

Simulating Programs for the SL-1

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INTRODUCTION:

There is two ways to simulate a program or G-code that may run in the SL-1, through console or software. However, only simulation through the machine console is truly reliable, therefore every program **MUST** be fully simulated in the machine's console before its execution with or without laser emission.

SIMULATION AT CONSOLE - STEP-BY-STEP:

1) Starting with the machine off, disable all four emergency buttons:

- By the laser source:



- By the CNC cabinet:



- By the console:



And there is another one at the powder feeder;

2) Flip the main switch to the ON position and wait for the console screen to stand still in a screen showing machine coordinates;

3) Press the button "Program manager" at the console;

4) Insert the previously formatted pen-drive with your program in the console and wait a minute for the machine to

read it. The machine won't respond to any external commands in the meanwhile;

5) Copy and paste the program in your folder, which must lie inside the folder "Part program" which resides in the "NC" drive. For shifting between the three drives use the buttons at the bottom of the screen. For navigating within a drive use the blue arrows; For editing use the buttons at the side of the screen. The yellow "Input" button works as the "Enter" button in any PC;

6) Open your program;

7) To simulate you program, press the button referent to "Simulation" at the bottom of the screen. A white screen with a cartesian grid will appear, press the green button with a diamond shaped drawing laying at the top-right corner to start the simulation. This button works as the "Cycle start" button when working inside of the simulation.

8) To exit the simulation, press the "Simulation" button again;

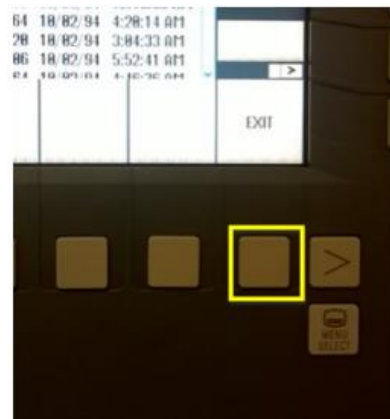
9) Edit your program and repeat steps 7 and 8 until the code is running according desired;

10) Do not remove your pen-drive while its folder is open. However, just pull it for removal.

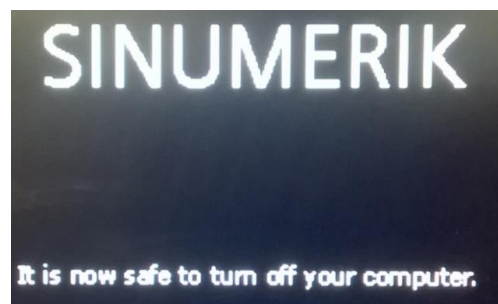
11) The next steps describe how to switch the machine off. Press the button "Menu Select" and after that the button ">", as shown in the picture.



12) The word "Exit" shall appear at the lower-right corner of the screen. Press the white button as shown in bellow.



13) The control system should start shutting down. Wait until the screen shows the message bellow.



14) To finalize the procedure, turn off the main switch at the CNC cabinet.

SIMULATION AT PERSONAL COMPUTER:

For simulating G-code in a PC, firstly a software provided by Siemens must be installed in it. The software is free to download at one of the links bellow, upon a free subscription.

https://w3.siemens.com.br/topics/br/pt/cnc4you/cnc_downloads/sinutrain_downloads/Pages/Baixar-versao-SinuTrain-para-SINUMERIK-Operate-V4-8-Ed-2-Basica.aspx

<https://w3.siemens.com.br/topics/br/pt/cnc4you/Pages/cnc4you0323-5872.aspx>

The installed software won't have SL-1's command relation, or image, imprinted on it and, therefore, may not respond to the programs simulated as the SL-1 would. This justifies the condition for program test out imposed at the beginning of this document. However, its interface is similar to the interface found at the SL-1 while it also provides a good tool to test programs without having to use machine time.