

# How to repeat a portion of a ladder diagram

The user can repeat a portion of a ladder program several times by using the following method.

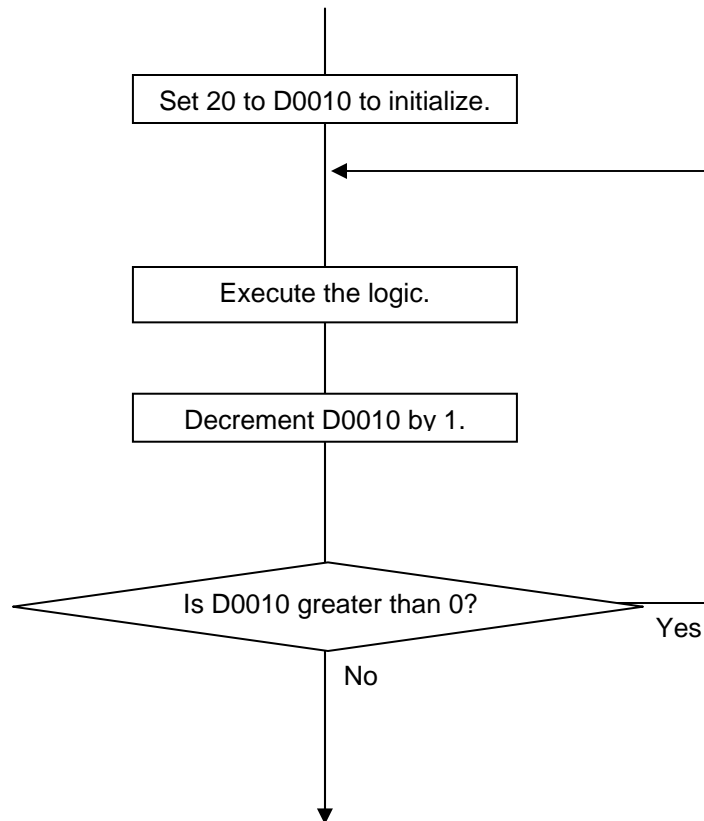
## Example

The ladder diagram shown below describes an example of repeating a portion of program. In this diagram, the logic in line 4 is executed 20 times a scan, and the logic in line 1 and 8 are executed once a scan.

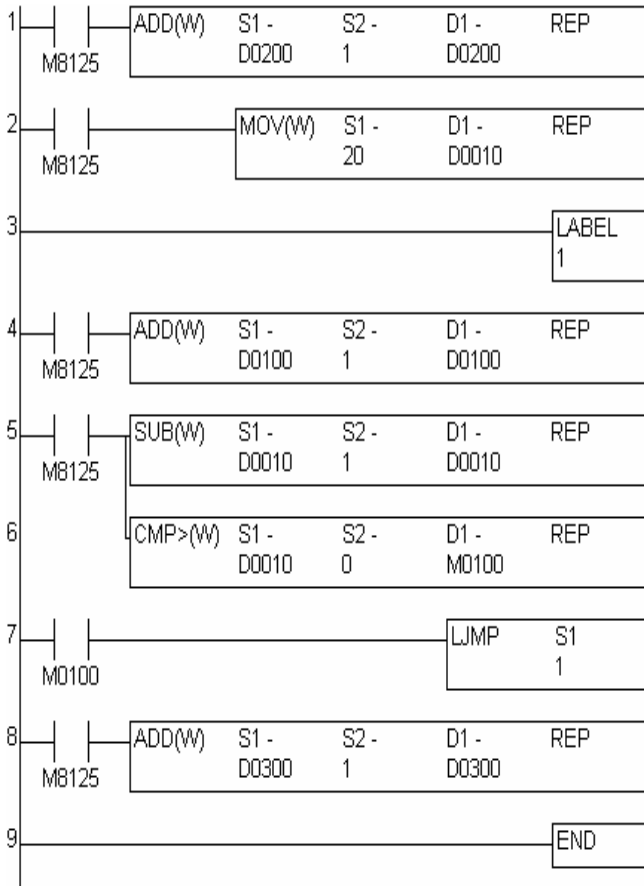
### Operands:

Operand	Description
D0010	The repeating counter. As long as this data register is greater than 0, the logic in line 4 is executed. This data register is initialized to 20 in line 2 so that the logic in line 4 is executed 20 times a scan.
M0100	The repeating flag. If D0010 is bigger than 0, M0100 is turned on by the CMP> instruction in line 6.

### Flowchart:



**Sample program:**



This ADD instruction is executed once a scan.

Add instruction in Line 4 is executed 20 times.  
D0010 is a counter for repeating.

This ADD instruction is executed 20 times a scan.

Decrement the repeating counter D0010 by 1.

If the repeating counter D0010 is greater than 0, The ADD instruction in line 4 is not executed 20 times, and M0100 turns on.

If M0100 is on, jump to LABEL 1.

This ADD instruction is executed once a scan.