

Step by Step Guide: FlexiCAM CNC




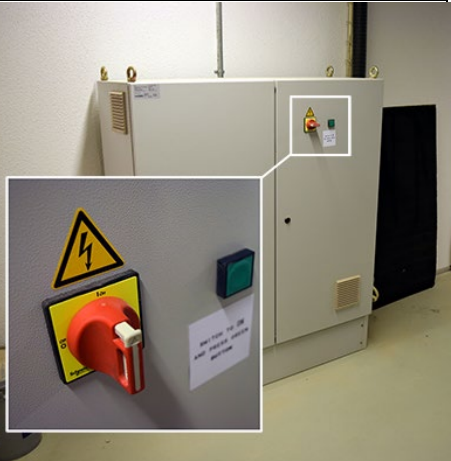



This step by step guide will take you through the use of FlexiCAM Viper CNC machine, from the start up of the machine to the finished product. It is divided into several sections so read the headings in the table of contents before you begin.

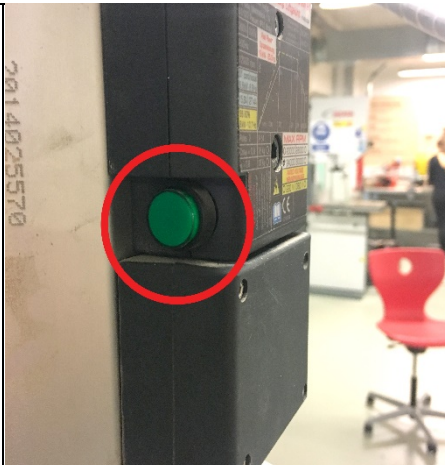
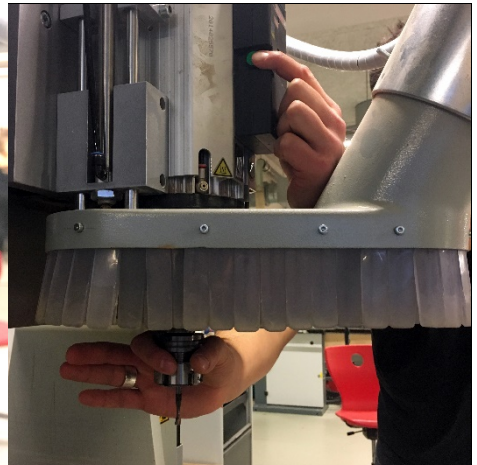
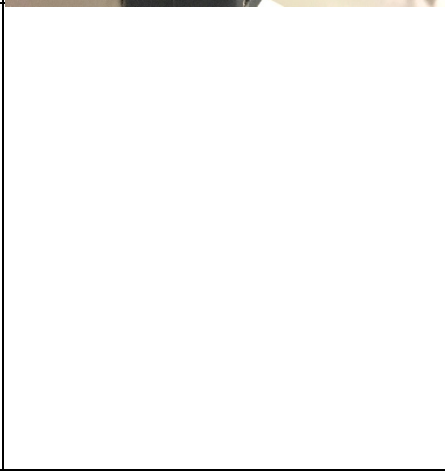

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Step by step guide: CNC

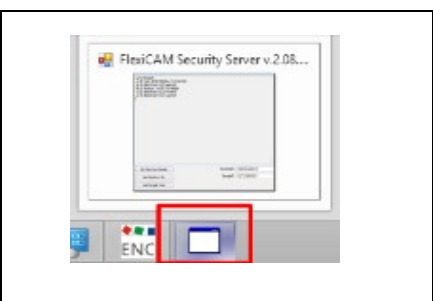
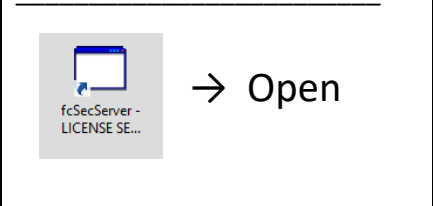
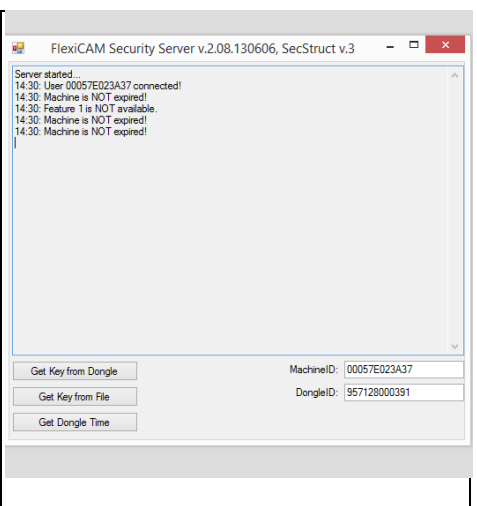
1: Start up rutine:


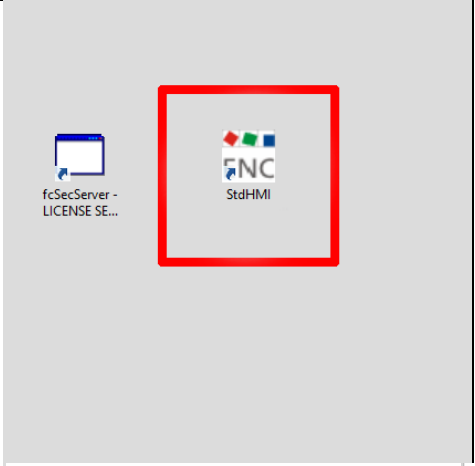
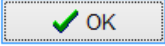
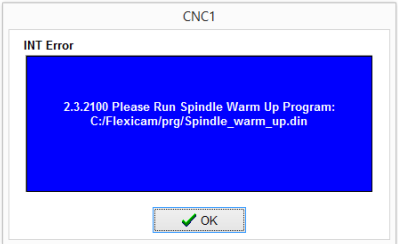

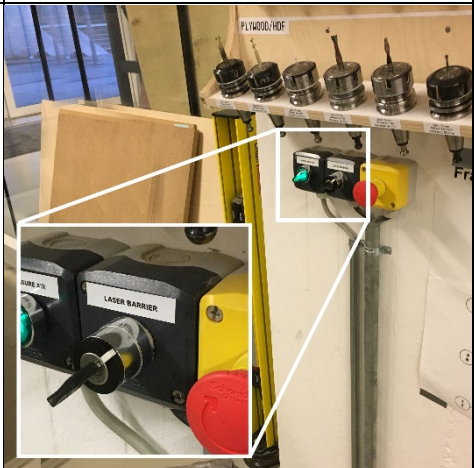

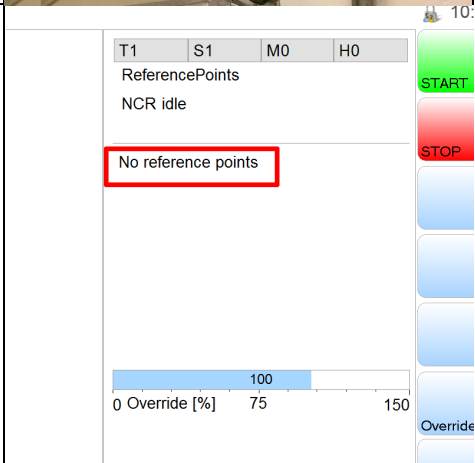
Tekst	Symbol	Billede
<p>1.1</p> <p>Turn power switch to ON.</p>		
<p>1.2</p> <p>Start the CNC by pressing the green button</p>	<p>0 → I</p>	
<p>1.3</p> <p>Turn on the "Pressure Air" switch.</p>		

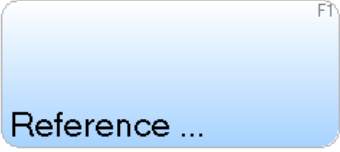
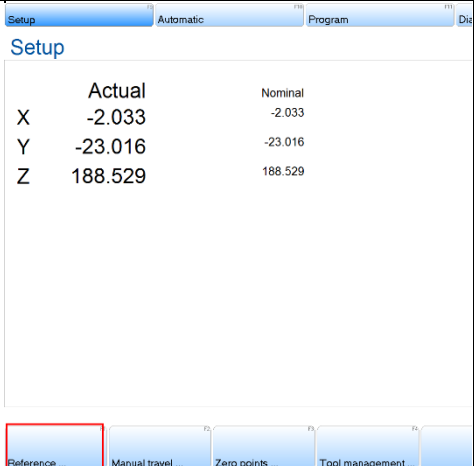

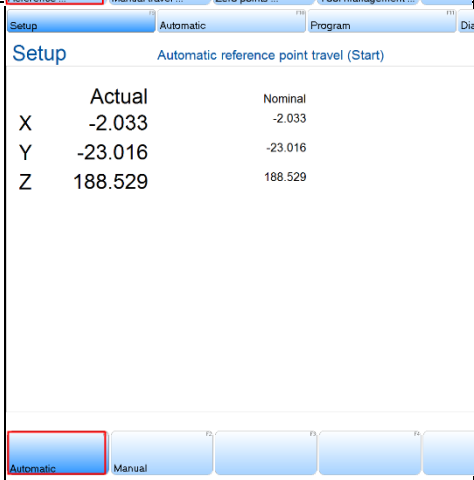

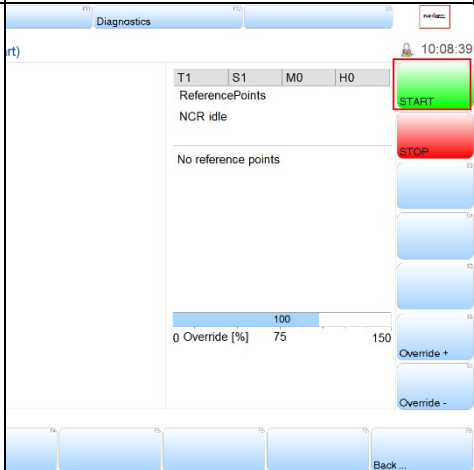

<p>1.4</p> <p>Remove tools from the spindle.</p> <p>One hand holding the tool and the other pressing the green button.</p>		
<p>1.5</p> <p>Remove all left behind tools from the tool holderen.</p>		

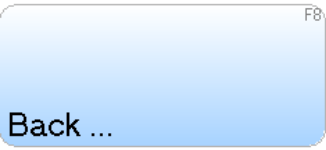
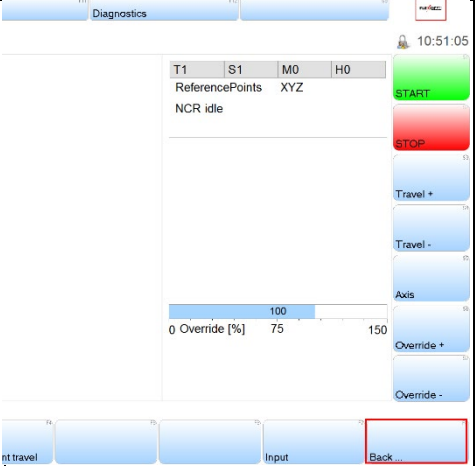
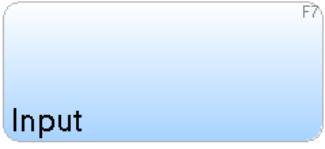
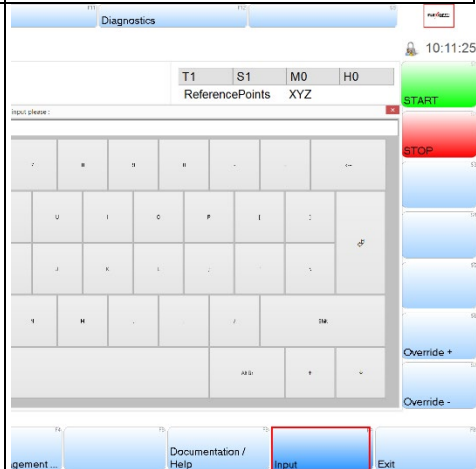
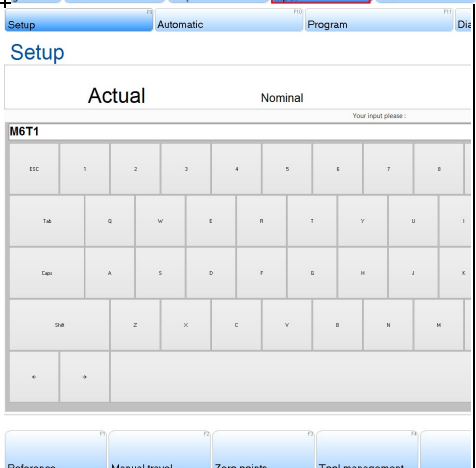
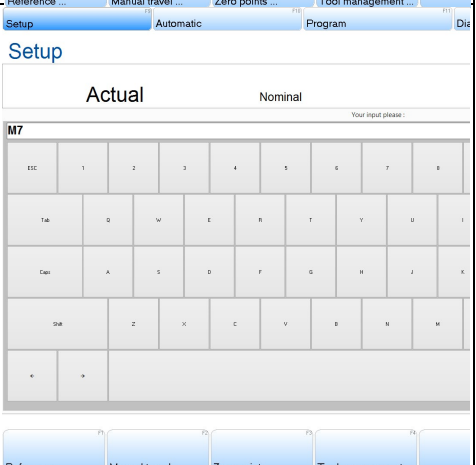
2: Setting up the CNC Machine


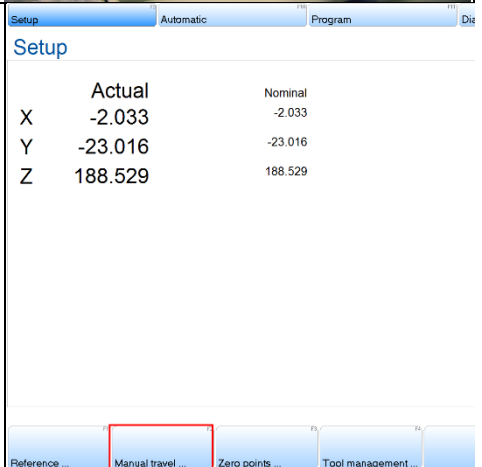
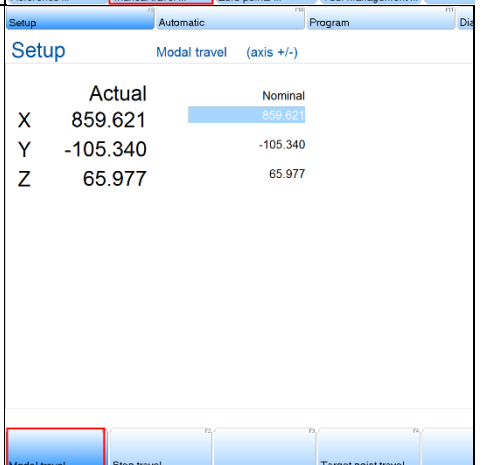

Start the computer, and follow these instructions.

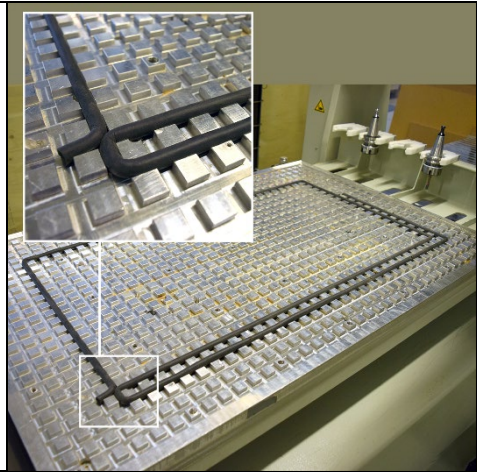
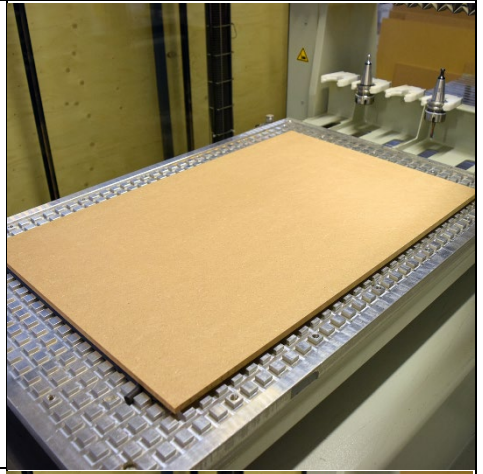
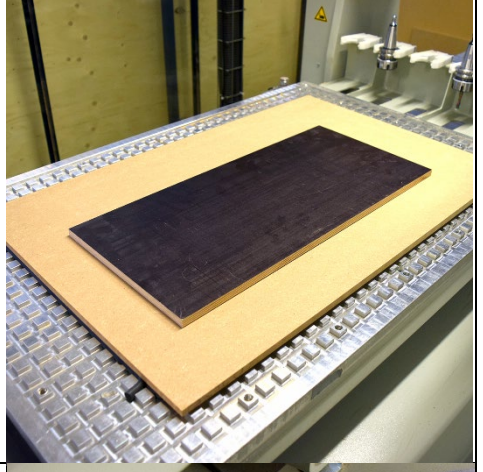
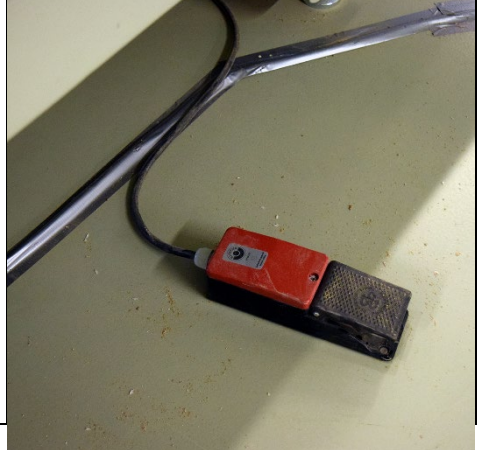
<p>2.1 OPTIONAL</p> <p>Maker sure the LICNECE SERVER is running. (fcSecServer LICENSE SERVER)</p> <hr/> <p>If not, double click fcSecServer LICENSE SERVER icon.</p>	 	
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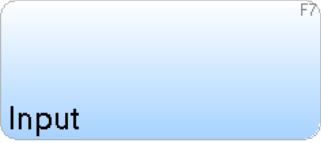
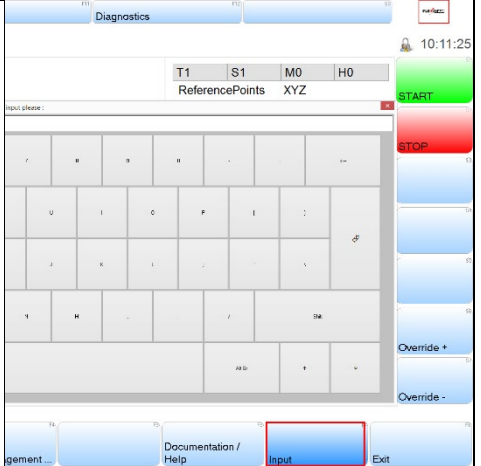
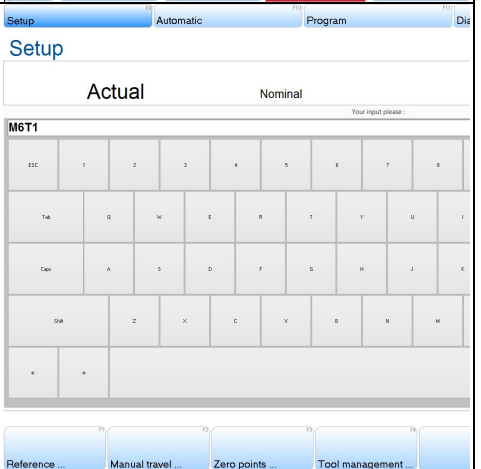
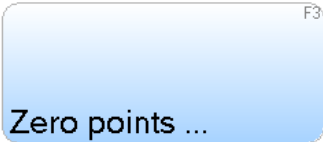
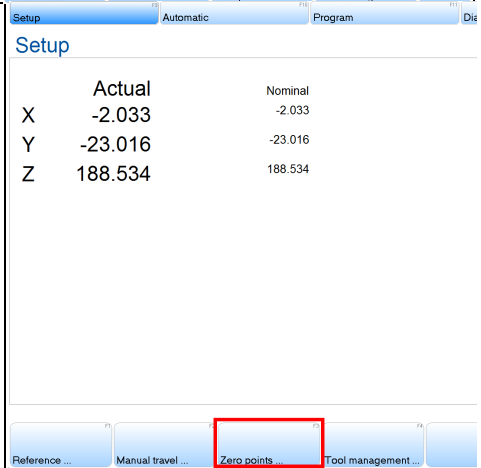
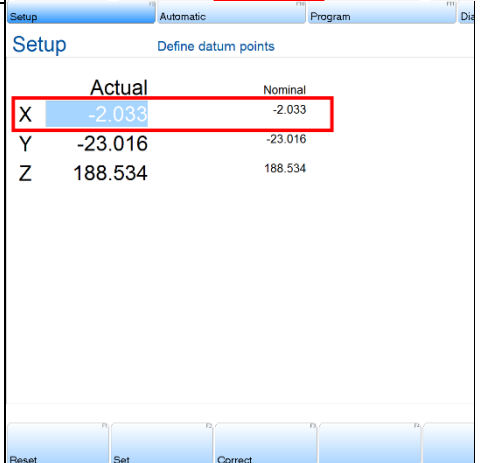
<p>2.2</p> <p>Double click on StdHMI icon, on the Desktop to start Flexicam.</p>		
<p>2.3</p> <p>Click OK.</p>		
<p>2.4</p> <p>Activate the light barrier by turning with the key back and forth one time.</p>		
<p>2.5</p> <p>Removing the "No reference point" error</p> <p>Click on the Setup Tab</p>		

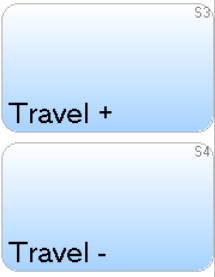
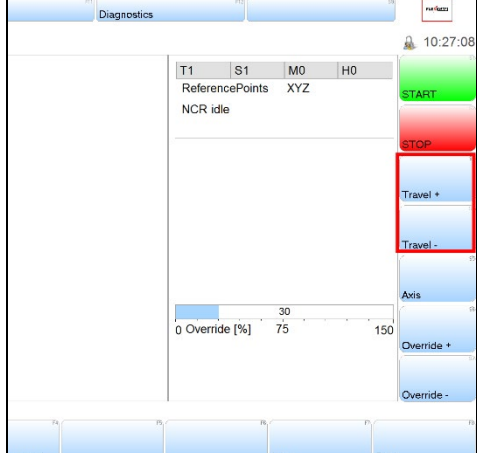

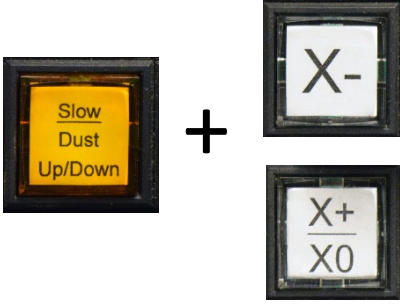

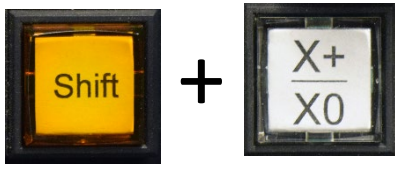

<p>2.6</p> <p>Click on Reference</p>		 <table border="1"> <thead> <tr> <th></th> <th>Actual</th> <th>Nominal</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>-2.033</td> <td>-2.033</td> </tr> <tr> <td>Y</td> <td>-23.016</td> <td>-23.016</td> </tr> <tr> <td>Z</td> <td>188.529</td> <td>188.529</td> </tr> </tbody> </table>		Actual	Nominal	X	-2.033	-2.033	Y	-23.016	-23.016	Z	188.529	188.529
	Actual	Nominal												
X	-2.033	-2.033												
Y	-23.016	-23.016												
Z	188.529	188.529												
<p>2.7</p> <p>Click on Automatic</p>		 <table border="1"> <thead> <tr> <th></th> <th>Actual</th> <th>Nominal</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>-2.033</td> <td>-2.033</td> </tr> <tr> <td>Y</td> <td>-23.016</td> <td>-23.016</td> </tr> <tr> <td>Z</td> <td>188.529</td> <td>188.529</td> </tr> </tbody> </table>		Actual	Nominal	X	-2.033	-2.033	Y	-23.016	-23.016	Z	188.529	188.529
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<p>2.8</p> <p>Click on Start.</p> <p>The Machine will now drive to its pre-defined 0-point.</p>														
<p>2.9</p> <p>Put your tools in the corresponding tool holder.</p>														

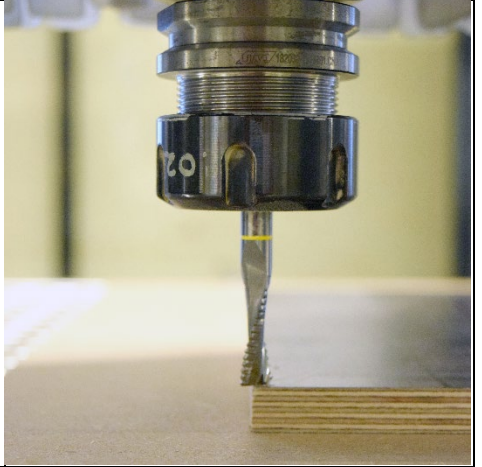
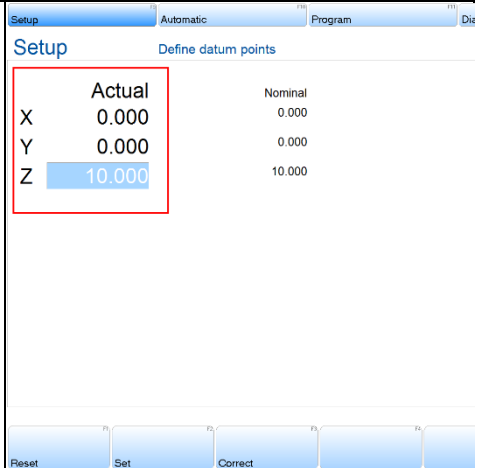
<p>2.10</p> <p>Click on BACK to go back to previous menu.</p>		
<p>2.11</p> <p>Measuring of tool stickout.</p> <p>Click on INPUT</p>		
<p>2.12</p> <p>Write M6T1 and finish with ENTER to choose the first tool.</p> <p><i>M6: Change tool</i> <i>T1: Tool in slot nr.</i></p>	<p>M6T1 → ENTER</p>	
<p>2.13</p> <p>Write M7 and finish with ENTER to automatic measure and store the tool stickout.</p>	<p>M7 → ENTER</p>	

<p>2.14</p> <p>Repeat 2.11 - 2.13 for all your tools.</p>	<p style="text-align: right;">F7</p> <p style="text-align: center;">Input</p> <p>M6T3 → ENTER M7 → ENTER M6T4 → ENTER M7 → ENTER ...</p>													
<p>2.15 OPTIONAL</p> <p>If you need better access to the cutting table. Can you move it manually.</p> <p>Click on Manual Travel</p>	<p style="text-align: right;">F2</p> <p style="text-align: center;">Manual travel ...</p>	 <table border="1"> <thead> <tr> <th></th> <th>Actual</th> <th>Nominal</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>-2.033</td> <td>-2.033</td> </tr> <tr> <td>Y</td> <td>-23.016</td> <td>-23.016</td> </tr> <tr> <td>Z</td> <td>188.529</td> <td>188.529</td> </tr> </tbody> </table>		Actual	Nominal	X	-2.033	-2.033	Y	-23.016	-23.016	Z	188.529	188.529
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Z	188.529	188.529												
<p>2.16 OPTIONAL</p> <p>Click on Modal Travel</p>	<p style="text-align: right;">F1</p> <p style="text-align: center;">Modal travel</p>	 <table border="1"> <thead> <tr> <th></th> <th>Actual</th> <th>Nominal</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>859.621</td> <td>859.621</td> </tr> <tr> <td>Y</td> <td>-105.340</td> <td>-105.340</td> </tr> <tr> <td>Z</td> <td>65.977</td> <td>65.977</td> </tr> </tbody> </table>		Actual	Nominal	X	859.621	859.621	Y	-105.340	-105.340	Z	65.977	65.977
	Actual	Nominal												
X	859.621	859.621												
Y	-105.340	-105.340												
Z	65.977	65.977												
<p>2.17 OPTIONAL</p> <p>With X axis selected, use TRAVEL + and TRAVEL - to move the cutting table.</p>	<p style="text-align: right;">S3</p> <p style="text-align: center;">Travel +</p> <p style="text-align: right;">S4</p> <p style="text-align: center;">Travel -</p>	 <table border="1"> <thead> <tr> <th></th> <th>Actual</th> <th>Nominal</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>143.550</td> <td>143.550</td> </tr> <tr> <td>Y</td> <td>56.200</td> <td>56.200</td> </tr> <tr> <td>Z</td> <td>16.820</td> <td>16.820</td> </tr> </tbody> </table>		Actual	Nominal	X	143.550	143.550	Y	56.200	56.200	Z	16.820	16.820
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Y	56.200	56.200												
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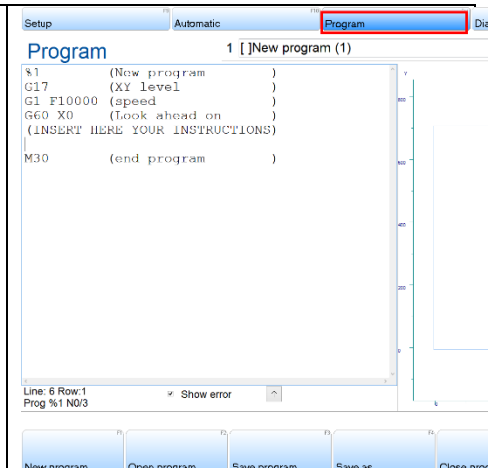
<p>2.18</p> <p>Place the seal gasket around the vacuum holes in the size of your item.</p> <p>Make sure it is completely closed.</p>		 A close-up photograph of a metal tray with a grid of small holes. A black seal gasket is being placed around the perimeter of the holes. A white box highlights the gasket's position.
<p>2.19</p> <p>Place a "sacrifice board"</p> <p>(Must be in MDF if you want to pull vacuum through)</p>		 A photograph showing a rectangular, light-colored wooden board (MDF) placed on top of the metal tray, covering the grid of holes.
<p>2.20</p> <p>Place your stock materiale on top of the "sacrifice board"</p>		 A photograph showing a dark, rectangular stock material placed on top of the wooden sacrifice board, which is on the metal tray.
<p>2.21</p> <p>Push the foot pedal to start the vacuum.</p>		 A photograph of a red foot pedal with a black rubber foot, connected to a vacuum system by a black cable.

<p>2.22</p> <p>Choose your first tool.</p> <p>Click on input.</p>		
<p>2.23</p> <p>Writer M6T1 and finish with ENTER to choose your first tool.</p> <p><i>M6: Change tool</i> <i>T1: Tool in slot nr.</i></p>	<p>M6T1 → ENTER</p>	
<p>2.24</p> <p>Define the 0 point so it matches the 0 point in your cam software, (Fusion 360/Alphacam)</p> <p>Click on ZERO POINT</p>		
<p>2.25</p> <p>Click on X</p>		


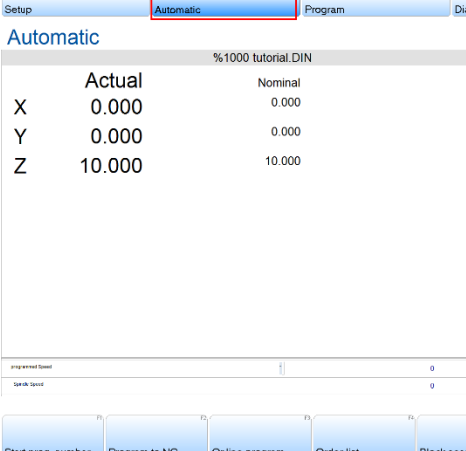
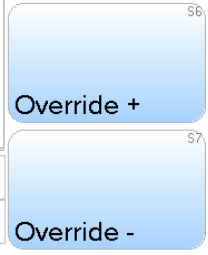
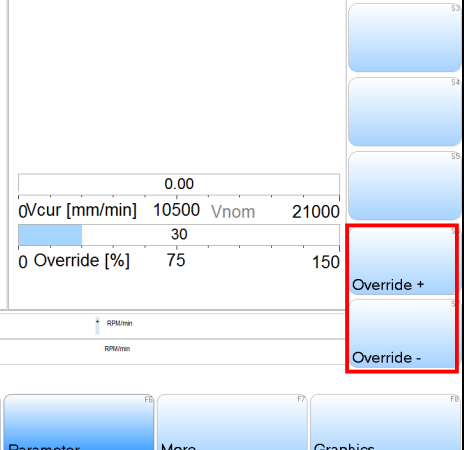


<p>2.26</p> <p>Click on Plus or Minus.</p>		
<p>2.27</p> <p>Repeat step 2.25 - 2.26 for the Y and Z axis.</p>		
<p>2.28</p> <p>Fine tune 0 point.</p> <p>Take the hand controller form the machine.</p> <p>Press and hold the SLOW button. Move the spindle to desired position by pressing the X- og X+. Buttons.</p>		
<p>2.29</p> <p>Saving the new 0 Point for X axis.</p> <p>Press and hold the SHIFT button. and then press the button X0.</p> <p>This will set current position to 0</p>		


<p>2.30</p> <p>Repeat step 2.28 -2.29 for Y and Z axis.</p>	<p>SLOW + Y-/Y+ SHIFT + Y0 SLOW + Z-/Z+ SHIFT + Z0</p>													
<p>2.31</p> <p>Check so your X, Y, Z is set correct.</p> <p>Z skal vare 10.000</p>	<p>!</p>	 <table border="1"> <thead> <tr> <th></th> <th>Actual</th> <th>Nominal</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Y</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Z</td> <td>10.000</td> <td>10.000</td> </tr> </tbody> </table>		Actual	Nominal	X	0.000	0.000	Y	0.000	0.000	Z	10.000	10.000
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3: Import G-code file

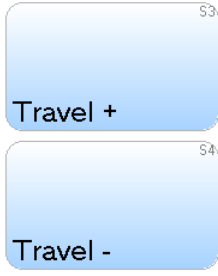
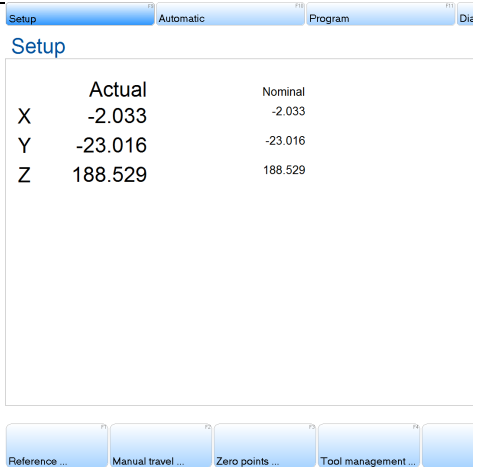



<p>3.1</p> <p>Click on Program</p>		 <pre> \$1 (New program) G17 (XY level) G1 F10000 (speed) G60 X0 (Look ahead on) (INsert HERE YOUR INSTRUCTIONS) M30 (end program) </pre>
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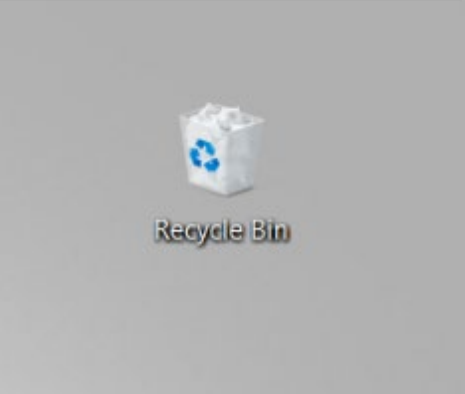
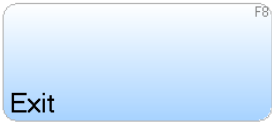
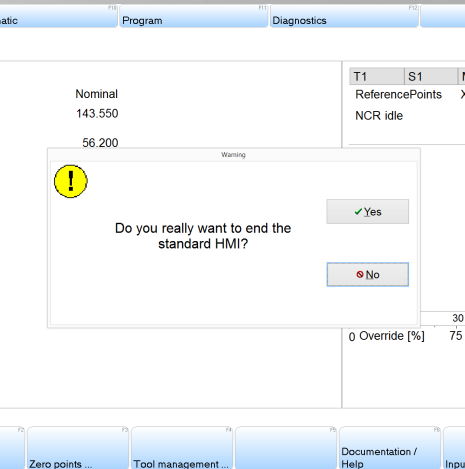

4: Run your file

<p>4.1</p> <p>Click on AUTOMATIC</p>		 <table border="1"> <thead> <tr> <th></th> <th>Actual</th> <th>Nominal</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Y</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Z</td> <td>10.000</td> <td>10.000</td> </tr> </tbody> </table>		Actual	Nominal	X	0.000	0.000	Y	0.000	0.000	Z	10.000	10.000
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X	0.000	0.000												
Y	0.000	0.000												
Z	10.000	10.000												
<p>4.2</p> <p>Set the Override til 30%</p>														
<p>4.3</p> <p>Wear protective goggles and ear protectors.</p>														

<p>4.4</p> <p>Click on Start</p>		
<p>4.5</p> <p>If everything runs as it should set Override back up to 100%</p>		
<p>4.6</p> <p>With each tool change, the machine will enter pause mode. Press START to continue the program.</p>		

5: Closing down and clean up:

<p>5.1</p> <p>Drive the spindel up (Z+) with Modal Travel (see step 2.15-2.17)</p>		 <table border="1"> <thead> <tr> <th></th> <th>Actual</th> <th>Nominal</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>-2.033</td> <td>-2.033</td> </tr> <tr> <td>Y</td> <td>-23.016</td> <td>-23.016</td> </tr> <tr> <td>Z</td> <td>188.529</td> <td>188.529</td> </tr> </tbody> </table>		Actual	Nominal	X	-2.033	-2.033	Y	-23.016	-23.016	Z	188.529	188.529
	Actual	Nominal												
X	-2.033	-2.033												
Y	-23.016	-23.016												
Z	188.529	188.529												
<p>5.2</p> <p>Put all the tools back in the rack, in their correct position. (See offset number)</p>														
<p>5.3</p> <p>Vacuum clean the whole machine, and around it.</p>														

<p>5.4</p> <p>Delete your work files from the computer.</p>	<p>DEL</p>	
<p>5.5</p> <p>Close FlexiCAM.</p>		
<p>5.5</p> <p>Close the maschine.</p>	<p>I → 0</p>	

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.

FEJL/PROBLEM	FORKLARING	LØSNING
6.1 GRW Error 1.1.12 Download: configured device not found	Forgot to turn on the CNC.	See step 1.1 - 1.2
6.2 SPS Error 2.10.106 Return Waiting for Dust Collector Up Signal	Forgot turn on the "Pressure Air" switch.	See step 1.3 – 1.5
6.3 SPS Error 210.113 Light Barrier Not Active	Forgot to turn on the light barrier	See step 2.4
6.4 ??? Error 2.3.2311 No Reference Point	Forgot to set reference point.	See step 2.6 – 2.8
6.5 ZST Error 291108 PLG Report Emergency Stop	Someone has pressed Emergency Stop or turned off the machine but not FlexiCAM software.	Sluk maskinen, se punkt 5.5 Luk FlexiCAM, Tænd maskinen, se punkt 1.1 Åbne FlexiCAM, se punkt 2.2
6.6 ZST Error 	License server is already running.	Click Quit.
6.6 	License server is already running.	Click Quit.

6.5 Cannot Establish connection with Secure Server	License service is NOT running.	Restart license server, see step 2.2
6.5 Machine Validity Expired!	License service is NOT running.	Restart license server, see step 2.2