How to Accurately Reproduce Dynamic Occlusion with 3Shape Lab Scanners

With 3Shape lab scanners*, you can easily scan models on articulators and, in the process, transfer the position of the mounted models from the articulator into Dental System™. The result: the static and dynamic occlusion will be the same in the Dental System virtual articulator as it is on the physical articulator. This is very valuable—especially for full contour case design—because without proper dynamic occlusion in the software, you risk creating a suboptimal design that could require manual modification or a complete redo. Here’s the process:

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**Calibration**

In order to be able to replicate the dynamic occlusion, you need to calibrate your system—including the articulator, transfer plates and scanner—using the 3Shape Articulator Calibration Object (formerly the Occlusion Transfer Calibration Object). You only need to calibrate your system one time and, after that, your workflow will be faster.

First, mount the Articulator Calibration Object on your articulator so the contact surface between the two halves are aligned with the sagittal plane and the incisor indicator is aligned with the vertical notch on the calibration object.

Very important: use very low-expansion gypsum for mounting the Articulator Calibration Object and your cases.

*Except D500, D640, D700, D710, D800, D810, D900

Once the Articulator Calibration Object is properly mounted:

1. Start ScanServer: the easiest way to do this is to start scanning the case, close the scan and then open the Scan Server again, clicking on the corresponding tray icon. Select “Tools” and “Manage Interface Plates.”

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2| Select “Add” under “Articulator Interfaces.”

3| Select the type of articulator you wish to calibrate and assign it a name.

4| Follow the on-screen instructions: put the articulator transfer plates with the Articulator Calibration Object on top into the scanner and press continue; there is no need to use the scan height adapter.

The calibration is complete.

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**Scanning the Case**

Once the physical articulator has been calibrated, you can quickly and easily transfer the position of the mounted models into the Dental Designer software.

Create the order as you normally would in Dental System™ and start scanning:

1| In the interface plate drop down list, select that you’re using an interface plate; this option only appears after you have calibrated the system.

2| Insert the models mounted on the interface plates in the scanner and close the door.

3| Scan as you normally would; the only difference is that you no longer need to scan the bite, saving you a step in the scanning process.

You can inspect the static occlusion in the Scan Occlusion step.

If gypsum expansion has caused slight penetration between the scanned models, the software will detect this and can correct it for you.

**Design as you normally would in Dental Designer, including using the virtual articulator. The arches are automatically placed in the very same occlusion as they were in the physical articulator, without the need of a bite scan.**

**Supported Articulators**

This example was made using the Artex™ articulator, but 3Shape supports a number of other articulators, including Denar, Bio-Art, KaVo, SAM and Shofu.

If your articulator doesn’t have specific transfer plates, you can use the 3Shape Generic Articulator Transfer plate. Simply glue your split plate on top of the flat interface plate and you now have an articulator transfer plate that works with your articulator. Calibration and scanning is the same as explained above.

In conclusion, with a simple, one-time calibration, you can scan mounted cases and get the same dynamic occlusion in the design software as in the physical articulator. This minimizes the need for manual adjustments and having to redo designs; it also saves a scan step for every case, increasing productivity.

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