Info File Infection Control

Instrument reprocessing in the dental practice

Dentsply Sirona

reddot winner 2020

Infection control systems for a high level of safety

Infection control in dental practices is becoming even more important, and with such significance comes increased monitoring. Ensure all-round protection for yourself, your practice team and your patients by using instrument reprocessing with a high level of hygienic safety and comprehensive documentation options. Infection control and prevention solutions from Dentsply Sirona are suitable for the cleaning, lubrication, disinfection and sterilization of dental instruments. Regardless of the design of your infection control workflows, we have the appropriate solution.

DAC Universal D, DAC Universal S

The combination machine cleans, lubricates (if necessary) and disinfects[1]/sterilizes[2] up to six straight and contra-angle handpieces, turbines, ultrasonic/sonic handpieces and tips, nozzles of multifunctional syringes and powder jet devices as well as powder jet handpieces in approx. 15 minutes[1]/ 21 minutes[2] – including cooling.

S1 Pureclave, S2 Pureclave, S3 Pureclave

The class B autoclaves are universally suitable for all sterilization items.

Find out more about DAC Universal D

Find out more about DAC Universal S

[1] DAC Universal D
[2] DAC Universal S

Instrument reprocessing

Straight and contra-angle handpieces, turbines, ultrasonic/sonic handpieces and tips, nozzles of multifunctional syringes and powder jet devices as well as powder jet handpieces place increased requirements on diligent reprocessing as a result of the narrow media channels and the angled interior spaces. Difficulty is increased by technological contaminations such as abrasion and oil residues in addition to typical contaminations from treatments such as blood, saliva, secretions and tissue.

In principle, straight and contra-angle handpieces and turbines must be re-processed after each patient treatment and require special care due to design cavities. Rotating instruments can be classified as semi-critical (non invasive use) or critical instruments (invasive use). Depending on the country, the procedure of reprocessing contains: cleaning, disinfection or sterilization (unwrapped) and wrapped sterilization. Automated reprocessing increases process reliability, whereby the occupational safety for the practice staff is also increased.

Automated reprocessing is preferable to manual reprocessing for these reasons. All workflows relating to the reprocessing of medical devices must be defined in the operating procedures.

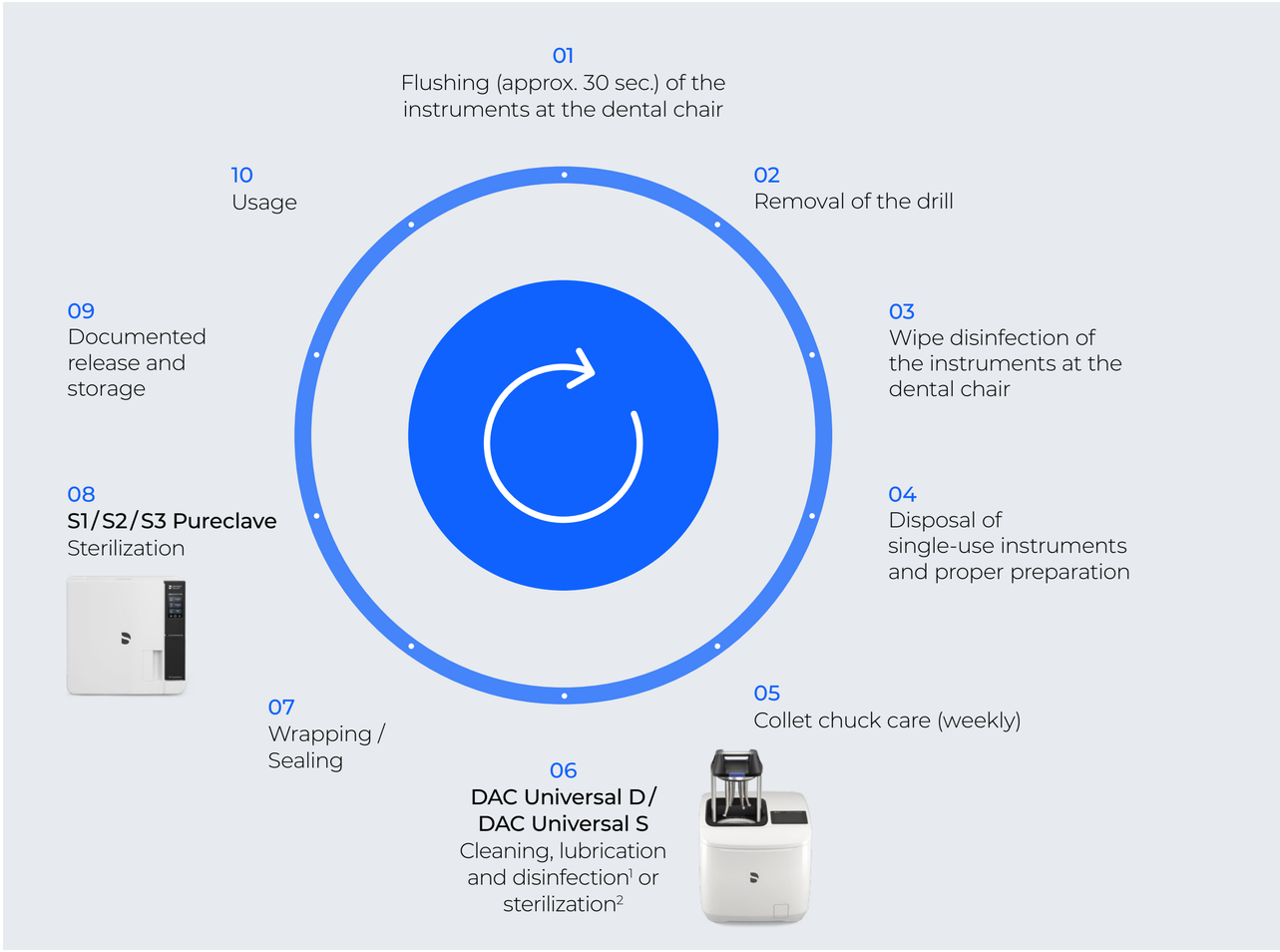
The reprocessing guidelines from the relevant manufacturers must be taken into account. All reprocessing steps as well as cleaning and disinfection[1]/steriliziation[2] measures should subsequently be compiled in the hygiene plan of the operating practice.

[1] DAC Universal D
[2] DAC Universal S

The infection control cycle in automated instrument reprocessing

It begins with correct hand hygiene and thorough disinfection of all patient-related surfaces. Emphasis is placed on the correct reprocessing of medical devices – an ever-present process. It affects all instruments that are brought into the reprocessing room after treatment. Such instruments are then put through comprehensive reprocessing consisting of cleaning, disinfection[1] or sterilization[2], wrapping – if necessary – and wrapped sterilization.
The effectiveness and repeatability of the reprocessing processes with DAC Universal are checked during validation. The authorities recognize this validation process. Medical devices designated for sterile use are wrapped.

During subsequent sterilization in S1/S2/S3 Pureclave, the instruments are rendered sterile. The wrapping protects against recontamination during storage and transportation. All important parameters and the success of reprocessing are documented after the cycle has been completed and then archived on the practice computer.



[1] DAC Universal D
[2] DAC Universal S

Instrument reprocessing in the hygiene area

The infection control area should consist of separate areas which must be designated for the reprocessing of instruments for semi-critical and critical applications. These reprocessing areas must be differentiated into the areas “Dirty”, “Clean” and “Storage”. It is recommended that these three areas are marked accordingly. DAC Universal must be positioned in the unclean area, directly on the border to the clean area.

Instrument reprocessing methods

Cleaning and disinfection

Automated cleaning and disinfection – the safe approach to reprocessing

With automated reprocessing, all process steps involved in cleaning and disinfection are performed by an infection control system. Cleaning is performed using water and, where necessary, cleaning agents are added. Disinfection is mostly thermal without the addition of chemicals. According to the RKI guidelines, automated reprocessing methods are preferable to manual methods, and thermal disinfection is favored over chemical disinfection. Automated cleaning and disinfection devices comply with the requirements of the international standard EN ISO 15883-1/-2.

Manual cleaning and disinfection

In the case of manual reprocessing, cleaning and disinfection chemicals from spray bottles are used to clean the inside and outside of instruments. To ensure effectiveness, standardized work instructions must be followed very closely. The manual method is very time intensive. For medical devices of invasive use, the automated reprocessing is generally recommended.

Semi-manual cleaning and disinfection

Numerous care and infection control devices offer automation of a part of the reprocessing process. The missing process steps have to be carried out manually or by a different machine system (see also “Market overview of care and infection control devices”).

Sterilizer classification

The standard for small steam sterilizers EN 13060 differentiates between three classes of sterilization programs:

Class B – the universal sterilization type

This autoclave sterilizes wrapped and unwrapped solid products and hollow items in accordance with the manufacturer’s specifications. Devices with such programs are referred to as class B sterilizers (e.g., S1 Pureclave / S2 Pureclave / S3 Pureclave).

Class S – for sterilization of medical devices

This autoclave sterilizes wrapped and unwrapped solid products and hollow items in accordance with the manufacturer’s specifications (see manufacturer’s declaration). Devices with such programs are referred to as class S sterilizers (e.g., DAC Universal S*). The sterilization result satisfies the same quality requirements as for class B sterilizers.

Class N – for thermal disinfection

This autoclave is used for unwrapped solid products. Class N cannot be used with hollow items.

* Does not fully comply with all requirements. Details can be found in the instructions for use, chapter 3.7 “Supplementary information on compliance with EN ISO 15883-1/ -2 and EN ISO 13060”.
The instructions for use can be found here: https://www.dentsplysirona.com/en/customer-support/download-center.html

DAC Universal D and DAC Universal S Advantages

Ease of use

- New design
- Touch display with intuitive user interface
- Guided maintenance workflow Check & Clean

Tutorial Check & Clean DAC Universal D / S

Cost-effective and environmental friendly reprocessing

- Low operating and consumption costs – no use of cleaning and disinfection chemicals and only up to 800 ml[1]/900 ml[2] water consumption per cycle
- Low investment costs in instruments thanks to cooling at the end of the process and therefore quick return to service

Fully automated reprocessing

- Six instruments in approx. 15 minutes[1]/ 21 minutes[2]
- Internal and external cleaning, lubrication (if needed) and disinfection[1]/sterilization[2] of straight and contra-angle handpieces, turbines, ultrasonic/sonic handpieces and tips, nozzles of multifunctional syringes and powder jet devices as well as powder jet handpieces
- Process safety through automated program selection via RFID technology
- LAN interface for electronical documentation

Watch the product video DAC Universal D

Watch the product video DAC Universal S

Legal certainty

- Cleaning and disinfection[1]/sterilization[2] process which can be validated
- Cleaning and disinfection process in accordance with EN ISO 15883-1/-2*
- Sterilization process in accordance with EN ISO 13060* and ISO 17665-1
- Routine Control with chemical indicator class 5 and PCD (Process Challenge Device)

[1] DAC Universal D [2] DAC Universal S

* Does not fully comply with all requirements. Details can be found in the instructions for use, chapter 3.7 “Supplementary information on compliance with EN ISO 15883-1/ -2 and EN ISO 13060”. The instructions for use can be found here: https://www.dentsplysirona.com/en/customer-support/download-center.html

Switch off infection control risks: Switch on DAC Universal D/ DAC Universal S

Comply with infection control standards at the touch of a button and avoid cross contamination: Completely safe with DAC Universal. Your patients and employees can rely on this all-round protection and put their complete trust in the treatment with the reprocessed instruments.

Conformity with standards

The cleaning and disinfection process of DAC Universal D is carried out in compliance with the international standard EN ISO 15883-1/-2* for cleaning and disinfection devices.

The cleaning process of DAC Universal S is carried out in compliance with the international standard EN ISO 15883-1/-2*, the sterilization process in accordance with EN ISO 13060* and ISO 17665-1.

Full virucidal efficacy: Reprocessing with DAC Universal D and DAC Universal S

The thermal disinfection of DAC Universal D as well as the sterilization of DAC Universal S, are not only bactericidal, mycobactericidal and fungicide but also fully virucidal. Proven full virucidal[1] efficacy.

Efficacy spectrum with relevant examples:

bactericidal	S. aureus
mycobactericidal	TBC
fungicide	C. albicans
virucidal	HPV, HBV, HCV, HIV, SARS-CoV 2, influenza, adenoviruses, noroviruses

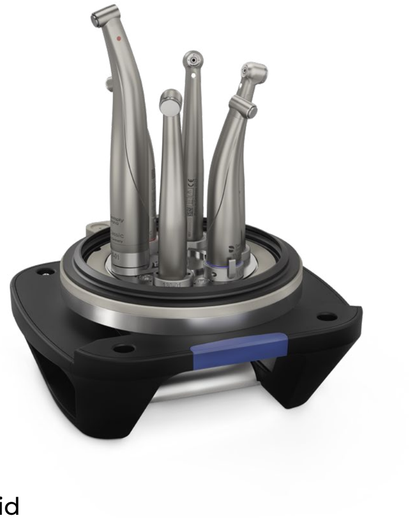
[1] Tested with temperature resistant parvoviruses.

* Does not fully comply with all requirements. Details can be found in the instructions for use, chapter 3.7 “Supplementary information on compliance with EN ISO 15883-1/ -2 and EN ISO 13060”. The instructions for use can be found here: https://www.dentsplysirona.com/en/customer-support/download-center.html

DAC Universal – Fully automated reprocessing process

DAC Universal cleans, lubricates (if necessary) and disinfects[1] / sterilizes[2] up to six straight and contra-angle handpieces and turbines in a fully automated process. Furthermore, ultrasonic/sonic handpieces and tips, nozzles of multifunctional syringes and powder jet devices as well as powder jet handpieces can be reprocessed at a very high level of hygienic safety in DAC Universal.

DAC Universal D – with disinfection
Lid variations



Blue Lid

For the reprocessing of straight and contra-angle handpieces, turbines and contra-angle handpiece heads.

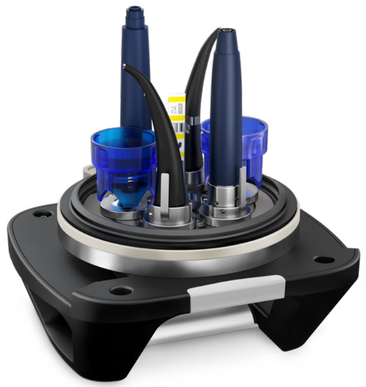
Green Lid

For the reprocessing of ultrasonic/ sonic handpieces and tips, nozzles of multifunctional syringes and powder jet devices as well as powder jet handpieces.

DAC Universal S – with sterilization
Lid variations

Pink Lid

For the reprocessing of straight and contra-angle handpieces, turbines and contra-angle handpiece heads.

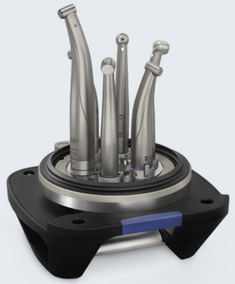


White Lid

For the reprocessing of ultrasonic/ sonic handpieces and tips, nozzles of multifunctional syringes and powder jet devices as well as powder jet handpieces.

[1] DAC Universal D
[2] DAC Universal S

Blue Lid



DAC Universal D – with disinfection

Within ~15 min. incl. cooling

Reprocessing of rotating instruments in a single cycle with the Blue Lid program

Internal cleaning with cold water

1. Preliminary cleaning
2. Leak test
3. Internal cleaning: The internal spray and drive channels are rinsed with water

Fully automated lubrication

4. Lubrication: The drive channels are lubricated (sufficient for the next treatment)

External cleaning with cold water

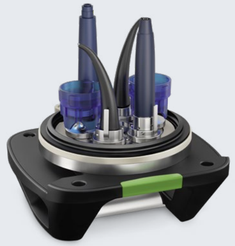
5. External cleaning: Pulse wash procedure (multi-cyclical cleaning method)

Disinfection and cooling

6. Heating up to 134 °C
7. Back-flush: Saturated steam is directed through the instruments
8. Disinfection: 0.5 min. at 134 °C
9. Cooling
10. The lid opens slightly
11. The lid can now be opened fully

The working principle of DAC Universal D

Green Lid



DAC Universal D – with disinfection

within ~15 min. incl. cooling

Reprocessing with the Green Lid program*

Internal cleaning with cold water

1. Preliminary cleaning
2. Leak test
3. Internal cleaning: The internal spray and drive channels are rinsed with water

External cleaning with cold water

4. External cleaning: Pulse wash procedure (multi-cyclical cleaning method)

Disinfection and cooling

5. Heating up to 134 °C
6. Back-flush: Saturated steam is directed through the instruments
7. Disinfection: 0.5 min. at 134 °C
8. Cooling
9. The lid opens slightly
10. The lid can now be opened fully

* identical process to the Blue Lid program, but without lubrication

Pink Lid

DAC Universal S – with sterilization

within ~21 min. incl. cooling

Reprocessing of rotating instruments in a single cycle with the Pink Lid program

Internal cleaning with cold water

1. Preliminary cleaning
2. Leak test
3. Internal cleaning: The internal spray and drive channels are rinsed with water

Fully automated lubrication

4. Lubrication: The drive channels are lubricated (sufficient for the next treatment)

External cleaning with cold water

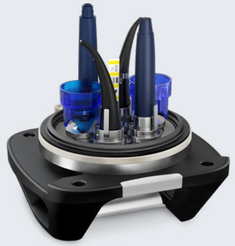
5. External cleaning: Pulse wash procedure (multi-cyclical cleaning method)

Sterilization and cooling

6. Heating up to 134 °C
7. Back-flush: Saturated steam is directed through the instruments
8. Sterilization: 3 min. at 134 °C
9. Cooling
10. The lid opens slightly
11. The lid can now be opened fully

The working principle of DAC Universal S

White Lid



DAC Universal S – with sterilization

within ~21 min. incl. cooling

Reprocessing with the White Lid program*

Internal cleaning with cold water

1. Preliminary cleaning
2. Leak test
3. Internal cleaning: The internal spray and drive channels are rinsed with water

External cleaning with cold water

4. External cleaning: Pulse wash procedure (multi-cyclical cleaning method)

Sterilization and cooling

5. Heating up to 134 °C
6. Back-flush: Saturated steam is directed through the instruments
7. Sterilization: 3 min. at 134 °C
8. Cooling
9. The lid opens slightly
10. The lid can now be opened fully

* identical process to the Pink Lid program, but without lubrication

Information on the validation of DAC Universal D and DAC Universal S

The following information is provided in line with the statutory requirements

Validation is a process that tests the effectiveness and reproducibility of the reprocessing procedure. It is composed of installation qualification (IQ), operational qualification (OQ) and performance qualification (PQ).

If the relevant authorities demand complete and **comprehensive initial validation** on-site in the practice, there are various dealers and service providers that offer such on-site validation services. Complete initial validation locally in the practice includes a comprehensive performance qualification in addition to the installation qualification and operational qualification.

The renewed performance qualification (revalidation) must be carried out after 12 months. With lasting stability of the processes as well as existing risk assessment by the operator, the interval can be raised on up to 24 months/ 4,000 cycles over the longterm. Revalidation is also required after changes have been made to the device that influence the process parameters or after a change in loading. The inspection qualification and operation qualification are omitted in the renewed performance qualification.

Batches must be documented; this can be carried out with a printer, using the practice software (also via a network) or via a USB data-logger system.

Routine control tests must be done due to the recommendations of the manufacturer. E.g., DAC Universal S requires chemical indicators with every cycle and a steam penetration test with a PCD regarding ISO 17665-1 once a week.

Maintenance as recommended by the manufacturer must be performed at the latest after two years or 3,000 cycles. A maintenance kit is available (REF. 67 15 689). Maintenance takes approx. three hours.

Process documentation

Process documentation enables complete verification of successful reprocessing. Here, it is not only the process parameters that are stored electronically; compliance with the batch-specific parameters with chemical indicators is also documented.

Electronic batch and process documentation, e.g.,

Charly, Dampsoft, dios*MP*, DOCma, Sego®, my:MPG

Label printer Pureclave

REF. 68 35 529

Printer

Time, temperature, serial number and correct running of the sterilization / disinfection are documented.

Serial printer Pureclave

REF. 68 35 511

DAC Universal thermal printer

REF. 60 51 770

Process documentation via USB stick

The data are stored digitally on the device on a data logger* and transmitted via USB stick to the documentation software.
The process is approved, digitally signed and archived.

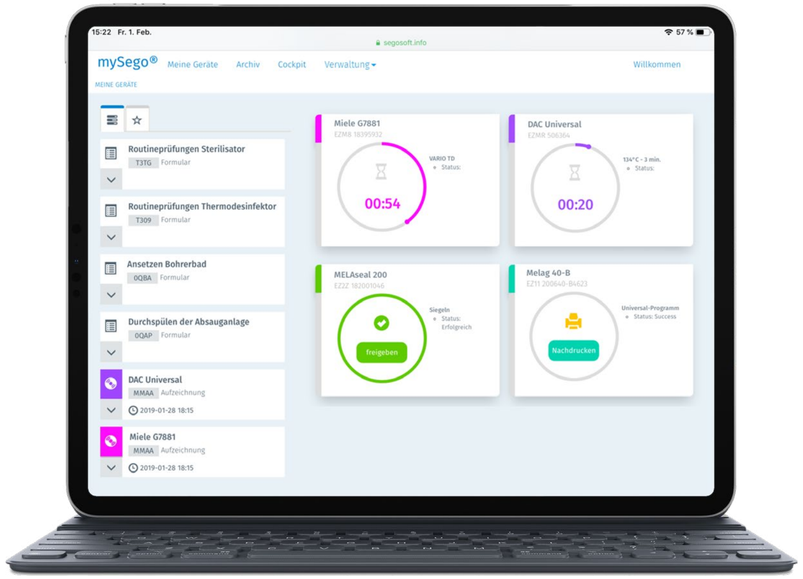
* Please ask your local dealer for details.

Electronic documentation

For electronic batch and process documentation, Dentsply Sirona recommends the solutions described below, diosMP and Sego®.

diosMP

Sego®



Electronic documentation

diosMP

Work safely, simply and in compliance with the law. diosMP is a modular system made up of hardware and software, with perfectly coordinated modules that are tailored to the specific needs of a practice, and which can expanded at any time as the requirements change. From a plug in and go kit for a single device (dios LOG Box, dios LOG Net) to fully digital process documentation and approval, as well as managing your medical devices – diosMP is the ideal solution for your medical device and hygiene management.

From documented approval…

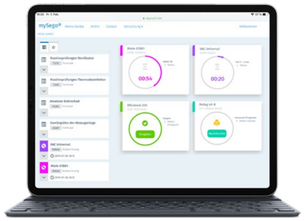
With diosMP, you can read out the protocol data from as many reprocessing devices as you wish, and document it in compliance with the law. diosMP is a manufacturer-independent software, which means that it is not limited to specific brands or combinations of devices. If you purchase a license, you obtain the full user rights for all of the currently available and future devices for a single practice. Approval of the reprocessing, which can be authenticated via a password, or personal contactless card, can be combined with freely definable checklists. The effort required to assess the process and for the fully digitally documented approval is reduced enormously. All of the data is archived by the software for an extended period, both in an encoded database and in a portable, manipulation-proof PDF format. If desired, approval can also be given the additional status of an advanced electronic signature.

…to fully digital practice management

In daily practice life, there are many guidelines, laws, regulations and standards to consider, which demand much more than merely well-organized hygiene management. diosMP is the ideal software for your medical device and hygiene management, with which you can fulfil all of your documentation obligations quickly and safely with minimum effort, way beyond mere process documentation. With diosMP, you keep control of your entire order and supply system and the management of your products, and you have an overview of your stock levels and product shelf lives. Thanks to patient-related consumption monitoring, you can retrace the use of sterile products and instruments, from the manufacturer all the way to the patient. With just a few clicks, you can obtain a continuous, complete treatment record. Furthermore, all tasks and areas of responsibility are digitally documented, thereby increasing the transparency of all of the processes within the practice. With its integrated warning and notification system, diosMP reliably reminds you of all tasks and duties to be completed, so that no task remains unfinished! Discover the diosMP system solution for yourself, and simplify your medical device and hygiene management.

Information based on manufacturers' details (December 2023)

Electronic documentation



Sego®

Easy to use

The use of Sego® enables easy, intuitive, fully automated and time-saving documentation of reprocessing steps and all device tests and routine checks. Sego® provides reliable documentation of the disinfection or sterilization process that can be accurately retraced at any time. The recording of data together with electronically signed documents is essential for quality assurance and protects you against liability risks. The user interface is well structured and clear.

Fast & efficient in daily practice life

Once the reprocessing devices have been started, Sego® records all of the relevant process data automatically, without the need for user intervention. After unloading and the visual inspection, the only task that the technical personnel have is to assess the machine reprocessing, approve the products and then close the approval dialog box by inputting a password, all of which can be done in a few dialogs on the monitor. With Sego®, no additional work processes are required for reliable documentation.

Individual application

Whether you use Windows, macOS, iOS, Android or Linux – the Sego® products can work web-based and across platforms. Whether they are linked to Sego® or not, whether they are active or not, and whether they can only be used to a limited extent or not, all medical devices can be fully documented and traced in Sego4Star. Stock lists, maintenance intervals, validation dates or safety checks, and the monitoring and inspection of instruments and sets that can only be reprocessed to a limited extent can be shown in a user-defined manner due to the close link between task and instrument management, which also provides reminders to complete certain tasks or take note of specific information. It is even possible to set up a check system for sterile goods that are approaching their expiration dates. A task manager that safeguards all of the routine checks rounds off the range of functions. Thereafter, you will find all of the relevant documents, both in a fully comprehensive archive and in the special medical device directory.

Reliable results

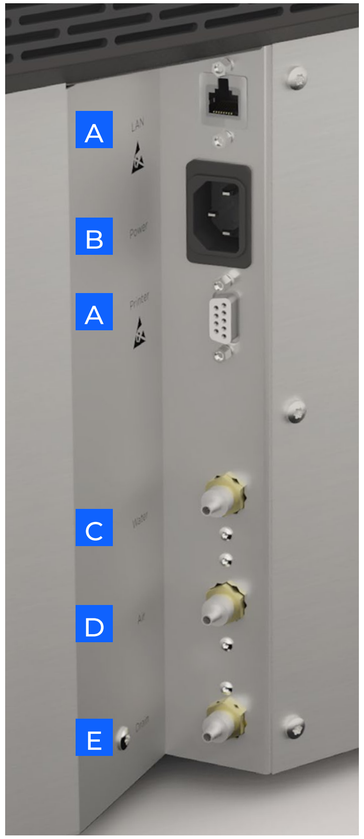
The intelligent SegoAgent is an integral component of the web-based Sego® products. It supports your employees when it comes to making decisions, protects against incorrect operation and manages your checklists and tasks. Long-term archiving is performed using the PDF/A-1 format, which is defined by ISO 19005-1:2005. This format has an electronic signature, making it tamper-proof, and therefore legally valid.

Sego® represents certified security

Information based on manufacturers' details (December 2023)

Requirements and information on installation

Requirements on location: Place DAC Universal in a well-ventilated location on a flat, heat-resistant table top near to a power source. A compressed air connection of 5 to 8 bar flow pressure is required. The recommended minimum distance to the wall is 10 cm. Further, there must be enough space to enable DAC Universal to be opened upward. The total height of the open DAC Universal is 59 cm. The minimum height should be 70 cm in order to prevent possible injuries when opening the lid (risk of crushing).



Installation of DAC Universal

A **Process documentation:**
RS232 interface: recommended for printer and documentation software
LAN interface: recommended for the connection with PC, laptop

B **AC connection:**
220 - 240 VAC, 50–60 Hz, 1,300 W

C **Water supply:** Water from a water treatment system can be connected to the water connection via a 6 mm hose. We recommend NitraDem Direct Connect 2 (REF. 68 07 825) as the direct connection. Water can also be filled manually into the water tank. Note: Water quality must be < 3 µS/cm. Note: Maximum water pressure is 6 bar.

D **Compressed air connection:**
Connect clean and dry air (6 mm hose). The air pressure must be between 5 and 8 bar flow pressure (short-term air consumption: approx. 60 Nl/min. at 5 bar).

E **Waste water:**
The waste water hose must be manufactured from heat-resistant material and has a diameter of 6 mm. The maximum length is 3 m. Please use the original waste water container (REF. 60 78 526) or an original siphon (REF. 61 26 341) for direct connection to the waste water system.

DAC Universal – Unboxing and installation

Market overview of care and infection control devices

■ available
□ optional
– not available

For the reprocessing of turbines and straight and contra-angle handpieces

Manufacturer	DAC Universal S Dentsply Sirona	DAC Universal D Dentsply Sirona	Assistina TWIN W&H	QUATTRO care Plus KaVo	iCare+ NSK	Melatherm 10 Evolution MELAG	PG 8581 MIELE	STATMATIC smart SciCan
Cycle time	approx. 21 min.	approx. 15 min.	approx. 10 sec.	approx. 1 min.	approx. 14 min.	approx. 57 min.[2]	approx. 53 min.[3]	approx. 10 min.
Capacity (instr.)	6	6	2	4	4	23	44	3
Weight [kg]	26	26	3.5	10	14	80	74	7.3
Water connection	■	■	–	–	–	■	■	–
Waste water connection	■	■	–	–	–	■	■	–
Compressed air connection	■ 0.5 – 0.8 MPa	■ 0.5 – 0.8 MPa	■ 0.5 – 1 MPa	■ 0.4 – 0.6 MPa	■ 0.5 – 0.6 MPa	–	–	■ 0.45 – 0.6 MPa
External cleaning	■ (water)	■ (water)	–	–	■ (cleaner)	■ (cleaner)	■ (cleaner)	–
Internal cleaning (spray channel)	■ (water)	■ (water)	–	–	■ (cleaner)	■ (cleaner)	■ (cleaner)	■ (cleaner)
Internal cleaning (drive channel)	■ (water)	■ (water)	–	–	–	■ (cleaner)	■ (cleaner)	■
Oil maintenance	■	■	■	■	■	–	–	■
Disinfection	–	■ (thermal)	–	–	■ (chemical)	■ (thermal)	■ (thermal)	–
Sterilization	■	–	–	–	–	–	–	–
Electronic documentation	□	□	–[1]	–[1]	■	□	□	■
Instruments can be directly used for semi-critical B	■	■	– (additional manual or automated internal, external cleaning and thermal disinfection/ unwrapped sterilization)	– (additional manual or automated internal, external cleaning and thermal disinfection/unwrapped sterilization)	■	■	■	– (additional manual external cleaning, thermal disinfection/ unwrapped sterilization)
Ultrasonic/sonic tips	■	■	–	–	–	■	■	–
Ultrasonic/sonic handpieces	■	■	–	–	–	■	■	–
Attachments for multifunctional syringes	■	■	–	–	–	■	■	–
Nozzles of powder jet devices	■	■	–	–	–	■	■	–

[1] Device is not a washer-disinfector/sterilizer [2] Including active drying [3] Including drying

Information based on manufacturers' details (December 2023)

S1 Pureclave – Beyond expectations

So many elements, so much technology and so many parts to serve and fulfil the daily requirements of a high-end B type sterilizer!

Smooth surfaces, a fresh, ergonomic design – and a crystal-clear color display. The menu structure and the artificial intelligence behind turns high end B type sterilizing into a simple, comfortable, and safe system globally. For comprehensive infection control within your daily work. S1 Pureclave equals high level infection prevention.

High class usability thanks to interface

The crystal clear colour touchscreen offers the entry to an intelligent menu structure with a wide range of options to make your daily work easier, faster, and more efficient.

High class traceability thanks to EliTrace

S1 Pureclave offers the possibility to trace back to the single instrument without any paper handling, dedicated computer, or software.

High class performance thanks to Eco Dry +

The advanced patented Eco Dry + technology adapts the drying time to the mass of the load. This reduces the cycle time, increases the life span of your instruments, and optimizes the energy consumption.

S1 Pureclave – Beyond expectations

So many elements, so much technology and so many parts to serve and fulfil the daily requirements of a high-end B type sterilizer! Smooth surfaces, a fresh, ergonomic design – and a crystal-clear color display. The menu structure and the artificial intelligence behind turns high end B type sterilizing into a simple, comfortable, and safe system globally. For comprehensive infection control within your daily work. S1 Pureclave equals high level infection prevention.

High class usability thanks to interface

The crystal clear colour touchscreen offers the entry to an intelligent menu structure with a wide range of options to make your daily work easier, faster, and more efficient.

High class traceability thanks to EliTrace

S1 Pureclave offers the possibility to trace back to the single instrument without any paper handling, dedicated computer, or software.

High class performance thanks to Eco Dry +

The advanced patented Eco Dry + technology adapts the drying time to the mass of the load. This reduces the cycle time, increases the life span of your instruments, and optimizes the energy consumption.

Easy to use
The touch screen with intuitive menus offers a wide range of options to meet all your needs.

Intuitive navigation
Four logical groups of activities are displayed for swift and efficient navigation.

User guidance
Instruction is available with the help button to assist you during navigation.

Guided maintenance
A set of 3-D animations shows you the main maintenance operations step by step. Makes operation easy and straightforward.

Customized to your needs
A wide range of options to customize your own traceability system to your exact needs.

User identification
Digitally record the user who loaded and unloaded the sterilizer. Users are identified by a 6-digit PIN.

High-capacity data logger

Load release confirmation
This option digitally records the end username and their confirmation of the successful sterilization and/or test cycle.

Easy and practical
Enables you to select the number of labels to be printed by EliSafe either automatically or manually.

Convenient and economical
The network connection (both Ethernet or Wi-Fi) allows 4 S1 Pureclave sterilizers to share one EliSafe label printer.

Time saving
Type B cycles process and dry 2 kg of load in less than 30 minutes.

Extends service life
Automatic adjustment of the drying time depending on the load reduces the heat exposure time. This extends the service life of your instruments.

Energy saving
The optimization of the drying time means reduced energy consumption = “green solution”.

S2 Pureclave – Simple operation & reliable traceability

The color touch screen has been selected and designed to make your daily work easier, faster, and more efficient.

S2 Pureclave also offers a comprehensive traceability system customized to your needs.

- Very fast B cycle in its segment
- Ergonomic and functional design
- Color touch display for easy navigation

Discover simple operation & reliable traceability

Discover remarkable upgradeability

Whatever occur in the future, with S2 Pureclave you're well prepared. The innovative upgradability system offers you a cost efficient, rapid, and customized opportunity to activate additional features to reflect your practice needs or comply with future requirements.

Discover high quality performance

S2 Pureclave offers you one of the fastest type B in its performance class right from the standard version. And you can improve them even by activating the additional features Eco Dry + and Fast Cycle.

S2 Pureclave – Simple operation & reliable traceability

The color touch screen has been selected and designed to make your daily work easier, faster, and more efficient.
S2 Pureclave also offers a comprehensive traceability system customized to your needs.

- Very fast B cycle in its segment
- Ergonomic and functional design
- Color touch display for easy navigation

Discover simple operation & reliable traceability

Easy to use
The intelligent menu structure ensures high operating comfort: you can browse to the preset programs quickly and intuitively using the large color touchscreen.

High-capacity data logger
A high-capacity USB drive automatically records the cycle reports throughout the entire service life. Optionally available: the label and cycle report printers with which you can document the traceability without an additional computer or separate software.

Discover remarkable upgradeability

Whatever occur in the future, with S2 Pureclave you're well prepared. The innovative upgradability system offers you a cost efficient, rapid, and customized opportunity to activate additional features to reflect your practice needs or comply with future requirements.

Performance
By upgrading to Eco Dry +, which automatically adapts the drying time to the mass of the load. This saves time and energy.

Fast Cycle
The quick cycle for in-between: the "Fast Cycle" allows sterilization of unwrapped, semi-critical instruments in just 20 minutes.

Traceability
Allows customization of the sterilizer and therefore traceability back to the person who initiated the sterilization cycle. They identify themselves with a 6-digit PIN directly on the device.

All in One
With the "All in One" Activation Code, you have all benefits in one go – and ultimately your sterilizer comes at a previously striking price-performance ratio.

Discover high quality performance

S2 Pureclave offers you one of the fastest type B in its performance class right from the standard version. And you can improve them even by activating the additional features Eco Dry + and Fast Cycle.

Time saving
Type B cycles process and dry 2 kg of load in less than 40 minutes.

Extends service life
Automatic adjustment of the drying time depending on the load reduces the heat exposure time. This extends the service life of your instruments.

Energy saving
The optimization of the drying time means reduced energy consumption = "green solution".

S3 Pureclave – B type sterilizer for very good performance

Efficiency and simplicity of a B type sterilizer are crucial. The S3 Pureclave sterilizer meets all these requirements and more: simple operation, ergonomic and functional design, appropriate sterilization cycles and upgradeable functions guarantee high efficiency leading to maximum results.

- B type sterilizer with the remarkable cycle times of its category.
- Ease of use for an smooth user experience.
- Special upgradeability for customizing and modernizing the device according to your needs.
- Advanced traceability for complete documentation.

Improved components – simplified work processes

Characterized by an effortless handling, ergonomic and functional design. Ideal to simplify the sterilization process and thus to ensure an efficient workflow in your practice.

Special upgradeability

The Activation Code system is an innovative upgradeability tool. Activation Codes offer a tailored opportunity to enhance additional features that meet your practice needs and comply with future requirements. Effectively, for customizing and upgrading your S3 Pureclave sterilizer.

S3 Pureclave – B type sterilizer for very good performance

Efficiency and simplicity of a B type sterilizer are crucial. The S3 Pureclave sterilizer meets all these requirements and more: simple operation, ergonomic and functional design, appropriate sterilization cycles and upgradeable functions guarantee high efficiency leading to maximum results.

- B type sterilizer with the remarkable cycle times of its category.
- Ease of use for an smooth user experience.
- Special upgradeability for customizing and modernizing the device according to your needs.
- Advanced traceability for complete documentation.

Improved components – simplified work processes

Characterized by an effortless handling, ergonomic and functional design. Ideal to simplify the sterilization process and thus to ensure an efficient workflow in your practice.

Ease of use

- 3.5” touchscreen enables smooth operation
- Simplified user interface and menu structure support practices in daily activities

Optimal sterilization programs

- The Eco B sterilization program reprocesses 0.5 kg in 27 minutes.
- Reprocess up to 5.5 kg of load to meet the requirements of dental clinics.
- The B Universal 121°C cycle even allows the reprocessing of sensitive items, including porous such as surgical clothing.

Design and maintenance

- Ergonomic design + functional shape thanks to modular feet + compact layout
- High level of reliability – service interval is set 4,000 cycles or 5 years

Enhanced traceability

- Documentation is automatically saved via high-capacity USB stick
- Optional: label and cycle report printer

Special upgradeability

The Activation Code system is an innovative upgradeability tool. Activation Codes offer a tailored opportunity to enhance additional features that meet your practice needs and comply with future requirements. Effectively, for customizing and upgrading your S3 Pureclave sterilizer.

Fast cycle

- The “Fast cycle” feature enables sterilization of unwrapped instruments, including handpieces. For a quick cycle for in-between.

Remote data storage

- The “Remote data storage” feature is the ideal addition for the digital cycle documentation. It offers the possibility to save cycles directly on PC.

Traceability

- The “Traceability” feature enables user identification and load release confirmation. Identification is secured by a PIN directly on the sterilizer and the W&H Steri App.

All in One

- The “All in One” feature provides all benefits at once – and ultimately your sterilizer becomes a striking price performance ratio.

Water supply

High-quality treated water is required for DAC Universal (< 3µS/cm) and for S1 / S2 / S3 Pureclave (< 15µS/cm). The majority of standard water reprocessing systems do not guarantee a constant flow or required return flow protection that would meet this requirement. In order to avoid cycle interruptions due to poor water quality, we recommend the NitraDem Direct Connect 2 water treatment system.

EN 1717 Category 5 for direct connection

NitraDem Direct Connect 2

Category 5 conform for direct connection

i

EN 1717 Category 5 for direct connection

Silicate filter

Manual filling

Demineralized water
WARNING!
Could have differing water quality!

i Direct connection: A water filter (20 µm) must be installed upstream of DAC Universal to ensure that the water is clean. This serves to protect your DAC Universal. REF. 63 12 214

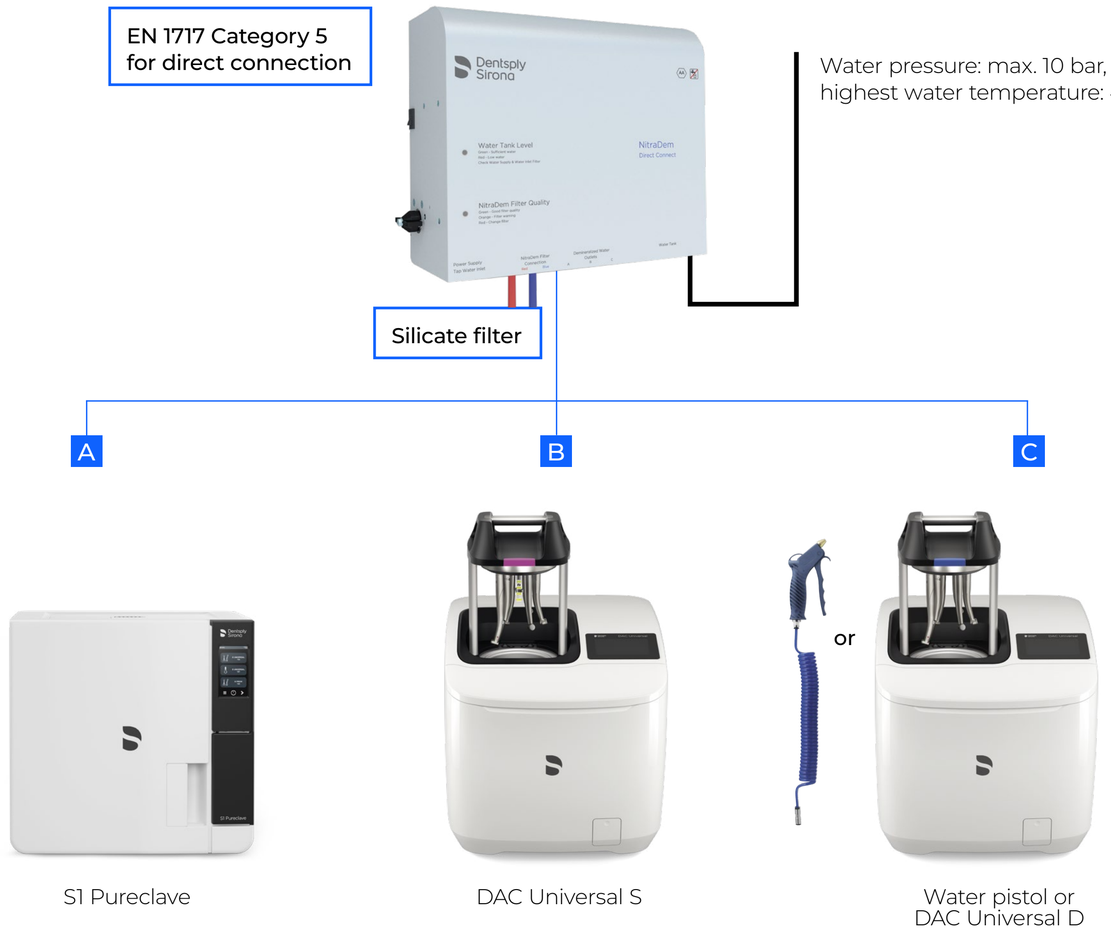
NitraDem Direct Connect 2 – connections

NitraDem Direct Connect 2 features 3 water outlets. Depending on the type, up to three devices can be connected.

Water treatment

REF. 68 07 825 NitraDem Direct Connect 2

NitraDem Direct Connect 2 has three water outlets, from which demineralized water is available at a pressure of 5-6 bar.



A At outlet A an infection control system can be optionally connected with or without a water suction pump. The system is not recommended for connection to cleaning and disinfection devices.

B **C** Water outlets B and C are used to connect infection control systems without a water suction pump, e.g., water pistol, DAC Universal.

NitraDem Direct Connect 2

Direct water connection

- EN 1717 Category 5-compliant for direct connection
- Water available on demand to all connected infection control systems
- Connection of up to three infection control systems simultaneously

Easy handling

- Simple filter replacement
- Compatible with DAC Universal and all standard sterilizers

Continuous control

- Always the right water quality
- No quality loss due to storage
- Water conductivity is continuously monitored

Technical data

DAC Universal

Installation prerequisites

Electrical power supply	~ 100-127 VAC/200-240 VAC 50/60 Hz
Power consumption	1.3 kW
Compressed air connection	Input pressure: 5.0 - 8.0 bar; max. Short-term air consumption: approx. 60 Nl/min. at 5 bar
Oil Can capacity	0.2 l
Water tank capacity	2.3 l
Water consumption	**DAC Universal D:** approx. 800 ml per cycle (Program Blue Lid) **DAC Universal S:** approx. 900 ml. per cycle (Program Pink Lid)
Water quality	< 3 µS/cm
Height open/closed (with Blue/Pink Lid) x width x depth	59 cm/40 cm x 40 cm x 42 cm
Capacity	up to 6 instruments
Weight	26 kg
Minimum distance from wall/ceiling	10 cm / 70 cm

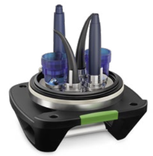
Documentation

RS 232 connections	e.g., printer, documentation software, data logger
LAN	e.g., connection to PC, laptop

[1] The cycle times can vary.

Programs

Program Blue Lid
Cleaning, disinfection and lubrication of straight and contra-angle handpieces, turbines and contra-angle heads 134 °C, 0.5 min disinfection, entire cycle time: approx. 15 min[1] including cooling



Program Green Lid
Cleaning and disfinfection of ultrasonic/sonic handpieces and tips, nozzles of multifunctional syringes and powder jet devices as well as powder jet handpieces 134 °C, 0.5 min. disinfection, entire cycle time: approx. 15 min1 including cooling

Program Pink Lid
Cleaning, sterilization and lubrication of straight and contra-angle handpieces, turbines and contra-angle heads 134 °C, 3 min. sterilization, entire cycle time: approx. 21 min1 including cooling

Program White Lid
Cleaning and sterilization of ultrasonic/sonic handpieces and tips, nozzles of multifunctional syringes and powder jet devices as well as powder jet handpieces 134 °C, 3 min. sterilization, entire cycle time: approx. 21 min1 including cooling

Technical data

S1/S2/S3 Pureclave

Sterilization cycle	B-Universal 134		B-Prion 134		B-Universal 121	Fast cycle
Temperature	134 °C		134 °C		121 °C	134°C
Holding time (minutes)	5‘30“		20‘30“		20’30’’	3’30’’
Test cycles	Helix / Bowie and Dick / Vacuum					
S1 Pureclave						
Total cycle duration (minutes) including complete drying	Eco dry+	Typical load	Eco dry+	Typical load	Eco dry+	Eco dry+
	Automatic from 22‘ to 46‘	29‘	Automatic from 38‘ to 63‘	45‘	40’ to 72’	13’ to 21’
S1 Pureclave 22 l	Max. 6 kg / typical 2 kg / max. porous 2 kg					Max. unwrapped 2 kg
S1 Pureclave 22 l containers load	Max. 9 kg					
S2 Pureclave						
Total cycle duration (minutes) including complete drying	Automatic from	Typical load	Automatic from	Typical load	Automatic from	Automatic from
	26‘ to 52‘	38‘	42‘ to 67‘	54‘	41’ to 73’	20’ to 22’
S2 Pureclave 17 l	Max. 4.5 kg / typical 2 kg / max. porous 1.5 kg					Max. unwrapped 2 kg
S2 Pureclave 17 l containers load	Max. 9 kg					
S3 Pureclave						
Total cycle duration (minutes) including complete drying	Automatic from	Typical load	Automatic from	Typical load	Automatic from	Automatic from
	27‘ to 51‘	47‘	42‘ to 66‘	62‘	63’ to 71’	20’ to 26’
S3 Pureclave 17 l	Max. 3.5 – 5.5 kg[1] / typical 2 kg / max. porous 0.5 – 1.5 kg[2]					Max. unwrapped 4 kg
S3 Pureclave 17 l containers load	Max. 5.5 kg					

[1] Duration is reported in the table refers to 3.5 kg. It is possible to sterilize up to 5.5 kg by drying time extension.
[2] Duration is reported in the table refers to 0.5 kg. It is possible to sterilize up to 1.5 kg by drying time extension.

Technical data

S1/S2/S3 Pureclave

Trade name and type:	S1 Pureclave	S2 Pureclave	S3 Pureclave
Chamber size	22 l	17 l	17 l
Power supply	200 – 240 V AC; 50/60 Hz; 10 A	200 – 240 V AC; 50/60 Hz; 10 A	200 – 240 V AC; 50/60 Hz; 10 A
Power consumption	2.0 – 2.4 kW	2.0 – 2.4 kW	2.0 – 2.4 kW
Overall dimension (w x h x d)	465 x 452 x 634 mm	465 x 452 x 646 mm	465 x 452 x 646 mm
Weight (empty)	47.5 kg	42.5 kg	40 kg
Main / used water tanks	4.8 l / 4.8 l	4.8 l / 4.8 l	4.8 l / 4.8 l
Working range	7 to 15 cycles	7 to 15 cycles	7 to 10 cycles
Usable space in chamber (w x h x d)*	195 x 195 x 400 mm	195 x 195 x 312 mm	195 x 195 x 312 mm
Connection types	5 USB ports, 1 Ethernet port, integrated automatic water filling connection	2 USB ports (5 as option), integrated automatic water filling valve	1 USB port in the front (additional 1 in the rear as option), automatic water filling kit (optional)

S1/S2/S3 Pureclave were designed, certified and validated with the most stringent directives and standards

2017/745 Medical Device Regulation	IEC 61326-1 Electromagnetic compatibility	IEC 61770 Electric appliances connected to the water mains
2012/19/EU Waste Electrical and Electronic Equipment	IEC 61010-1 Safety requirements	EN 13060 Small steam sterilzers
2014/68/EU Pressure Equipment Directive	IEC 61010-2-040 Specific requirements for stream sterilizer	The sterilizer can be validated acording to EN ISO 17665-1

* Usable space is referred to standard rack configuration.

Technical data

NitraDem Direct Connect 2

NitraDem Direct Connect 2	
Manufacturer	Dentsply Sirona
Throughput [l/h]	42
Water quality [µS/cm]	0–3
Electrical connection	100 V – 240 V 50 – 60 Hz
Dimensions (H x W x D) [cm]	26.5 x 30 x 12
Weight [kg]	7.3
Capacity/500 µS/cm/[liter]	180 (Mini)/ 360 (Long-Life)
Capacity/10° dH/[liter]	255 (Mini)/ 510 (Long-Life)
Conductivity test	Yes
Fixed connection	Yes
DIN EN 1717-compliant for direct connection	Yes

Ordering information and accessories

DAC Universal

Product			REF.
DAC Universal D 	**Includes:** • Blue Lid • 1 bottle of DAC Oil lubrication concentrate • Water filter • Hose • Combination filter • Power cable • Screwdriver for adapter	**Check & Clean kit:** • Check & Clean Cap • Check & Clean Lid • NitraClean cleaning tablets • Syringe • Cotton rolls • Screwdriver for waste water filter • Waste water filter	67 27 916
DAC Universal S 	**Includes:** • Pink Lid • 1 bottle of DAC Oil lubrication concentrate • Water filter • Hose • Combination filter • Power cable • Screwdriver for adapter • Indicator holder	**Check & Clean kit:** • Check & Clean Cap • Check & Clean Lid • NitraClean cleaning tablets • Syringe • Cotton rolls • Screwdriver for waste water filter • Waste water filter	67 62 160
	**“Siphon” installation kit (Touch):** • Siphon with direct connection • Manometer • Hose • Waste water filter (6 pcs.) • NitraClean cleaning tablets (50 pcs.)		67 09 880
	**“Waste water tank” installation kit (Touch):** • Waste water tank • Manometer • Hose • Waste water filter (6 pcs.) • NitraClean cleaning tablets (50 pcs.)		66 98 299

Accessories DAC Universal D		REF.
	Blue Lid without adapters	67 09 815
	Green Lid without adapters	67 09 823

Accessories DAC Universal S		REF.
	Pink Lid, incl. indicator holder, without adapters	67 42 907
	White Lid, incl. indicator holder, without adapters	67 42 931
	PCD DAC Universal S	67 42 956
	Indicator holder	67 43 624
	Chemical indicators (510 pcs., for DAC Universal S)	67 42 857

Accessories DAC Universal		REF.
	DAC Oil lubrication concentrate (blue, 6 bottles) for DAC Universal	62 59 118
	NitraClean tablets (pack of 50)	66 35 499
	Waste water filter (6 pcs.)	66 98 166
	Check & Clean Lid	67 09 997
	Check & Clean Cap	67 10 003
	Lid holder	67 09 856
	Waste water tank with hose	60 78 526
	Siphon with direct connection	61 26 341
	DAC Universal thermal printer	60 51 770
	Printer paper	68 05 407

Ordering information and accessories

Adapters for Blue Lid for DAC Universal D and Pink Lid for DAC Universal S

Adapter for straight and contra-angle handpieces	REF.
Dentsply Sirona TE/Classic Adapter Touch	66 86 682
ISO/INTRAmatic® adapter	60 51 648
KaVo and Bien-Air contra-angle handpiece adapter	60 51 663

Adapter for turbines	REF.
Dentsply Sirona quick coupling R/F/B adapter	60 51 697
KaVo MULTIflex adapter	60 51 655
W&H Roto quick adapter	60 51 671
BienAir UNIFIX adapter	60 51 713
NSK Phateleus adapter	60 51 804
NSK QDJ adapter	60 51 812
Borden 2/3 hole adapter	60 51 861

Adapter for turbines	REF.
Castellini CERAMIC FREEDOM adapter	60 51 762
Midwest/ISO 4/5-hole adapter	60 51 853
Morita PAR-DI adapter	60 51 911
Morita PAR-O adapter	60 51 929
Osada OFJ-MZL adapter	60 85 745
Yoshida QUICK JOINT adapter	63 23 831

Ordering information and accessories

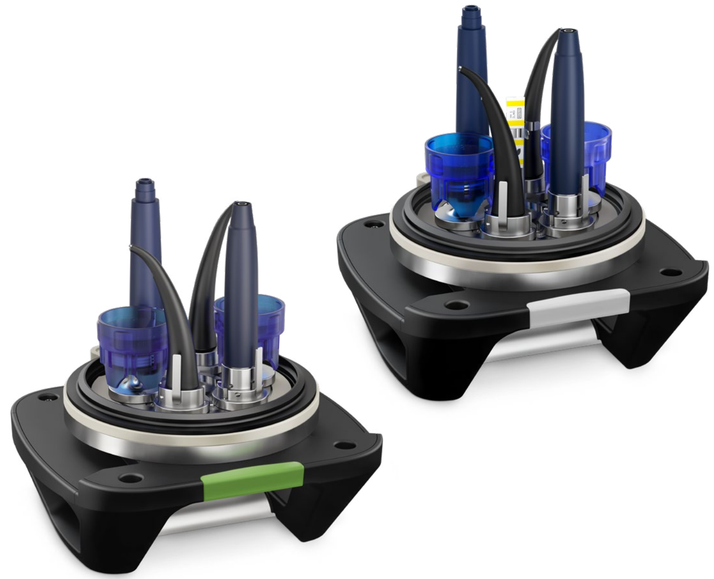
Adapters for Green Lid for DAC Universal D and White Lid for DAC Universal S

Adapter for ultrasonic/sonic handpieces	REF.
Dentsply Sirona SiroSonic TL/PerioSonic adapter	65 36 135
Dentsply Sirona SiroSonic/L adapter	65 36 143
EMS handpiece adapter for EMS EN-041	67 50 090
EMS Piezon handpiece adapter for EMS Piezon® LED, EMS Piezon®, KaVo PiezoLED™	66 13 538
Satelec Slim handpiece adapter	66 23 438
Satelec Newtron LED handpiece adapter	66 23 446
Satelec Newtron handpiece adapter	66 23 420
KaVo SONICflex handpiece adapter for KaVo SONICflex 2003 and KaVo SONICflex 2008	67 32 056

Adapter for multi-functional syringe nozzles	REF.
Dentsply Sirona Sprayvit nozzle adapte	65 36 150
Dentsply Sirona Sprayvit 4000 nozzle adapter	65 36 168

Adapter for ultrasonic/sonic tips	REF.
Dentsply Sirona ultrasonic tip adapter: For the instrument tips SiroSon S/C8/L; SiroSonic/L; SiroSonic TL; PerioSonic[1,2]	65 36 127
EMS ultrasonic tip adapter[2]	66 10 708
Satelec ultrasonic tip adapter[2]	66 10 716
KaVo SONICflex 2003 tip adapter[2]	67 35 646

Adapter for nozzles of powder jet devices	REF.
EMS AIRFLOW® handpiece adapter	68 20 356
EMS AIRFLOW® Handy nozzle-adapter	66 23 453



[1] The Green Lid and the White Lid is not intended for the reprocessing of implant, endo and CEM tips.
[2] Please check the compatibility list for authorized tips.

Ordering information

Pureclave

S1 Pureclave		REF.
	**Includes:** • Tray holder • Rack • Trays (5 pcs.) • USB pen drive • Drain tube • Main cable EU • Tube for AWF drain connection • Emergency door opening tool	68 24 150

S2 Pureclave		REF.
	**Includes:** • Tray holder • Rack • Trays (3 pcs.) • USB pen drive • Drain tube • Mains cable EU • Tube for AWF drain connection • Emergency door opening tool	68 24 168

S3 Pureclave		REF.
	**Includes:** • Tray holder • Rack • Trays (3 pcs.) • USB pen drive • Drain tube • Mains cable EU • Tube for AWF drain connection • Emergency door opening tool	68 24 176

Activation Codes		REF.
	Activation Code Traceability Pureclave	68 35 578
	Activation Code Performance Pureclave	68 35 586
	Activation Code Fast Cycle Pureclave	68 35 594
	Activation Code Remote Data Storage Pureclave	68 35 602
	Activation Code All In One S2 Pureclave	68 35 628
	Activation Code All In One S3 Pureclave	68 35 636

Documentation		REF.
	Serial printer Pureclave	68 35 511
	Label printer Pureclave	68 35 529
	QR code / Bar code reader for labels	68 35 552
	Wi-Fi dongle key	68 35 560
	Kit Helix test (PCD + 30 strips)	68 35 669
	250 Helix strips	68 35 677
	USB pen drive	68 35 834

Maintenance		REF.
	Door gasket	68 35 735
	Bacteriological filter (bagged)	68 35 859
	400/800 cycle consumable kit	68 35 867
	Dust filter	68 36 006
	W&H MC-1000 cleaning liquid (1000 ml)	68 39 083
	Roll of thermal paper	68 37 475
	Label printer consumable kit	68 37 467

Ordering information and accessories

NitraDem Direct Connect 2

Water treatment system	REF.
NitraDem Direct Connect 2 incl. installation kit and Silicate Long-Life filter	68 07 825

Accessories and filters		REF.
	Water pistol	62 59 084
	Silicate Mini filter	67 91 326
	Silicate Long-Life filter	67 91 334

Dentsply Sirona

Sirona Dental Systems GmbH
Fabrikstraße 31, 64625 Bensheim, Deutschland
dentsplysirona.com

Dentsply Sirona