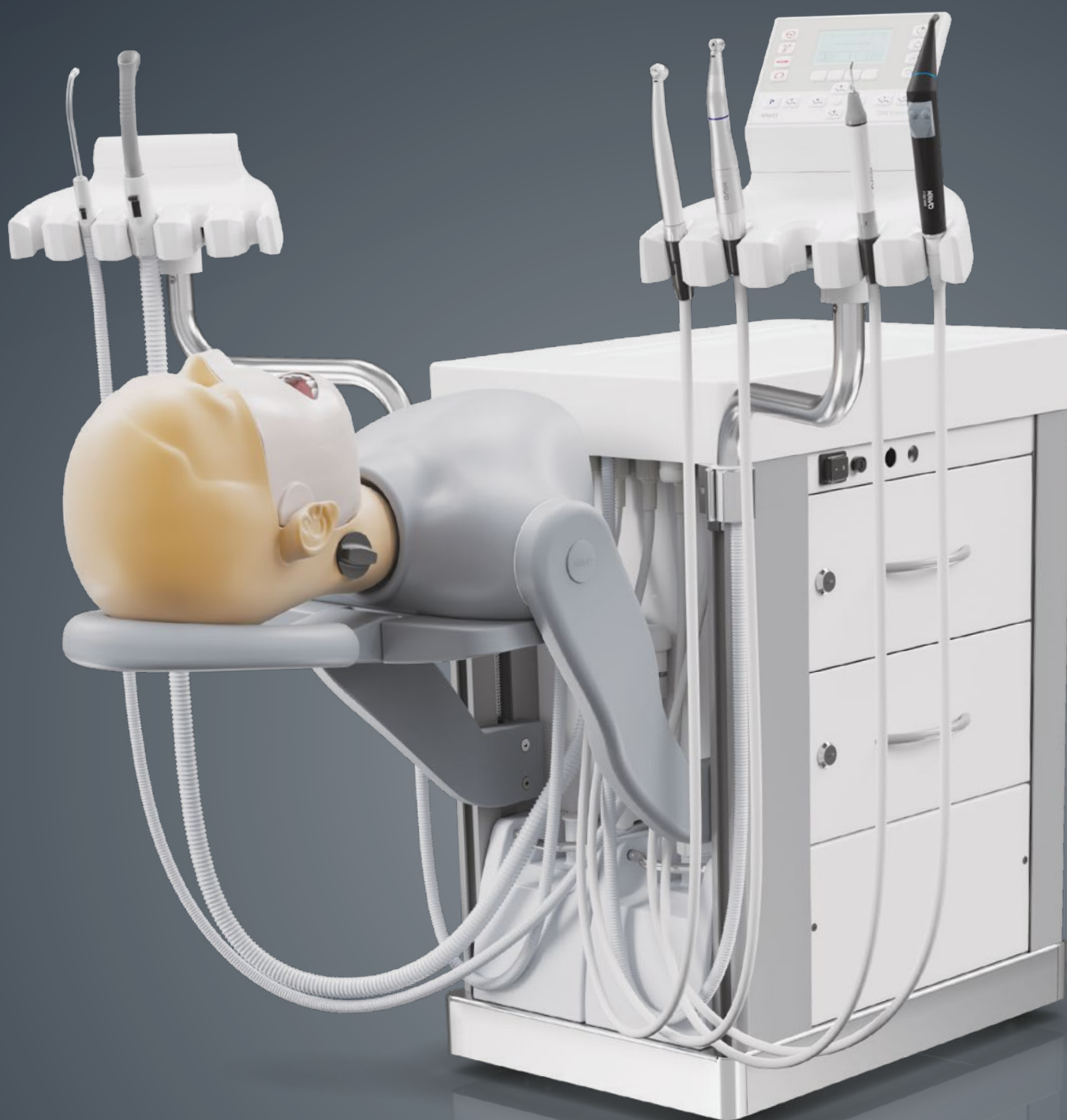


**DSE Expert.**  
Turn students into experts.



## KaVo Pre-clinic. Dental excellence starts here.

KaVo has been representing dental excellence for almost 110 years. As one of the world's leading companies for both medical and technical dental products, we have used ground-breaking developments to shape the world of dentistry, promoted innovative technologies and become a comprehensive solution partner for practices, laboratories and for training.

Several hundred thousand installed treatment units and patient simulators provide evidence of the quality, precision and durability of our products – and of our comprehensive 360° expertise in the area of pre-clinics and clinics.

### **Global recognition:**

More than 1,000 leading institutes, clinics and universities in over 80 countries rely on KaVo for their dental training, making us the global standard in the pre-clinic area.

### **For purchasing, teaching and learning purposes:**

With our many years of expertise in the pre-clinic and clinic areas we link the requirements of professors, dentists and students and of service technicians and project procurement specialists with offers that are just like our products: excellent.

### **Long-lasting quality:**

The particular quality of the production and durability of KaVo products ensures a smooth teaching and learning process over the long term.

### **Expert and individual all-round service:**

From detailed advice on facility equipment to rapid installations and extensive equipment training and options for expansion – our KaVo consultants support you through the entire process, ensuring that your investment maintains its value.



### Some of the benefits include:

- Electrical positioning of the patient simulator for the most realistic training conditions ever
- Perfect ergonomics through separate height adjustment of the dentist and assistant element
- Flexible instrumentation and modular structure: endodontic function, integrated water supply and disposal as well as other functions available as options
- Compact and clinical design with larger individual storage space for students
- Integrated suction motor with low air consumption
- Precise handling in accordance with high quality standards
- Solid design using high-quality materials
- Maximum functional safety with all components tested 100%

## Dental training has a name: DSE Expert.

As the successor to the most successful dental simulation unit of its kind, the DSE Expert is the perfect training tool for universities and advanced training colleges. The treatment workstation includes electronically controlled patient positioning, integrated water supply and suction, generous storage spaces and ergonomically adjustable dentist and assistant elements with individually selectable instrumentation. In addition, the patient simulator with teeth, mandibular joint, head and upper body is for students easily accessible integrated in the unit and can be folded away to save space.



## Built to meet your requirements: DSE Expert, freely configurable and expandable.

There is not just one DSE Expert, but rather: your DSE Expert. Thanks to its modular structure, it can be used as an individual device as well as in complete training station groups. It can be operated with air or electric-powered instruments and expanded to cover root canal treatments with endodontics software at any time, even after purchase.



### DSE Expert modules.

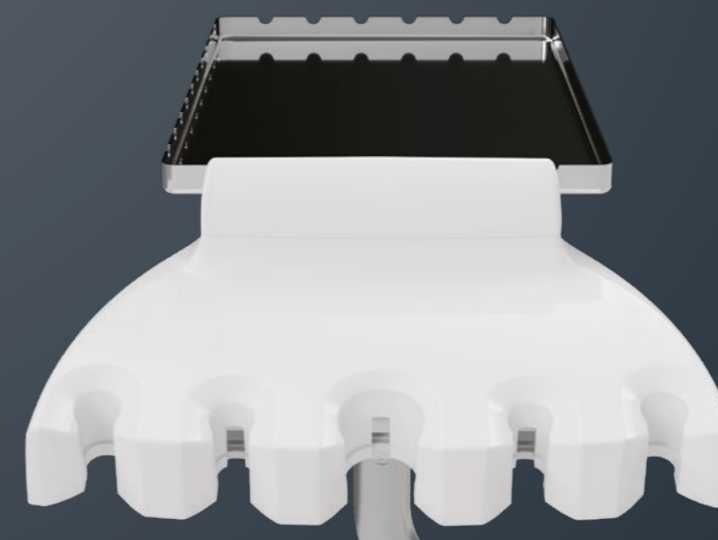
- Dentist element
- Assistant element
- Patient simulator head
- Patient positioning
- Lights
- Foot control
- Media supply
- Mobile equipment frame
- Storage space with optional doors or drawers
- and much more

## Experts in their element: DSE Expert dentist and assistant elements.

Overall, the dentist and the optional assistant element automatically recognise up to six flexibly selectable instruments. Both elements are manually height-adjustable and freely positionable from



9 to 12 o'clock in terms of treatment positions. If required, they can be converted for left-handed users in just a few seconds, simply by repositioning the instrument arm, with no need for tools.



### Additional functions for the dentist element:

- Display for the date, time, dentist selection and for accessing individual instrument parameters
- Direct selection keys, service keys and 4 keys that can be programmed freely for rapid adjustment of the automatic positions of the patient simulator – in the same way as with a treatment unit

### Additional function for the assistant element:

- Optional extension with standard tray on the rear section

## Instrumentation.

### Can be configured as required with options including:

- Multiflex coupling, e.g. for turbines, air motors, SONICflex Air Scaler etc.
- Electronic motor, e.g. KL 703, including with endodontic function
- Ultrasonic scalers PiezoLED or PIEZOsoft
- Various syringes
- Spray mist suction (if no assistant element)
- Laboratory drive selection (operated via the same foot control)



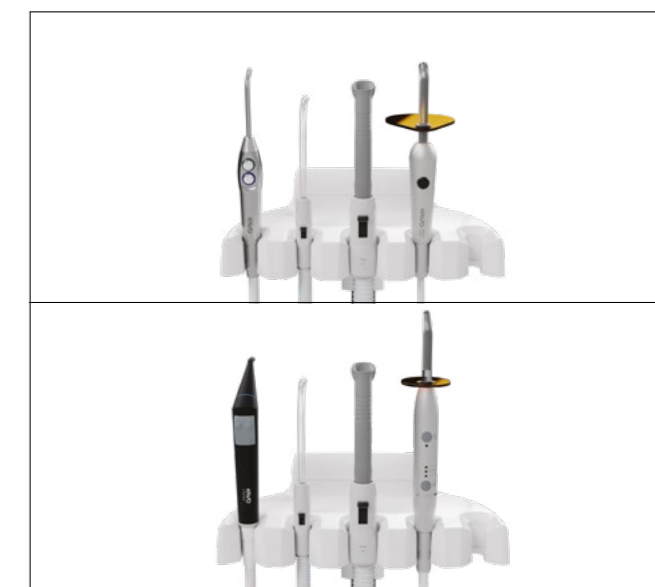
## Instrumentation.

### Fitted as standard with:

- Spray mist suction
- Saliva extraction

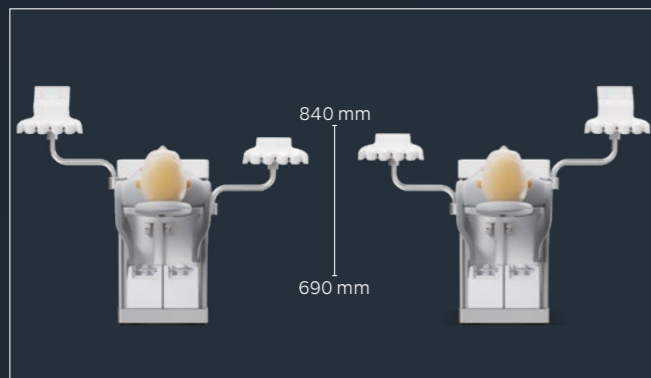
### Can optionally be configured as required with:

- Various syringes
- Polymerisation handpiece Satelec Mini LED
- Polymerisation handpiece PolyONE



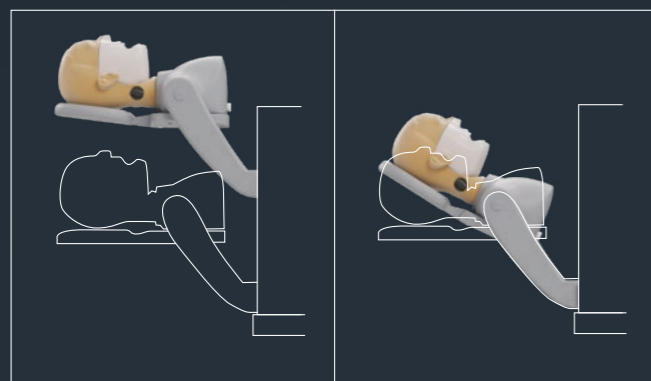
# Ergonomics is a matter of adjustment: individual customisation of the DSE Expert.

## Conversion from right to left.



Left-handed users can convert the dentist and assistant element to a correct and ergonomic side for them in just a few seconds and without requiring tools. Both elements are height-adjustable independently of each other from a lowest position of 690 mm to a highest position of 840 mm.

## Adjusting the patient simulator.



In order for both small as well as large students to be able to take up an ergonomic treatment position, the simulator has a wide range of options for adjusting the height and tilt.

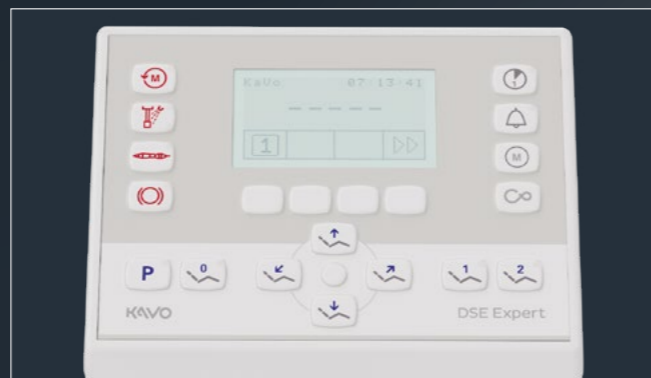
### Vertical height adjustment:

- Lowest height to incisal edge: 700 mm
- Maximum height to incisal edge: 950 mm

### Inclination of the simulator:

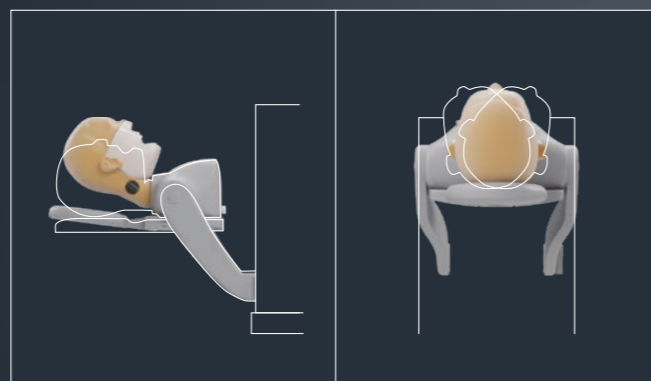
- Angle adjustment: from -10° to +90°

## Positioning of the patient simulator.



Select one out of three individual pre-programmed positions which is accessed via an electronic synchronous mechanism – just as with a treatment unit. Alternatively, the user can move the patient simulator to the required treatment position by pressing a button on the dentist element.

## Adjusting the patient's head.



The patient's head can be positioned freely for flexible readjustment of a wide range of treatment options:

- up to approx. 25° nodding movement forwards
- up to approx. 40° nodding movement backwards
- up to approx. 20° tilt left and right

# Realistic, even more realistic, DSE Expert. Options with the patient simulator.

## Jaw simulators:

The DSE Expert can be combined freely with all KaVo jaw simulators. The G20 and G40/J/JM Standard jaw simulator or the individually adjustable G50/J/JM can be enhanced with the lifelike KaVo tooth models if required.



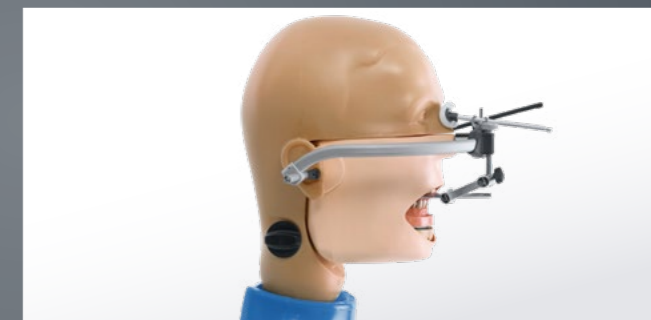
## Face masks:

Depending on the level and objective of the training, the face mask with the large mouth opening (standard for beginners), the one with the small mouth opening (simulating children or older patients) or the one with an adapter for the spray mist suction (for two-handed treatment) can be fitted in a matter of seconds.



## Face bows:

The KaVo patient simulator has all of the important reference points and levels for training with the face bow (bipupilar line, infraorbital point, sub-nasal anterior, external ear canal). This way the DSE Expert allows work to take place in exactly the same way as on a real patient with the face bow.



## Lights:

There are two separate connected lights with LED technology available for assembly.

- Precise colour reproduction Ra >95
- Spring-loaded joint system or flexible arm
- Toggle switch (I/O) on the light head

**LED 7:** light intensity 15,000 lx/0.5 m, light colour 4000 K,  
**LED 20:** light intensity 40,000 lx/0.5 m, light colours 3300 K, 3800 K or 4400 K, illumination level can be dimmed in 5 stages



Because each university is different:  
freely configurable media supply.



**Suction:**  
The integrated stand-alone wet suction device for saliva extraction and spray mist suction features low air consumption with continuously strong suction power. The discharge container (1 l) with integrated overflow protection, transport handle and self-sealing lock is easily accessible. Alternatively, the unit can also be connected to a central wet or dry suction device. In case of a dry suction, the waste water tank is used as a separator.

**Water supply:**  
Water is supplied via an integrated stand-alone unit with a pressure regulator, overflow protection and a tested, easily accessible pressurised water bottle (max. 1.3 l) which also opens under pressure thanks to auto-ventilation. There is an option for manual permanent and intensive germ reduction by adding KaVo Oxygenal 6 for protection against germs. Alternatively, the unit can be connected to the building's central water supply.

Selection from frame to foot control:  
a convenient option for students and service.

As a mobile simulation unit on four sturdy castors, the DSE Expert can be positioned freely and then stably fixed in the optimum treatment position using the pneumatic brake. The frame itself can be configured with intermediate shelves, doors or metal drawers.

**Student areas:**

- Two lockable storage areas for students
- Comfortably accessible from the side
- Space for a jaw simulator or articulator and tray with instruments

**Service areas:**

- Maintenance-friendly structure, only accessible with tools
- Above the storage spaces: media and electronics
- Lower area: suction motor, transformer and further installations

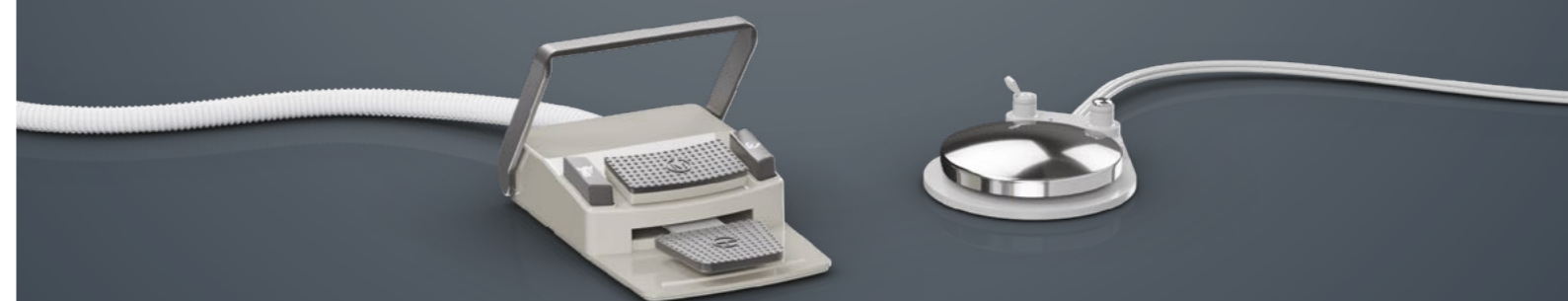


**Foot control:**

Both versions with hoses routed centrally at the front of the device, suitable for left and right-handed users.

Type A: The continuously variable speed control is operated using a comfortable right/left movement of the pedal. There are also foot keys for switching the spray water or the blow air on/off and for activating/deactivating the motor counter-clockwise operation. The patient simulator position can also be adjusted using the foot control.

Type C: The spray water is switched on/off using a folding valve, and the blow air is switched on/off via a pressure valve. The instrument's start/stop function is conveniently controlled via the disc gas pedal.



## Always in the perfect position: Options for using the DSE Expert.

The options for using the KaVo DSE Expert are unlimited. It can be combined as a standalone feature or combined with a technician's workstation. The extremely compact device can be easily stationed under the technician's workstation, thereby giving the student maximum legroom.

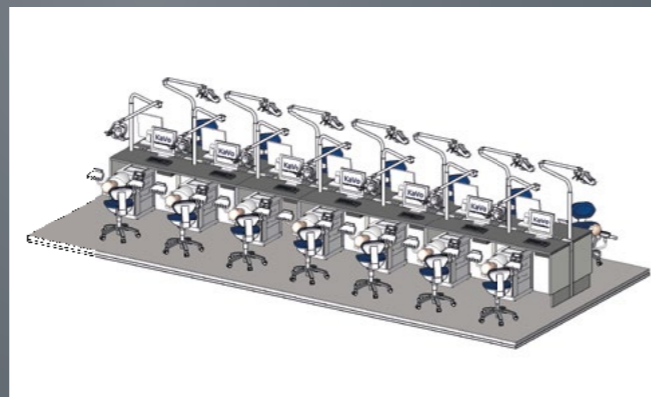


### Flexible arrangements:

Whether arranged in an island of 2, 4, individual or double rows, the DSE Expert can save space in any training room to suit the relevant training concept.

### Realistic prior planning included:

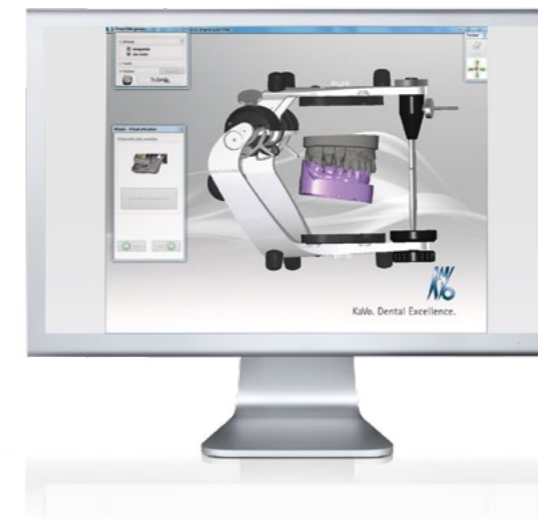
The facilities in the training area, including the technical equipment and furniture, are optimised through our space and installation planning and are also displayed realistically. This provides a realistic simulation of your clinic's specific features.



## The future is digital. DSE Expert is ready for it.

The future belongs to anyone who is able to identify the next big step and dares to take it. Digitalisation is increasingly making its way into modern dentistry. KaVo also provides innovative systems for tutors who want to provide efficient teaching and familiarise students with new technologies right from the start. Efficient teaching resources save tutors' time and optimise the chances of students being successful in their learning.

### KaVo Dental Teacher.



The system for rapid and objective evaluation of preparations gives tutors three software modules for effective teaching of complex topics.

- **Prep validation:**  
The quickest method for evaluating student preparations. Objective, automatic, computer-assisted.
- **Virtual articulation:**  
With a display of the interplay between the areas of tooth morphology with movements, students are able to understand the principles of occlusion, articulation and functional jaw movements much more quickly.
- **Virtual growth:**  
Module for growing dental prostheses in pre-clinic for treating patients. Optimised for learning CAD/CAM technology from the start of the course.

### KaVo EDUnet Ultra HD.



The new version of the communication network allows tutors and students to embark on the next stage of interactive learning.

- With full frame transmission in real time – including with large amounts of data such as videos, live demos, etc. – all students can follow the lecture “from the front row”.
- Full-HD and optional ULTRA HD resolution for optimum presentation of even the finest details, such as fissures.
- The audio transmission available as an option allows the tutor to communicate with one, several or all students.
- Independent of any computer hardware or software or any PC network.
- A safe investment for the future thanks to the integration of all the latest interfaces (DVI-D, DVI-I, USB, HDMI).

## Overview of equipment and fittings.

### Dentist element

Preparation for Multiflex connection*	x
Air motor*	o
INTRA LUX Motor KL 701*	o
INTRA LUX Motor KL 703 LED*	o
PiezoLED*	o
PIEZOssoft*	o
Triple-function handpiece One	x
Triple-function handpiece	o
Multi-function handpiece	o
Preparation for DCI spray	o
Spray mist suction unit	x
Reduction of spray mist suction unit to saliva extraction	o
Endodontic function/torque control	o

### Assistant element

Assistant element	o
Saliva extraction	x <sup>1</sup>
Spray mist suction unit	x <sup>1</sup>
Triple-function handpiece One	o
Triple-function handpiece	o
Multi-function handpiece	o
Preparation for DCI spray	o
Polymerisation handpiece One	o
Polymerisation handpiece Satelec Mini LED	o
Standard Tray	o
US Tray	o

### Frame

With 2 doors	x
With 2 drawers	o
Open with shelves	o
Mobile	x
Metal chassis with pneumatic brake	x
Double standard tray	o
Anti-slip mat	o

x In series x<sup>1</sup> In series if assistant element present o Optional

\* Maximum of 4 rotating instruments can be selected

### Media

Connection to building water supply	x
Internal suction	x
Connection to central suction wet	o
Connection to central suction dry	o

### Foot control

Type A	x
Type C	o

### Dental drives

K5 plus handpiece 4911	o
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### LED light installed on DSE Expert

LED 7	o
LED 20	o

### Jaw simulator

G40	o
G40 J	x
G40 JM	o
G50	o
G50 J	o
G50 JM	o
Without jaw simulator	o

### Face mask

Closed 06223882	x
With drainage 06221401	o
With coupling 06221411	o
With adapter 06221431	o
Latex mask 06224872	o
Without mask	o

### Tooth model

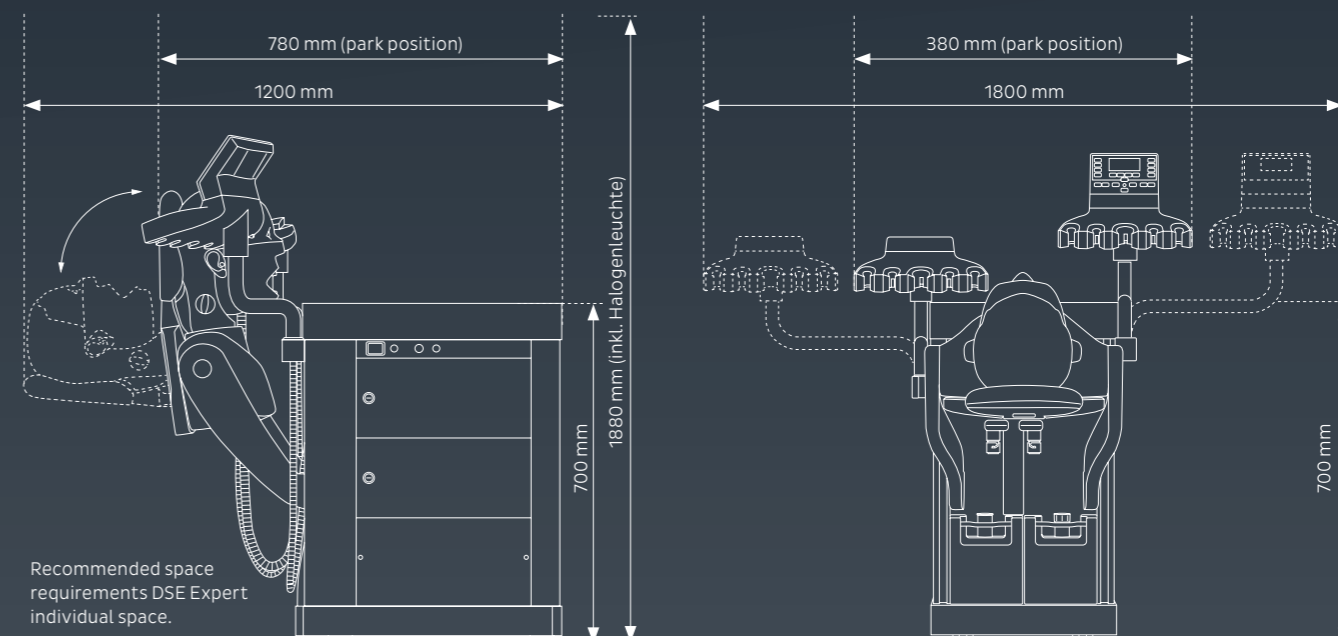
UJ/LJ V16	x
UJ/LJ TZ14	o
Without tooth model	o

## Technical information.

Rated voltage (country specific)	• 100, 110, 120, 130, 220, 230, 240 V, 50/60 Hz, 300 VA
Mains fuse	• Type T2.0 H / 250 V, T6.3 H / 250 V • Permissible mains voltage fluctuations max. ± 10% • Overvoltage category II
Connection values	• DSE Expert power consumption 300 VA • On-site compressed air 5.5 to 6 bar (79.8 to 87 psi) • On-site water pressure 2.6 to 3 bar (37.7 to 43.5 psi) • Max. water consumption 0.15 l/min • Max. air consumption 60 l/min
Recommended settings	• System pressure 3.0 bar / 43.5 psi • Spray air 1.0 bar / 14.5 psi • Spray water 0.8 bar / 11.6 psi
Media	• Drinking water quality • Water hardness: 1.5 to 2.14 mmol/l ≈ 8.4 to 12 dH
Suction performance with suction unit installed	• Spray mist suction hose: 230 l/min • Saliva extraction: 40 l/min
DSE Expert speed	• Dentist drives: instruments depending on type up to 300,000 rpm, KL motor 40,000 rpm • Dental drives: K4 handpiece 4914 / K5 plus handpiece 4911 35,000 rpm • DSE Expert speed in Endo mode: range from 100 to 40,000 rpm, max. speed clockwise 40,000 rpm, max. speed anti-clockwise 40,000 rpm, motor torque, max. torque 2.7 Ncm
Operating environment	• Ambient temperature 5 to 40°C / 41 to 104°F, optimum ambient temperature 15 to 35°C / 59 to 95°F • Relative air humidity 30 to 75% non-condensing • Degree of pollution 2, installation location maximum 3000 m above sea level
Weight	60 kg

The DSE Expert is configured as standard with the connection to the compressed air supply and is fitted with the plugs and supply voltages required at the installation location.

## Dimensions.





# Dental Excellence in any area.



## Equipment for the practice

KaVo treatment units, treatment lights, practitioners' chairs, patient communication systems, dental microscopes and further accessories for the dental practice.



## Instruments

Dental hand pieces and contra-angle hand pieces, turbines, powder jet hand pieces and small devices for all areas of application, from diagnostics to prophylaxes through to restorations, surgery, endodontics and care and maintenance of your instruments.



## Imaging

Intraoral X-ray tube assemblies, sensors and imaging plates, panoramic x-rays and teleradiographs, including combined with DVT, as well as dedicated DVT equipment for any indication in dentistry.



## CAD/CAM

Dental CAD/CAM solutions for highly aesthetic, natural looking and long-lasting restorations, suitable for dentists and dental technicians.

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