From design to fabrication in a few minutes

Mrs. Esther Moll, KaVo application technician and dental technician, presents a design made with the ARCTICA-Software package

By Mrs. Esther Moll

The DentalDatabase user interface (Figure 1) shows all individual steps, from order creation, scanning, design to data transfer to the milling machine. To illustrate the rapid and simple realisation of a design, the description of the “step-by-step wizard” contains the time code. Tooth 21 is to be supplied with a crown. Design inputs are the current situation (Figure 2) and the mirror tooth 11. The impression of the current situation is taken and the scanned data are stored. The tooth is prepared, the impression is scanned.

02:25 p.m. - Data are stored.

02:26 p.m. - Data of the prepared 21 and the impression of the current situation is uploaded. The crown is positioned on the prepared stump (Figure 5).

02:27 p.m. – The step-by-step wizard leads to the next step of the process. The preparation line is created by the software via “1-click” (Figure 4).

02:28 p.m. – The software shows the calculated restoration shape (stump, Figure 5). This proposal by the software could still be individualized or changed.

02:29 p.m. - Mesial and distal contact points (Figure 6) are set.

02:30 p.m. - The software has positioned the database tooth (Figure 7).

02:30 p.m. – The step-by-step wizard offers to adapt the database tooth (white) to the situation (turquoise). The process step in the box (right) is called “Adaptation of model teeth”. The software calculates the correction (Figure 8).

02:30 p.m. – Adaptation of the design is complete (Figure 9).

02:31 p.m. - This process step (Figure 10) would allow additional changes or corrections. Proceed to the next process step with the “Consute” button.

02:31 p.m. – The system offers to trim the antagonist (purple) (Figure 11). Contact points to the adjacent teeth can be created or reduced.

02:33 p.m. – The MultiCAD software package now calculates the anterior tooth crown, com- piles the data and generates the milling data (Figure 12).

From now on the order for milling the crown can be issued. Access the “KaVo Software Suite” via the “CAM” button in the DentalDatabase. This controls the Engine. Use the start menu to select fabrication job and tool magazine and completes the order (Figure 15).

“With a little practice “simple” individual crowns can be done in five minutes”

In the interview below with KaVo’s, dental technician Esther Moll discusses the ARCTICA System’s further possibilities.

By KaVo

Dental technician Esther Moll has been an application technician with KaVo Dental since 1 October 2007 and works with KaVo Everett and KaVo Artecta. During product pilot phases, she acts as export contact person for validations, correction of bugs, software tests, etc. In addition, she complaints manager and works for international support. On the occasion of her user report, DZW spoke to Esther Moll about the particularities of KaVo’s Artecta System.

Q: Ms Moll, for a crown design to take barely ten minutes as described in the example, is this achievable for absolute Artecta professionals only?

Esther Moll: Anyone who has sufficient knowledge to define a crown by its key anatomic features can do that. With a little practice “simple” individual crowns can be done in five minutes – and this despite the five-axis technology, which is capable of fabricating even complex shapes. We are working on process optimizations that could lead to process times of ten minutes.

How much space will I have to allow for an Artecta system in my lab? Is a tabletop sufficient?

Yes, a big advantage is its size - half a technician’s bench is enough. The Artecta-Engine’s dimensions of 30 1/2 x 25 1/4 x 25 inch (775 x 500 x 584 millimeters) and its installation depth of 20 2/5 ince (524 millimeters) are indeed very compact.

Contact Information

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Figure 1: Intelligent preparation line determination

Figure 2: Initial situation and definition of target situation

Figure 3: Positioning

Figure 4: Intelligent preparation line determination

Figure 5: Software places a database tooth

Figure 6: Contact point

Figure 7: Software clarifies the database tooth

Figure 8: Correction of database tooth

Figure 9: Adaptation of database tooth

Figure 10: Query for further adaptation requests

Figure 11: Trimming the antagonist

Figure 12: Crown calculated – ready for fabrication

Figure 13: The “KaVo Software Suite”