

**PROVISOR TC200
BEGINNER'S MANUAL
OF
PERSONAL COMPUTER PROGRAMMER
TCPRGOS-W(E) V2.00 for Windows**

April, 2002

TOSHIBA MACHINE CO., LTD.

TOKYO, JAPAN

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First edition
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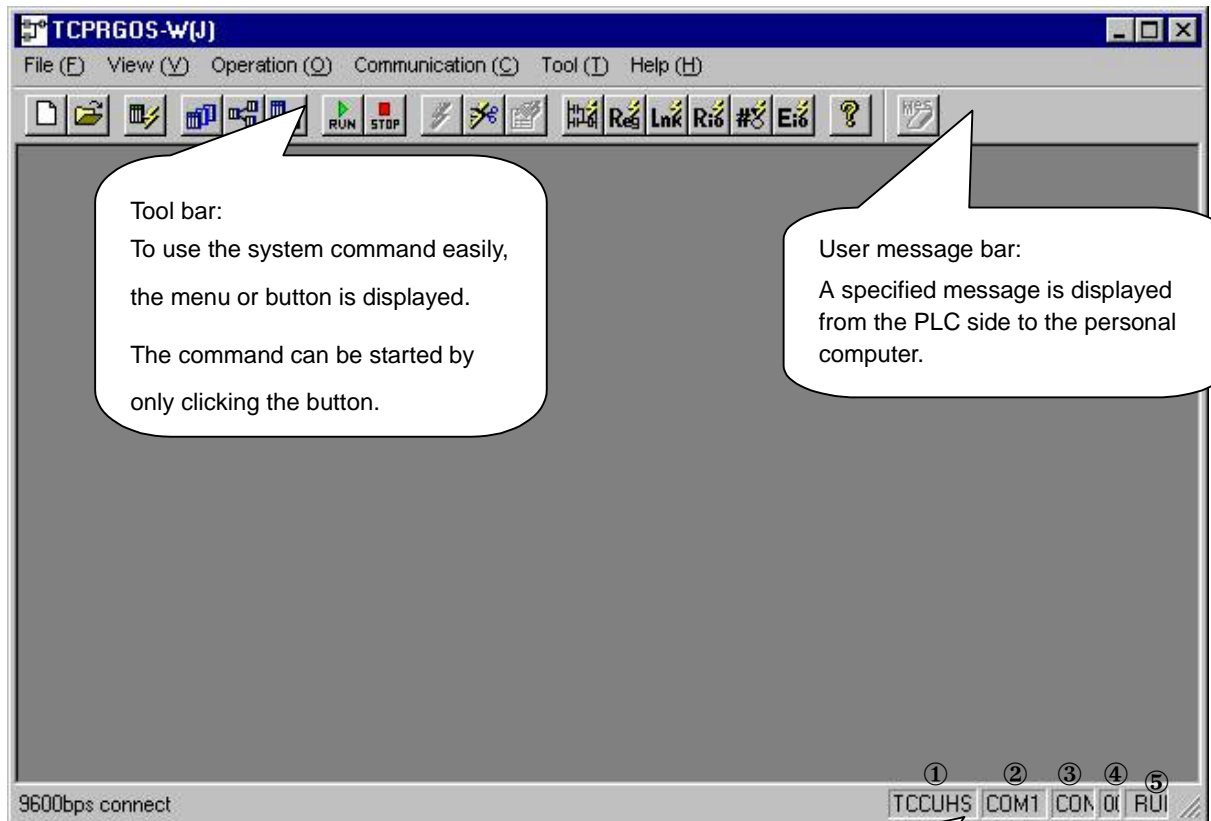
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1. Let's Start

◆ Starting TCPRGOS-W

- ① Double-click the TCPRGOS-W icon  on the desktop.
- ② The TCPRGOS-W starts.



Status bar:

Information on current system connection status, message from application to user, etc. is displayed.

- ① Connected PLC model is displayed.
- ② Connection method is displayed, which is specified in communication setup.
- ③ Connection/disconnection status is displayed.
- ④ Connected PLC number is displayed.
- ⑤ RUN/STOP status of PLC is displayed.

2. Let's Create a Circuit

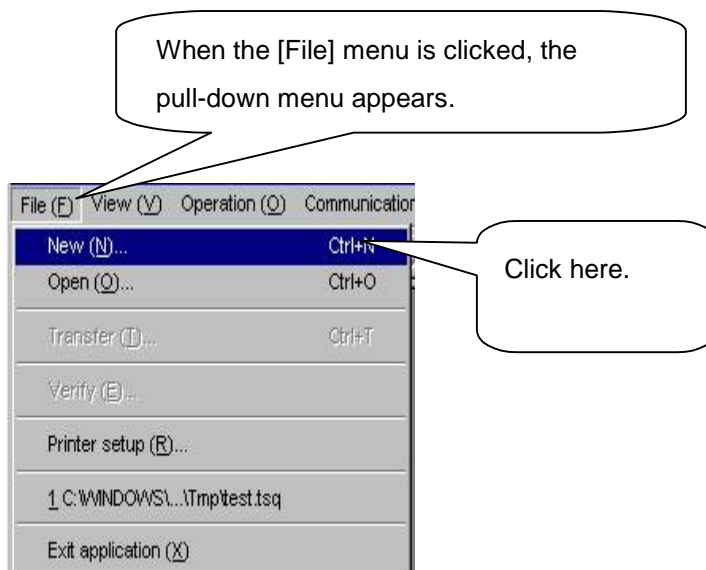
◆ Creating a New Ladder Program and Saving in a File

★ Program to be created.

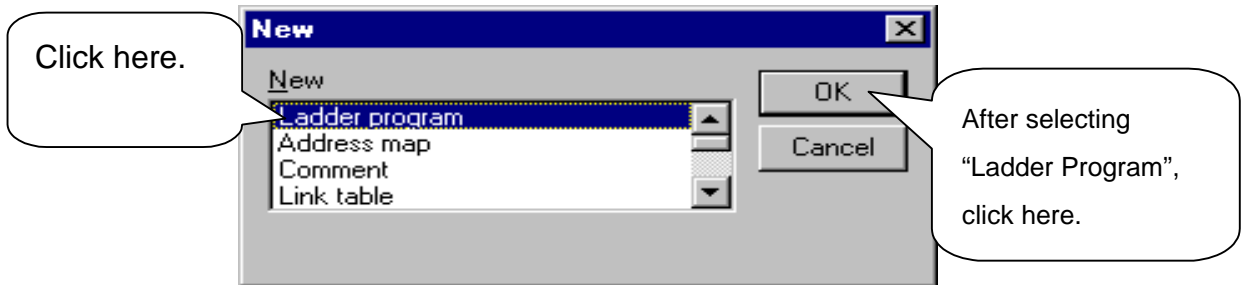


(1) Start ladder editor newly

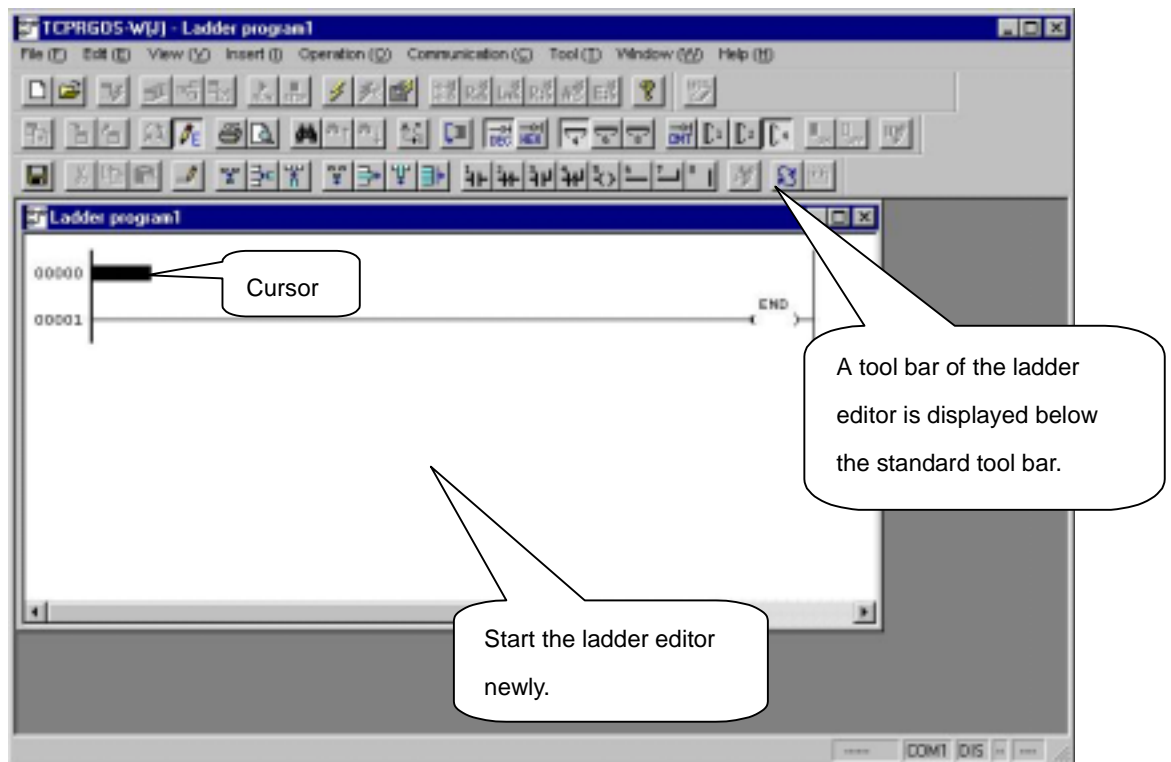
- ① Click [New] from the [File] menu.



- ② As the [New] dialog box appears, click [Ladder Program] from the [New] box.

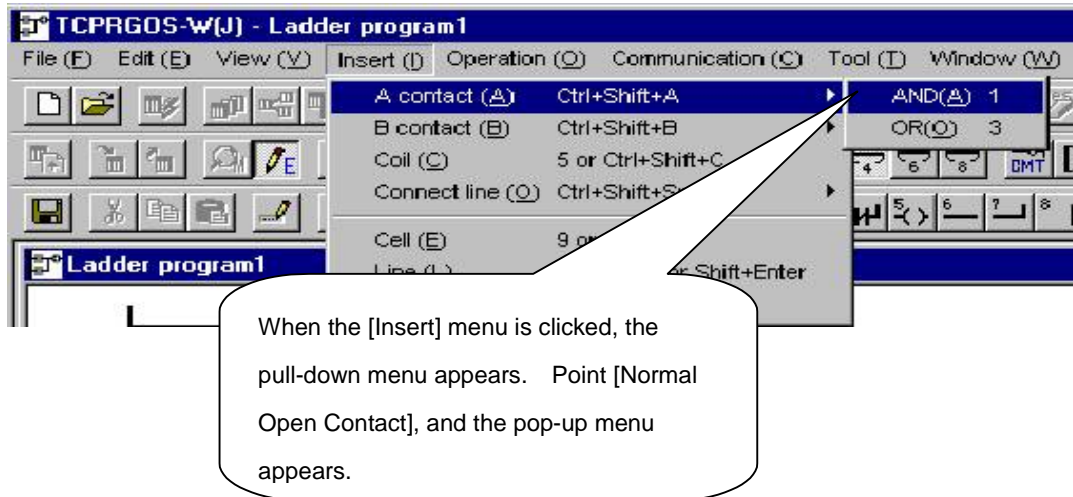


- ③ The ladder editor starts newly.

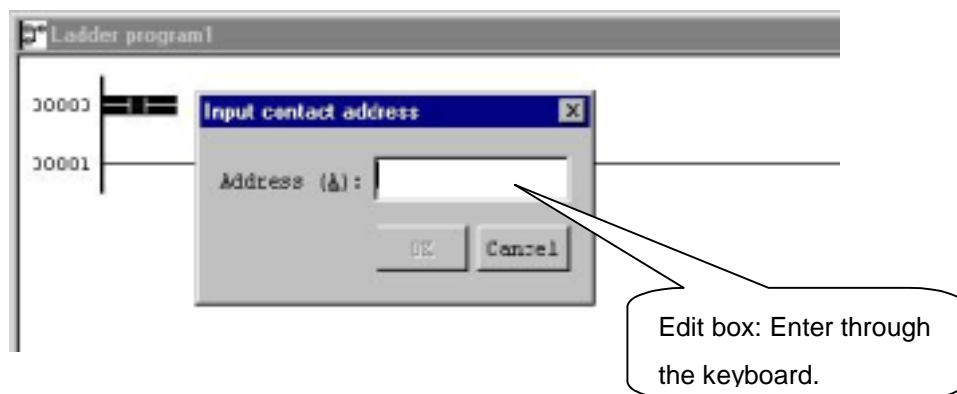


(2) Create a circuit

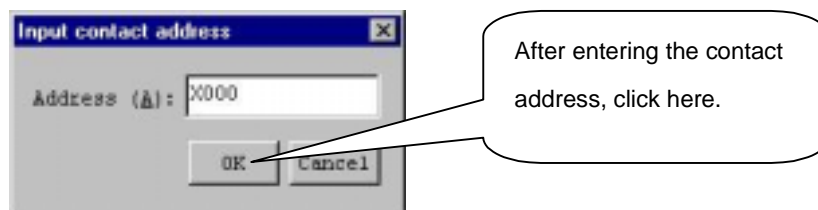
- ① Point [Normal Open Contact] from the [Insert] menu, then click [AND].



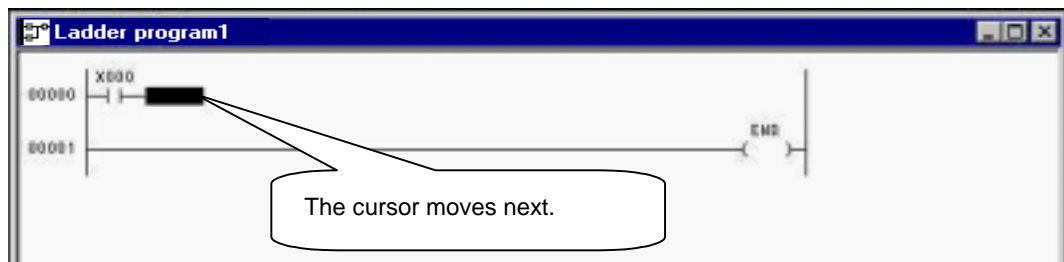
- ② The symbol of normal open contact is entered at the cursor position and the contact address input dialog box appears.



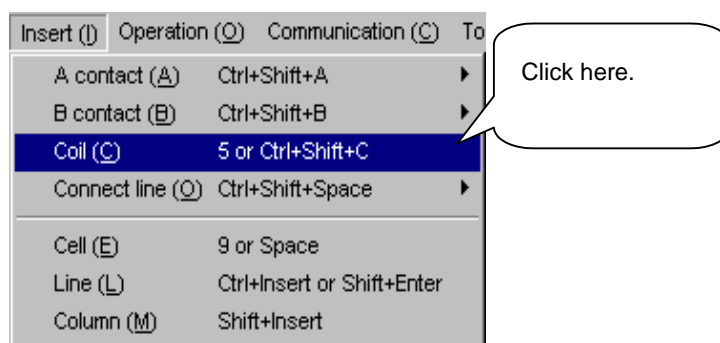
- ③ Move the cursor to the contact address edit box and enter "X000". Then click the [OK] button.



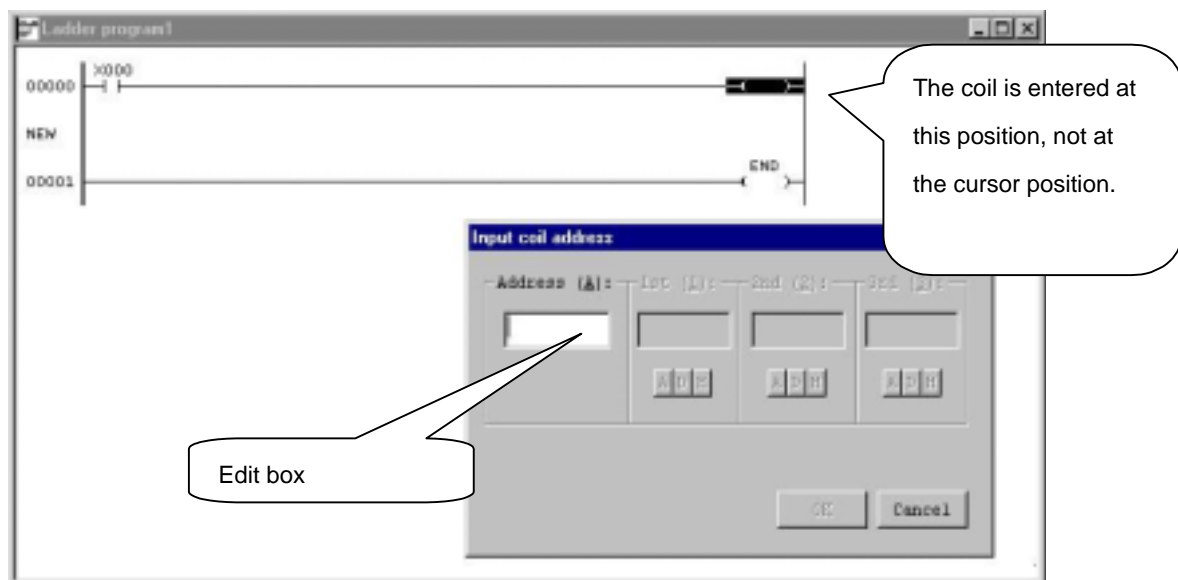
- ④ The normal open contact of address X000 is entered.



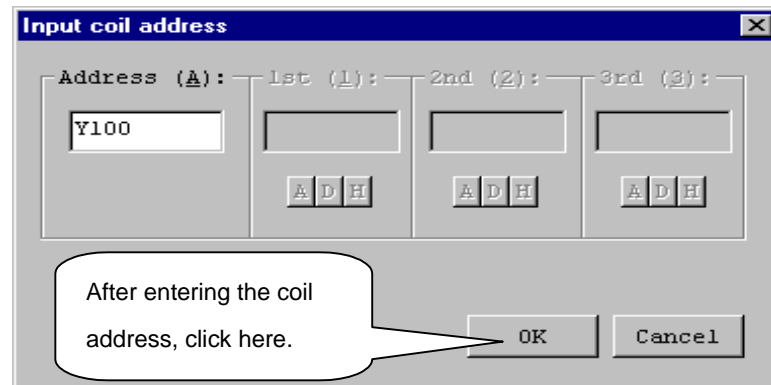
- ⑤ Click [Coil] from the [Insert] menu.



- ⑥ The symbol of coil is entered and the coil input dialog box appears.



- ⑦ Enter “Y100” in the coil address edit box and click the [OK] button.



- ⑧ One (1) circuit is created as shown below.

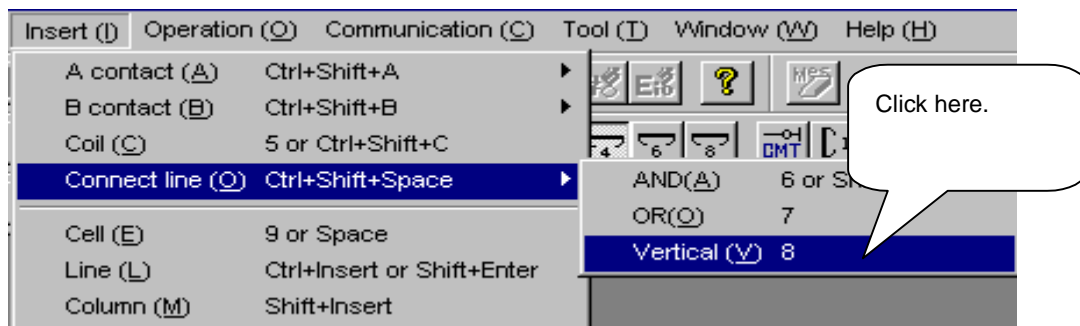


One Point Advice

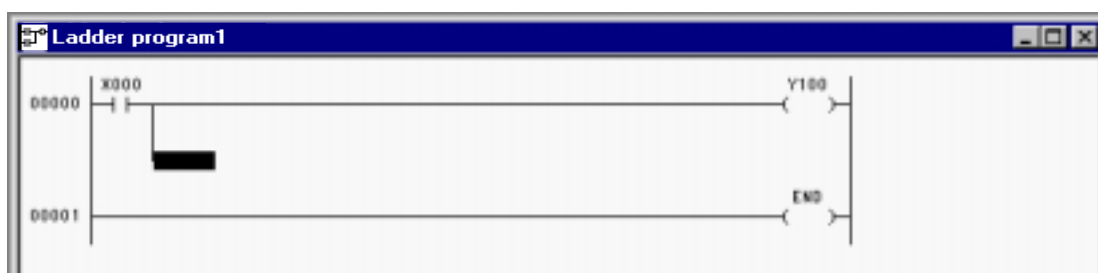
- ☆ **Cursor movement**
If a desired position is clicked by means of the mouse, the cursor moves to that position. The cursor can also move vertically and horizontally by means of the arrow keys. The symbol other than coil is entered at the cursor position.
- ☆ **Address change**
When the mouse is moved to an already entered contact or coil and double-clicked, the address input dialog box appears. Move the cursor to the edit box where the address is to be entered, modify the address, then click the [OK] button.

(3) Input symbol of perpendicular line

- ① Point [Connecting Line] from the [Insert] menu and click [Perpendicular].

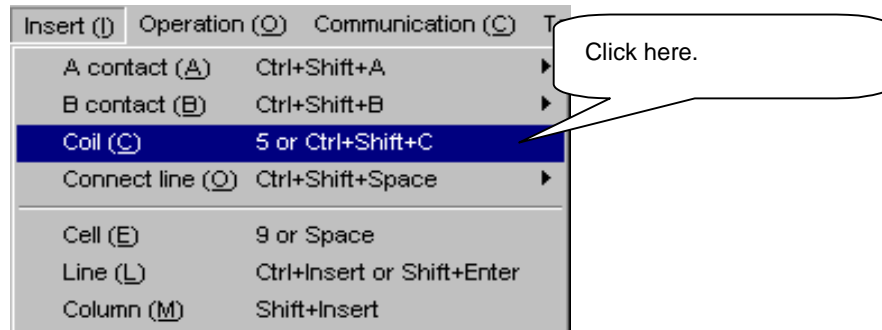


- ② The symbol of perpendicular line is entered.



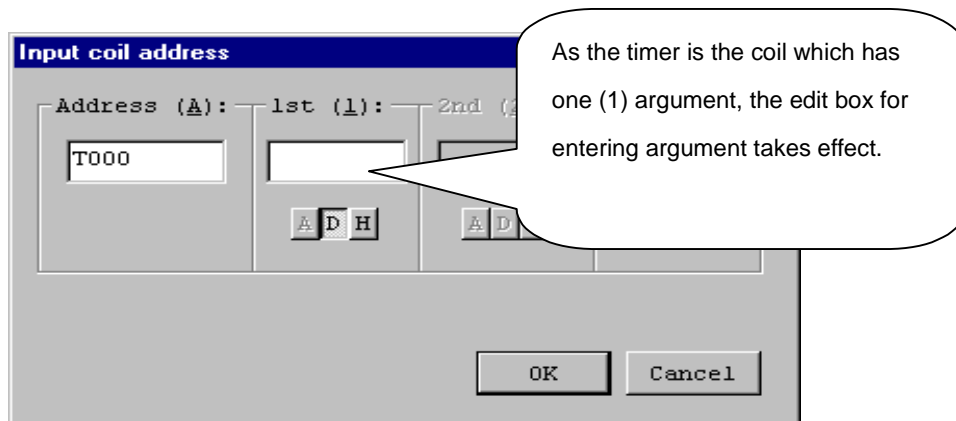
(4) Input a timer in coil

- ① Click [Coil] from the [Insert] menu.

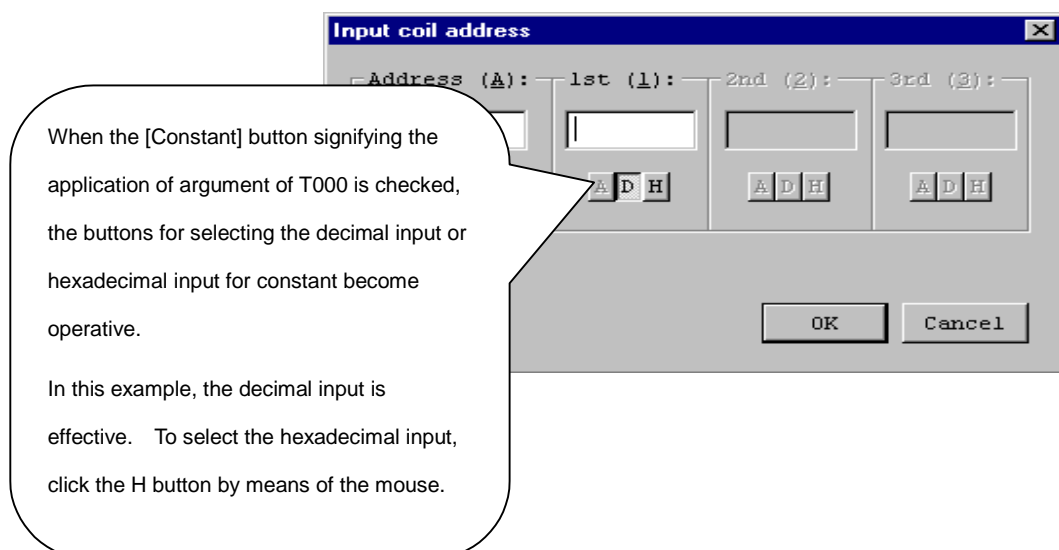


- ② The symbol of coil is entered and the coil address input dialog box appears.

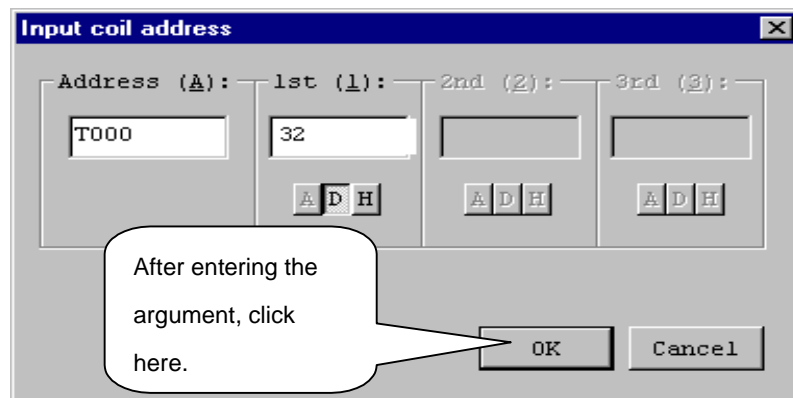
- ③ Enter "T000" in the coil address.



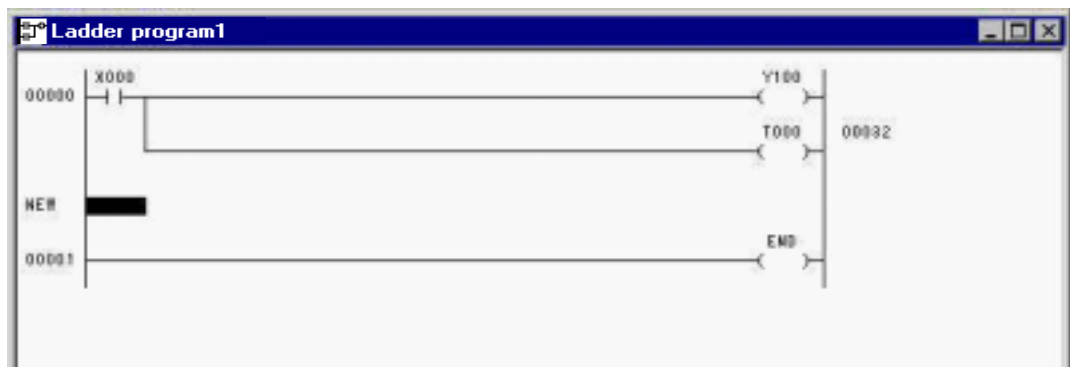
- ④ Click the first argument edit box to move the cursor.



- ⑤ Enter “32” in the first argument and click the [OK] button.

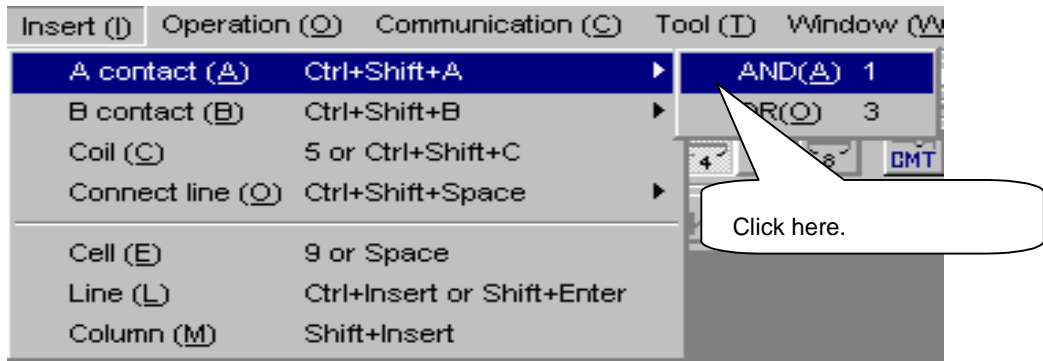


- ⑥ The following circuit is created.

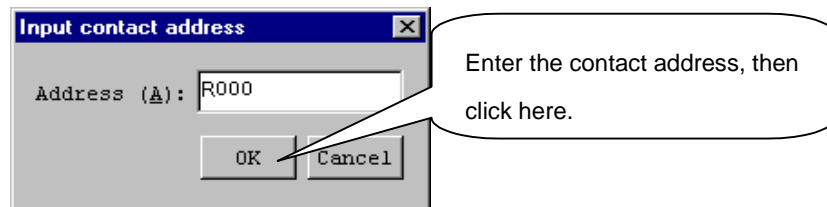


(5) Input a function command in coil

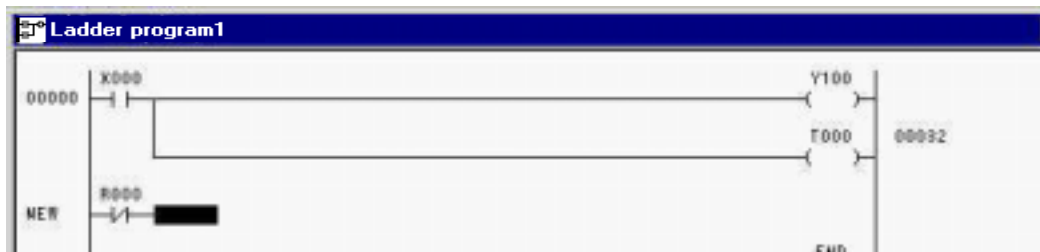
- ① Point [Normal Close Contact] from the [Insert] menu and click [AND].



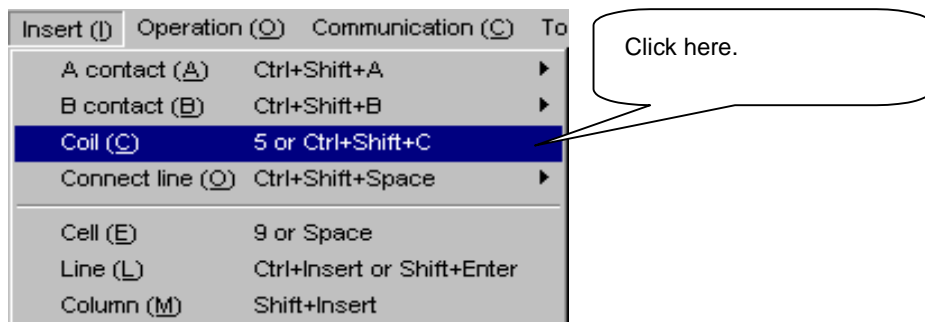
- ② The symbol of normal close contact is entered and the contact address input dialog box appears. Enter the contact address "R000".



- ③ The normal close contact of R000 is entered.

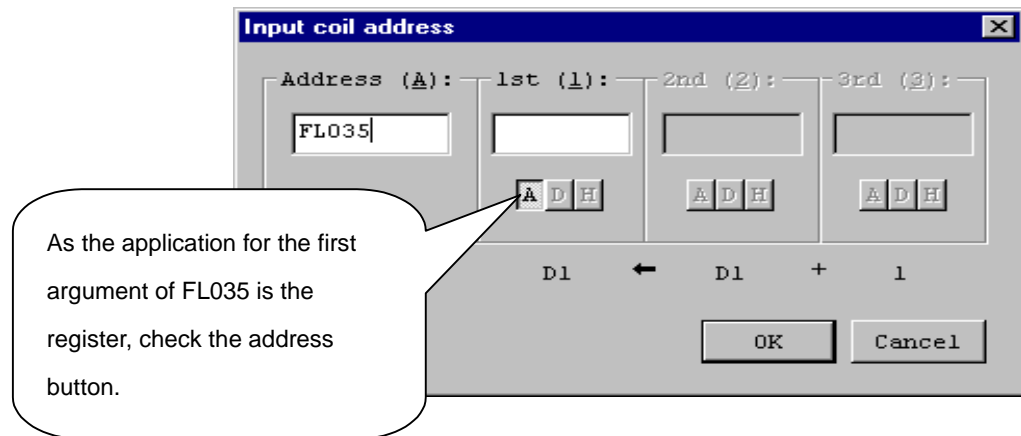


- ④ Click [Coil] from the [Insert] menu.

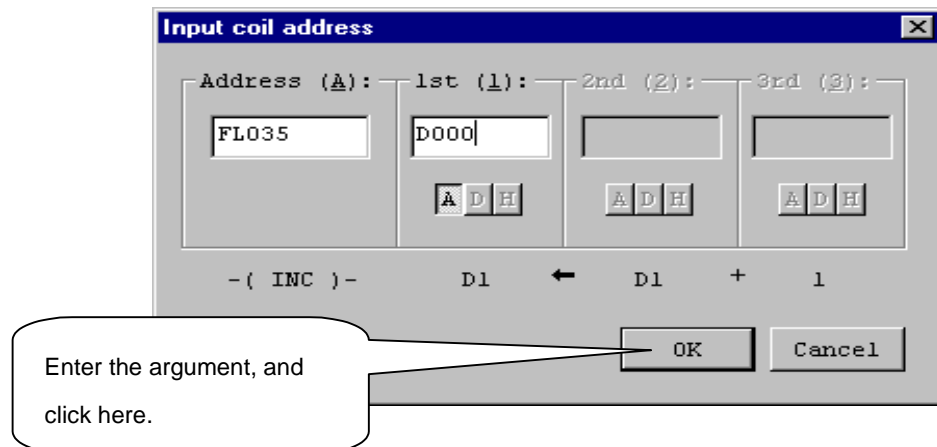


- ⑤ The symbol of coil is entered and the coil address input dialog box appears.

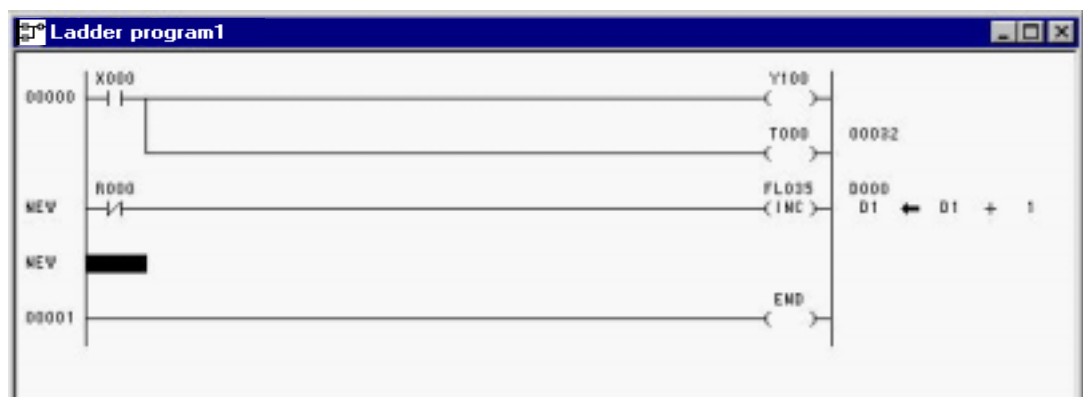
- ⑥ Enter “FL035” in the coil address, and move the cursor to the first argument edit box.



- ⑦ Enter “D000” in the first argument.



- ⑧ The following circuit is created.



One Point Advice

☆ Coil input dialog box

After “FL020” is entered, the coil input dialog box is as follows:

The dialog box is titled "Input coil address". It contains four input fields: "Address (A):" (containing "FL020"), "1st (1):", "2nd (2):", and "3rd (3):". Below each field are three buttons labeled "A", "D", and "H". At the bottom, there is a label "- (BIN) -" with a left arrow, a label "D1" with a left arrow, and a label "+ D3" with a right arrow. There are also "OK" and "Cancel" buttons.

Application instruction symbol is displayed

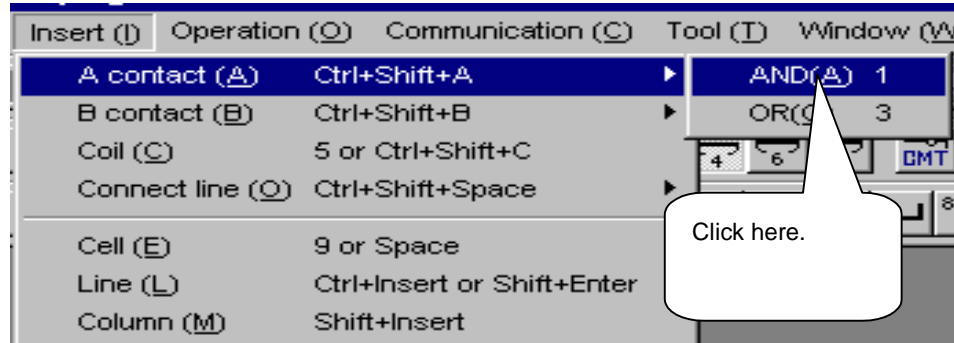
As the second argument where the cursor is located can use both the register and constant, the buttons of both address and constant take effect. Select the button according to the input data.

As this coil has three (3) arguments, all of three (3) arguments are effective.

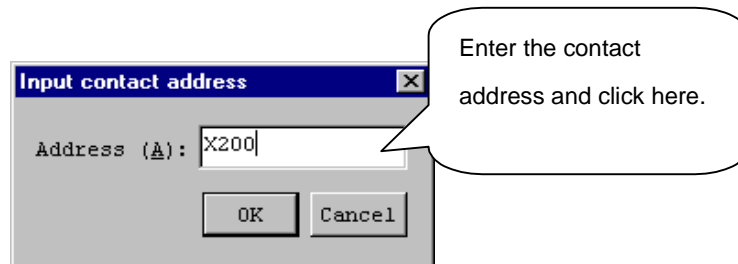
In this way, the status of the coil input dialog box differs with the type of the coil.

(6) Input pair coil

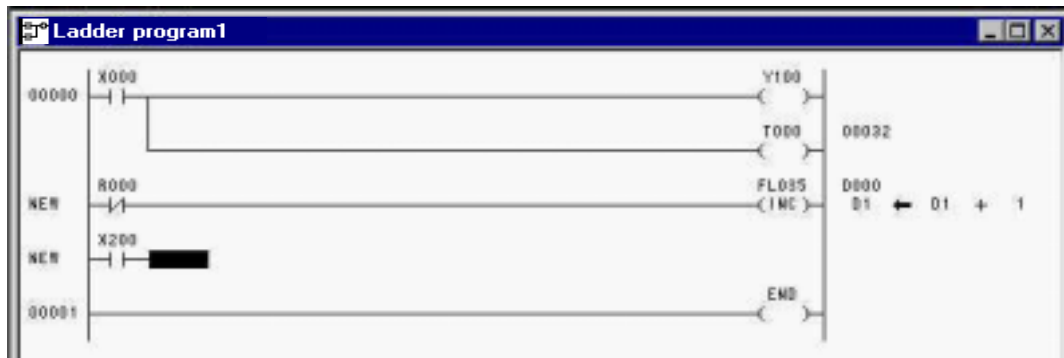
- ① Point [Normal Open Contact] from the [Insert] menu and click [AND].



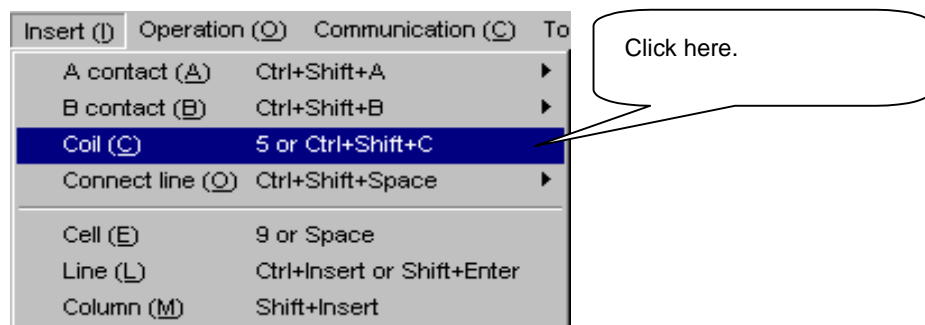
- ② The symbol of normal open contact is entered and the contact address input dialog box appears. Enter "X200" in the contact address.



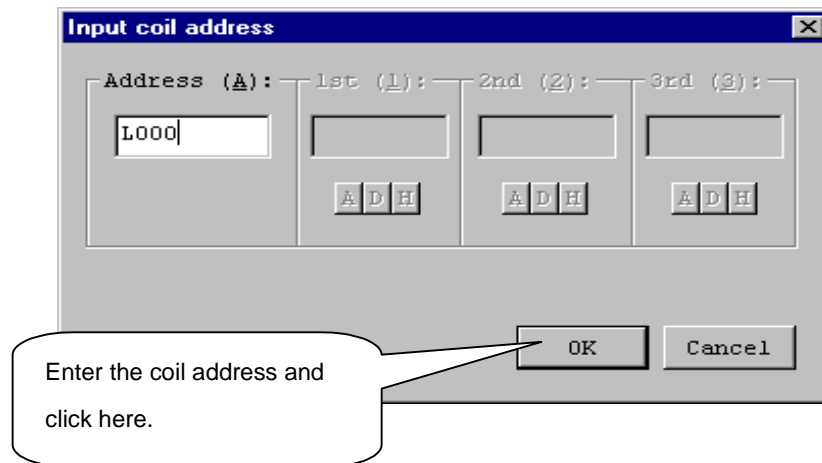
- ③ The normal open contact of X200 is entered.



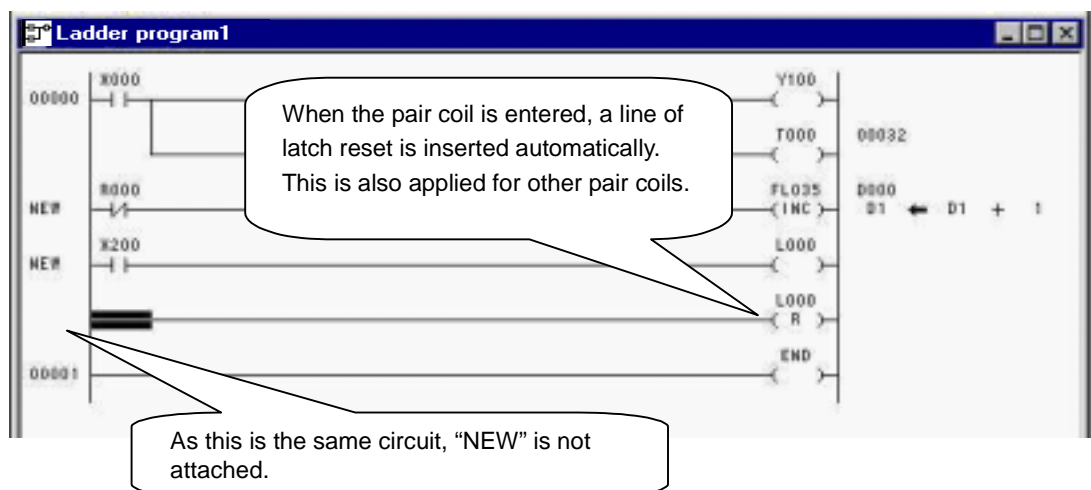
- ④ Click [Coil] from the [Insert] menu.



- ⑤ The symbol of coil is entered and the coil address input dialog box appears. Enter "L000" in the coil address.

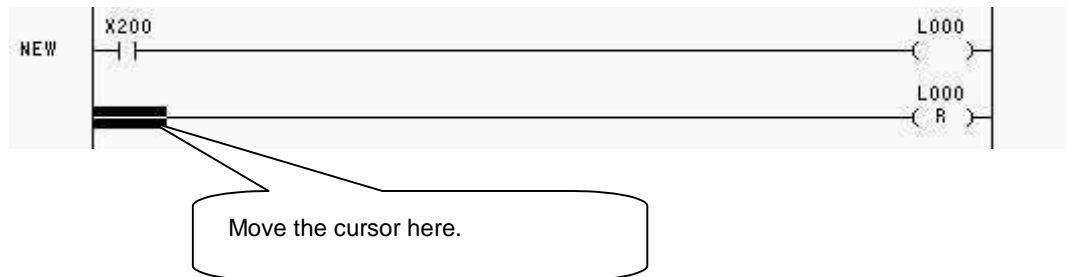


- ⑥ The following circuit is created.

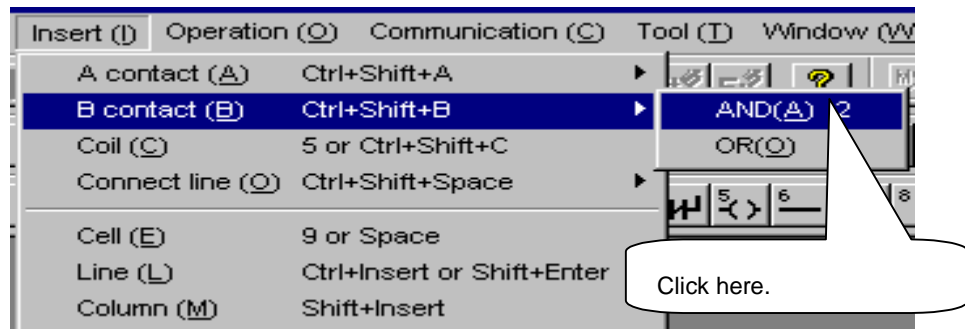


(7) Change connecting line with contact

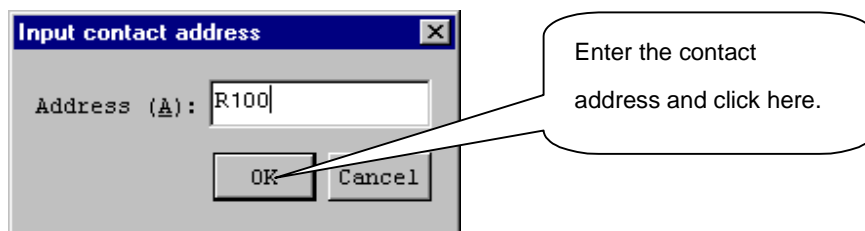
- ① Move the mouse to the head of the latch reset and click. The cursor moves to the head position.



- ② Point [Normal Close Contact] from the [Insert] menu and click [AND].



- ③ The symbol of normal close contact is entered and the contact address input dialog box appears. Enter "R100" in the contact address.

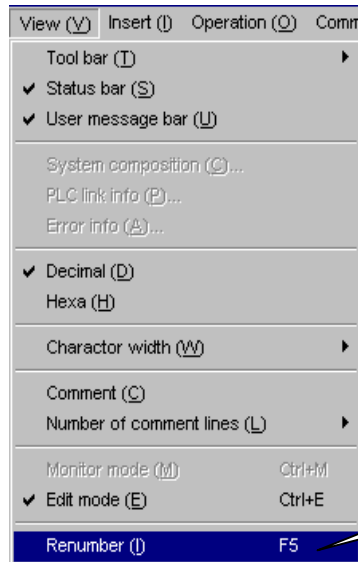


- ④ The normal close contact is inserted at a place where the connecting line was input and the circuit is changed as shown below.

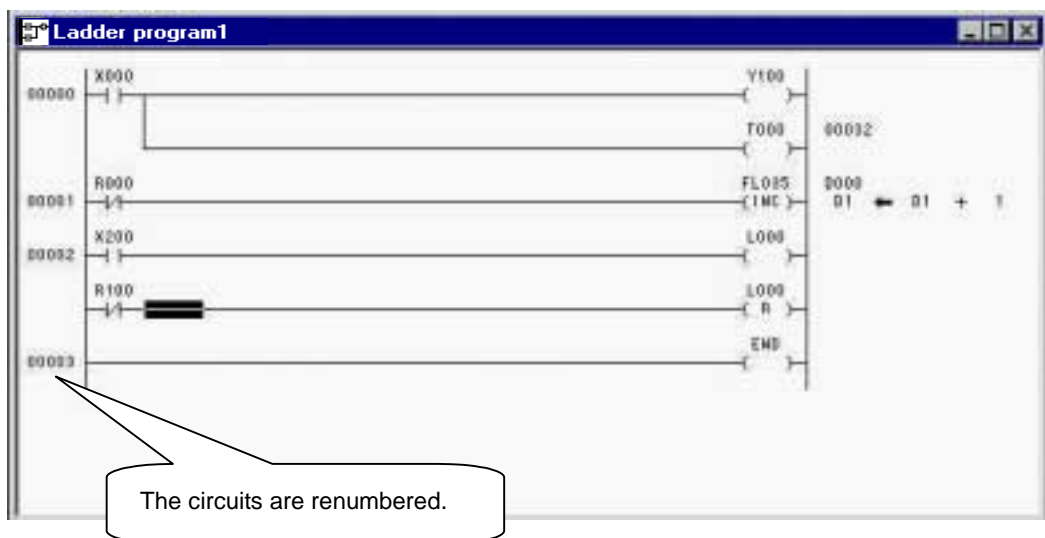


(8) Renumber circuits

- ① Click [Renumber] from the [View] menu.

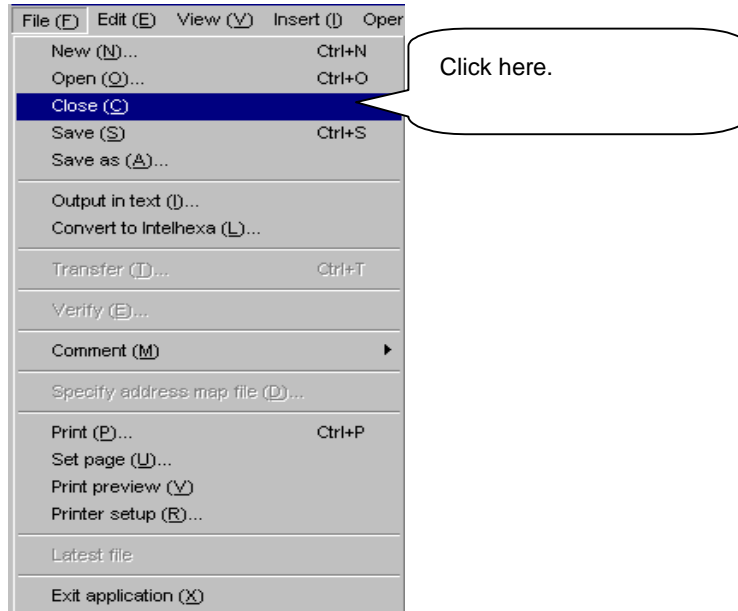


- ② Words [NEW] are cleared and the circuits are renumbered.

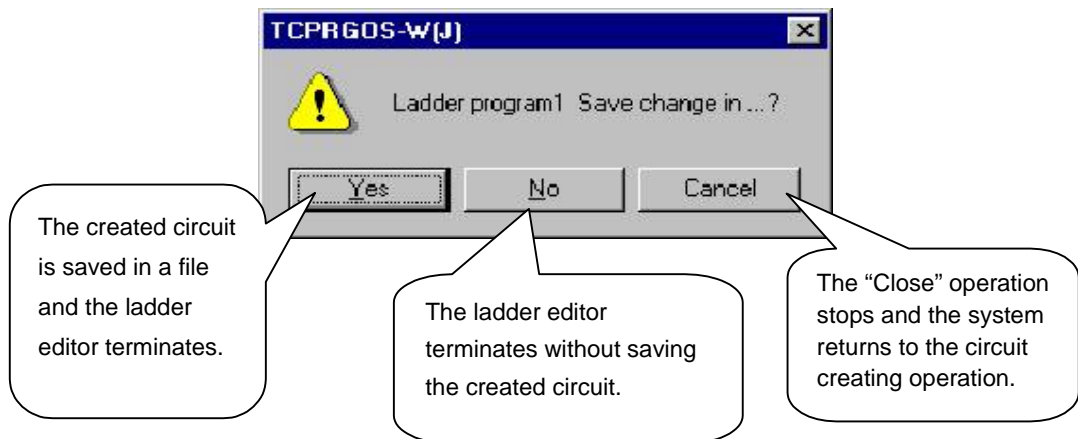


(9) Save in a file

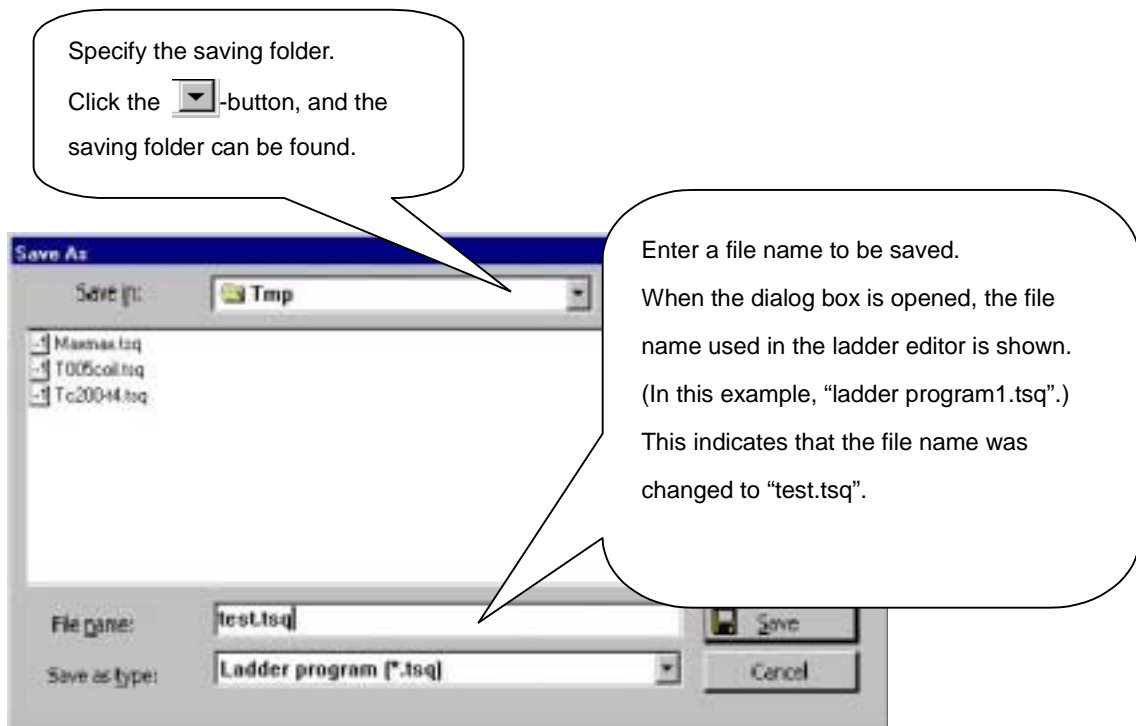
- ① Click [Close] from the [File] menu.



- ② As the following message box appears, click the [YES] button.



- ③ The following file saving dialog box appears.

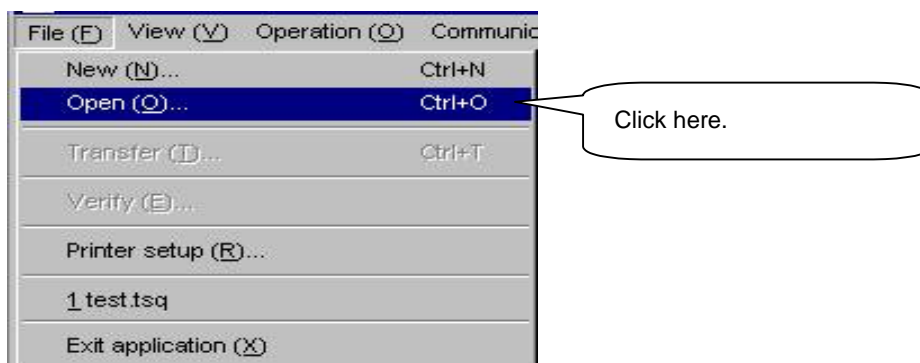


- ④ Click the [Save] button. The ladder editor is closed and the created circuit is saved in the file of "test.tsq".

◆ Reading Ladder Program File and Modifying Circuit

(1) Read ladder program (Start existing file)

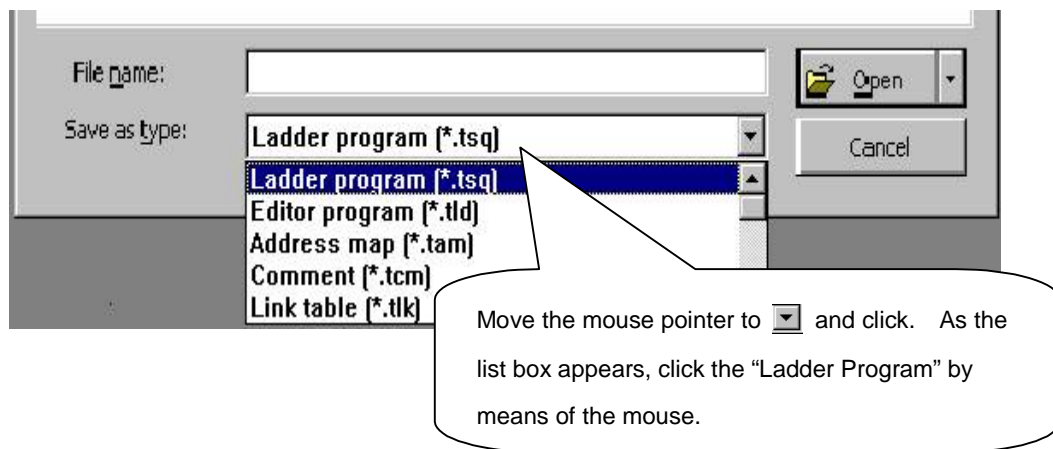
- ① Click [Open] from the [File] menu.



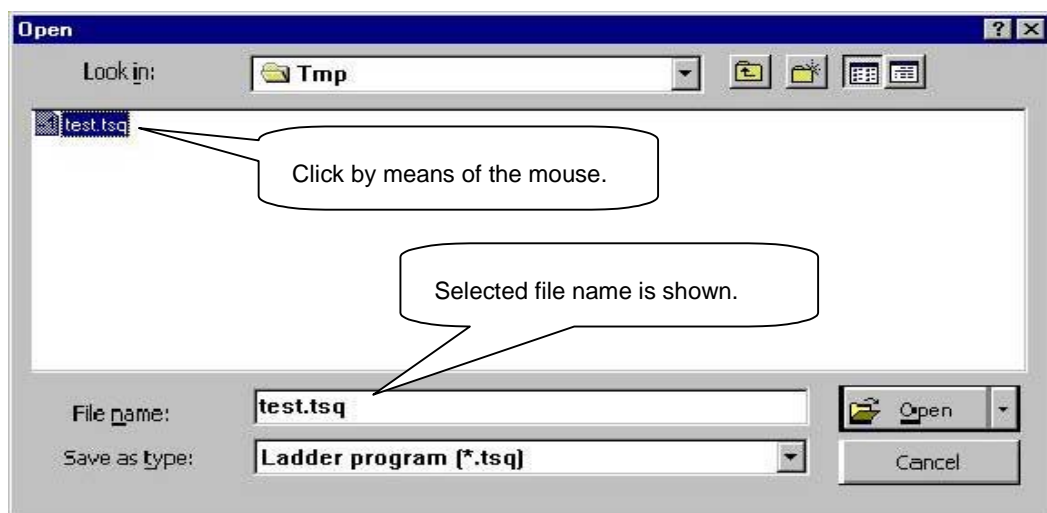
- ② The following [Open] dialog box appears.



- ③ Change the type of file to “Ladder Program”.



- ④ Select “test.tsq” among the displayed ladder programs.



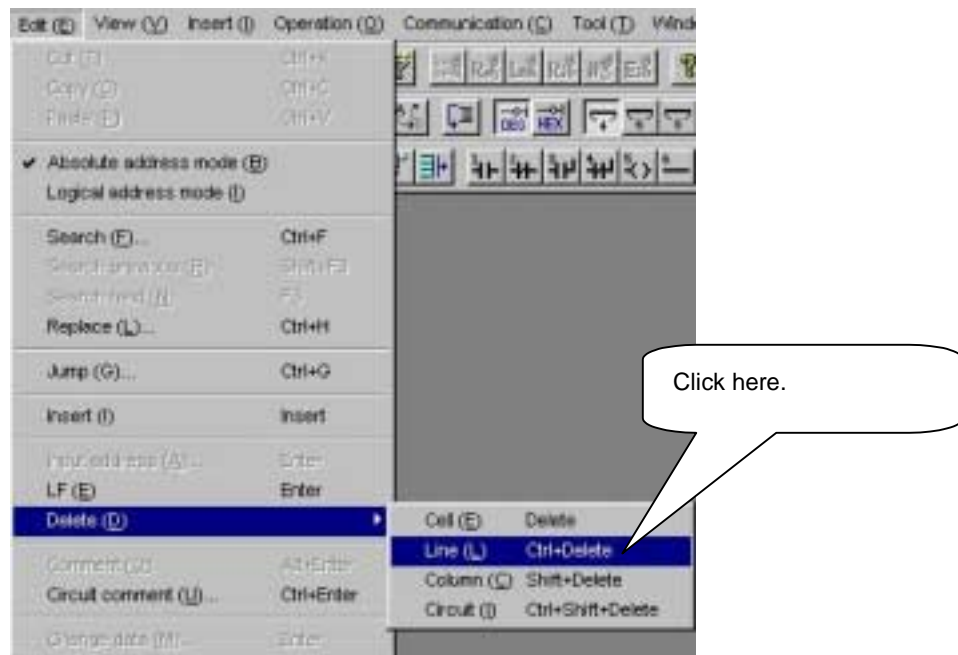
- ⑤ Click the [Open] button, and the file of “test.tsq” is opened.

(2) Modify and save existing circuit

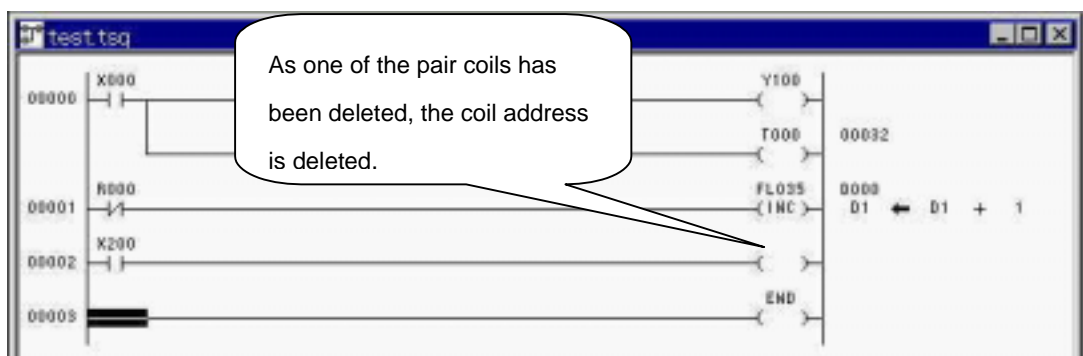
- ① Move the cursor to the circuit of the latch reset.



- ② Point [Delete] from the [Edit] menu and click [Line].



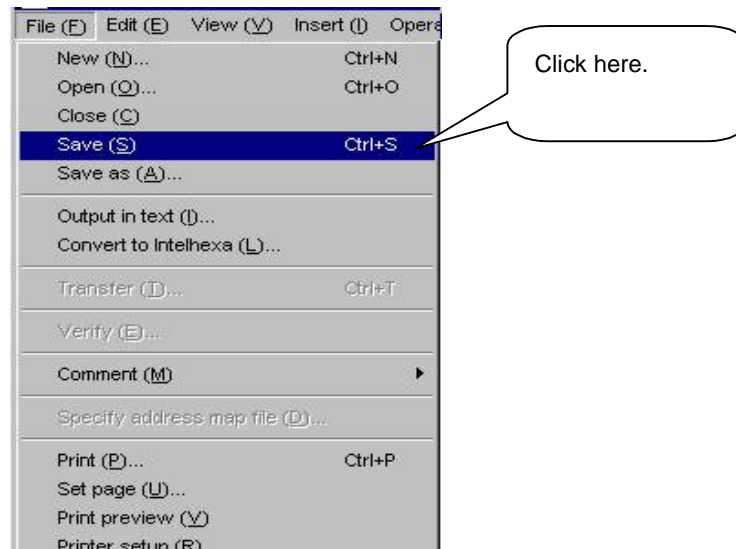
- ③ The specified line is deleted.



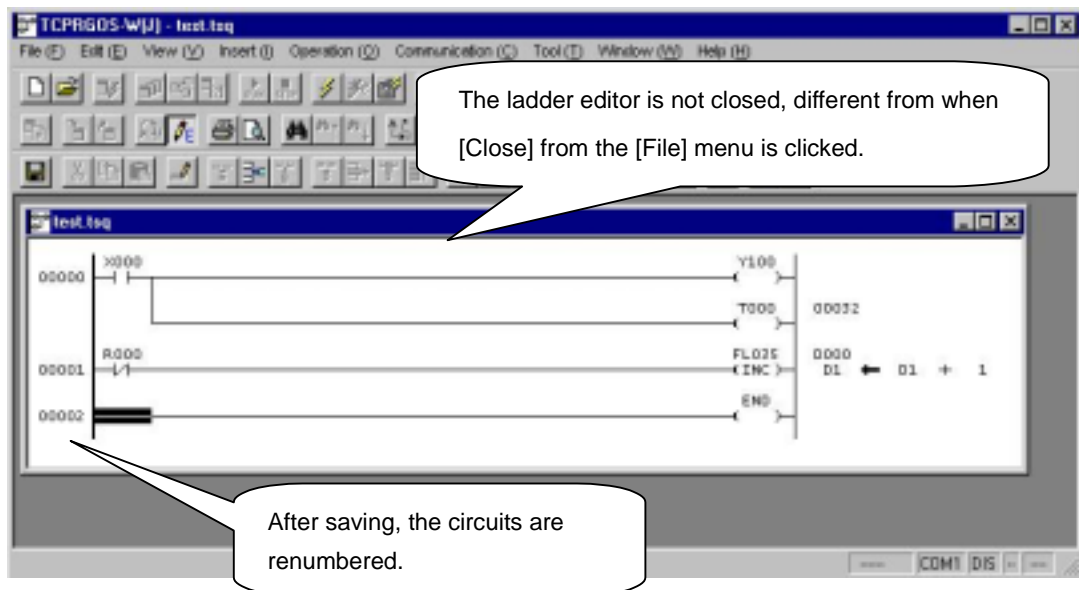
-
- The screenshot shows the Proteus 9.9 SE software interface. The 'Edit' menu is open, displaying various editing options. The 'Delete' option is highlighted, and a sub-menu is visible with the following options:
- Cell (E)
 - Line (L)
 - Column (C)
 - Circuit (I)
- The background shows a circuit diagram with components like R000 and X200.

-

- ⑦ Click [Save] from the [File] menu.



- ⑧ The file of “test.tsq” is overwritten.



3. Let's Perform Online Operation Including Transfer

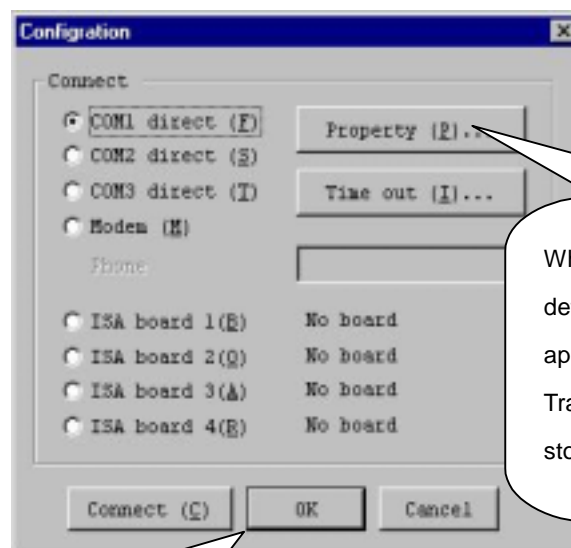
◆ Operating PLC Online

(1) Check for communication setup

- ① Click [Setup] from the [Communication] menu.



- ② The following communication setup dialog box appears.



When the [Property] button is clicked, the detailed setup dialog box of specified port appears.

Transfer speed (bit/sec), data bit, parity, stop bit and flow control can be specified.

[Connect] button: Connects after communication setup.

[OK] button: For only communication setup.

[Cancel] button: Stops communication setup.

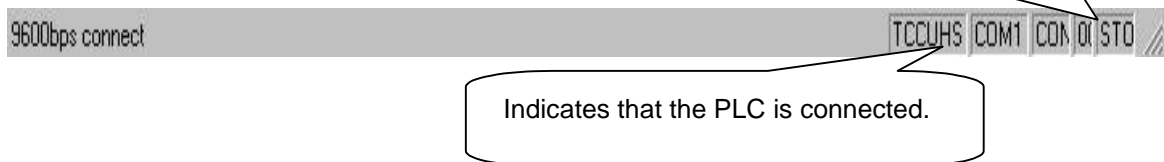
Caution !

The baudrate is changed over automatically.
Select the connection method alone. Normally, the property need not be changed.

(2) Connect

- ① Click [Connect] from the [Communication] menu, and the PLC is connected with the personal computer.

Check for the status bar on the bottom of the window.

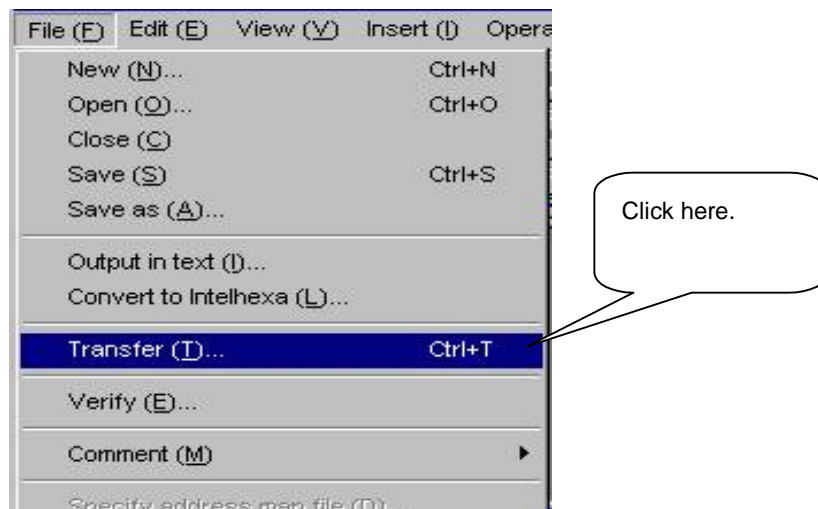


Caution !

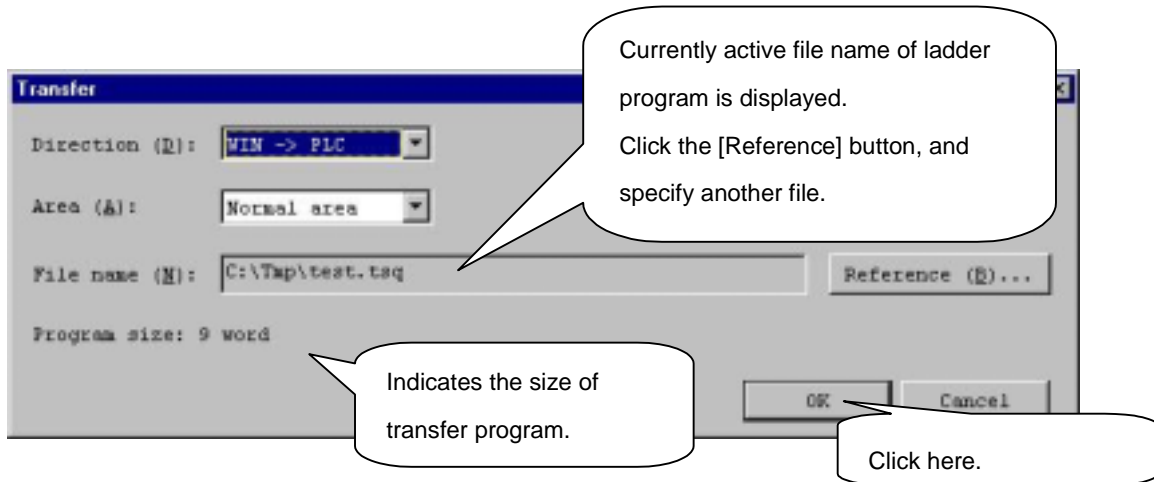
Baudrate that can be connected is recognized automatically, and the connected baudrate is displayed on the status bar.

(3) Transfer previously created circuit to PLC

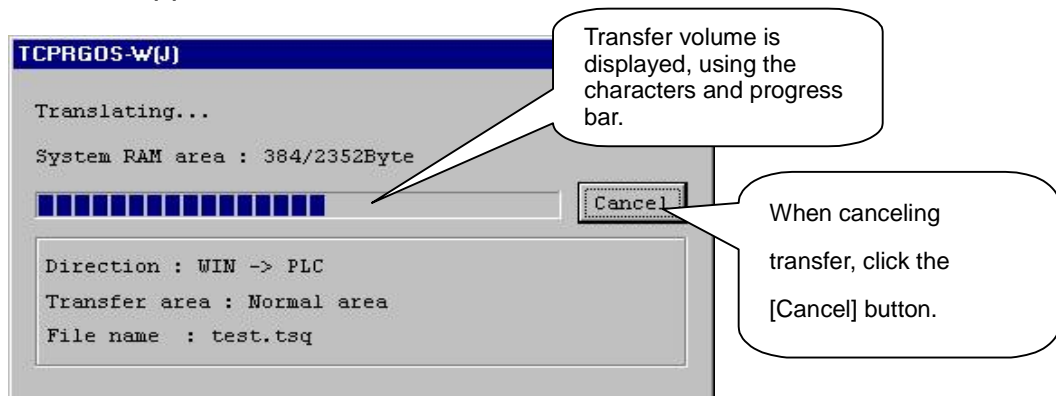
- ① Click [Transfer] from the [File] menu.



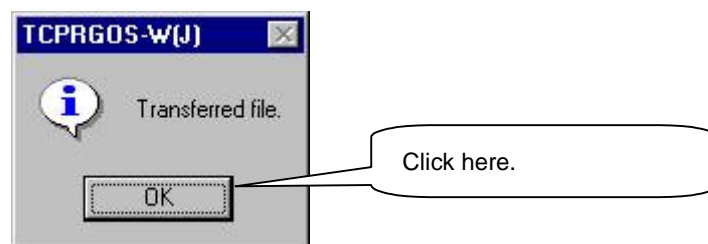
- ② When the following transfer dialog box appears, click the [OK] button.



- ③ Transfer starts. During the transfer, the following transfer progress dialog box appears.

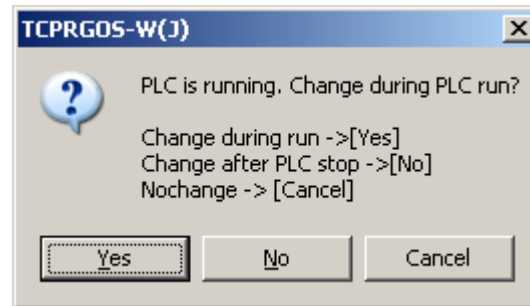


- ④ When the transfer has finished, the transfer finish message box appears. Click the [OK] button then.



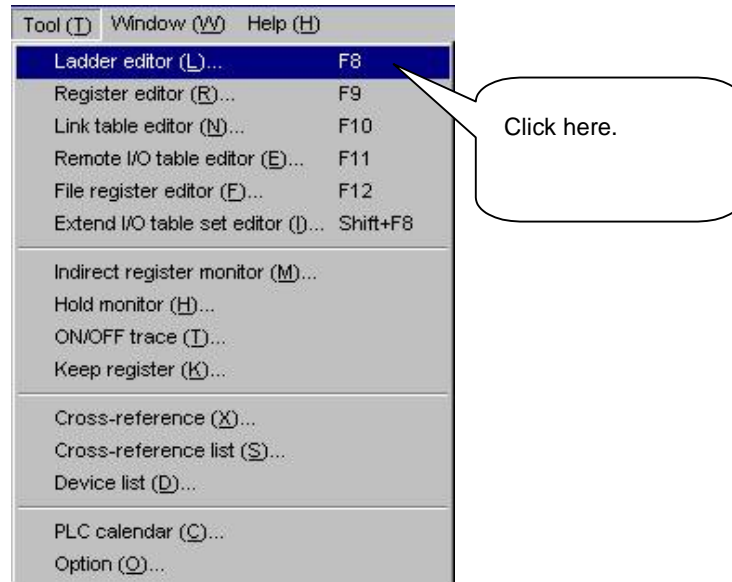
Caution !

While the PLC is running, the following message box appears. Operate according to the instructions.

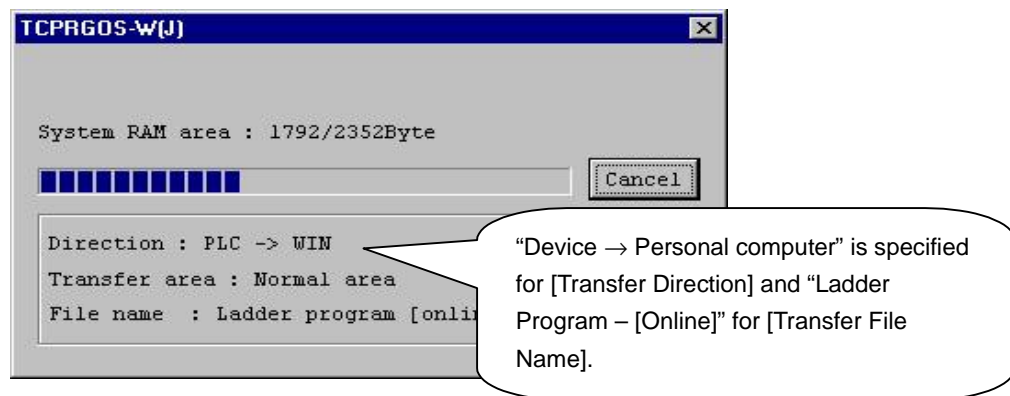


(4) Start the online ladder editor.

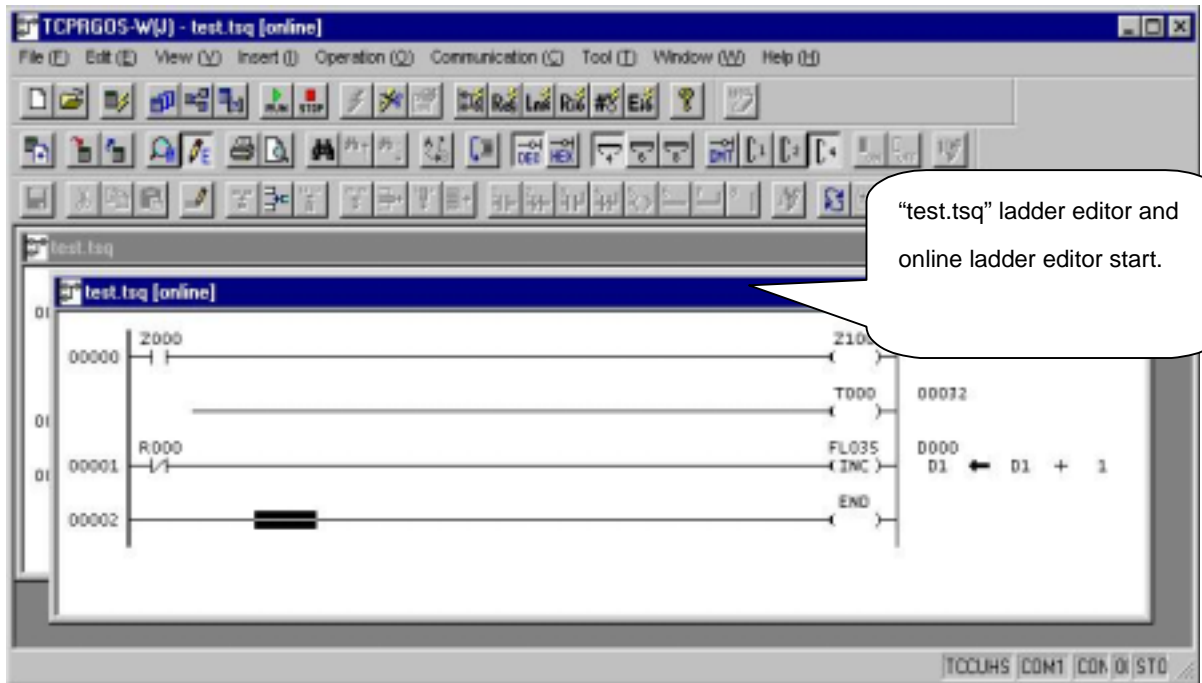
- ① Click [Ladder Editor] from the [Tool] menu.



- ② Data transfer from the PLC to the personal computer starts and transfer progress dialog box is displayed.

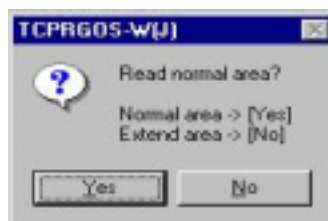


- ③ When the transfer has finished, the transfer progress dialog box disappears and the online ladder editor starts.



Caution !

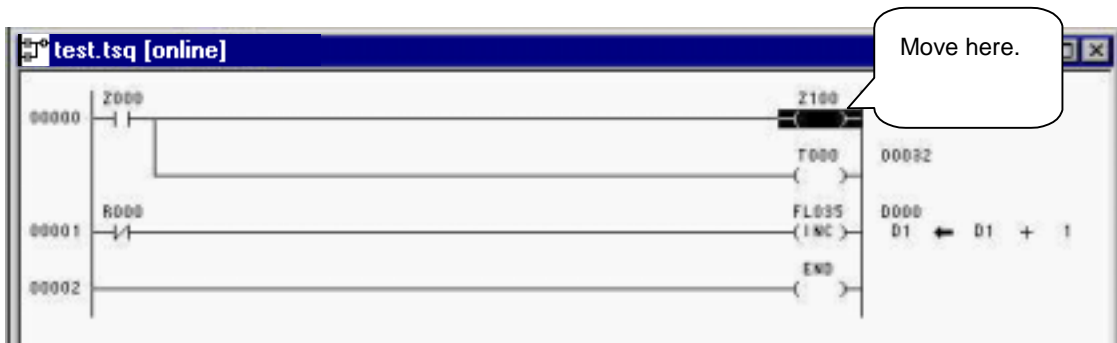
For the TCCUHA having normal area and extended area, either area from which transfer starts first should be specified. As the following message box is displayed before the transfer, click to select a desired area, using the mouse.



(5) Modify circuit of online ladder editor

- ★ Modification can be made in the same manner as the offline ladder editor.
To change the coil address, observe the following steps.

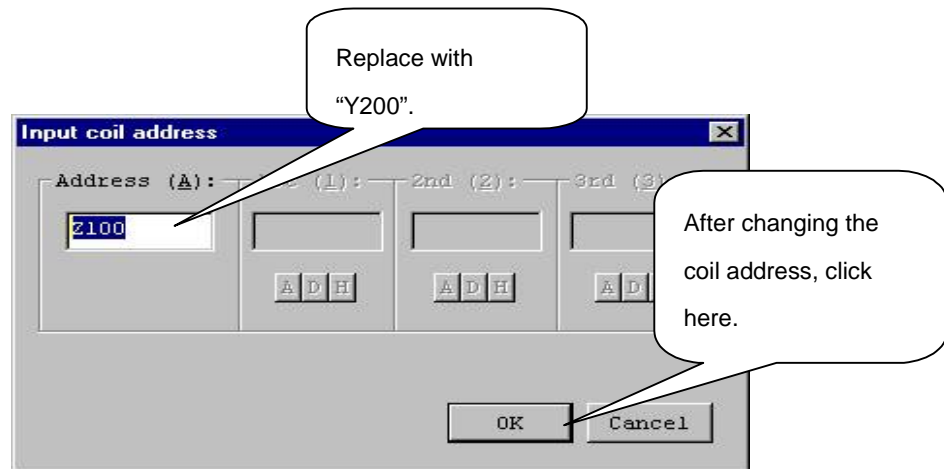
- 1) Move the cursor to the coil (Z100) of circuit number 0000.



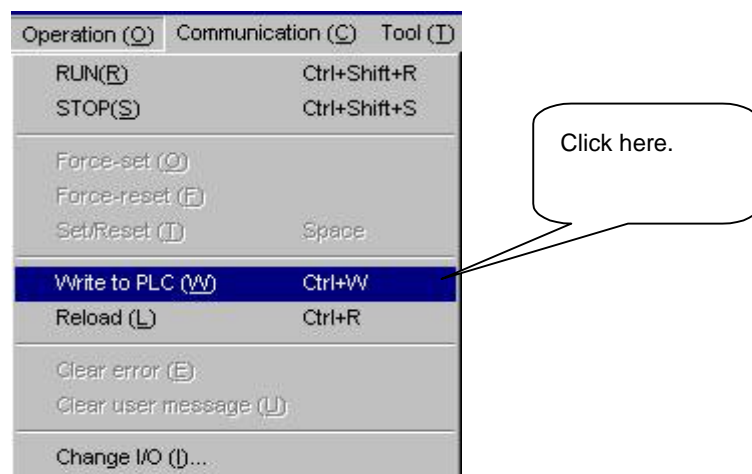
- 2) Click [Input Address] from the [Edit] menu.



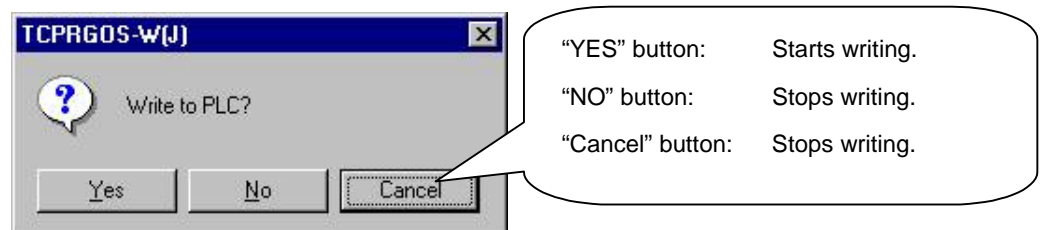
- 3) As the coil address input dialog box appears, change the coil address to “Y200”.



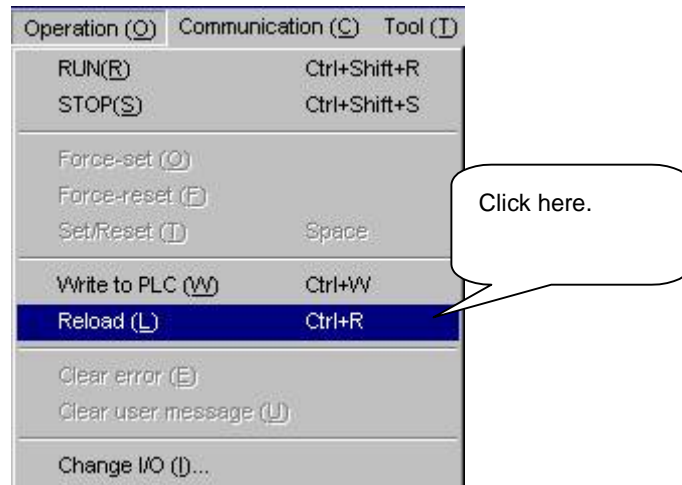
- 4) The coil address is changed.
- 5) Click [Write to PLC] from the [Operation] menu.



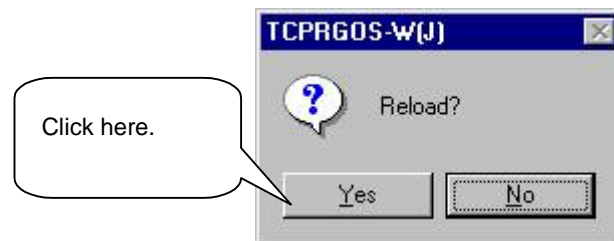
- 6) As the following message box appears, click the [YES] button.



- 7) The transfer progress dialog box is displayed and writing to PLC starts. When it has finished, the transfer progress dialog box is cleared.
- 8) Click [Read] from the [Operation] menu.



- 9) As the following message dialog box appears, click the [YES] button.



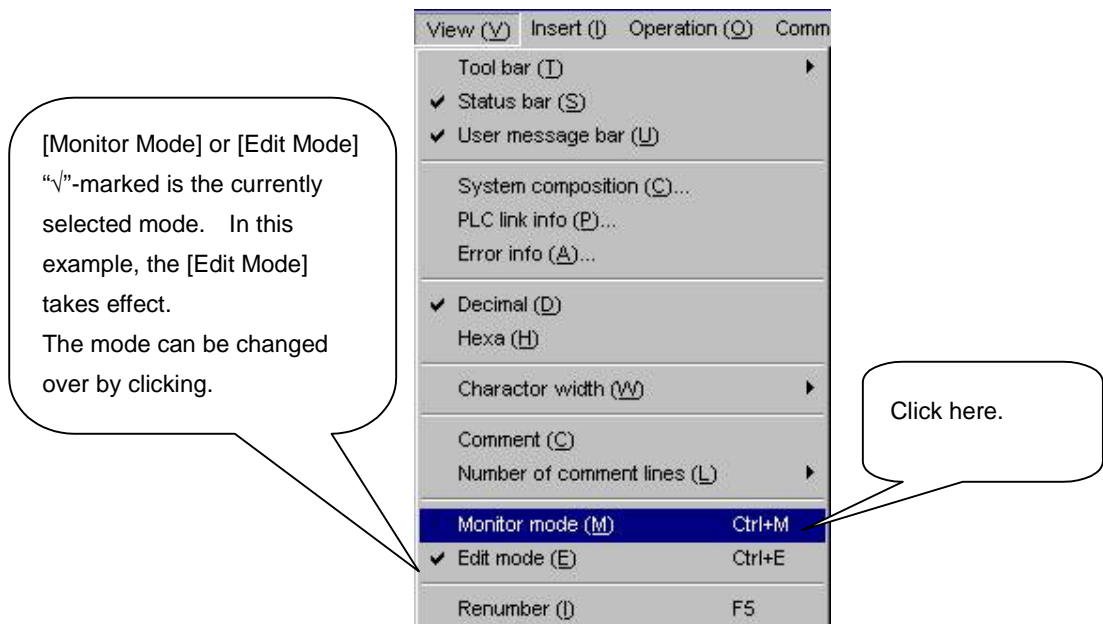
- 10) The online ladder editor is closed and the transfer progress dialog box appears. Then the transfer starts.
- 11) When the transfer has finished, the transfer progress dialog box is closed and the online ladder editor starts again.

4. Let's Monitor

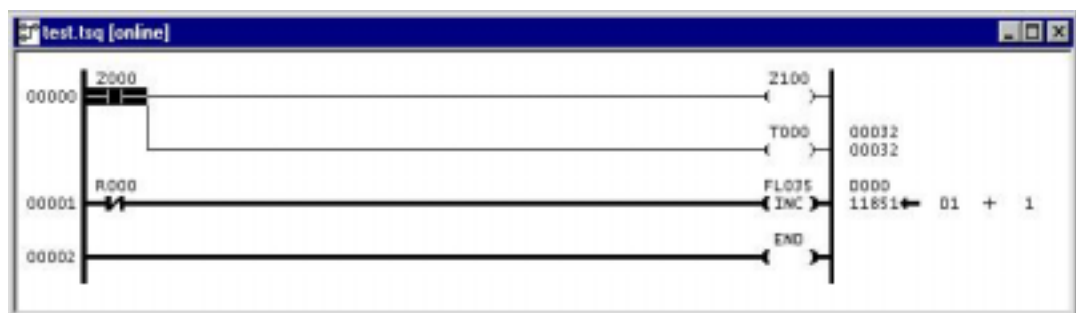
◆ Monitoring Ladder Program

(1) Select monitor mode

- ① Click [Monitor Mode] from the [View] menu.

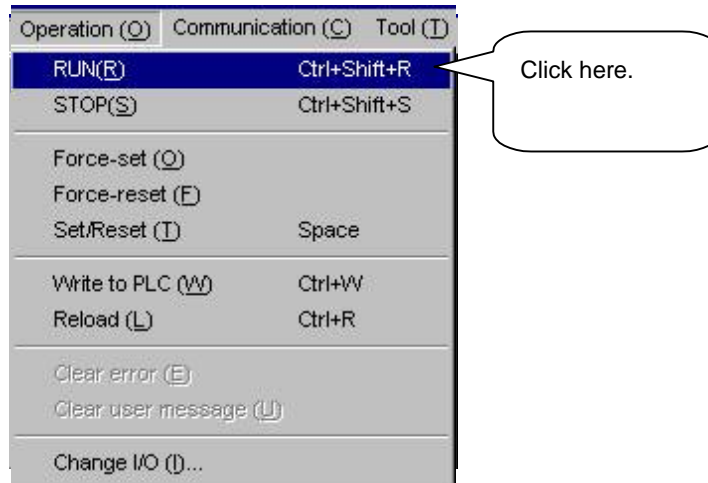


- ② The monitor mode replaces the edit mode.

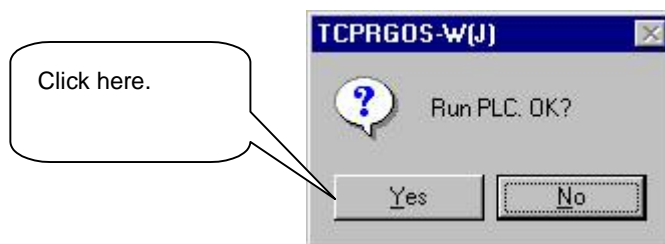


(2) Specify RUN or STOP of PLC and set contact compulsively

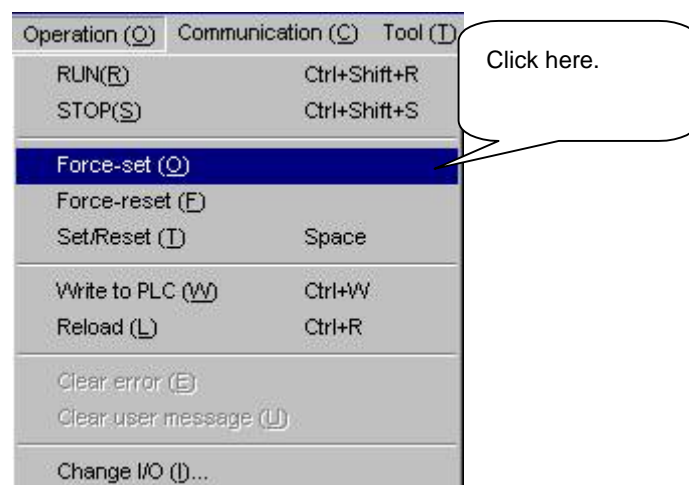
1) Click [RUN] from the [Operation] menu.



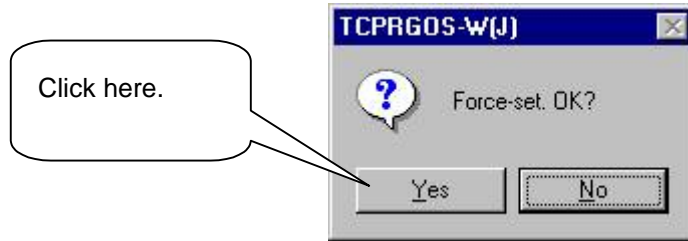
2) As the following message box appears, click the [YES] button to run the PLC.



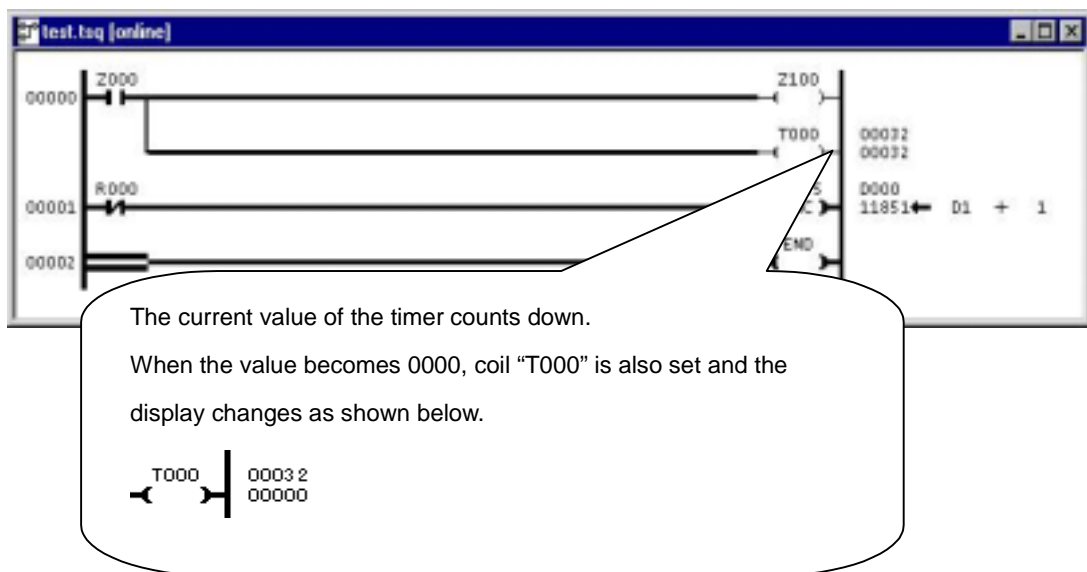
3) Make sure that the cursor is located at the normal open contact of "Z000" in circuit number 0000. Then click [Force Set] from the [Operation] menu.



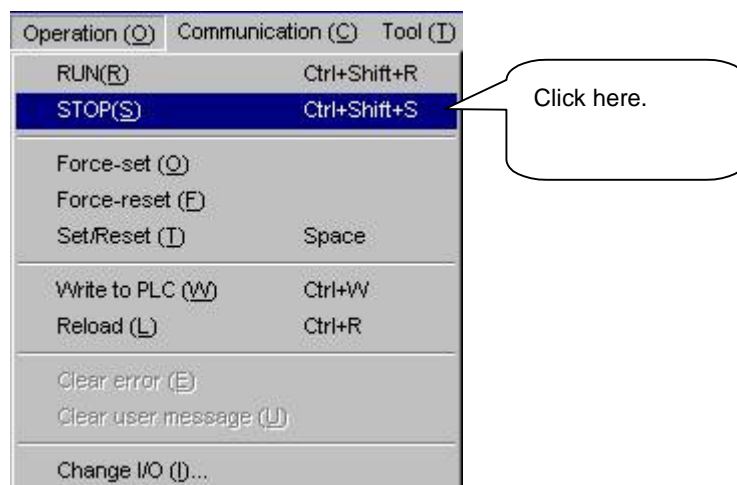
- 4) As the following message box appears, click the [YES] button.



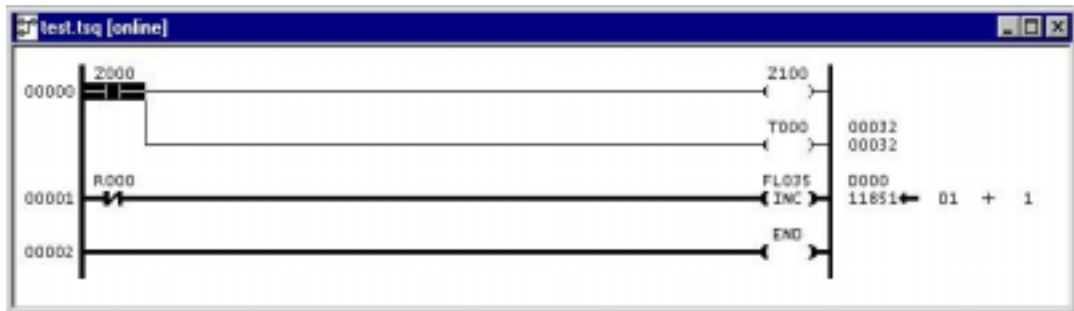
- 5) The normal open contact of “Z000” in circuit number 0000 is compulsively set.



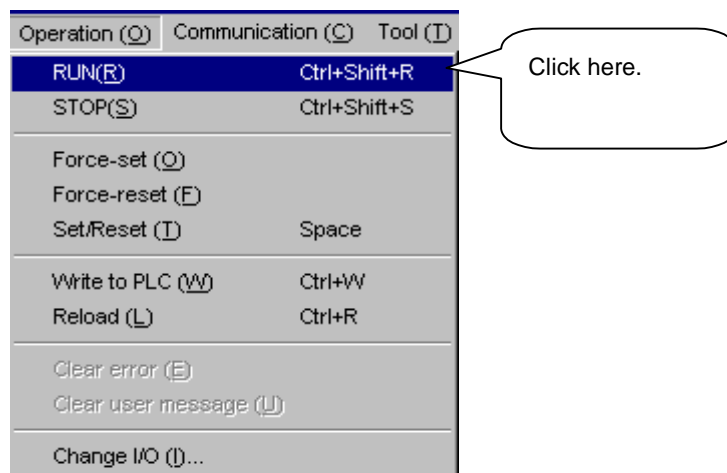
- 6) Click [STOP] from the [Operation] menu to stop the PLC.



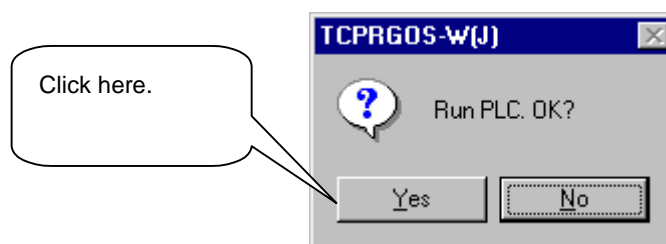
- 7) The normal close contact is set and monitored as shown below.



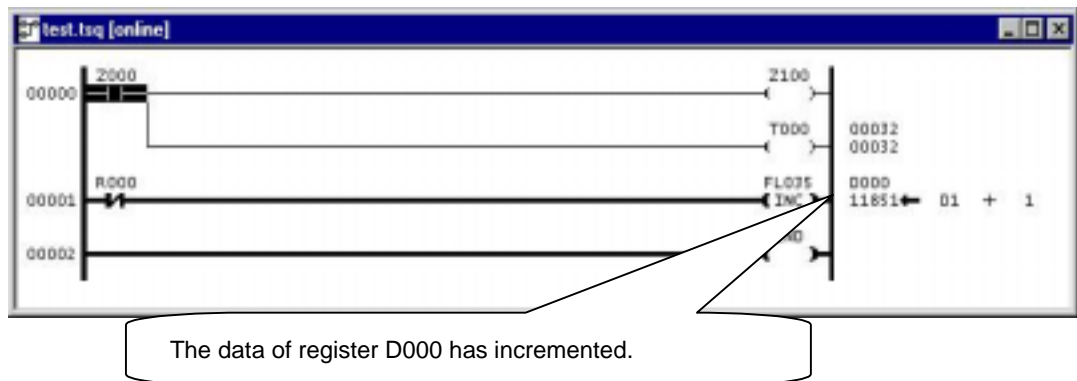
- 8) Click [RUN] from the [Operation] menu.



- 9) As the following message box appears, click the [YES] button to run the PLC.



10) Monitoring is performed as shown below.



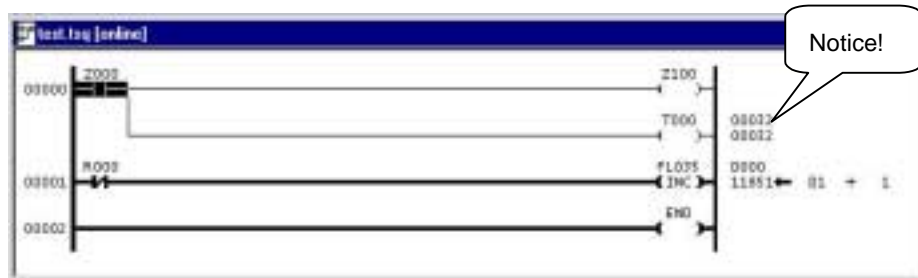
One Point Advice

- ☆ Changeover of decimal/hexadecimal notation

The notation comes in two (2) types; decimal notation and hexadecimal notation.

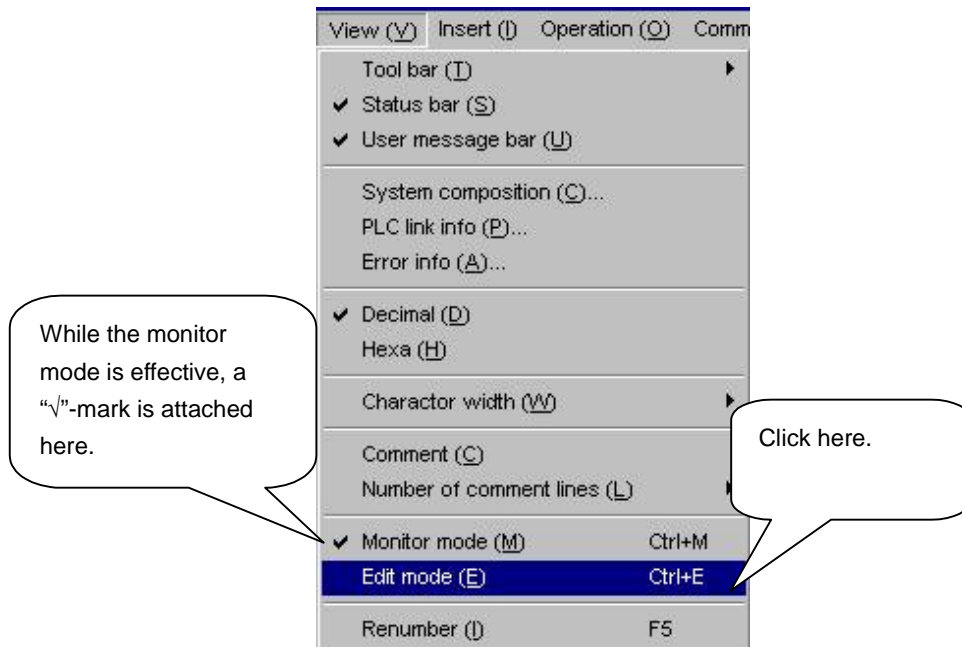
To change over the notation, click [Decimal] or [Hexadecimal] from the [View] menu. The menu item marked with “√” on the left side is the currently selected notation.

Example of hexadecimal notation:



(3) Exit from monitor mode

- ① Click [Edit Mode] from the [View], and the monitor mode terminates with the edit mode selected.



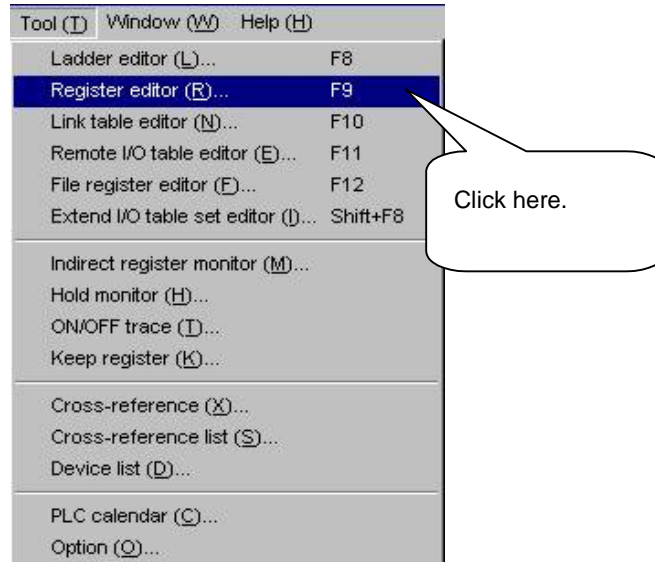
Caution !

In the monitor mode, editing of a circuit (modification, addition, deletion, etc.) is not allowed. Edit after selecting the edit mode. Modified circuit cannot be monitored unless written to the PLC. After writing it to the PLC, read and call the latest online ladder editor.

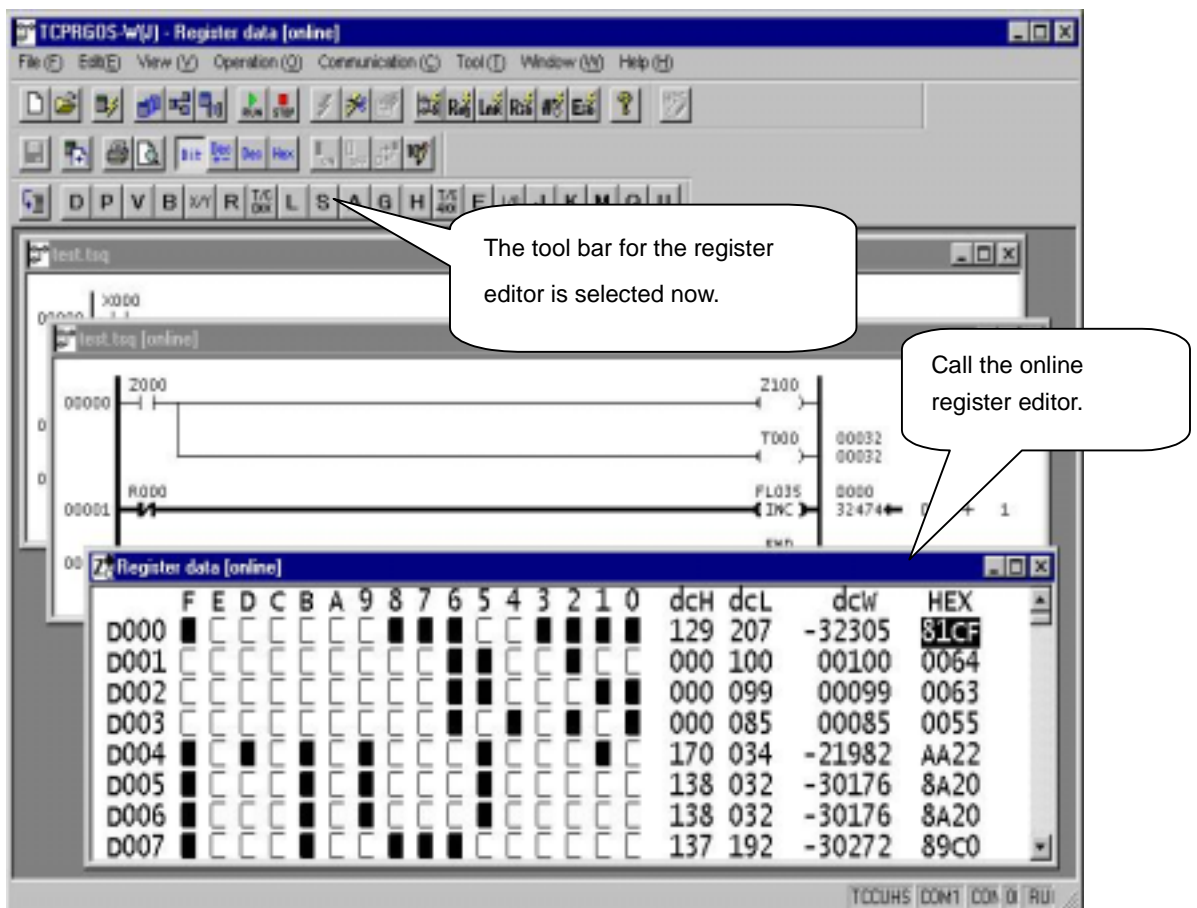
◆ Monitoring Online Register Data

(1) Start online register editor

- ① Click [Register Editor] from the [Tool] menu.

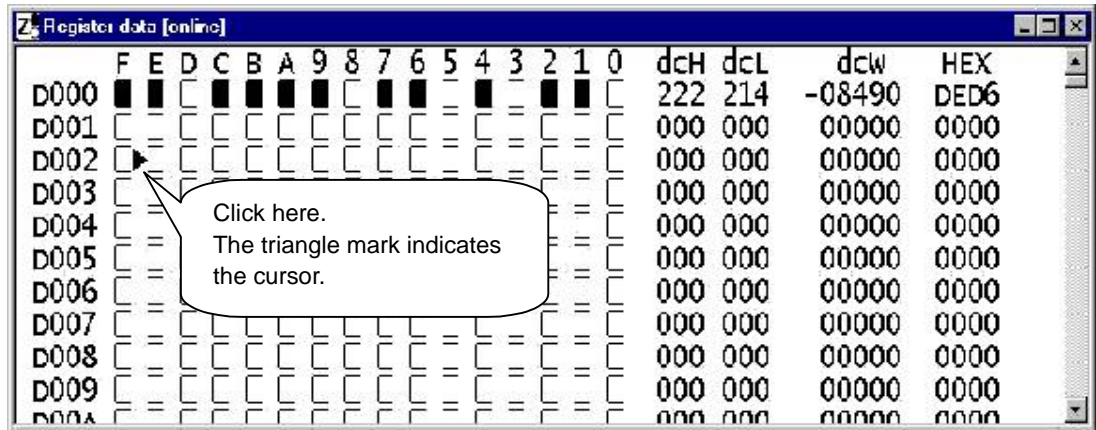


- ② The online register editor starts.

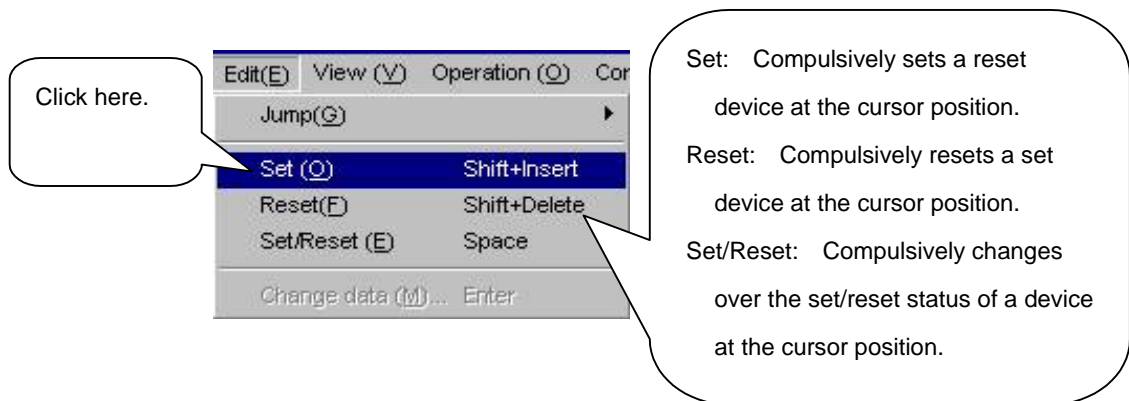


(2) Set device compulsively

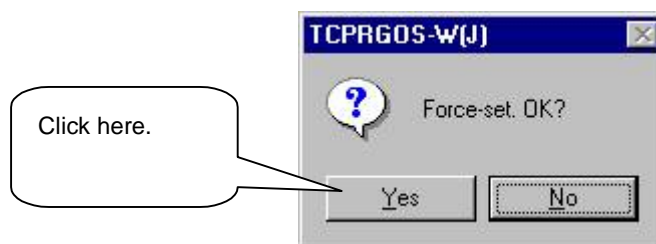
- ① Click Bit E of D002 by means of the mouse and move the cursor.



- ② Click [Set] from the [Edit] menu.



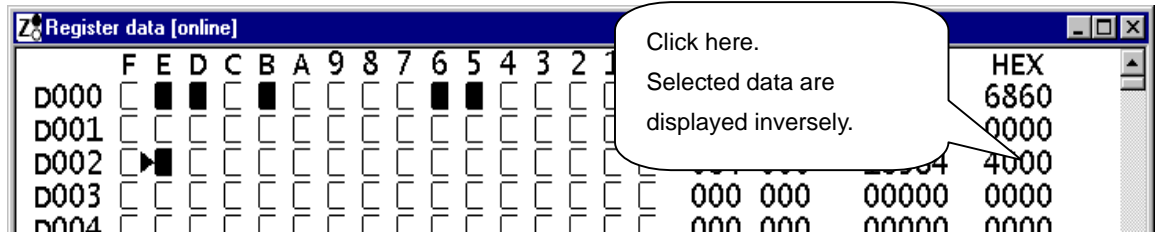
- ③ As the following message dialog appears, click the [OK] button.



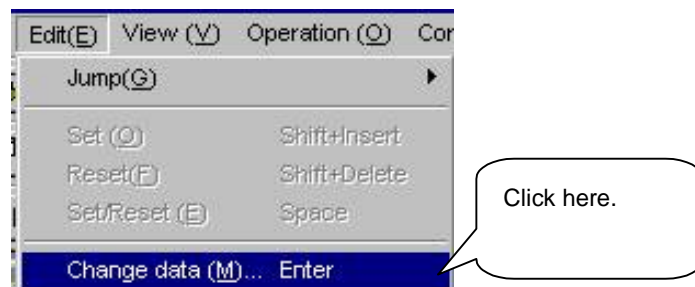
- ④ Bit E of D000 is set compulsively.

(3) Modify word data specified by address

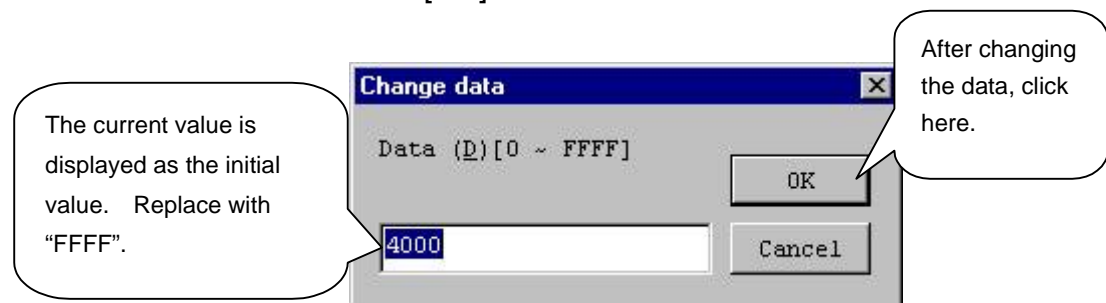
- ① Move the mouse pointer to the hexadecimal data area of D002, then click.



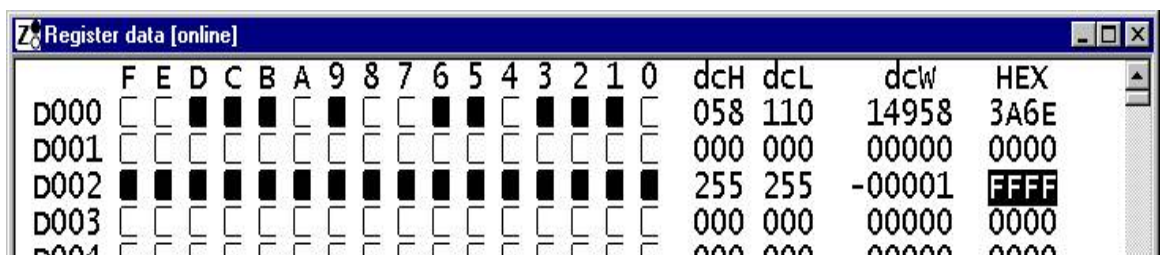
- ② Click [Change Data] from the [Edit] menu.



- ③ The following [Change Data] dialog box appears. Change the data to "FFFF" and click the [OK] button.



- ④ The data are changed.

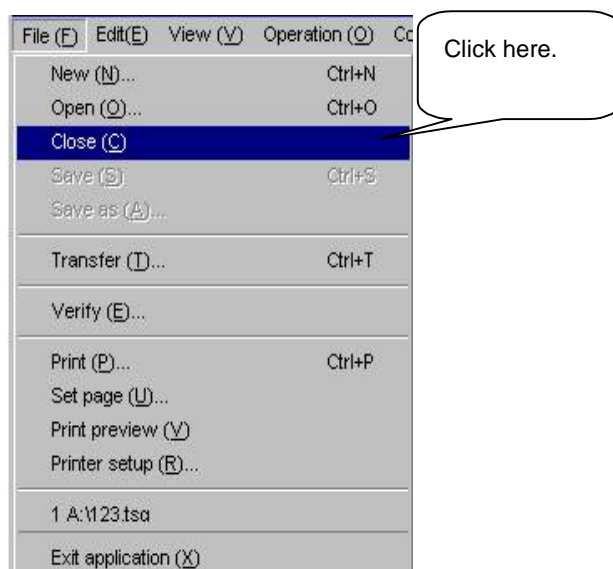


5. Let's Quit TCPRGOS-W

◆ Exiting from Each Editor and Quitting TCPRGOS-W

(1) Exit from active editor

- ① Click [Close] from the [File] menu. The active editor terminates.

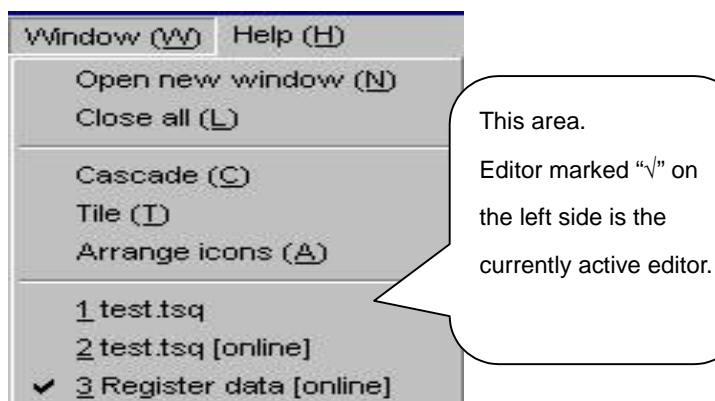


- ② Repeat Step ① above and quit all editors (online ladder editor, online register editor, offline ladder editor ("test.tsq")).

One Point Advice

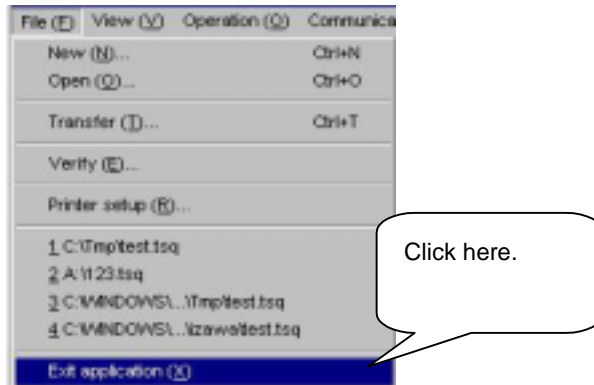
☆ Active editor

Indicates the editor which is operated currently. It is located on the forefront among the TCPRGOS-W windows. To change over the active editor, click the editor name shown in the "Window" menu.



(2) Quit TCPRGOS–W

- ① Click [Quit Application] from the [File] menu. The TCPRGOS–W terminates to close the window.



Caution !

You need not quit the TCPRGOS–W after closing all active editors. You can quit by only clicking [Quit Application] from the [File] menu with the editors opened. When change was made in any editor, appropriate message box appears to ask whether each change should be saved or not.

Edition No.	Revision	Revised Date	In Charge	Approved by
0	Newly prepared.	Apr., 2002		
1	Change of a font.	Jun.2004		
2				
3				
4				

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CHECKED BY:

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