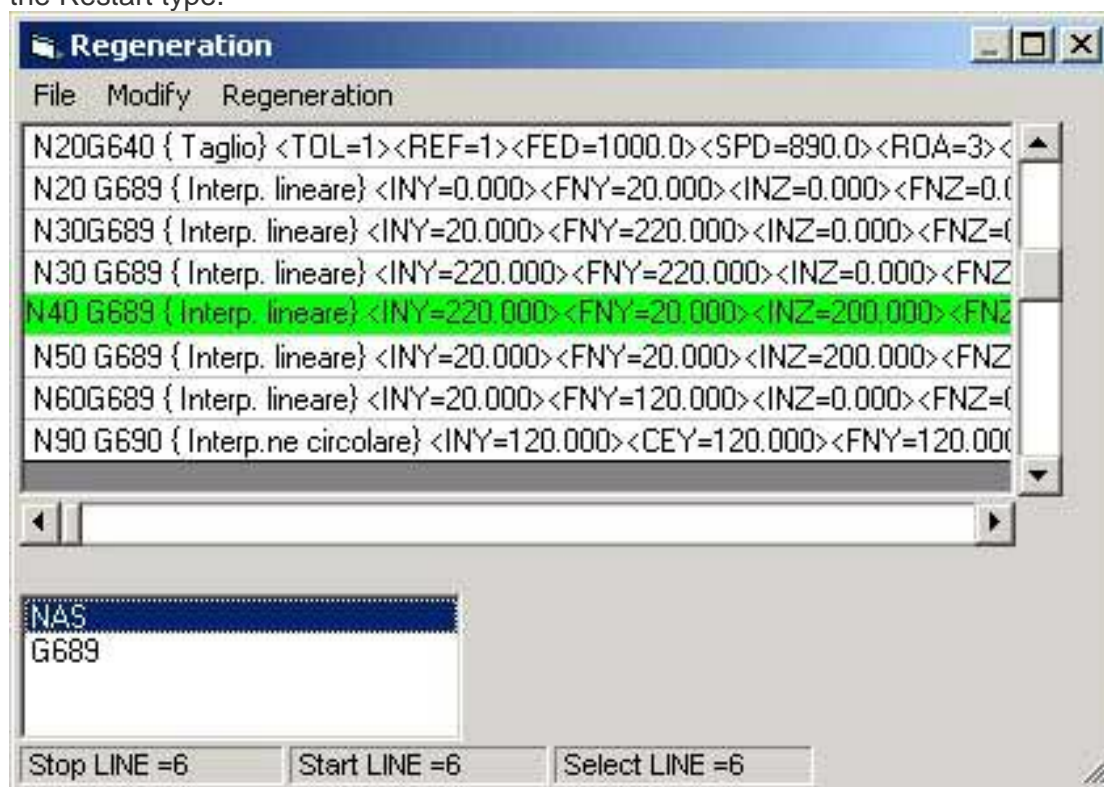


Machining Restart Control.

The machining of pieces on machine tools often lasts several hours. Therefore an unrequited interruption can sometimes occur and it can be caused by: black-outs, failures on the electrical or electronic part of the machine, tool breaking, etc. In order to restart the interrupted machining, the necessary functioning conditions must be restored, such as the CNC switching on or at least an operation to cancel the activated alarms (Reset). Moreover, a displacement of the axes from the position in which they are, must also be carried out, in order to execute the set of the axes (Home). In these conditions, the CNC could carry out the machining program, beginning from the start only, even though the piece or pieces machines have been almost accomplished. Thus it is very important to allow the restart of the machining from the point where it was interrupted, keeping in this way both the machine safety conditions and the pieces quality.

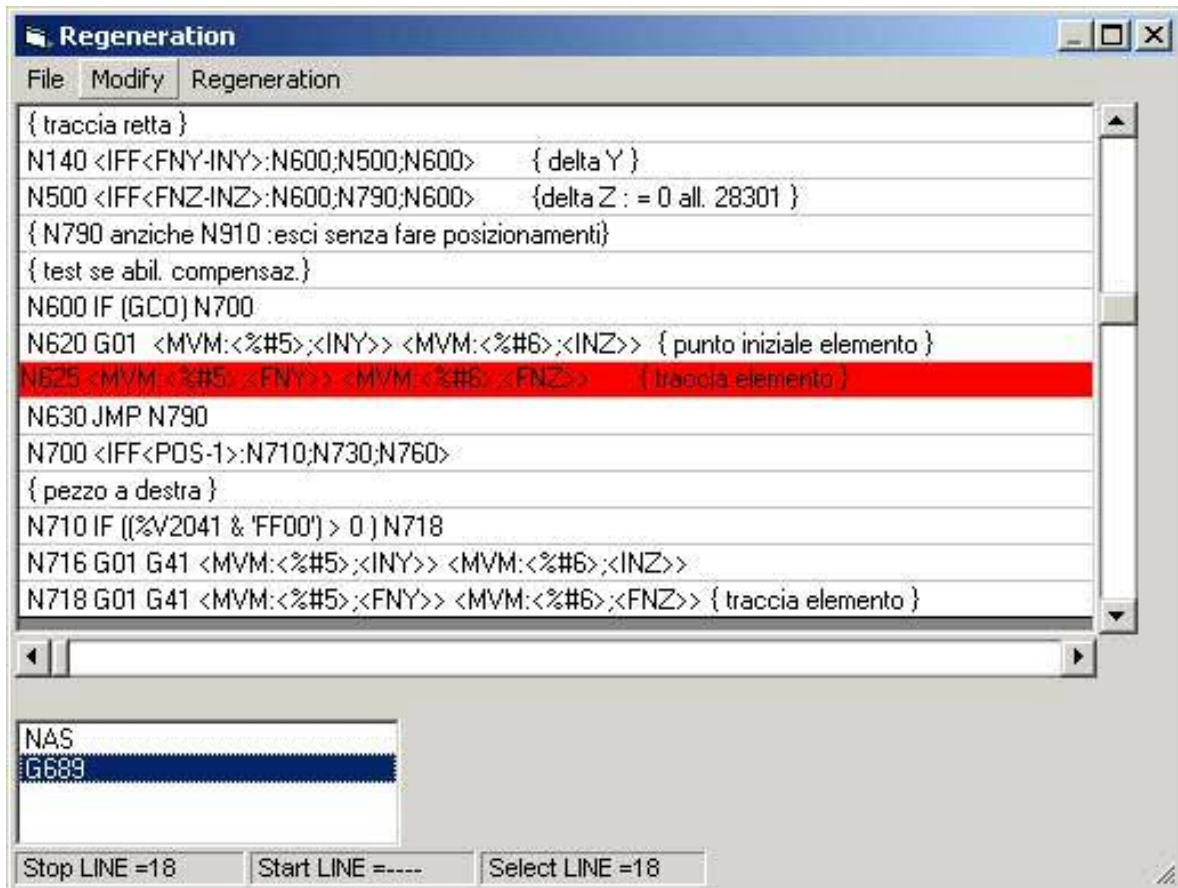
On this purpose, the CNC proposes two types of machining Restart: one of Automatic and one of Manual type. The Automatic Restart is completely guided and it allows the requested tool to be placed on the point indicated by the record of the program that is previous to the interrupted one. The Manual Restart, thanks to its basic functions, allows a remarkable rapidity in the interrupted record research, thus it is particularly suitable for long programs generated by CAD – CAMs.

Here below is a display of the guide method proposed by the operator interface before choosing the Restart type.



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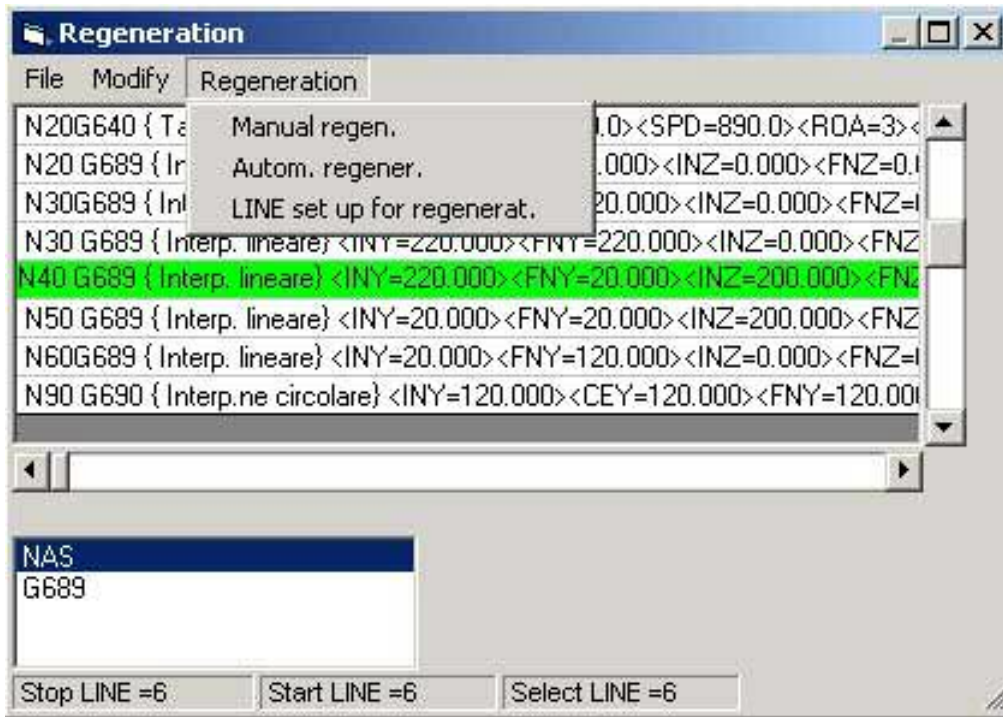
By the Restart command the following items are displayed: name of the main program that was interrupted and its corresponding record. The green colour indicates that the interruption was not a direct one, thus depending on a sub-program. In the reported example, the main program is NAS and it recalls the sub-program G689. By clicking on G689 the record actually interrupted is highlighted in red.



Once the interrupted record has been found it is possible to choose the Restart type to be carried out and eventually the record from which to restart, unless the interrupted record is not the required one.

This is useful to link machining without leaving a trace of the interruption occurred.

In order to find the new record, just click on the required program or sub-program and then on the record. The chosen record will be highlighted in yellow.



In case of Automatic Restart, all the necessary commands are proposed, so that the operator can select and execute them in the required sequence. These commands are: tool change, if necessary, in order to have the required one; spindle rotation with the required direction and speed, the enabling of all the auxiliary functions such as the cooling liquid and finally, the tool positioning, axis by axis, in the required position.

