

2.11.11 EXERCISES OF USER MACRO (CONT'D)

First, these moving distances may all be converted into variables.

S: They are local variables #1 through #33, aren't they? But which type of local variable?

T: Type 1 for small number of variables. This type allows the use of X, Y, and Z and therefore makes the argument designation easier to understand.

S: OK. When type 1 is used, we have the following variables:

X100.	Y50.	R-80.	Z-40.	P3.0	F250
↓	↓	↓	↓	↓	↓
#24	#25	#18	#26	?	#9

(P3)

Address P of dwell time cannot be used for argument designation, can it?

T: No. Use some other address. Then, write the address U instead of P.

P3.0	→	U3.0	(P3')
		↓	
		#21	

Using these variables, rewrite the former program (P2).

S: OK.

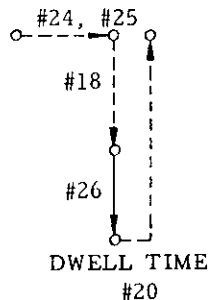
(P4)

```

G91 ;
① G00 X#24 Y#25 ;
② G00 Z#18 ;
③ G01 Z#26 F#9 ;
④ G04 P#21 ;
⑤ G00 Z-[#18 + #26] ;

```

Is this all right?



T: Sorry, it isn't right. You have forgotten to specify something in ⑤, haven't you?

S: Oh, I should have specified "ROUND." (P5)

```

⑤ G00 Z-[ROUND[#18] + ROUND[#26]] ;

```

Is this good?

T: Yes. Write as follows after the above, and we have a complete user macro body.

⑥ M99 ;

S: That's easy.

T: Then, using G65, create this macro call and the user macro body in the complete formats.

S: Let me try it.

The macro call command is as follows:

(P6)

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G91 ;
G65 P9082 X100. Y50. R-80. Z-40.
      U3.0 F250. ;

```

The user macro body is as follows:

(P7)

```

O9082 ;
G00 X#24 Y#25 ;
G00 Z#18 ;
G01 Z#26 F#9 ;
G04 P#21 ;
G00 Z-[ROUND[#18] + ROUND[#26]] ;
M99 ;

```

Program number "O9082" of the user macro is arbitrary.

T: That looks OK.

S: I think something is wrong. With this program, I have to specify points R and Z every time!

T: That's true. With a usual canned cycle, when points R and Z have been specified once, their values are retained.

S: Do you have any trick to overcome this inconvenience?

T: I do. In such a case, common variables help. Using common variables, write the macro to designate the position of points R and Z. U and F may also be used for the same purpose.