

**HARMUTH**  
**CNC-FRÄSTECHNIK**



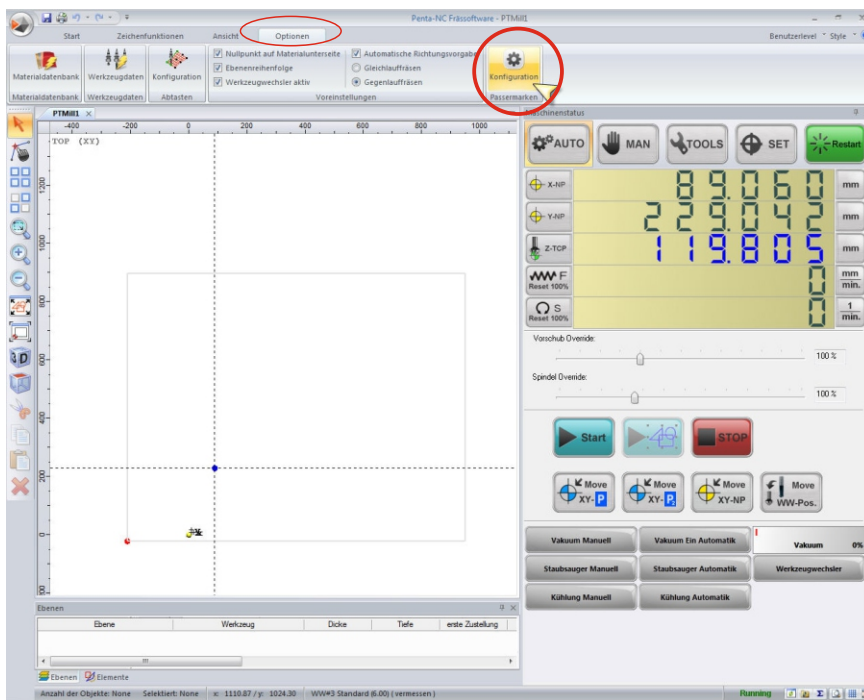
**Tutorial**  
**Camera**

## Camera Settings

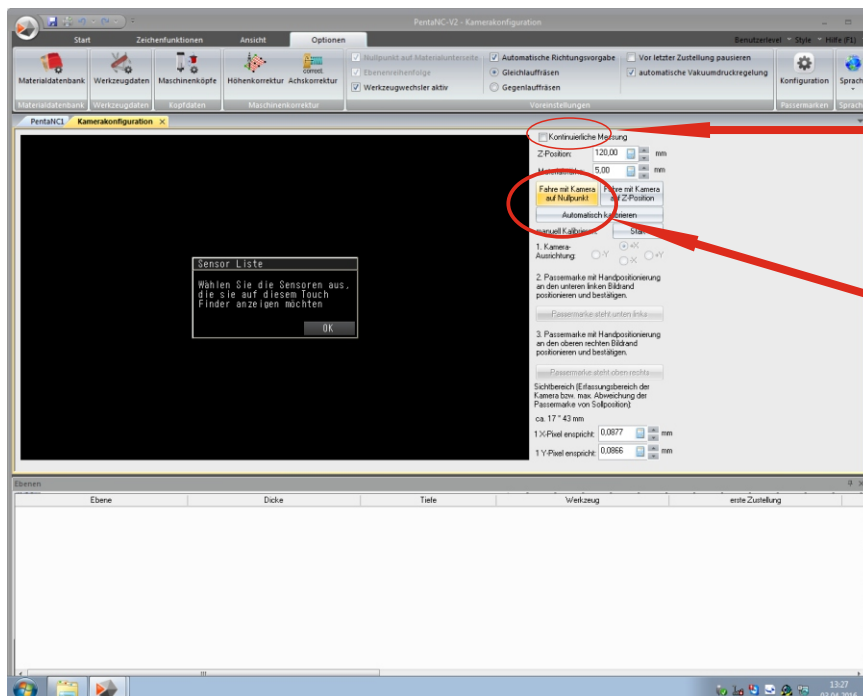
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# 1. Configuration of fiducial mark

## Optionen - Configuration



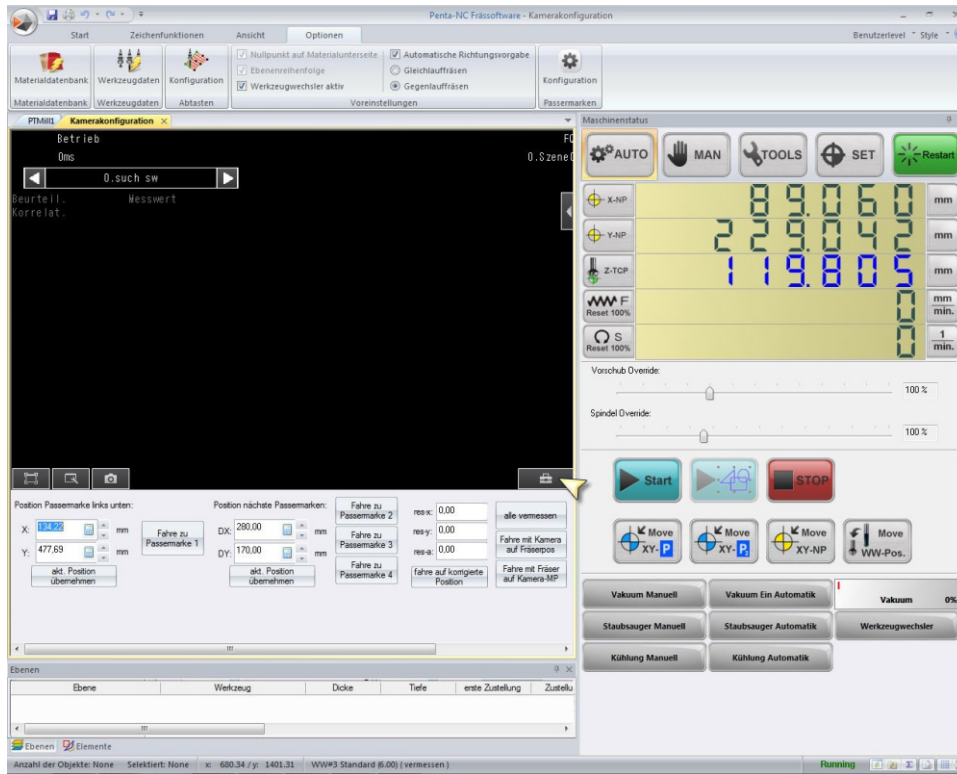
## Kamera zum Teachen auf richtige Höhe fahren



Camera ON

Go to the Zero-Point Camera

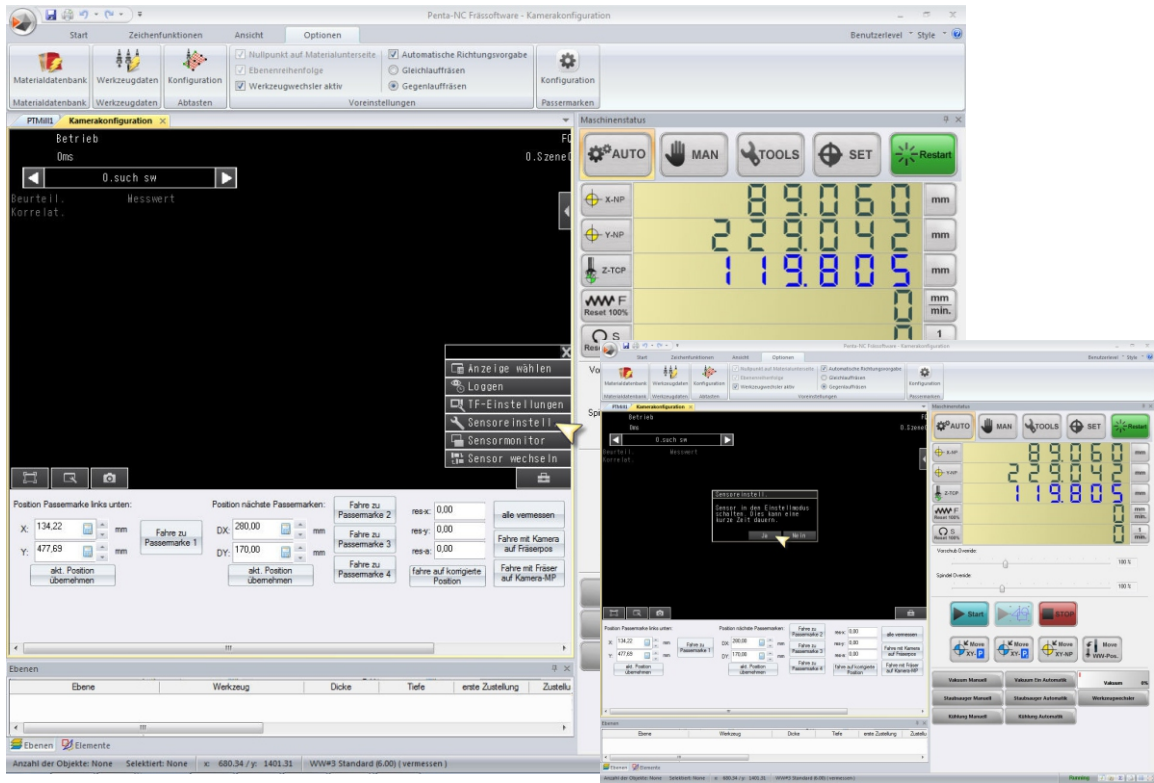
## 2. Camera Configuration



More information on specified functions: see chart below

Option	Remark
<p><b>Camera Configuration</b></p>	<ul style="list-style-type: none"> <li>• One single click on the option symbol (bottom right) opens the selection</li> </ul>

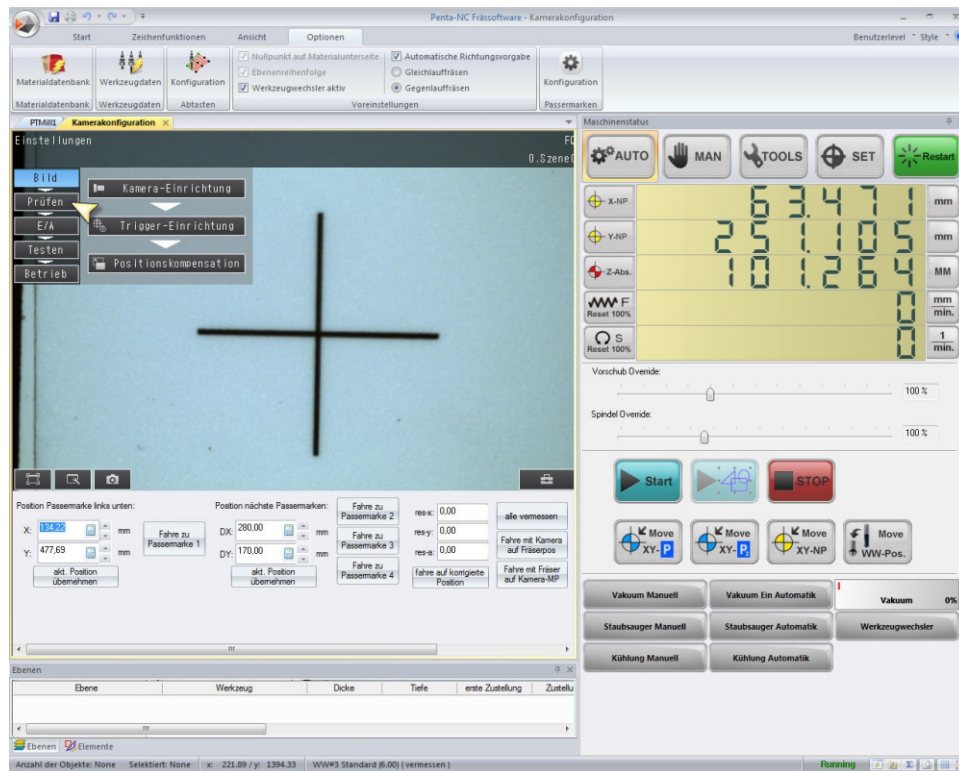
### 3. Setting the sensor



More information on specified functions: see chart below

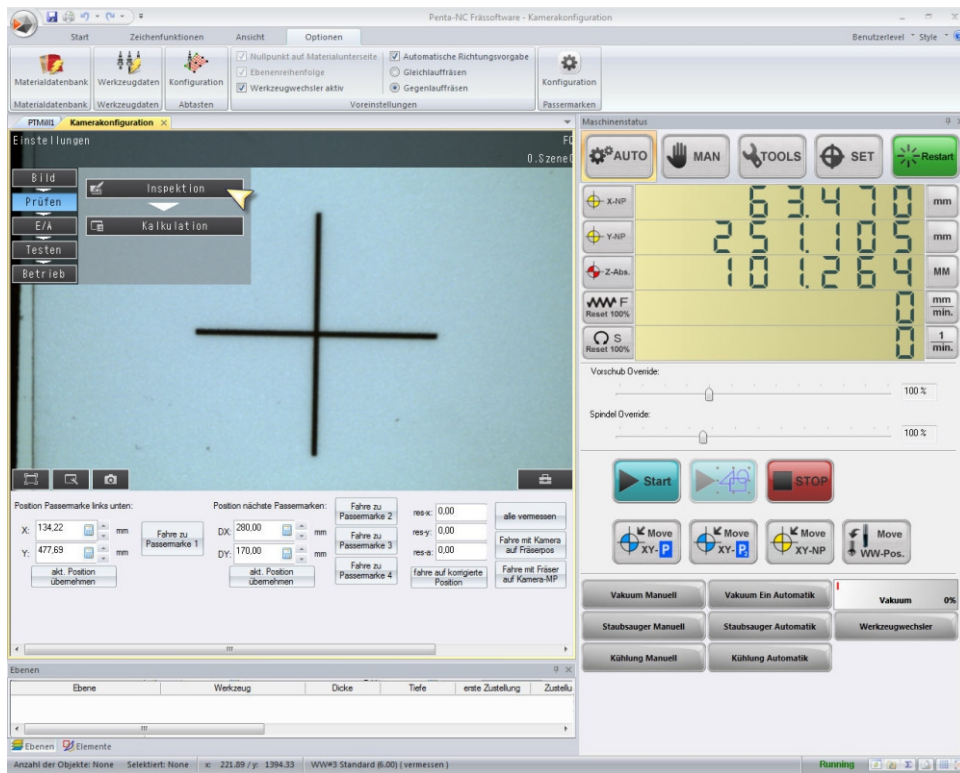
Option	Remark
<p><b>Setting the sensor</b></p>	<ul style="list-style-type: none"> <li>• Select the option „sensor setting“</li> <li>• Confirm the prompt „Setting sensor into setting mode this can take some time“ with a „Yes“</li> </ul>

## 4. Live-mode of the camera



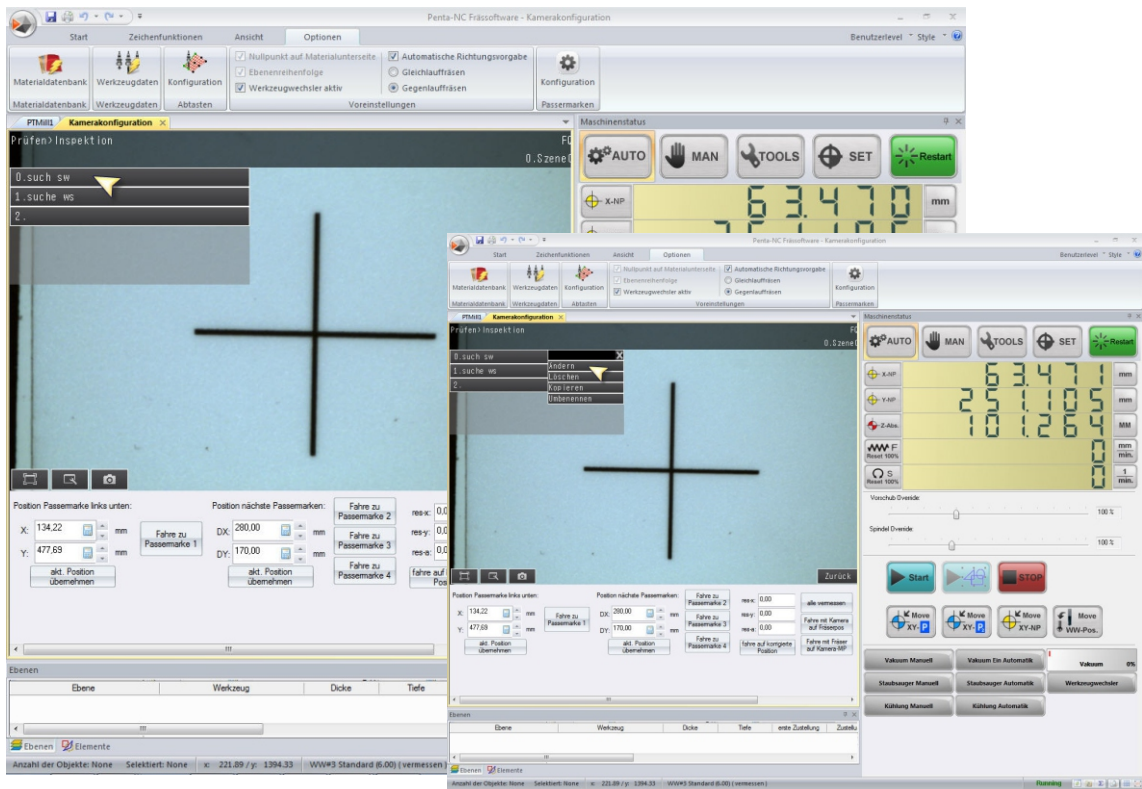
More information on specified functions: see chart below

Option	Remark
<p><b>Live-mode</b></p>	<ul style="list-style-type: none"> <li>• Now the camera is set to „Live-mode“</li> <li>• The image will be renewed permanently and the lighting of the camera flashes</li> <li>• Select „test“ in the menu</li> </ul>



More information on specified functions: see chart below

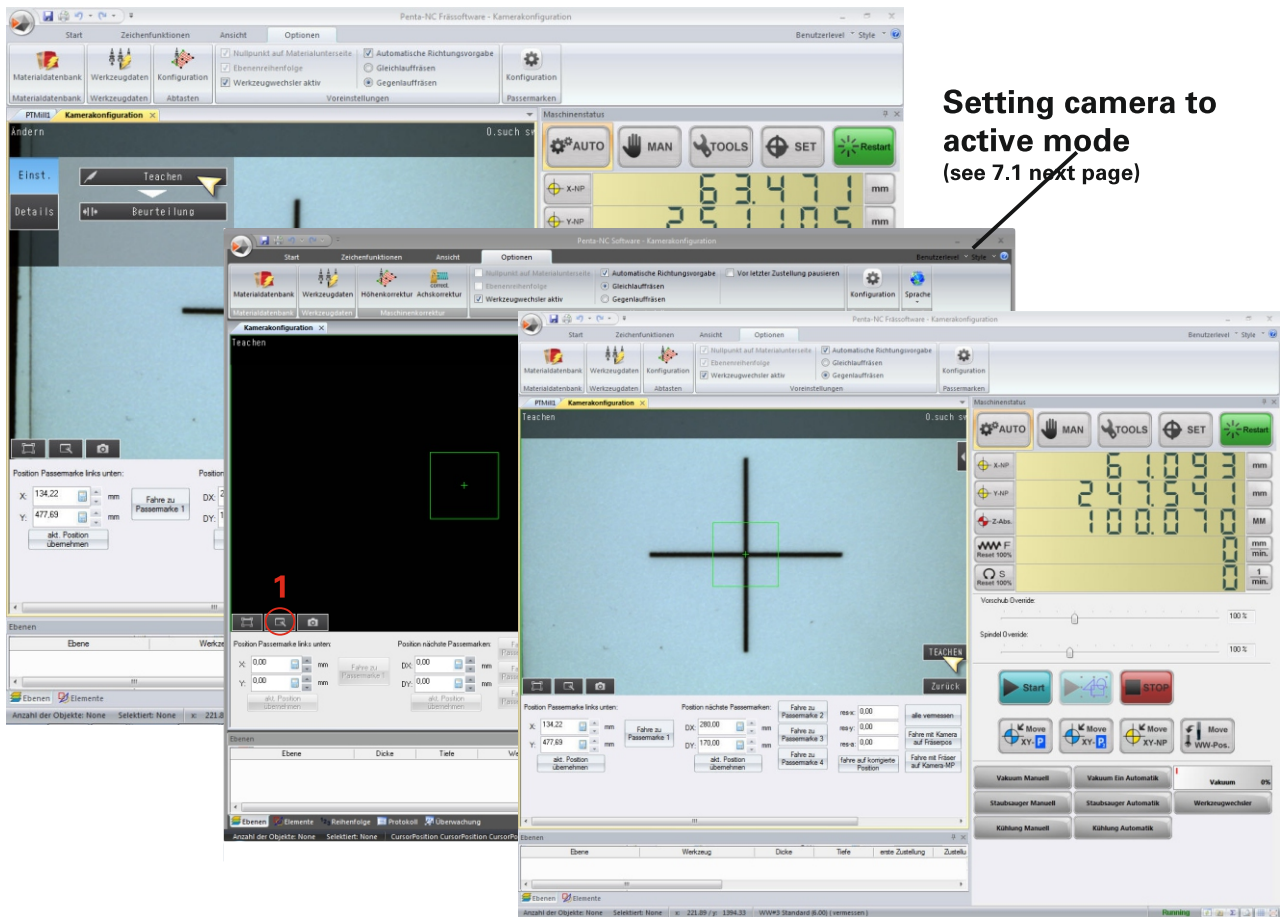
Option	Remark
<p><b>Inspection</b></p>	<ul style="list-style-type: none"> <li>• Select the option „Inspection“</li> </ul>



More information on specified functions: see chart below

Option	Remark
<p><b>Search SW</b></p>	<ul style="list-style-type: none"> <li>• Select the option „Search SW“ and click „Change“</li> </ul>



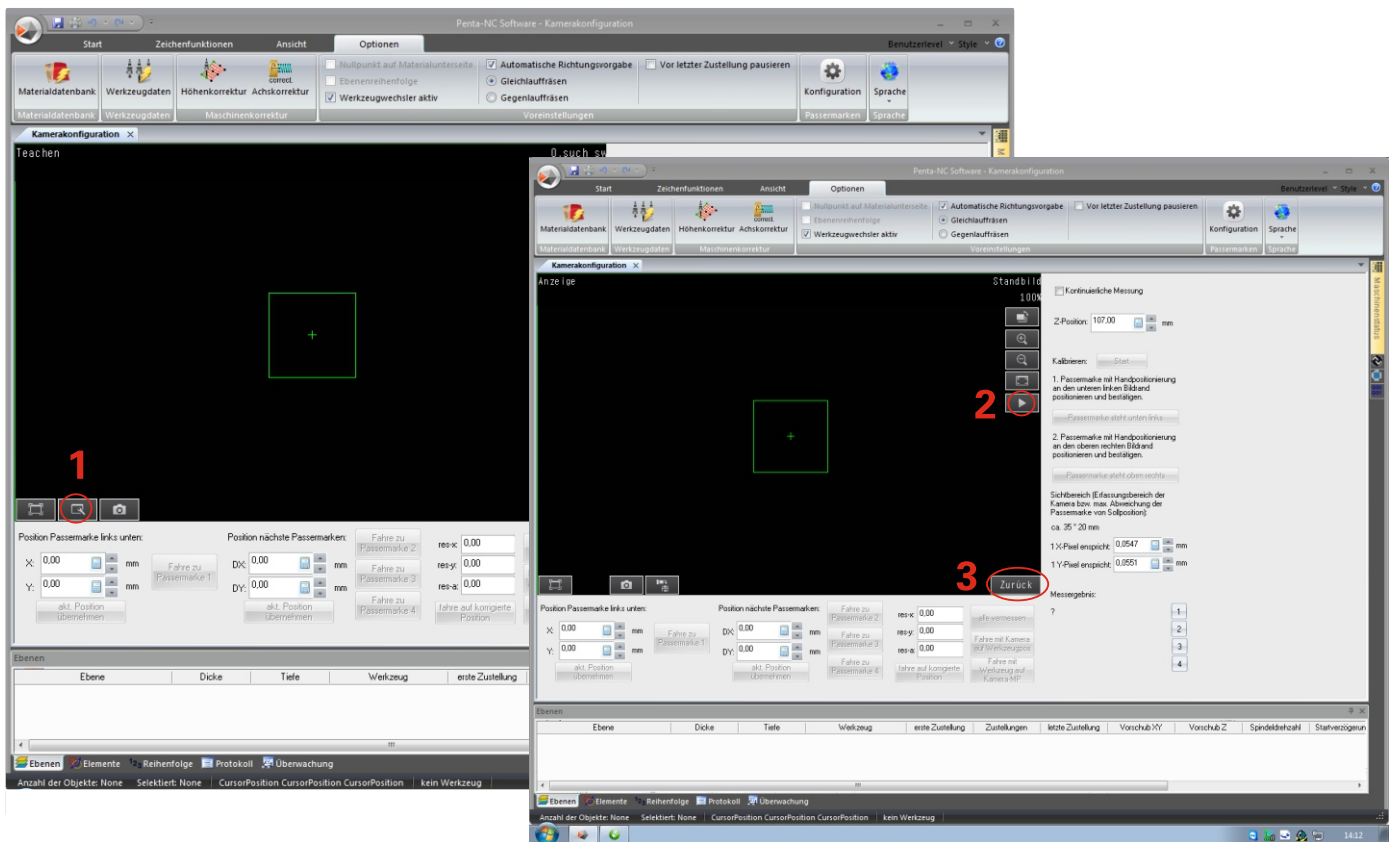


Setting camera to active mode (see 7.1 next page)

More information on specified functions: see chart below

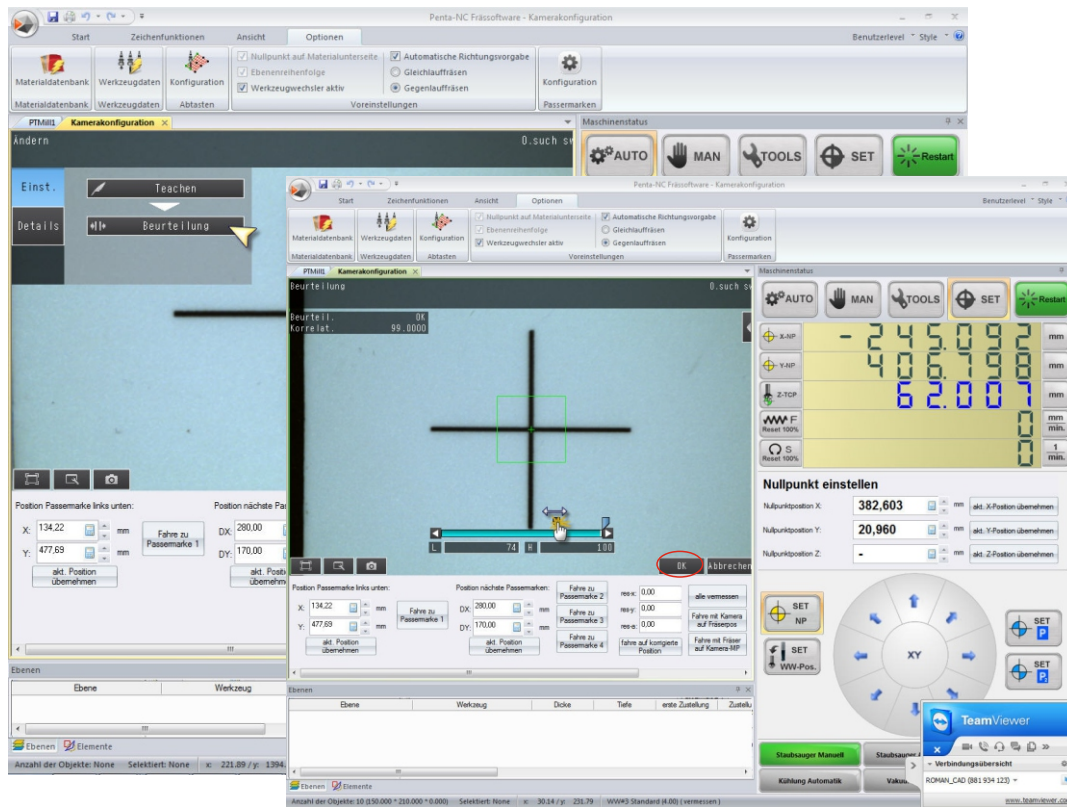
Option	Remark
<p><b>Teaching</b></p>	<ul style="list-style-type: none"> <li>• Select the option „Teaching“</li> <li>• <b>prior to teaching set the camera to active (see 7.1)</b></li> <li>• Now you see the Live-image and a green square with a reticle</li> <li>• The green square describes the field of vision for the mark. The reticle is the centre.</li> <li>• Position the reticle with the hand-held device right above the centre of the fiducial mark.</li> <li>• Make sure that the fiducial mark is situated within the angle.</li> <li>• Via button „Teaching“ the mark will be taken over whilst the square disappears for a short time</li> <li>• By pressing the button „Back“ the teach-function will be left.</li> </ul>

# 7.1 Setting camera to active



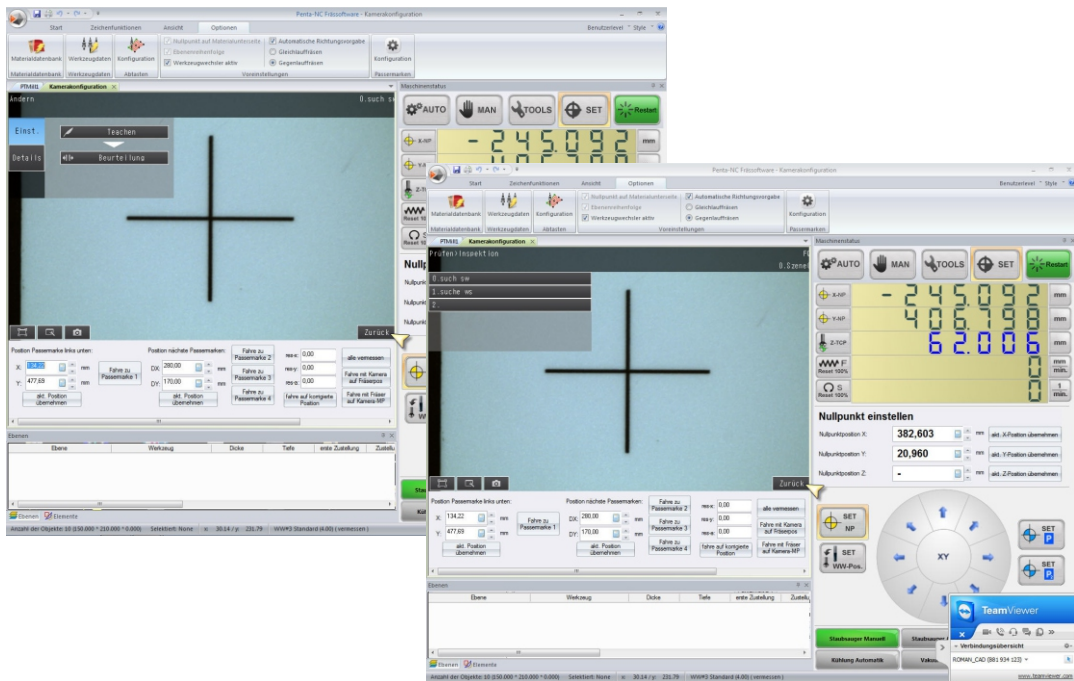
More information on specified functions: see chart below

Option	Remark
<p><b>Setting camera to active mode</b></p>	<ul style="list-style-type: none"> <li>• Setting camera to active mode:               <ol style="list-style-type: none"> <li>1. click to Settings</li> <li>2. click to Start</li> <li>3. click to „Back“ to get back to the configuration</li> </ol> </li> </ul>



More information on specified functions: see chart below

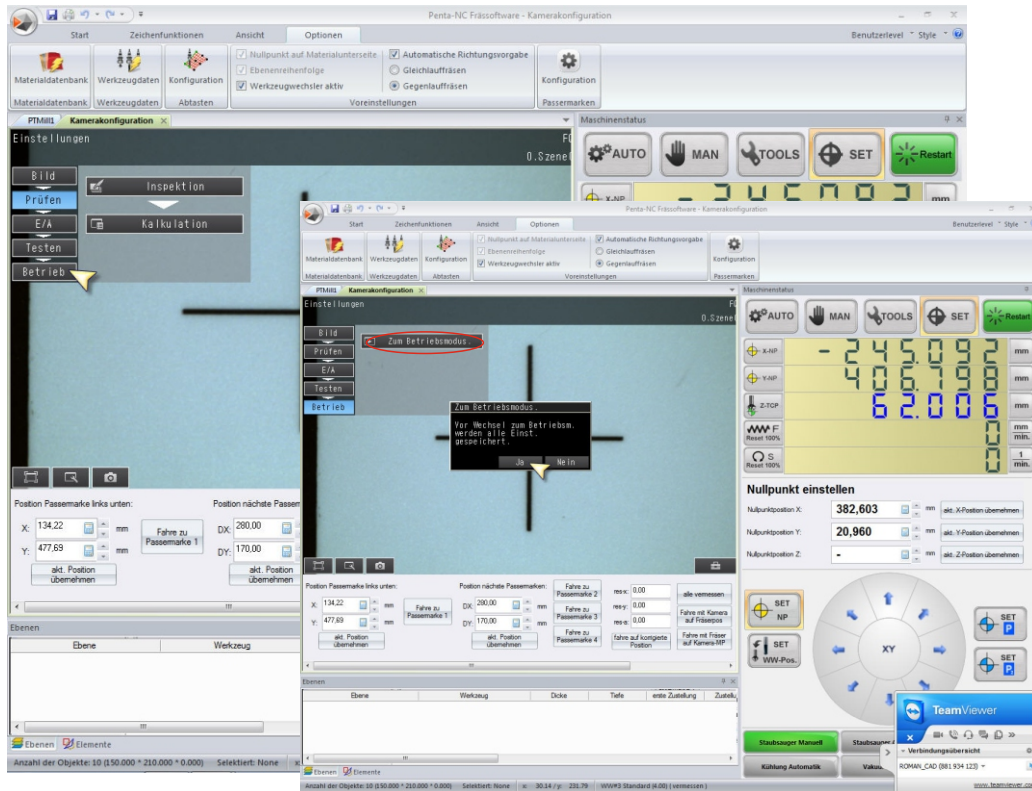
Option	Remark
<p><b>Evaluation</b></p>	<ul style="list-style-type: none"> <li>• Select „evaluation“ in the menu</li> <li>• Here you can tell how much % of the fiducial mark corresponds with the taught one</li> <li>• With the help of the slide control the threshold value can be set from on the fiducial mark will be recognised as invalid</li> <li>• Being in the menu you can also move to different fiducial marks to tell the evaluation.</li> <li>• Leave the evaluation function by pressing the button „OK“</li> </ul>



More information on specified functions: see chart below

Option	Remark
<p><b>Back to menu</b></p>	<ul style="list-style-type: none"> <li>• Press on the „Back“ button twice in a row</li> </ul>

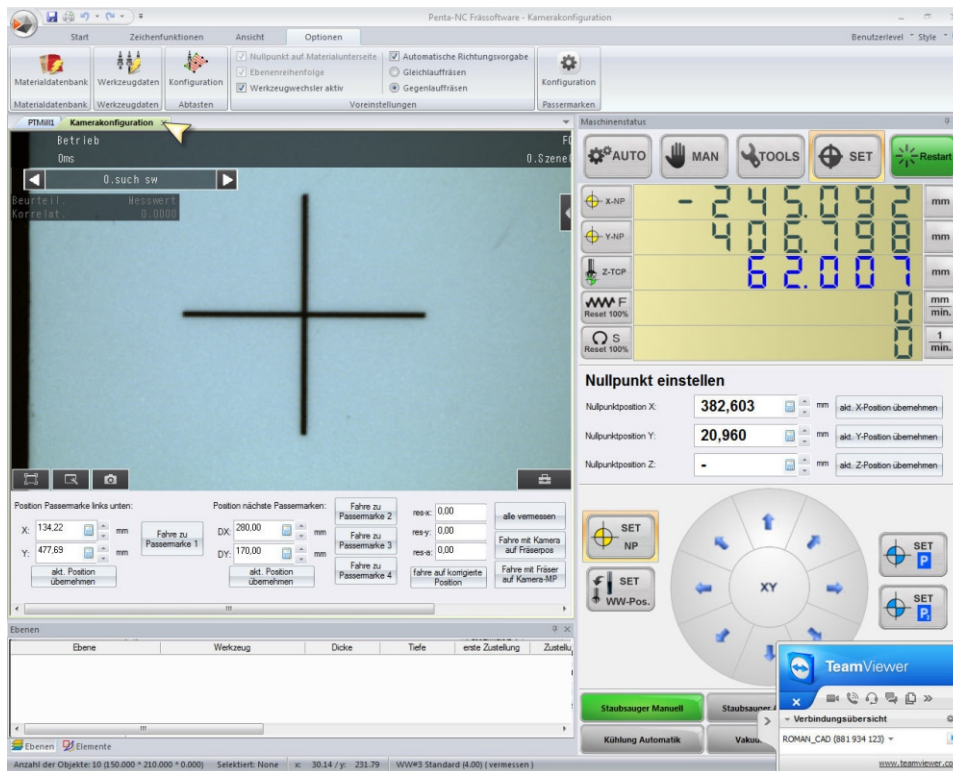
# 9. Mode of operation



Nähere Informationen zu bestimmten Funktionen: siehe untere Tabelle

Option	Remark
<p><b>Mode of operation</b></p>	<ul style="list-style-type: none"> <li>• Select „Operation“ in the menu</li> <li>• next select „to Operation mode“</li> <li>• Confirm the prompt                      „In prior to changing to operation mode all settings will be saved“ with a „Yes“</li> </ul>

# 10. Configuration of locking the camera

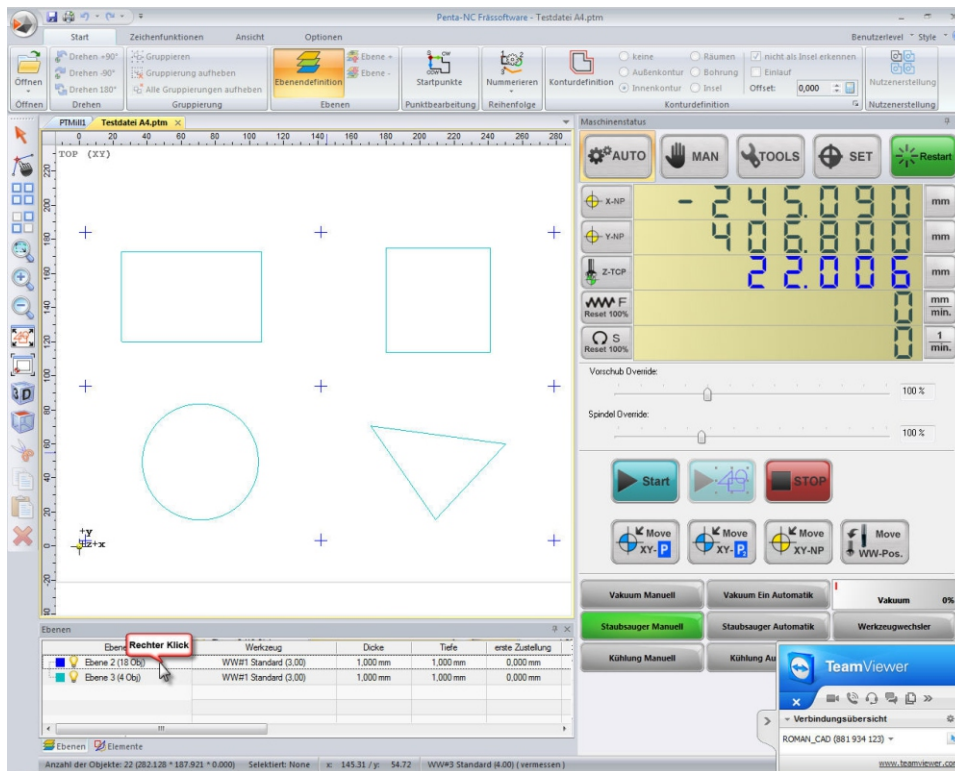


More information on specified functions: see chart below

Option	Remark
<b>Camera Configuration</b>	<ul style="list-style-type: none"><li>• Close the configuration of the camera</li></ul>

# 11. Determine the fiducial mark

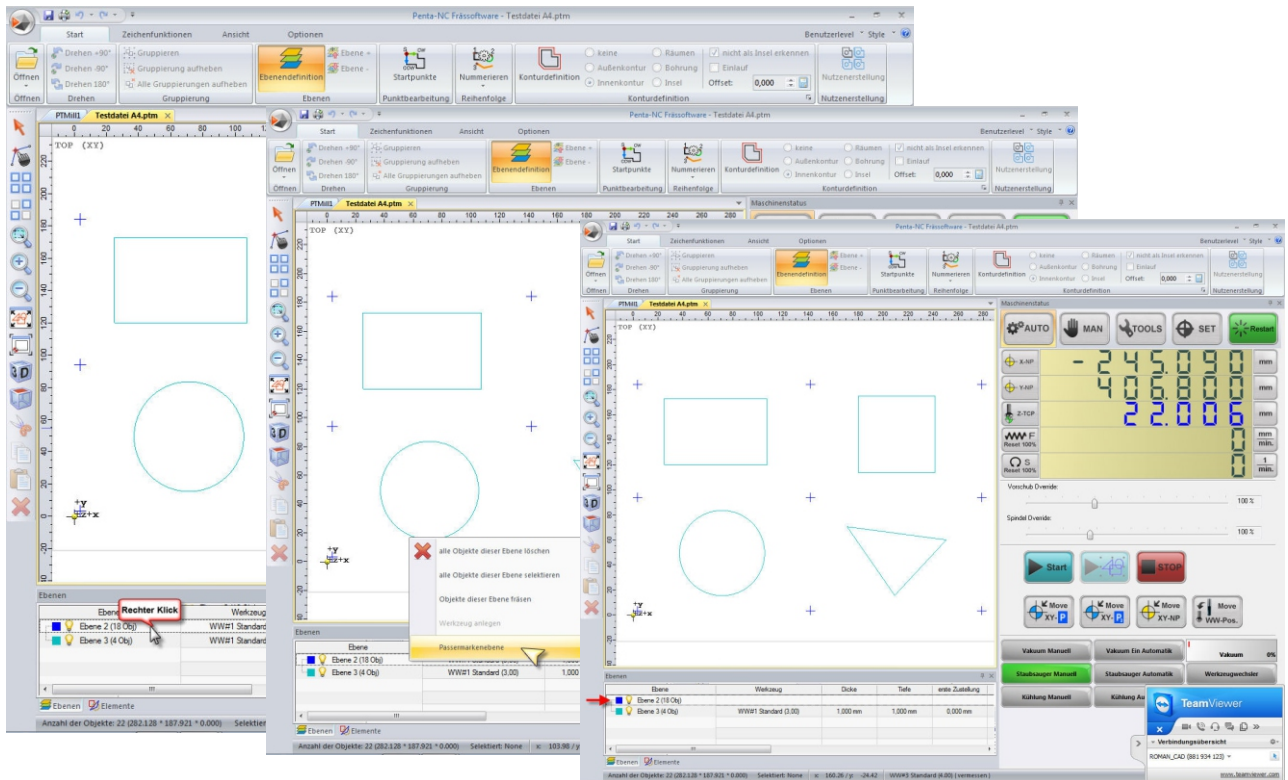
## Example



More information on specified functions: see chart below

Option	Remark
<b>Determining of fiducial marks</b>	<ul style="list-style-type: none"><li>• The passable are put onto an own level</li><li>• The fiducial mark within the millfile does not have to correspond to the printed fiducial mark so a printed reticle for example may be found as a circle within the millfiles as well</li><li>• It is important, that the fiducial mark consists out of:<ul style="list-style-type: none"><li>- a maximum of 2 objects</li><li>- the geometrical focal point of the objects are identically</li><li>- the geometrical focal point corresponds to the fiducial mark</li></ul></li><li>• The chronological order of the fiducial mark scan must correspond with the chronological order of the object numbers.</li></ul>

## 12. Determining of fiducial mark level



More information on specified functions: see chart below

Option	Remark
<p><b>Determining of fiducial mark level</b></p>	<ul style="list-style-type: none"> <li>• To determine the fiducial mark level right click on the level click</li> <li>• A small submenu opens up where you can select „fiducial mark level“</li> <li>• If there is a fiducial mark level determined already, all data will be hid except the name of the level</li> <li>• The function for the fiducial mark is set to active automatically</li> </ul>