2.9.21 TOOL RADIUS COMPENSATION C (G40, G41, G42) (CONT'D)

M. Advance reading of blocks is prohibited when M00, M01 (M02, M30) commands are given, and compensation is usually interrupted. Continuation of correct compensation is secured by programming I, J, K in a dummy block immediately before M00, M01 to avoid interruption.
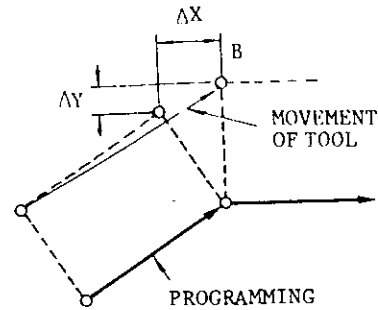
(G41)
.
.
.

N200 G01 X··· Y··· ;

N201	I... J... ;
N202	M00 ;

←— Command movement data N203 using I, J

N203   X··· Y··· ; ——

N. Up to 99 radius values can be stored in the offset memory in total for the tool radius compensation, together with the values for other compensation. Make designation by a D code. The maximum programmable value of tool radius compensation is ±999.999 mm (or ±99.9999 inch).

O. Overcut occurs if compensation is programmed on a step less than the tool radius in M96 mode. Keep this in mind. Although undersize cut occurs with the G97 mode, it is better than overcut with the M96 mode.

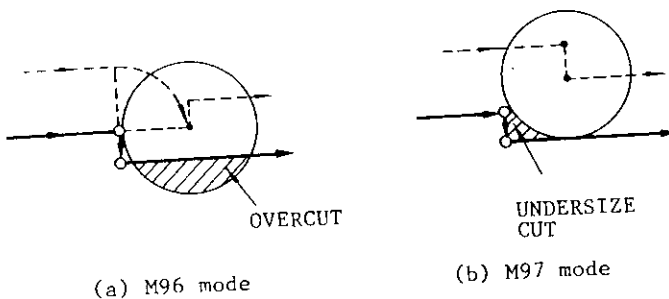(a) M96 mode   OVERCUT

(b) M97 mode   UNDERSIZE CUT

Fig. 2.57

P. Even in M96 mode, the tool moves directly toward point B without making circular path, if both ΔX and ΔY are smaller than a fixed value as shown below. The fixed value in this case is the value set by parameter (#6230).

$$\Delta X \leqq \gamma$$
$$\Delta Y \leqq \gamma$$

γ: Set value of parameter #6230

Fig. 2.58

10. Intervention of MDI operation in compensation mode

MDI operation can not be intervened in compensation mode.

11. Intervention to active buffer in compensation mode

The data given below can be programmed in the compensation mode of G41 or G42 with procedures identical to those of MDI operation, after turning on the SINGLE BLOCK switch to suspend the block, and then, selecting the RAPID or JOG mode.

Programmable data: F, M, S, T and B† codes
Programmable block: In addition to the block of instructions of the active buffer just executed

When the CYCLE START button is pushed in the RAPID or JOG mode after programming, the instructions are immediately executed and signals such as BCD output are sent out. Automatic operation can be resumed when CYCLE START is made after returning to the original automatic operation mode.

Note: In the operation described in these items, the following M codes cannot be written.

M00, M01, M02, M30, M90 to M199