SECTION 4 MDI OPERATION

MDI is an abbreviation for Manual Data Input and each block of data entered is executed as in automatic mode operation.

1. Operation Procedure

The operation procedure is described below:

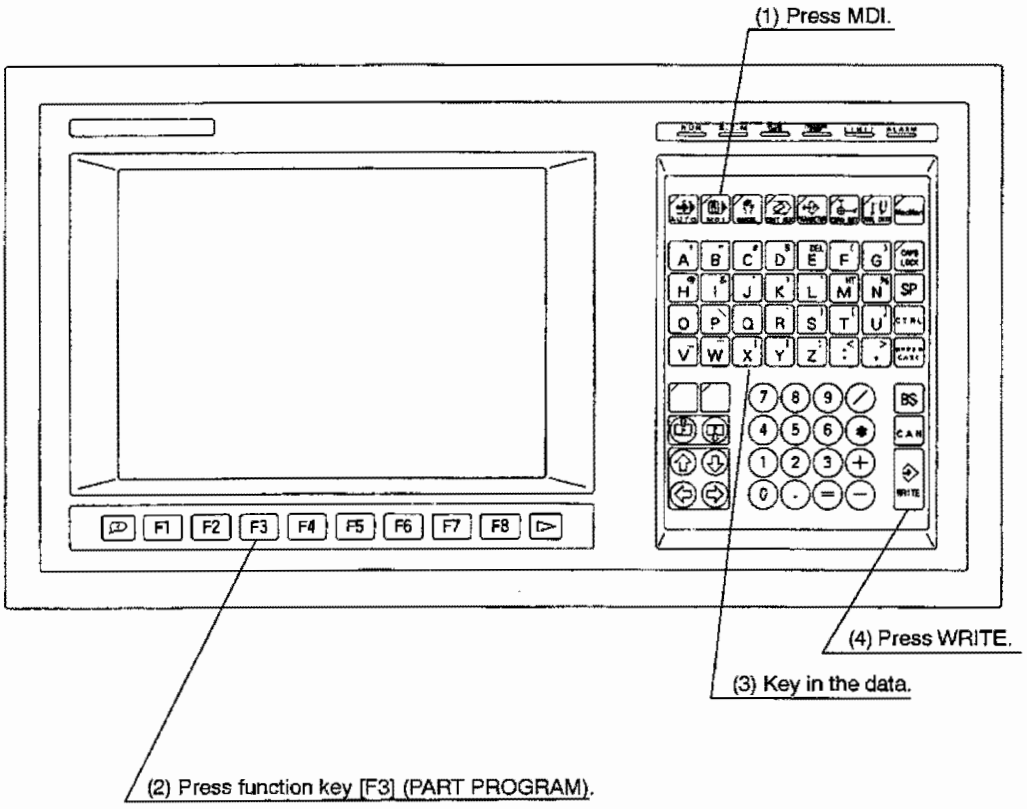


Fig. 4-1 MDI Operation

(1) Press the MDI key.

"IN" is displayed on the 21st line on the display screen.

(2) Press function key [F3] (PART PROGRAM).

The title ∗MDI PROGRAM∗ is displayed on the display screen.

If this display page is not given, press the PAGE key until this page is displayed.

Note that MDI operation is possible without this step.

(3) Enter the data of one block on the keyboard.

This data is displayed on the console line (21st line).

(4) Press the WRITE key.

The entered data is displayed in the buffer field of the MDI program display. The RTMDI (Return from MDI) Instruction is automatically inserted.

In the BUFFER field, only one block of commands may be entered. If an attempt is made to enter a block of commands when another block of commands is displayed in the BUFFER field, the commands presently displayed are cleared.

(5) Press the CYCLE START switch.

The input data is executed when this switch is pressed. The input data is transferred from the BUFFER field to the CURRENT field and the BUFFER field is cleared.

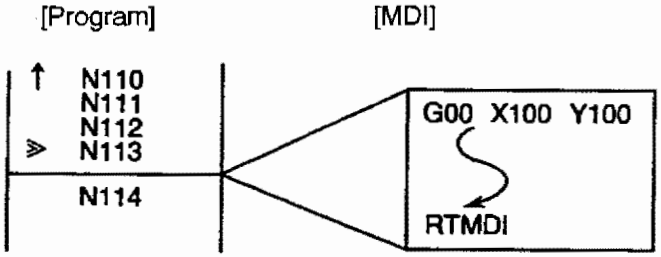
(6) If steps (3) to (5) are executed repeatedly, the NC operates successively.

2. Automatic Mode Operation and MDI Mode Operation

(1) During the execution of the automatic mode operation, the MDI mode operation may be inserted after interrupting the automatic mode operation.

(2) Switching the operation mode from the automatic to the MDI causes the control to halt after the execution of the commands in the block which has been read at the time of operation mode switching, thus permitting the entry of the data. Note that the block which has just been read is identified by the symbol ">>" on the display screen. (The block being executed is designated with "↑".)

When the operation mode is switched from the Single Block mode to the MDI mode, the control is placed in the MDI mode right after the completion of the block, once it has been executed.



(3) If the MDI mode is switched on during N110 execution by automatic operation (single block mode off), blocks up to N113 are executed and the machine stops operation. Then, if the machine is returned to the automatic mode, the program execution is continued from block N114 after several blocks are executed in the MDI mode.

(4) The commands entered the MDI mode are executed in the same manner as those in a program, and the modal state established in the MDI mode will remain active after the operation mode is switched back to automatic.

(5) When the MDI mode is selected while the cutter radius compensation function is active, the axis movement commands keyed in and executed in the MDI mode are also controlled by this function.

(6) The manually inputted data may be executed directly after the commands of the block which has been executed when the operation mode is switched from the automatic (single block mode off) to the MDI. That is, the data reading-in mode as in the single block mode can be set. This setting is made by bit 7 of NC optional parameter (bit) No. 2.

3. Subprogram Call in the MDI Mode Operation

(1) Although the CALL command (single call) may be activated in the MDI mode, the MODIN command (call of subprogram after axis movement) is not effective in this mode. For the call of a subprogram, the main program from which the subprogram is called should be selected before it is called in the MDI mode.

(2) During the execution of a subprogram, the single block mode may be turned on and off as needed. While the single block mode is off, the called subprogram is executed up to its end and then the control stops operation. If the single block mode is on, the called subprogram is executed by one block and the control stops. Pressing the CYCLE START switch after that causes blocks of commands to be executed sequentially block by block each time it is pressed. The entry of new data is not allowed until the completion of the called subprogram.

[Supplement]

1. The following commands cannot be specified in the MDI mode:

   Branch commands ..... GOTO and IF

   Commands used in schedule program ..... VSET, PSELECT, etc.

2. During the execution of a schedule program, the MDI mode operation is possible if a main program is not being executed.

3. The CYCLE START switch becomes effective when it is released after it is pressed as in the automatic mode operation.