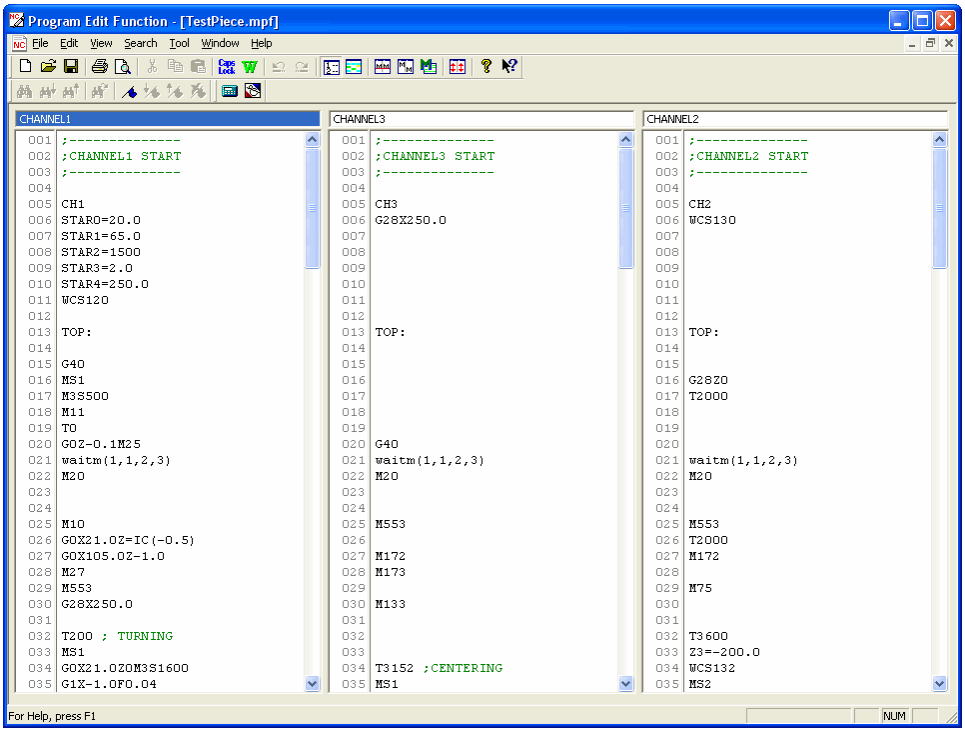
4-1-5 MITSUBISHI 2-path

The programs of 2-path for the MITSUBISHI are displayed on one screen.
The left pane is for $1 and the right pane is for $2.



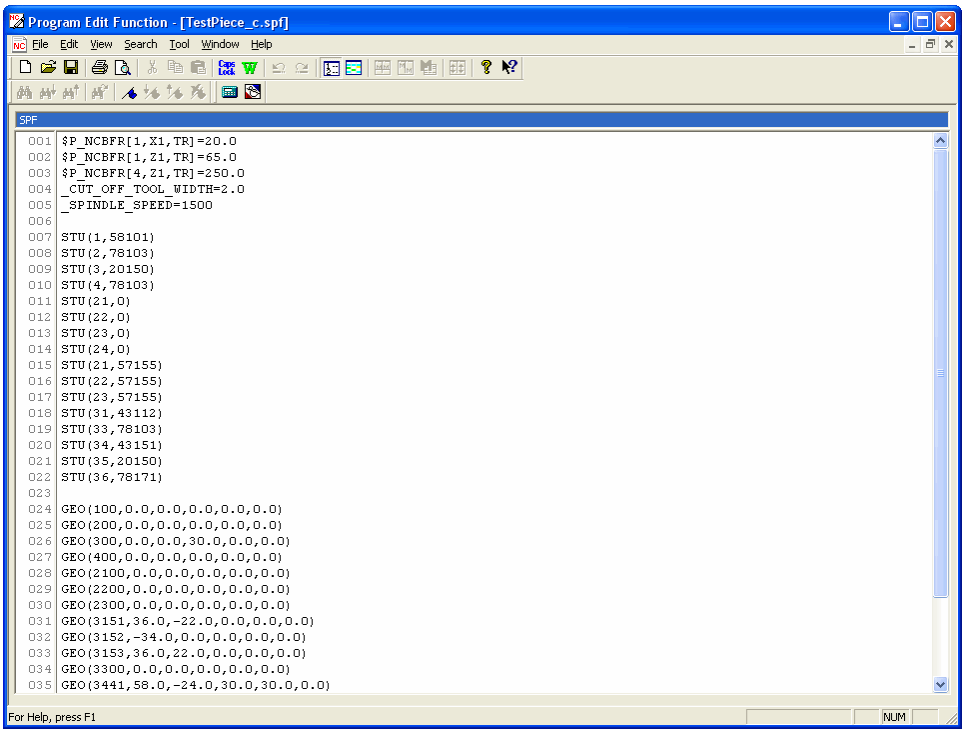
4-1-6 ECAS main program 3-channel

The programs of 3-channel for the ECAS are displayed on one screen.
The left, center and right panes are for CH1, CH3 and CH2 respectively.



4-1-7 ECAS sub program

Sub program is displayed individually.



4-1-8 Program Edit screen

* The most recent display status of the toolbar and the status bar are stored, and these bars are displayed in the same way at the next activation.
* The font is displayed with the setting selected by [Option] from the menu bar [View].
* The text color, the background color, the number color, the comment color, the label color, the T-Code color and the M-Code color are displayed with the setting selected by [Option] from the menu bar [View]. Other colors are assumed the Windows conforming.
* Please be reminded that characters that can be used in the program edit screen are basically same as characters that can be used at the NC side.

4-2 Operation

1) Operations are made with mouse and the Windows standard keys.

2) Each function is activated by selecting from the menu. When selecting from the keyboard, type one character in the menu title while pressing [Alt] key. (Ex: File; [Alt] + [F])

Menu title	Outline
File	File operation, Print management, File history, Exit
Edit	Operation history, Edit operation
View	Bar display, Option, Line number display, M-Code hit and fit, Synchronous Scroll
Search	Search, Move, NC code search, Bookmark
Tool	User Setup, Indispensable tool, External Program registration, Template manager, Tooling
Window	Window control, Open window display
Help	Situation dependence help, Version information

3) Current pane is switched by clicking each pane of the program editing window, or pressing the [F6] key.

4) Typing mode is changed by pressing the [Insert] key. The form of cursor changes as follows. Insert mode (|), Overtype mode (▮)

5) The selection range can be specified by the unit of the character or each line (Windows like).

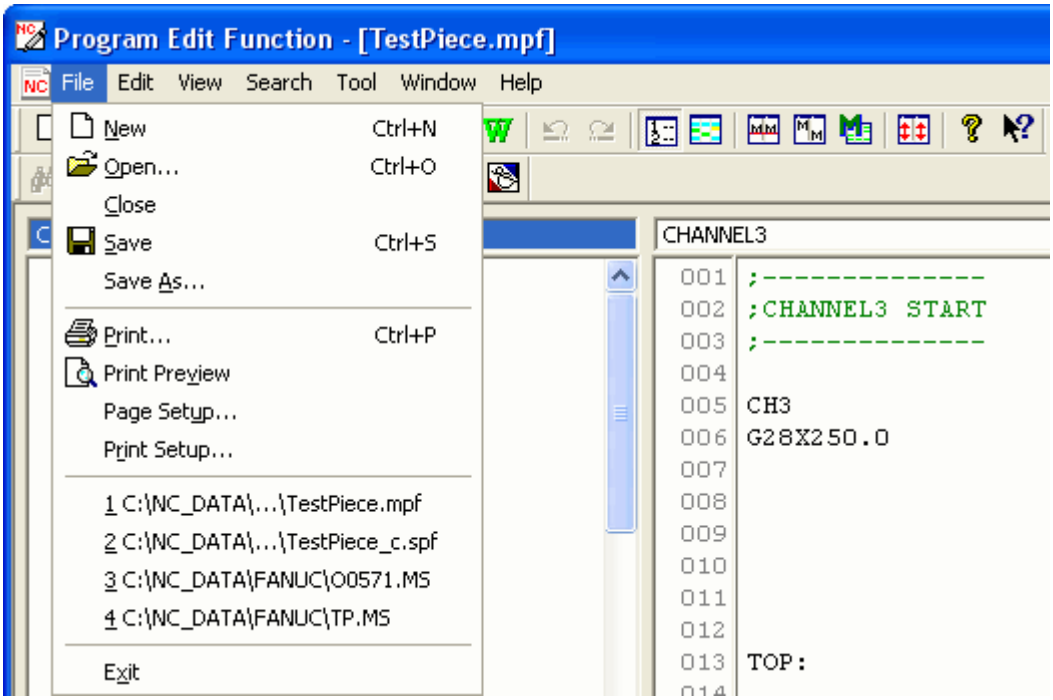
6) Clicking the right mouse button in the editing window, the following menu is displayed.

7) The following shortcut keys are prepared.

Shortcut key	Function
[Ctrl] + [N]	New (Display dialog of file type)
[Ctrl] + [O]	Open
[Ctrl] + [S]	Save
[Ctrl] + [Shift] + [S]	Save As…
[Ctrl] + [P]	Print
[Ctrl] + [Z]	Undo
[Ctrl] + [Y]	Redo
[Ctrl] + [X]	Cut
[Ctrl] + [C]	Copy
[Ctrl] + [V]	Paste
[Ctrl] + [A]	Select all
[Ctrl] + [Home]	Top row
[Ctrl] + [End]	Bottom row
[Ctrl] + [J]	Jump
[Ctrl] + [F]	Find
[Ctrl] + [H]	Replace

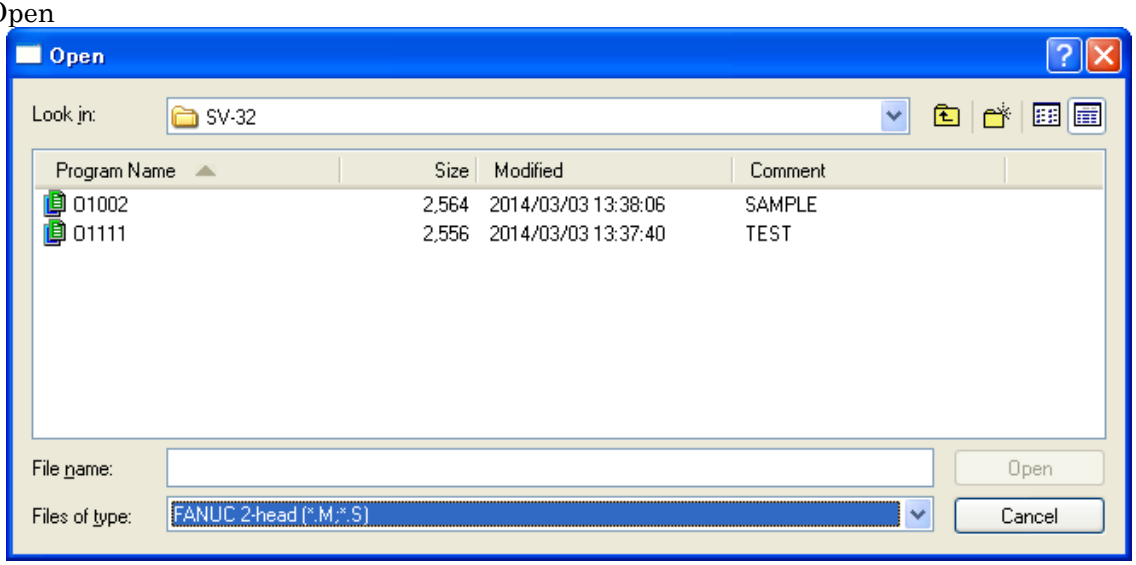
4-3 Menu bar

4-3-1 [File] menu



* New
New window is created.

* Open

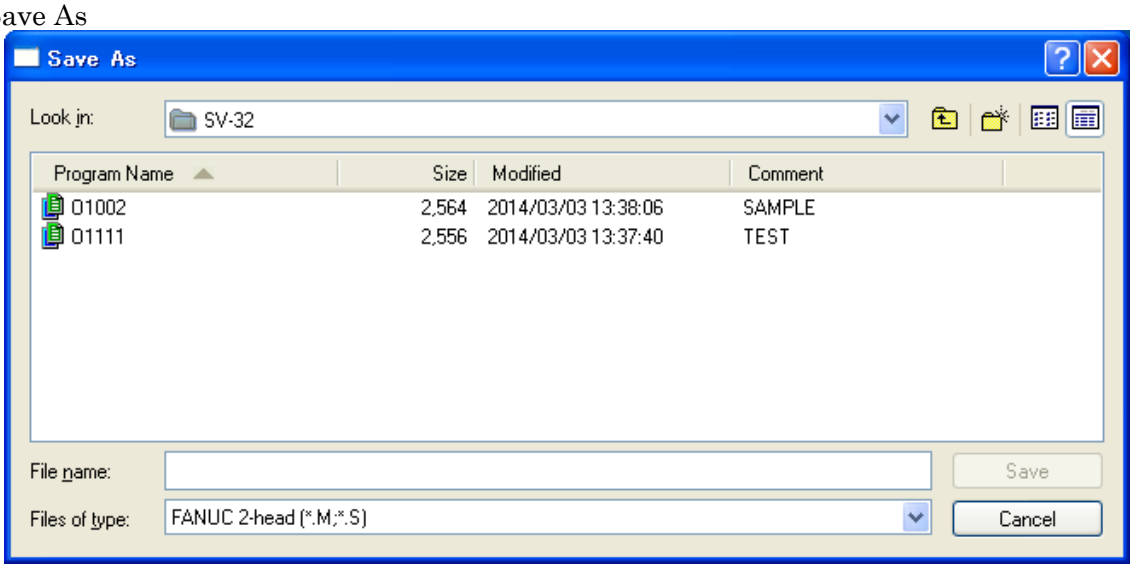


The “Open” dialog box is displayed.
As a file type, [FANUC 2-head (*.M;*.S)] is set as default.

* Close
The currently displayed file is closed. When any edit has been made, save confirmation appears.

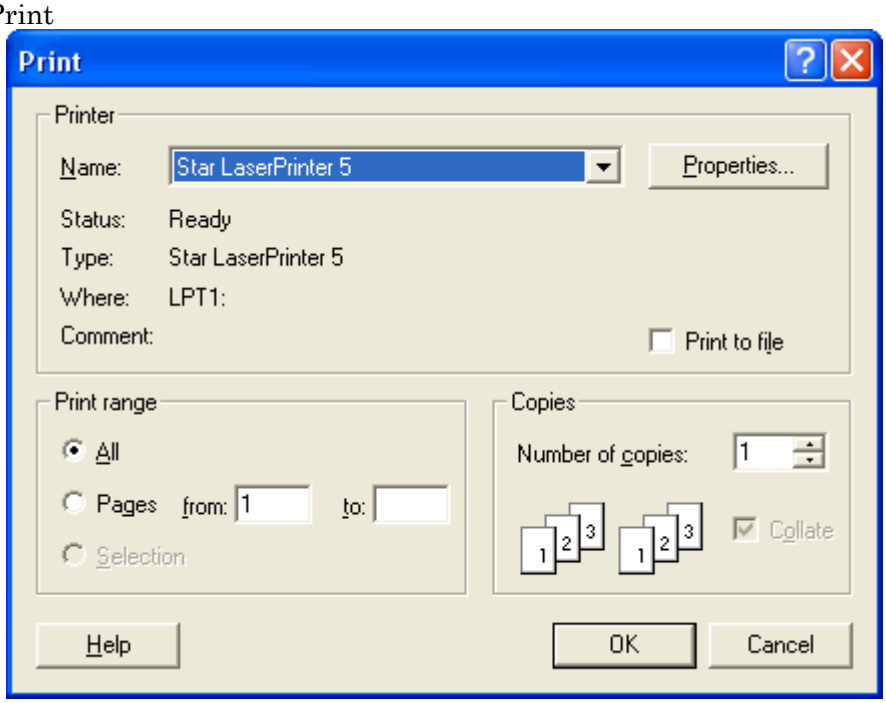
* Save
The currently displayed file is saved.
When a new file is created, the “Save As” dialog box appears. Save the file.

* Save As



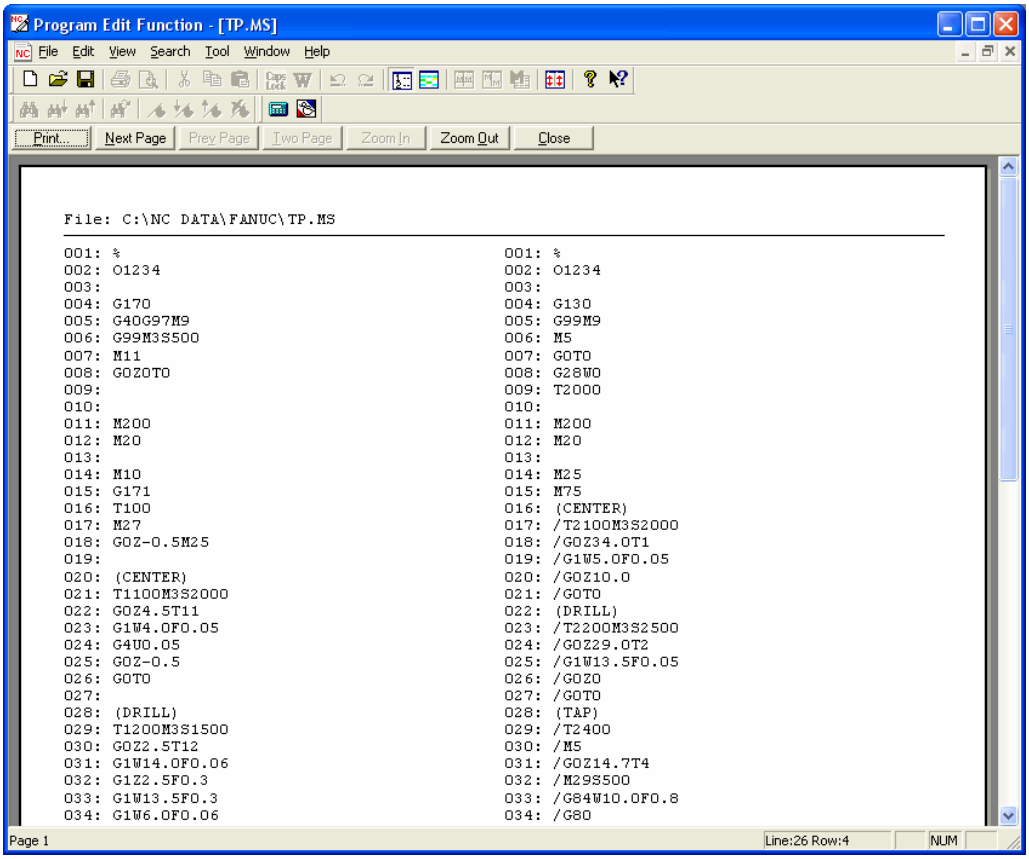
The “Save As” dialog box appears. Input the file name, or select from the list, then save.
When 1 path is displayed, select “HEAD1 (*.M)”, “HEAD2 (*.S)”, “PATH1 (*.P1)”, “PATH2 (*.P2)”, “PATH3 (*.P3)”, “MITSUBISHI Program (*)” or “ECAS sub program (*.SPF)” from the [Files of type] list box.
When using 2-path file, please select “FANUC 2-head (*.M;*.S)”, “FANUC multi-path (*.PA)” or “MITSUBISHI program (*)” from [Files of Type] list box.
When using 3-channel file, please select “FANUC 3-path (*.P1;*.P2;*.P3)”, “FANUC multi-path (*.PA)” or “ECAS main program (*.MPF)” from [Files of Type] list box.

* Print



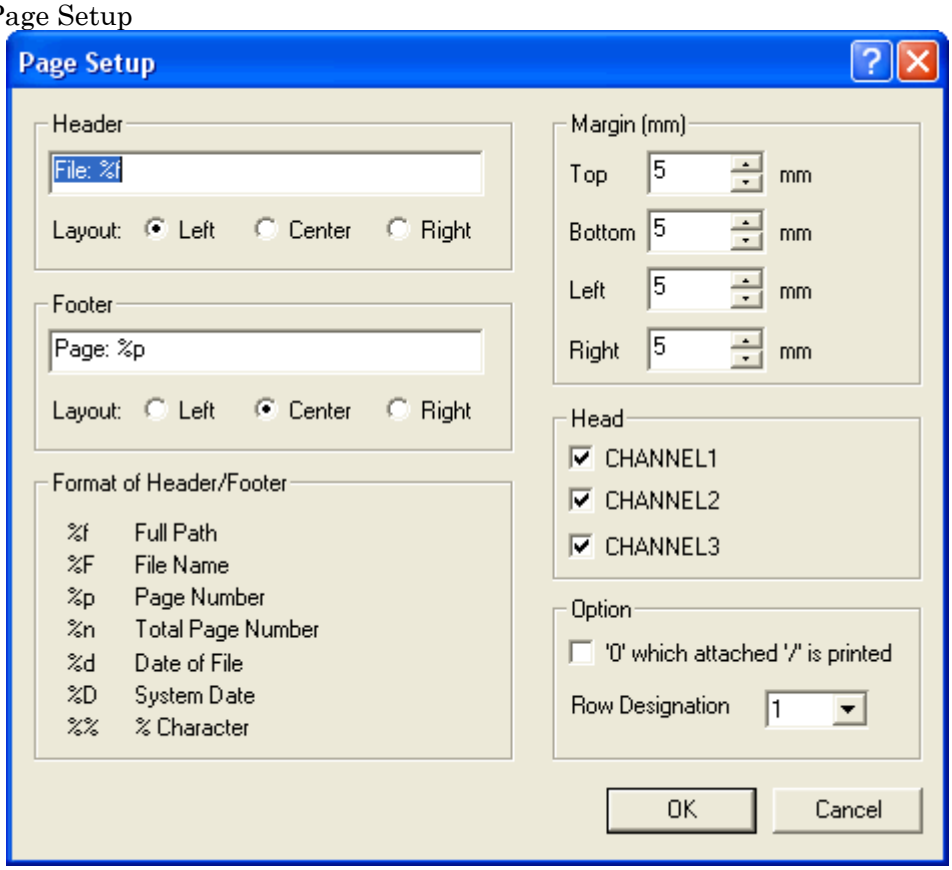
The “Print” dialog box appears, then printing starts.
When printing, file name, time stamp, page number (header or footer) can be printed.
When 2 paths (path 1 and path 2) are displayed, both programs are printed in parallel.
When 3-channel programs are displayed, those programs are printed in parallel.

* Print Preview



The print image is displayed.
The image can be zoomed / returned to original size.

* Page Setup



Header / footer can be set.
Margins are set.
Columns to print are set. (It is effective in the 1-path display.)

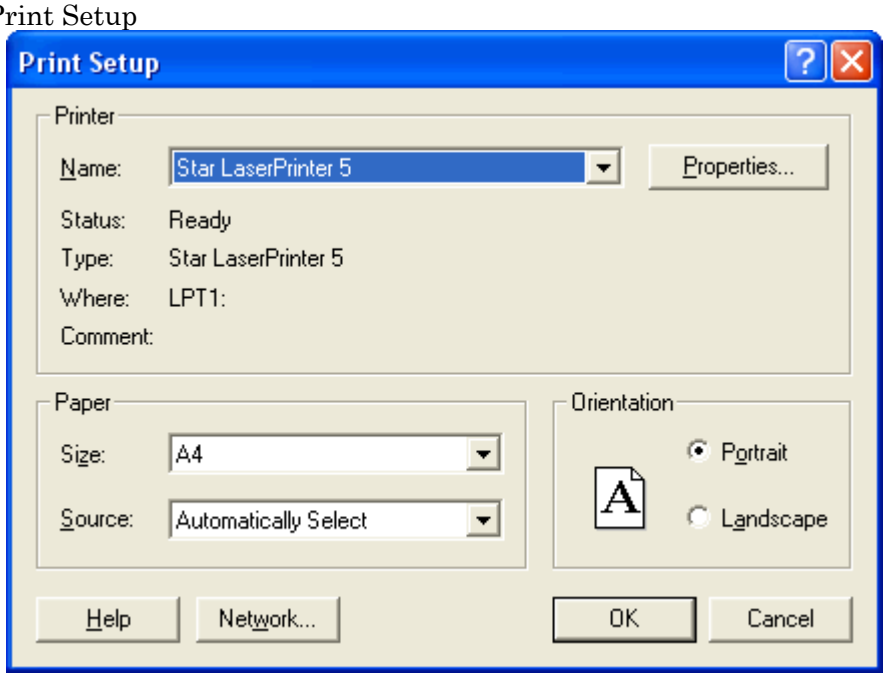
[Header & Footer]
* Text box: File name and page number will be printed by inputting %f and %p.
* Arrange button: Specifies the header / footer location (left, center, right).

[Margin]
* Sets the amount of top, bottom, left and right margins.

[Head]
* Select the head to print.

[Option]
* Select to attach a slash to each “0” at the time of printing.
* Row Designation: Specifies the printed column in the range of 1 to 3.
(It is used in the 1-path.)

* Print Setup



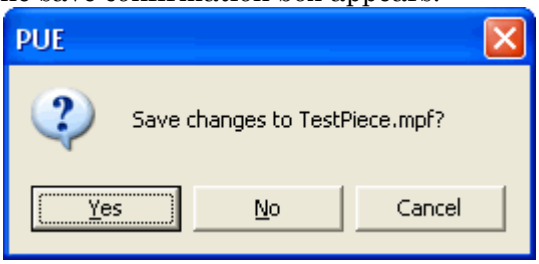
The “Print Setup” dialog box is displayed. Printer selection and paper settings are carried out.

* File history

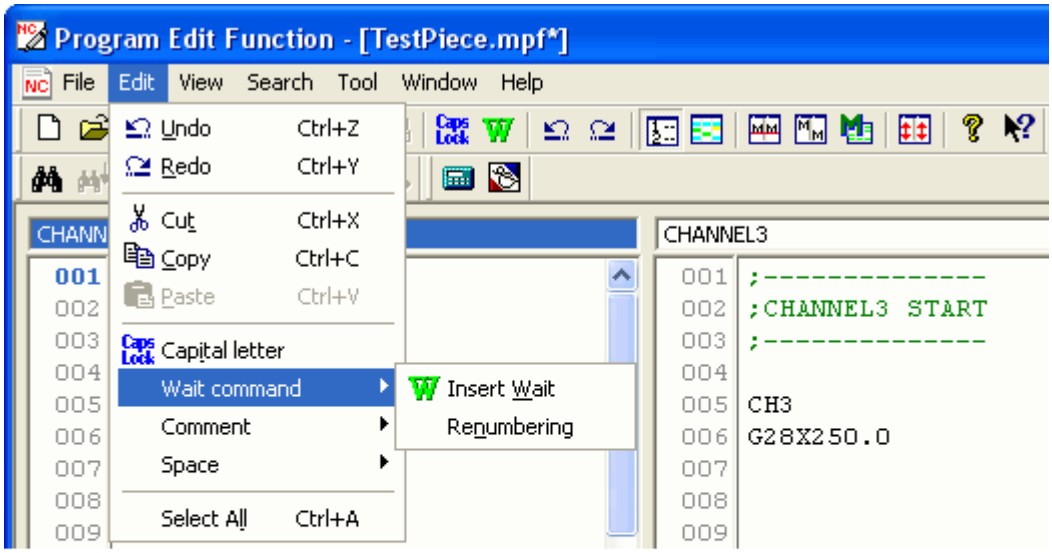
The recently opened 8 files are displayed.

* Exit

The currently displayed file is closed, and the editor is terminated. If something has been edited, the save confirmation box appears.



4-3-2 [Edit] menu



* Undo
  Undo the last action

* Redo
  Reverse the Undo command

* Cut
  Cut selected data to the Windows Clipboard

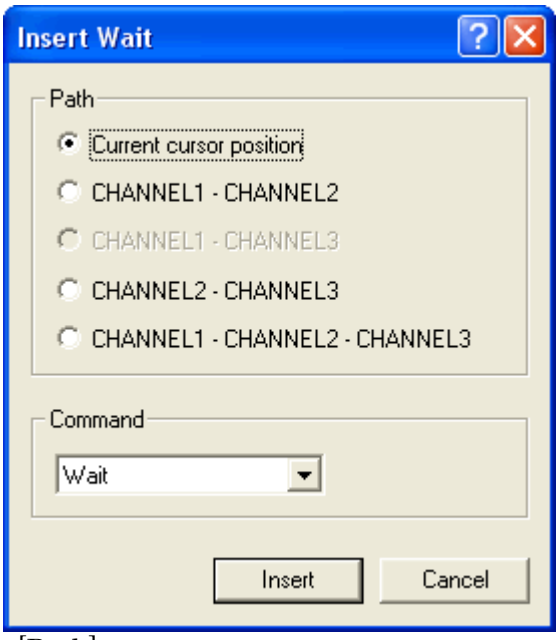
* Copy
  Copy selected data to the Windows Clipboard

* Paste
  Paste data from the Clipboard

* Capital letter
  When this check box is selected, inputting will all change to capital letters (for FANUC/YASNAC, this will be automatically selected and de-selecting will not be possible).

* Wait Command

Insert Wait : Insert a wait code or M code into the current position of the cursor.



[Path]

* Select the Path to insert a wait code into.
  If the cursor position of each channel (path) is in a position where waiting is not possible, it will not be possible to select the channel (it will be displayed as grey).

[Command]

* Select the code to insert. The M codes that have been set in the [Wait] and [M-Code Hit and Fit Setup] dialog boxes will be displayed.

Wait:	For ECAS	waitm(,,,)
	For FANUC/MITSUBISHI	M200～M999

Renumbering : The wait numbers in the program will be arranged in descending order.

* Comment

Set	: A comment will be added to the selected line
Cancel	: The comment of the selected line will be removed

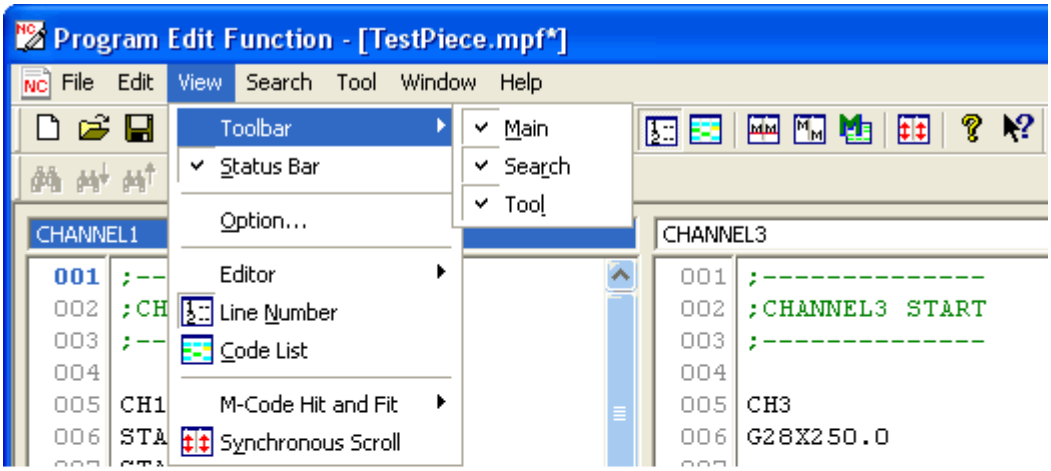
* Space

Add:	Space is automatically added in the NC program.
Delete:	The spaces in the NC program are automatically deleted.

* Select All

Select all the data in the current pane

4-3-3 [View] menu



* Toolbar

Main:	Contains file and edit menu functions
Search:	Contains search menu functions
Tool:	Contains tool menu functions

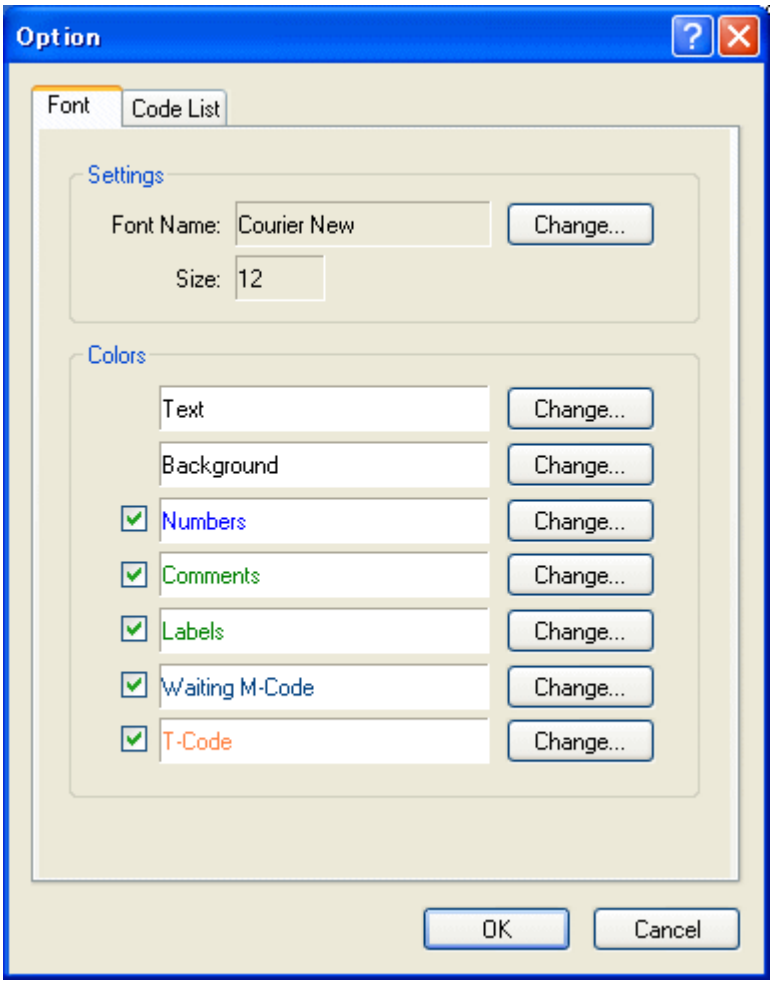
Note) The displayed Toolbar can be moved by "Drag and drop".

* Status bar

When status bar is selected, cursor coordinates and the displayed window name are displayed at the bottom of the screen.

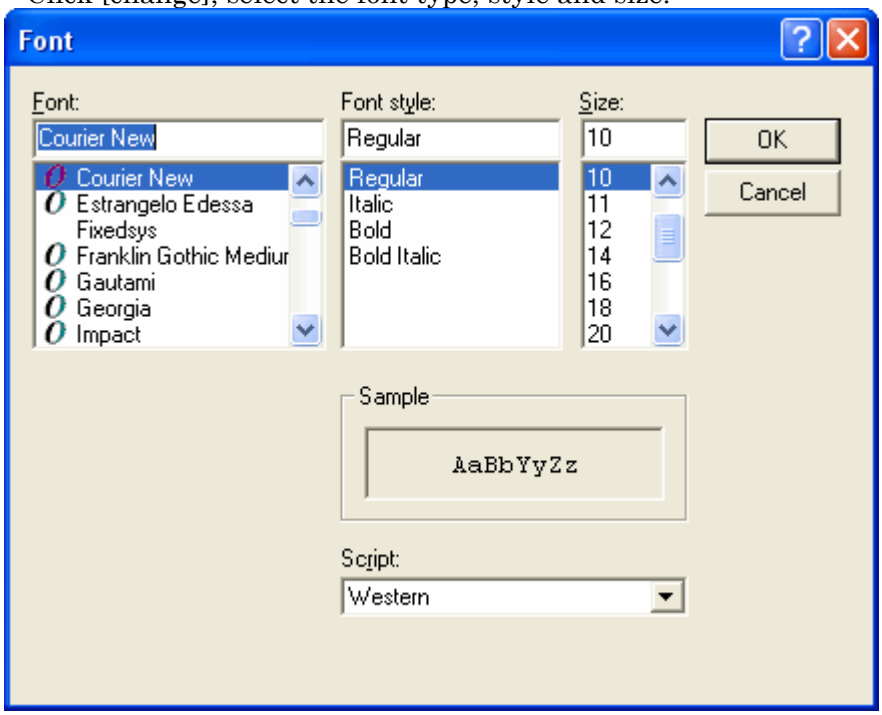
* Option

Font : Set the font and text color



[Setting]

* Click [change], select the font type, style and size.



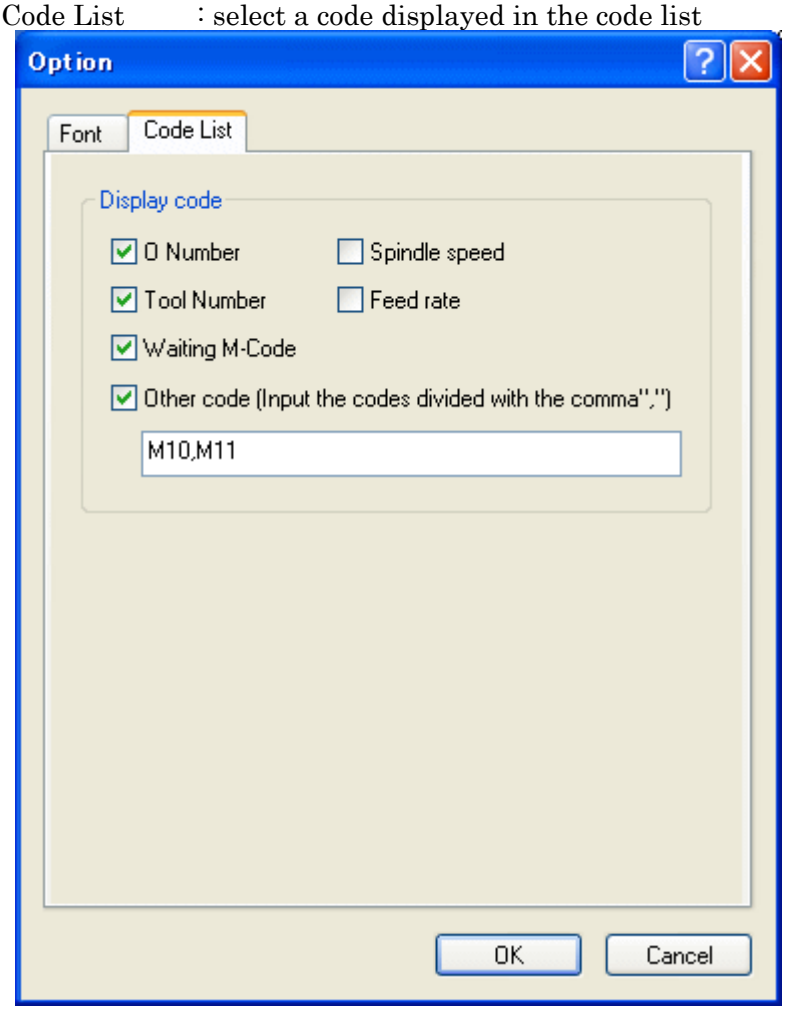
[Color]

Click [change] to display [Color] dialog. Select the color and click [OK] button to change for color setting.

Setting items	Setting contents	
	Color setting	Valid / Invalid of color setting
Text, Background	○	---
Number	○	○
Comment	○	○
Label	○	○ *
Waiting M-code	○	○
T-Code	○	○

*) Except for FANUC/MITSUBISI files

Code List : select a code displayed in the code list



[O Number]
* Search for an O number and display in the code list

[Tool Number]
* Search for a tool number and display in the code list

[Spindle speed]
* Search for a spindle speed and display in the code list

[Feed rate]
* Search for a feed rate and display in the code list.

[Waiting M-Code]
* Search for M codes set in the [M-Code Hit and Fit Setup] dialog box, and wait codes (waitm, M200~M999), and display in the code list.

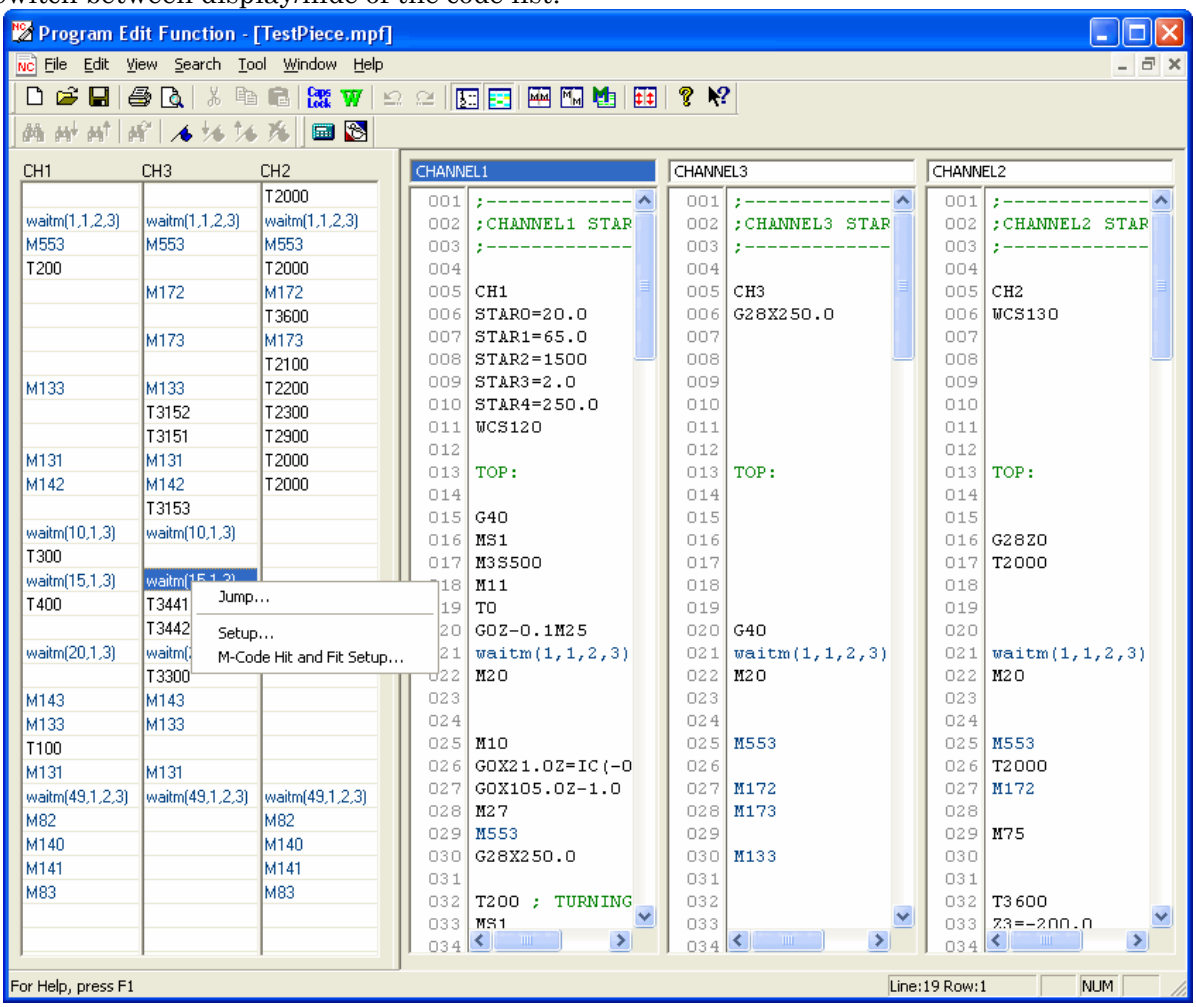
[Other code]
* Search for an arbitrary code and display in the code list. If more than one code is set, use commas "," to divide them.

* Editor
Switch between display/hide of the editor of each channel (path).

* Line Number
Switch between display / hide of the line number.
This setting is also effective when printing.

* Code List

Switch between display/hide of the code list.



In the code list, search for specific codes, match the lines of wait codes together, and display them in the list. If there are any incorrect wait codes, they will be displayed in red. Set the code to search on the [Code list] page of the [Option] dialog box.

[Jump]

*Move to the line of the selected code

[Setup]

*Display the [Code list] page of the [Option] dialog box, then set the code to search

[M-Code Hit and Fit Setup]

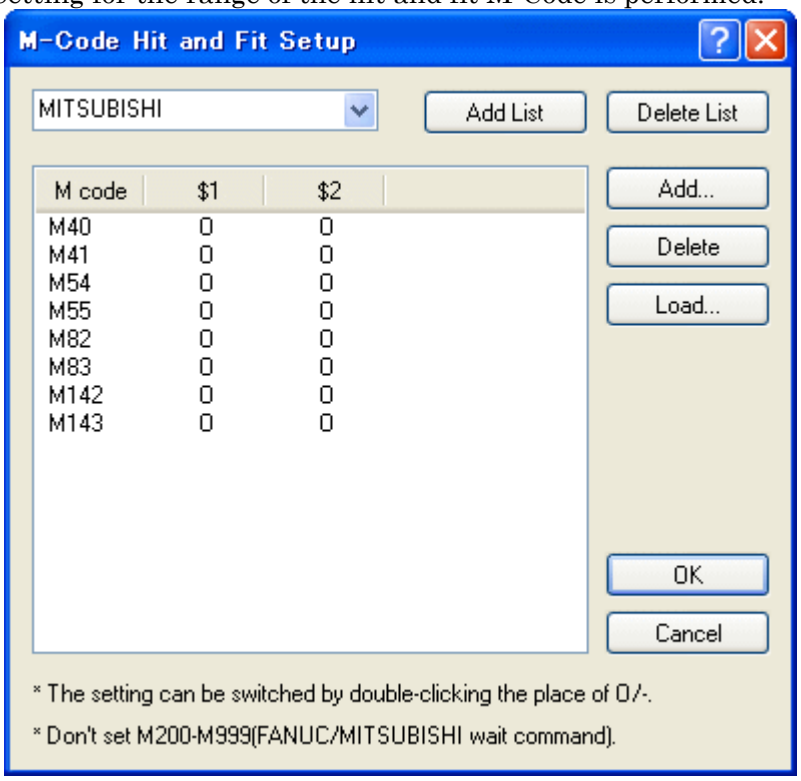
*Display the [M-Code Hit and Fit Setup] dialog box and carry out M-code setting

* M-Code Hit and Fit (It is effective in the 2-path or 3-path display)

Hit and Fit: According to the setting, 'M-Code Hit and Fit' is performed.
For ECAS files, the waitm-Code is also hit and fitted.
'M-Code Hit and Fit' is effective when printing.

Reset: 'M-Code Hit and Fit' is reset.

Setup: Setting for the range of the hit and fit M-Code is performed.



"O" is displayed at channels (paths) that perform waiting. Double-clicking onto "O" will switch between "O" and"–".

[Add List] This adds a new list. The default M-codes are set in the added list.
It is possible to change the name of the added list.

[Delete List] This deletes the displayed list.

[Add] This adds a new M-code.

[Delete] This deletes the selected M-code.

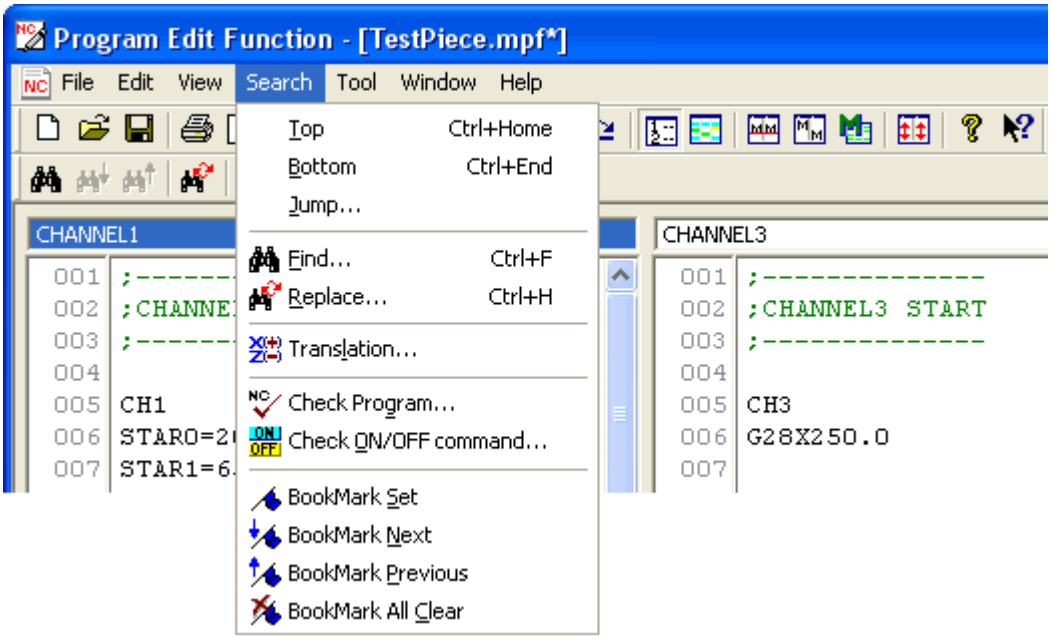
[Load] This loads the M-code list of selected machine.

- By adding a new list with the [Add List] button and registering M-codes in accordance with the specifications of each machine, it is possible to set the wait M-codes for each machine.
- It is not necessary to set the wait commands (M200~M999) of FANUC.
- If there are several wait combinations just as with M82 of ECAS (CH1–CH2, CH2–CH3), please set all of them.
- When the opened file is for FANUC/MITSUBISHI, the information of the FANUC/MITSUBISHI M-codes is automatically read. In addition, when the file is for ECAS, the information of the ECAS M-codes is automatically read. Therefore, it is not necessary to set the FANUC/MITSUBISHI and ECAS M-codes at the same time in the [M-Code Hit and Fit Setup] dialog box.

* Synchronous Scroll

The screen of among paths are scrolled synchronously.

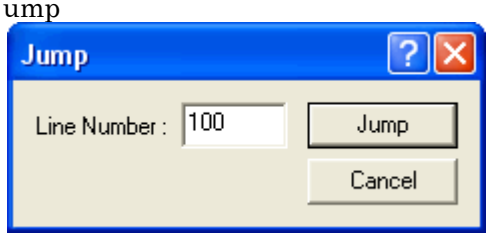
4-3-4 [Search] menu



* Top
Jump to the top row.

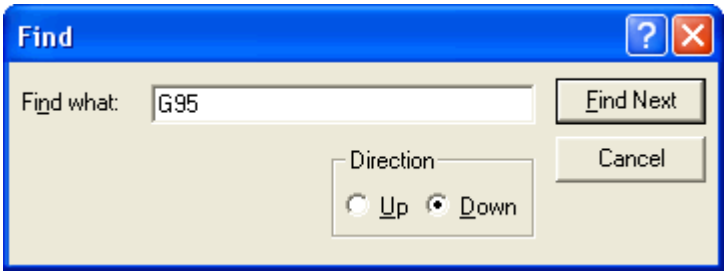
* Bottom
Jump to the bottom row.

* Jump



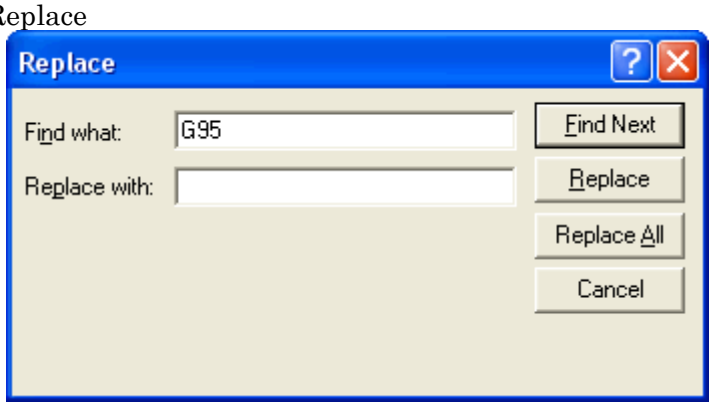
Jump to the specified row.

* Find



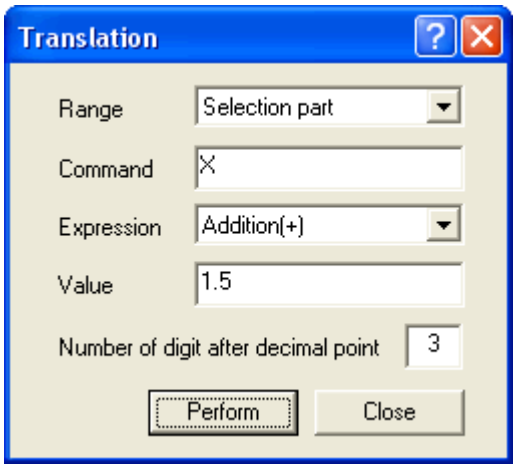
Find the specified character.

* Replace



Replace the specified character.

* Translation



Translate the value of the specified command.

[Range]	Select the part on which to carry out translation
[Command]	Input the command for carrying out translation
[Expression]	Select the method of translation
[Value]	Input the value used for translation
[Number of digit after decimal point]	Input the number of digits after the decimal point of the value after translation
[Perform]	Execute translation according to the inputted/selected contents.

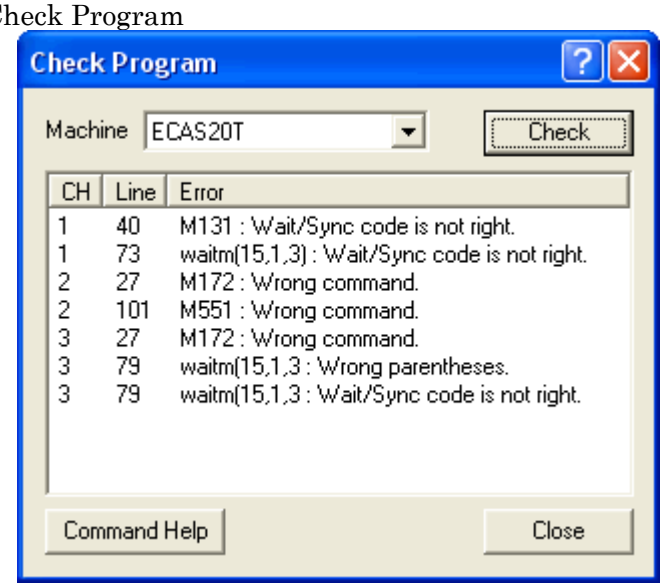
Example 1:

G0 X**15.0** Z1.0			G0 X**17.0** Z1.0
G1 X**12.5** F0.05		[Command] : X	G1 X**14.5** F0.05
G1 Z5.0	—	[Expression] : Addition(+) →	G1 Z5.0
G1 X**13.0**		[Value] : 2.0	G1 X**15.0**
G0 X**15.0**			G0 X**17.0**

Example 2:

G0 **X**15.0 Z1.0			G0 **Y**15.0 Z1.0
G1 **X**12.5 F0.05		[Command] : X	G1 **Y**12.5 F0.05
G1 Z5.0	—	[Expression] : Replace(Command)→	G1 Z5.0
G1 **X**13.0		[Value] : Y	G1 **Y**13.0

* Check Program



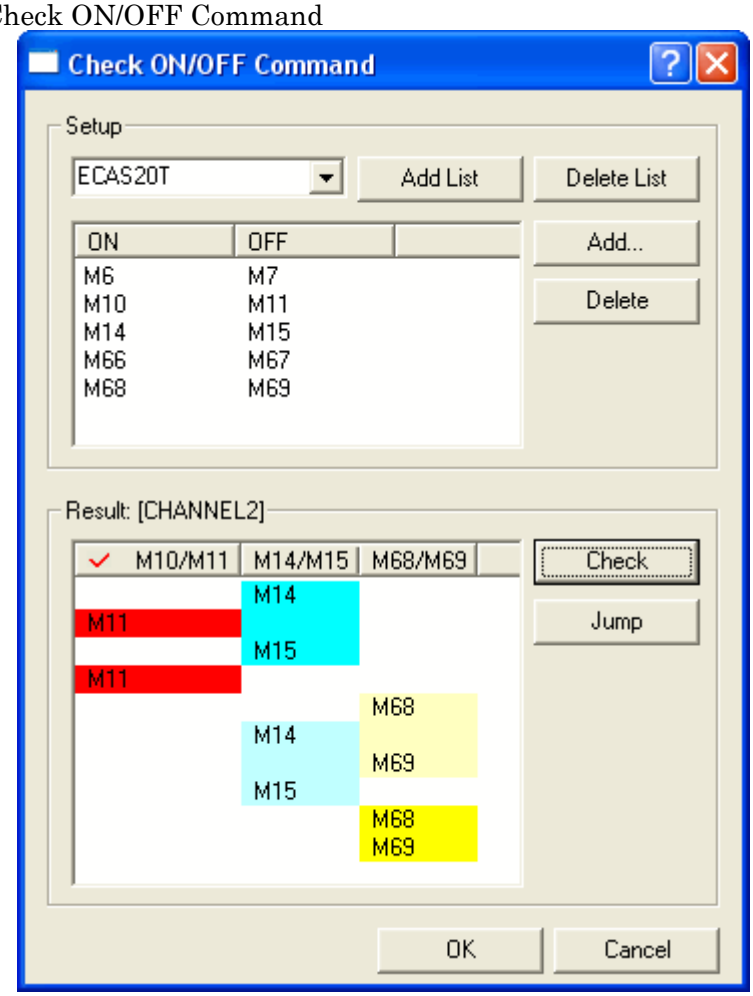
Check the program with regards to the following items.

- An illegal G code for the selected machine has been commanded
- An illegal M code for the selected machine has been commanded
- G codes of the same group have been commanded in one block
- Wait codes or synchronous M codes have been commanded incorrectly
- Parentheses (brackets) are not closed
- Double-byte characters have been used

[Machine]	Select the machine
[Check]	Start the program check
[Error list]	The system No. (path No.), line No. and error details of the discovered error are displayed. By double-clicking the listed items, it is possible to move to the error line of editor.
[Command Help]	Open command help of the selected machine.

* Only simple checks can be carried out with this program check. Therefore, even when no errors are discovered with this check, it does not necessarily ensure that the program will function correctly with the machine.

* Check ON/OFF Command



Check the command condition of the ON/OFF command which has been set.

[Add List]	Add a new setting list.
[Delete List]	Delete the displayed setting list.
[Add]	Add a new ON/OFF command
[Delete]	Delete the selected ON/OFF command.
[Check]	Search for the specified ON/OFF command from the editor of the system (path) which is currently being edited. The result will be displayed in [Result list].
[Jump]	It is possible to move to the line of editor of the command selected in [Result list].
[Result list]	The searched command will be displayed in commanding order. If the ON/OFF commands are arranged in the correct order, the background color of the command sections changes to blue or yellow (Note 1). If they are incorrect (Note 2), the background color changes to red, and a check mark will appear at the header of the list which includes the incorrect command.

Note 1) The blue and yellow background colors in [Result list] have no particular meaning. In order to make it easier to read the list, the background color changes to the order of blue, yellow, blue, yellow.

Note 2) The incorrect commands mean the command only with ON command, only with OFF command or the command specified by the order of OFF-ON.

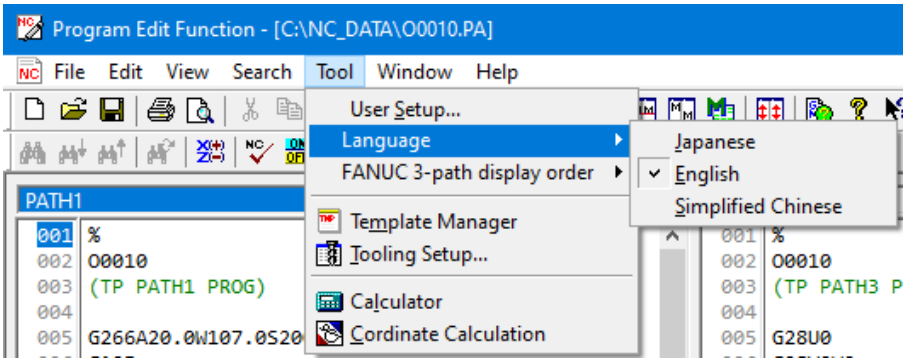
* Book Mark set
  Set / Reset bookmark to the current cursor row.
  The line number of the line that has the bookmark set will change to “BKM”.

* Book Mark Next
  Jump to the next bookmark.

* Book Mark Prev
  Jump to the previous bookmark.

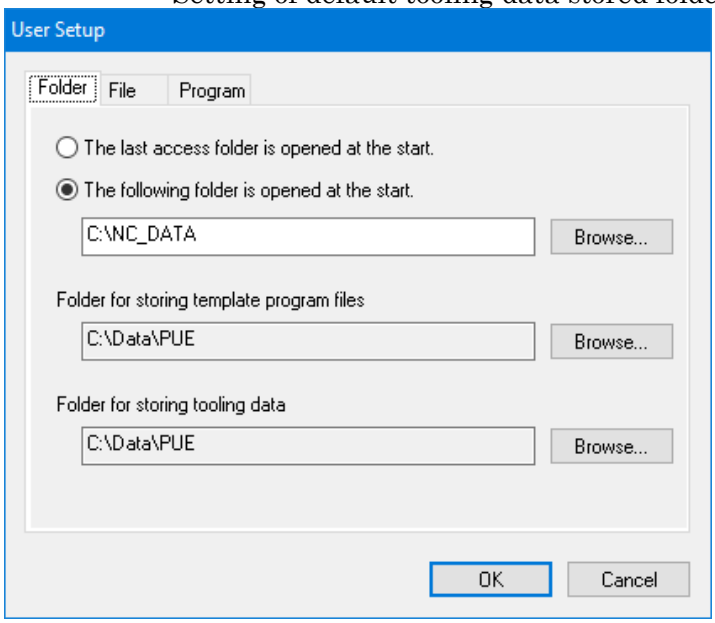
* Book Mark All Clear
  Clear the all bookmarks.

4-3-5 [Tool] menu

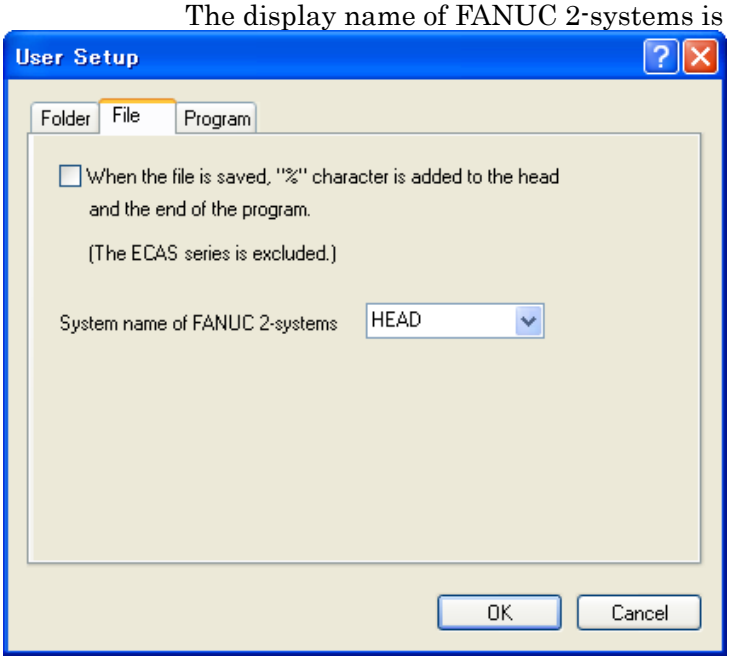


* User Setup

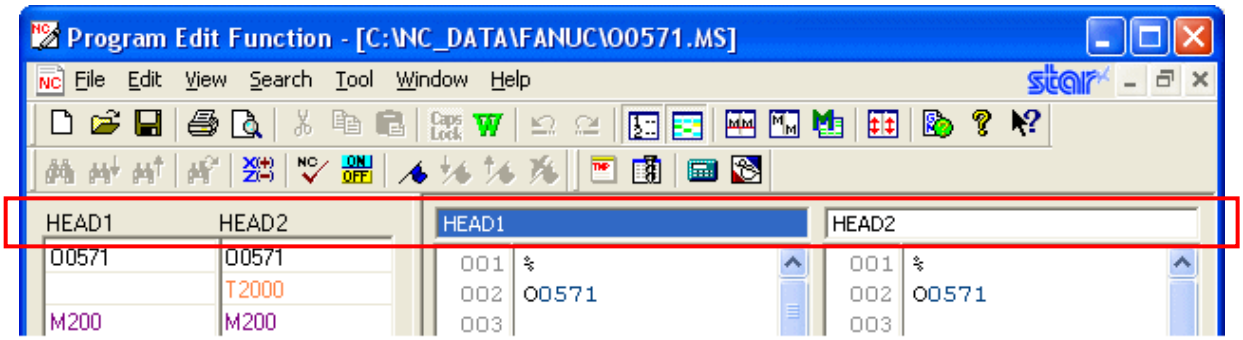
Folder: Setting of default stored folder.
Setting of default template files stored folder. (It will be changed after restart.)
Setting of default tooling data stored folder.

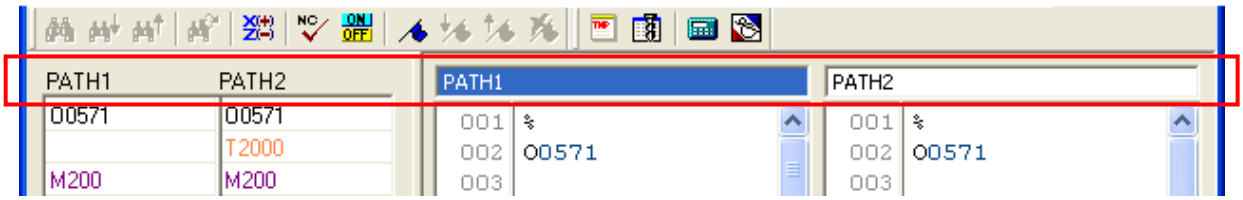


File: When saving a file, choose whether or not to add the “%” character to the head and end of the program.
The display name of FANUC 2-systems is set up.

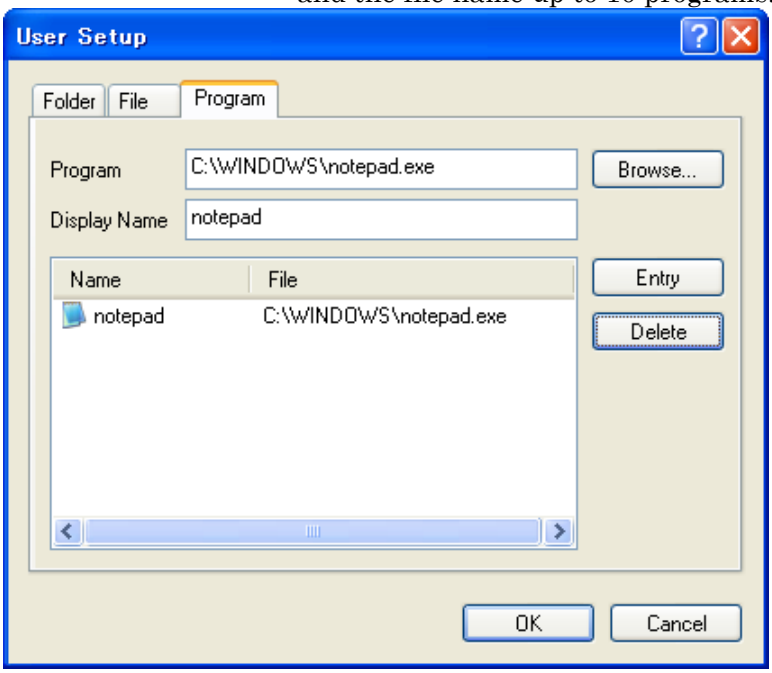


The name of FANUC 2-systems can be selected from "HEAD" and "PATH". The selected name is displayed on the Program title or the Code list.





External Program: An External Program is registered / deleted by specifying the folder name and the file name up to 10 programs.



* Language

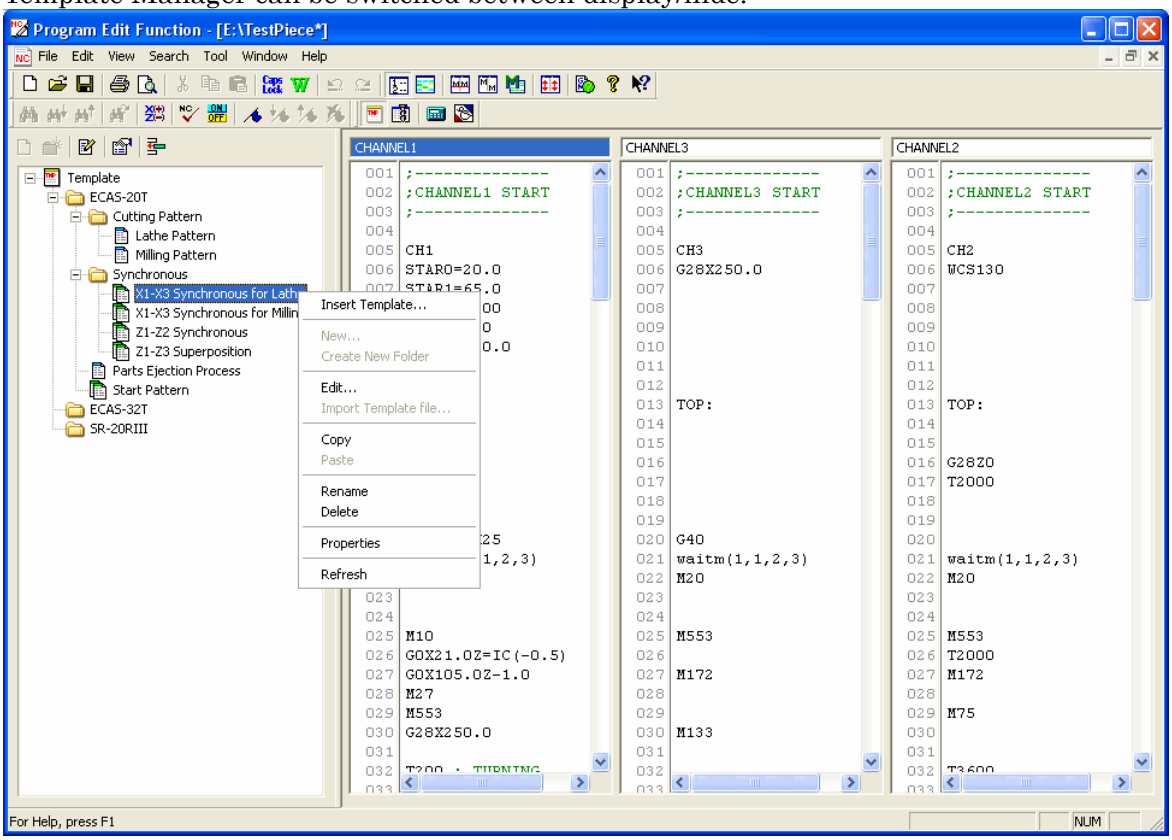
Switch to the display language that selected in the submenu. (It will be changed after restart.)

* FANUC 3-path display order

Switch to the 3-path display order that selected in the submenu. (It will be changed after restart.)

* Template Manager

Template Manager can be switched between display/hide.

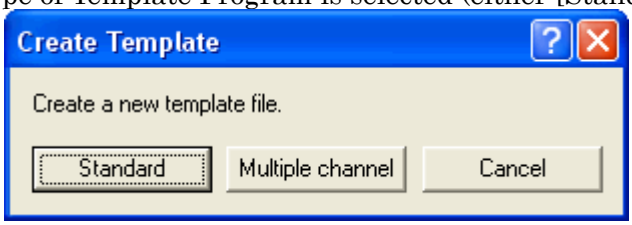


In Template Manager, the template program file and the storage folder are displayed in tree view. It is possible to create and edit template program files, and insert them into Editor.

[Insert Template]()	Insert the selected template program into the cursor position of Editor.
[New]()	Create a new template program file.
[Create New Folder]()	Create a new folder.
[Edit]()	Display the [Edit Template] dialog box and carry out editing of the template program.
[Import Template File]	A template program file saved in a separate location can be imported into Template Manager.
[Copy]	Copy the template program file or folder currently selected.
[Paste]	Paste the copied template program file or folder.
[Rename]	Alter the name of a template program file or folder.
[Delete]	Delete a template program file or folder.
[Properties]()	The properties window can be switched between display/hide. The comment of the selected template program file will be displayed in the properties window.
[Refresh]	Refresh the file tree display of Template Manager.

■Creating a template program file

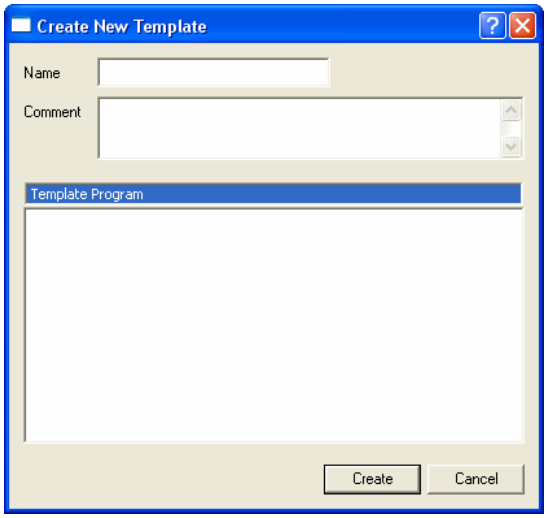
1) When the [New] menu is selected, the [Create Template] dialog box appears. This is where the type of Template Program is selected (either [Standard] or [Multiple Path]).



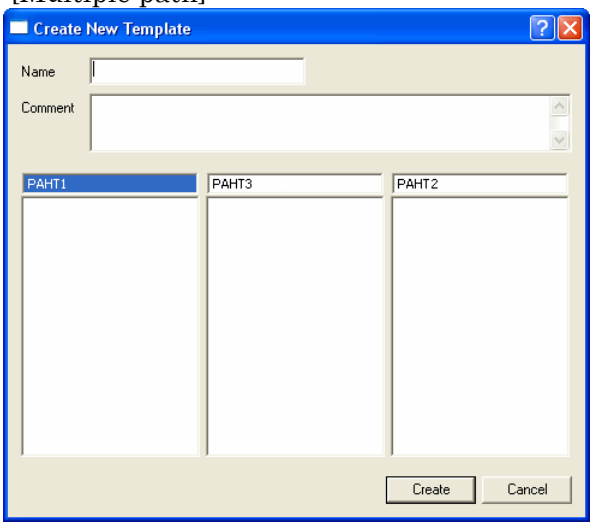
[Standard] Create a Template Program with 1 system (path).
[Multiple channel] Create a Template Program with 2 or 3 systems (paths).

2) A [Create New Template] dialog box will be displayed according to the selected type. By entering the [Name], [Comment] and [Template Program], and clicking the [Create] button, the Template Program File will be created.

[Standard]



[Multiple path]



* In the Template Program for [Multiple path], only enter the programs for the necessary systems (paths).
E.g. To create a Template Program of "X1-X3 synchronous machining", enter the necessary programs for paths 1 and 3. At this time, a Template Program File for path 1 & 3 will be created.

3) The created Template Program File will be displayed by icons similar to those shown below.

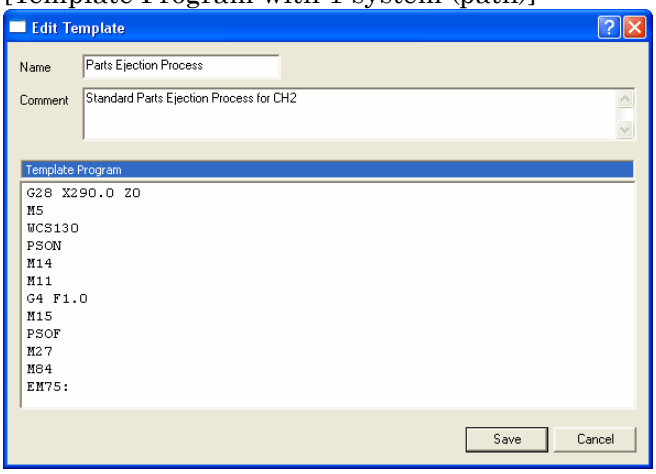
 A Template Program with 1 system (path).

 A Template Program with 2 or 3 systems (paths).

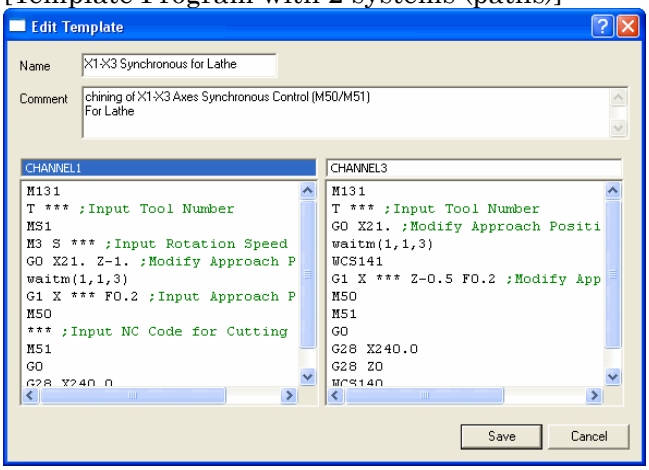
■Editing a Template Program File

1) When [Edit] is selected from the menu, the [Edit Template] dialog box will be displayed (the layout differs according to the type of Template Program File).

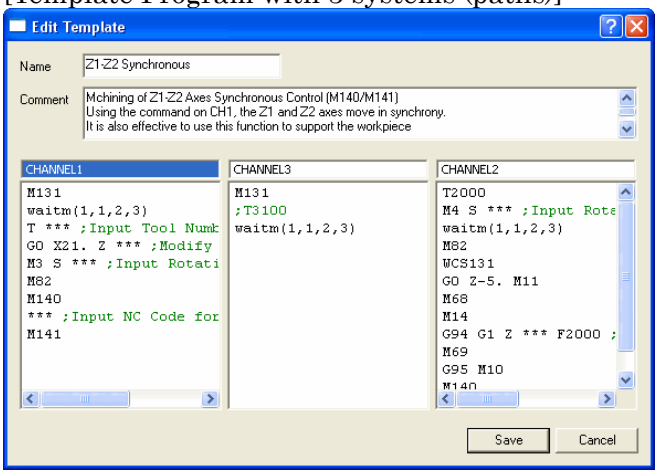
[Template Program with 1 system (path)]



[Template Program with 2 systems (paths)]



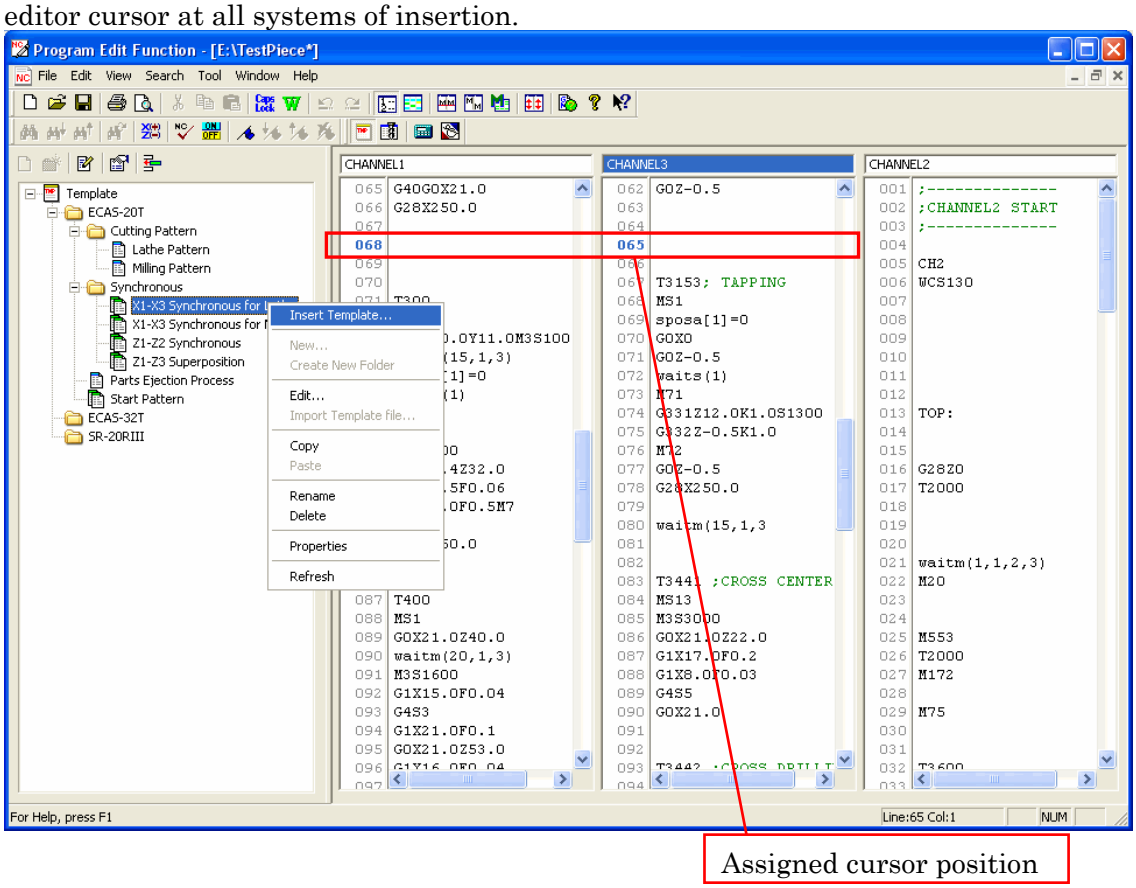
[Template Program with 3 systems (paths)]



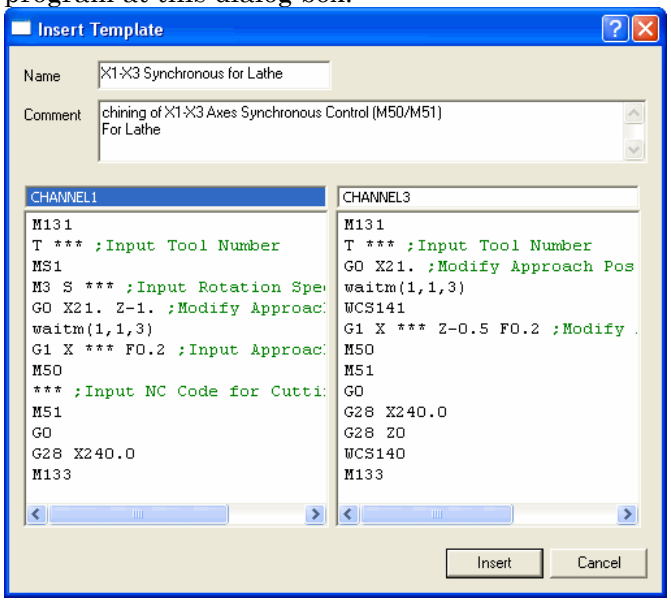
2) Edit the program and press the [Save] button to close the dialog. Editing is now complete. At this time, the number of systems (paths) cannot be changed.

■Inserting a Template Program File

1) Move the Editor cursor to the desired position for inserting a Template Program. If a Template program with 2 or more systems (paths) is inserted, assign the position of the editor cursor at all systems of insertion.

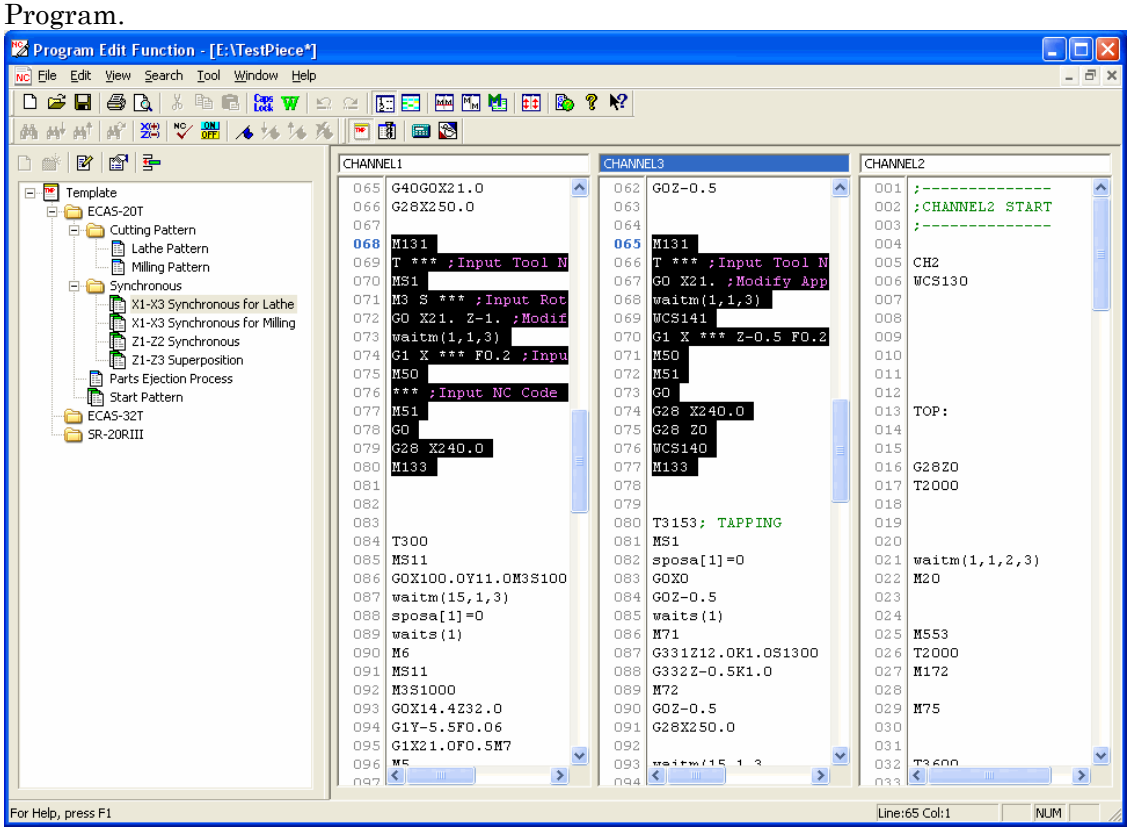


2) Select a Template Program File at Template Manager, then click [Insert Template...] from the menu. The [Insert Template] dialog box will be displayed. If necessary, please edit the program at this dialog box.



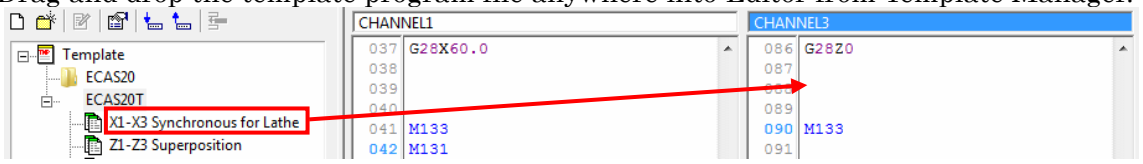
* Editing the program at this dialog box will not alter the Template Program File. Only the inserted program will be altered.

3) Click the [Insert] button of the [Insert Template] dialog box to finish inserting the Template Program.

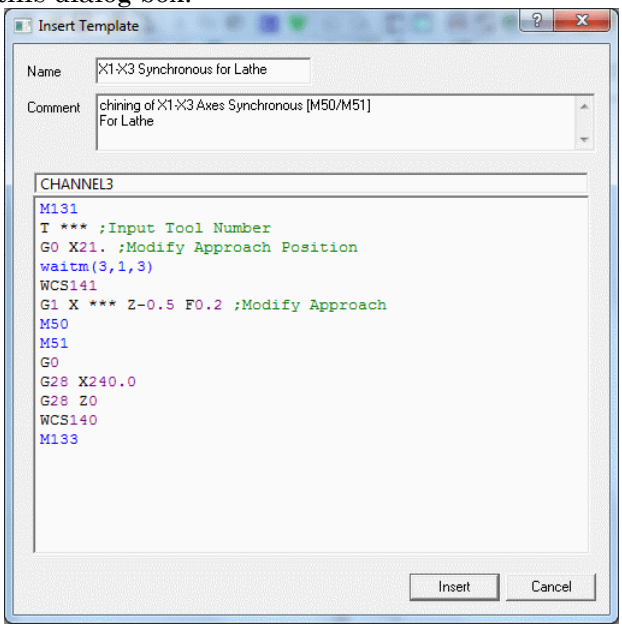


・Inserting a Template Program file with the function of drag and drop

1) Drag and drop the template program file anywhere into Editor from Template Manager.



2) The [Insert template] dialog box will be displayed. If necessary, please edit the program at this dialog box.



* Editing the program at this dialog box will not alter the Template Program File. Only the inserted program will be altered.

* In the case of the template program with 2 or more PATHs, the template program of the same PATH as the PATH, which selected in Editor in order to insert a template program file, is displayed at the dialog box.

3) Click the [Insert] button of the [Insert Template] dialog box to finish inserting the Template Program.

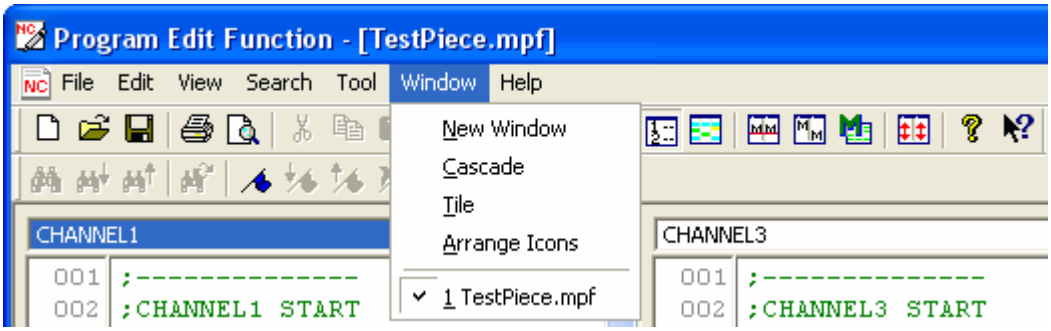
・Tooling Setup
Start the Tooling function (Refer to the clause 6).

・Calculation
Start the electronic calculator installed in Windows.

・Coordinate Calculation
Start the coordinate calculation function (Refer to the clause 5).

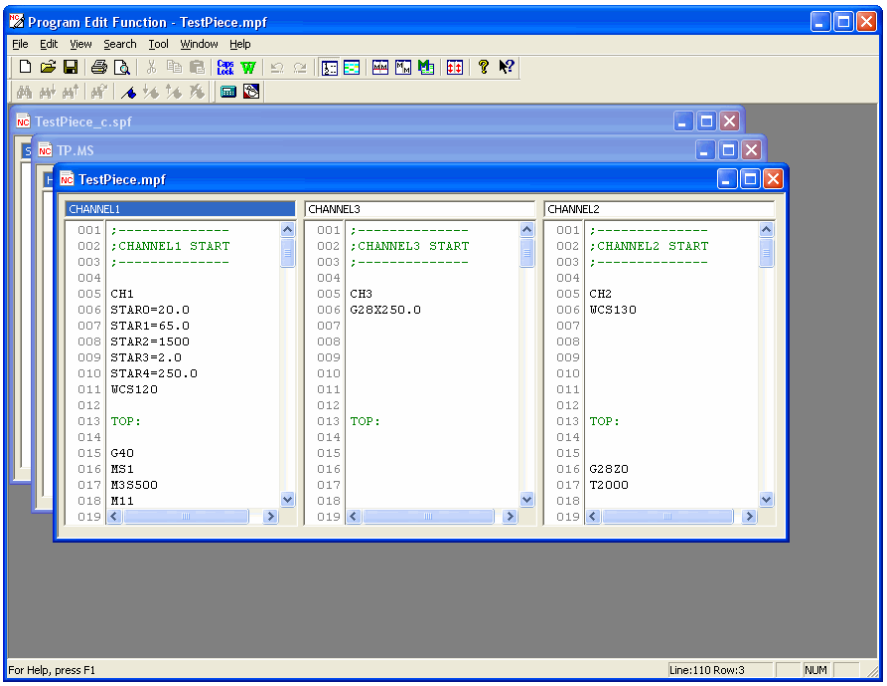
・Registered programs
External programs registered by the user setup are displayed.

4-3-6 [Window] menu



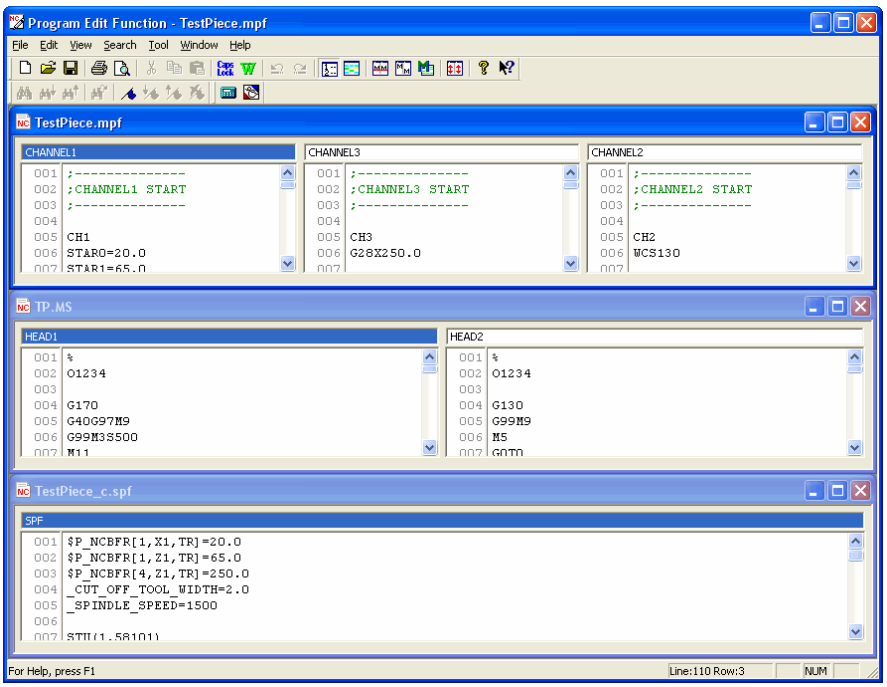
・New Window
The new window is opened.
It is used when one file is edited in two or more windows.

・Cascade



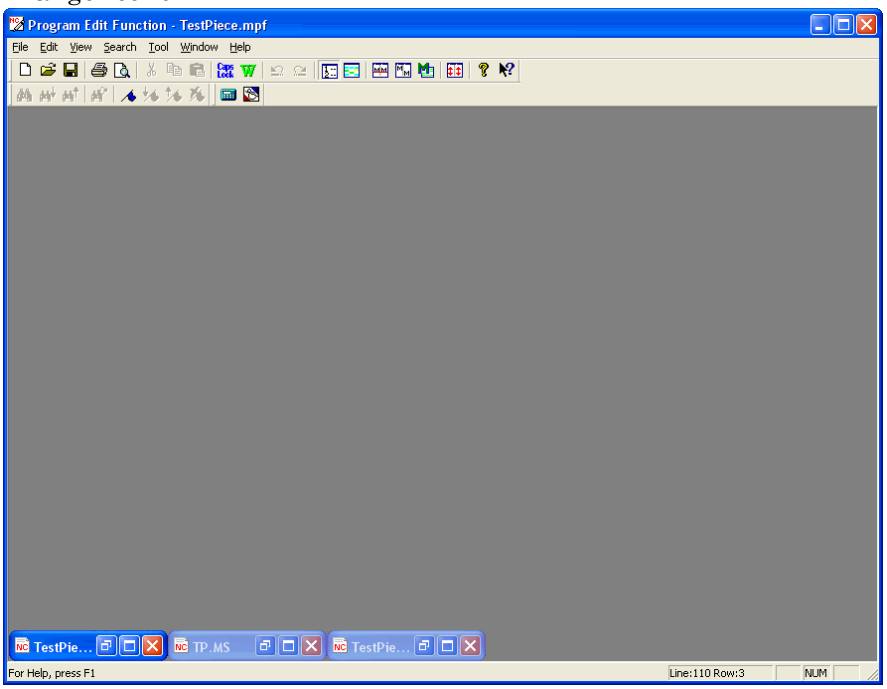
Windows are displayed in cascading.

・Tile



Windows are displayed in tiling.

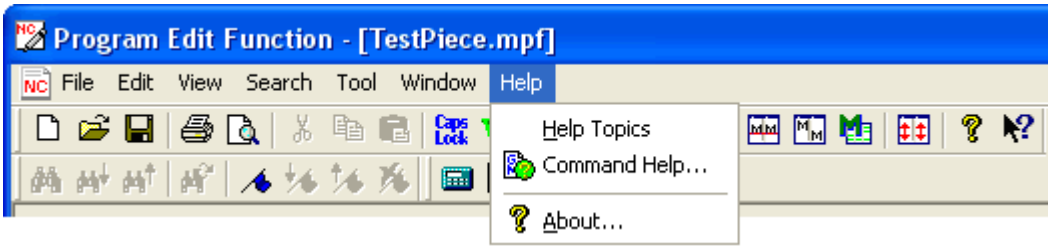
・Arrange Icons



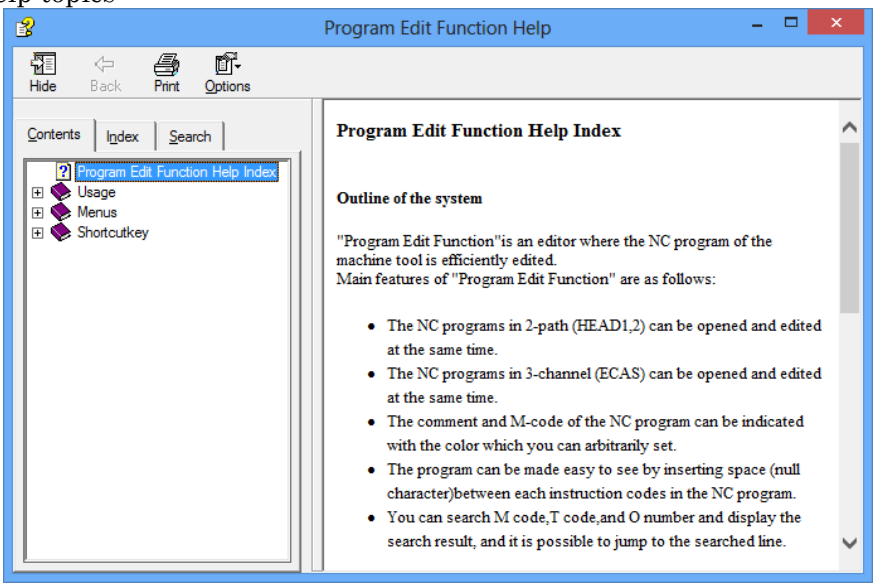
Arrange icons at the bottom of the window.

・Open Window Display
View (file name)
The currently opened file name is displayed.

4-3-7 [Help] menu

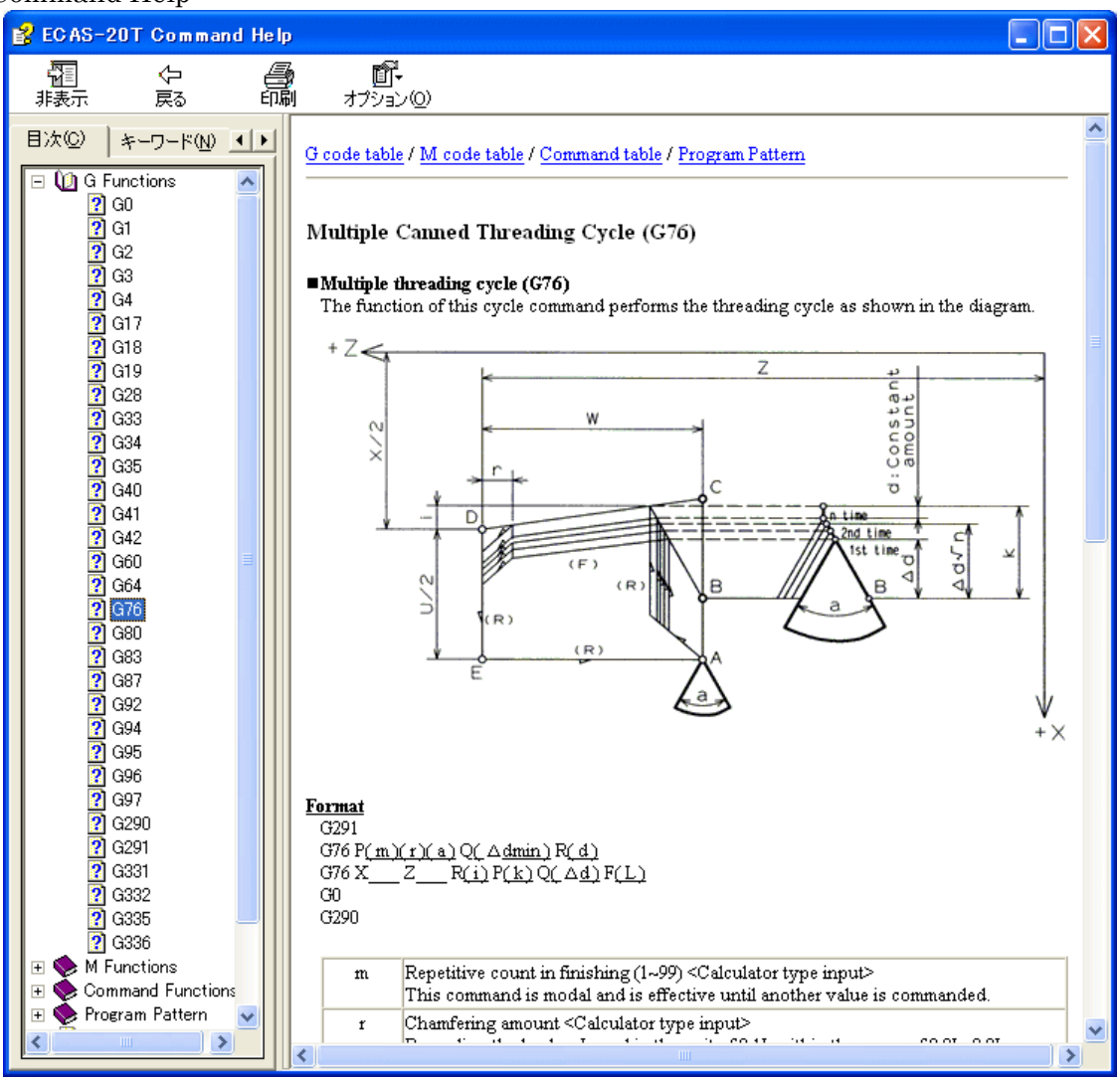


・Help topics



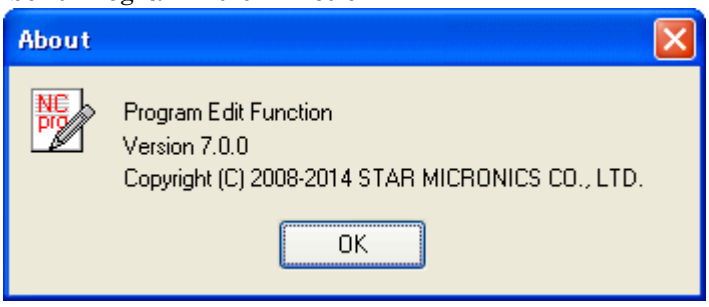
Explanation help of the usage of Program Edit function is displayed.

・Command Help



Explanation help of the G-code and M-code is displayed.

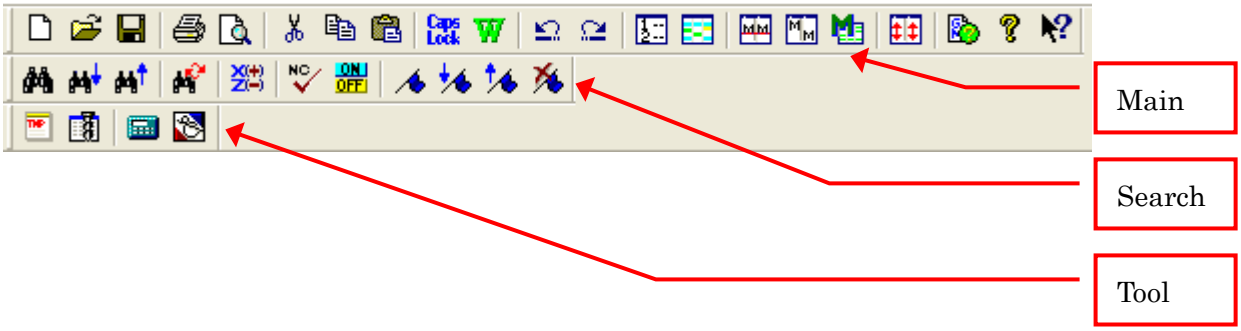
・About Program Edit Function



Version information of Program Edit function is displayed.

4-4 Tool Bar

Refer to “4-3 Menu bar” for each button’s meaning.



New
Open
Save
Print
PrintPreview
Cut
Copy
Paste
Capital letter
Insert Wait
Undo
Redo
Line Number
Code List
Hit and Fit
Reset
M-Code Hit and Fit Setup
Synchronous Scroll
Command Help
About
Help

Find
Find Next
Find Previous
Replace
Translation
Check Program
Check ON/OFF command
BookMark Set
BookMark Next
BookMark Previous
BookMark All Clear
Template Manager
Tooling Setup
Calculator
Coordinate Calculation

CHAPTER 5

Coordinate Calculation function

5 Coordinate Calculation function

5-1 Outline of Coordinate Calculation function

The coordinate calculation function obtains the necessary coordinates for NC program creation from the dimensions of the parts drawings.

5-1-1 Starting Coordinate calculation function

・For Windows 8.1 or Windows 8

a) When starting from Program Edit function
Coordinate Calculation function is started by selecting [Coordinate Calculation] from the menu bar [Tool], or clicking [Coordinate Calculation] button  on the toolbar.

b) When starting from the Start screen

Click on [Coordinate Calculation] tile on the Start screen to start up.

If the Start screen is not displayed, move the mouse pointer to the top-right corner or bottom-right corner to display the Charms bar, and then click on [Start].

c) When starting from the "Apps" screen

1) Right-click on an empty area in the Start screen.

2) Select [All apps] from the displayed application bar.

3) "Apps" screen is displayed. Click on [Coordinate Calculation] to start up.

・For Windows 7 or Windows Vista

a) When starting from Program Edit function
Coordinate Calculation function is started by selecting [Coordinate Calculation] from the menu bar [Tool], or clicking [Coordinate Calculation] button  on the toolbar.

b) When starting from the start menu
1) Select Windows' [Start] menu.
2) Select [Program] command.
3) Select [Star Micronics].
4) Select [Common].
5) Select [Coordinate Calculation] to start Coordinate Calculation function.

・For Windows 11 or Windows 10

a) When starting from Program Edit function
Coordinate Calculation function is started by selecting [Coordinate Calculation] from the menu bar [Tool], or clicking [Coordinate Calculation] button  on the toolbar.

b) When starting from the start menu
1) Select Windows' [Start] menu.
2) Select [All apps]. <- For Windows 11
3) Select [Star Micronics].
4) Select [PUC] to start Coordinate Calculation function.

5-1-2 Function explanation

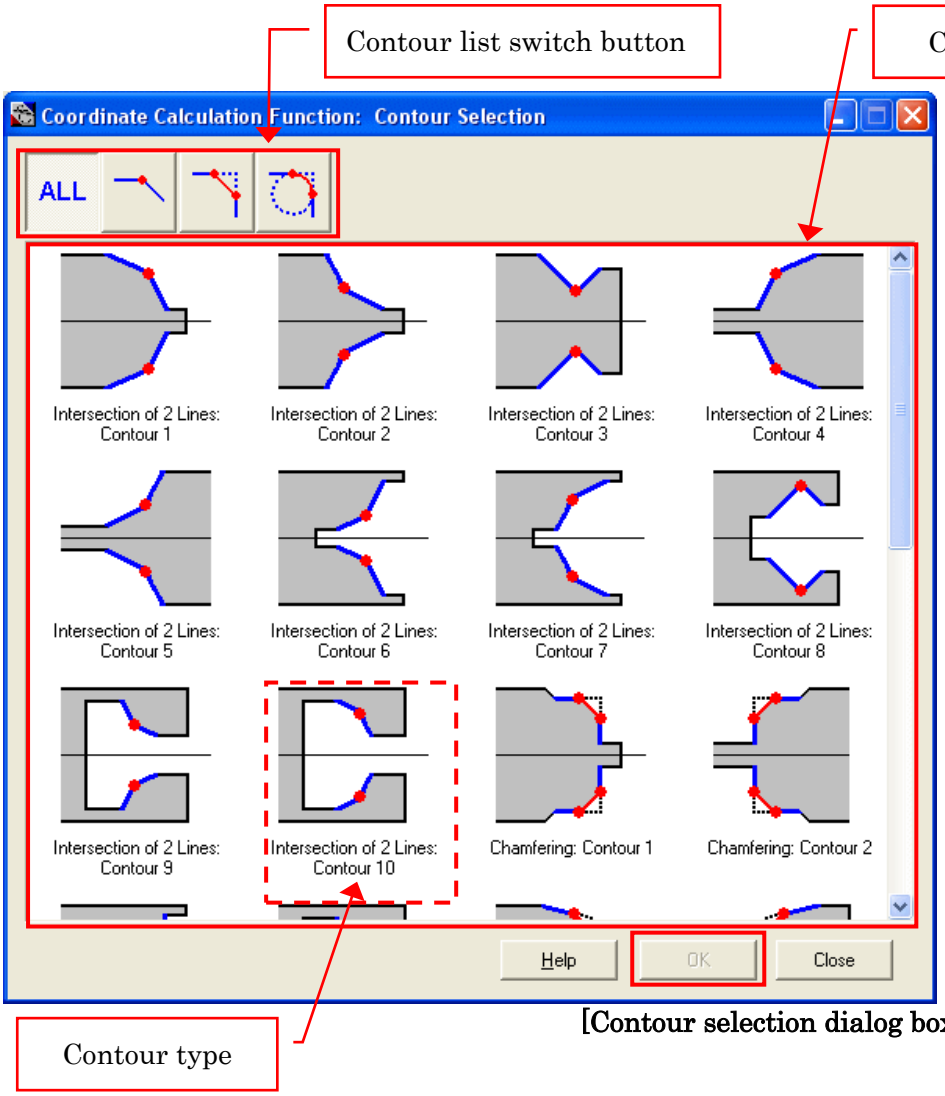
Coordinate Calculation function performs three kinds of coordinate calculations as listed below.

* Intersection of two lines
* Chamfering
* Circle tangent to two lines

5-2 Procedure of operation

Follow the procedure below to carry out operation of the [Coordinate calculation function].

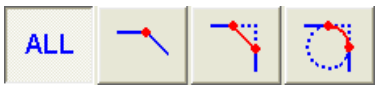
1) When [Coordinate calculation function] is started up (refer to 5-1-1 Starting Coordinate calculation function), the [Contour selection dialog box] will be displayed.



[Contour selection dialog box]

① Please use the [Contour list switch button] to switch the [Contour list].

The contour list that corresponds to the 3 kinds of coordinate calculations previously mentioned in "5-1-2 Function explanation" will be displayed for each button.



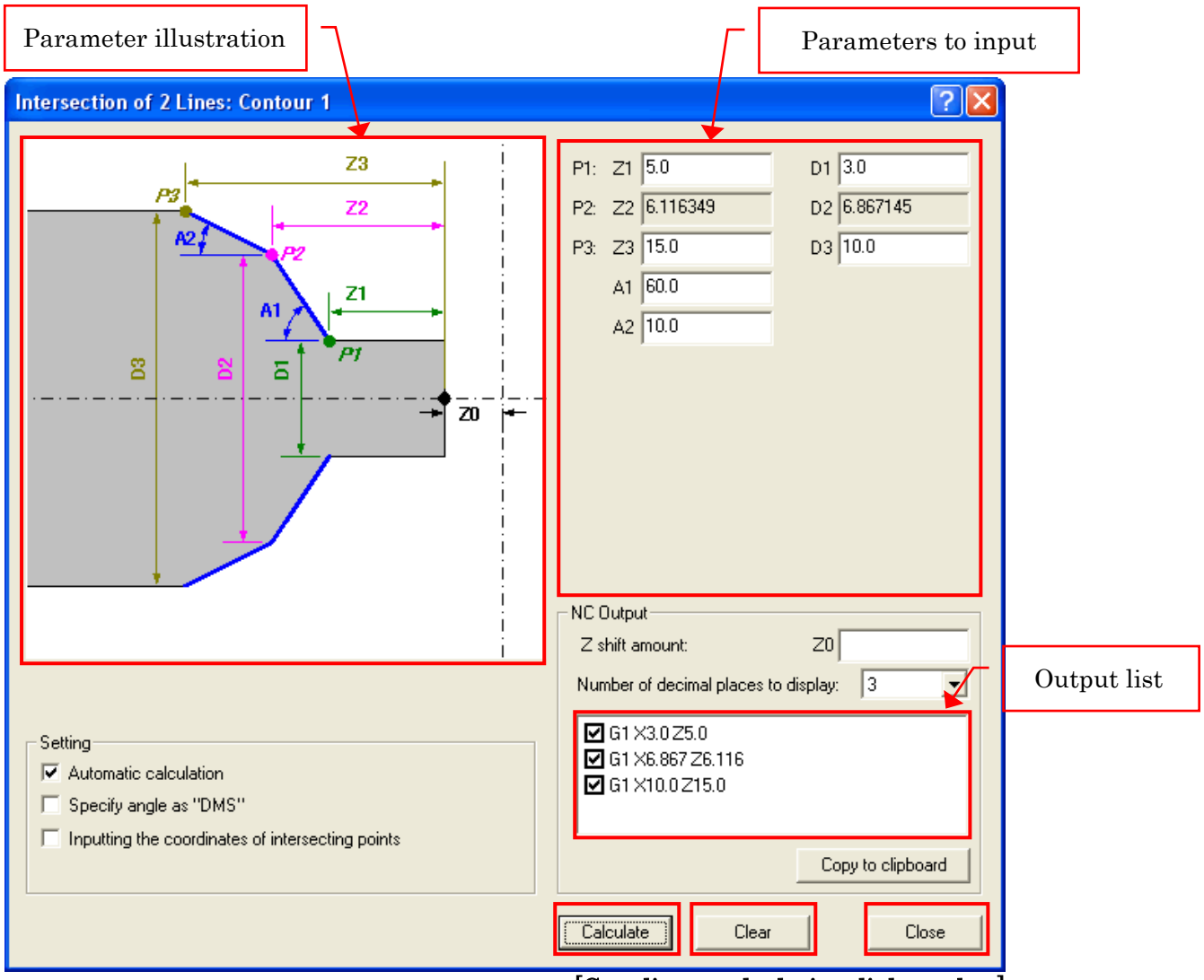
(1) (2) (3) (4) **[Contour list switch buttons]**

(1) All
(2) Intersection of 2 lines
(3) Chamfering
(4) Circle tangent to 2 lines

② Select the [Contour type] from the [Contour list] to obtain the necessary coordinates, then press the [OK] button

Note: Press the [Help] button to display the [Help topic search] dialog box.

2) When [OK] is pressed on the [Contour selection dialogue box], the [Coordinate calculation dialog box] corresponding to the selected [Contour type] will be displayed.



[Coordinate calculation dialogue box]

① While referring to the [Parameter illustration], input the values that are known into the [Parameters to input] items.

- It is not necessary to input all of the values.
- When the [Calculate] button is pressed, the unknown values (values not inputted) will be calculated using other values. The calculated values will be displayed as “read-only”.
- When automatic calculation is checked, the unknown values (values not inputted) will be automatically calculated using other values.
- In [Parameter to input], not only can formulas of numerical values be inputted, but also formulas of the four arithmetic operations. The calculation result of the formula will be rounded off to 6 decimal places.

  \+ : Add
  − : Subtract
  ＊ : Multiply
  ／ : Divide
  (*formula*) Give priority to calculation inside brackets

E.g. 3+1/8 -> 3.125

–(0.3+1.7)/(2+1) -> –0.666667

② Press the [Calculate] button.

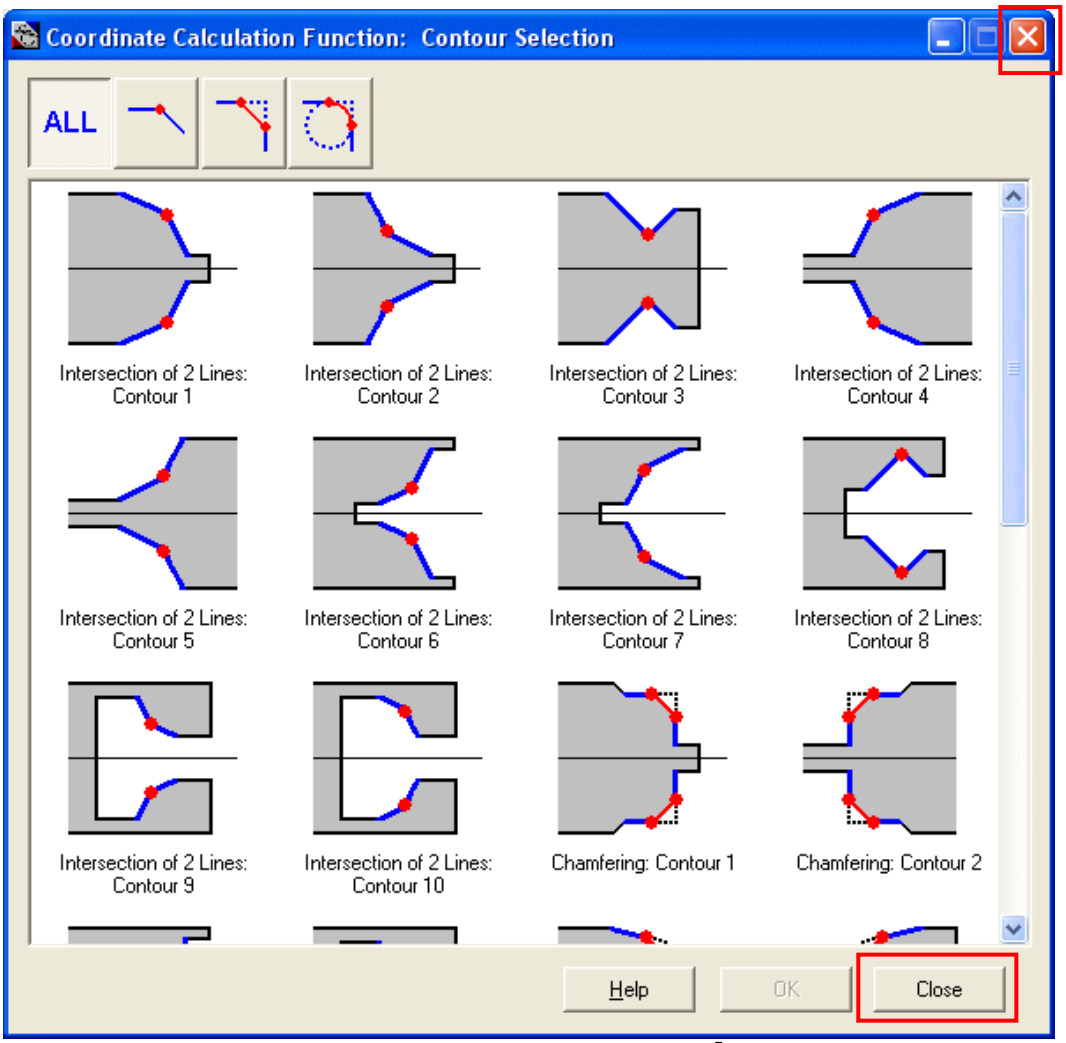
- Unknown values (values not inputted) will be calculated using other values, and will be displayed as “read-only”.
- When the all parameters were determined as the result of the calculation, the NC program will be displayed in [Output list].
- By pressing the [Copy to clipboard] button, it will be possible to paste the NC program displayed in [Output list] into the program edit function (refer to 5-3 Coordinate calculation).

③ Then to input a separate coordinate and carry out coordinate calculation, press the [Clear] button to clear the inputted values, and repeat steps ① and ②.

④ To close the coordinate calculation dialog box, press the [Close] button.

For details on each setting item of the [Coordinate calculation dialog box], please refer to “5-3 Coordinate calculation”.

3) When the [Coordinate calculation dialog box] is closed, the display will return to the [Contour selection dialog box].



[Contour selection dialog box]

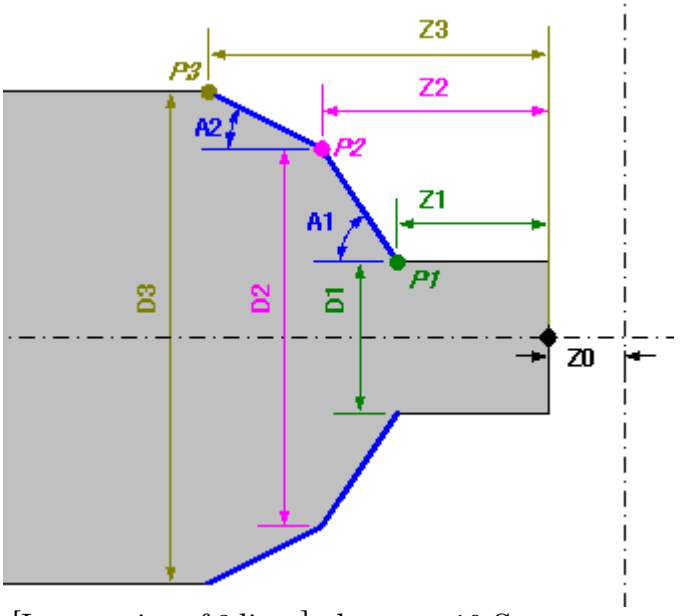
① To carry out coordinate calculation of other contour types, select [Contour type] and press the [OK] button. The [Coordinate calculation dialog box] will be displayed again.

② To end the [Coordinate calculation function], press [Close] or the ☒ button.

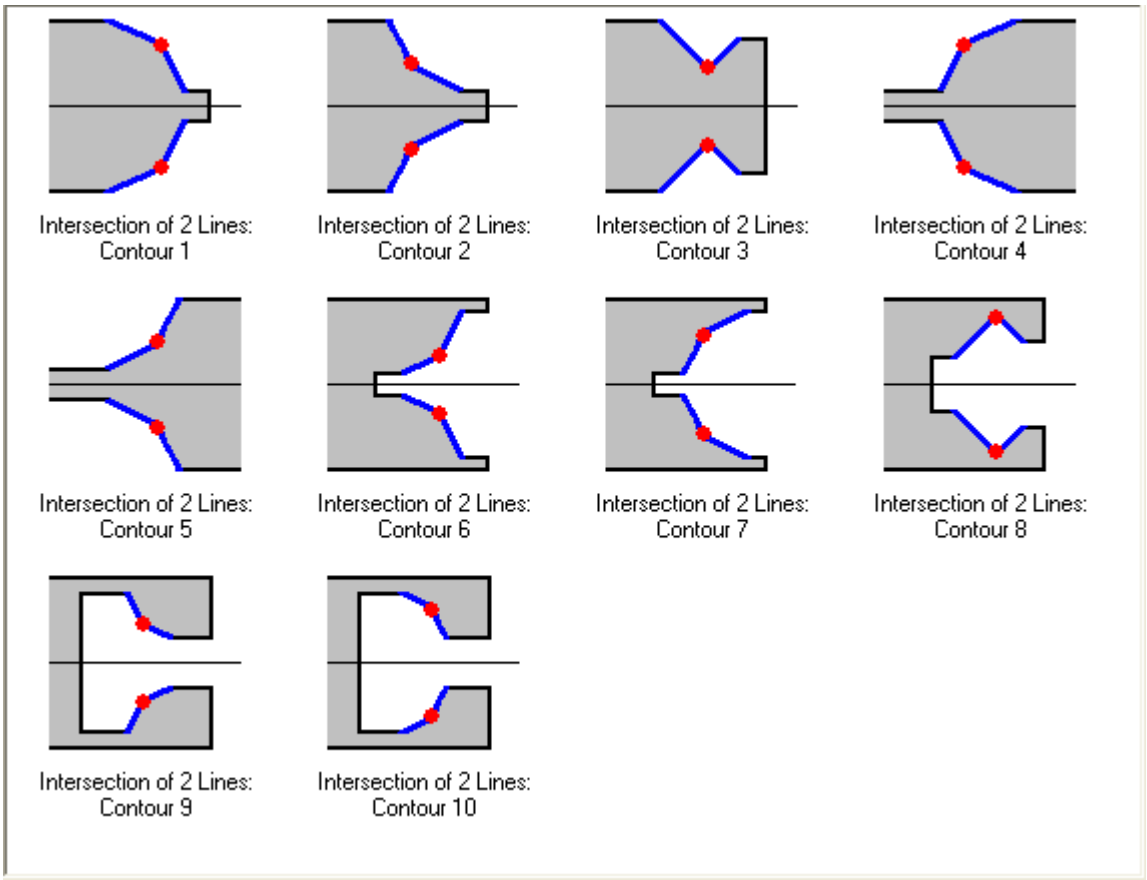
5-3 Coordinate calculation

5-3-1 Intersection of 2 lines

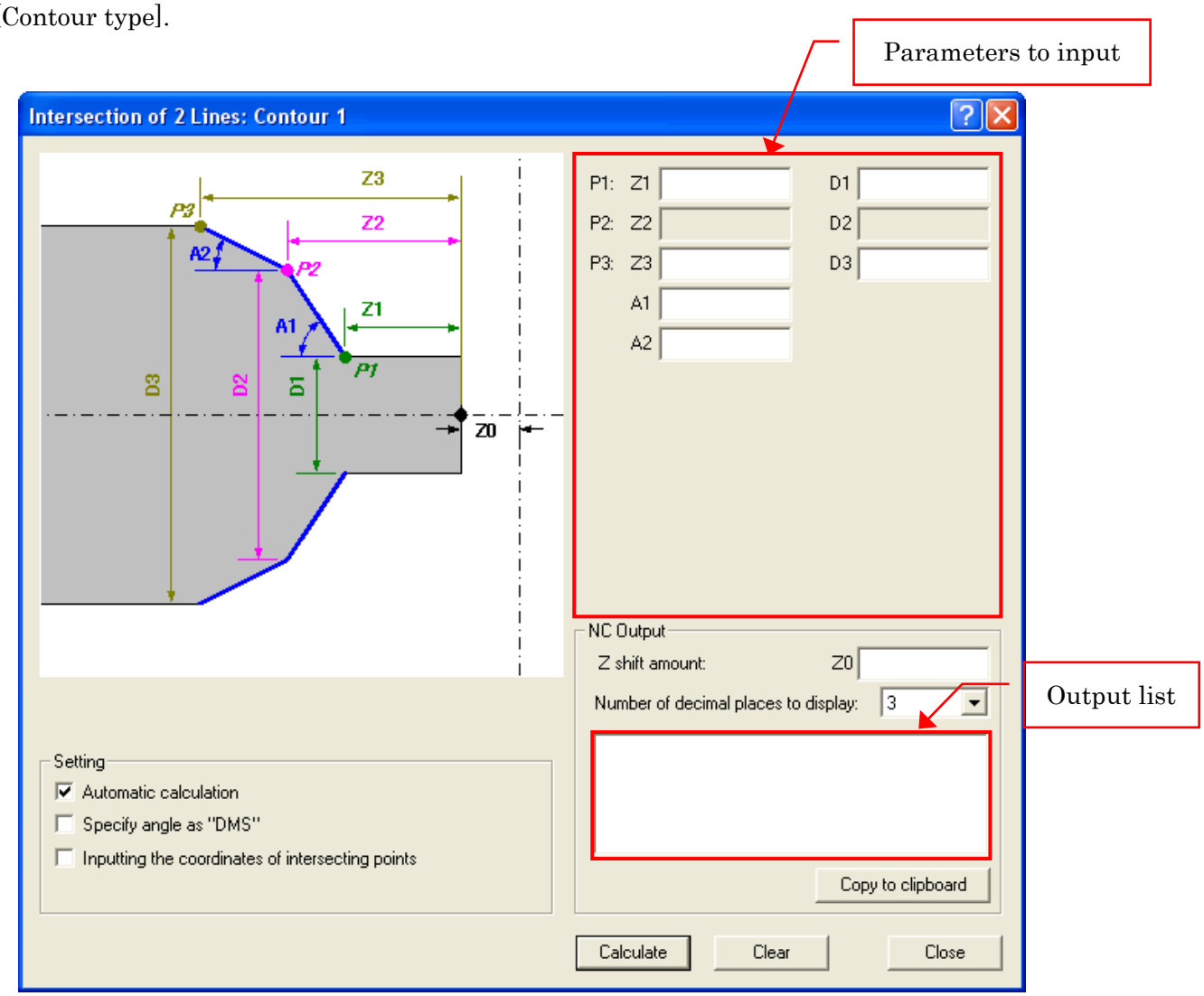
In [Intersection of 2 lines], it is possible to obtain the coordinates for each point of the contour that is composed by 2 straight lines, as shown below.



In [Intersection of 2 lines], there are 10 Contour types as shown below.



Coordinate calculation of [Intersection of 2 lines] is carried out with the [Coordinate calculation dialogue box] similar to the one shown below.
If [Parameters to input] is [Intersection of 2 lines], it will be of common use regardless of the [Contour type].



・Parameters to input

Input the following values of the items that are known.

2 lines		
P1:	Z1	Z coordinate value of point P1
	D1	Diametrical value of point P1
P2:	Z2	Z coordinate value of intersecting point P2
	D2	Diametrical value of intersecting point P2
P3:	Z3	Z coordinate value of point P3
	D3	Diametrical value of point P3
Angle	A1	Angle of straight lines P1-P2
	A2	Angle of straight lines P2-P3

・Setting

Automatic calculation:

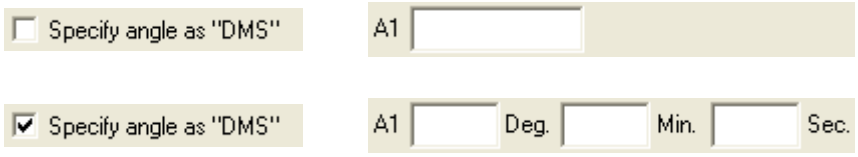
When there are values that have not been inputted, they will be calculated by using other values. On such occasions, when automatic calculation is checked, the values that are not inputted will be automatically inputted with the calculation result.

The parameters inputted by the calculation result will become “read-only” thus making them impossible to edit. These inputted parameters based on the calculation can be edited by restoring them to blank.

If the automatic calculation check is left out, and the [Calculate] button is pressed, the calculation result will be inputted into the values that are not inputted.

Specify angle as “DMS”:

There are two types of units that can be specified for the [Angle]. It is possible to switch between the unit of [degrees] and [degrees, minute, second].



Inputting the coordinates of intersecting points:

Carrying out checking will make it possible to input coordinates of an intersecting point (P2). This is used when wanting to obtain coordinates of other points from the coordinates of the intersecting point (P2).

・NC output

Z shift amount:

Add the [Z shift amount] to the result of coordinate calculation, then output it to the output list as an NC code. When the Z shift amount is corrected, it will immediately reflect in the NC codes.

Number of decimal places to display:

The result of the coordinate calculation will be rounded off in [Number of decimal places to display], and will be outputted to the output list as an NC code. Also, if the digits after 2 decimal places are "0", they will be omitted (e.g. 1.0300 → 1.03). When the value of [Number of decimal places to display] is corrected, it will immediately reflect in the NC codes.

Output list:

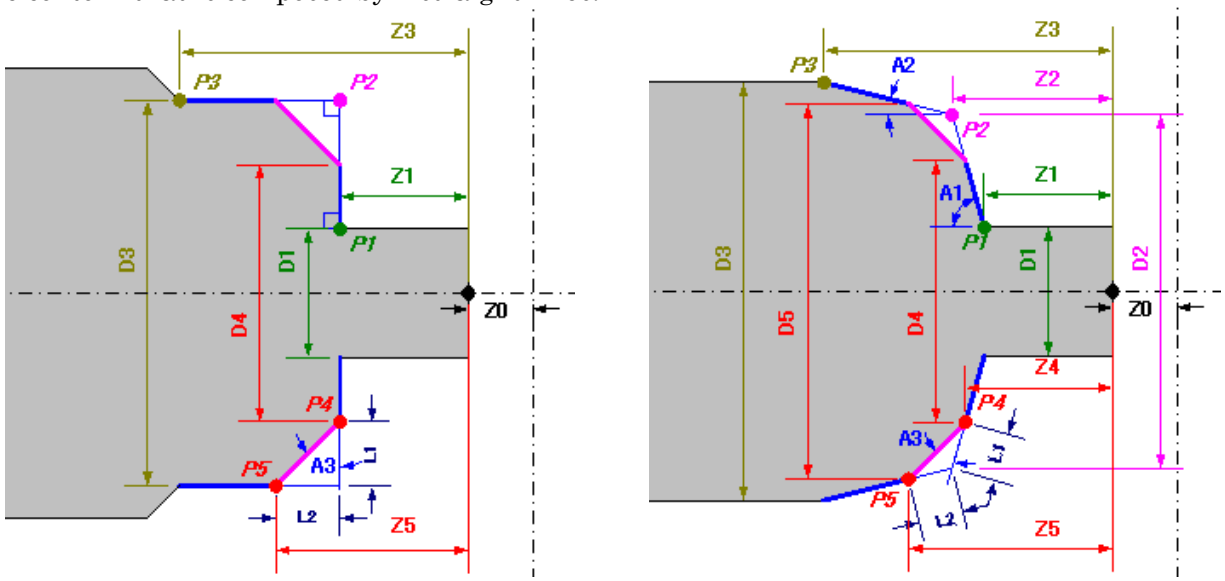
When [Calculate] is pressed, the result of coordinate calculation will be outputted as an NC code. However, if the values necessary for calculating unknown values (values not inputted) have not been inputted, it will not be outputted. If the parameter values are changed after the NC code was output to the output list, the output list will be cleared.

A check box will be displayed at the head of each block of an outputted NC code. When the [Copy to clipboard] button is pressed, blocks with a selected check box will be copied into the clipboard. The contents copied into the clipboard can also be pasted into the program editing function (in the program editing function, select "Paste" in the "Edit" menu).

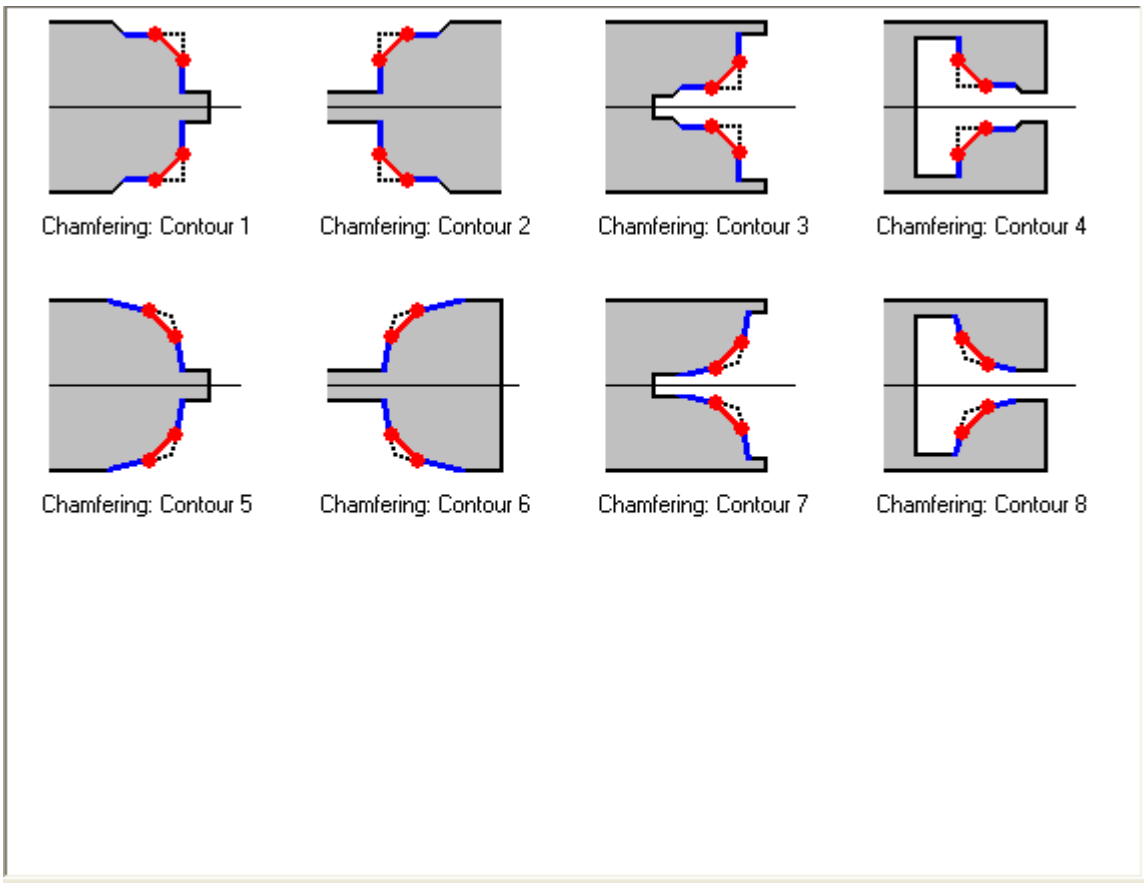
The NC code is output with an address of diameter direction X, long distance direction Z, arc radius R. When another address is necessary for the NC program, replace the address after paste into the program editing function.

5-3-2 Chamfering

In [Chamfering], it is possible to obtain the coordinates of each point of the chamfered contour from the contour that is composed by 2 straight lines.

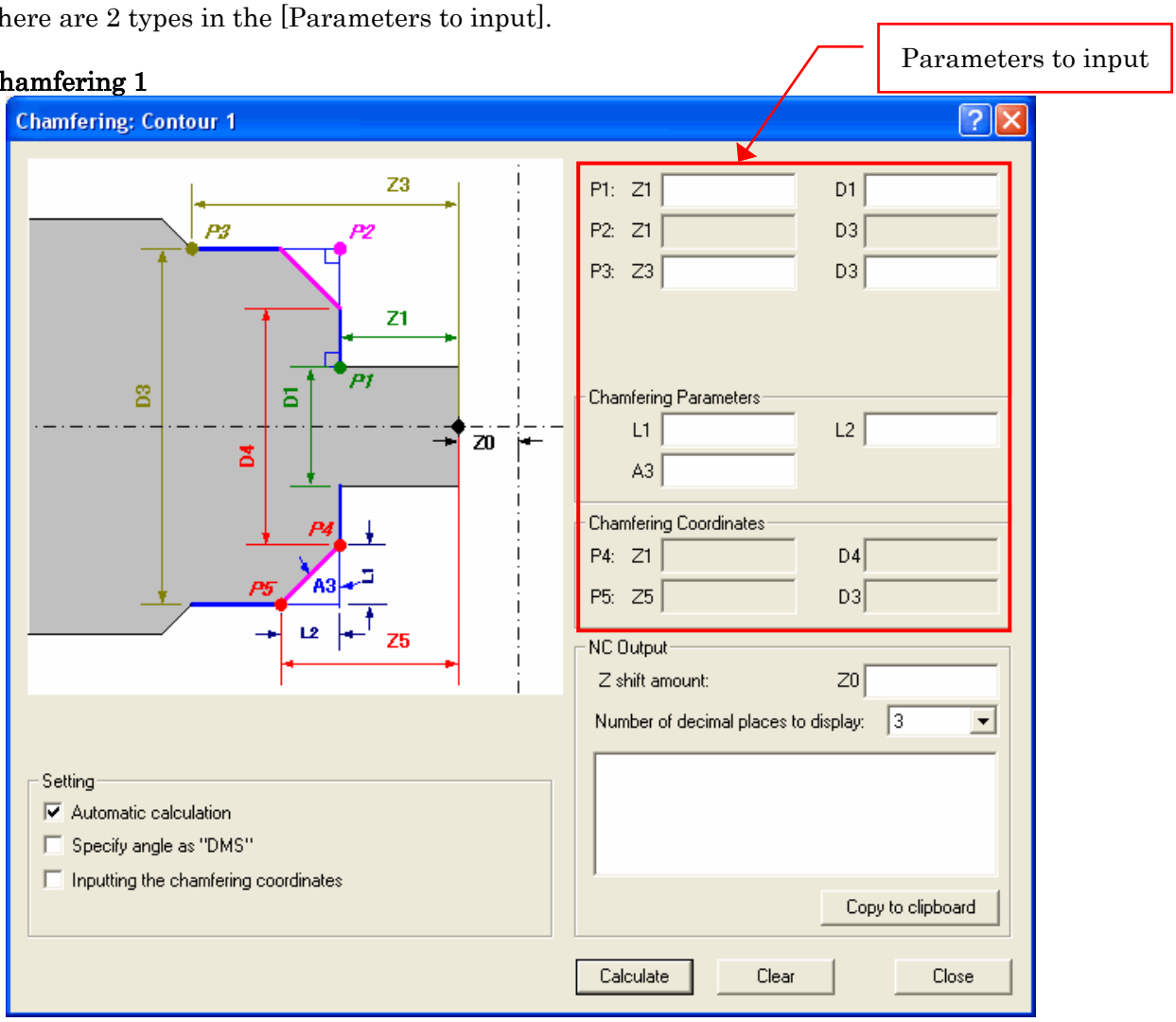


In [Chamfering], there are 8 [Contour types] as shown below.



Coordinate calculation of [Chamfering] is carried out with the [Coordinate calculation dialogue box] similar to the one shown below.
There are 2 types in the [Parameters to input].

Chamfering 1

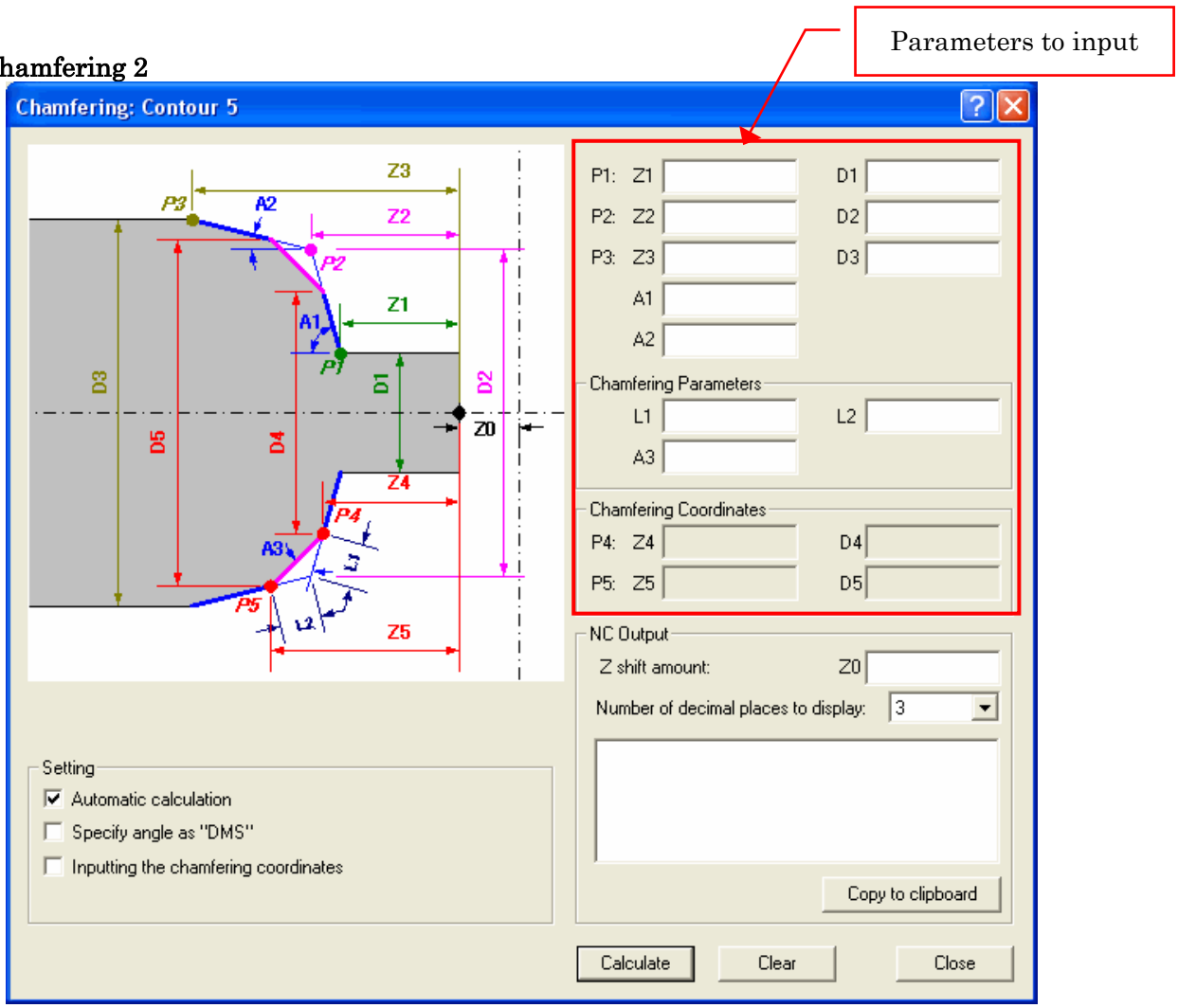


・Parameters to input

Input the following values of the items that are known.

2 straight lines		
P1:	Z1	Z coordinate value of point P1
	D1	Diametrical value of point P1
P2:	Z1	Z coordinate value of intersecting point P2 (same value as P1:Z1)
	D3	Diametrical value of intersecting point P2 (same value as P3:D3)
P3:	Z3	Z coordinate value of point P3
	D3	Diametrical value of point P3
Chamfering		
Distance	L1	Chamfering length of straight line P1-P2
	L2	Chamfering length of straight line P2-P3
Angle	A1	Chamfering angle
P4:	Z1	Straight line P1-P2 and intersecting point of chamfering Z coordinate value (same value as P1:Z1)
	D2	Straight line P1-P2 and intersecting point of chamfering Diametrical value
P5:	Z2	Straight line P2-P3 and intersecting point of chamfering Z coordinate value
	D3	Straight line P2-P3 and intersecting point of chamfering Diametrical value (same value as P3:D3)

Chamfering 2



・Parameters to input

Input the following values of the items that are known.

2 straight lines		
P1:	Z1	Z coordinate value of point P1
	D1	Diametrical value of point P1
P2:	Z2	Z coordinate value of intersecting point P2
	D2	Diametrical value of intersecting point P2
P3:	Z3	Z coordinate value of point P3
	D3	Diametrical value of point P3
Angle	A1	Angle of straight line P1-P2
	A2	Angle of straight line P2-P3
Chamfering		
Distance	L1	Chamfering length of straight line P1-P2
	L2	Chamfering length of straight line P2-P3
Angle	A3	Chamfering angle
P4:	Z4	Straight line P1-P2 and intersecting point of chamfering Z coordinate value
	D4	Straight line P1-P2 and intersecting point of chamfering Diametrical value
P5:	Z5	Straight line P2-P3 and intersecting point of chamfering Z coordinate value
	D5	Straight line P2-P3 and intersecting point of chamfering Diametrical value

・Setting

Automatic calculation:	Please refer to “5-3-1 Intersection of 2 lines”
Specify angle as “DMS”:	Please refer to “5-3-1 Intersection of 2 lines”

Inputting the chamfering coordinates:

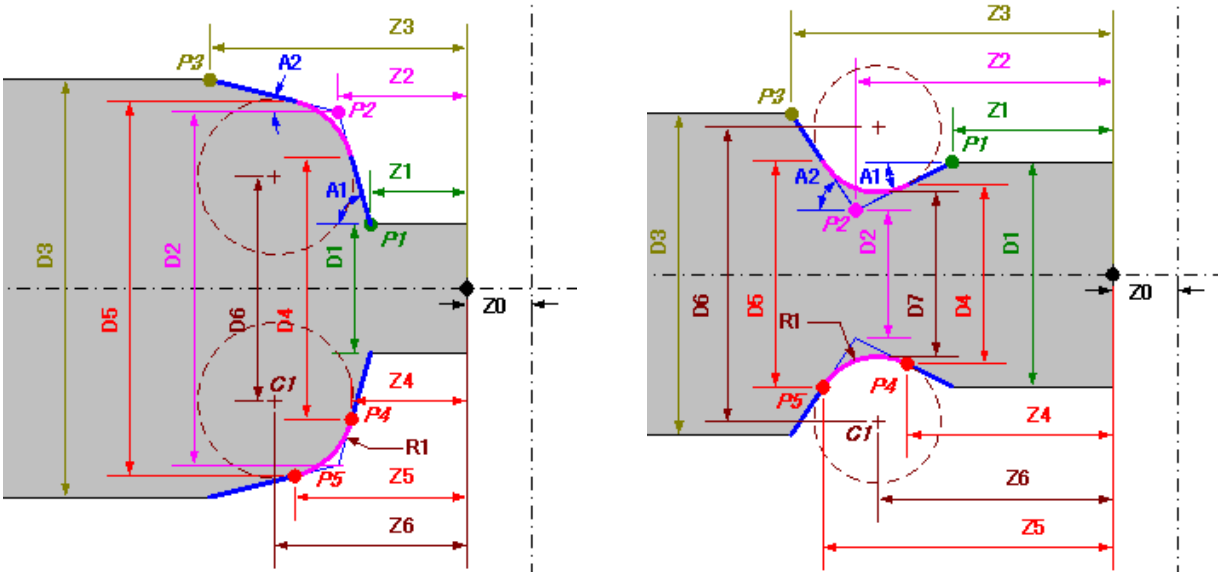
When a check is carried out, it will be possible to input coordinates of the chamfering area (P4, 5). This is used when wanting to obtain coordinates of other points from the coordinates of the chamfering area (P4, 5)

・NC output

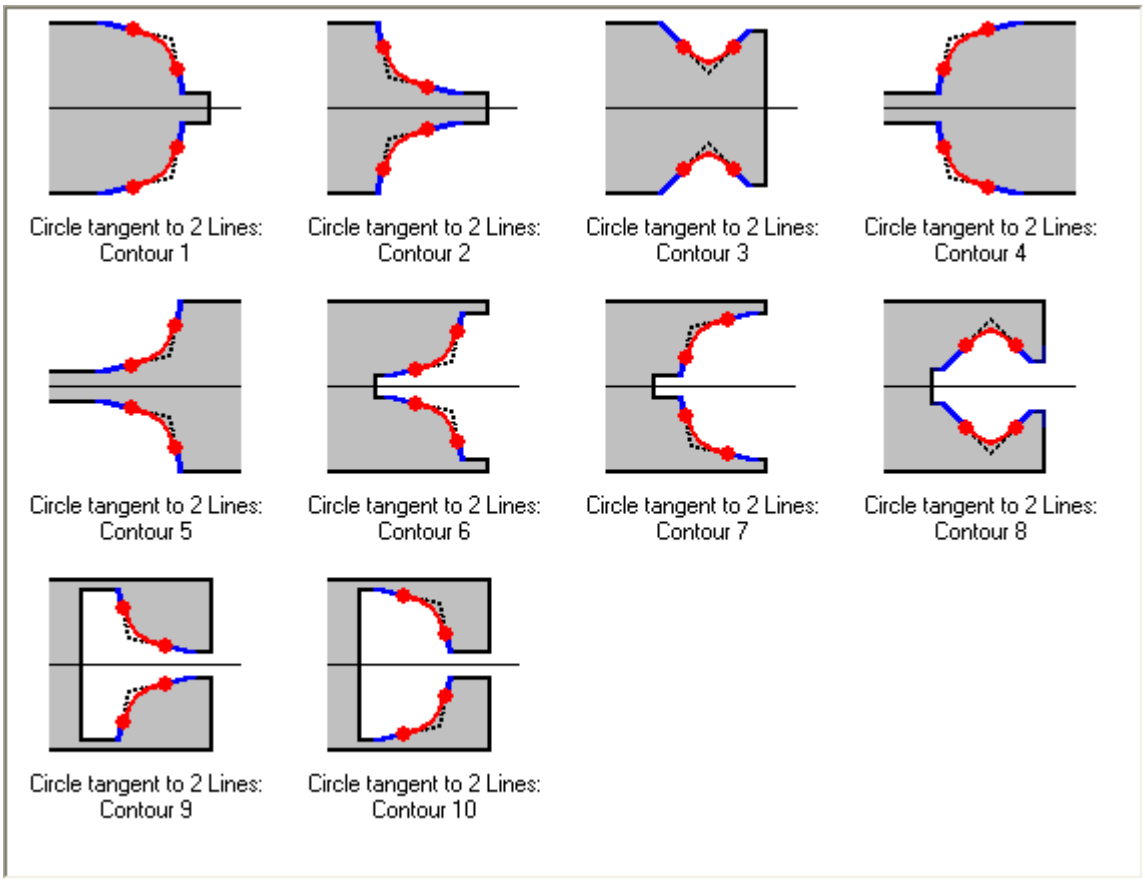
Z shift amount:	please refer to “5-3-1 Intersection of 2 lines”
Number of decimal places to display:	please refer to “5-3-1 Intersection of 2 lines”
Output list:	please refer to “5-3-1 Intersection of 2 lines”

5-3-3 Circle tangent to 2 lines

In [Circle tangent to 2 lines], it is possible to obtain the coordinates of each point of the contour that is composed by 2 straight lines, and are touched by the curve of a circle.

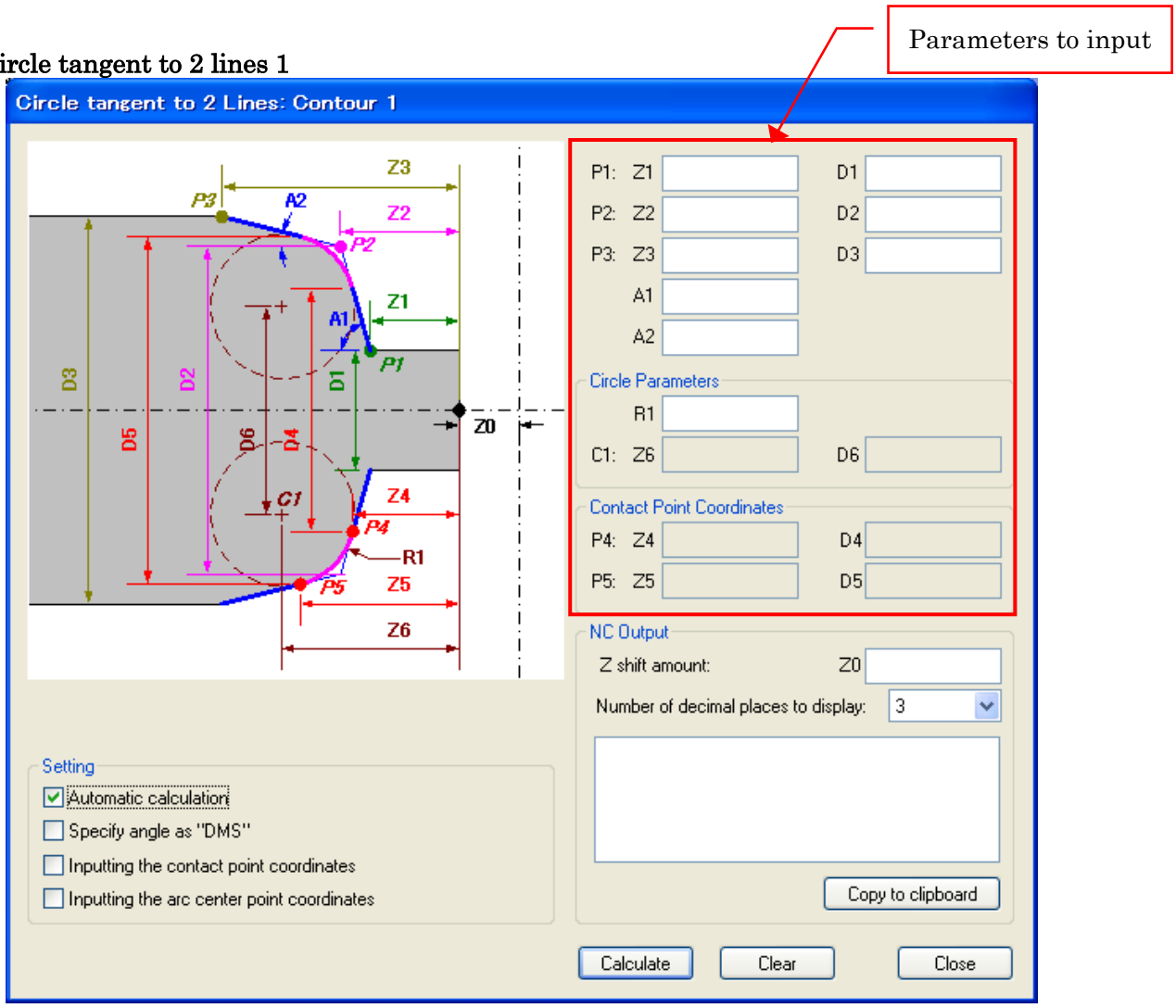


In [Circle tangent to 2 lines], there are 10 [Contour types] as shown below.



Coordinate calculation of [Circle tangent to 2 lines] is carried out with the [Coordinate calculation dialogue box] similar to the one shown below.
There are 2 types in the [Parameters to input].

Circle tangent to 2 lines 1

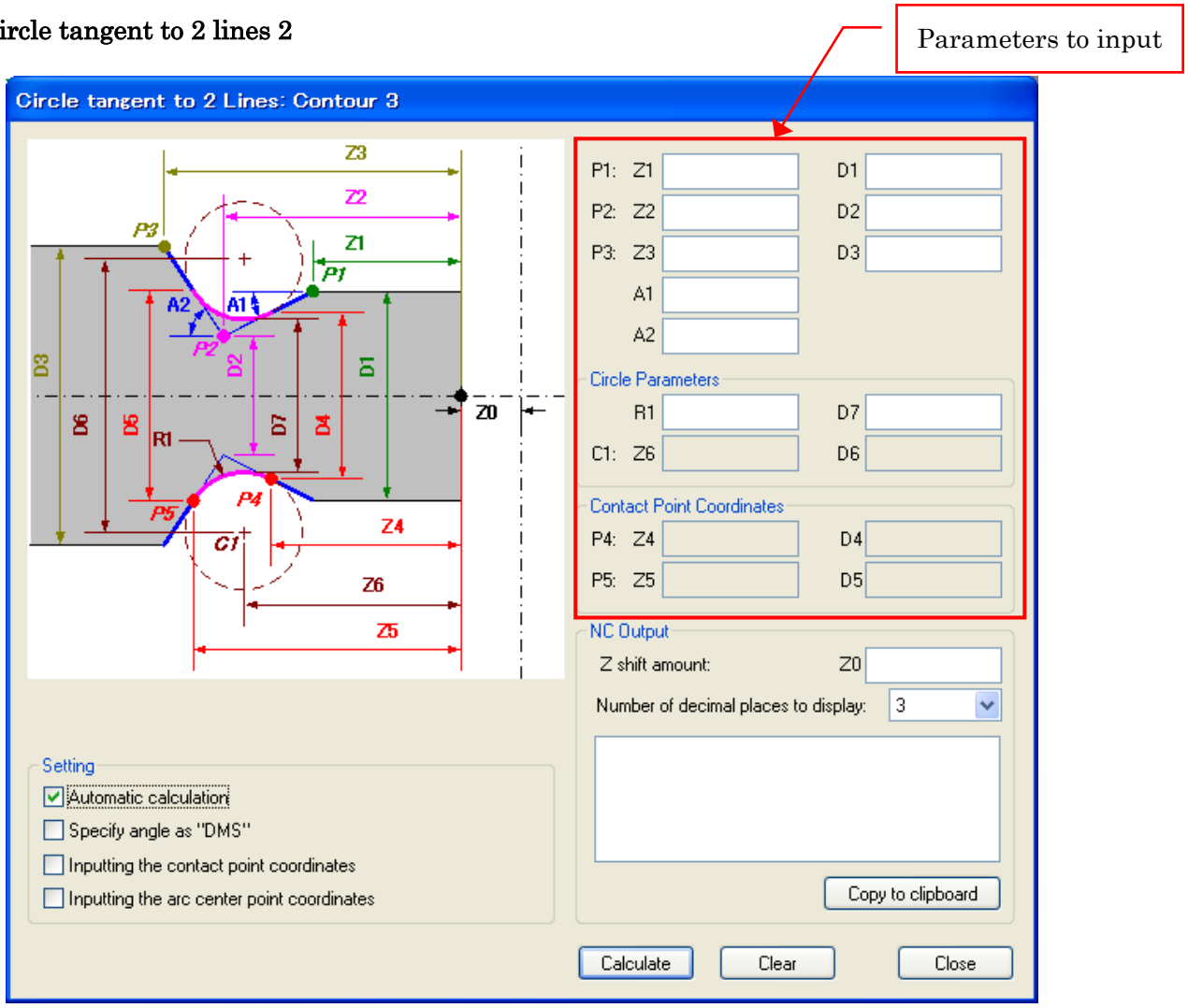


・Parameters to input

Input the following values of the items that are known.

2 straight lines		
P1:	Z1	Z coordinate value of point P1
	D1	Diametrical value of point P1
P2:	Z2	Z coordinate value of intersecting point P2
	D2	Diametrical value of intersecting point P2
P3:	Z3	Z coordinate value of point P3
	D3	Diametrical value of point P3
Angle	A1	Angle of straight line P1-P2
	A2	Angle of straight line P2-P3
Circle		
Radius	R1	Radius of circle
C1:	Z6	Center of circle Z coordinate value
	D6	Center of circle Diametrical value
P4:	Z4	Straight line P1-P2 and contact point of circle Z coordinate value
	D4	Straight line P1-P2 and contact point of circle Diametrical value
P5:	Z5	Straight line P2-P3 and contact point of circle Z coordinate value
	D5	Straight line P2-P3 and contact point of circle Diametrical value

Circle tangent to 2 lines 2



・Parameters to input

Input the following values of the items that are known.

2 straight lines		
P1:	Z1	Z coordinate value of point P1
	D1	Diametrical value of point P1
P2:	Z2	Z coordinate value of intersecting point P2
	D2	Diametrical value of intersecting point P2
P3:	Z3	Z coordinate value of point P3
	D3	Diametrical value of point P3
Angle	A1	Angle of straight line P1-P2
	A2	Angle of straight line P2-P3
Circle		
Radius	R1	Radius of circle
Core	D7	Diametrical value of core
C1:	Z6	Center of circle Z coordinate value
	D6	Center of circle Diametrical value
P4:	Z4	Straight line P1-P2 and contact point of circle Z coordinate value
	D4	Straight line P1-P2 and contact point of circle Diametrical value
P5:	Z5	Straight line P2-P3 and contact point of circle Z coordinate value
	D5	Straight line P2-P3 and contact point of circle Diametrical value

・Setting

Automatic calculation:	Please refer to “5-3-1 Intersection of 2 lines”
Specify angle as “DMS”:	Please refer to “5-3-1 Intersection of 2 lines”

Inputting the contact point coordinates:

When a check is carried out, it will be possible to input coordinates of the contact point of the circle (P4, 5). This is used when wanting to obtain coordinates of other points from the coordinates of the contact point of the circle (P4, 5).

Inputting the circle center coordinates:

When a check is carried out, it will be possible to input coordinates of the center of the circle (C1). This is used when wanting to obtain coordinates of other points from the coordinates of the center of the circle (C1).

・NC output

Z shift amount:	please refer to “5-3-1 Intersection of 2 lines”
Number of decimal places to display:	please refer to “5-3-1 Intersection of 2 lines”
Output list:	please refer to “5-3-1 Intersection of 2 lines”

CHAPTER 6
Tooling function

6 Tooling function

6-1 Outline of Tooling function

Tooling function manages the information of geometry offset, tools and units etc. This tooling information can be printed out as a tooling sheet.

6-1-1 Starting Tooling function

・For Windows 8.1 or Windows 8

a) When starting from Program Edit function
Tooling function is started by selecting [Tooling Setup] from the menu bar [Tool], or clicking [Tooling Setup] button  on the toolbar.
When starting up [Tooling Function] from [Program Edit function], the T codes, geometry offset commands (ECAS: GEO, FANUC/MITSUBISHI: G265), and unit commands (ECAS: STU, FANUC: G264) in the program will automatically be extracted, and the tooling information will be initialized.
If the NC program file is saved with [Program Edit function], the tooling information will be automatically saved in the same folder as the NC program file. In addition, if the NC program file is read-in with [Program Edit function], the tooling information file saved into the same folder as the NC program file will be automatically read-in.

b) When starting from the Start screen

Click on [Tooling Function] tile on the Start screen to start up.

If the Start screen is not displayed, move the mouse pointer to the top-right corner or bottom-right corner to display the Charms bar, then click on [Start].

c) When starting from the “Apps” screen

1) Right-click on an empty area in the Start screen.

2) Select [All apps] from the displayed application bar.

3) “Apps” screen is displayed. Click on [Tooling Function] to start up.

・For Windows 7 or Windows Vista

a) When starting from Program Edit function
Tooling function is started by selecting [Tooling Setup] from the menu bar [Tool], or clicking [Tooling Setup] button  on the toolbar.
When starting up [Tooling Function] from [Program Edit function], the T codes, geometry offset commands (ECAS: GEO, FANUC/MITSUBISHI: G265), and unit commands (ECAS: STU, FANUC: G264) in the program will automatically be extracted, and the tooling information will be initialized.
If the NC program file is saved with [Program Edit function], the tooling information will be automatically saved in the same folder as the NC program file. In addition, if the NC program file is read-in with [Program Edit function], the tooling information file saved into the same folder as the NC program file will be automatically read-in.

b) When starting from the start menu
1) Select Windows's [Start] menu.
2) Select [Program] command.
3) Select [Star Micronics].
4) Select [Common].
5) Select [Tooling] to start Tooling function.

・For Windows 11 or Windows 10

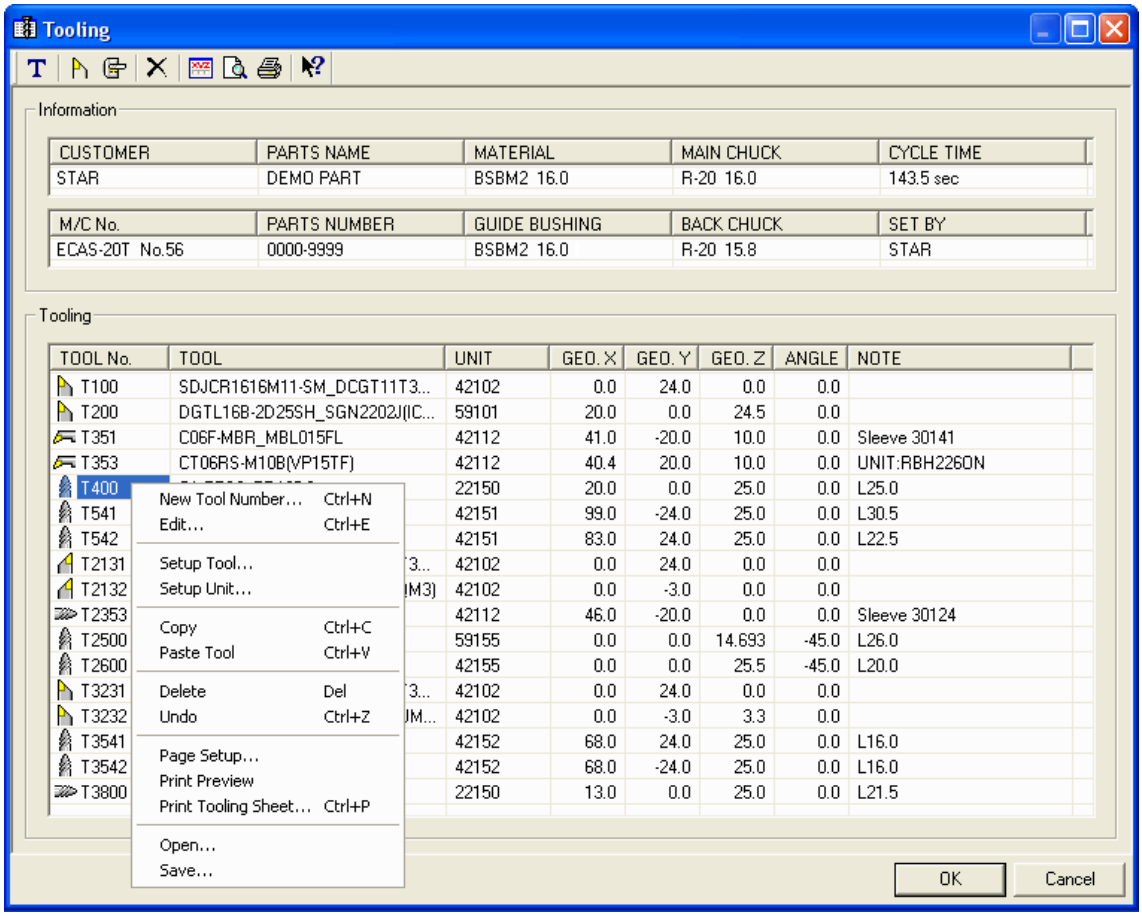
a) When starting from Program Edit function
Tooling function is started by selecting [Tooling Setup] from the menu bar [Tool], or clicking [Tooling Setup] button  on the toolbar.
When starting up [Tooling Function] from [Program Edit function], the T codes, geometry offset commands (ECAS: GEO, FANUC/MITSUBISHI: G265), and unit commands (ECAS: STU, FANUC: G264) in the program will automatically be extracted, and the tooling information will be initialized.
If the NC program file is saved with [Program Edit function], the tooling information will be automatically saved in the same folder as the NC program file. In addition, if the NC program file is read-in with [Program Edit function], the tooling information file saved into the same folder as the NC program file will be automatically read-in.

b) When starting from the start menu
1) Select Windows's [Start] menu.
2) Select [All apps]. <- For Windows 11
3) Select [Star Micronics].
4) Select [PUT] to start Tooling function.

6-1-2 Function explanation

Tooling function contains the following functions:
* Manages the NC program file together with the tooling information file
* Prints the tooling sheet, the geometry offset sheet and the process list sheet
* Outputs geometry offset information to a file (for ECAS: GEO command, for FANUC/MITSUBISHI: G265)
* Outputs unit information to a file (for ECAS: STU command, for FANUC: G264)

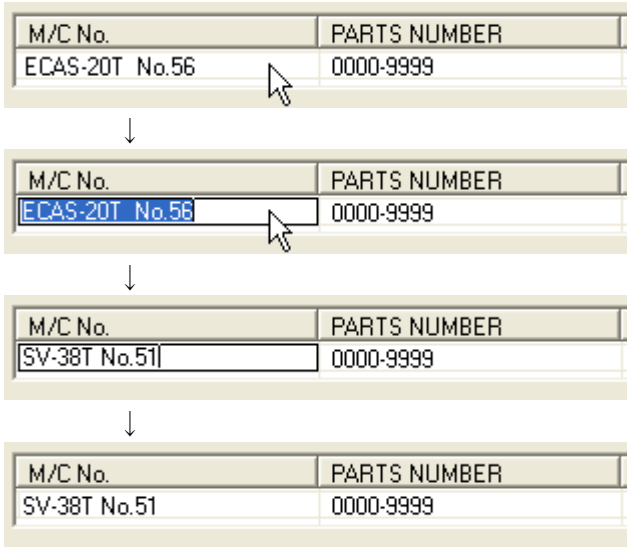
6-2 Procedure of operation



[Tooling function] is composed of an [Information] area and a [Tooling] area. In the [Information] area, values can be directly inputted into each item. In the [Tooling] area, the values set in the dialog for each item will be displayed in list form for each tool number.

6-2-1 Inputting data

In the [Information] area, when clicking on an item to input data, the edit box will be displayed at the item. Input a value into the edit box and press the [ENTER] key to finish inputting



Click on the item to input

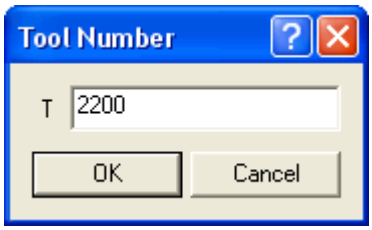
The edit box displays

Input a new value

Press the [ENTER] key to finish inputting

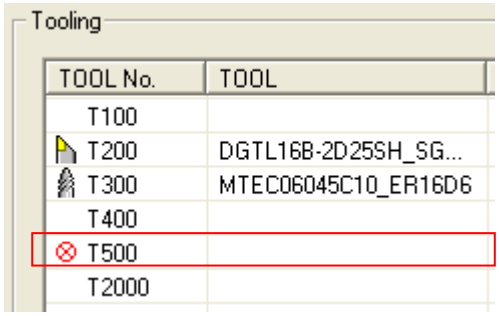
6-2-2 Setting of Tool Number

In the [Tooling] area, either select [New Tool Number...] from the menu, or click on the T button on the tool bar to display the "Tool Number" dialog box. When a tool number is inputted into this dialog box, the new tool number will be added to the list.



Note) If a tool number is not added, it will not be possible to carry out the setting of [TOOL], [UNIT] and other information.

Start up [Tooling function] from [Program Edit function]. If tool numbers are added which are not commanded in the NC program, the ⊗ icon will be displayed at the tool number.

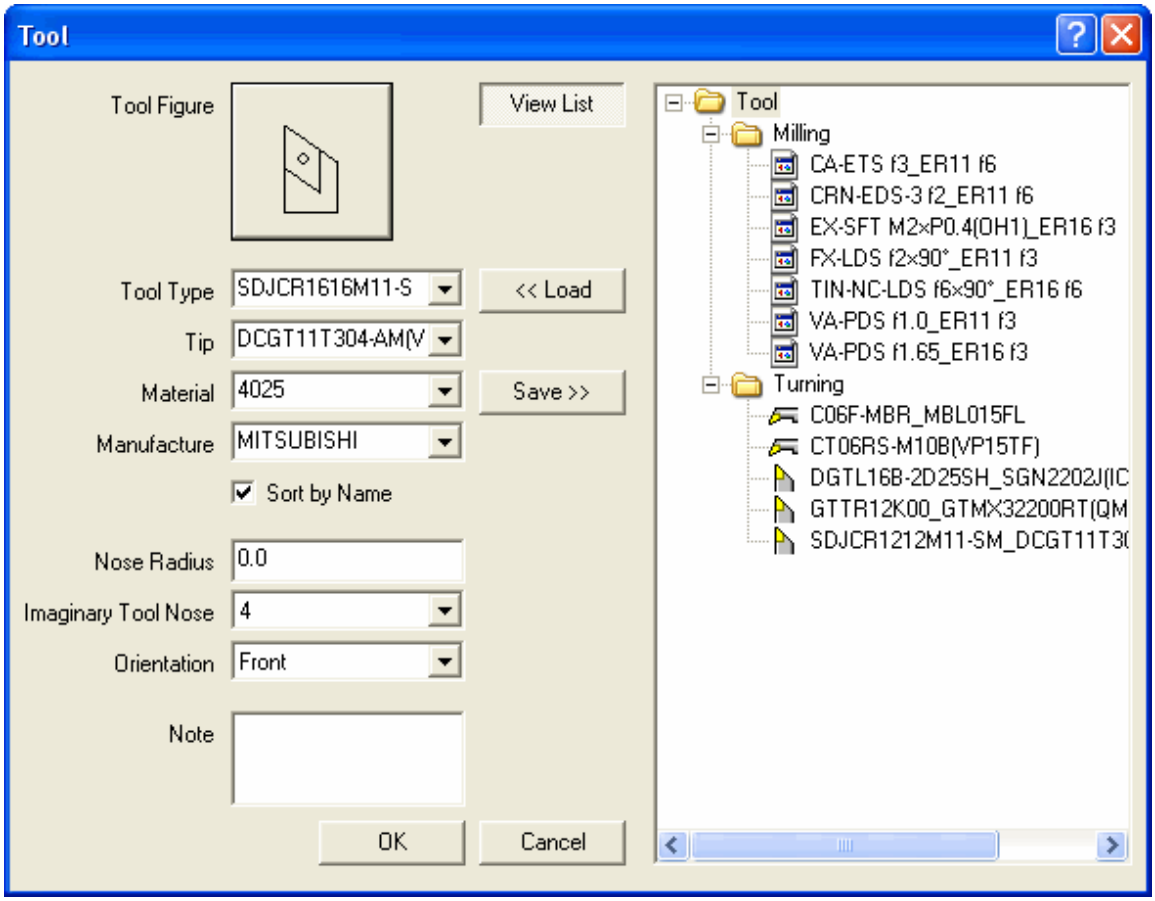


To delete a tool number, select the tool number item from the list, then either select [Delete] from the menu or click on the ✕ button on the tool bar.

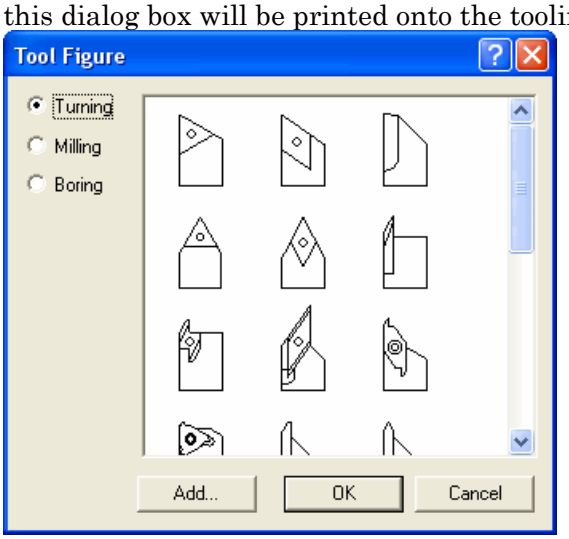
Note) When a tool number is deleted, the [TOOL], [UNIT] and other information which has been set in the tool number will also be deleted. To cancel the deletion, select [Undo] from the menu.

6-2-3 Tool Setting

In the [Tooling] area, select the tool number item from the list then either select [Setup Tool...] from the menu or click on the button on the tool bar to display the "Tool" dialog box.



[Tool Figure] button The "Tool Figure" dialog box will be displayed. The selected tool shape in this dialog box will be printed onto the tooling sheet.



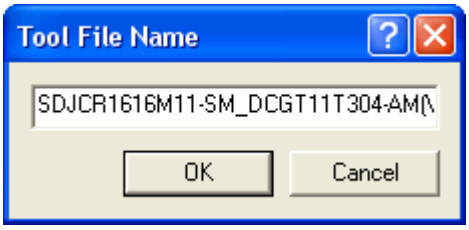
The original tool shape can be added from the bitmap file by pressing the [Add] button. To delete the original shape which has been added, select a shape icon then press the [DEL] key.

* The recommended bitmap of the tool shape to be added is a monochromatic bitmap with a size of 54 × 54.

[Tool Type]	Input the Tool Type, or select from the drop-down list.
[Tip]	Input the Tip, or select from the drop-down list.
[Material]	Input the Material, or select from the drop-down list.
[Manufacture]	Input the Manufacturer, or select from the drop-down list.

(Caution) In the drop-down lists of [Tool Type], [Tip], [Material] and [Manufacturer], there are initially no registered items. When these items have been inputted, the values can be selected from the drop-down list.

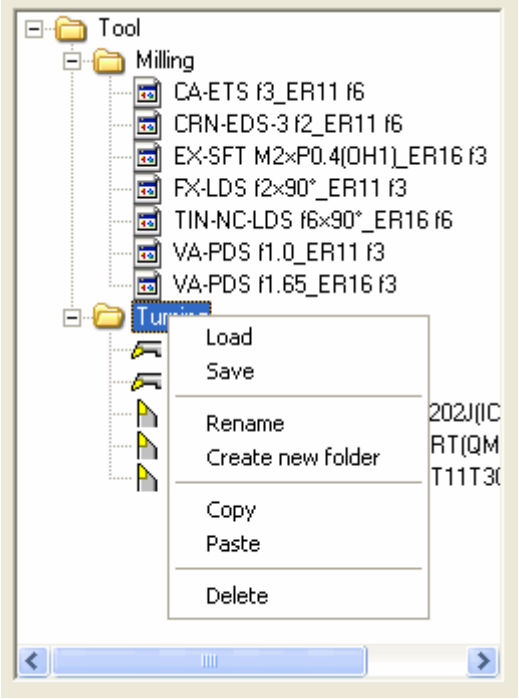
[Sort by Name]	When this item is ticked, the drop-down list of [Tool Type], [Tip], [Material] and [Manufacturer] will be displayed in order of name. When this item is not ticked, the drop-down list of those items will be displayed in order of input.
[Nose Radius]	Input the Nose Radius.
[Imaginary Tool Nose]	Select Imaginary Tool Nose from the drop-down list.
[Orientation]	Select Orientation from the drop-down list.
[Note]	Input Note.
[View List] button	Switch between display/hide of [Tool files list].
[Load] button	Read-in the tool information selected in [Tool files list].
[Save] button	The current setting contents will be saved as a tool file in the [Tool files list]. At this time, if a folder is selected in [Tool files list], the "Tool File Name" dialog box will be displayed. The tool file of the name inputted in the "Tool File Name" dialog box will be created in that folder.



If a tool file is selected in [Tool files list], it will be overwritten.

■Tool files list

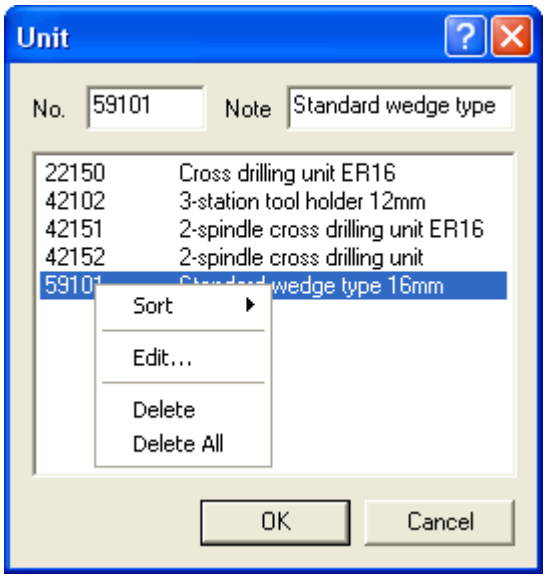
In the list where folders and tool files are displayed in tree form, it is possible to carry out saving, reading-in and editing etc. of tool files.



[Load]	The same as the [Load] button of the “Tool” dialog box.
[Save]	The same as the [Save] button of the “Tool” dialog box.
[Rename]	Alter the name of a tool file or folder.
[Create new folder]	Create a new folder.
[Copy]	Copy a tool file or folder.
[Paste]	Paste the copied tool file or folder.
[Delete]	Delete a tool file or folder.

6-2-4 UNIT Setting

If [Setup Unit...] is selected from the menu in the [Tooling] area, or the button on the tool bar is clicked, the "Unit" dialog box will be displayed. This is where inputting and selection of the Unit number is carried out.



[No.]	Input the Unit number.
[Note]	Input a note. This does not have to be inputted, however inputting the unit names etc. can be convenient.

(Caution) There are initially no items registered in the list. When [No.] and [Note] are inputted and the [OK] button is clicked to close the dialog box, they can be selected from the list from the next time onwards.

[Sort]	Select the order of items in the list from [by Most recently used], [by Number] and [by Note].
[Edit]	Edit the [No.] and [Note] items registered in the list.
[Delete]	Delete the selected item in the list.
[Delete All]	Delete all items in the list.

6-2-5 Geometry Offset Setting

Input [GEO.X], [GEO.Y], [GEO.Z]. The method of input is the same as inputting in the [Information] area.

6-2-6 Angle Setting

Input the [ANGLE]. The method of input is the same as inputting in the [Information] area.

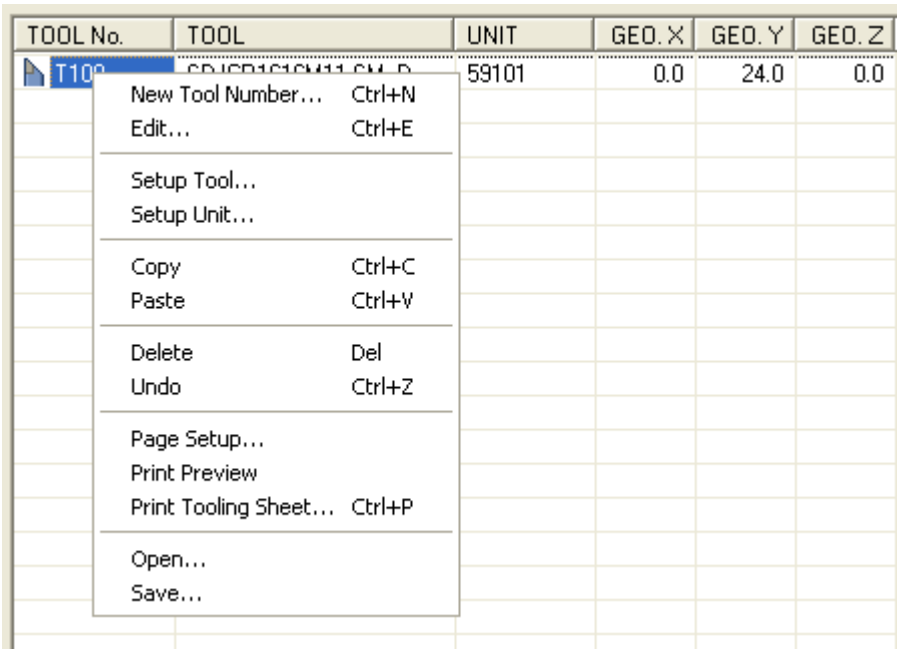
6-2-7 Note Setting

Input the [NOTE]. The method of input is the same as inputting in the [Information] area.

6-2-8 Copy / Paste / Delete

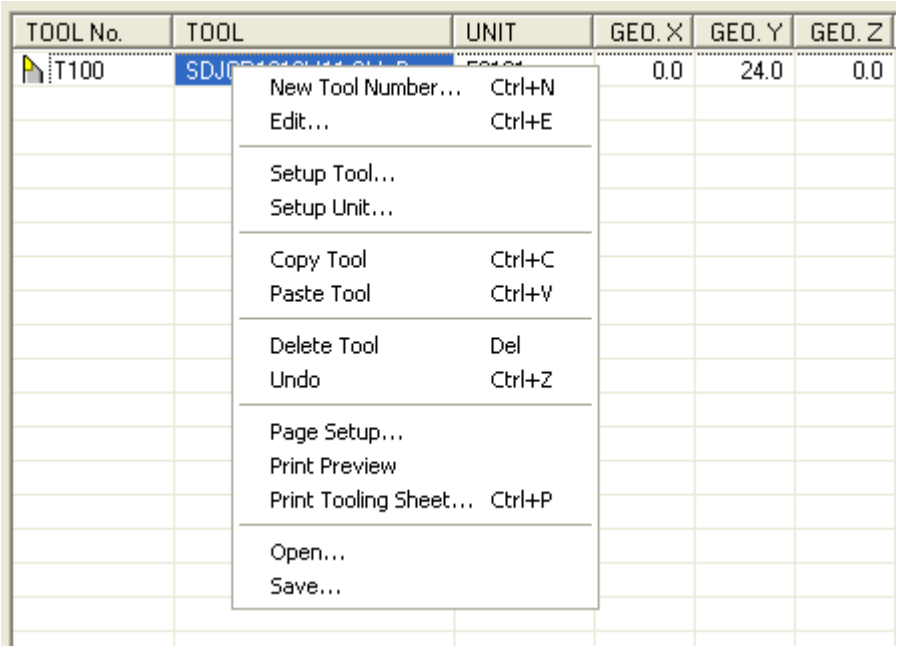
The contents of the menu (copy, paste, delete) displayed in the [Tooling] area will differ depending on which column the menu is opened in.

■For tool numbers



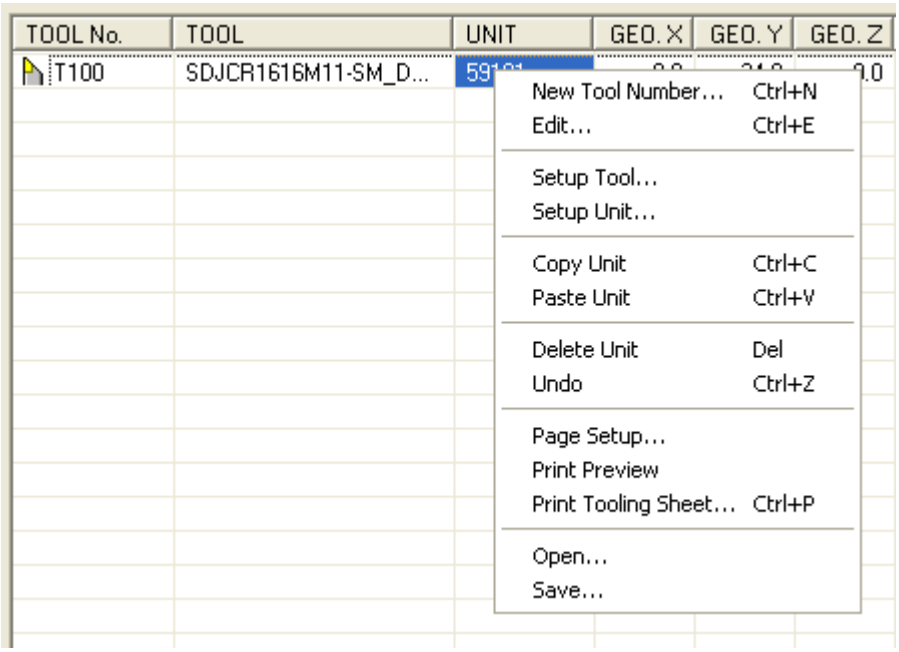
[Copy]	The [TOOL], [UNIT], [GEO], [ANGLE] and [NOTE] items in the line of the selected tool number will be copied altogether.
[Paste]	The copied [TOOL], [UNIT], [GEO], [ANGLE] and [NOTE] items will be pasted altogether.
[Delete]	The whole line of the selected tool number will be deleted.

■For tools



[Copy Tool] Copy the selected tool.
[Paste Tool] Paste the copied tool.
[Delete Tool] Delete the selected tool.

■For units



[Copy Unit] Copy the selected unit.
[Paste Unit] Paste the copied unit.
[Delete Unit] Delete the selected unit.

6-2-9 Saving/Opening Files

When [Save...] is selected from the menu in the [Tooling] area, the contents of the tooling setting can be saved in an exclusive tooling file. In addition, geometry offset commands and unit setting commands can be saved in the outputted text files.

The following file formats can be saved:

Tooling file (.utl)	Exclusive tooling file for saving the contents of a tooling setting.
*ECAS20T information file (*_c.spf)	An ECAS-20T tool data file with outputted STU command and GEO command.
*ECAS32T information file (*_c.spf)	An ECAS-32T tool data file with outputted STU command and GEO command.
FANUC geometry offset file [G265] (.txt)	Text file with outputted G265 geometry offset command of FANUC.
FANUC unit setting file[G264] (.txt)	Text file with outputted G264 unit setting command of FANUC.
FANUC information file [G264,G265] (.txt)	Text file with both G265 geometry offset command and G264 unit setting command of FANUC outputted.

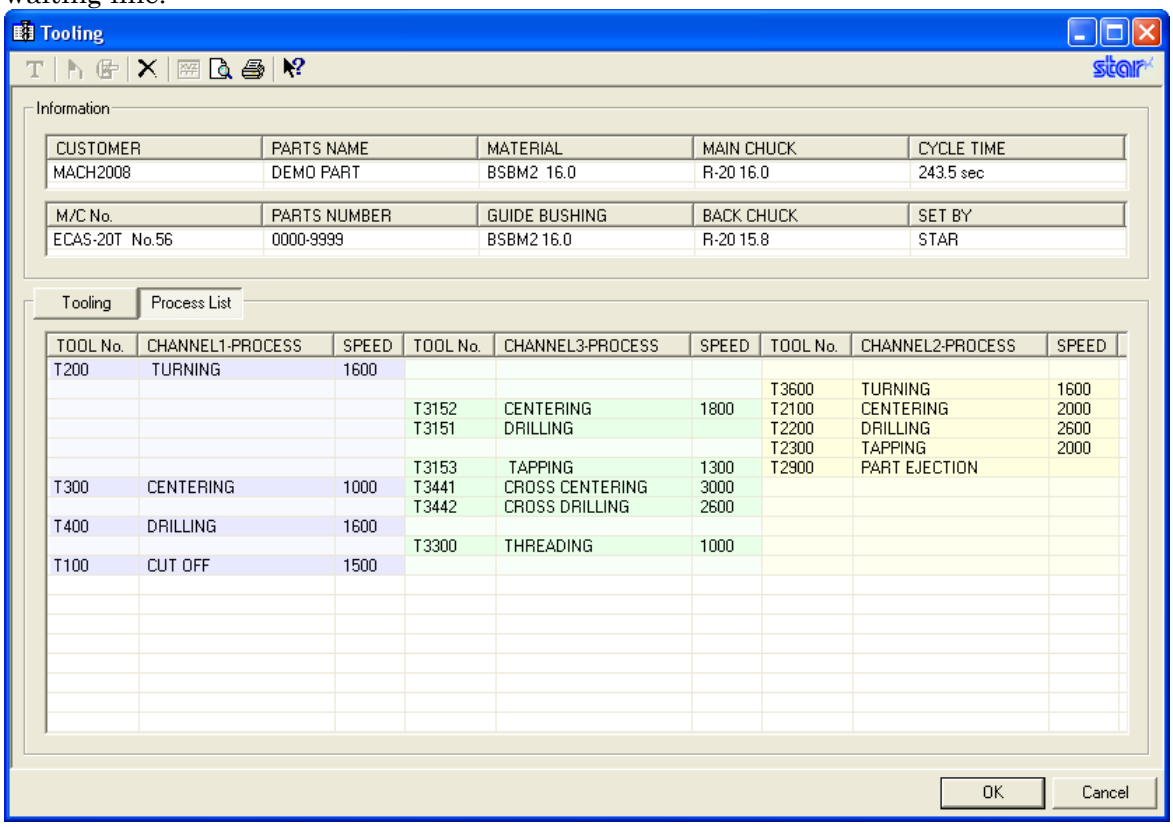
When [Open...] is selected from the menu in the [Tooling] area, the text file with an outputted exclusive tooling file, geometry offset command or unit setting command can be opened.

The following file formats can be opened:

Tooling file (.utl)	Exclusive tooling file with saved contents of the tooling setting.
*ECAS information file (*_c.spf)	An ECAS-20T or ECAS-32T tool data file with outputted STU command or GEO command.
FANUC information file [G264, G265] (.txt)	Text file outputted with both/either of FANUC geometry offset command (G265), FANUC unit setting command (G264).

6-2-10 Process List

When [Process List] button is selected in the [Tooling] area, the process list will be displayed. The T codes in the program will automatically be extracted, and they will be displayed by arranging a waiting line.



[TOOL No.] The T codes in the program will automatically be extracted, and they will be displayed by arranging a waiting line. [TOOL No.] cannot be edited.

[PROCESS] Input a processing name. The comment of T code block in the program is displayed as an initial value. When there is no comment in T code block, the comment described within five lines before T code block is displayed. [PROCESS] can be edited.

[SPEED] S command that was commanded first after T code block is displayed. [SPEED] can be edited.

The line can be deleted, if T number or a blank line is selected and the [DEL] key is pressed or [DELETE] button of a tool bar is clicked.

(Caution) The process list is re-drawn by the newest information extracted from NC program whenever the [Tooling] dialog box was opened. Therefore, deletion of [TOOL No.] and the edit of [SPEED] will become invalid by reopening the dialog box.

6-3 Print

The inputted tooling information can be printed on the tooling sheet and geometry offset sheet.

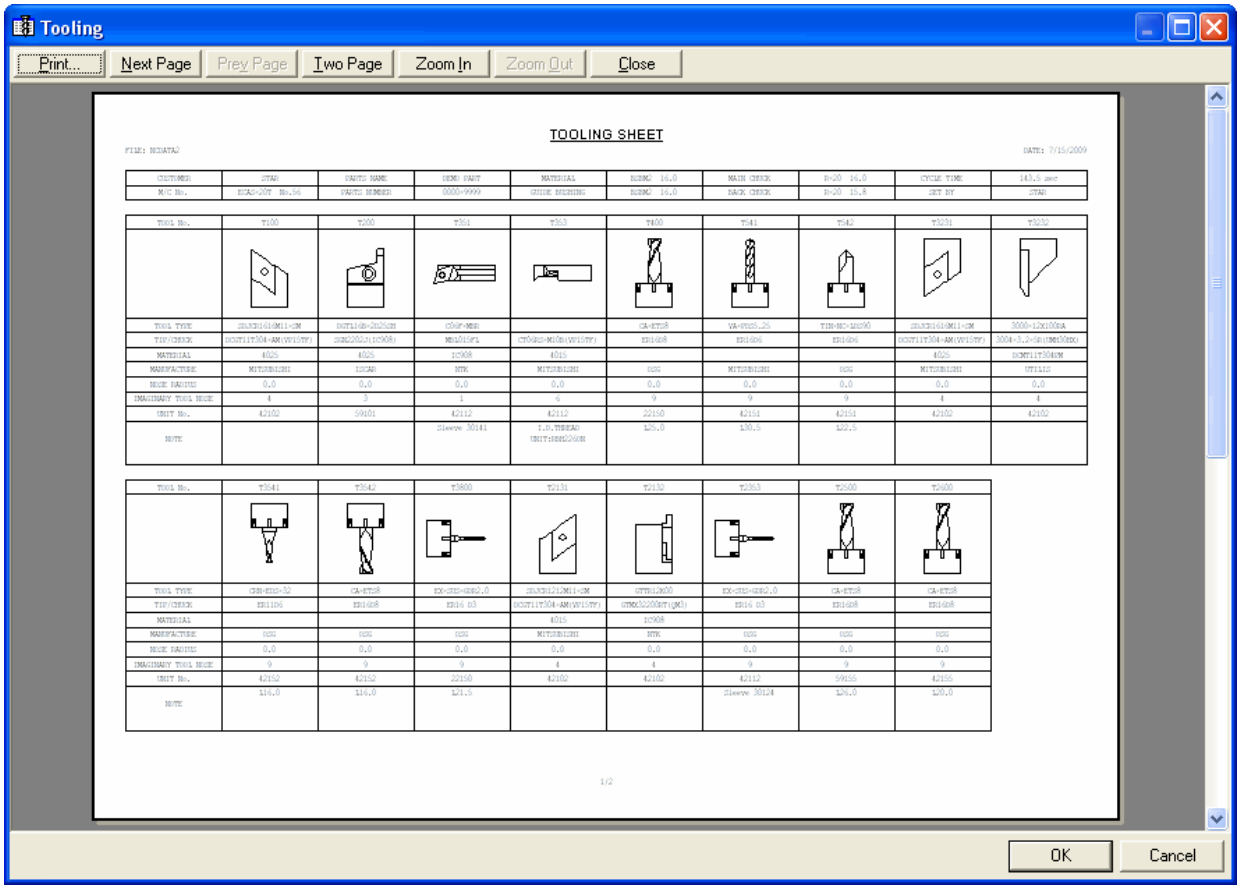
6-3-1 Setting of Print Page

When [Page Setup...] is selected from the menu of the [Tooling] area, the “Page Setup” dialog box will be displayed. The paper size, orientation, margin etc. can be set in this dialog.

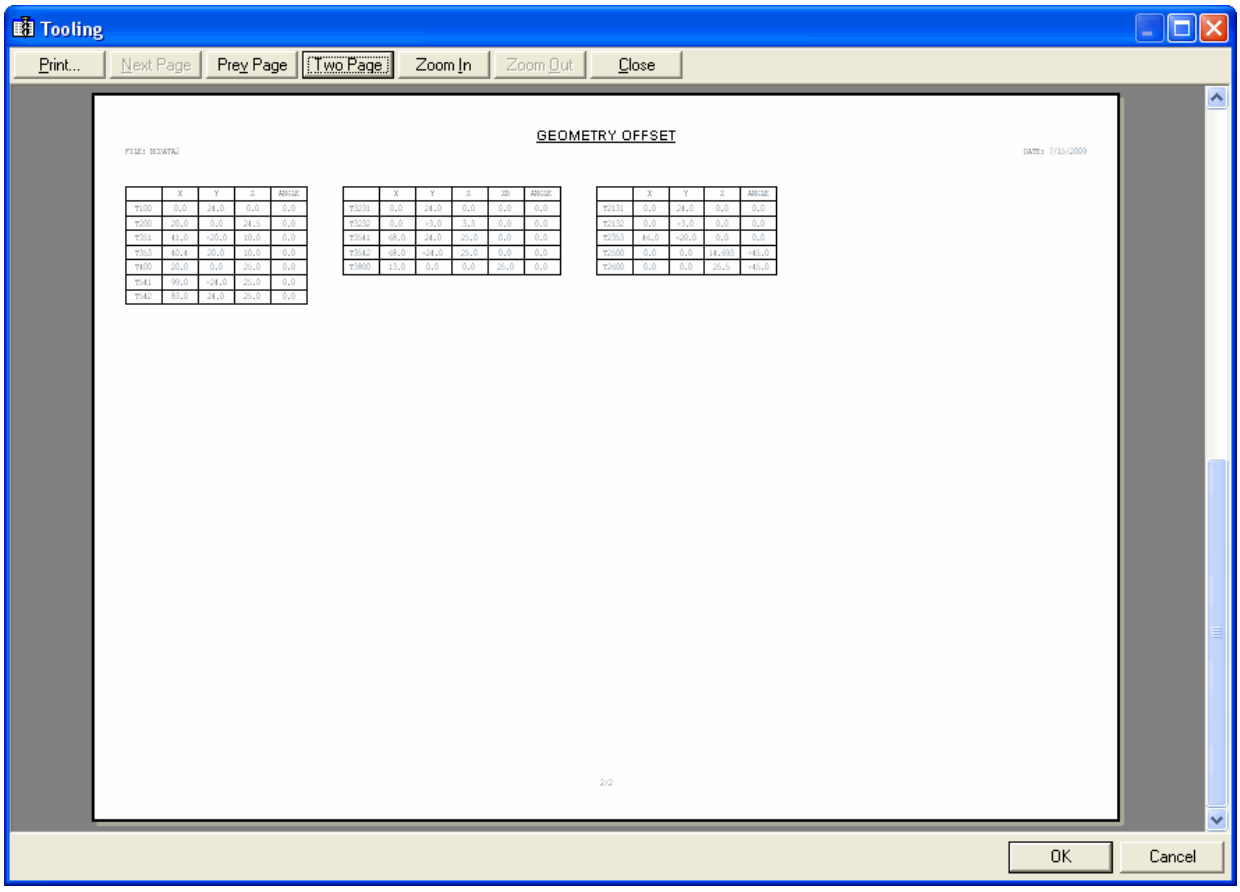
6-3-2 Print Preview

By selecting [Print Preview] from the menu in the [Tooling] area, or clicking the  button on the tool bar, the print preview page will be displayed.

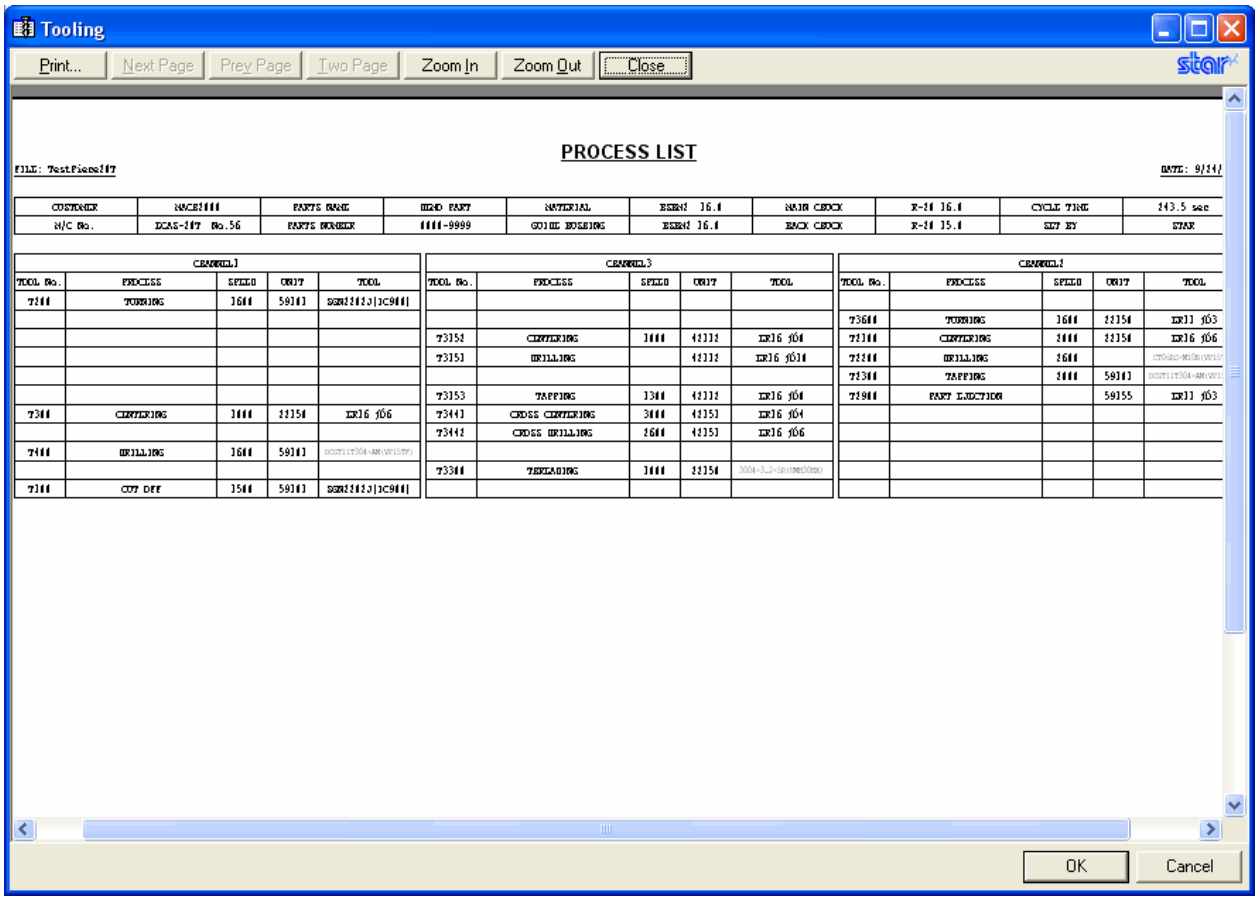
■Tooling sheet



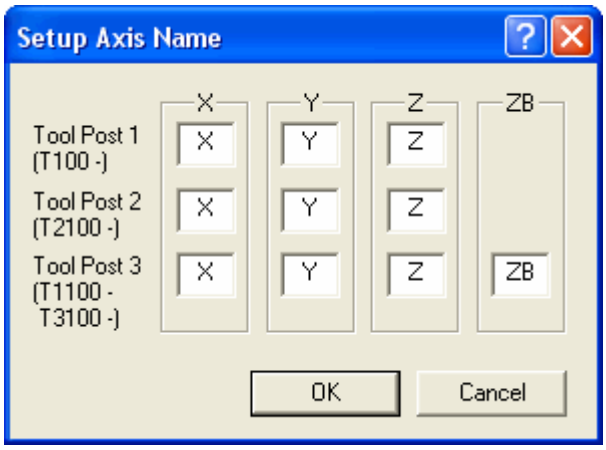
■Geometry offset sheet



■Process list



By clicking on the button on the tool bar, the “Setup Axis Name” dialog box will be displayed. In this dialog, the names of the axes to be printed on the geometry offset sheet can be set. If nothing (no character) is inputted in the setup axis name, the geometry offset of the axes will not be printed on the sheet.



6-3-3 Print

By selecting [Print Tooling Sheet...] from the menu in the [Tooling] area, or clicking on the button on the tool bar, the “Print” dialog box will be displayed and the tooling sheet can be printed.

CHAPTER 7
Trouble shooting

7 Trouble shooting

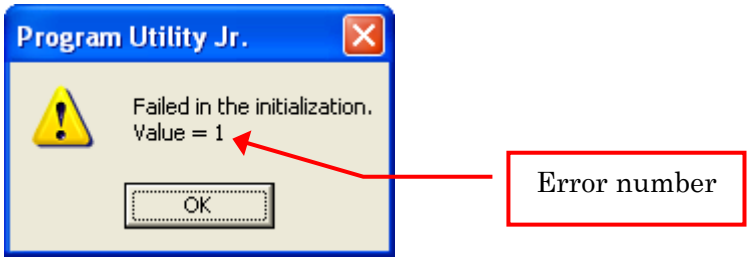
7-1 Troubles related to PU-Jr.

7-1-1 PU-Jr. ends immediately after it starts

If you copy the file related to the PU-Jr. from another computer and try to run PU-Jr., it happens that PU-Jr. ends immediately after it starts.

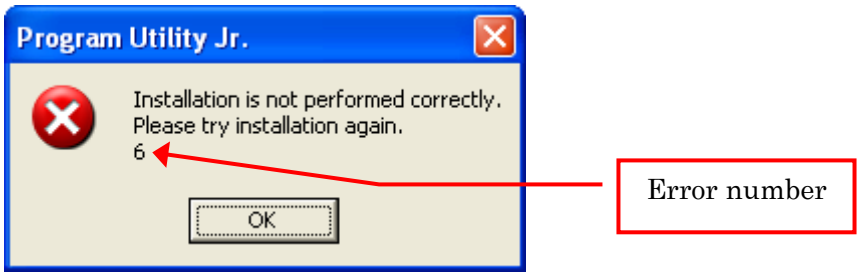
7-1-2 “Failed in the initialization” is displayed when starting up

As an error number is also indicated, refer to the corresponding explanation in ‘A-1-9 Error code of “Failed in the initialization” when starting up PU-Jr.’.



7-1-3 “Installation is not performed correctly” is displayed when starting up

As an error number is also indicated, refer to the corresponding explanation in ‘A-1-9 Error code of “Installation is not performed correctly” when starting up PU-Jr.’.



7-1-4 Can not input the password

When you input the password in the PC, you need to log-on as an administrator or with an account that has administrator privileges.

When your PC has multiple network interface, displayed ID code may differ from the one of when the password was acquired. Make the network interface which is not used disable. Refer to the manual of your PC for the way to make the network interface disable.

7-1-5 PU-Jr. requires a password, though the PC is equipped with an e-camo protection key

To enable PU-Jr. password authentication with e-camo protection key, the PC must be installed with e-camo Ver3 or later. If e-camo Ver3 or later is not installed, please obtain the PU-Jr. password.

7-1-6 The NC programs cannot be input and output between machine and PC

1) Is the RS-232C cable the correct one?

Please refer to the clause “1-1 General Specifications” for the cable specification.

2) Is the connection of the PC correct?

It is necessary to connect the cable with the serial port (RS-232C).

Please confirm the manual of the PC.

> Attention) For PC users except for PC-98x1/FC-98x1 series by NEC.
> Generally, D-sub 9-pin male, D-sub 25-pin male connector become Serial port. (Recently, D-sub 9-pin male connector is mainstream.)
> D-sub 25-pin female connector is printer (parallel) port.
> If you have “RS-232C cable which was purchased for the Data Manager by Star” or “RS-232C cable whose both ends are D-sub 25-pin male”, do not connect them to the printer port. PC body may be damaged.
> Conversion adapter listed in Cable specification on “1-1 General Specification” enable the connection to the serial port.

3) Is the Read/Punch operation correct?

Please refer to the clause “3-5 Send operation of NC program” or “3-6 Receive operation of NC program”.

4) Is the communication setting correct?

<1> Are the baud rate and the stop bit corresponding to the machine (NC) side?

→Please refer to “3-8-2 Communication setup dialog” for the detail on the setting of PU-Jr. Please refer to the manual of NC or section “2-3 CNC side setting” of this manual for setting of the baud rate and the stop bit on the machine side.

<2> Do the serial port connected by RS-232C cable correspond to the port number set on PU-Jr.?

→Refer to the manual of your PC to check the communication port number of the serial port.

<3> Communications Port differs according to the PC. Please pay close attention for the case of using USB converter.

Do the serial port connected by RS-232C able correspond to the port number set on PU-Jr.?

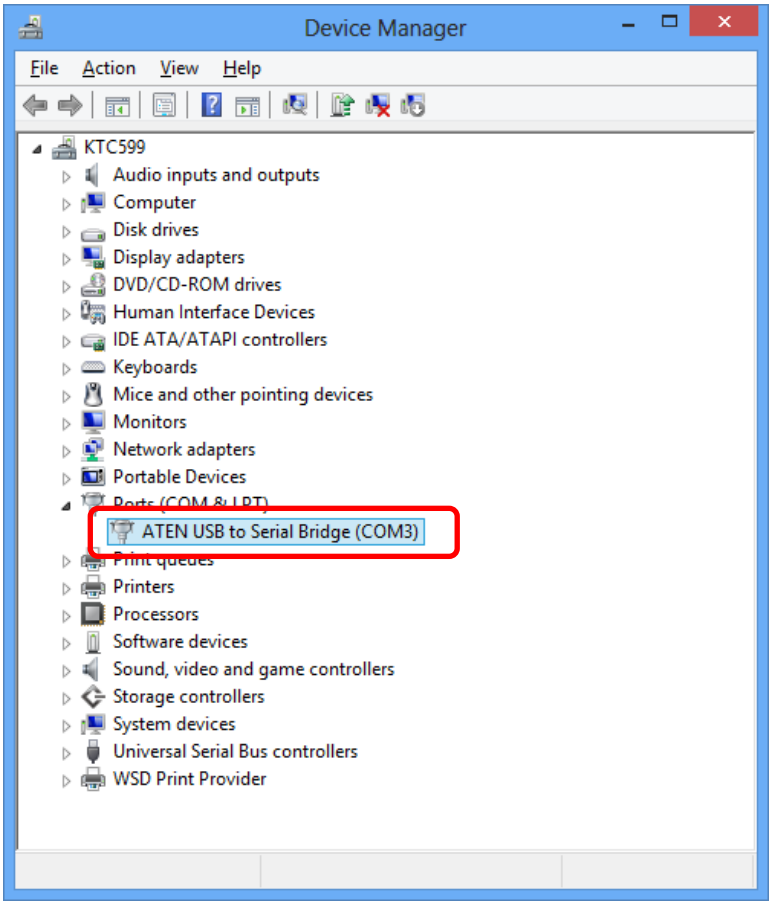
→Display device manager by following procedure to check the communication port number.

* For Windows 11, Windows 10, Windows 8.1 or Windows 8

(1) Right-click on the bottom-left corner of the screen, then click [Device Manager].

(2) “User Account Control” dialog is displayed. Click [Continue (C)].

(3) Double-click on [Ports (COM & LPT)].



* For Windows 7 or Windows Vista

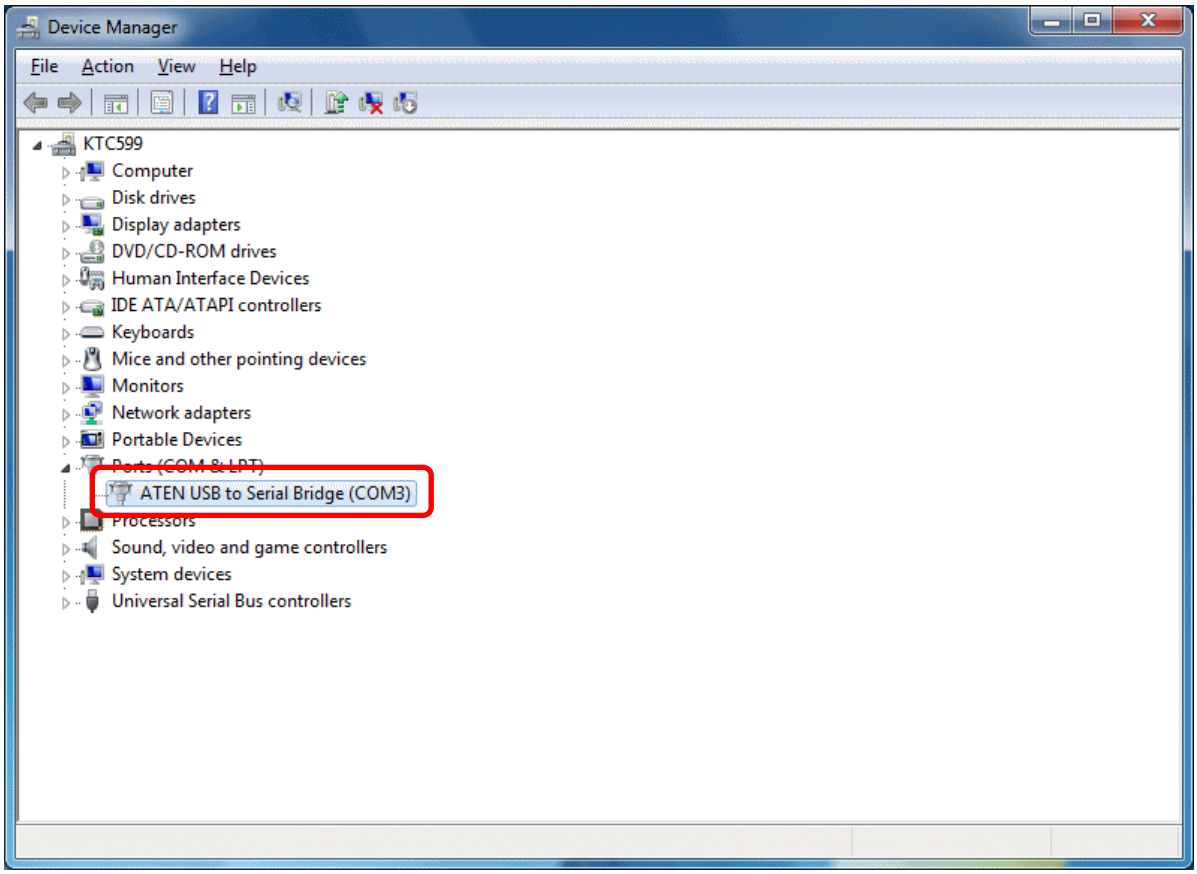
(1) Click on [Start].

(2) Right-click on [Computer], then click [Properties].

(3) Click on [Device Manager] displayed at the top-left corner.

(4) “User Account Control” dialog is displayed. Click [Continue (C)].

(5) Double-click on [Ports (COM & LPT)].



5) When inputting by the machine with YASNAC i80L, alarm 0010(9010) displays.

→ Change parameter pm0016-b4 to b6 as follows. Please do not change pm0018.

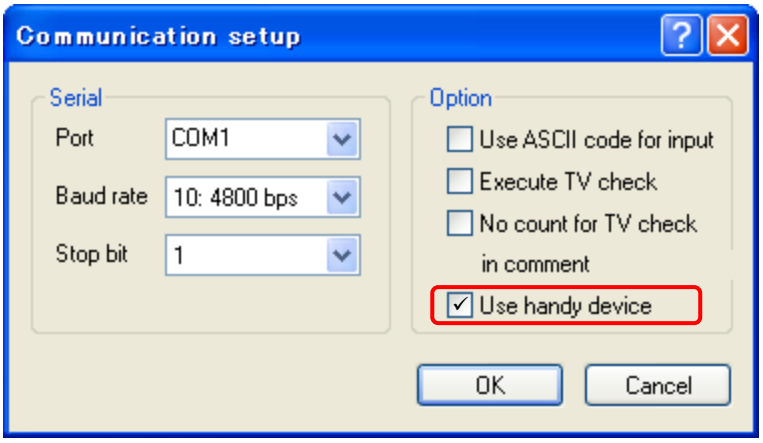
7	6	5	4	3	2	1	0
	IPS2PB1 **0**	**IPS2PB0** **0**	**IPS2BL** **1**	IPS2STB	Baud rate		

6) When inputting by the machine with CNC of FUNUC, alarm SR0086 displays.

→ Input the correct I/O channel number.

7-1-7 You want to input and output NC programs between PC and communication device other than NC

This software is basically used to communicate with NC.
However, if you check on the "Use handy device" check box in the Communication setup dialog (refer to the clause "3-8-2 Communication setup dialog"), some machines become possible to communicate.



7-1-8 NC program copied from FANUC NC, through the memory card, cannot be displayed on PU-Jr.

・Can the memory card function properly?
→ If not, get the memory card ready referring to the PC manual.

・The extension of the NC program outputted to the memory card is incorrect.
→ Change the file name using Explorer on Windows.
(e.g. 1) Path 1 program: "O1002" → "O1002**.m**" (add "**.m**" as the extension)
(e.g. 2) Path 3 program: "O1003.P-3" → "O1003**.P3**" (add "**.P3**" as the extension)
→ When you copy NC program to the memory card, please add the extension to the file name.
(e.g. 1) Path 1 program: Input "ABCD.M" or "ABCD.P1", press [F NAME] key.
(e.g. 2) Path 2 program: Input "ABCD.S" or "ABCD.P2", press [F NAME] key.

Refer to operation manual or user's manual of FANUC for details.

7-1-9 Can not read NC program form the memory card

"%" is required at the top and the bottom of NC programs.

<Before the change>
O1000(TEST FILE)
G25
M131

M81
M99

<After the change>
%
O1000(TEST FILE)
G25
M131

M81
M99
%

7-1-10 "Memory card error" is displayed when using the memory card

- Is the MEMORY INPUT Key switch turned to ON?
  → Turn the MEMORY INPUT key switch to ON.

- Is an applicable ATA card used?
  → Use an applicable ATA card.

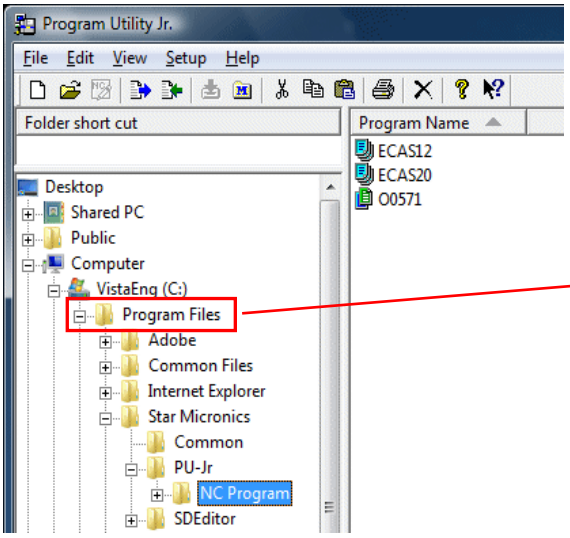
- Is a recommendable PC card adapter used?
  → Use a recommendable PC card adapter.

- Is an SRAM's backup battery usable?
  → Change backup batteries.

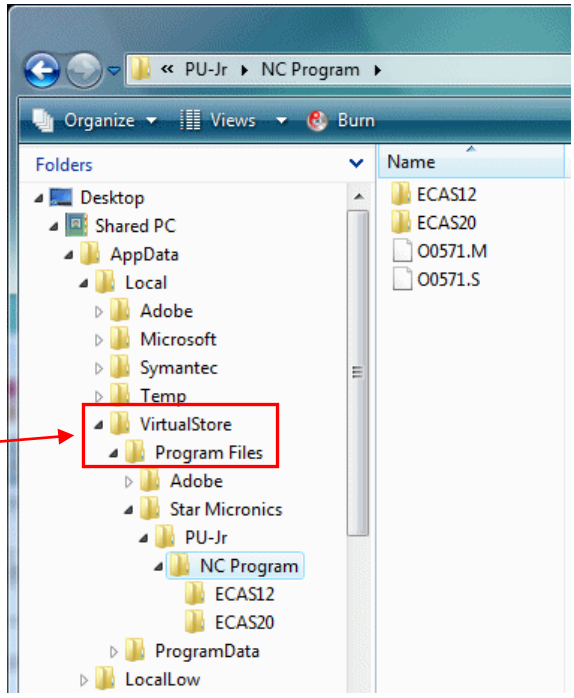
- Is an error code indicated?
  → Refer to FANUC OPERATOR'S MANUAL or USER'S MANUAL.
  If no explanation about the error code, please contact STAR.

7-1-11 In Windows Vista or later, the saved file is not displayed by Explorer

The file displayed on the "Program Files" folder in PU-Jr. may not be displayed by Windows Explorer. It is because the file saved to the "Program Files" folder will be saved in fact to the "VirtualStore" folder.



The file saved by PU-Jr. to the "Program Files" folder



In Explorer, it is saved to the "VirtualStore" folder.

→When you use PU-Jr. in Windows Vista or later, please do not save a file to the "Program Files" folder.
Please save a file to the folder created directory under C drive (e.g. C:\NC Program).

7-1-12 Folder short-cut does not function

However shared folder on the network is set as folder short-cut, the contents of the folder does not display despite the double click.

→The function does not correspond to the shared folder on the network. Please allocate the network drive.

7-2 Troubles related to “Program Edit function”

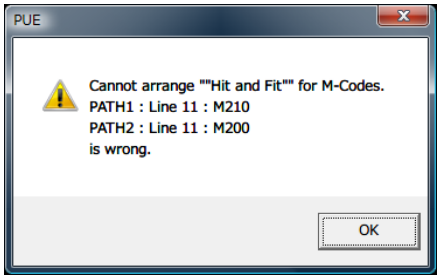
7-2-1 “Program Edit function” does not start

1) Re-boot you PC because “Program Edit function” becomes available in some cases by re-boot of PC.

2) If the trial period of PU-Jr. has passed or the password is not inputted by PU-Jr., Program Edit function does not start. Please check whether PU-Jr. can start normally.

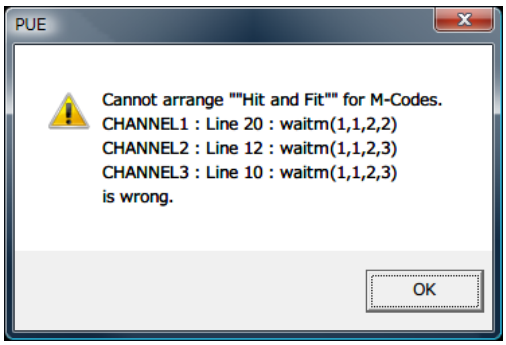
7-2-2 When executing ‘M-Code Hit and Fit’ on Program Edit function, an error occurs

* In a FANUC/MITSUBISHI file, if the M code set with “M-Code Hit and Fit” does not exist in all the set paths, the following dialog will be displayed.



Enter the M code set with “M-Code Hit and Fit” in all the set paths.

* On the editing of ECAS file, if the wait code set with “M-Code Hit and Fit” is mismatched between the set channels, the following dialog will be displayed.



Correct the wait code set with “M-Code Hit and Fit” so that it matches between the set channels.

7-2-3 Template File

Created template file is on the following directory.

%USERPROFILE%\Documents\Star Micronics\PUE\Template

7-3 Troubles related to “Coordinate Calculation function”

7-3-1 Coordinate Calculation function does not start

If the trial period of PU-Jr. has passed or the password is not inputted by PU-Jr., Coordinate Calculation function does not start. Please check whether PU-Jr. can start normally.

7-3-2 For using coordinate calculation function of former version which has the calculation function of Tool Nose Radius compensation.

When installing the PU-Jr., execution file (PUC_321.exe) of the coordinate calculation function of former version (Ver. 3.2.1) is installed to following directory at the same time

<**********>\Common\PUC_321.exe
********** is the address where PU-Jr. is installed.

By starting this execution file, the coordinate calculation function of former version becomes available. By registering this execution file as the external program by the function of file management, communication or program editing, the calculation function can be called from the screen of each function. (Refer to “3-8-1 Environment setup dialog” and “4-3-5 [Tool] menu for the details.)

Appendix

Appendix

A-1 Error code list

A-1-1 Errors on PU-Jr. side (during communication)

108 ERROR Designated Serial Port doesn't exist.

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC, SI Series and ECAS Series.
Cause 1	The serial port selected with the Communication Setup does not exist on the personal computer.
Countermeasure	Confirm the serial port number of the personal computer to which the communication cable is connected, and select the correct serial port number according to the Communication Setup.
Reference	[7-1-6 Communication setup dialog], or Manual of your PC
Cause 2	The serial port cannot be used.
Countermeasure	Using Device Manager, confirm whether the pertinent serial port can be used. The serial port might not be able to be used according to the personal computer's power saving etc.
Reference	Manual of your PC
Cause 3	The serial port selected with the Communication Setup is already used by other application software.
Countermeasure	Please terminate application software, such as printer surveillance software which is using the same serial port as the setting of the Communication Setup.
Reference	Manual of your PC or Printer

109 Incorrect function

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC and ECAS Series.
Cause 1	The serial port selected with the Communication Setup is set up also by the printer.
Countermeasure	Set a different serial port to the Communication Setup of PU-Jr. and to the printer properties of a control panel.
Reference	Manual of your PC

201 ERROR Buffer over flow

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC and ECAS Series.
Cause 1	The communication setting is wrong.
Countermeasure	Match the setting related to the TV check between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]
Cause 2	The baud rate is too fast, and internal processing cannot be done in time.
Countermeasure	Lower the baud rate.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

202 ERROR Over run

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC and ECAS Series.
Cause 1	The communication setting is wrong.
Countermeasure	Match the setting related to the TV check between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog]
Cause 2	The following data had been received before data was taken from the receiving register.
Countermeasure 1	Lower the baud rate.
Countermeasure 2	Set the stop bit to 2.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

203 ERROR Framing Error

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC and ECAS Series.
Cause1	The stop bit cannot be detected.
Countermeasure	Match the setting between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]
Cause2	Mismatch of the file type (extension).
Countermeasure	Define proper file type (extension).

1 path NC:
"HEAD1 (*.M)" or "PATH1 (*.P1)"

FANUC/YASNAC 2 path NC:
"HEAD1 (*.M)" or "PATH1 (*.P1)"
"HEAD2 (*.S)" or "PATH2 (*.P2)"

FANUC 3 path NC:
"PATH1 (*.P1)"
"PATH2 (*.P2)"
"PATH3 (*.P3)"

MITSUBISHI ELECTRIC NC:
"MITSUBISHI Program (*)"

ECAS: "YS840DI files (*)"

Reference [3-6 Receive operation of NC program]

204 ERROR Parity error

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC and ECAS Series.
Cause1	The parity bit is not correct.
Countermeasure	Match the setting between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]
Cause2	Communication code is not correct.
Countermeasure	Set communication code (PUNCH CODE) as ISO = 1.
Reference	[2-3 CNC side setting]

205 ERROR Break signals

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC, SI Series and ECAS Series.
Cause	The communication cable which does not match to the machine is used.
Countermeasure	Use a correct communication cable. Take following countermeasures when the machine to be connected is equipped with FS0, 2, 3, 6, 10, or YSNAC LX series or i80. ▪ Use the option cable. ▪ Use bundled "PU junior adapter" and straight cable together. ▪ Change the wiring of the cable on hand.
Reference	[1-1 General Specifications]

207 ERROR DR signals off

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC, SI Series and ECAS Series.
Cause1	The connected machine is not turned on.
Countermeasure	Turn on the power supply of the machine.
Cause2	The communication cable which does not match to the machine is used.
Countermeasure	Use a correct communication cable. Take following countermeasures when the machine to be connected is equipped with FS0, 2, 3, 6, 10, or YSNAC LX series or i80. ▪ Use the option cable. ▪ Use bundled "PU junior adapter" and straight cable together. ▪ Change the wiring of the cable on hand.
Reference	[1-1 General Specifications]

208 ERROR ESC received

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC and ECAS Series.
Cause	The NC parameter is wrong.
Countermeasure1	Check the NC parameter setting.
Countermeasure2	When using the machine equipped with FANUC series except FS6, 10, set the “I/O CHANNEL” or NC parameter to “0”.
Countermeasure3	When FANUC 0 series, set the NC parameter No.38-b7 to “1” and No.38-b6 to “0”.
Reference	[2-3 CNC side setting]

209 ERROR TV check error

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC and ECAS Series.
Cause	When the received data was converted, an error was detected by the TV check.
Countermeasure	Match the setting related to the TV check between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

210 Communication is suspended. Please check the connection.

Object machine	SI Series.
Cause1	Communication setting of PU-Jr. is not correct.
Countermeasure	Set the baud rate to “19200bps”, and the stop bit to “1”.
Reference	[3-8-2 Communication setup dialog]
Cause2	The communication cable which does not match to the machine is used.
Countermeasure	Use a correct communication cable.
Reference	[1-1 General Specifications]

211 Specified machine is not under the receiving conditions.

Object machine	SI Series.
Cause	The transfer refusal flag is “ON”.
Countermeasure1	If the connected SI is under operation, stop the machine.
Countermeasure2	If the machine is being stopped, set [Deny the program loading from the computer] in [KEEP RELAY] in [SETTING MENU] dialog to “OFF”.

213 The wrong point which wasn't expected occurred.

Object machine	SI Series.
Cause1	Abnormal data was received.
Countermeasure	Set the baud rate to “19200bps”, and the stop bit to “1”.
Reference	[3-8-2 Communication setup dialog]
Cause2	The communication cable which does not match to the machine is used.
Countermeasure	Use a correct communication cable.
Reference	[1-1 General Specifications]

302 error code = 302

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC and ECAS Series.
Cause	Received improper code.
Countermeasure	Confirm the communication settings on PU-Jr. and on the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

303 Input operation was performed under output operation waiting state.

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC and ECAS Series.
Cause 1	The DC1 code was received in the waiting state for receiving.
Countermeasure	In the waiting state for receiving, perform the output (punch) operation on the machine side.
Reference	[3-6 Receive operation of NC program]
Cause 2	The serial port selected with the Communication Setup does not exist on the personal computer.
Countermeasure	Confirm the serial port number of the personal computer to which the communication cable is connected, and select the correct serial port number according to the Communication Setup.
Reference	[7-1-6 Communication setup dialog]

304 Output operation was performed under input operation waiting state.

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC and ECAS Series.
Cause	The DC2 code was received in the waiting state for sending.
Countermeasure	In the waiting state for sending, perform the input (read) operation on the machine side.
Reference	[3-5 Send operation of NC program]

501 error code = 501

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC, SI Series and ECAS Series.
Cause1	The specified file is used with another application.
Countermeasure	Close the pertinent file which is being used with another application.
Cause2	The file's attribute is "Read-only" and it cannot be overwritten.
Countermeasure1	Open the property of the pertinent file by Windows Explorer, and change "Read-only" attribute.
Countermeasure2	Receive the file with a different file name.
Cause3	When you store the file in the floppy disk drive, the floppy disk is write-protected.
Countermeasure	Clear the write protection.

502 error code = 502

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC and ECAS Series.
Cause1	When you store the file in the floppy disk drive, the floppy disk is write-protected.
Countermeasure	Clear the write protection.
Cause2	There is not enough empty capacity in the drive in which the file is to be stored.
Countermeasure1	Change to the drive with enough empty capacity.
Countermeasure2	Delete unnecessary files, and increase empty capacity.

503 error code = 503

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC and ECAS Series.
Cause	The file is broken.
Countermeasure1	Confirm whether the pertinent file can be opened with the Program Edit Function. When it is possible to open, attempt sending again.
Countermeasure2	When it is not possible to open, inspect the drive where the pertinent file exists using Scandisk, Type of test: Thorough. Restore the error if detected.
Countermeasure3	If you have made backup file in other media etc., restore the backup file as well.
Countermeasure4	If the same program exists in the machine, receive the pertinent program from the CNC and restore it.

* Errors other than the above-mentioned (usually not generated)

Object machine	The machine equipped with FANUC/YASNAC/MITSUBISHI CNC, SI Series and ECAS Series.
Cause	Internal error of PU-Jr.
Countermeasure	End PU-Jr., reactivates Windows, then start PU-Jr. again. If an error is generated again, contact Star.

A-1-2 Alarms on the machine equipped with FANUC (except FS300is, FS30i, FS31i, FS32i, FS0i-TD and FS0i-TF)

For details, please refer to the "ALARM LIST" in the "OPERATOR'S MANUAL" of FANUC.

• NC Alarm

001 TH PARITY ALARM

Cause	TH check error is detected.
Countermeasure	Match the setting between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

002 TV PARITY ALARM

Cause	TV check error is detected.
Countermeasure	Match the setting concerning TV check between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

071 DATA NOT FOUND

Cause	Performed input (read) operation when the Memory Input key is at OFF.
Countermeasure	Turn on the Memory Input key.

073 PROGRAM NUMBER ALREADY IN USE

Cause	Tried registration of the program number, which is already registered.
Countermeasure	Change the program number.

074 ILLEGAL PROGRAM NUMBER

Cause1	The program number is other than 1 to 9999.
Countermeasure	Correct the NC program.
Cause2	An attempt has been made to input a binary file.
Countermeasure	Input a NC program file.

085 COMMUNICATION ERROR

Cause	Overrun, parity or framing error.
Countermeasure	Match the setting between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

086 DR SIGNAL OFF

Cause	DR signal failure
Countermeasure1	Make receiving or sending status on PU-Jr. side.
Countermeasure2	Use proper communication cable. Take following countermeasures when the machine to be connected is equipped with FS0, 2, 3, 6, 10. ▪ Use the option cable. ▪ Use bundled "PU junior adapter" and straight cable together. ▪ Change the wiring of the cable on hand.
Reference	[1-1 General Specifications]
Countermeasure3	Set the code of data output to “ISO”.
Reference	[2-3 CNC side setting]

087 BUFFER OVERFLOW

Cause1	Performed input (read) operation when the Memory Input key is at OFF.
Countermeasure	Turn on the Memory Input key.
Cause2	Tried registration of the program number, which is already registered.
Countermeasure	Change the program number.
Cause3	The free space of the memory isn’t enough.
Countermeasure	Delete unnecessary programs and secure free disk space.

233 IN USE OF THE DEVICE

Cause1	Tried to use the device such as RS-232C etc. which was in use of the other user.
Countermeasure1	When CNC is FS16i/18i/21i, set the parameter No. 110-b0 to “0” and turn on the power again.
Countermeasure2	Turn on the power again.

・Memory Card Error

030 MEMORY CARD IS NOT INSERTED

Cause1	When I/O channel is 4, RS-232C cannot use.
Countermeasure	Set I/O channel to 0 - 2.
Cause2	CNC cannot detect the memory card.
Countermeasure	Check if the memory card is detected with the PC.

099 FAT FILE SYSTEM ON THE MEMORY CARD IS CORRUPTED

Cause	The memory card cannot be read as FAT file system on the memory card is corrupted.
Countermeasure	Check if the memory card is compatible with the PC. If not, format the memory card to a FAT (FAT16) file system.

102 THERE IS A SHORTAGE OF FREE SPACE IN THE MEMORY CARD

Cause	Insufficient free space in the memory card.
Countermeasure1	Delete unnecessary folders/files.
Countermeasure2	Use a memory card with sufficient free space.

105 MEMORY CARD IS NOT MOUNTED

Cause	The memory card is not inserted correctly into the CNC slot.
Countermeasure1	Check if the memory card is inserted with its face up/down correctly.
Countermeasure2	Insert the memory card deep into the slot.

111 TOO MANY FILES IN THE ROOT DIRECTORY

Cause	File cannot be created as the root directory has too many folders/files.
Countermeasure	Delete unnecessary folders/files in the root directory.

114 DESIGNATED FILE DOES NOT EXIST

Cause	File number is not designated correctly.
Countermeasure	Input the file number displayed on the screen.

115 DESIGNATED FILE IS PROTECTED

Cause 1	Read-only attribute has been set to the file.
Countermeasure	Remove Read-only attribute of the file.
Cause 2	" ? " (question mark) is inputted in a file name.
Countermeasure	Do not use characters other than the alphanumerical characters in a file name.

122 DESIGNATED FILE NAME IS INCORRECT

Cause Inputted file name is invalid.

Countermeasure Input a file name with eight or less alphanumeric characters.

124 EXTENSION OF THE DESIGNATED FILE NAME IS INCORRECT

Cause Inputted extension is invalid.

Countermeasure Input an extension with three or less alphanumeric characters.
To be recognized on PU-Jr.:

For the machine of 1 PATH,

Input extension ".M" when outputting a FANUC program on PATH/HEAD 1.

For the machine of 2 PATHs,

Input extension ".M" when outputting a FANUC program on PATH/HEAD 1.

Input extension ".S" when outputting a FANUC program on PATH/HEAD 2.

For the machine of 3 PATHs,

Input extension ".P1" when outputting a FANUC program on PATH/HEAD 1.

Input extension ".P2" when outputting a FANUC program on PATH/HEAD 2.

Input extension ".P3" when outputting a FANUC program on PATH/HEAD 3.

For using a FANUC multi-path program,

Input extension ".PA" when outputting a FANUC multi-path program.

135 MEMORY CARD IS NOT FORMATTED

Cause The memory card cannot be used as it has not been formatted.

Countermeasure Format the corresponding memory card to a FAT (FAT16) file system on the PC.

If the card cannot be used even after formatting, use a recommended memory card.

1010 FOLDER INFORMATION DOES NOT EXIST

Cause1	The memory card is not applicable for the CNC.
Countermeasure	Use a recommended memory card.
Cause2	The format type of the memory card is not supported by the CNC.
Countermeasure	Check if the format type is a FAT (FAT16) or not by following the steps below. (1) Connect the memory card to the PC. (2) Open [My Computer]. (3) Right-click on "Memory card drive" icon, then click on [Properties(R)]. (4) Verify that [File system] on the drive properties screen is "FAT". If it is not FAT (FAT16), format the card to a FAT (FAT16) file system.
Cause3	The memory card was not removed by the proper procedure after usage on the PC.
Countermeasure	Before removing the memory card, carry out the following steps: Open [My Computer] → Right-click on the memory card drive icon → Execute [Remove (J)].
Cause4	The memory card may be corrupted.
Countermeasure	Check if the memory card can be used on the PC normally.
Cause5	An attempt has been made to use the memory card immediately after it was inserted into the CNC slot.
Countermeasure	Wait for about 5 seconds after inserting the card into the CNC slot.

A-1-3 Alarms on the machine equipped with FS300is, FS30i, FS31i, FS32i and FS0i-TD/ -TF

For details, please refer to the “ALARM LIST” in the “USER’S MANUAL Volume 2 of 3” of FANUC.

SR0001 TH PARITY ALARM

Cause	TH check error is detected.
Countermeasure	Match the setting between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

SR0002 TV PARITY ALARM

Cause	TV check error is detected.
Countermeasure	Match the setting concerning TV check between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

SR(BG)0085 OVERRUN ERROR

Cause	Parity or framing error is detected.
Countermeasure	Match the setting between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

SR(BG)0086 DR OFF

Cause1	DR signal is OFF
Countermeasure1	Make receiving or sending status on PU-Jr. side.
Countermeasure2	Use proper communication cable.
Reference	[1-1 General Specifications]
Countermeasure3	Set the code of data output to “ISO”.
Reference	[2-3 CNC side setting]
Cause2	Setting of I/O channel number is wrong.
Countermeasure	Set the correct I/O channel number.
Reference	[2-3 CNC side setting]
Cause3	Setting of stop bit is wrong.
Countermeasure	Set the correct stop bit.
Reference	[2-3 CNC side setting], [3-8-2 Communication setup dialog]

SR(BG)0087 BUFFER OVERFLOW

Cause1	Performed input (read) operation when the Memory Input key is at OFF.
Countermeasure	Turn on the Memory Input key.
Cause2	Tried registration of the program number, which is already registered.
Countermeasure	Change the program number.
Cause3	The free space of the memory isn't enough.
Countermeasure	Delete unnecessary programs and secure free disk space.

BG1590 TH PARITY ALARM

Cause	TH check error is detected.
Countermeasure	Match the setting between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

BG1591 TV PARITY ALARM

Cause	TV check error is detected.
Countermeasure	Match the setting concerning TV check between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

SR(BG, PS)1805 ILLEGAL COMMAND

Cause	Communication error occurred.
Countermeasure	Check the communication cable.
Reference	[General Specifications]

SR(BG, PS)1807 PARAMETER SETTING ERROR

Cause	An I/O interface option that has not yet been added on was specified.
Countermeasure	Confirm the CNC's parameter setting.
Reference	[2-3 CNC side setting]

SR(BG, PS)1808 DEVICE DOUBLE OPENED

Cause	An attempt was made to open a device that is being accessed.
Countermeasure1	Confirm the CNC's parameter setting.
Reference	[2-3 CNC side setting]
Countermeasure2	Switch on the machine again.

SR(BG)1823 FRAMING ERROR (1)

Cause	Framing error is detected.
Countermeasure	Match the setting between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

SR1955 PATH/FILE NOT FOUND(USB MEMORY)

Cause1	The specified file is not found in USB memory.
Countermeasure	Input the correct file name.
Cause2	The double-byte characters are used to file name.
Countermeasure	Change to the file name without the double-byte characters.
Cause3	A space is used to file name.
Countermeasure	Do not use a space.

SR1961 NOT READY (MEMORY CARD)

Cause	The memory card is not ready.
Countermeasure	Wait for about 5 seconds after inserting the card into the CNC slot.

SR1962 CARD FULL (MEMORY CARD)

Cause	The memory card has run out of space.
Countermeasure	Delete unnecessary directories /files to secure free space.

SR1964 NOT MOUNTED (MEMORY CARD)

Cause	The memory card could not be mounted.
Countermeasure	Use a recommended memory card.

SR1965 DIRECTORY FULL (MEMORY CARD)

Cause	The file could not be generated in the root directory for the memory card.
Countermeasure	Delete unnecessary folders/files in the root directory.

SR1966 FILE NOT FOUND (MEMORY CARD)

Cause	The specified file could not be found on the memory card.
Countermeasure1	Input the correct file name.
Countermeasure2	Select the file to be inputted using cursor keys, then press [F GET], [F SET] keys in that order to set the file name.

SR1968 ILLEGAL FILE NAME (MEMORY CARD)

Cause	Illegal memory card file name.
Countermeasure1	Input the correct file name.
Countermeasure2	Select the file to be inputted using cursor keys, then press [F GET], [F SET] keys in that order to set the file name.

SR1969 ILLEGAL FORMAT (MEMORY CARD)

Cause	Illegal format.
Countermeasure	Format the corresponding memory card to a FAT (FAT16) file system on the PC.

SR1970 ILLEGAL CARD (MEMORY CARD)

Cause	This memory card cannot be handled.
Countermeasure	Use a recommended memory card.

A-1-4 Alarms on the machine equipped with MITSUBISHI ELECTRIC

For details, please refer to the "Operation Messages in the "Instruction Manual" of MITSUBISHI ELECTRIC.

L01 Serial port being used -2

Cause1	Serial port has already been opened.
Countermeasure1	Set the port not to share by Anshin-net and so on.
Cause2	Serial port cannot be used.
Countermeasure2	Correct the parameter settings for tape operation port.
Reference	[2-3 CNC side setting]

L01 Timeout error -4

Cause	Communication ended with timeout.
Countermeasure	Confirm the CNC's parameter setting.

L01 Host ER signal OFF -10

Cause	ER signal in HOST (or DR signal in CNC) is not turned ON.
Countermeasure	Use proper communication cable.
Reference	[1-1 General Specifications]

L01 Parity H error -15

Cause	Communication ended with parity H.
Countermeasure	Match the setting between PU-Jr. and the machine.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

L01 Parity V error -16

Cause	Communication ended with parity V.
Countermeasure	Match the setting concerning TV check between PU-Jr. and the machine.

L01 Overrun error -17

Cause	CNC received 10 bytes or more data from PU-Jr. in spite of DC3 (request to stop data transfer) transmission from CNC to the PU-Jr., which terminated the communication. CNC received 10 bytes or more data from PU-Jr. during the data transmission from CNC to the PU-Jr.
Countermeasure	Please contact STAR.

A-1-5 Alarms on the machine equipped with LX1/LX3/LX3BS

For details, please refer to the “ALARM NUMBER LIST” in the “OPERATOR’S MANUAL” of YASNAC LX1/LX3/LX3BS.

010 TH ERROR

Object CNC	LX1/LX3/LX3BS
Cause	TH parity error is detected.
Countermeasure	Match the setting between PU-Jr. and the machine equipped with LX1/LX3/LX3BS.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

011 TV ERROR

Object CNC	LX1/LX3/LX3BS
Cause	TV parity error is detected.
Countermeasure	Match the setting between PU-Jr. and the machine equipped with LX1/LX3/LX3BS.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

012 OVERFLOW (128CH)

Object CNC	LX1/LX3/LX3BS
Cause	Buffer capacity overflow in a block (128 characters).
Countermeasure	Reduce the total character number of the block down to "128".

015 PROG ERROR (UNUSABLE CH)

Object CNC	LX1/LX3/LX3BS
Cause	Unusable character programmed in insignificant data area.
Countermeasure	Check that no usable character is used.

017 PROG ERROR (8DIGITS)

Object CNC	LX1/LX3/LX3BS
Cause	Input data overflow (more than 8 characters).
Countermeasure	Reduce the total character number of the word down to "8".

075 RS-232C ERROR (BAUD RATE)

Object CNC	LX3BS
Cause	RS-232C interface number of data bits / baud rate not coincide.
Countermeasure	Match the setting between PU-Jr. and the machine equipped with LX3BS.
Reference	[2-3 CNC side setting], [3-8-2 Communication setup dialog]

076 RS-232C ERROR (SIGNAL LEVEL)

Object CNC	LX3BS
Cause	RS-232C interface transmission error.
Countermeasure	The hardware may be out of order. Please contact STAR.

077 RS-232C ERROR (OVER-RUN)

Object CNC	LX1/LX3/LX3BS
Cause	10 characters or more have been read in after stop code has been transmitted through RS-232C interface.
Countermeasure1	Match the setting between PU-Jr. and the machine equipped with LX1/LX3/LX3BS.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]
Countermeasure2	Lower the baud rate.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]
Countermeasure3	Set the stop bit to 2.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]
Countermeasure4	Use a correct communication cable. ▪ Use the option cable. ▪ Use bundled "PU junior adapter" and straight cable together. ▪ Change the wiring of the cable on hand.
Reference	[1-1 General Specifications]

A-1-6 Alarms on the machine equipped with i80L

For details, please refer to the “ALARM NUMBER” in the “OPERATOR’S MANUAL” of YASNAC i80L.

0010(9010) TH ERROR

Cause	TH parity error is detected.
Countermeasure1	Match the setting between PU-Jr. and the machine equipped with i80L.
Countermeasure2	Set the set value of parameter “D3 of pm0006 (ISOPI2)” to “1”.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

0011(9011) TV ERROR

Cause	TV parity error is detected.
Countermeasure	Match the setting concerning TV check between PU-Jr. and the machine equipped with i80L.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

0012(9012) ILLEGAL CHARACTER

Cause	There are unusable characters other than ISO/EIA code with RS-232C.
Countermeasure	Check that no usable character is used.

0013(9013) 1 BLOCK LENGTH ERROR

Cause	One block over capacity (128 characters) was detected.
Countermeasure	Reduce the total character number of the block down to "128".

0014(9014) DATA SET READY DOWN

Cause	DSR (Data Set Ready) signal is not response.
Countermeasure1	Make PU-Jr. Receiving or Sending condition.
Countermeasure2	Use a correct communication cable. ▪ Use the option cable. ▪ Use bundled "PU junior adapter" and straight cable together. ▪ Change the wiring of the cable on hand.
Reference	[1-1 General Specifications]

0015(9015) NUMERIC DATA OVERFLOW

Cause	Input data digits overflow (Beyond 9 characters).
Countermeasure	Reduce the total character number of the word down to "8".

0016(9016)　RS-232C ERROR (SIGNAL LEVEL)

Cause	The RS-232C interface transmission abnormal.
Countermeasure	The hardware may be out of order.　Please contact STAR.

0017(9017)　RS-232C ERROR (OVER RUN)

Cause	Read exceeded 10 characters after RS-232C interface stop code out.
Countermeasure1	Match the setting between PU-Jr. and the machine equipped with i80L.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]
Countermeasure2	Use a correct communication cable. ▪ Use the option cable. ▪ Use bundled "PU junior adapter" and straight cable together. ▪ Change the wiring of the cable on hand.
Reference	[1-1 General Specifications]

0018(9018)　RS-232C ERROR (CH SELECT)

Cause	Error in selection of RS-232C interface circuit.
Countermeasure	Confirm the i80L's parameter setting.
Reference	[2-3 CNC side setting]

0019(9019)　RS-232C ERROR (FRAMING)

Cause	Framing error occurs.
Countermeasure	Match the setting between PU-Jr. and the machine equipped with i80L.
Reference	[3-8-2 Communication setup dialog], [2-3 CNC side setting]

0020(9020)　RS-232C ERROR (APL-1)

Cause	Line specified is already open.
Countermeasure	Switch on the machine again.

0021(9021)　RS-232C ERROR (APL-2)

Cause	Line specified is not open.
Countermeasure	Switch on the machine again.

0022(9022)　RS-232C ERROR (APL-3)

Cause	Dual coils not being used in the correct combination.
Countermeasure1	Confirm the i80L's parameter setting.
Reference	[2-3 CNC side setting]
Countermeasure2	Switch on the machine again.

0023(9023)　RS-232C ERROR (APL-4)

Cause	Transmission was not conducted during the specified time.
Countermeasure1	Confirm the i80L's parameter setting.
Reference	[2-3 CNC side setting]
Countermeasure2	Switch on the machine again.

0024(9024)　RS-232C ERROR (APL-5)

Cause	Transmission or receiving start processing not conducted.
Countermeasure1	Confirm the i80L's parameter setting.
Reference	[2-3 CNC side setting]
Countermeasure2	Switch on the machine again.

0025(9025)　RS-232C ERROR (APL-6)

Cause	Error in specified parameter.
Countermeasure	Confirm the i80L's parameter setting.
Reference	[2-3 CNC side setting]

A-1-7 The Machine which is loaded by YS840DI made by Yaskawa Siemens.

File name received has some problem

Cause1	2 characters from the top of the file name are other than alphabets.
Countermeasure	Type the file name so that 2 characters from the top are alphabets.
Cause2	The number of characters in the filename is over 22 characters.
Countermeasure	Type the file name so that the number of characters in the filename are 22 characters or less.
Cause3	The double-byte characters are used for the filename.
Countermeasure	Do not use the double-byte characters for the filename.

A-1-8 Machine error code of “Failed in the initialization” when starting up PU-Jr.

Error No. 2

Cause	Lack of the necessary files.
Countermeasure	Uninstall PU-Jr. and reboot the PC, and then install once again.

Error No. 1

Cause1	Windows Service for PU-Jr. is not executed.
Countermeasure1	Reboot the PC.
Countermeasure2	Log-on as an administrator or with an account that has administrator privileges. Uninstall PU-Jr., and reboot the PC, and then install PU-Jr. once again.
Cause2	“PU-Jr.” icon is added to Windows Startup group.
Countermeasure	Starting of PU-Jr. from Windows Startup group may fail therefore do not register PU-Jr. on Windows Startup group.

Error No. 4

Cause	PU-Jr. hasn't been installed on the appropriate PC.
Countermeasure	Uninstall PU-Jr. from the current disk, and install on the actual using PC.

Error No. The figure except the above

Countermeasure	Uninstall PU-Jr. and reboot the PC, and then install once again.

If the problem cannot be solved in spite of the countermeasures above, please contact STAR.

A-1-9 Error code of "Installation is not performed correctly" when starting up PU-Jr.

Error No. 6

Cause	Changed the date of the PC to try extending the trial period.
Countermeasure	Change back the correct date.

Error No. 7

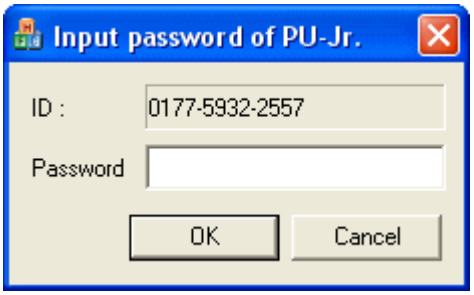
Cause1	The network adapter is not working under Windows.
Countermeasure	Install the driver software for the network adapter.
Reference	Manual of your PC
Cause2	The network adapter is disabled in Windows Device Manager.
Countermeasure	Enable the network adapter in Windows Device Manager.
Reference	Manual of your PC
Cause3	The network adapter exist more than one on the PC.
Countermeasure	If more than one adapter exist, disable unnecessary ones.
Reference	Manual of your PC
Cause4	Copied the PU-Jr. related files from another PC whose PU-Jr. runs normally, then started PU-Jr.
Countermeasure	Please contact STAR.

Error No.　12

Cause1　Uninstalled PU-Jr. and installed again on the PC whose trial period had expired.

Countermeasure1　Please input a password according to the following procedures.

1) Copy "<Product disk of PU-Jr.>\Tool\PuPass.exe" to the folder in which PU-Jr. was installed.
2) Start PuPass.exe. The following dialogs are displayed.



3) Acquire the password by reporting the ID code indicated in the above mentioned screen to Star Micronics using the User registration sheet contained in this manual.
   (When the password is already acquired, please follow the following procedure 4.)
4) Input the acquired password into the above-mentioned dialog, push the <O.K.> button, and close a dialog. PU-Jr. becomes usable.

Cause2　Copied the PU-Jr. related files from another PC whose PU-Jr. runs normally, then started PU-Jr.

Countermeasure2　Please contact STAR.

Error No.　The figure except the above

Countermeasure　Uninstall PU-Jr. and reboot the PC, and then install once again.

If the problem can not be solved in spite of the countermeasures above, please contact STAR.

A-2 About the Memory card / USB memory

With the memory card, it points at "SRAM card" and "ATA card".
It is a table of the machine manufactured by Star Micronics which it can use the memory card / USB memory for.

Manufacturer	CNC type	Application			Remarks
		SRAM Card*1	ATA Card	USB Memory	
FANUC	0 series	NG	NG	NG	
	2/3 series	NG	NG	NG	
	6 series	NG	NG	NG	
	10 series	NG	NG	NG	
	16/18/21 series	NG	NG	NG	
	16i/18i/21i-TA series	OK	OK / NG *7	NG	*3
	16i/18i/21i-TB series	OK	OK *2	NG	*3
	31i/32i-A series	NG	OK *2	NG	
	30i/31i/32i-B series	NG	OK *2	OK *5	
	300is/30i-A series	NG	OK *2	OK / NG *4*5	
	0i-TD/-TF series	NG	OK *2	OK / NG *5*8	
YASKAWA	LX1/LX3/LX3BS	NG	NG	NG	
	i80L	NG	NG	NG	
	MP920	NG	NG	NG	SI series
MITSUBISHI ELECTRIC	M70V	NG	NG	OK *5	*9
	M80	NG	NG	OK *5	*10
Yaskawa Siemens NC	YS840DI	NG	NG	OK *5	ECAS series *6

*1) You can use the SRAM card in Windows 95/98. By Windows except it, can not use the SRAM card.

*2) Adaptable ATA card is "**Compact Flash 86311102**". Performance of other cards can not be ensured.

*3) Refer to FANUC manual for the usage of the memory card.

*4) The following machines can apply USB interface.

SR-20RIII	No. 190 onwards
ST-38	All

*5) Can not guarantee movement in all USB memory storage.

*6) The following machines can apply USB interface.

ECAS-12/-20	No. 344 onwards
ECAS-32T	No. 138 onwards
ECAS-20T	All

*7) The following combination of NC software can accept ATA card.

NC software

16i-TA	B1F1 20 edition onwards
18i-TA	BEF1 20 edition onwards
21i-TA	DEF1 13 edition onwards

Boot system

16i/18i/21i-TA	60M3 09 edition onwards

Hardware

16i-TA	A20B-8100-0130	12E edition onwards
18i-TA	A20B-8100-0135	12E edition onwards
21i-TA	A20B-8100-0136	10E edition onwards
	A20B-8100-0137	10E edition onwards

Following is the models and serial numbers suitable for above conditions.

Model	Serial number
SV-20	274 onwards
SA-12/-16	706 onwards
SE-12/-16	976 onwards

*8) The following machines can apply USB interface.

SB-12II/16II/20 typeA, C	No. 286 onwards
SB-12II/16II/20 typeE	No. 816 onwards
SB-12R/16R/20R All type	All

*9) M70V can apply compact flash.

*10) M80 can apply SD/SDHC card up to 32 GB.

Using following product enable to use ATA card on the PC which has no PC card slot.

Manufacturer	Model	Interface	Remarks
RATOC Systems, Inc.	REX-CBS40	PCI bus	CardBus PCcard 1 slot

* Above information is as of March 2014. Check for the details with Web page or catalog etc. of manufacturer.

* Star cannot guarantee of the products above.

A-3 Option

Purchase part code	Product name	Remarks
72593	PU-Jr. USB protection key	

EDP code	Product name	Remarks
86311102	Compact Flash	FANUC 128MB
86311103	Compact Flash Adapter	
86311104	Compact Flash Adapter	
86311105	Compact Flash	Mitsubishi 256MB
86311106	Compact Flash	Mitsubishi 2GB
86870101	Cable	Dsub9(Female) -- Dsub9(Female) 3m
86870102	Cable	Dsub25(Male) -- Dsub9(Female) 3m
86870104	Cable	Dsub25(Male) -- Dsub9(Female) 15m
86870105	Cable	Dsub9(Female) -- Dsub9(Female) 15m
86870106	Cable	Dsub9(Female) -- Dsub9(Female) 5m
86910300	PU Junior Adaptor	
86997112	USB Converter	
932ZZZZZ	Additional license	One license for one password

72592-E930

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