

THE DENTAL
SOLUTIONS
COMPANY™



Info File Infection Control

Instrument reprocessing in the dental practice

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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 solutions from Dentsply Sirona are suitable for the cleaning, care, disinfection and sterilization of dental instruments. Regardless of the design of your infection control workflows, we have the appropriate solution.

DAC Universal, DAC Universal S

The combination machine cleans, lubricates (if necessary) and disinfects¹ / sterilizes² 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 minutes¹ / 21 minutes² - including cooling.

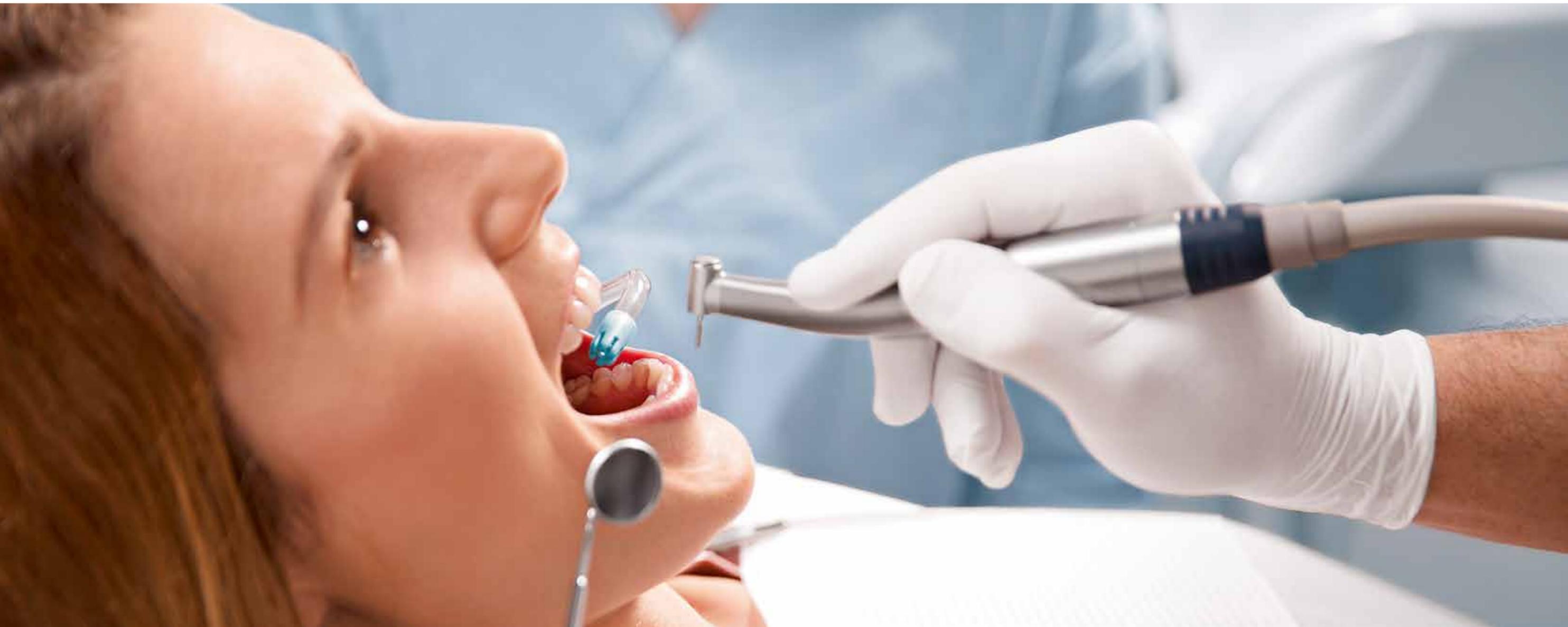
¹ DAC Universal
² DAC Universal S

DAC Premium, DAC Professional

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

SiroSeal Premium, SiroSeal Professional

With the sealing devices, instruments can be packaged for storage and transportation.





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 reprocessed 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. Machine reprocessing increases process reliability, whereby the occupational safety for the practice staff is also increased. Mechanical 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 disinfection¹ / sterilization² measures should subsequently be compiled in the hygiene plan of the operating practice.

¹ DAC Universal

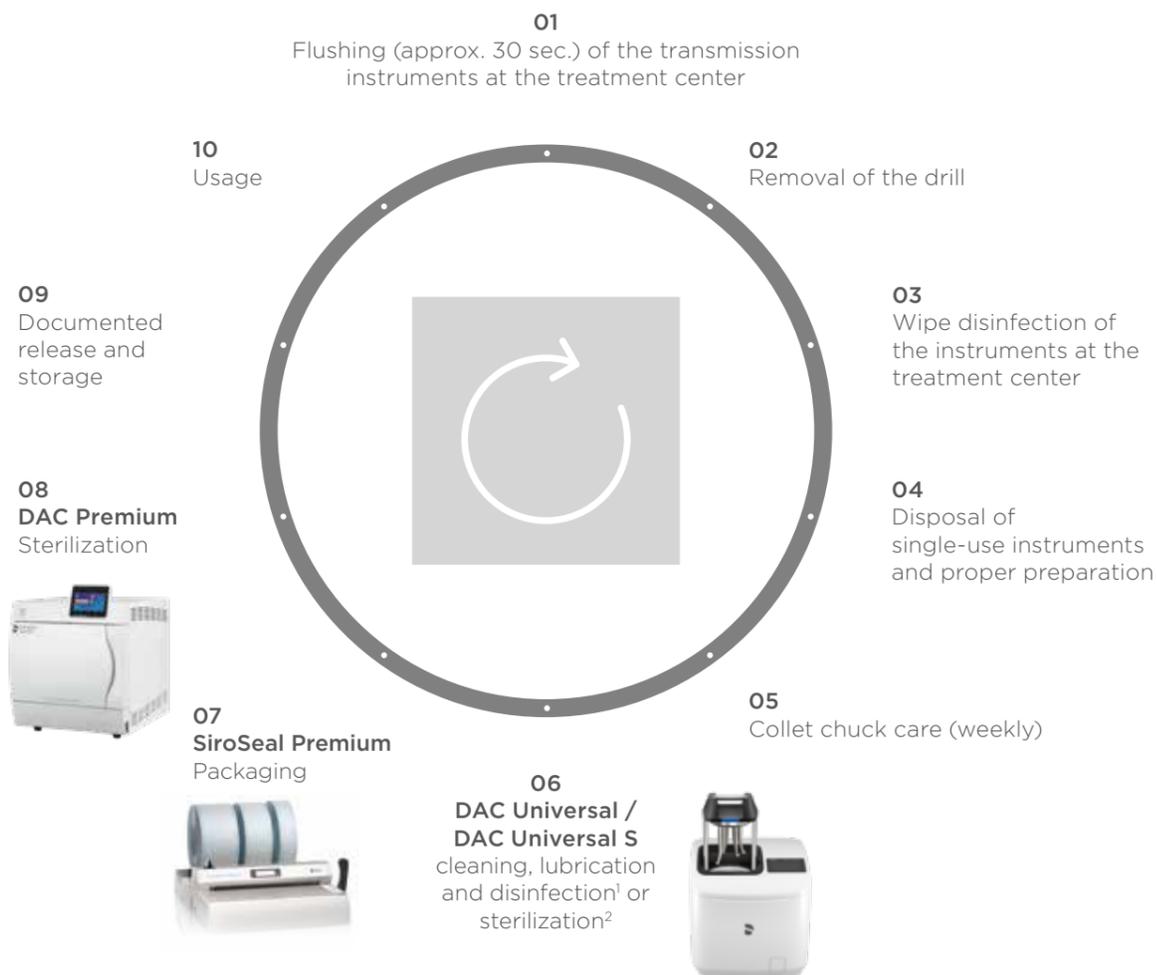
² DAC Universal S

The infection control cycle in machine 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, disinfection¹ or

sterilization², packaging – if necessary – and wrapped sterilization. The effectiveness and repeatability of the reprocessing processes with DAC Universal / DAC Universal S are checked during validation. The authorities recognize this validation process. Medical devices designated for sterile use are wrapped and sealed with SiroSeal Premium. During subsequent sterilization in

DAC Premium, the instruments are rendered sterile. The packaging 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
² DAC Universal S

Instrument reprocessing methods

Cleaning and disinfection

Machine cleaning and disinfection – the safe approach to reprocessing

With machine 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, machine reprocessing methods are preferable to manual methods, and thermal disinfection is favored over chemical disinfection. Machine 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 machine 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 page 17 “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. DAC Premium / DAC Professional).

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.

DAC Universal and DAC Universal S Advantages



Ease of use

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

Cost-effective and environmental friendly reprocessing

- Low operating and consumption costs – no use of cleaning and disinfection chemicals and only up to 800 ml¹ / 900 ml² 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 automatic reprocessing

- Six instruments in approx. 15 minutes¹ / 21 minutes²
- Internal and external cleaning, lubrication (if needed) and disinfection¹ / sterilization² 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 automatic program selection
- LAN interface for electronic documentation

Legal certainty

- Cleaning and disinfection¹/sterilization² 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)

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

Comply with infection control standards at the touch of a button and avoid cross contamination: Completely safe with DAC Universal / DAC Universal S. 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 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.

Fully active against viruses: Reprocessing with DAC Universal and DAC Universal S



The thermal disinfection of DAC Universal as well as the sterilization of DAC Universal S, are not only bactericidal and fungicide but also fully virucidal. Proven full virucidal¹ activity. Efficacy spectrum with relevant examples:

bactericidal	TBC, S. aureus
fungicide	C. albicans
virucidal	HPV, HBV, HCV, HIV, COVID-19, influenza, adenoviruses, noroviruses

¹ Tested with temperature resistant parvoviruses.

¹ DAC Universal
² DAC Universal S

DAC Universal – with disinfection

Fully automated reprocessing process

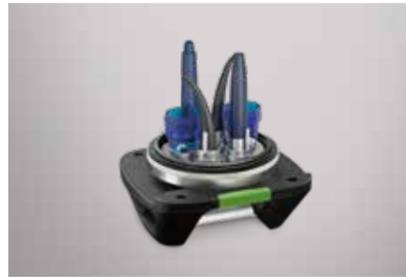
DAC Universal cleans, lubricates (if necessary) and disinfects* up to six straight and contra-angle handpieces and turbines in a fully automated process. Furthermore, ultrasonic/sonic handpieces and tips, nozzles of multifunctional syringes and powder jet devices as well as powder jet handpieces can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

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.

* no sterilization

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



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

Reprocessing with the Green Lid (identical process to the Program Blue Lid, but without lubrication)



Internal cleaning with cold water



External cleaning with cold water



Disinfection and cooling



DAC Universal S – with sterilization

Fully automated reprocessing process

DAC Universal S cleans, lubricates (if necessary) and sterilizes 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 S.

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.

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



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

Reprocessing with the White Lid (identical process to the Program Pink Lid, but without lubrication)



Internal cleaning with cold water



External cleaning with cold water



Sterilization and cooling



Information on the validation of DAC Universal 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 / 4000 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). The dealer technician must be allowed approx. three working hours.



Ordering information and accessories

DAC Universal S

Product	REF.
 <p>Pink Lid:</p> <ul style="list-style-type: none"> • Pink Lid • 1 bottle of NitramOil lubrication concentrate • Water filter • Hose • Combination filter • Power cable • Screwdriver for adapter • USB stick DAC Universal S • Indicator holder • 1 paper of chemical indicators (30 pcs.) <p>Check & Clean kit:</p> <ul style="list-style-type: none"> • Check & Clean Cap • Check & Clean Lid • NitraClean cleaning tablets • Syringe • Cotton rolls • Screwdriver for waste water filter • Waste water filter 	67 42 899 (EU) 67 47 534 (GB)
 <p>“Siphon” installation kit (Touch):</p> <ul style="list-style-type: none"> • Siphon with direct connection • Manometer • Hose • Waste water filter (6 pcs.) • NitraClean cleaning tablets (50 pcs.) 	67 09 880
 <p>“Waste water tank” installation kit (Touch):</p> <ul style="list-style-type: none"> • Waste water tank • Manometer • Hose • Waste water filter (6 pcs.) • NitraClean cleaning tablets (50 pcs.) 	66 98 299

Accessories	REF.
 NitramOil #2 lubrication concentrate (blue, 6 bottles) for DAC Universal	62 59 118
 NitraClean tablets (pack of 50)	66 35 499
 PCD DAC Universal S	67 42 956
Waste water filter (6 pcs.)	66 98 166
Indicator holder	67 43 624
Chemical indicators (510 pcs., for DAC Universal S)	67 42 857
Check & Clean Lid	67 09 997
Check & Clean Cap	67 10 003

Accessories	REF.
 Pink Lid, incl. indicator holder, without adapters	67 42 907
 White Lid, incl. indicator holder, without adapters	67 42 931
 Lid holder	67 09 856
 Waste water tank with hose  Siphon with direct connection	60 78 526 61 26 341
DAC Universal thermal printer printer paper	60 51 770 65 99 018

Pink Lid

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.
 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 PTL adapter	60 51 804
 NSK QDJ adapter	60 51 812
 Borden adapter, 2 - 3 holes	60 51 861
 Castellini CERAMIC FREEDOM adapter	60 51 762
 Midwest/ISO 4/5-hole turbine with fixed connection adapter	60 51 853
 Morita Alpha adapter	60 51 911
 Morita CP4 adapter	60 51 929
 Osada OFJ adapter	60 85 745
 Yoshida QUICK JOINT adapter	63 23 831

White Lid¹

Adapter for ultrasonic/sonic handpieces, tips and multi-functional syringe attachments	REF.
Adapter for ultrasonic/sonic handpieces:	
 Sirona SiroSonic TL / PerioSonic adapter	65 36 135
 Sirona SiroSonic / L adapter	65 36 143
 EMS Piezon straight handpiece adapter	66 13 538
 Satelec Slim	66 23 438
 Satelec Newtron LED	66 23 446
 Satelec Newtron	66 23 420
 KaVo SONICflex handpiece adapter for KaVo SONICflex 2003 and KaVo SONICflex 2008	67 32 056
Adapter for multi-functional syringe nozzles:	
 Sirona Sprayvit nozzle adapter	65 36 150
Adapter for ultrasonic/sonic tips:	
 Sirona ultrasonic tip adapter: For the instrument tips SiroSon S/C8/L; SiroSonic/L; SiroSonic TL; PerioSonic ¹	65 36 127
 EMS ultrasonic tip adapter	66 10 708
 Satelec ultrasonic tip adapter	66 10 716
 KaVo SONICflex 2003 tip adapter	67 35 646
Adapter for nozzles of powder jet devices:	
 EMS AIR-FLOW ^{®2}	66 23 461
 EMS AIR-FLOW [®] Handy	66 23 453

¹ The White Lid is not intended for the reprocessing of implant, endo and CEM tips.

² Currently not available