

Simulation Workstations

Practical teaching and learning

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Practical teaching and learning

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Dentsply Sirona provides a comprehensive suite of solutions for equipping universities, hospitals and training centres. Here at Dentsply Sirona you can obtain everything from a single source from products for preclinical training, through clinical training and treatment, to laboratory products. Our comprehensive product range allows us to tailor global solutions to your individual needs.



Individual solutions: Made in Germany

A learning environment with realistic conditions is a key factor for training success when practising on a phantom in the preclinical phase. As training concepts, local approaches and infrastructural conditions usually differ from institution to institution, Dentsply Sirona always provides custom-made solutions that we develop together with you.

Digital workflows

Digital workflows now already form part of our everyday lives in many hospitals. Getting to know these workflows initially in the preclinical phase eases a student's passage to later patient treatment during clinical training and subsequent dental practice. Dentsply Sirona's simulation workstations are network-compatible, thus allowing different digitised processes to be depicted in preclinical training.

Simulation laboratory at the Danube Private University in Krems, Austria



Perfect fit across the board

To feel well on our workstation and for procedures to be easy to implement, all our resources need to mesh. Teaching should not be any different from circumstances in a dental practice. This results in high demands on simulation workstations. A dentist's element should be well positioned, the torso at the right working height, the working area well illuminated. Furthermore, integrated microscopes and intraoral scanners ensure that every item is always to hand.

Master workstation in Dentsply Sirona's in-house simulation laboratory in Bensheim, Germany.



Products working in unison

To equip simulation laboratories, we can provide you with robust and durable units for students and lecturers plus modern CAD/CAM systems for contemporary training using innovative technologies. You can link and conveniently control every image source and monitor via a multimedia training system.



Simulation workstations

Learning for real

A learning environment with realistic conditions is a key factor for training success in the preclinical phase. Dentsply Sirona provides solutions for simulation units which are precisely tailored to the individual needs, training concepts, local approaches and infrastructural conditions of the particular institution. Furthermore, the use of important elements from Dentsply Sirona's latest treatment centers facilitates a student's passage from preclinical to clinical training.



CAD/CAM systems for training purposes

Digital from the word go

The CEREC CAD/CAM system from Dentsply Sirona enables you to give students an ideal grounding in digital-based dentistry and prepare them for future career success. CEREC boasts over 30 years of clinical experience and is completely future-proof.

Unbiased verification

prepCheck software – based on the CEREC system – is a system specially designed for teaching enabling, rapid and objective assessment of preparations for CEREC restorations.



Multimedia training system

Enhanced visualisation

Every simulation laboratory should be designed and equipped in such a way as to allow students not to be distracted, to have good access to devices and have the best view of demonstrations at the master workstation. Here the alphadirect® Digital System solution provides an ideal basis. It enables a lecturer to transfer high-resolution screen content in real-time from any device to any screen in the simulation laboratory at just a touch of a button. This allows ongoing monitoring of a student's progress and valuable content to be taught.

Individual and global: Made in Germany

When it comes to the organization of your simulation units, we leave nothing to chance. Benefit from our long-standing experience in international university projects. Our global customers attach major importance to “Made in Germany”. For us it is synonymous with top quality.

We guide you step by step throughout the planning and organization process from the initial idea all the way to implementation:

1. Space

Analysis of the spatial conditions.

2. Teaching concept

Coordinating the desired course content.

3. Budget

Total concept within budget.

4. Project partners

Global cooperation with project-related partners.

5. Job options

Adaptive solutions for additional functions.

6. Interior design

Flexible choice of materials and adaptation to your design requirements.

7. Ergonomics

Healthy working from the start.

8. Equipment

Maximum flexibility in configuring the simulation units.

Robust materials

In building our simulation workstations, we use only high-quality materials like stainless steel, aluminium and high-grade plastics which can also be thermally disinfected. In our furniture and worktops we use solid-core materials and mineral stones, which offer maximum

resistance to water, humidity and also mechanical wear. Even the most robust materials can incur damage at some point. In such an unlikely event, all our installed components are easy to repair.



High manufacturing quality

Simulation units are usually in longer use than treatment units within a practice. We therefore use particularly robust materials for our simulation units, manufacture them very precisely and have all of our systems undergo strenuous quality tests. Dentsply Sirona's outstanding manufacturing quality at our Bensheim location guarantees a long service life for our simulation workstations.

Modular concepts

Our simulation workstations can be enhanced throughout their service lives and functions can also be added even after installation.

MADE IN
GERMANY



Ergonomics

Ergonomics plays a key role in all our product development at Dentsply Sirona. We want to enable dentists to lead healthy working lives from their student days right through to retirement. So we intend students on our simulation units to learn the right working posture from the start and counteract postural impairments.

Healthy sitting

More dynamism for the spine

Healthy working posture starts with the way we sit. Dentsply Sirona's work stools provide well thought-out design for ideal freedom of movement, high comfort sitting and support for the user's particular working position. The dynamic backrest automatically straightens the spinal column and prevents muscle tension. The flexible tilt of the front left or right half of the seat counteracts excess pressure on the back of the legs and prevents circulatory disorders.



More height and tilt positions

The infinitely variable height and tilt adjustment of the patient simulator ensures optimum body posture for the user. Electronic vertical adjustment speeds up and boosts convenience in finding the right working height.



Legroom around the clock

The sophisticated design of our patient simulators ensures enough legroom in all treatment positions for shorter and taller users. Notably in the 9 o'clock position.



Ergonomics

Under control and in focus

The dentist's and assistant's elements of our simulation workstations can be positioned for all treatment situations in such a way as to permit ergonomic access - keeping the shoulder in a steady position and allowing movement solely from the elbow. The instruments in the dentist's element are arranged to permit their "blind" access while focussing on the phantom.



Retaining posture without assistance

The support arms of the dentist's and assistant's elements are designed to also enable unlimited ergonomic 2-handed treatment. So students can maintain a healthy posture on the simulation unit even without assistance.



Perfect also for left-handers

The number of left-handers in dentistry in some countries has now risen to 15%; even as high as 30% among dental students. In order to provide both left- and right-handers ergonomically ideal working and study conditions, our simulation workstations can be switched from right to left or vice versa within seconds.



Hygiene and infection prevention

Understanding and practising due care in using dental devices at a preclinical stage is a key element in being able to implement and subsequently evaluate the legally required hygiene measures in treating patients in a clinic and in private practice. In the area of infection prevention, Dentsply Sirona's simulation workstations also feature the same range of functions as our treatment centers.

Integrated disinfection system

Constant disinfection of water

An integral disinfection system within the simulation unit plays a critical role in preserving high water quality and also durability of the workstation. It continuously adds the disinfection agent Dentosept to the process water; which if used consistently will reliably prevent microbial proliferation in the water lines of the simulation unit and the system as a whole.

Intensive disinfection (sanitisation)

The integrated disinfection system has an additional function for sanitisation. This involves all the water lines being automatically flushed with undiluted Dentosept at the touch of a button. This intensive disinfection (sanitisation) combats any deposits on the walls of the water lines and effectively counteracts biofilm formation. If Dentosept is retained in the water lines for at least 24 hours (e.g. over the weekend), it provides ideal protection against the formation of a biofilm. Dentsply Sirona recommends sanitising water lines once a month and after extended hold times such as after summer holidays and semester breaks.

Suction tube cleaning

Adaptors are also provided for the suction tubes and so every suction tube can be rinsed automatically with a simple touch of a button.

Built-in sanitisation adapter for AutoPurge and sanitisation

The programs "AutoPurge" for daily rinsing and "Purge" for rinsing after every "treatment" can be added to Dentsply Sirona's simulation workstations. Therefore rinsing the water lines can be performed rapidly, easily and very reliably at the push of a button. The water lines are rinsed automatically at the same time. This involves simply inserting the instrument tubes into the sanitisation adapters provided. If it is not possible to install an integrated disinfection system, the tubes can be purged manually using a sanitisation hood.



Surface design and materials

Easy cleaning

Dentsply Sirona's simulation workstations feature easy-clean surfaces as they are smooth and have only a minimum of joints. All hygiene-critical elements are removable and can be thermally disinfected or sterilised. All hygiene-critical elements, such as treatment lamp handle sleeves, are removable and can be thermally disinfected or sterilised.



Unit management software

Vionex

Vionex is a comprehensive software solution for dental clinics from Dentsply Sirona. It facilitates daily hygiene and technical workflows and ensures a consistently high quality standard for hygiene documentation. It links up all simulation workstations (and also treatment centers) and saves data completely and transparently on a central server. Thus the hygiene and technical status of each unit can be monitored at any time: quickly, clearly, completely - and from any point in the clinic.

Vionex brings key advantages especially in teaching:

- Using Vionex you can raise students' awareness of the right infection preventive measures starting from the preclinical semester.
- User errors are easier to recognise and can be reduced by guiding students through all the hygiene measures to be implemented.



Equipment versions

Dentist's element

We equip our simulation units with the appropriate dentist's element subject to the model, desired functionalities and available space.

Work as on a treatment center

Assembly on a support arm

- Ergonomic design with flexibly positionable arm, also height-adjustable
- Space for 5+1 instruments incl. turbine and motor, scaler and intraoral camera
- Two different user interfaces: Keyboard or touch screen
- With suspended tubes (TS) or whips (CS)
- Suitable for both right- and left-handers
- With optional integrated endo-functionality



Sub-table assembly

- Space for 5+1 instruments incl. turbine and motor, scaler and intraoral camera
- Suitable for both right- and left-handers
- With optional integrated endo-functionality



Compact dentist's elements for confined spaces

Combines the instruments of the dentist's and assistant's element into one rack.

For very tight spaces and basic suite of instruments.



Assistant's element

The assistant's elements also let you select from diverse equipment options:

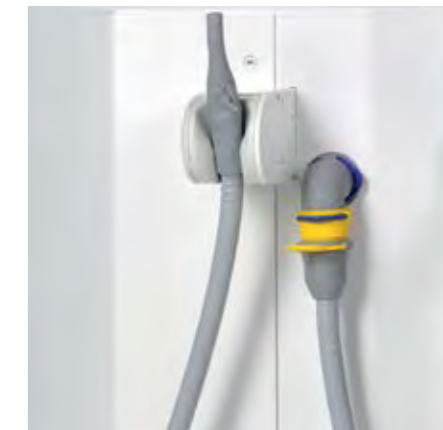
Work as on a treatment center

- Fully equipped assistant's element on mobile support arm, height-adjustable
- Space for 4 instruments
- Configurable with polylight, scaler and intraoral camera
- Suitable for both right- and left-handers



Compact suction

Assistant's element with large and/or small suction device.



Face mask with integrated suction

For more convenient working, especially with 2-handed treatment, the large or small suction device can be attached directly to the phantom head's face mask. The water is aspirated from the oral cavity and the student has a free hand – e.g. for the mirror or other instruments.



Equipment options

Foot switch

Different foot switches are available:

Pneumatic foot switch



The instruments are controlled by pedal using the pneumatic instrument foot switch.

Electrical foot switch



In addition, the speed and torque of the instruments can be controlled via the electrical foot switch. The patient simulator can also be adjusted for height by means of the foot switch.

4-way foot switch



If the height of the patient simulator is adjusted by a motor, it can also be activated by a 4-way foot switch.

All versions are attached centrally to the supply element, enabling them to be used by right- and left-handers.

Securely stowed

When the foot switches are not in use, they can be fixed securely to a holder. This enables the floor to be cleaned more easily when training is finished and avoids the danger of tripping.



Well connected

Many practical interfaces are built into the furniture of the simulation units: LAN, USB, compressed air, mains voltage. If external devices are connected, the cables can be tidily stowed in a cable compartment.



Treatment lights

Two different models of treatment lights are available to choose from. Both work with LED technology and they are fully-fledged treatment lights like those used in patient treatment. In addition, there is also the option of an exclusive laboratory lamp.

LED view Plus



Light intensity:
Up to 40,000 lx in 7 steps
Colour temperature:
4,600 – 6,200 K in 3 steps
Composite mode:
in accordance with ISO 9680:2014

LED light Plus



Light intensity:
Up to 30,000 lx in 5 steps
Colour temperature:
5,000 K
Composite mode:
in accordance with ISO 9680:2014

Laboratory lamp

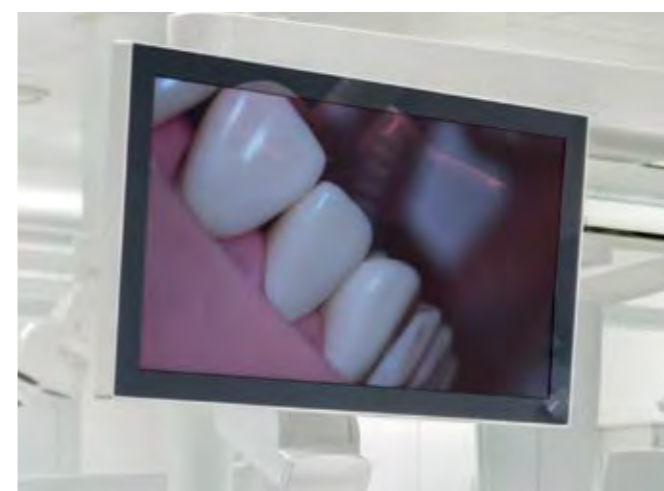


Light intensity:
50,000 lx
Colour temperature:
4000 K

Monitor

In order to display content from different sources, a monitor can be integrated into the simulation workstation. If you already have a monitor in place, we can easily provide just the mechanical and media technology VESA interfaces it would need.

Monitor



VESA interface



Equipment options

Patient simulators

As realistic as possible

A diverse range of phantom heads and torsos from different manufacturers can be connected to Dentsply Sirona simulation workstations and treatment units. If you already have patient simulators, which you would like to continue using, we can easily prepare just the interface for the simulators to be connected to.

Fitting to a simulation workstation

Phantom head only



Phantom head with torso



Interface for simulators from different manufacturers



Height and tilt adjustment

As ergonomically as possible

For training for an ergonomic work method it is important to be able to adjust the patient simulator for height and tilt to the greatest possible extent. We provide different options to achieve this purpose:

Manual operation



Manual operation with foot release (for height adjustment)



Motorised height adjustment



Fitting to a treatment unit

Phantom head and torso can also be attached to our treatment units for an even more realistic simulation.

To a motorised headrest



To a double-articulating headrest



Phantom head with torso as backrest



Keyless access

To simplify the group or course management, the system can be locked and unlocked via a code card or a chip.



Equipment options

Dental technology

Training in dentistry and dental technology in the smallest format

Dentsply Sirona's simulation workstations can be supplemented with dental technology components in order to be able to perform interdisciplinary courses in one place.

The following modules are available:

- Motor and handpiece for dental technology
- Dry grinding
- Wet grinding
- Bunsen burner or induction heating for wax model exercises



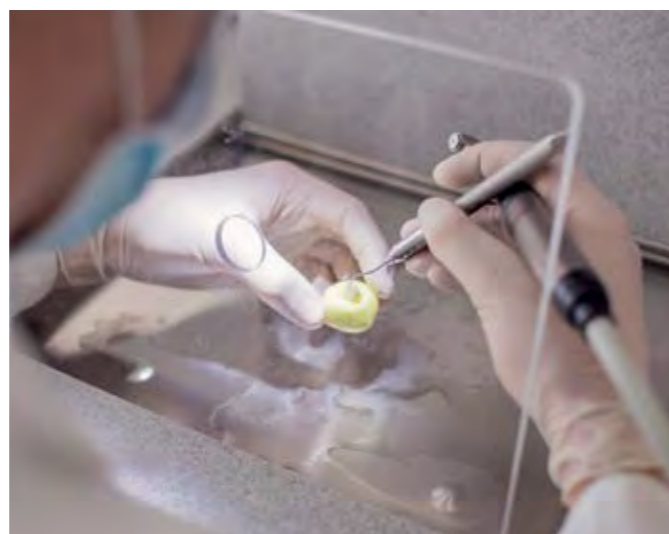
Dry grinding

The protective screen and dry suction device prevent inhalation of unhealthy dust particles and vapours.



Wet grinding

A tub built into the tabletop and the wet suction device above the assistant's element's large suction device enable work to be performed with spray mist cooling without getting peripheral areas or the table surface wet.



Surgery tray

For exercises on an animal specimen (for surgery, periodontology) a stainless steel tray can be attached to the phantom's interface.



Easy modification



Connecting a microscope

Microscopes from different manufacturers can be fixed to the light supporting post of the simulation workstation to save floor space.



If space is restricted or as an economical solution, it is possible to fix a microscope centrally for use at four workstations.



CAD/CAM in teaching

Shaping the future of dentistry

Modern digital dentistry is a topic which has increased in significance in recent years and has revolutionised research, clinical operations and training. For this reason, Dentsply Sirona has now been promoting innovations in the CAD/CAM field for over 30 years, which makes us pioneers of digital solutions that have really brought about an improvement in dentistry. Our CAD/CAM solutions cover imaging, design, manufacturing and also glazing techniques and the largest possible variety of materials. In just one session, dentists can provide patients with restorations such as inlays, onlays, crowns, bridges and veneers. Furthermore, our solutions also offer the possibility of producing digital impressions, drill templates and other devices necessary for a better, faster and safer implant and orthodontic restoration.

In CEREC we have not only developed an innovative CAD/CAM system – an optimum workflow for practitioners, but also a powerful training tool for prospective dentists:

prepCheck – Analytical tool for CEREC preparations

Future dentists require good training in how to produce preparations. However, owing to rising numbers of students and staff shortages there is less and less time left over to discuss student work. prepCheck is an easy system to learn based on objective measurement methods; it analyses and documents student's results and makes them subsequently accessible. This is a combination of the CEREC Omnicam and prepCheck analysis software which is installed on the CEREC imaging unit.

Benefits

- prepCheck compares a student's CEREC preparation with the master preparation or preset parameters and suggests improvements.
- prepCheck supports lecturers in explaining to students how to further improve their preparations.
- The prepCheck report summarises the analytical results and provides them as a printable PDF*. In addition, it is possible to export the results into an Excel table for easier grading.
- prepCheck also enables students to practice without supervision during evening hours or at the weekend.



At the university of Groningen in the Netherlands students learn to master standards – part of which is CAD/CAM.

Integrating an intraoral scanner

Students can be introduced to digital dentistry as early as in the preclinical stage.

The intraoral scanner can be linked to a mobile acquisition unit which also permits flexible usage in other rooms and in patient treatment.



The intraoral scanner can also be used at up to four workstations by installing it centrally on a support arm.



Multimedia training system

Better communication with your students

Better communication with your students

Practical experience is essential for students, particularly in the health sciences. To obtain this practical experience in a university institution, in the initial years students are trained in simulation laboratories. The greatest challenges in a simulation laboratory are visibility, distractions and a lecturer's access to and control of all the equipment.

The alphadidact® Digital System solution enables lecturers to transfer high-resolution screen content in real time from any device to any screen in the simulation laboratory at the touch of a button. This allows them to share teaching content and constantly monitor a student's progress.

Advantages for lecturers

- Boost the quality of your presentation
- Focus your students' attention
- Enable and promote interactive cooperation
- Connect all the equipment: intraoral cameras and scanners, microscopes, notebooks, tablets, screens and projectors
- Record treatment sequences step by step for later playback

Advantages for students

- Optimum view of a trainer's activities on one's own monitor
- Perfect audio communication with the trainer

Advantages for universities

- The system is maintenance-free
- irrespective of the hardware and software being used
- No cost-intensive investments in IT infrastructure
- 3-year warranty

Control of all devices via an operating panel



- Video camera
- Projector
- Notebook
- Microscope
- Intraoral cameras and scanners
- Students' and instructor's monitors
- Audio
- Smartphone
- Tablets

Case study

Ulm University Clinic, Germany

When Ulm University Clinic replaced their simulation units in 2014, they were convinced by the customised solution provided by Dentsply Sirona. After a detailed needs analysis and a thorough planning process, they installed 42 simulation units for students, 1 master unit for lecturers and 35 units for technicians. To further support the high-quality training, all the workstations were networked with two alphadidact® Digital Systems. The system

enables image transfer from digital cameras and microscopes or an additional intraoral camera to individual workstation monitors, projectors and panel displays. Each student, therefore, has excellent visibility and can use the lesson time effectively. The alphadidact® Digital System further also facilitates two-way audio communication via headsets, minimise distractions and enables simple one-to-one interaction.



Image transfer from microscopes or video cameras to monitors

This is what makes alphadidact® Digital Systems so outstanding:

- Simple and intuitive handling
- High reliability
- Very high image quality without compression or colour change
- Screen transfer in real time without delays
- Flexible integration of most modern devices
- High safety
- Hardware-based for independence from IT infrastructure (data security)



Simple attachment of a video camera to the treatment light

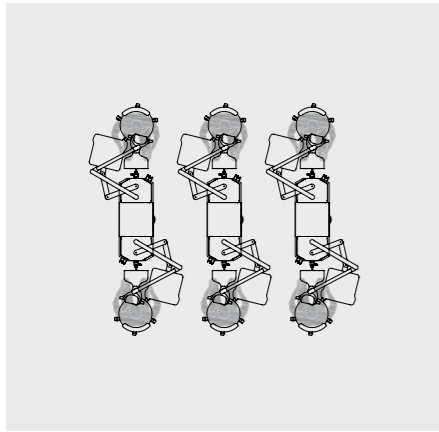
Any off-the-shelf video camera can easily be connected to the LEDview plus treatment light. This yields an efficient solution for both educational purposes (live feed and documentation) and patient communication.

Layout options

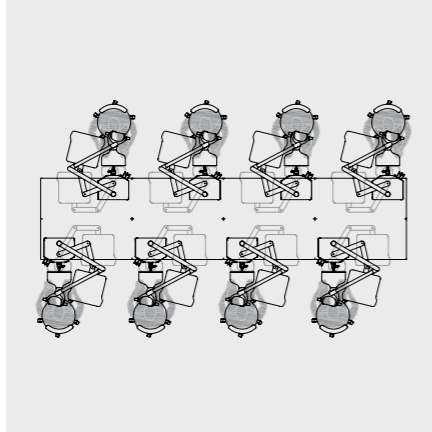
Room layout

The simulation units can be installed in varying set-ups subject to space availability and preferred teaching methods. These are some examples of possible installations:

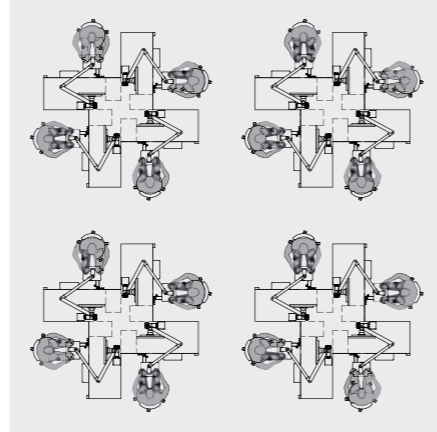
Twin station



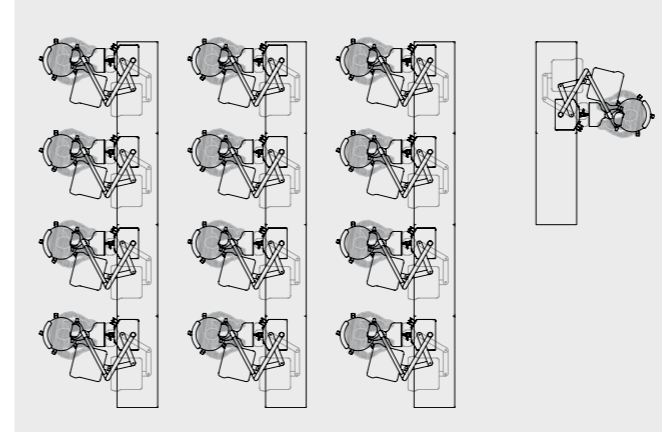
Series of clusters



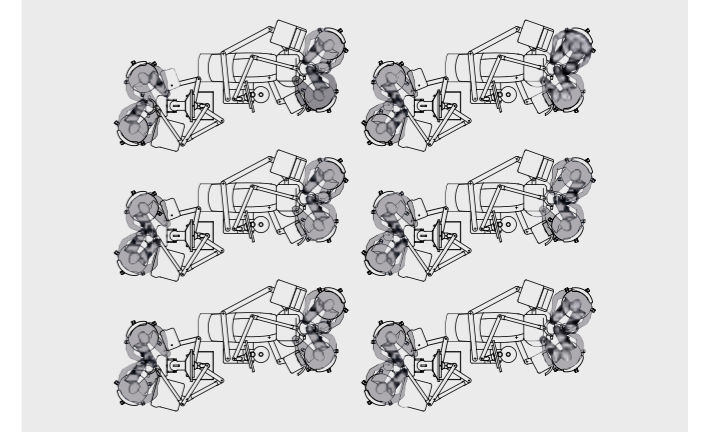
Star-shaped clusters



Classroom



Workstations combined with a treatment center



Your particular requirement takes shape

Guidance

Anyone setting up a teaching environment for dental training for the first time, has a lot to take into account: the training concept, future-proofing, economy and sustainability. This requires a competent partner. Dentsply Sirona has over 60 years of experience in developing solutions for academic institutions and in implementing global projects within scheduled timelines and planned budgets. We have in-depth understanding of project management while being able to provide great flexibility; this means we can design the ideal learning environment for your needs.



Finding the right solution

Are you planning a new building, a renovation or replacements for your equipment or would you like to integrate digital technologies into your training? We are with you every step of the way:

Room layout in the clinic

Optimised room layout to support efficient and ergonomic workflows in everyday clinic operations

Infection control

Safety practices in connection with water lines, suction hoses and outer surfaces

Technical infrastructure

Cost-efficient solutions for piping and running cables underground, water pipes, air/suction lines and electrical power supply

IT infrastructure

Seamless integration into existing networks and dental data management systems

Planning

Following a comprehensive phase of validation and cost-benefit analysis, we supply a solution maximising the benefits of our fully integrated product range, if necessary in combination with products from other manufacturers. Being your central partner, we lead a team of experts, ensuring smooth cooperation and local project management. This ensures that your projects are implemented within the defined timelines and budgets and exactly as you specify.

Transfer, service and maintenance

Upon completion of the project you can count on comprehensive, qualified support: after properly implemented technical transfer to your building services, we will be pleased to train your users in exercising the necessary care in using the new system. We will also be glad to carry out annual maintenance for you, so that you, your colleagues and future students can have years of pleasure working on Dentsply Sirona's simulation units.



We plan for you in 2D and would then be pleased to render the planning for you in 3D. This lets you get an even better advance idea of your project.

Dentsply Sirona in Bensheim Training centre and showroom

Back in 1998, when the Dentsply Sirona Academy Bensheim was set up, Dentsply Sirona was already setting trends in the sector and has proven that there is more to it than just selling products. Over the decades, through countless training activities and events, the company has contributed to elevating dental care to new heights. Having expanded the Dentsply Sirona Academy Bensheim, Dentsply Sirona has now created a contemporary and ultramodern training centre.

You can discover and try out Dentsply Sirona's full range of products in the showroom. You can emulate teaching situations and teaching content in our internal simulation laboratory so that you and our experts can work out the best solution.



Success starts with the right partner

In the course of our company history, Dentsply Sirona has supported nearly 1000 universities, clinics and hospitals worldwide in planning and building new facilities and installations. In addition, we have refurbished and replaced a lot of obsolete equipment and walked satisfied customers through the process of digitisation. Whichever part of the world you may call home, Dentsply Sirona is the right partner to support you in planning your new dental hospital or your new faculty and realise your vision. This is a selection of some of our latest success stories.

 For further information please visit us at: dentsplysirona.com/clinics



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Procedural Solutions

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Endodontics
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Enabling Technologies

CAD/CAM
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Treatment Centres
Instruments