6. Multi-file Transfer (MPIP)

The MPIP command is used to transfer multiple part program files at a time using the RS232C interface.

The following sub commands are provided.

Item	Command	Function
Multi-file read	MR	Reads multiple part program files from an external device and stores them to the memory.
Multi-file punch	MP	Outputs multiple part program files, stored in the memory, to a tape punch.
Multi-file verify	MV	Verifies multiple part program files, in an external device, against those in the memory.
Multi-file transfer end	Q	Quits the multi-file transfer mode.

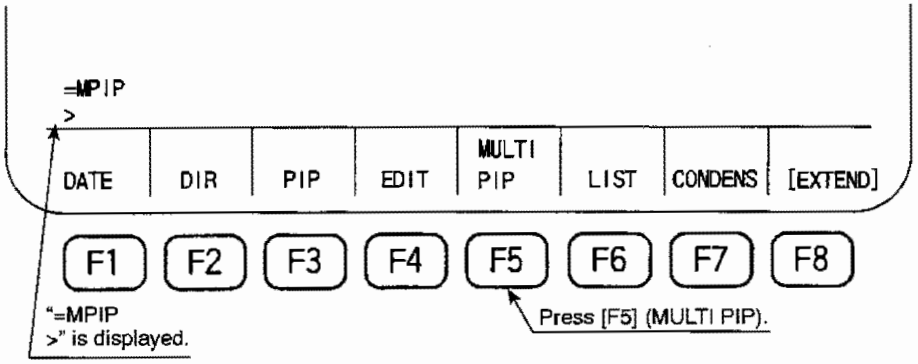
NOTICE : During file transfer processing, do not turn off the power supply. If the power supply is turned off during file transfer, the contents of file might be destroyed.

6-1. Multi-file Read

The multi-file read function reads multiple part programs from the external device and store them in the NC memory.

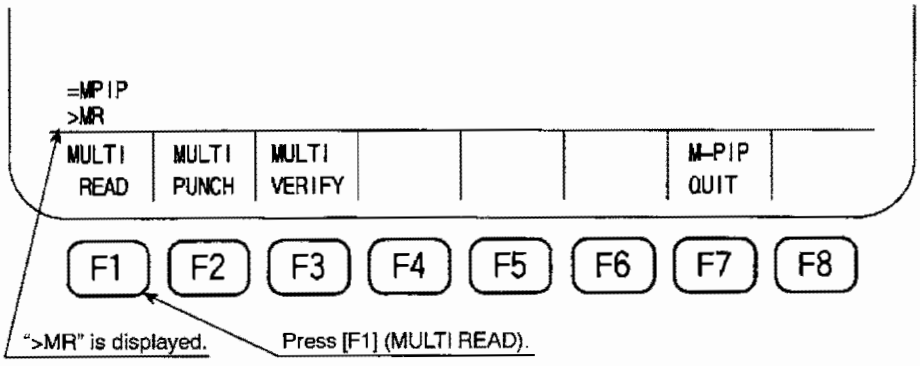
The operation procedure is indicated below:

(1) Press function key [F5] (MULTI PIP).



The function key names change as indicated in item (2).

(2) Press function key [F1] (MULTI READ).



"MR" is displayed on the console line.

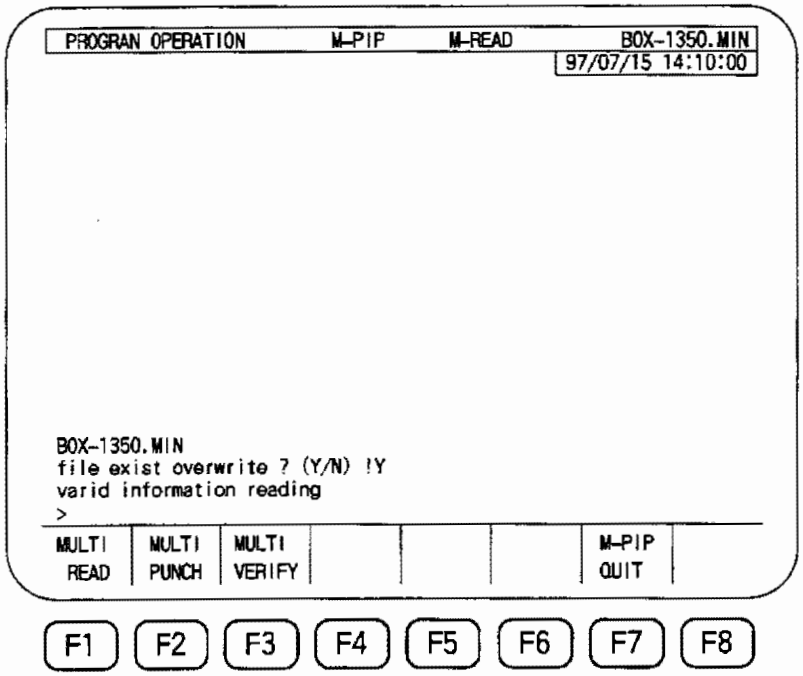
(3) Following ">MR", enter the file name of the file to be read using the keyboard and press the WRITE key.

The machining programs are read and stored in the NC memory.

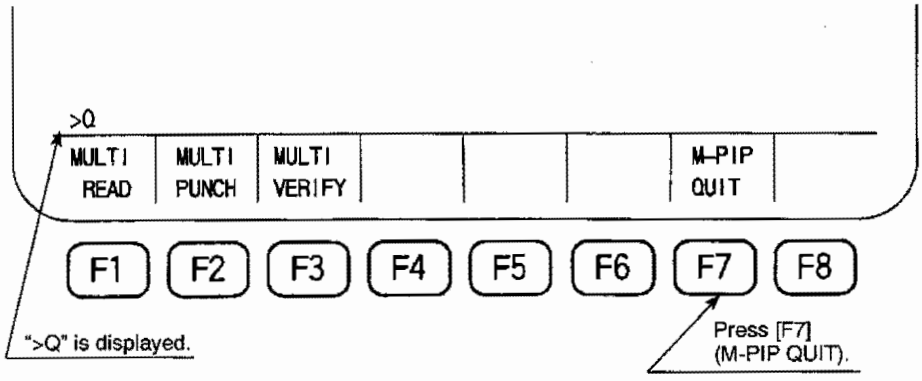
While the program is being read, "M-READ" and the file name are displayed at the upper right area of the screen.

After the start of program reading, "Valid information reading" is displayed on the console line.

At the completion of reading, ">" appears on the console line.



(4) Press function key [F7] (M-PIP QUIT).



The function key names return to those as displayed in item (1).

[Supplement]

Command format

>MP <input-device:><input-file-name><,<output-device:>><;option>WRITE

(a) input-device:

TT:, CN0:, CN1:, CN2:, CN3:, CN4:

If no input-device name is specified, the default device set for optional parameter (word) No. 57 is selected. (If "0" is set for this parameter, CN0: is selected.)

(b) input-file-name

Main file name: Alphanumerics (max. 16 characters), beginning with an alphabetical letter. Wild card ("*", "?") can be used.

Extension : Alphanumerics (max. 3 characters), beginning with an alphabetical letter. Wild card ("*", "?") can be used.

(c) output-device:

MD0:, MD1:, FD0:, FD1:, FD2:, FD3:

Default device is MD1:.

(d) option

Y: Unconditional overwrite; if the file of the same file name to be output already exists in the specified output device, the file is unconditionally overwritten in this operation.

[Supplement]

1. If the text (tape data) read from the input device does not agree with the specified input file name, it is skipped and not stored to the output device.
2. If input file name is omitted, input file name of "*.*" is assumed and all read texts are stored to the specified output device.
3. If available space in the output device becomes full during reading, an error occurs and communication is shut off. In this case, the file being read is not stored.
4. If the file of the same file name already exists in the output device while no option Y is specified, the following messages are displayed on the console line.

   A.MIN
   file exist overwrite ? (Y/N) !

   If "Y" is input, the existing file is overwritten, and if "N" is input, the text to be read is skipped and the next file is read.
5. If an output file name is specified, an error occurs.

   5213 File name, error 11
6. If the read file agrees with the file selected for DNC-B mode operation, the text to be read is skipped and the next file is read.

   5226 Main program file selecting 'A.MIN
7. If the read text already exists in the output device and if it is protected, the text to be read is skipped and the next file is read.

   'A.MIN File write protect

Example 1: >MP ＊.MIN [WRITE]

All files with extension ".MIN" are read and stored to MD1:.

Example 2: >MP BOX1???.MIN [WRITE]

All files beginning with "BOX1" and with extension ".MIN" are read and stored to MD1:. Files such as BOX1001.MIN and BOX1002.MIN are read.

Example 3: >MP [WRITE]

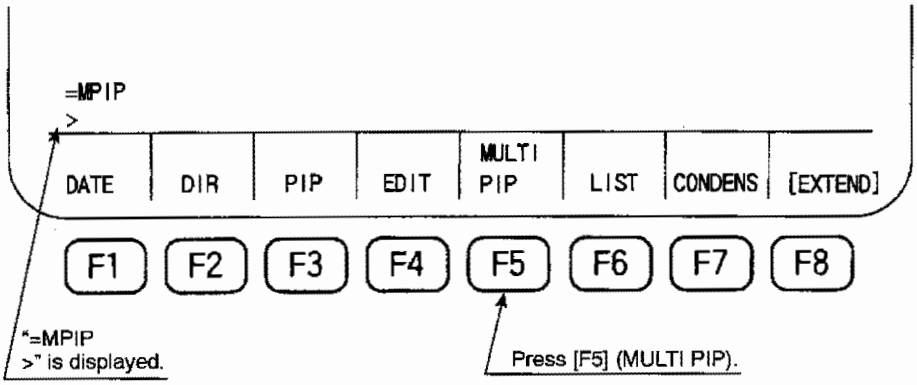
All input files are read and stored to MD1:.

6-2. Multi-file Punch

The multi-file punch function outputs multiple part programs, stored in the NC memory, to the punch device.

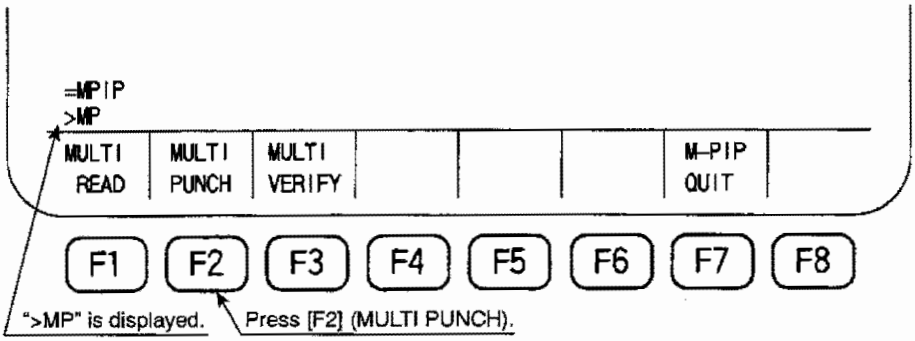
The operation procedure is indicated below:

(1) Press function key [F5] (MULTI PIP).



The function key names change as indicated in item (2).

(2) Press function key [F2] (MULTI PUNCH).



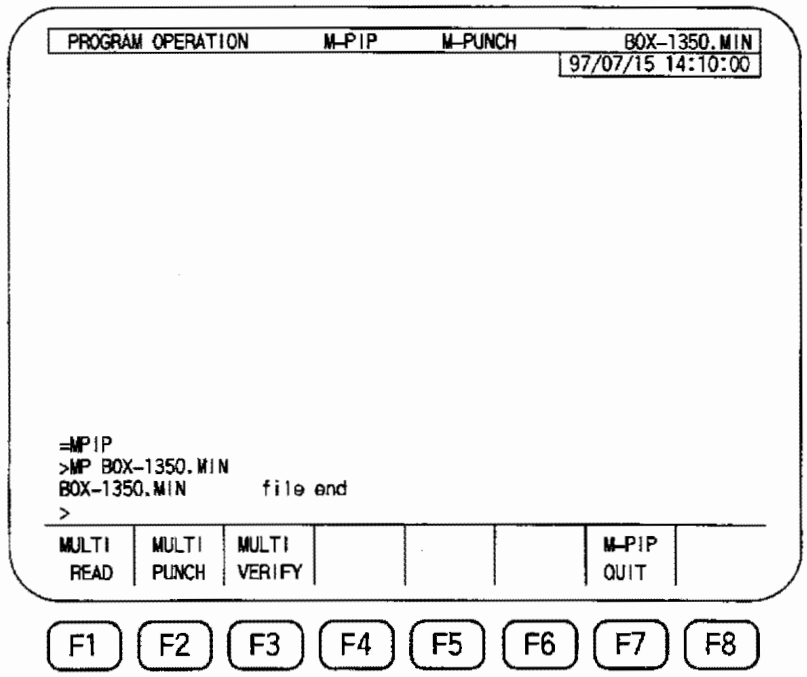
"MP" is displayed on the console line.

(3) Following ">MP", enter the file name of the file to be output to the punch device using the keyboard and press the WRITE key.

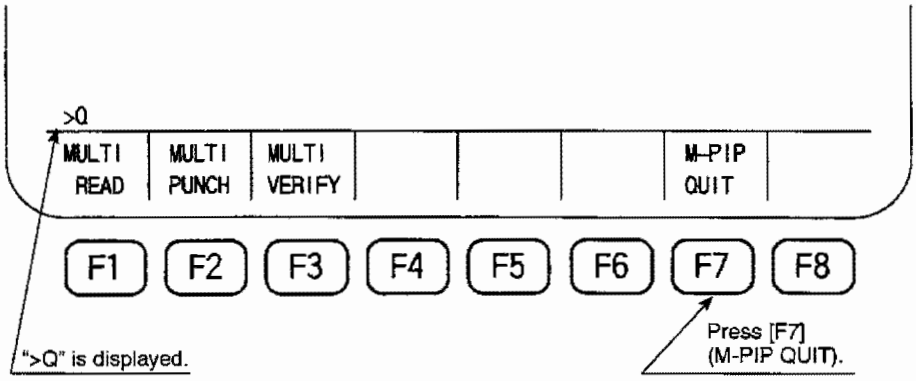
The part programs are output to the punch device.

While the program is being output to the punch device, "M-PUNCH" and the file name are displayed at the upper right area of the screen.

At the completion of output, "file end" appears on the console line, then ">" appears.



(4) Press function key [F7] (M-PIP QUIT).



The function key names return to those as displayed in item (1).

[Supplement] 1.

Command format

>MV <input-device:><input-file-name><,<output-device:>><;option>WRITE

(a) input-device:

MD0:, MD1:, FD0:, FD1:, FD2:, FD3:

Default device is MD1:.

(b) input-file-name

Main file name : Alphanumerics (max. 16 characters), beginning with an alphabetical letter. Wild card ("*", "?") can be used.

Extension : Alphanumerics (max. 3 characters), beginning with an alphabetical letter. Wild card ("*", "?") can be used.

(c) output-device:

TT:, CN0:, CN1:, CN2:, CN3:, CN4:

If no output-device name is specified, the default device set for optional parameter (word) No. 45 is selected. (If "5" is set for this parameter, CN0: is selected.)

(d) option

P: Only protected files are output.
C: Only files which are not protected are output.

2. If input file name is omitted, input file name of "*.*" is assumed and all files are output to the punch device.

3. If none of the specified files exists in the input device, file is not output.

File not found

4. If an output file name is specified, an error occurs.

5213 File name, error 11

5. If only one file is output, it does not cause an error.

Example 1: >MP *.MIN [WRITE]

All files with extension .MIN in MD1: are output.

Example 2: >MP BOX1???.MIN [WRITE]

All files beginning with "BOX1" and with extension ".MIN" in MD1: are output. Files such as BOX1001.MIN and BOX1002.MIN are output.

Example 3: >MP [WRITE]

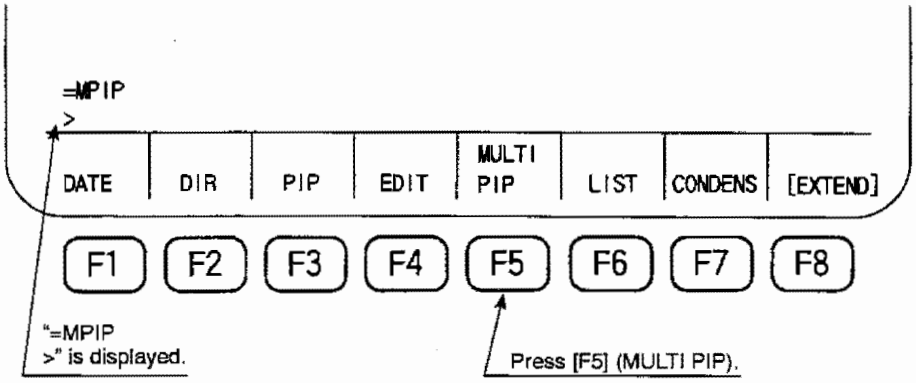
All files in MD1: are output.

6-3. Multi-file Verify

The multi-file verify function verifies multiple machining programs, stored in an external device, against those in the NC memory.

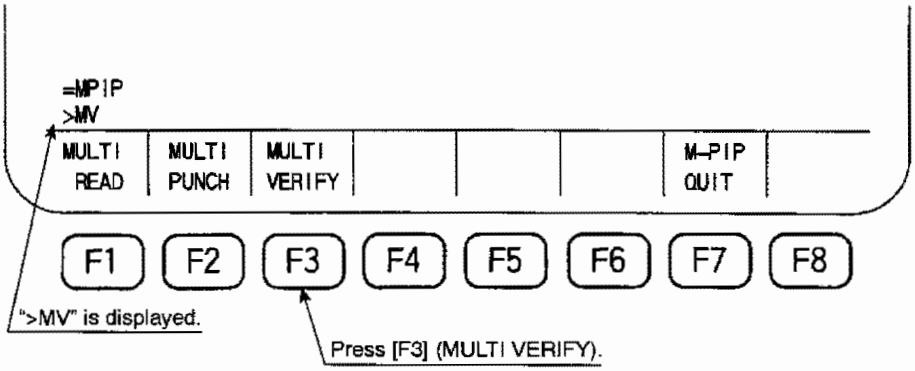
The operation procedure is indicated below:

(1) Press function key [F5] (MULTI PIP).



The function key names change as indicated in item (2).

(2) Press function key [F3] (MULTI VERIFY).

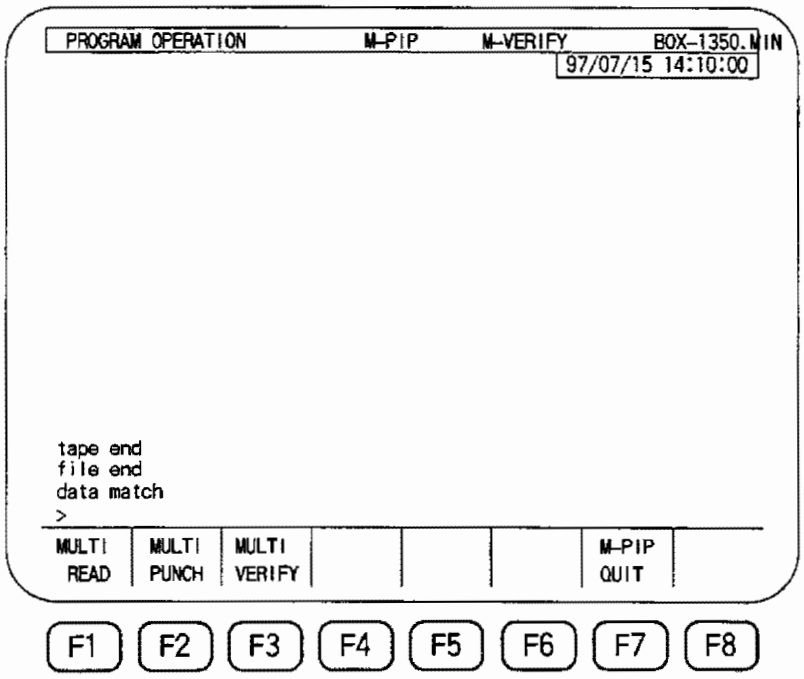


"MV" is displayed on the console line.

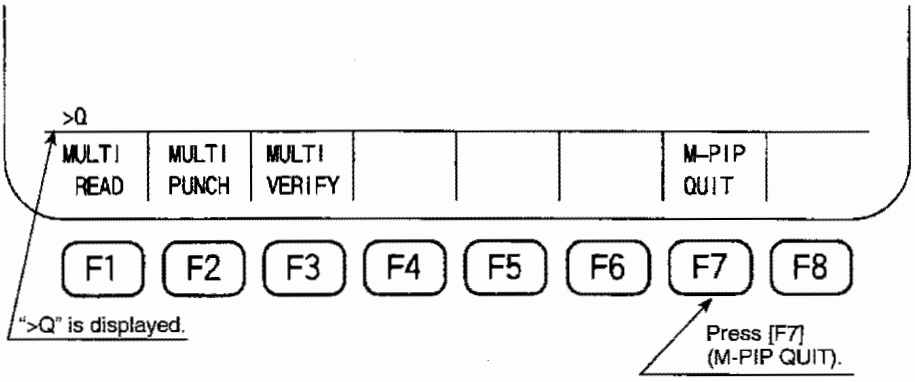
(3) Following ">MV", enter the file name of the file to be verified using the keyboard and press the WRITE key.

The specified part programs are read and compared to those stored in the NC memory.

While the program is being verified, "M-VERIFY" and the file name are displayed at the upper right area of the screen.



(4) Press function key [F7] (M-PIP QUIT).



The function key names return to those as displayed in item (1).

[Supplement] 1.

Command format

>MV <input-device:><input-file-name><,<output-device:>>WRITE

(a) input-device:

TT:, CN0:, CN1:, CN2:, CN3:, CN4:

If no input-device name is specified, the default device set for optional parameter (word) No. 57 is selected. (If "0" is set for this parameter, CN0: is selected.)

(b) input-file-name

Main file name : Alphanumerics (max. 16 characters), beginning with an alphabetical letter. Wild card ("*", "?") can be used.

Extension : Alphanumerics (max. 3 characters), beginning with an alphabetical letter. Wild card ("*", "?") can be used.

(c) output-device:

MD0:, MD1:, FD0:, FD1:, FD2:, FD3:

Default device is MD1:.

2. If the text (tape data) read from the input device does not agree with the specified file name, it is skipped and not verified.

   In this case, the following message is displayed.

   5210 Input file name not same α '(tape) file name'
   α: Number of unmatched files

   If no files match with the tape data, the following message is displayed at the end.

   5210 Input file name not same error β
   β: Total number of unmatched files

3. If input file name is omitted, input file name of "*.*" is assumed and those which match the read texts are verified.

4. If unmatch is found, the corresponding line is displayed on the console line with unmatch character blinking on and off.

   The message "verify continuing (Y/N) !" is displayed. To continue verify, input "Y", then the program verify restarts from the next line. If "N" is input, the file containing the unmatch is skipped and program verify is executed from the next file.

   For each file, the result of verify is displayed:

   (a) If all data matched, the following message is displayed and the next file is continuously verified.

   tape end . file end . data match .

(b) If file data remains although text (tape data) has been read to the end, the following message is displayed on the console line and the next file is continuously verified.

tape end
data match

(c) If tape data remains although file data has been read to the end, the following message is displayed on the console line and the next file is continuously verified.

5. If an output file is output, it does not cause an error.

5213 File name, error 11

Example 1: >MV *.MIN [WRITE]

Verify is made with the files which have the same file name as the input files, having extension .MIN.

Example 2: >MV BOX1???.MIN [WRITE]

Verify is made with the files which have the same file name as the input files, having extension .MIN and beginning with BOX1. The files such as BOX1001.MIN and BOX1002.MIN are examples of such files.

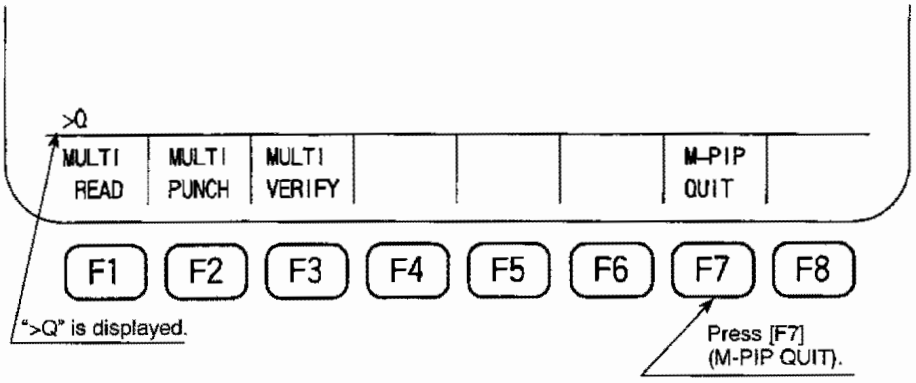
Example 3: >MV [WRITE]

Verify is made for all input files with the files having the same file name.

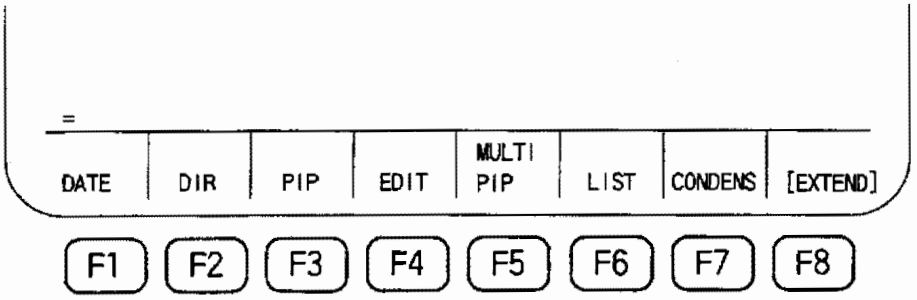
6-4. Quitting Multi-file Transfer

This function is used to quit the multi-file transfer mode and to return to the program operation mode.

(1) Press function key [F7] (MULTI QUIT).



">Q" is displayed on the console line and the system quits the multi-file transfer mode. The screen returns to the program operation mode screen and the function key names as indicated below are displayed.

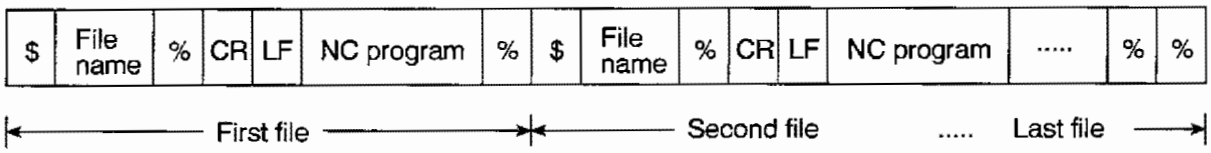


6-5. Notes on Using Multi-file Transfer Sub Commands

(1) Communication Text Format

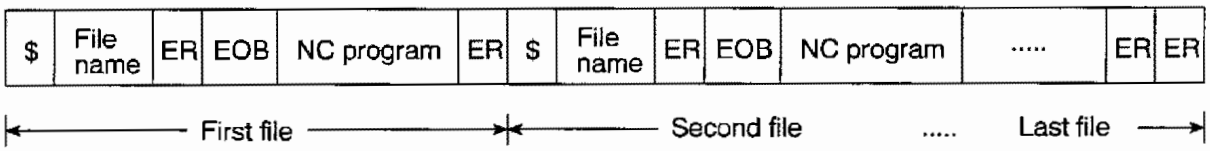
The text format used in multi-file transfer operation differs from the format used in a single file transfer operation. The format used in multi-file transfer operation is indicated below.

(a) ISO code



1) The file name is preceded by "$" symbol.
2) The data which follows "% CR LF" is regarded as the machining program.
3) The program end code is fixed to "%". (NULL code is not allowed.)
4) The end of communication code is fixed to "%%". (NULL code is not allowed.)
5) Leading and trailing feed holes (NULL or space) are not provided.

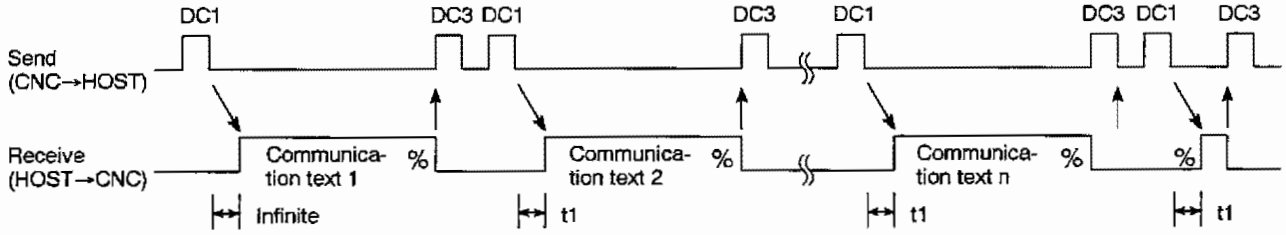
(b) EIA code



1) A file name is preceded by "$" symbol (set for optional parameter (bit) No. 31).
2) The data which follows "ER EOB" is regarded as the part program.
3) The program end code is fixed to "ER". (NULL code is not allowed.)
4) The end of communication code is fixed to "ER ER". (NULL code is not allowed.)
5) Leading and trailing feed holes (NULL or space) are not provided.

(2) Timing Chart

(a) Multi-file read and multi-file verify (CNC: master)



[Supplement] 1. The DC3 code is output in the following cases.

(1) Just after receiving the text file name

(2) Just before writing text name to output device (every 252 characters)

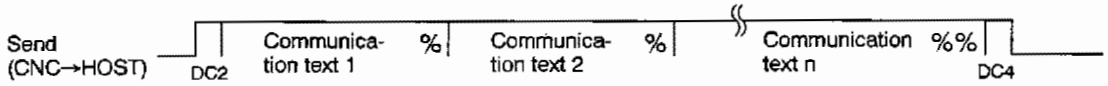
(3) Just after receiving "%" code at the end of a part program

(4) Just after receiving "%%" code which indicates the end of communication.

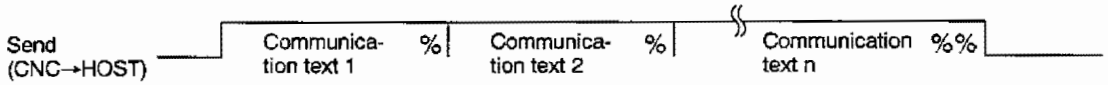
2. t1

"t1" indicates the "RS232C ready wait time" set for parameter.

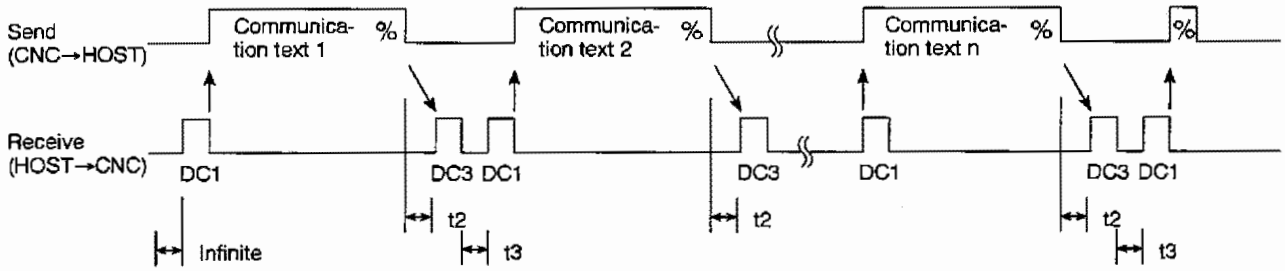
(b) Multi-file punch (CNC: master, DC2/DC4 code output)



(c) Multi-file punch (CNC: master, DC2/DC4 code not output)



(d) Multi-file punch (CNC: slave)



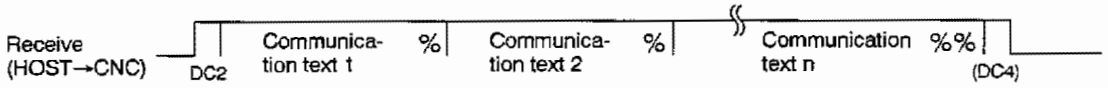
[Supplement] 1. t2

"t2" indicates the "RS232C ready wait time" set for parameter.

2. t3

"t3" indicates the "RS232C ready wait time" set for parameter.

(e) Multi-file read and multi-file verify



(3) Parameter Settings

Before connecting an external device, it is necessary to set the following parameters.

For details of parameters, refer to III "PARAMETERS".

(a) Optional parameter (bit) No. 1, 8, 12, 13, 14, 21, 22, 40

[Supplement]

1. In multi-file transfer operation, since the tape delimiter code is fixed to "%" or "ER", the parameter (No. 1, bit 3) used for this setting is not used.
2. Verify in tape reading is effective only when the input device is TR: (tape reader). Therefore, the parameter (No. 1, bit 4) used to set the device is not used in multi-file transfer operation.
3. The multi-file transfer operation supports only standard DC code. Therefore, if the parameter setting* is for "DC code control type 2" or "no DC code control", an error occurs.

   Bit 5 and 6 of No. 8, 13, 14, and 15:

   Setting should be ON for bit 5 and OFF for bit 6.

   5261 Device name error 1 'CN0'
   ↑
   Varies depending on the selected device name
4. In multi-file transfer operation, since file name punch is fixed to "yes", the parameter (No. 12, bit 2) used for this setting is not used.
5. In multi-file transfer operation, since feed hole punch is fixed to "no", the parameter (No. 12, bit 4 and bit 5) used for this setting is not used.

(b) Optional parameter (word) No. 6, 34 to 42, 45, and 57

[Supplement]

1. In multi-file transfer operation, if "5" is set in the punch device name designation (No. 45), it selects "CN0:" instead of "PP:".
2. In multi-file transfer operation, if "0" is set in the tape read device name designation (No. 57), it selects "CN0:" instead of "TR:".