



# HEIDENHAIN



## NC Solutions

Description of NC Program 8220

English (en)  
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## 1 Description of NC programs 8220\_en.h, 8225\_en.h, and 82251\_en.h

The NC programs are used to count the program runs. In addition, the control resets the counter at a time that you previously defined (e.g., upon change of shift).



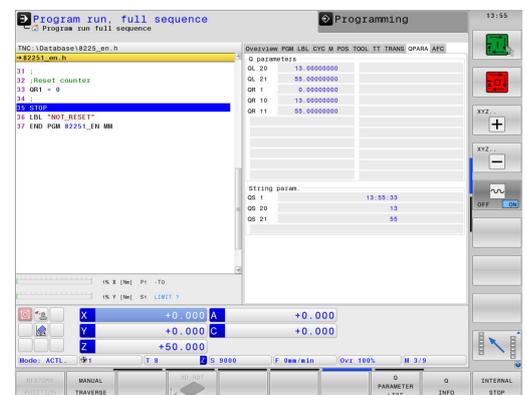
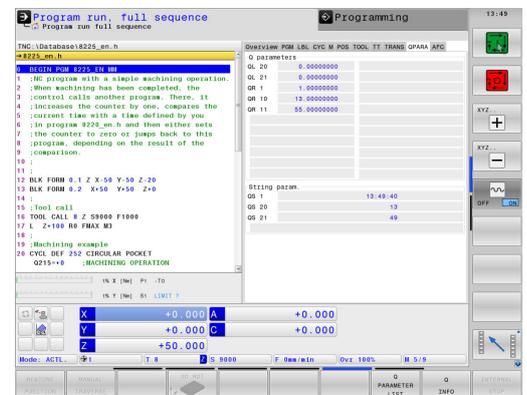
### Program sequence

In NC program 8220\_en.h, you first define the time at which the counter is to be reset. Then you run the NC program in Program Run mode so that the values are written to the QR parameters.

After this, you start the NC program 8225\_en.h. The machining of the workpiece is programmed in this NC program. At the end of the NC program, the control uses the **CALL PGM** command to call the NC program 82251\_en.h. The control increments the current counter value by one in NC program 82251\_en.h. The control also reads the current time. Then the control compares this time with the time at which it will reset the counter. If the defined time has not been reached, the control jumps to the end of the program. If the time has been reached, the control will reset the counter. The control returns to NC program 8225\_en.h at the end of the program.



The control saves the counter and the time at which it will reset the counter in non-volatile parameters (QR parameters). The values are retained in these parameters until you overwrite them with new ones. This means that the values are retained across power cycles of the control.



**Structure of NC program 8220\_en.h**

In this NC program, you define the time at which the control will reset the counter by assigning the hour value to the parameter QR10 and the minute value to the parameter QR11.

In addition, you set the parameter QR1 that is used as the counter to zero.

At the beginning you need to run this NC program once, in order for the control to write the values to the parameter list. You also need to run the NC program again if you made changes to the values in the NC program.

Parameter	Name	Meaning
QR10	HOUR	Hour of the time at which the control will reset the counter
QR11	MINUTE	Minute of the time at which the control will reset the counter

**Structure of NC program 8225\_en.h**

The machining of the workpiece is programmed in NC program 8225\_en.h (example program: the milling of a circular pocket).

At the end of the program, the control calls the NC program 82251\_en.h.



If you rename the NC programs or do not save the NC programs in the same directory, you need to modify the path specified in the **CALL PGM** function.

### Structure of NC program 82251\_en.h

In this NC program, you program the use of the counter, the comparison for determining whether or not the time for resetting the counter has been reached, as well as the resetting procedure itself (where appropriate).

In the first program step, the control increments the counter QR1 by one. In the next program step, the current time is read out. You program the function **SYSSTR (ID321 NR13)** for this. With this function, the control writes the current time (as a string parameter) to the parameter QS1. Then the control reads the first two digits (= hours) of the string parameter QS1 and writes them to an additional string parameter QS20. This is done with the program function **SUBSTR**. With the same function, it also reads out the third and fourth digits (= minutes) from the parameter QS1 and saves them to the parameter QS21. In the next step, the control uses the **TONUMB** function to convert the digits in the QS parameters 20 and 21 into numbers. The control saves the numerical values to the local parameters QL20 and QL21.

In the next step, the control first compares the value of the parameter QL20 (= hours of the current time) with the value in the non-volatile parameter QR10. This parameter contains the hour value you have defined for resetting the counter. If the value in QL20 is less than the value in QR10, the control jumps to the end of the program. If the value is equal to the defined value, the control compares the minute values. If the current value for the minutes is less than the defined nominal value, the control jumps to the end of the program. If the current value is equal to or greater than the value defined in QR11, the time for resetting the counter has been reached and the control sets QR1 to zero.

In the example program, a stop is programmed next. At the end of the NC program, the control returns to the main program, where the next machining operation can be started.



During program run you can display the Q parameters used and their current values in the Q parameter status.