Simodont Dental Trainer
Order code: **4508.SIMODONT**

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Information about product price on demand

Parameters

Quantitative unit   ks

Nissin Simodont dental trainer offers dental training in a virtual reality environment (a 'virtual reality phantom head'). Students can train dental procedures in a 3D virtual environment. Highly realistic haptic feedback (feeling) is provided through the drill hand piece so that the student has an exact feeling of the objects and materials that are being worked on during the training. Currently the following procedures are included:

- Manual dexterity training
- Indirect vision training
- Cardiology preparations
- Endodontic access preparations
- Crown preparations
- Patient specific crown preparations, via an easy import of an intra-oral scan (.STL file) of your patient
- Dental anatomy training
- Dental implants (under development)

The Simodont contains an extensive library of tooth models, instruments and procedures, and can be further customized by teachers so that it matches the training philosophy and requirements of individual dental schools. Teachers can observe and evaluate the work of students either real time or off-line at a later point in time. Training programs can be set up and managed, and tools are provided for objective assessment of students' work. Simodontis used and supported in over 100 dental schools around the world as a complement to traditional phantom heads. The Simodont was (and is) developed together with ACTA (the Academic Center for Dentistry in Amsterdam) and is continuously expanded with further functionalities developed in cooperation with a range of dental schools.

Simodont Hardware

1. ID Swipe or RFID user login in addition to manual login

2. Touch panel user interaction with the Simodont courseware

3. 3D display viewer

4. Projectors for stereo vision

5. Audio

6. 3D passive stereo glasses

7. Height adjustment to get the optimum height for user operation

8. Virtual mirror for working with indirect vision

9. Hand rest and finger rest for support of hand and fingers

10. Space mouse to manipulate the virtual model

11. Handpiece gimbal providing realistic haptic simulation of dental handpiece

12. Foot pedal providing variable speed

Teacher Application

Teachers can use the Simodont courseware for:

- User management: uploading and maintaining users, creating groups
- Planning of courses using the provided preset cases and customized cases
- Building customized case scenarios based on the provided model library containing over 60 tooth and manual dexterity models
- Importing intra oral scan data (STL) to build patient specific exercises
- Composing customized instrument sets from instrument library containing over 70 instruments
- Incorporate the schools own assessment rubrics
- Monitoring students and discuss cases in class using the remote viewer
- Reviewing student work in the evaluation environment
- Creating reports and exporting data

Simodont Courseware Student Application

Students work on the Simodont and:

- Practice in their own time
- Login using manual login, swipe ID card or RFID card
- Select cases from planned courses
- Choose their own positioning: left or right handed
- Learn about the virtual patient
- Write a treatment plan and make treatment plan drawings
- Select the required instruments for the planned treatment
- Easily switch between different virtual instruments for the preparation of the tooth
- Can actually feel the difference between the different tissues in the tooth
- Save 3D snapshots at different stages of the preparation
- Repeat exercises from a certain moment in the preparation using reloading of snapshots
- Inspect and review their preparation using virtual inspection tools not available in real practice
- Assess their own work using self assessment rubrics
- Compare their preparation against self made the treatment plan drawings
- Review the teachers feedback and grading on the Simodont

Simodont Supported Procedures

Manual Dexterity

- Over 40 preset exercises from basic to advanced level, direct and indirect vision
- Automatic scoring
- For cariology, crown, and endodontic exercises

Operative

- Over 10 preset Class I, Class II and Class V cases
- Permanent and primary dentition models
- Cases based on scanned real teeth, pictures and X-rays of the teeth are included in the cases
- Optional virtual patients
- Various caries excavating burs, hand excavators and caries sensible probe
- Virtual caries detector helps students locate caries

Crown

- Test the occlusal reduction using the antagonist
- Use the tooth axis as a guide for the preparation of the tooth
- Measure the reduction using the gauges and the tooth's original outline
- Measure the wall angles using virtual measurement tools like grids and gauges
- Inspect damage of the adjacent teeth

Endodontic access cavity

- Over 20 tooth models for access cavity exercises
- Good definition of the pulp chamber and root canals
- "Feel the drop in the pulp chamber"
- Inspect the tooth in semi-transparent mode
- Inspect the radiograph of the tooth during treatment
- Inspect the root canals using the explorer

Pediatric

- 2 Class II mandibular molar and 2 Class II maxillary molar models

Patient specific workflow

- Create your own models for the Simodont
- Practice real clinical cases on the Simodont
- Compatible with many intra oral scanners using the STL format