



# DENRACLE PRE-MILLED ABUTMENT SOLUTION FOR VHF N4

USER'S GUIDE V1.0



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## User's Guide

### DENRACLE Pre-milled abutment solution for vhf N4 Impression

1. Applicable machine: vhf N4 impression
2. Introduction: This User's Guide is to instruct users to apply DENRACLE holder on vhf N4 impression and thus to process the milling of the DENRACLE pre-milled abutments.
3. Instruction:
  - 3.1 vhf N4 impression machine front view

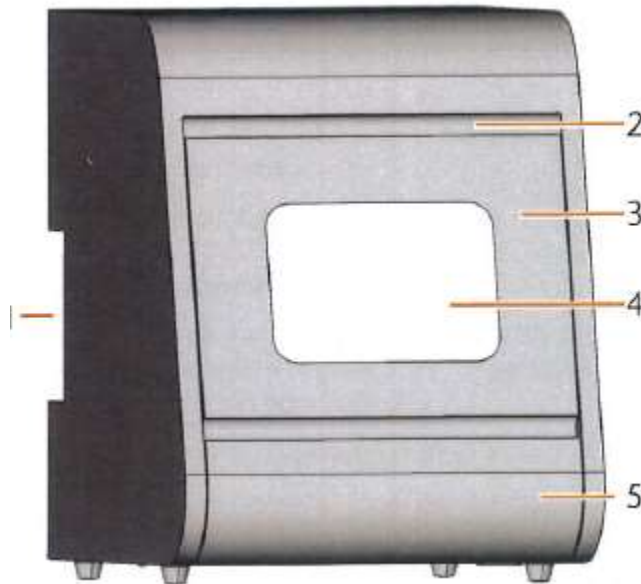
[1] Connection panel on the backside

[2] Recessed grip for opening the front cover

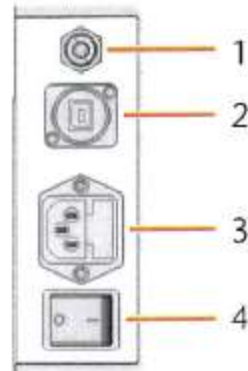
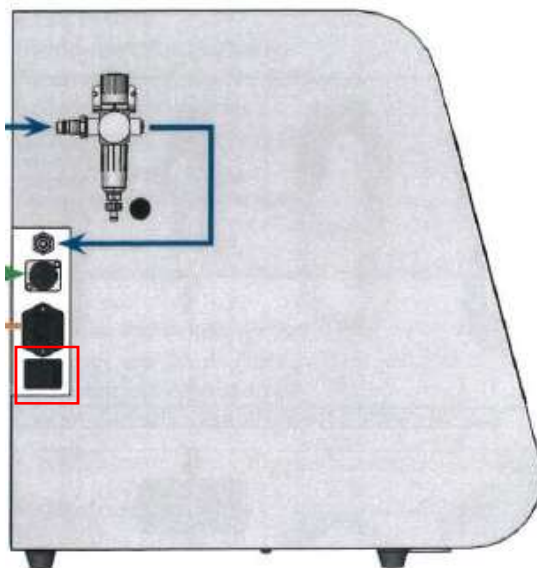
[3] Front cover

[4] View window to the working chamber

[5] Liquid container



3.1.1 Switch on the power. The switch is on the panel on the machine left.



Connection panel on the backside

[1] Pneumatic connection

[2] USB connection

[3] Power connection

[4] Power switch

3.1.2 Ensure the USB cable is connected with the controlling computer.

3.2 Software installation

3.2.1 Ensure to close the anti-virus software before installing the software.

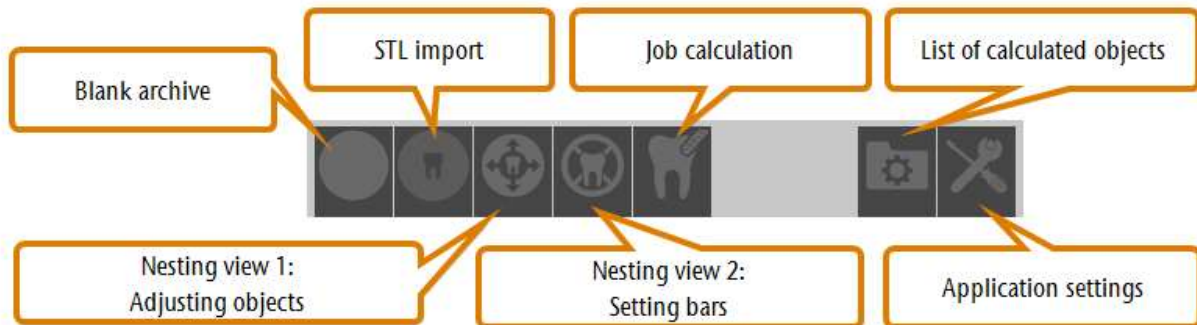
3.2.2 Minimum system requirements

- CPU : Intel® i3 or equivalent
- Graphics Coprocessor : Internal with 300 MHz
- Operating system: : 64 bit version of Windows® 8.1 or 10
- Hard drive : 125 GB free space for data
- RAM : 4 GB
- Display resolution : 800 vertical pixels
- Mouse with scroll wheel for 3D nesting (for all other functions a touch display is sufficient)
- Permanent internet connection

3.3 Starting the **DentalCAM** software by clicking the icon



3.3.1 The icon bar of **DentalCAM**

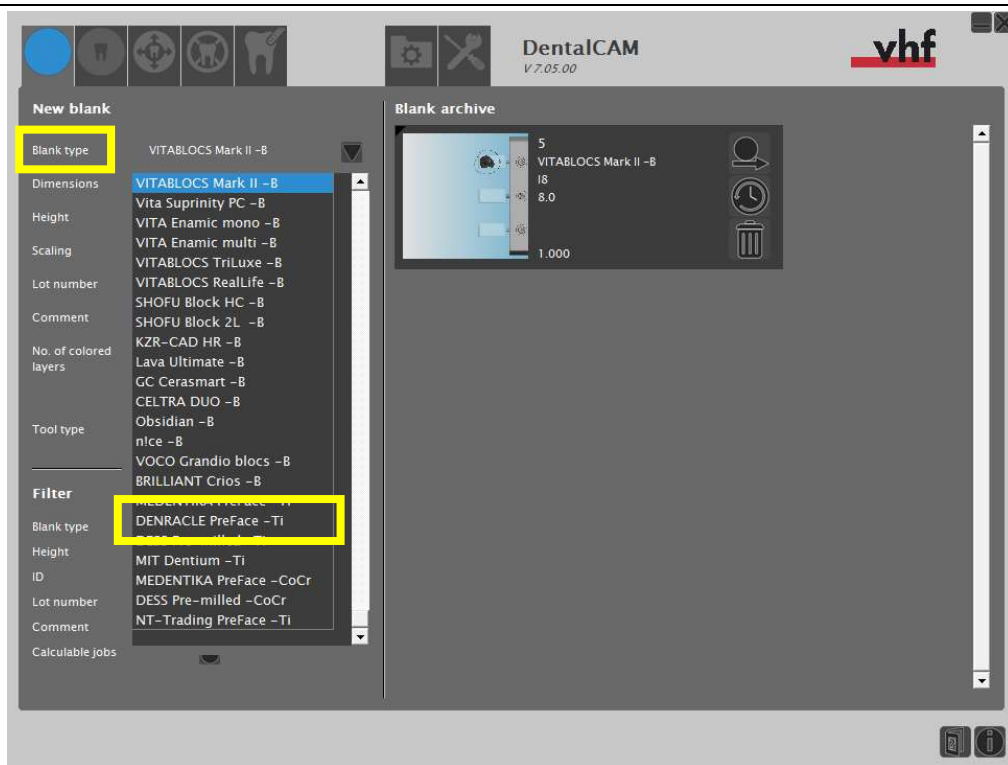


3.3.2 Operation procedure

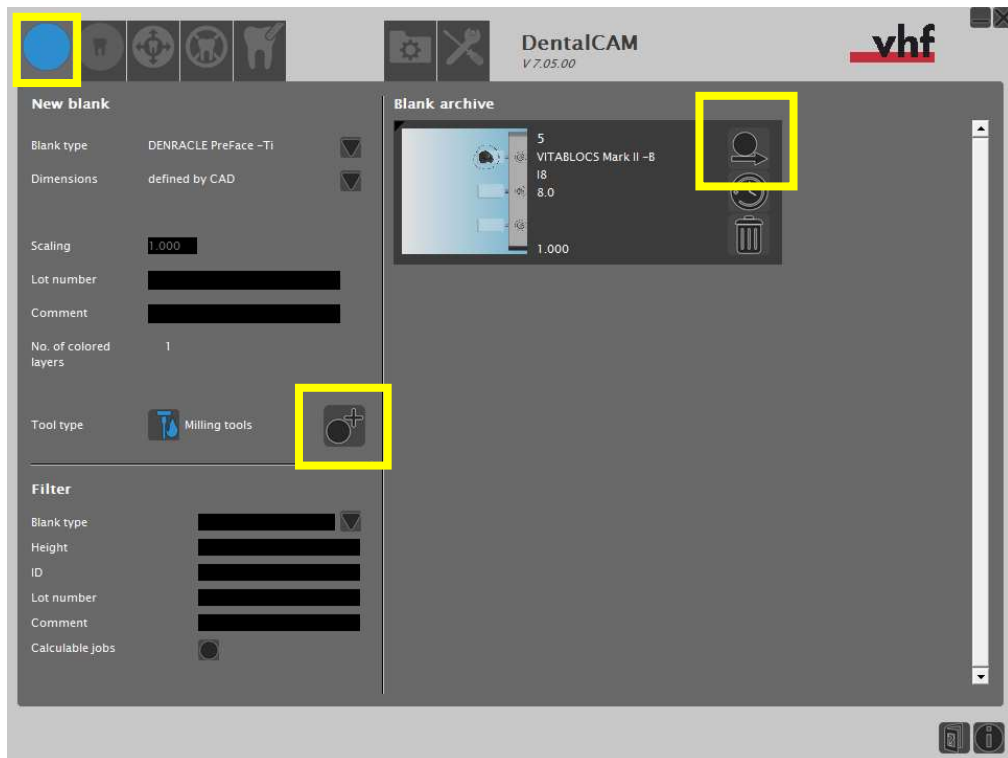
The basic workflow is to follow each operation button from left to right.

3.3.2.1 In the **Blank archive** page, to mill custom abutments, in the **Blank type** area, choose **DENRACLE PreFace-Ti**.

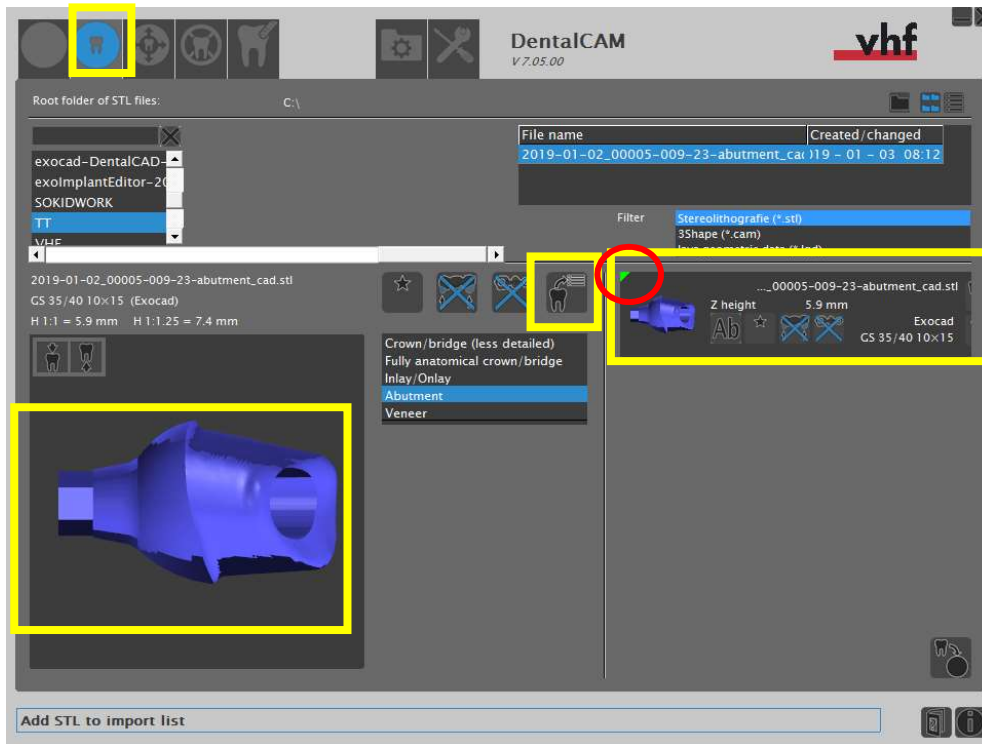
3.3.2.2 To mill glass ceramic, confirm the material brand and size.



3.3.2.3 Adding newly required material as below. Click **Import STL** button.

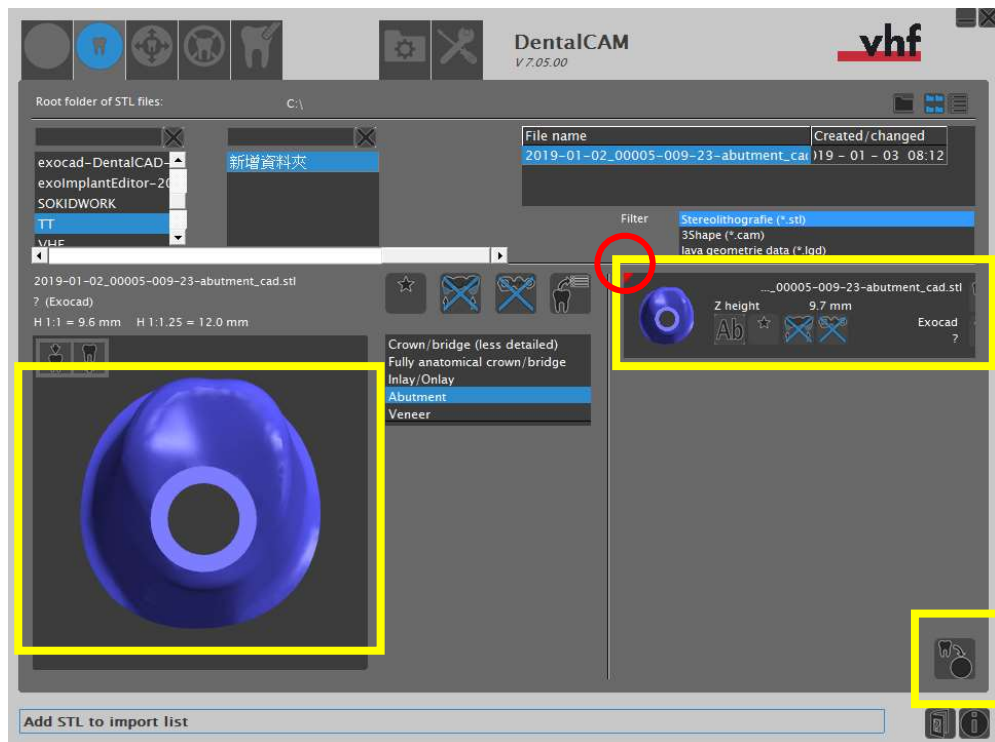


3.3.2.4 In the **Import STL** page, select and confirm the milling file by checking the data shown on the screen as the below image.

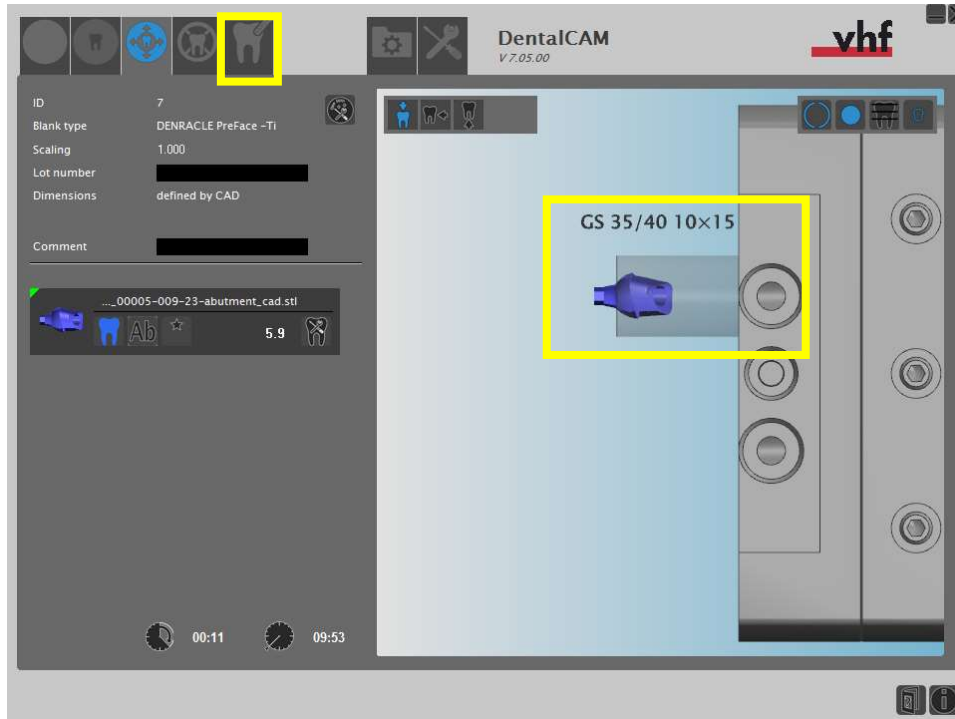


3.3.2.4.1 If the file is correct, the green indicator will appear on the left top.

3.3.2.4.2 If the file is incorrect, the red indicator will appear on the left top.

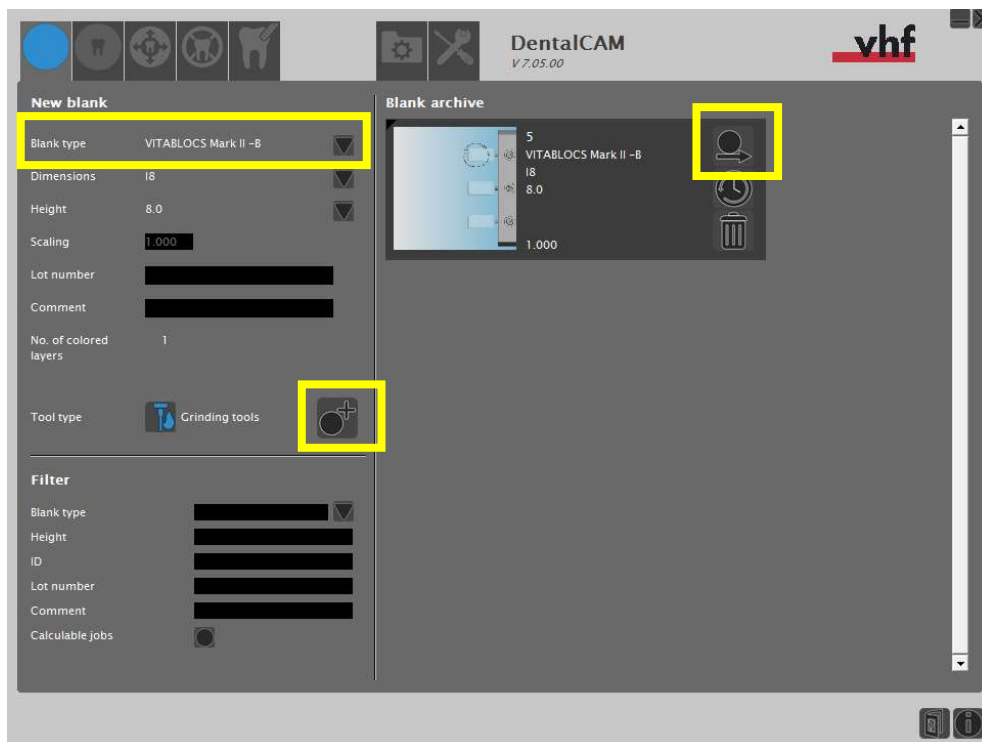


3.3.2.5 Adjust the direction of the workpiece (in this case, a custom abutment) and ensure it is within the material for proper milling. Then, click **Job calculation**.

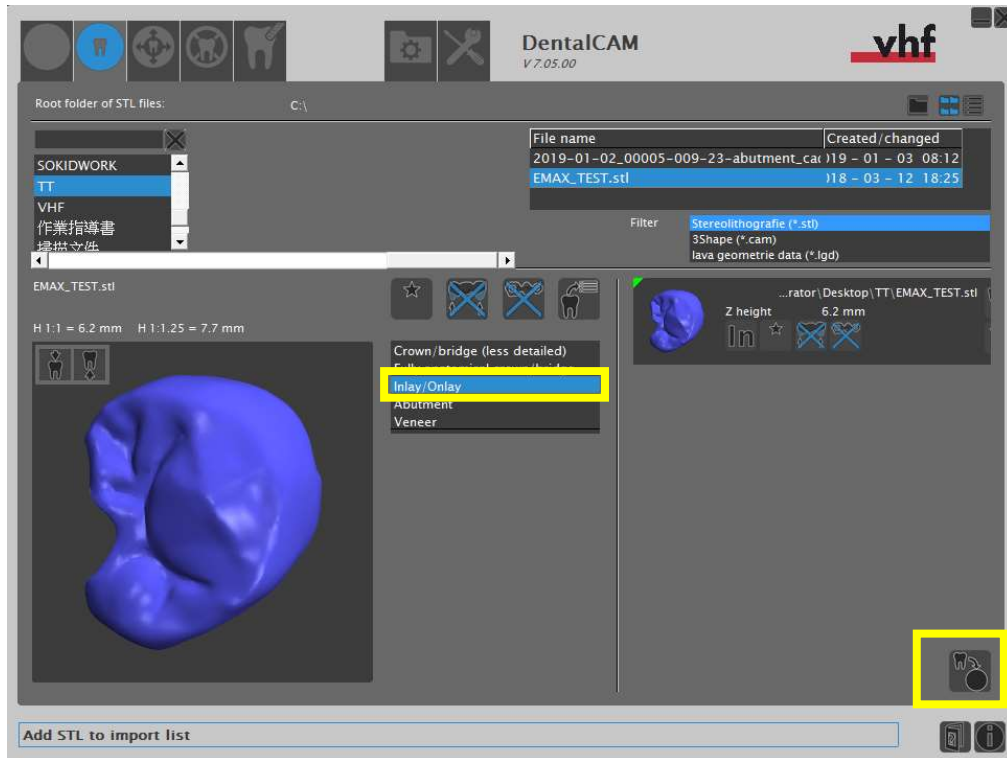


### 3.3.3 Milling glass ceramics

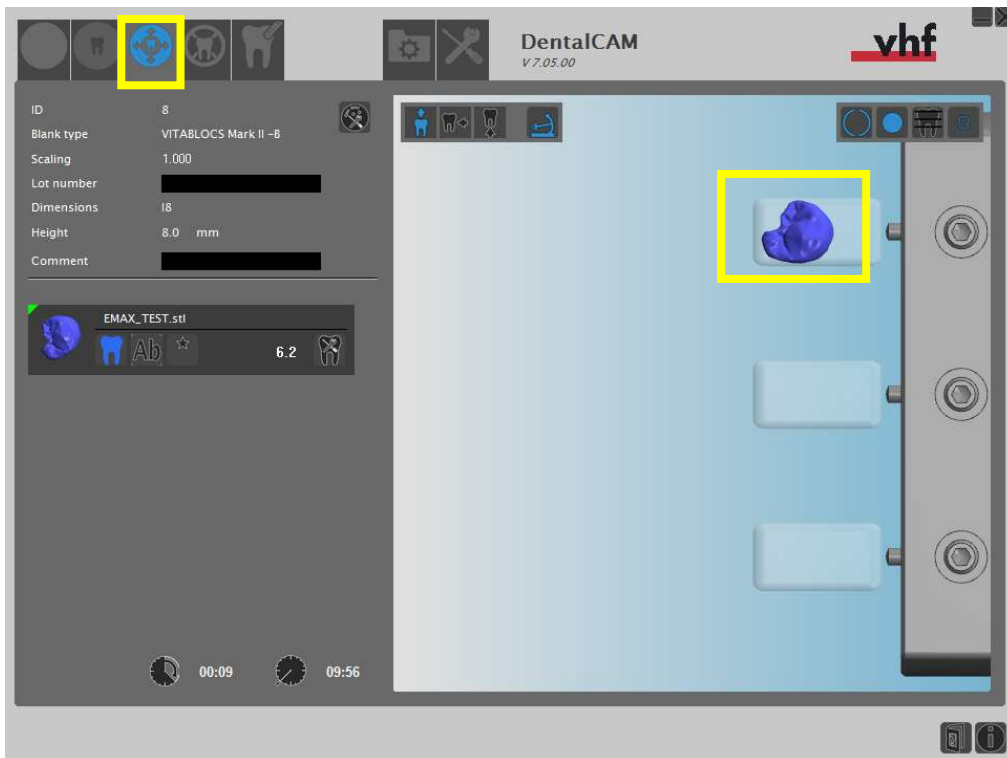
3.3.3.1 In the **Blank archive** page, in the **New blank** area, selecting **Blank type**.



3.3.3.2 In the **Import STL** page, selecting the desired milling file.



3.3.3.3 In **Nesting view: adjusting object page**, adjust the position of the workpiece (in this case, an onlay). Right click and use the mouse wheel to rotate its direction.

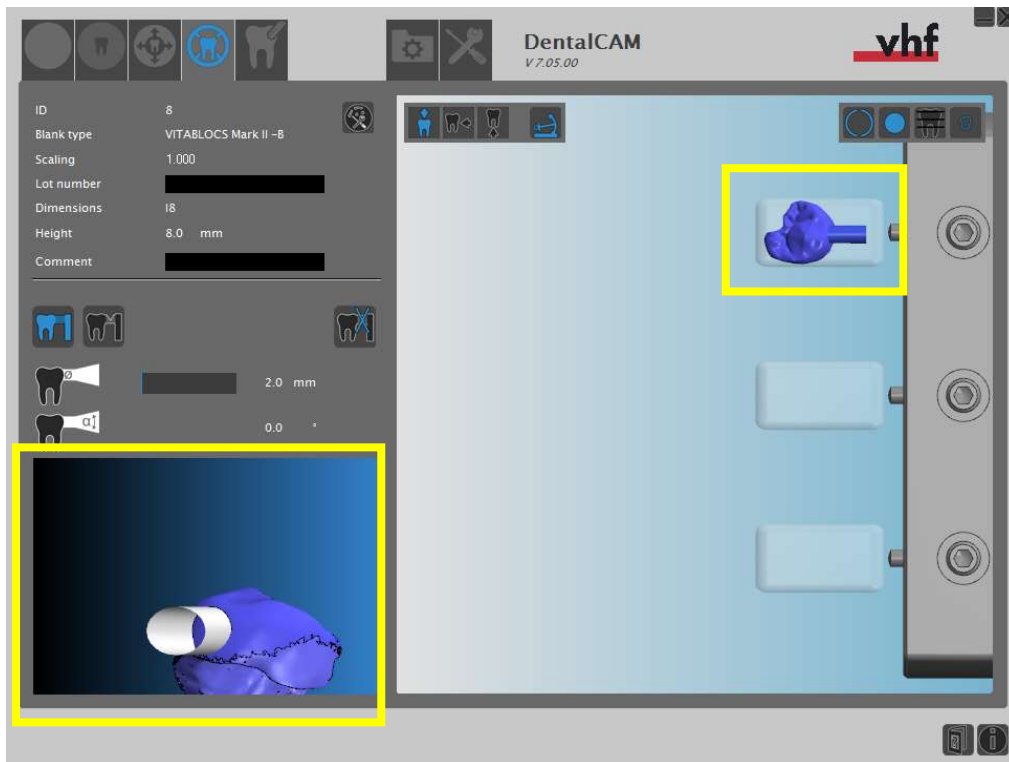


3.3.3.4 Then, in **Nesting view 2: Setting bars** page, set the position of the supporting bars.

It is suggested to set bars NOT on the contact side but on buccal or lingual side.

3.3.3.5 After setting the bar, adjust details in the small window at the left bottom corner (see

below image).



3.3.4 Click **Job calculation** button or click **Dental CNC** icon on the desktop.



3.4 Starting Dental CNC . Following is the DentalCNC icon bar.

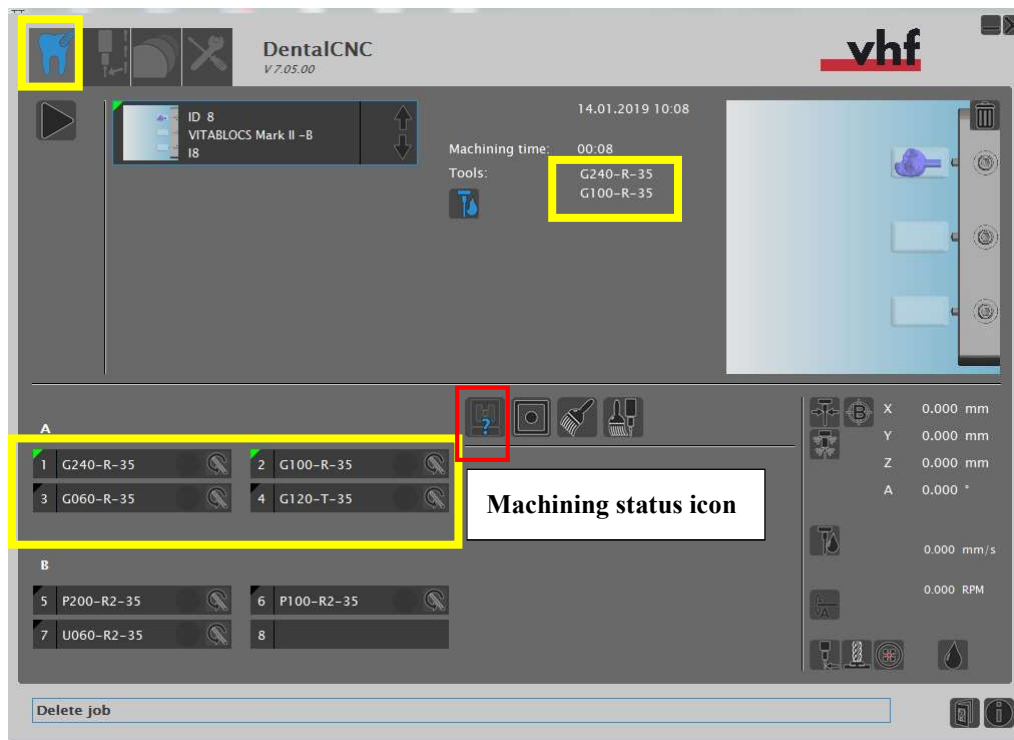


3.4.1 Operating DentalCNC







The basic workflow is to follow each operation button from left to right.


3.4.1.1 Entering the **Machining View** page.





### 3.4.1.1.1 Machine status icon

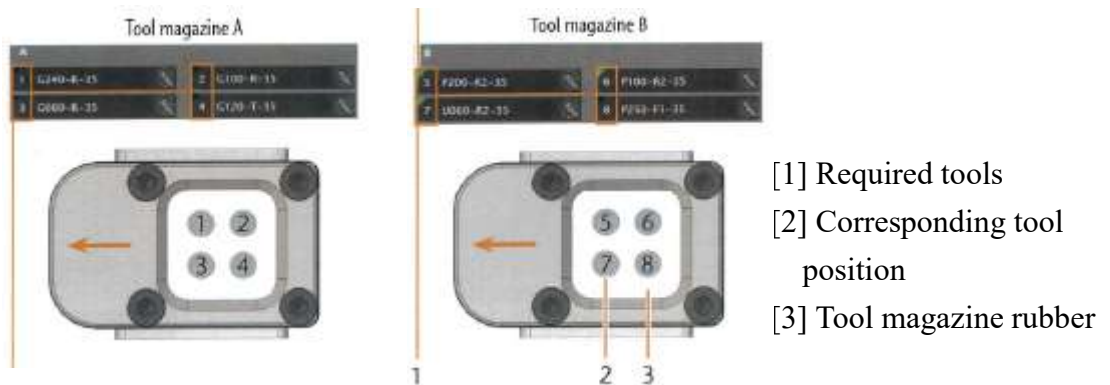
| Icon  | Status                    | Description  |
|---|---------------------------|--|
|  | Not connected             | DentalCNC couldn't find your machine. If the machine is properly installed, you may need to establish the connection.  |
|  | Connected                 | DentalCNC successfully established a connection to your machine.   |
|  | Working chamber door open | The working chamber door is open. For safety reasons, all operations that require the axes to move are not available.  |
|  | Machine is operating      | The axes of the machine are moving. In most cases, it is machining a job.  |
|  | Operation interruption    | DentalCNC interrupted machining because a parameter (e.g. the strength of the incoming air pressure) is outside the permitted range. DentalCNC displays a message informing you about the incorrect parameter. Machining will continue as soon as the parameter is within the permitted range again. |
|  | Machine waiting for data  | In cases of especially complex jobs, the machine may be able to process the blank faster than the computer can calculate the job. If this happens, DentalCNC pauses the machine until enough data has been calculated to resume machining.   |

|   |                            |   |
|---|----------------------------|---|
|  | <p>Machine malfunction</p> | <p>A machine malfunction is recognized by the internal control unit in case of a critical event. DentalCNC displays the error code and error message that was sent by the control unit.</p> |
|---|----------------------------|---|

3.4.1.2 In the **Tool Administration** page, confirm the below before machining any object.

3.4.1.2.1 Based on the required milling tools, put the milling tools to the corresponding position in the tool magazine.

(The milling tools must be placed following the designated and corresponding position. For example, in the following case, tool G240-R-35 must be place in position No.1, G120-T-35 must be placed in position No. 4 in Tool magazine A. Misplacement may cause breakage of tools).



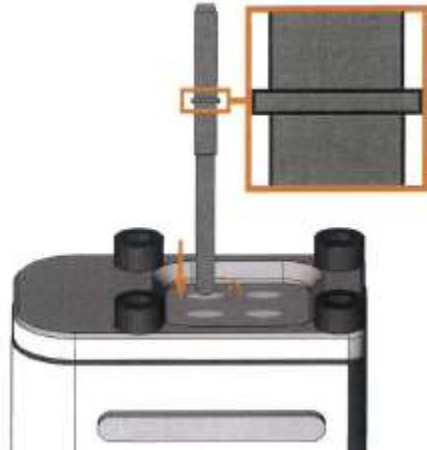
3.4.1.2.2 Tools for milling glass ceramic is named with an initial letter, “G”, which stands for “glass ceramic”.

3.4.1.2.3 Tools for milling pre-milled abutment is named with an initial letter, “M”, which stands for “metal”.

3.4.1.3 The milling process only starts when the green indicator appears on the top left corner.



3.4.1.4 Check the milling tools and the rings before each milling starts.



\*Check if the ring (see above enlarged image) is properly placed on the machine before each milling.

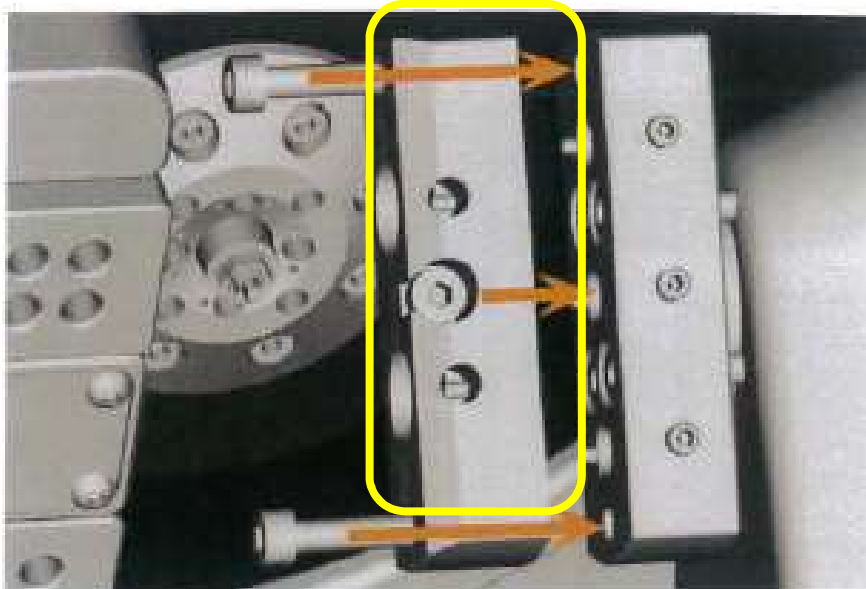
3.4.1.5 If the file is correct, the green indicator will appear on the left top corner.

3.4.1.6 Confirm there is sufficient water in the water container.

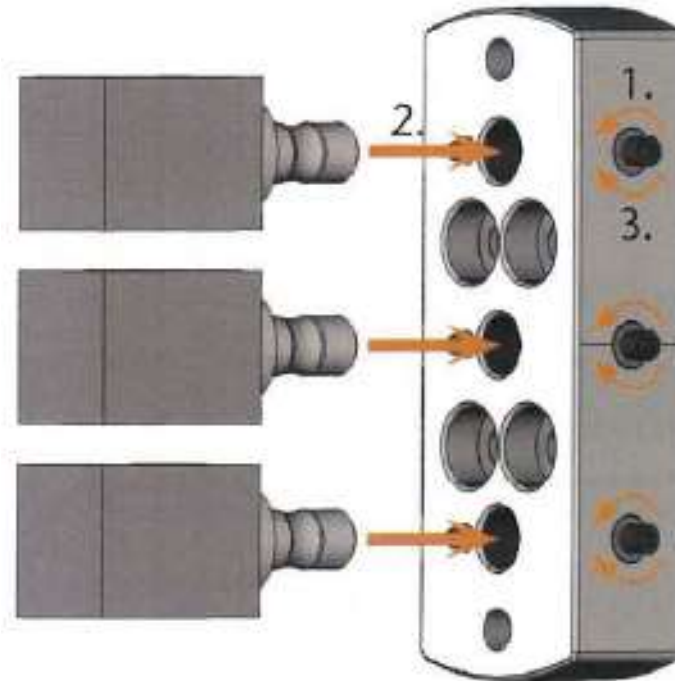
3.4.1.7 Confirm the air pressure is larger than 6 (The normal range is from 5~8. Do not start milling when the value is below 6).

3.4.1.8 Screw the material blank on the machine.

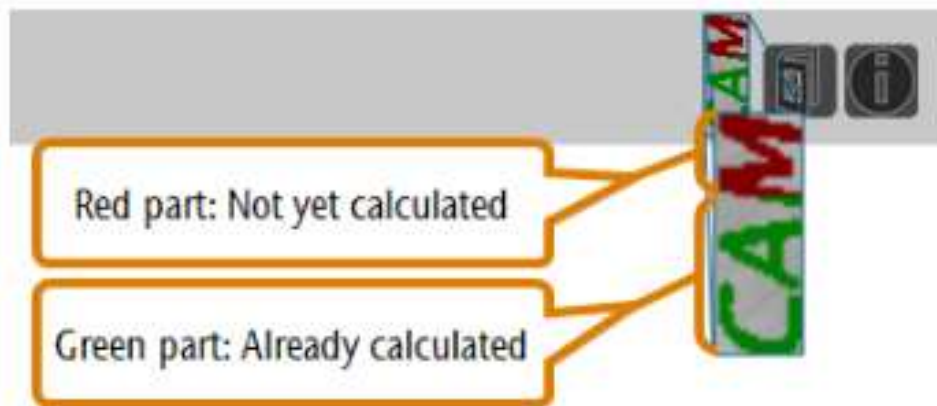
3.4.1.8.1 When milling pre-milled abutment, screw the pre-milled abutment on DENRACLE blank holder first and then screw the holder on the machine.



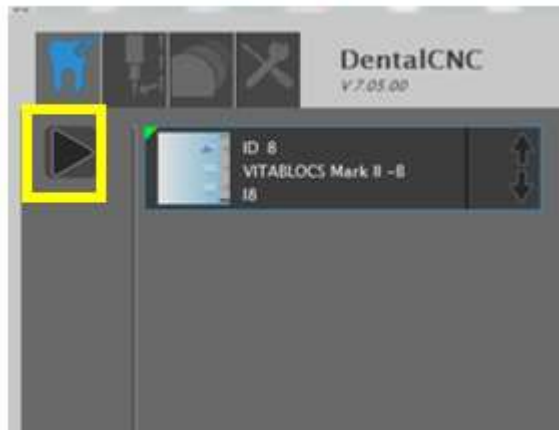
3.4.1.8.2 When milling glass ceramic, directly screw the glass ceramic blank on the machine.




3.4.1.9 **Job calculation:** If a job is still being calculated, **DentalCNC** displays the word **CAM** on the right side of the corresponding job list entry. The word functions like a progress bar– the green part indicates the already calculated data and the red part the data that needs yet to be calculate. Do not start milling if the calculating progress is finished less than half.



3.4.1.10 After confirming the above, start machining by clicking the start button (the below yellow circled button).

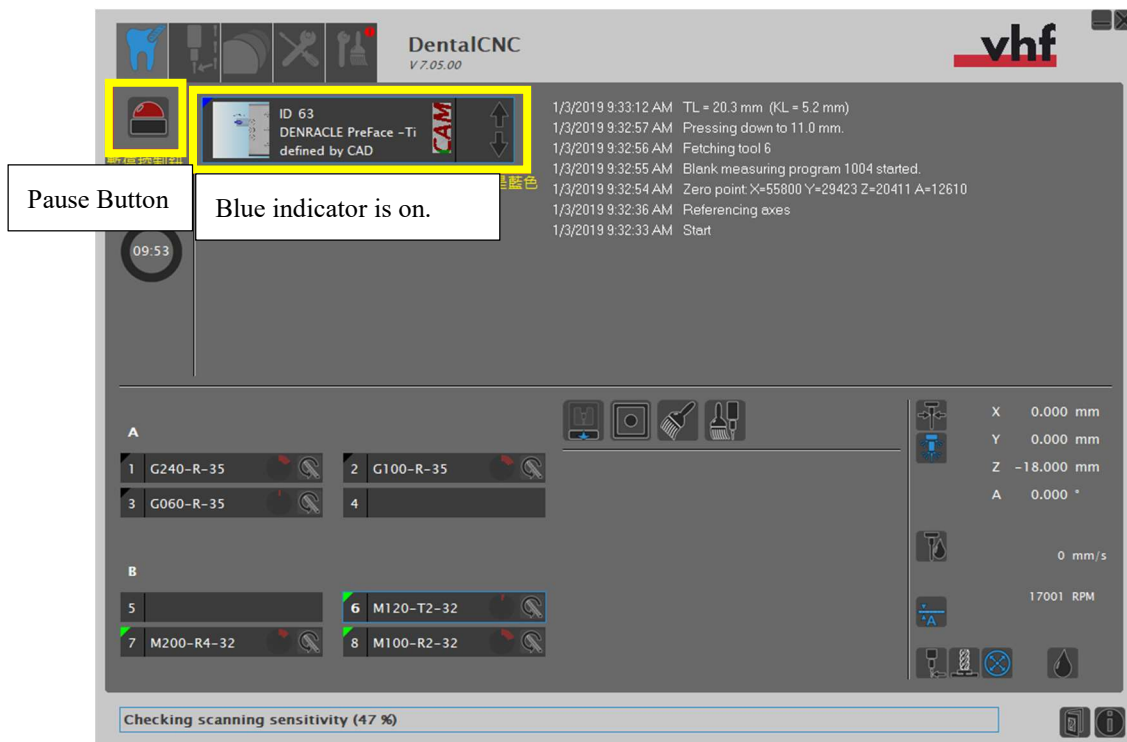


3.4.1.11 The operation staff is advised not to leave the machine until the material is properly placed and the machining starts.

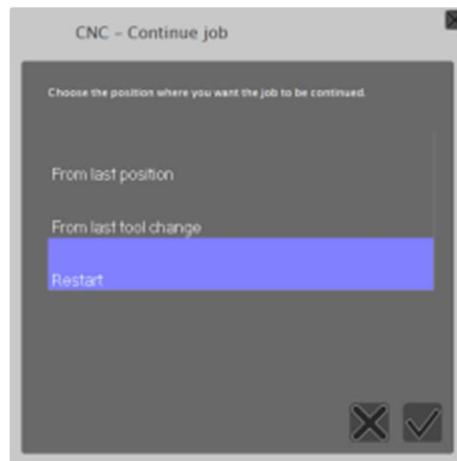
3.4.1.12 Press the **Pause** button  if any problem.

3.4.1.13 The blue indicator on the left top corner shows the machining status.

3.4.1.14 If any alarm or warning message shows, press **Pause** and consult vhf N4 impression maintenance guide (TM-64).



3.4.1.15 Once press the **Pause** button, you can restart machining in the **CNC-Continue job** dialog box.



3.4.1.15.1 Select **From last position** to continue the machining process from the last procedure before the pause.

3.4.1.15.2 Select **From last tool change** to execute all machining procedure of the last milling tool before the pause.

3.4.1.15.3 Select **Restart** to restart from the very beginning of all the machining process.

3.4.1.15.4 Click  after selecting the desired option.

3.4.1.16 While machining is executed, the indicator should be blue.

3.4.1.16.1 Color indicators and their meanings

| Colors       | Status   |
|--------------|--|
| <b>Green</b> | Machine is ready. Close the front case.        |
| <b>White</b> | Milling process finishes. Open the front case. |
| <b>Blue</b>  | Milling is under process                       |
| <b>Red</b>   | Machine malfunction                            |