6.2.3 AUTOMATIC TOOL LENGTH MEASUREMENT† (CONT'D)

g. Depress the WRITE & RETRACT button. The control executes the following operation.

i. The control stores the difference between home position and base position, that is, move measurement value (ML) as the value specified by the offset number.

$ML = (-Z_1) - (B)$

ii. The tool automatically returns in the Z-direction to the home position in rapid traverse.

iii. The tool offset number is increased by one in preparation for next writing of offset value.
(When it is H99, H01 is designated.)

h. Exchange the tool with a next tool by manual operation or by MDI operation. Even when the MDI mode is switched on, the MEASUREMENT lamp remains lighted. Return to the MANUAL mode afterwards.

i. Repeat the processes f. through h. to store all the required offset values.

j. Push the MEASUREMENT key.

The MEASUREMENT lamp goes out, and the automatic writing function is turned off. The length measuring data also disappears from the CRT.

NOTES:

- In this automatic writing mode, the measured values are stored in the absolute values.
- When the home position is different from the tool change position, the new tool may be brought to the reference surface directly without first returning to the home position. Once the home position has been set up by the use of the MEASUREMENT key, repositioning to the home position is not necessary.
- When the WRITE & RETRACT key is pushed with H00 designated as the tool offset number, the tool offset number is changed to H01 but no writing nor tool return is performed. When the key is pushed again, the tool offset value is written under H01 in the normal manner.

2. Operation for measuring remaining distance (Parameter $\#6039_{D4}$ = "1")

The following three methods are possible in addition to the method described above.

a. Whereas the move measurement value M_L (Fig. 6.2.3.2) is written as a tool offset value, the remaining distance R_L is written when the parameter $\#6039_{D4}$ is set to "1."

The bottom level which is used as a base of calculating remaining distance can be set by setting #6508 (bottom level setting, 1 = input unit). Writing operation is the same as described in step 1.

$R_L = -(A - M_L)$

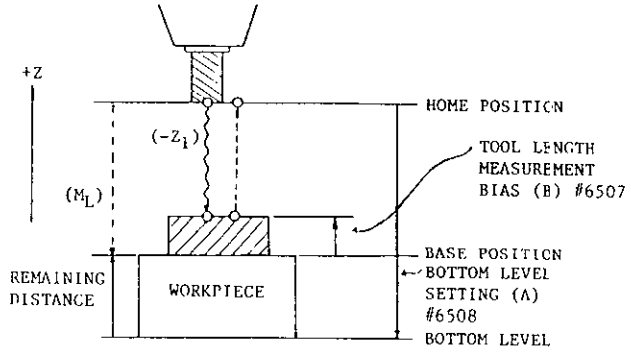

Fig. 6.27

3. The following method is possible with NC control station.

i. Instead of the MEASUREMENT key, depress the POS and PAGE key to select the page of POSITION [UNIVERSAL].

ii. Reset the display by depressing Z and ORG keys. This means that home position is set to "0."

iii. Return the function mode to offset by depressing OFS key.

iv. Instead of the WRITE & RETRACT key, depress the NEXT, Z, WR keys in that order.

This executes automatic writing of the same tool offset measured as written in step 1. The Z-axis, however, will not return to home position.

v. In this measurement operation, parameter $\#6039_{D4}$ (move measurement value/remaining distance switching) is effective. Storing either one of the values is determined by parameter.