CHAPTER 5

EDITING

5.1 PROGRAM EDITING METHODS

Editing functions on the R2E3 are performed two ways:

1. In the Front Panel Edit (Quick Edit) mode using the keypad functions provided within the system.

2. In the full edit capability while in the Set Up mode using a local keyboard.

5.2 QUICK EDIT

Front Panel Edit keys are found in the yellow portion of the keypad, see Figure 5-1. The edit feature is active in the Set Up, and Run modes and is provided to enable quick modification or additions to existing part programs. Changes can be accomplished on a block-by-block basis. Quick Edit is not intended for extensive editing or for entering entire part programs for execution.

Changes to specific blocks in existing part programs are made by deleting the entire block then reentering the block with the appropriate changes made. The following list of keys and their assigned functions will describe the use of the "quick edit" feature.

CAUTION

Canned cycles can not be deleted or inserted into, when in the Edit mode. Doing so may cause machine corruption.
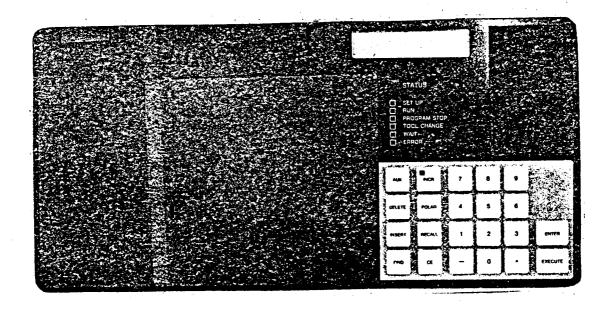
Figure 5-1: Quick Edit Controls Front Panel

5.2.1   FIND

This enables searching for a particular part program block
sequence number, tool number, or part program number. Each time
the FIND key is pressed, the screen messages will advance through
N, T and part number. Entering an appropriate value and pressing
EXECUTE will search the part program for the desired value.   The
search will begin at the current program line, continue to the
end of the text and move on to the top of the   program.   If   no
match is found, NF will be displayed. If the block is found, the
display will read the first 40 characters of the block.

Example:

```
---------------------------------------------
|F I N D               N                     |
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
|                                            |
---------------------------------------------
```

Key in 100 and EXECUTE the screen will display:

```
------------------------------------------------
|N 1 0 0 G 0 G 9 0 X 1   0 Y 2 . 0 Z .  |
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
|5 0 0 S 2 4 0 0 T 3 M 6                  |
------------------------------------------------
```

Using the FIND key then the EXECUTE key without an argument will scroll up the next line.

Using FIND in the Run mode will cause definition blocks to be executed.

NOTE

In Run mode the program search starts at the current line and continues to the end of the program. The search does not wrap around in Run mode.

5.2.2   INSERT

When the INSERT key is pressed the current line is displayed. INSERT enables the insertion of a part program text in front of the current line when the EXECUTE key is pressed. The MDI entry is used to create the new text using the available G codes in the MDI mode. When EXECUTE is activated to enter the line, the Insert mode is ended.

NOTE

After AUTO RUN the display may be showing the last line of the program but the line pointer has been set to the top of the program. An insertion at this time would add to the beginning of the file. To avoid this always search to the block after the proposed insertion by using the FIND key, then INSERT. INSERT will not be active when running a canned cycle.

5.2.3 DELETE

Use of the DELETE key erases the current line. When the DELETE key is pressed the current line is displayed on the screen. When the EXECUTE key is pressed, the first 40 characters of the next part program block will be displayed.

NOTE

DELETE will not be active when running a canned cycle.

5.2.4 RECALL

This backs up the part program pointer one line and displays the first 40 characters of the new line.

5.2.5 AUX

The AUX key will permit the operator to enter M, S, and T Codes in MDI, MDI Store or Insert. These codes do not appear as a routine function in the menu presentation provided in these modes.

5.2.6 INCR

Use of this key allows the operator to specify an incremental distance for an axis move rather than in absolute coordinates. When in INSERT, MDI or MDI STORE it will enter either a G90 or a G91.

5.2.7 POLAR

POLAR input enables replacement of X, Y input with R, A, I, J where R is the polar radius, A is angular distance from the positive (+) X axis, and I & J are the pole centers. POLAR is active in MDI, MDI STORE and INSERT modes. Pressing the POLAR key a second time will revert the entry to the rectangular coordinate system.

5.2.8 "0 - 9", "." (Decimal)

Numerals as needed for data input.

5.2.9 "-" (Minus Sign)

Minus sign is required for entering negative data; absence of sign assumes a positive value.

5.3 FULL EDIT METHOD

5.3.1 Description

The Editor enables the operator to input, change or delete the part program via a local console such as a teleprinter or CRT. The Editor has two modes of operation, Command mode and Text mode.

1. Command mode is used to control the operation of the Editor. In Command mode the operator may list, alter or manipulate the part program. The operator may place the line pointer at a specific line for these purposes when in Command mode.

2. Text mode is used to input new program text blocks.

The Editor is entered by pressing the LOAD/CLEAR/EDIT button on the Front Panel, and selecting EDIT. If the spindle is on when EDIT is entered, it will be turned off. If a terminal is not attached to the local port of the R2E3, the Editor may be exited by pressing only the LOAD/CLEAR/EDIT key.

Access to the text Editor is through serial Port A (active 20ma current loop or RS-232C compatible).

5.3.2 Editor Commands

Most commands consist of one character. Some commands are followed by a list of arguments. Command characters preceded by a "^", such as "^R", are control characters. They are formed by holding down the "CTRL" key and pressing the desired character at the same time.

Command mode:

A Append string: Appends the character string following A to the end of the current line and

prints the entire line at the terminal.
Syntax: A string to append

B   Bottom: Sets the line pointer to the bottom (end) of the text buffer.
Syntax: B

C   Change: Replaces the old string specified with the new string specified in the current line only. Any delimiter may be used.
Syntax: C\old string\new string

D   Delete: Delete the specified number of lines starting with the current line and print the new current line. The argument, n, must be in the range of 0-999. If 0, or a null argument, is given, the current line will be deleted.
Syntax: Dn or D

F   Find text: Find the specified string. The search begins with the next line and is in the forward direction only. If the string is not found <NF> will be printed at the terminal. The space between the 'F' and the string is not optional.
Syntax: F string

I   Insert: Insert new program text. This command puts the editor in the Text mode. Text is inserted in front of the current line. If there is not enough room in the text buffer for the line being inserted the message <NR> is printed. When less than enough space for 132 characters is left in the buffer the message <AF> is printed. To return to Command mode after inserting text, a null line must be entered <CR>.

If a string is included after the letter "I" the command will be interpreted as a single line insert and the string will be inserted as a new text line without changing the mode. A space between the "I" and the string is an optional delimiter. This mode is used to enter new data from an external TTY connected to Port A.
Syntax: I or Istring or I string

KI   Kill: Delete the entire text buffer.
Syntax: KI

L   List: Lists the entire text buffer at the
                        terminal. Listings may be suspended,
                        resumed and aborted through the use of
                        CONTROL Q, CONTROL S and CONTROL O.
                        Syntax: L

N   Next: Moves the line pointer forward or
                        backwards an integral number of lines.
                        "n" must be in the range of -999 to 999.
                        Syntax: Nn or N-n or N

^O   Abort: This will cause the print or list in
                        progress to be aborted.
                        Syntax: Press the letter "O" while
                        holding the CTRL key down.

P   Print: Print the current line or print n lines
                        beginning with the current line. The
                        argument must be in the range of 0 to
                        999.
                        Syntax: P or Pn

^P   Punch tape: This command will cause the contents of
                        the   part program buffer to be
                        transmitted to the local device in the
                        format: 24 inches of leader (NUL),
                        rewind stop code, the part program text,
                        E, 24 inches of trailing NULs.
                        Syntax: Press the letter P while
                        holding the CTRL key down.

^S   Stop print: This will cause the print or list in
                        progress to be temporarily suspended.
                        Syntax: Press the letter "S" while
                        holding the CTRL key down.

M   Mass modify: Replace all incidents of the old string,
                        starting with the current line, with the
                        new string, until the end of text is
                        reached. Any delimter may be used.
                        Syntax: M\old string\new string

R   Replace: Replace line with new text.   This
                        command deletes the current line and
                        replaces it with the specified text.
                        Syntax: R text

^R   Repeat the line just typed.

^Q   Resume: This will cause a suspended print or
                        list to be resumed.
                        Syntax: Press the letter "Q" while
                        holding the CTRL key down.

T   Top: Moves the line pointer to the top (start) of the buffer.
Syntax: T

^U   Delete line being typed. If <CR> has not been typed this will delete the line being typed.
Syntax: Press the letter "U" while holding down the CTRL key.

^Z   Exit the Editor. This will return the R2E3 to Set Up mode and print the EXIT message.
Syntax: Press the letter "Z" while holding down the CTRL key.

<CR> Carriage return: Prints the next line in the buffer and makes it the current line, when not preceded by a command character. Otherwise <CR> serves as the terminator for command lines.

Text Mode:

<Rubout>, <DEL>   The last character typed is deleted.

^U   The line just typed is deleted.

<CR>   Returns the Editor to Command mode if not preceded by any other character. Otherwise the text preceding the carriage return is inserted in the part program text.

^R   Repeat the line just typed.