Step by Step Guide: FlexiCAM CNC

This step by step guide will take you through the use of FlexiCAM Viper CNC machine, from the start up of the machine to the finished product. It is divided into several sections so read the headings in the table of contents before you begin.

Index
Step by Step Guide: FlexiCAM CNC ................................................................. 1
Step by step guide: CNC .................................................................................... 2
  1: Start up routine: .......................................................................................... 2
  2: Setting up the CNC Machine ........................................................................ 3
  3: Import G-code file ........................................................................................ 11
  4: Run your file .................................................................................................. 13
  5: Closing down and clean up: ......................................................................... 15
  6: Error, Problems and Solutions: ................................................................. 17
### 1: Start up routine:

<table>
<thead>
<tr>
<th>Tekst</th>
<th>Symbol</th>
<th>Billede</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1  Turn power switch to ON.</td>
<td><img src="image1.png" alt="Symbol" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>1.2  Start the CNC by pressing the green button</td>
<td>0 → 1</td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
<tr>
<td>1.3  Turn on the “Pressure Air” switch.</td>
<td><img src="image4.png" alt="Symbol" /></td>
<td><img src="image5.png" alt="Image" /></td>
</tr>
</tbody>
</table>
1.4 Remove tools from the spindle.
One hand holding the tool and the other pressing the green button.

1.5 Remove all left behind tools from the tool holder.

2: Setting up the CNC Machine
Start the computer, and follow these instructions.

2.1 OPTIONAL
Make sure the LICNECE SERVER is running.
(fcSecServer LICENSE SERVER)

If not, double click fcSecServer LICENSE SERVER icon. → Open
2.2

Double click on **StdHMI** icon, on the Desktop to start Flexicam.

![StdHMI Icon](image)

→ Open

2.3

Click OK.

![OK Button](image)

2.4

Activate the light barrier by turning with the key back and forth one time.

![Light Barrier](image)

2.5

Removing the "No reference point" error

Click on the **Setup Tab**

![Setup Tab](image)
2.6
Click on Reference

2.7
Click on Automatic

2.8
Click on Start.
The Machine will now drive to its pre-defined 0-point.

2.9
Put your tools in the corresponding tool holder.
2.10
Click on BACK to go back to previous menu.

2.11
Measuring of tool stickout.
Click on INPUT

2.12
Write M6T1 and finish with ENTER to choose the first tool.
M6: Change tool
T1: Tool in slot nr.

2.13
Write M7 and finish with ENTER to automatic measure and store the tool stickout.

M6T1 → ENTER
M7 → ENTER
2.14
Repeat 2.11 - 2.13 for all your tools.

M6T3 → ENTER
M7 → ENTER
M6T4 → ENTER
M7 → ENTER
...

2.15 OPTIONAL
If you need better access to the cutting table. Can you move it manually.

Click on Manual Travel

2.16 OPTIONAL
Click on Modal Travel

2.17 OPTIONAL
With X axis selected, use TRAVEL + and TRAVEL – to move the cutting table.
| 2.18 | Place the seal gasket around the vacuum holes in the size of your item. Make sure it is completely closed. |
| 2.19 | Place a “sacrifice board” (Must be in MDF if you want to pull vacuum through) |
| 2.20 | Place your stock material on top of the “sacrifice board” |
| 2.21 | Push the foot pedal to start the vacuum. |
2.22
Choose your first tool.
Click on input.

2.23
Writer M6T1 and finish with ENTER
to choose your first tool.

\[
\text{M6: Change tool}
\]
\[
\text{T1: Tool in slot nr.}
\]

2.24
Define the 0 point so it matches
the 0 point in your cam software,
(Fusion 360/Alphacam)

Click on \text{ZERO POINT}

2.25
Click on X
### 2.26
Click on Plus or Minus.

![Travel +](image1)
![Travel -](image2)

### 2.27
Repeat step 2.25 - 2.26 for the Y and Z axis.

### 2.28
Fine tune 0 point.

Take the hand controller form the machine.

Press and hold the SLOW button. Move the spindel to desired position by pressing the X- og X+. Buttons.

### 2.29
Saving the new 0 Point for X axis.

Press and hold the SHIFT button and then press the button X0.

This will set current position to 0
2.30
Repeat step 2.28 - 2.29 for Y and Z axis.

SLOW + Y-/Y+
SHIFT + Y0
SLOW + Z-/Z+
SHIFT + Z0

2.31
Check so your X, Y, Z is set correct.

Z skal vare 10.000

3: Import G-code file

3.1
Click on Program
3.2
Click on Open Program

3.3
Choose your .DIN file.
Desktop Path: C:/USER/Makerlab/Desktop

3.1
Click on Accept

3.1
Click on SAVE AND LOAD TO NC
4: Run your file

4.1
Click on **AUTOMATIC**

4.2
Set the Override til 30%

4.3
Wear protective goggles and ear protectors.
4.4
Click on Start

4.5
If everything runs as it should set Override back up to 100%

4.6
With each tool change, the machine will enter pause mode. Press START to continue the program.
5: Closing down and clean up:

5.1
Drive the spindel up (Z+) with **Modal Travel** (see step 2.15-2.17)

5.2
Put all the tools back in the rack, in their correct position. (See offset number)

5.3
Vacuum clean the whole machine, and around it.
### 5.4
Delete your work files from the computer.

### 5.5
Close FlexiCAM.

### 5.5
Close the machine.
6: Error, Problems and Solutions:
There may be various errors and problems when you need to start your job, therefore there are some solutions below to the most outstanding problems and errors.

<table>
<thead>
<tr>
<th>FEJL/PROBLEM</th>
<th>FORKLARING</th>
<th>LØSNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 GRW Error</td>
<td>Forgot to turn on the CNC.</td>
<td>See step 1.1 - 1.2</td>
</tr>
<tr>
<td>1.1.12 Download:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>configured device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>not found</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.2 SPS Error</td>
<td>Forgot turn on the “Pressure Air” switch.</td>
<td>See step 1.3 – 1.5</td>
</tr>
<tr>
<td>2.10.106 Return</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waiting for Dust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collector Up Signal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.3 SPS Error</td>
<td>Forgot to turn on the light barrier</td>
<td>See step 2.4</td>
</tr>
<tr>
<td>210.113 Light Barrier Not Active</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.4 ??? Error</td>
<td>Forgot to set reference point.</td>
<td>See step 2.6 – 2.8</td>
</tr>
<tr>
<td>2.3.2311 No Reference Point</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.5 ZST Error</td>
<td>Someone has pressed Emergency Stop or turned off the machine but not FlexiCAM software.</td>
<td>Sluk maskinen, se punkt 5.5</td>
</tr>
<tr>
<td>291108 PLG Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Stop</td>
<td></td>
<td>Luk FlexiCAM, Tænd maskinen, se punkt 1.1</td>
</tr>
<tr>
<td>6.6 ZST Error</td>
<td>License server is already running.</td>
<td>Click Quit.</td>
</tr>
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<td>License server is</td>
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</tr>
<tr>
<td>already running.</td>
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<td></td>
</tr>
<tr>
<td>Section</td>
<td>Description</td>
<td>Status</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>--------</td>
</tr>
<tr>
<td>6.5</td>
<td>Cannot Establish connection with Secure Server</td>
<td>License service is NOT running.</td>
</tr>
<tr>
<td>6.5</td>
<td>Machine Validity Expired!</td>
<td>License service is NOT running.</td>
</tr>
</tbody>
</table>