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sirona
The Dental Company

DAC UNIVERSAL

Operating Instructions

English



Dear Customer,

Thank you for purchasing a DAC UNIVERSAL unit.

DAC UNIVERSAL cleans, oils and sterilizes / disinfects 6 instruments automatically. Wrapped and solid instruments can also be sterilized in next to no time and are therefore back in action quickly. DAC UNIVERSAL saves you time-consuming manual reprocessing and reliably protects you and your patients from cross-contamination.

These operating Instructions are designed to assist you prior to initial use and whenever you require information later on. It is important to observe all safety information to prevent personal injury and material damage. Please follow the instructions below for care and cleaning of the DAC UNIVERSAL.

We wish you a great deal of success and enjoyment with DAC UNIVERSAL.

Your DAC UNIVERSAL team

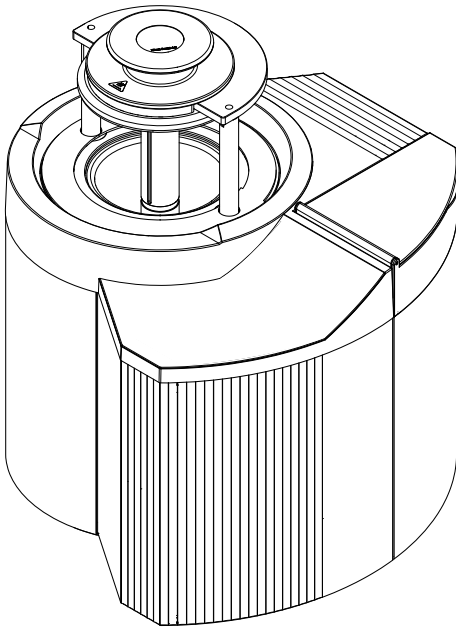


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1 General Information

1.1 Contact information

Customer Service Center

For technical questions, use the contact form on the Internet at www.sirona.com. Follow the menu items "CONTACT" / "Customer Service Center" and click on the "CONTACT FORM FOR TECHNICAL INQUIRIES" button.

You can call our Customer Service Center at:

+49 (0)6251/16-1670

Manufacturer

Sirona Dental A/S
Rho 10
DK-8382 Hinnerup
Denmark
www.sirona.com

For a list of technical service locations, please refer to our website:
www.sirona.com/en/contact/dealer-search/

1.2 General notes

Observe the Operating Instructions

Please familiarize yourself with the unit by reading through these Operating Instructions before putting it into operation. It is essential that you comply with the specified warning and safety information.

Keep documents safe

Always keep the Operating Instructions handy in case you or another user require(s) information at a later point in time. Save the Operating Instructions on the PC or print them out.

If you sell the unit, make sure that the Operating Instructions are included with it either as a hard copy or on an electronic storage device so that the new owner can familiarize himself with its functions and the specified warning and safety information.

Online portal for technical documents

We have set up an online portal for the Technical Documents at <http://www.sirona.com/manuals>. There, you can download these operating instructions and further documents. Please complete the online form if you would like a hard copy of a particular document. We will then be happy to send you a printed copy free of charge.

Help

If you reach an impasse despite having thoroughly studied the Operating Instructions, please contact your dental depot.

1.3 Versions of the DAC UNIVERSAL

This manual covers 2 different versions of the DAC UNIVERSAL. These versions have different user interfaces and are operated differently. Please check the serial number of your machine, in order to be able to know which type you have. The serial number is located on the back of the DAC UNIVERSAL.

The DAC UNIVERSAL with a graphical user interface carries serial numbers above 500.000.

These autoclaves are in this manual known as the DAC UNIVERSAL ADVANCED.

The DAC UNIVERSAL with a text display carries serial numbers below 500.000.

These autoclaves are in this manual known as the DAC UNIVERSAL STANDARD.

1.4 CD "User E-Guide" DAC UNIVERSAL

A "User E-guide" CD is included with DAC UNIVERSAL that contains all operating instructions and important technical information.

1.5 Other valid documents


DAC UNIVERSAL includes other separate documents. The instructions as well as any warning and safety information contained therein must also be observed:


	REF
Check & Clean	65 33 033 65 46 431
Brief operating instructions	65 37 588 65 46 480
Installation instructions	65 52 678


1.6 Structure of the document

1.6.1 Identification of the danger levels

To prevent personal injury and material damage, please observe the warning and safety information provided in these operating instructions. Such information is highlighted as follows:

 DANGER
An imminent danger that could result in serious bodily injury or death.

 WARNING
A possibly dangerous situation that could result in serious bodily injury or death.

 CAUTION
A possibly dangerous situation that could result in slight bodily injury.

NOTICE
A possibly harmful situation which could lead to damage of the product or an object in its environment.

IMPORTANT
Application instructions and other important information.

Tip: Information on making work easier.

1.6.2 Formats and symbols used

The formats and symbols used in this document have the following meaning:

<ul style="list-style-type: none"> ✓ Prerequisite 1. First action step 2. Second action step or <li style="padding-left: 20px;">> Alternative action ↩ Result ➤ Individual action step 	Prompts you to do something.
See "Formats and symbols used [→ 11]"	Identifies a reference to another text passage and specifies its page number.
• List	Designates a list.
"Command / menu item"	Indicates commands, menu items or quotations.

1.7 Warranty and liability

The manufacturer guarantees that the product delivered to you (DAC UNIVERSAL) was subjected to a thorough quality test before it left the factory.

A warranty period of 12 months is given for DAC UNIVERSAL starting on the day it is delivered. The warranty covers production and material defects and includes both replacement parts and work.

Warranty

The warranty does not cover defective products

- That were serviced by service technicians not authorized by the manufacturer
- If non-original spare parts have been used
- That were handled improperly or damaged in transport
- That were used in a manner other than described in the operating instructions
- For which the prescribed maintenance was not carried out
- That no longer function because water conductivity exceeded 3.0 mS/cm.

The manufacturer retains the right to make changes/improvements of all kinds to the product manufactured or sold by the manufacturer without being obligated to apply these changes to products that were manufactured or sold by the manufacturer before this time.

Exclusion of liability

The manufacturer assumes no liability whatsoever in cases involving:

- Service or repairs made by other persons who are not authorized by the manufacturer or dealer
- Use of the DAC UNIVERSAL that does not comply with its intended use
- Use of non-original components or parts that are not included in "Accessories [→ 218]"
- Infections or cross-contamination caused by unwrapped sterilized instruments for treatments that require sterile instruments (e.g. invasive treatment)
- Instruments already damaged before reconditioning

1.8 Intended use

The DAC UNIVERSAL is intended to clean, lubricate and steam sterilize dental handpieces. Dental handpieces is defined as rotating instruments split up into the categories straight handpieces, contra angles and turbines.

The DAC UNIVERSAL is intended to clean and steam sterilize solid dental instruments.

The DAC UNIVERSAL is intended to clean and thermally disinfect Sirona ultrasonic scaler handpieces of type SIROSONIC, SIROSONIC L, SIROSONIC TL, PerioSonic and similar dental ultrasonic scaler handpieces, which are comparable concerning weight, materials, surface, construction principles, gaps and geometry.

The DAC UNIVERSAL is intended to clean and thermally disinfect Sirona Scaler tips of the types Instrument L, PE, PS, SIRORETRO, SIROPREP and similar dental scaler tips, which are comparable concerning weight, materials, surface, construction principles, gaps and geometry including the associated torque wrench.

The DAC UNIVERSAL is intended to clean and thermally disinfect Sirona Sprayvit nozzles of the types SPRAYVIT, SPRAYVIT 4000, SPRAYVIT 4000E and similar dental sprayvit nozzles, which are comparable concerning weight, materials, surface, construction principles, gaps and geometry.

The DAC UNIVERSAL is intended to clean and steam sterilize EMS Piezon ultrasonic scaler handpieces of type EN-041, EN-060 and similar dental ultrasonic scaler handpieces, which are comparable concerning weight, materials, surface, construction principles, gaps and geometry.

The DAC UNIVERSAL is intended to sterilize wrapped solid instruments, straight handpieces, contra angles and turbines.

1.9 Contraindications

The DAC UNIVERSAL is not intended to clean, lubricate or sterilize/ disinfect liquids, cloth loads, biomedical waste or other devices and materials not specified above.

Furthermore DAC UNIVERSAL is not intended to sterilize/ disinfect medical devices which are not compatible with steam sterilization. The processing of articles other than specified above may result in incomplete cleaning or sterilization/ disinfection, damage to the incompatible articles, and/or damage to the DAC UNIVERSAL.

The DAC UNIVERSAL is not intended to reprocess Implant, Endo and CEM tips.

The DAC UNIVERSAL is not intended to reprocess ultrasonic scaler handpieces of type SIROSON and SIROSON S.

1.10 Scope of delivery

The scope of delivery of the DAC UNIVERSAL includes the following parts:

- STANDARD lid without adapter
- STANDARD indicator holder
- 1 bottle of NitramOil #2 lubrication concentrate
- Air filter
- Waste water hose
- CD User E-Guide
- Relevant international power plug *

* included in some countries.

The adapters for the STANDARD lid can be freely selected and must be purchased separately. See "Accessories [→ 218]" for an overview of available adapters.

2 Safety instructions

IMPORTANT

This product is intended for use by qualified healthcare professionals only. Before operating the DAC UNIVERSAL, carefully read and follow these instructions and save them for future reference. Observe all cautions.

2.1 Electrostatic discharge

Protective measures

Electrostatic discharge (abbreviated: ESD – **ElectroStatic Discharge**)

Electrostatic discharge from people can damage electronic components when the components are touched. Damaged components usually have to be replaced. Repairs must be performed by qualified personnel.

Measures to protect against ESD include:

- Procedures to avoid electrostatic charging via
 - air conditioning
 - air humidification
 - conductive floor coverings
 - non-synthetic clothing
- discharging the electrostatic charges from your own body through contact with
 - a metallic unit casing
 - a larger metallic object
 - any other metal part grounded with the protective earth

Endangered regions are indicated on the unit by the ESD warning label:

We recommend that all persons working with this system are made aware of the significance of the ESD warning label. A training course should also be held to inform users about the physics of electrostatic charges.

Physics of electrostatic charges

An electrostatic discharge requires prior electrostatic charging.

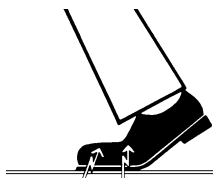
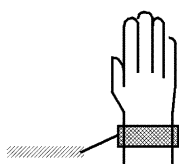
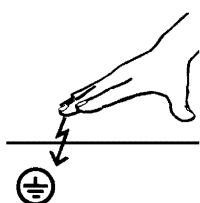
There is a danger of electrostatic charges building up whenever two bodies rub against each other, e.g. when:

- walking (soles of shoes against the floor) or
- moving (chair casters against floor).

The amount of charge depends on several factors: The charge is:

- higher at low air humidity than at high air humidity, and
- higher with synthetic materials than with natural materials (clothing, floor coverings).

The following rule of thumb can be applied to assess the transient voltages resulting from an electrostatic discharge.



An electrostatic discharge is:

- perceptible at 3,000 V or higher
- audible at 5,000 V or higher (cracking, crackling)
- visible at 10,000 V or higher (arc-over)

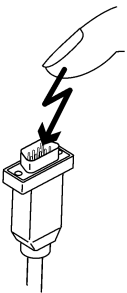
The transient currents resulting from these discharges have a magnitude of over 10 amps. They are not hazardous for humans because they last for only several nanoseconds.

Tip: 1 nanosecond = 1/1,000,000,000 second = 1 billionth of a second

Voltage differentials exceeding 30,000 volts per centimeter may lead to a charge transfer (electrostatic discharge, lightning, arc-over).

Integrated circuits (logical circuits and microprocessors) are used in order to implement a wide variety of functions in a device. The circuits must be miniaturized to a very high degree in order to include as many functions as possible on these chips. This leads to structure thicknesses as low as a few ten thousandths of a millimeter. Integrated circuits that are connected to wires leading externally are therefore particularly at risk from electrostatic discharge.

Even voltages that are imperceptible to the user can cause breakdown of the structures, thus leading to a discharge current that melts the chip in the affected areas. Damage to individual integrated circuits may cause malfunction or failure of the unit.



2.2 Caution symbols on the device



Meaning: Warning of danger

This symbol is found on the back of the DAC UNIVERSAL next to:

- The COM PORT: External computer hardware that is connected to this serial interface must be labeled "The connected device must comply with the UL 1950 and IEC/EN 60950 standards and may be connected only to safety extra low voltage (SELV) circuits."

Please read the corresponding sections in "Connecting to a documentation device [→ 56]".

- The water, air, and waste water connections. See "Installation of DAC UNIVERSAL connections [→ 49]" for the respective installation.

Meaning: Warning of hazardous electrical voltage



Meaning: Warning of a hot surface



Special safety symbols on the FLEX lid



Disinfection



No sterile instruments

2.3 Flammable materials

CAUTION

Risk of explosion

Never use the DAC UNIVERSAL in the presence of flammable anesthetics or gases.

CAUTION

Risk of explosion

Do not hold the NitramOil #2 bottles near an open flame.

2.4 Reducing the risk of burns

CAUTION

Danger of burning!

The bottom of the DAC UNIVERSAL may be hot.

CAUTION

Danger of burning!

The PCD test device may be hot.

CAUTION

Danger of burning!

Never hold on to the lid or hold your head directly over the DAC UNIVERSAL when it opens, as steam will emerge from the device.

CAUTION

Danger of burning!

Even when the lid of the DAC UNIVERSAL is partly or completely open, the instruments are still hot. Allow the instruments that become very hot during the process to cool off.

CAUTION

Danger of burning!

The metal part of the lid is very hot. After the end of the cycle, touch only the plastic part of the lid.

CAUTION

Danger of burning!

Please do not open the DAC UNIVERSAL when the temperature is still above 104°C (219°F), see display indicator. Hot steam may emerge from the chamber.

 **CAUTION**

Danger of burning!

The drain hose, filter housing, drain filter, and drain tank are very hot during the reprocessing process. Switch the DAC UNIVERSAL off and let it cool down (about 15 minutes) before emptying and cleaning the drain tank or cleaning or replacing the drain filter.

2.5 Instruction of practice personnel

The personnel responsible for operation and maintenance of the DAC UNIVERSAL must be instructed in the safe operation of the DAC UNIVERSAL by a service technician trained by the manufacturer. A person in the practice must be designated who is responsible for instructing all personnel who use and service the DAC UNIVERSAL.

2.6 Installation site

 **CAUTION**

Risk of crushing!

The total height of the open DAC UNIVERSAL is 53 cm. To prevent injuries, a minimum distance of 70 cm must be maintained between the counter and overhead cabinet.

2.7 Maintenance

 **CAUTION**

Please observe the regulations applicable in your country when handling the waste water tank and waste water filter.
The manufacturer recommends to wear your personal protective gear when handling the waste water tank and waste water filter.

3 Product description

3.1 Functions

The DAC UNIVERSAL reduces the risk of cross-contamination and ensures the proper maintenance of your instruments.

DAC UNIVERSAL automatically cleans, lubricates, and sterilizes 6 instruments in about 16 minutes with the STANDARD lid. The instruments can be used again immediately after cooling down.

The BASKET lid is available optionally for the cleaning and sterilization of a maximum of 5 unwrapped solid instruments.

The WRAPPED lid and a sterile filter are needed for sterilizing wrapped instruments in the DAC UNIVERSAL. The WRAPPED lid holds 3 instruments at a time.

The optional FLEX lid is available for the cleaning and thermal disinfection of a maximum of 6 unwrapped instruments. The instruments reprocessable on the FLEX lid are following:

- ultrasonic scaler handpieces
- scaler tips / torque wrenches (maximum 2 at a time)
- SPRAYVIT nozzles

These instruments are further called FLEX lid instruments.

3.1.1 Functions with the STANDARD lid

The unwrapped instruments are reprocessed as follows using the adapter on the STANDARD lid.



Internal cleaning

Internal cleaning ensures that the water and air channels of the instruments are rinsed thoroughly. For the internal cleaning of the instruments, water is forced through the channels using compressed air.



Oil care

After the internal cleaning, the transmission channels of the instruments are lubricated with oil. The amount of oil used is precisely calculated for one patient treatment which is on average 20 to 30 minutes. To ensure trouble-free operation, accumulated operating time of rotating handpiece treated in DAC UNIVERSAL shall not exceed 10 minutes.



External cleaning

The instruments are first cleaned 3 times with cold water in a pulse-wash procedure (multicyclic cleaning method).

Warm external cleaning / thermal disinfection is conducted up to 120°C (248°F).

It is possible to increase the number of cold washes to 5 times via the menu system.

The chamber is then heated to 134°C (273°F) or 121 °C (250°F), depending on the chosen program, for the sterilization process.



Sterilization

After external cleaning, the instruments are sterilized. Saturated steam is forced into the chamber and then extracted back through the drive, air, and water channels (if available) of the instruments. This is known as the backflush method.



Three different sterilization programs are available:

- 134°C (273°F) with a sterilization time of 3 minutes
- 134°C (273°F) with a sterilization time of 18 minutes
- 121°C (250°F) with a sterilization time of 15 minutes

To select the program, see "Programs and program selection [→ 33]".

For instructions for reprocessing unwrapped rotating handpieces see "Reprocessing with the STANDARD lid DAC UNIVERSAL ADVANCED [→ 99]" for the DAC UNIVERSAL ADVANCED and "Reprocessing with the STANDARD lid DAC UNIVERSAL STANDARD [→ 172]" for the DAC UNIVERSAL STANDARD.

3.1.2 Functions with the BASKET lid

Five solid instruments, instruments without cavities, can be reprocessed in the DAC UNIVERSAL with the optional BASKET lid.



⚠ WARNING

According to the European EN 13060 standard, non-solid instruments or instruments with cavities may not be sterile after a cycle in the BASKET lid.

External cleaning with NitraClean cleaning tablet

Solid instruments are first cleaned externally 3 times with cold water using a NitraClean tablet. This is necessary to perform the cleaning properly. The external cleaning is done using the pulse-wash method (multicyclic cleaning method). Warm external cleaning / thermal disinfection is conducted up to 120°C (248°F).

The chamber is then heated to 134°C (273°F) or 121 °C (250°F), depending on the chosen program, for the sterilization process.





See "NitraClean cleaning tablet [→ 241]" for more information on NitraClean cleaning tablets.



Sterilization

After external cleaning, the instruments are sterilized. Saturated steam is forced through the instruments and air is extracted from the chamber.

Three different sterilization programs are available:

- 134°C (273°F) with a sterilization time of 3 minutes
- 134°C (273°F) with a sterilization time of 18 minutes
- 121°C (250°F) with a sterilization time of 15 minutes

To select the program, see "Programs and program selection [→ 33]".

For instructions on reprocessing solid instruments see "Reprocessing with the BASKET lid DAC UNIVERSAL ADVANCED [→ 104]" for the DAC UNIVERSAL ADVANCED and „Reprocessing with the BASKET lid DAC UNIVERSAL STANDARD [→ 177]" for the DAC UNIVERSAL STANDARD.

3.1.3 Functions with the WRAPPED lid



The WRAPPED lid is also available for sterilizing 3 reprocessed, wrapped instruments.



A sterile filter is included with the WRAPPED lid and must be installed by a service technician.

Sterilization

The wrapped instruments are sterilized for 3 minutes at 134°C (273°F).



For instructions for the sterilization cycle for wrapped instruments see "Reprocessing with the WRAPPED lid DAC UNIVERSAL ADVANCED [→ 110]" for the DAC UNIVERSAL ADVANCED and "Reprocessing with the WRAPPED lid DAC UNIVERSAL STANDARD [→ 182]" for the DAC UNIVERSAL STANDARD.

3.1.4 Functions with the FLEX lid

The unwrapped FLEX lid instruments are reprocessed as follows using the appropriate adapter on the FLEX lid.



Internal cleaning

Internal cleaning ensures that the water and air channels of the instruments are rinsed thoroughly. For the internal cleaning of the instruments, water is forced through the channels using compressed air. The water and air channels are rinsed with water 12 times during a cleaning cycle.



External cleaning

The instruments are first cleaned 5 times with cold water in a pulse-wash procedure (multicyclic cleaning method).

Then warm external cleaning / thermal disinfection is conducted up to 120°C (248°F).

The total number of washes is 5 cold and 1 warm, in total 6 washes.

The chamber is then heated to 134 °C (273 °F) or 121 °C (250 °F), depending on the chosen program, for the disinfection process.



Thermal disinfection

After external cleaning, the instruments are thermally disinfected. Saturated steam is forced through the instruments and then extracted back through the air and water channels (if available) of the instruments. This is known as the backflush method.

Three different thermal disinfection programs are available:

- 134°C (273°F) with a holding time of 3 minutes
- 134°C (273°F) with a holding time of 18 minutes
- 121°C (250°F) with a holding time of 15 minutes

The reference load during hygiene testing is performed with following load:

1x Sirosonic L, 1x Sirosonic TL, 1x Sprayvit 4000, 1x Sprayvit G and 2x Ultrasonic tips.

Find enclosed the characteristic values of the FLEX lid.



FLEX lid	Cleaning	Disinfection
max. water consumption	150 ml	260 ml
max. time	350s	570s
max. temperature	55 °C	135 °C
max. flow rate	10 ml/per instrument	
A0-value		>>3000

To select the program, see "Programs and program selection [→ 33]".

For instructions for reprocessing FLEX lid instruments see "Reprocessing with the FLEX lid DAC UNIVERSAL ADVANCED [→ 115]" for the DAC UNIVERSAL ADVANCED and "Reprocessing with the FLEX lid DAC UNIVERSAL STANDARD [→ 187]" for DAC UNIVERSAL STANDARD.

3.2 Controls and functional elements of the DAC UNIVERSAL

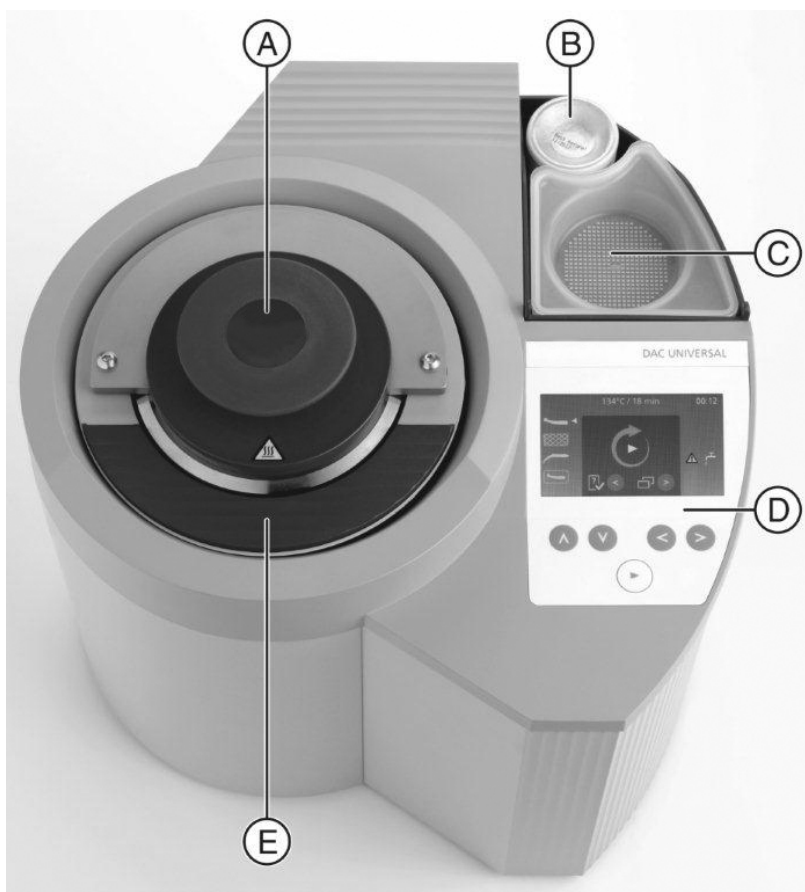
With the DAC UNIVERSAL ADVANCED a new appearance has been introduced see „Overview DAC UNIVERSAL ADVANCED [→ 26]“.

For an overview of the DAC UNIVERSAL STANDARD see „Overview DAC UNIVERSAL STANDARD [→ 27]“.

Please refer to „Versions of the DAC UNIVERSAL [→ 10]“ in order to differentiate between these versions.

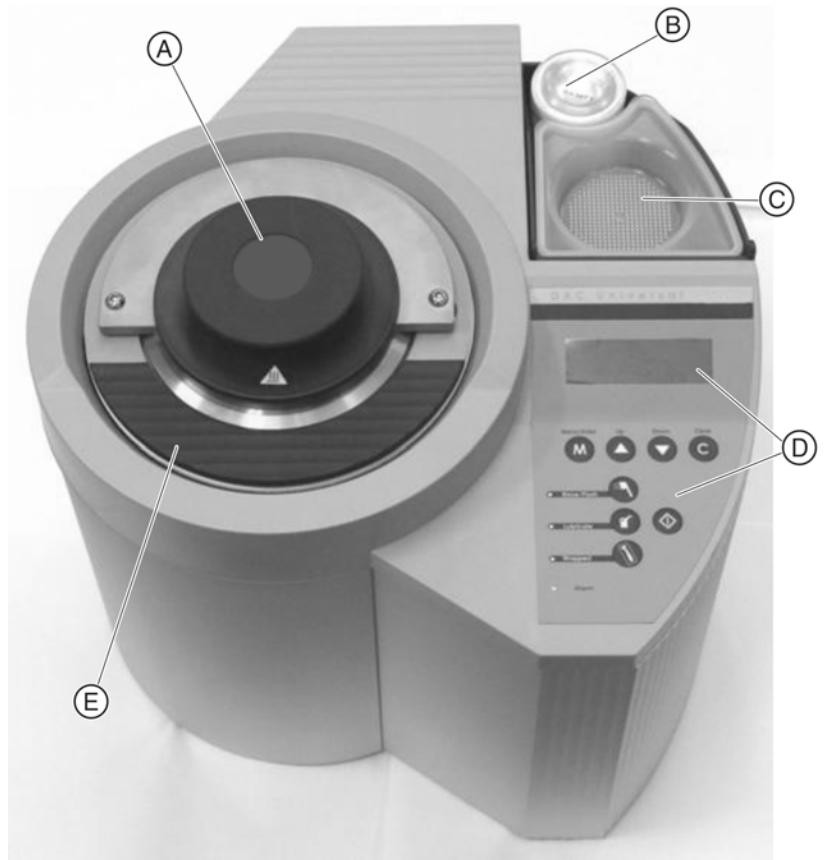
3.2.1 Overview of the DAC UNIVERSAL

3.2.1.1 Overview DAC UNIVERSAL ADVANCED



A	Lid
B	Lubrication concentrate and oil dispenser
C	Water tank
D	Display with keyboard
E	Safety ring

3.2.1.2 Overview DAC UNIVERSAL STANDARD



A	Lid
B	Lubrication concentrate and oil dispenser
C	Water tank
D	Display with keyboard
E	Safety ring

3.2.2 Lid

The following lids can be used for reprocessing in the DAC UNIVERSAL:



- STANDARD lid for reprocessing unwrapped rotating handpieces.

See "Functions with the STANDARD lid [→ 20]" for functions and "Reprocessing with the STANDARD lid DAC UNIVERSAL ADVANCED [→ 99]" or "Reprocessing with the STANDARD lid DAC UNIVERSAL STANDARD [→ 172]" for instructions.

The maximum load on the STANDARD lid is 6 instruments.

The permissible weight of each instrument is 250 g while the PCD is permissible at 265 g.

The permissible total weight of the instruments to be sterilized is 600 g.



- BASKET lid for reprocessing unwrapped solid instruments.

See "Functions with the BASKET lid [→ 22]" for functions and "Reprocessing with the BASKET lid DAC UNIVERSAL ADVANCED [→ 104]" or "Reprocessing with the BASKET lid DAC UNIVERSAL STANDARD [→ 177]" for instructions.

The maximum load on the BASKET lid is 5 solid instruments.

The permissible weight of each instrument is 250 g.

The permissible total weight of the instruments to be sterilized is 600 g.



- WRAPPED lid for reprocessing wrapped rotating handpieces and wrapped solid instruments.

See "Functions with the WRAPPED lid [→ 23]" for functions and "Reprocessing with the WRAPPED lid DAC UNIVERSAL ADVANCED [→ 110]" or "Reprocessing with the WRAPPED lid DAC UNIVERSAL STANDARD [→ 182]" for instructions.

The maximum load on the WRAPPED lid is 3 instruments.

The permissible weight of each instrument is 250 g. including wrapping.

The permissible total weight of the instruments to be sterilized is 600 g.



- FLEX lid for cleaning and disinfection of unpacked syringes, scalers and scalertips.

See "Functions with the FLEX lid [→ 24]" for functions and "Reprocessing with the FLEX lid DAC UNIVERSAL ADVANCED [→ 115]" or "Reprocessing with the FLEX lid DAC UNIVERSAL STANDARD [→ 187]" for instructions.

The maximum load on the FLEX lid is 6 instruments.

The permissible weight of each instrument is 250 g.

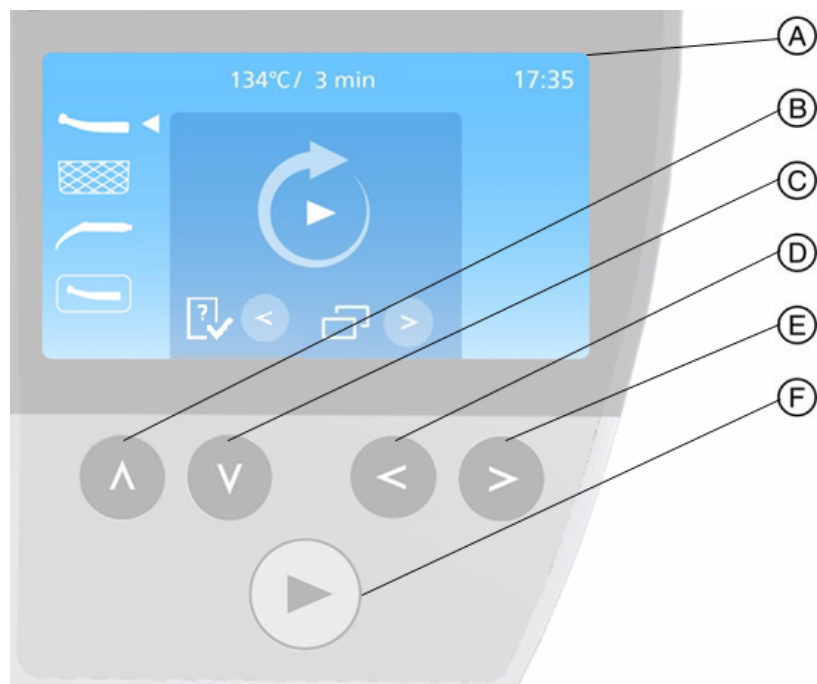
The permissible total weight of the instruments to be disinfected is 600 g.

3.2.3 Display and key pad

With the DAC UNIVERSAL ADVANCED a new appearance has been introduced see „Display and keyboard DAC UNIVERSAL ADVANCED [→ 29]“.

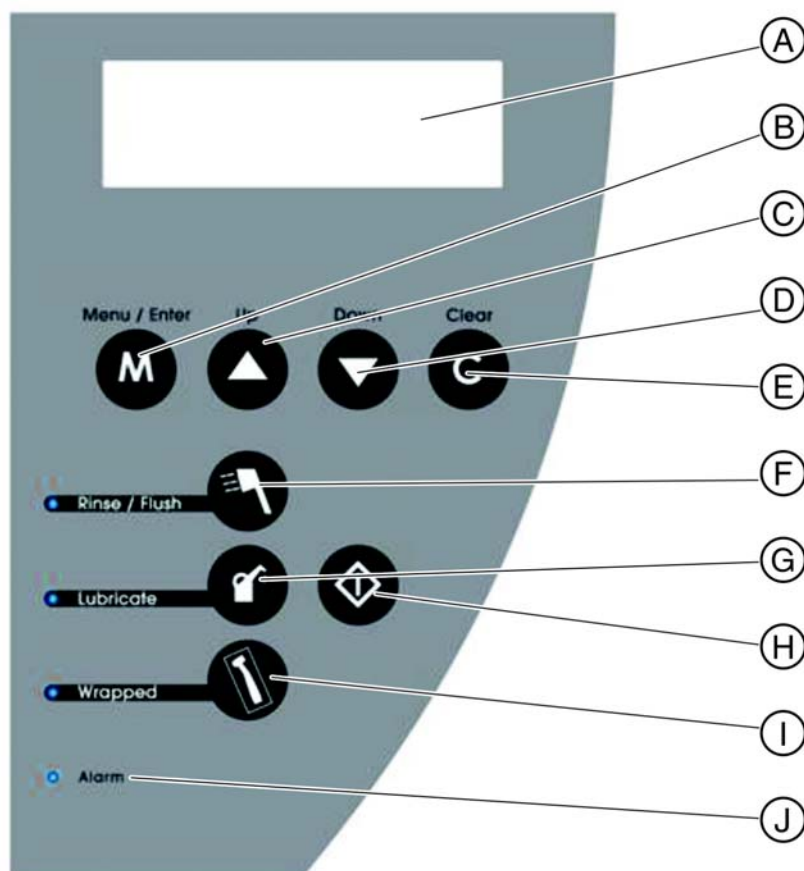
For an overview of the DAC UNIVERSAL STANDARD see „Display and keyboard DAC UNIVERSAL STANDARD [→ 30]“.

3.2.3.1 Display and keyboard DAC UNIVERSAL ADVANCED



A: Display	In the standby state the DAC UNIVERSAL shows the ready screen. During the execution of a program the display will show the current progress.
B: "Up"-Key	This key is used to select the lid type or navigate through the menu system. Pressing this will result in selecting the upward option from the current state of the menu system. Hereby returning to an upper level of the menu, confirming a selection or selecting another lid on the ready screen.
C: "Down"-Key	This key is used to select the lid type or navigate through the menu system. Pressing this will result in selecting the downward option from the current state of the menu system. Hereby reaching a lower level of the menu, confirming a selection or selecting another lid on the ready screen.
D: "Left"-Key	Pressing this will result in switching to the left option from the current state of the menu system. If pressed from the ready screen, the display will enter the part of the menu system needed for the Check & Clean maintenance.
E: "Right"-Key	This key is used to navigate through different selections in the menu system. Pressing this will result in switching to the right option from the current state of the menu system. If pressed from the ready screen, the display will enter the menu system.
F: "Start/Stop"-Key	This key is only active when the autoclave is displaying the ready screen. Pressing this key will start the chosen program. If the autoclave is currently running, pressing this key will stop the current program.

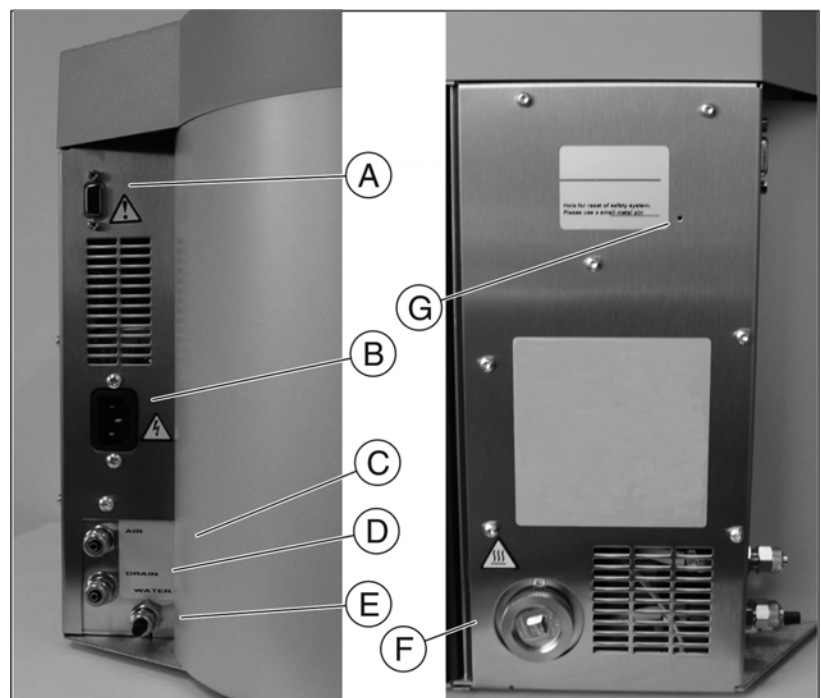
3.2.3.2 Display and keyboard DAC UNIVERSAL STANDARD



Display/button	Description
A: Display	The temperature and pressure in the chamber are displayed constantly. The pressure is indicated as an absolute value (including ambient air pressure).
B: "Menu/Enter"-Key	This key opens the menu. In addition, it is used as an entry/confirmation key for the menu system.
C: "Up"-Key	This key is used to scroll up the menu.
D: "Down"-Key	This key is used to scroll down the menu.
E: "Clear"-Key	This key can be used to exit the menu step by step. When the key is pressed and held (approx. 2 s), the system switches to stand-by mode. This key is also used when the DAC UNIVERSAL displays a message. The message is deleted by pressing this key. The key is used to interrupt a cycle even if it is not yet finished.
F: "Rinse/Flush"-Key (Cleaning)	When the cycle is active, a blue LED control lamp lights up. Pressing the "Rinse/Flush"-Key when it is switched on activates and deactivates cleaning. When the blue LED control lamp is off, cleaning is deactivated. IMPORTANT: When cleaning is omitted, successful sterilization is no longer ensured, except for the WRAPPED lid.
G: "Lubricate"-Key (Lubrication)	When lubrication is activated, a blue LED control lamp lights up. Pressing the "Lubricate"-Key when it is switched on activates and deactivates lubrication. When the blue control lamp is off, lubrication is deactivated.
H: "Start"-Key	This key switches the DAC UNIVERSAL on and starts it.

Display/button	Description
I: "Wrapped"-Key	The "Wrapped"-Key is for the cycle for reprocessing wrapped instruments. Cleaning and lubrication are then deactivated. When the program is active, a blue LED control lamp lights up. Pressing the "Wrapped"-Key when it is switched on activates the respective program.
J: Alarm	When this lamp lights up, an error has occurred. The message is shown on the display. It is important to check any error that occurs. See "Display messages DAC UNIVERSAL STANDARD [→ 211]" for a list of all messages.

3.2.4 Back of unit



A	Standard interface RS232
B	Power supply connection
C	Compressed air connection
D	Waste water connection
E	Fixed water connection
F	Filter and filter housing
G	Reset button

See also "Installation of DAC UNIVERSAL connections [→ 49]".

3.2.5 Safety ring



The DAC UNIVERSAL is equipped with a safety ring that serves as a cycle confirmation tool and prevents users from pinching their fingers when closing the lid.

If there is an object between the chamber and the lid when the lid closes, the cycle is stopped immediately. The lid is then lifted for 5 seconds and a message is displayed.

To remedy message 86, see "Display messages DAC UNIVERSAL ADVANCED [→ 140]" or "Display messages DAC UNIVERSAL STANDARD [→ 211]".

3.2.6 Water tank with sieve



The water tank is used for manually filling the DAC UNIVERSAL with demineralized or distilled water (water conductivity <math>< 3.0 \mu\text{S}/\text{cm}</math>). The sieve located on the water tank filters out any particles that may be present in the water during filling.

NOTICE

The water should be poured carefully through the sieve into the tank. Otherwise, the water may run in between the tank and the DAC UNIVERSAL itself, resulting in water on the table or in worst-case, water on the electrical parts of the DAC UNIVERSAL, which can cause a short circuit.

IMPORTANT

The water must be free of foreign objects.

3.2.7 NitramOil #2 lubrication concentrate



The NitramOil #2 lubrication concentrate is for lubricating the transmission channels of the instruments and is screwed into the oil dispenser in the DAC UNIVERSAL.

NitramOil #2 can be used only with the following DAC UNIVERSAL serial numbers:

- 14,000 – 99,999
- 104,000 – 199,999
- 220,000 – 999,999

NitramOil #2 is approved by leading international instrument manufacturers.

One bottle of NitramOil #2 is enough for lubricating approx. 250 cycles (corresponding to approx. 1500 straight, contra-angle, or highspeed handpieces).

The lubrication concentrate comes in a no-pressure bottle.

3.3 Programs and program selection

The DAC UNIVERSAL has 3 different programs that can be selected as needed. They are set using the menu system, see "Menu system DAC UNIVERSAL ADVANCED [→ 77]" and "Menu system DAC UNIVERSAL STANDARD [→ 165]".

The standard program (134°C / 273°F, sterilization time 3 minutes) is preset.

Temperature	max. temperature	Pressure In bar (absolute)	Sterilization time	Total cycle duration*	Program	Reprocessing steps
134 °C	137 °C	3.2 bar	3min.	16min.	Standard program	Cleaning, lubrication, and sterilization (High-level disinfection only for FLEX lid)
134 °C	137 °C	3.2 bar	18min.	32min.	Prion program (required in France, for example)	Cleaning, lubrication, and sterilization (High-level disinfection only for FLEX lid)
121 °C	124 °C	2.1 bar	15min.	28min.	Sensitive program Program for instruments that cannot withstand high temperatures. Specified by the instrument manufacturer.	Cleaning, lubrication, and sterilization (High-level disinfection only for FLEX lid)

* with factory settings

IMPORTANT

The DAC UNIVERSAL remembers the last program used, even after being switched off. This also happens in case the electric power supply to the DAC UNIVERSAL was interrupted.

IMPORTANT

When using the DAC UNIVERSAL ADVANCED, be sure to select the correct lid type.

IMPORTANT

When using the DAC UNIVERSAL STANDARD, select the lid type when beginning a cycle. Refer to section "Reprocessing with DAC UNIVERSAL STANDARD [→ 171]" for further instructions.

Program for STANDARD lid

One of the 3 programs listed above can be selected from the menu. If nothing is selected, the standard program is used.

Program for BASKET lid

One of the 3 programs listed above can be selected from the menu. If nothing is selected, the standard program is used.

IMPORTANT

When using the DAC UNIVERSAL STANDARD it is imperative that the "Lubricate"-Key is pressed to turn off the automatic oil treatment.

Program for WRAPPED lid

Only the standard program is available. The total length of the cycle in the "Wrapped" program is approx. 20 minutes.

IMPORTANT

When using the DAC UNIVERSAL STANDARD it is imperative that the "Wrapped"-Key is pressed to turn off the automatic rinse and oil treatment.

Program for FLEX lid

One of the 3 programs listed above can be selected from the menu. If nothing is selected, the standard program is used.


IMPORTANT

When using the DAC UNIVERSAL STANDARD it is imperative that the "Lubricate"-Key is pressed to turn off the automatic oil treatment.

Block/unblock individual programs

It is possible to block programs that are not used. Please contact your authorized dealer to block/unblock programs.

3.4 Technical data

Manufacturer:	Sirona Dental A/S
Model:	DAC UNIVERSAL
Dimensions (H/W/D):	Opened: 53 cm / 38 cm / 37 cm Closed with STANDARD lid: 35 cm / 38 cm / 37 cm
Materials:	Anodized aluminum, plastic
Weight: (net without packaging)	23 kg / 51 pounds
Weight: (gross with packaging)	25 kg / 55 pounds
Noise:	<65 dBA
Power supply:	90-120 VAC / 190-240 VAC
Frequency:	50/60 Hz
Nominal current at 110/230 VAC:	10A/ 5A
Power input	1.1 kW
Electric class:	I
Type:	Not applicable
Type BF applied part:	Not applicable
Safety class:	Never use the DAC UNIVERSAL in the presence of flammable anesthetics or gases.
Cycle length:	16 – 32 minutes
Operating conditions:	Temperature: 16 °C to 26 °C (61 °F to 79 °F) The DAC UNIVERSAL must not be stored at temperatures below 0°C (32°F), while in operating modus. Up to 2000 m above sea level.
Relative humidity	60-80 %
Fluctuations in electrical supply	+/- 10% of nominal voltage
Transient overvoltage	Installation category II
Pollution degree	2
Maximum loss of heat at a surrounding temperature of approximate 23°C	about 500 W for the whole device about 250 W for the front.
Total chamber volume	Approximate 1.8 liters
Design pressure in the chamber	3.5 bar
Maximum allowable working pressure in the chamber	3.5 bar
Maximum allowable working temperature in the chamber	148 °C (300 °F)
Usable space in the chamber	Height: Approximate 16 cm, Diameter: Approximate 11 cm
Transport and storage conditions:	Temperature: -40 °C to +65 °C (-40 °F to +149 °F) Relative humidity: 20 % to 90 % Air pressure: 500 to 1,060 hPa
	This product bears the CE marking and complies with the provisions of EU Directive 93/42/EEC for medical devices dated June 14, 1993.

The DAC UNIVERSAL complies with the requirements of the RoHS Directive 2011/65/EU.

Symbols on the DAC UNIVERSAL packaging/external carton



This way up



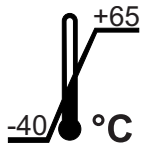
Keep away from rain



Handle with care



Use no hooks



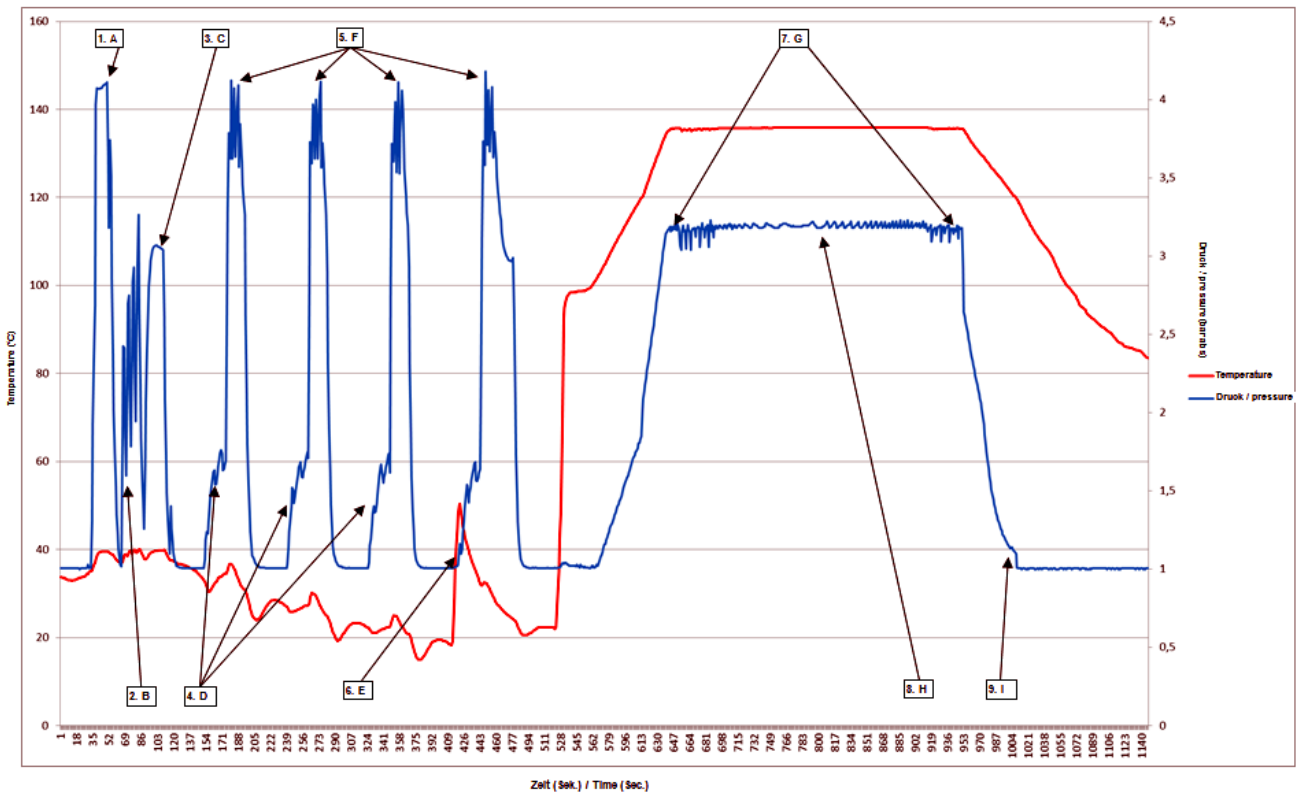
Temperature limit: -40 ° C - +65 ° C

3.5 Presentation of the sterilization process

The following graphs show an overview of the process. This process overview shows the different temperature and pressure levels over time.

Standard program

The following graph shows temperature (°C) and pressure (bar) during the standard program, with standard settings, holding time 3 min and a total cycle time of 16 min:

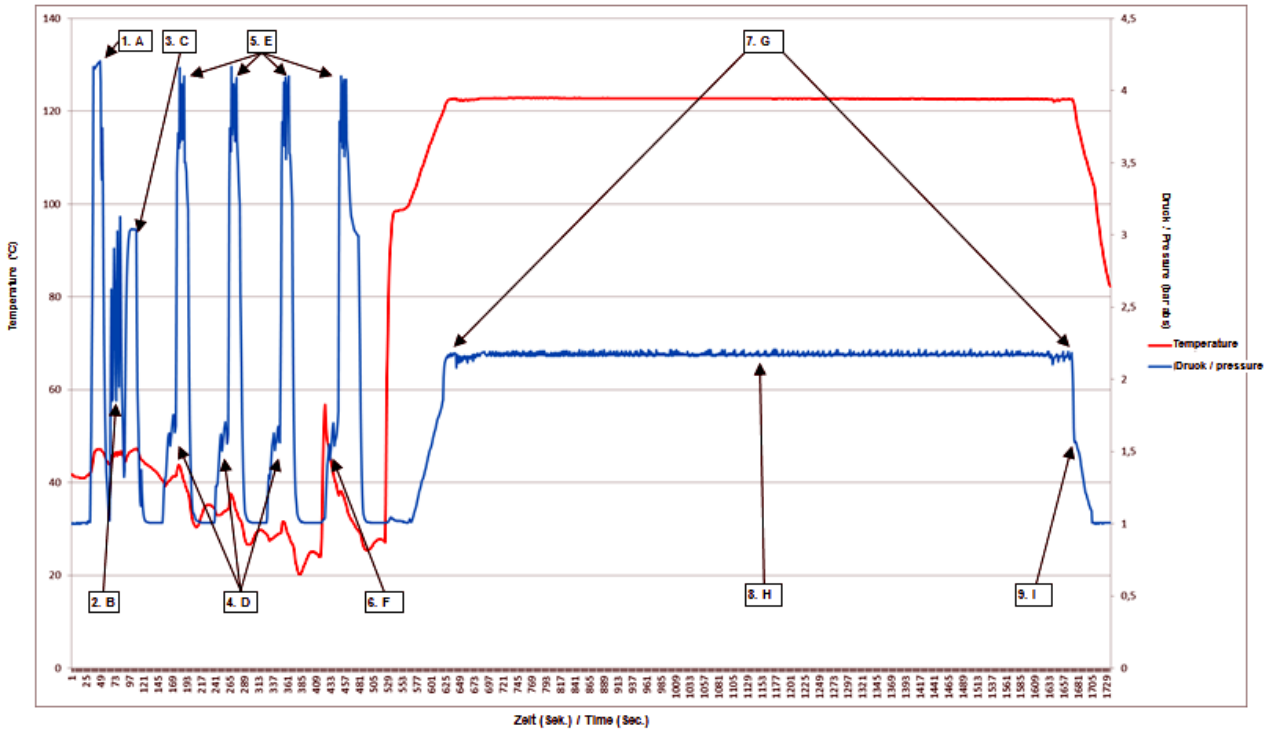


Standard program

1.A	Pressure test with air
2.B	Internal flush of the channels with water
3.C	Oil care
4.D	3x External cold rinse
6.E	1x External warm rinse
5.F	Drain chamber
7.G	Back-Flush of the channels with steam
8.H	Sterilization
9.I	Ventilation of the chamber, open lid

Sensitive program

The following graph shows temperature (°C) and pressure (bar) during the sensitive program, with standard settings, holding time 15 min and a total cycle time of 28 min:

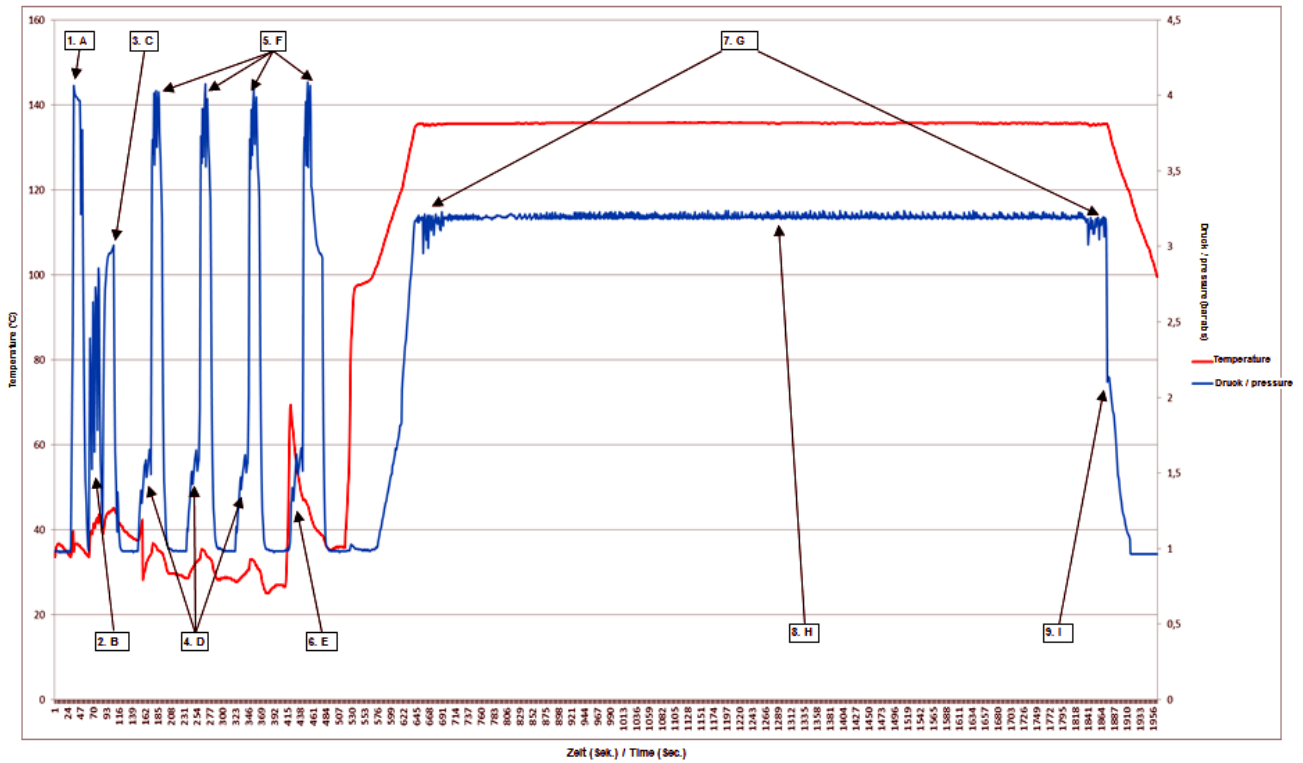


Sensitive program

1.A	Pressure test with air
2.B	Internal flush of the channels with water
3.C	Oil care
4.D	3x External cold rinse
5.E	1x External warm rinse
6.F	Drain chamber
7.G	Back-Flush of the channels with steam
8.H	Sterilization
9.I	Ventilation of the chamber, open lid

Prion program

The following graph shows temperature (°C) and pressure (bar) during the prion program, with standard settings, holding time 18 min and a total cycle time of 32 min:

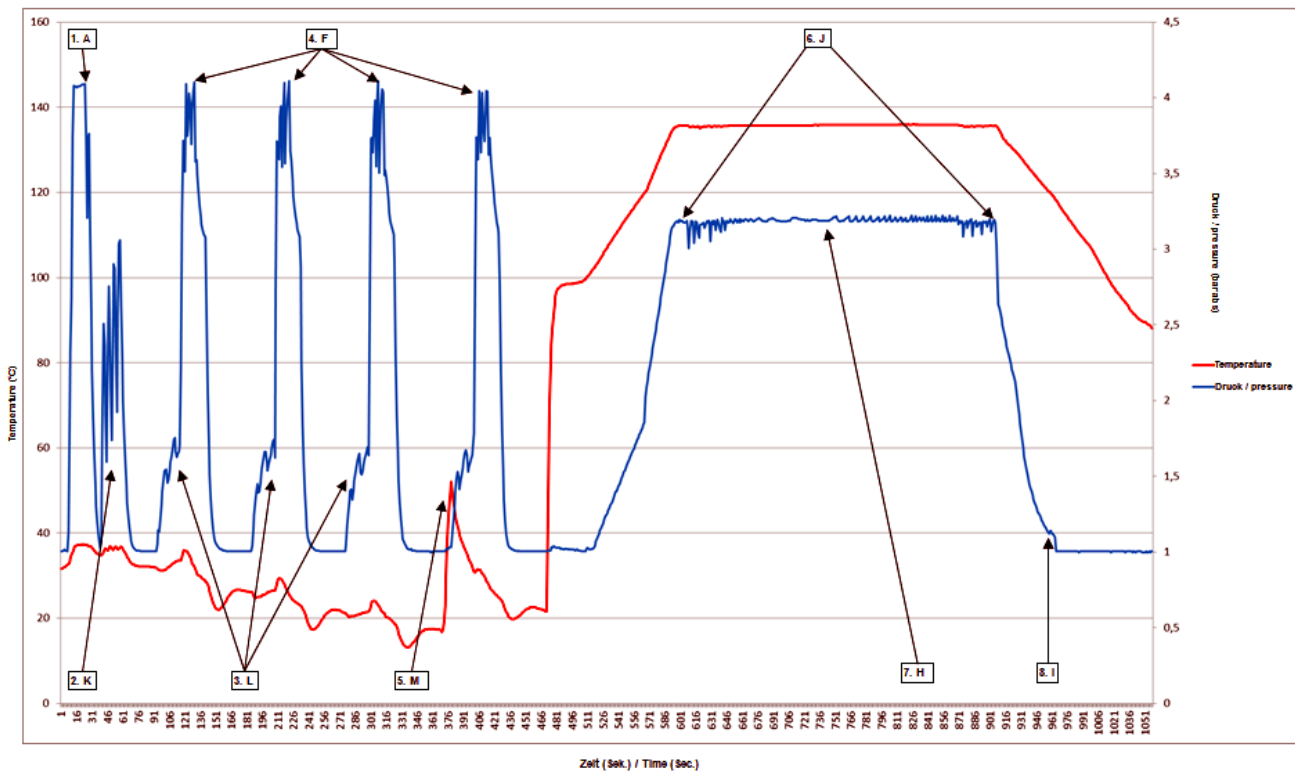


Prion program

1.A	Pressure test with air
2.B	Internal flush of the channels with water
3.C	Oil care
4.D	3x External cold rinse
6.E	1x External warm rinse
5.F	Drain chamber
7.G	Back-Flush of the channels with steam
8.H	Sterilization
9.I	Ventilation of the chamber, open lid

BASKET lid

The following graph shows temperature (°C) and pressure (bar) during the standard program with the BASKET lid, with standard settings, holding time 3 min and a total cycle time of 16 min:

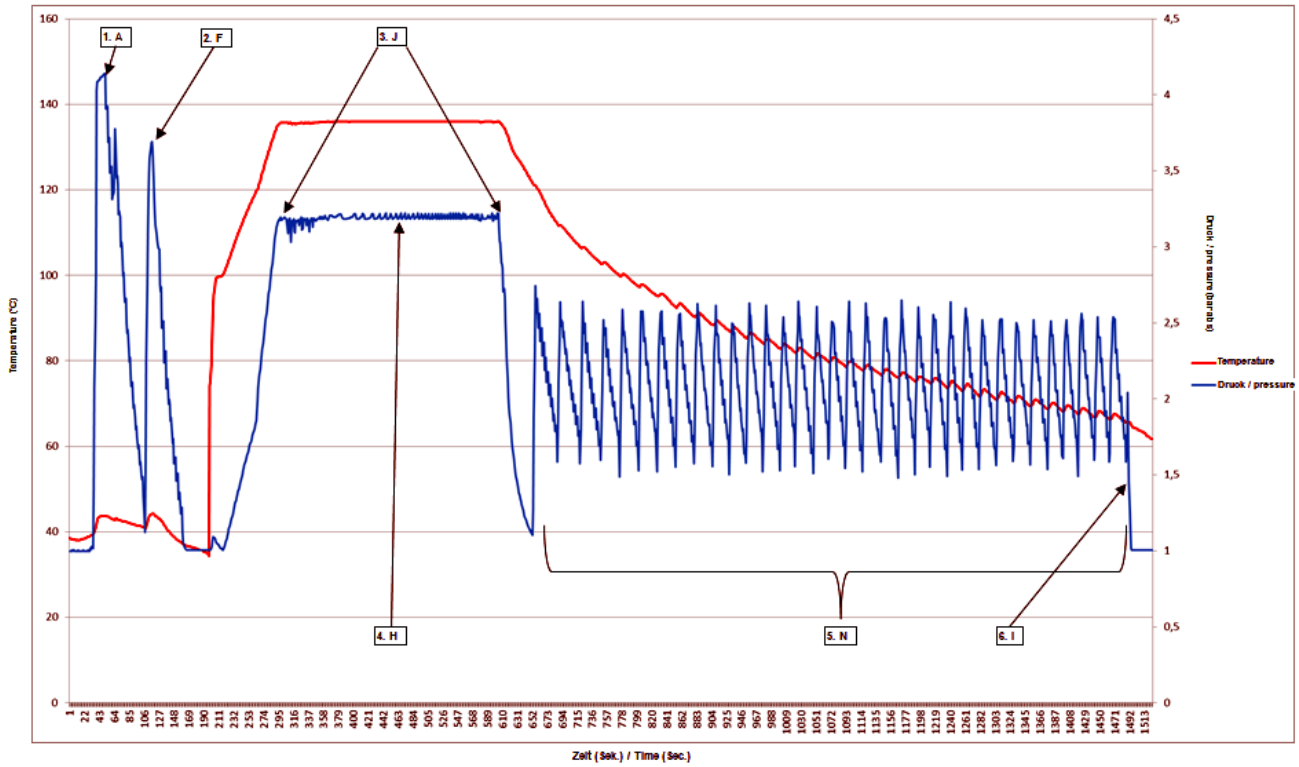


BASKET lid

1.A	Pressure test with air
4.F	Drain chamber
7.H	Sterilization
8.I	Ventilation of the chamber, open lid
6.J	Back-Flush of the channels with steam
2.K	Flush of chamber bottom
3.L	3x Cold rinse
5.M	1x Warm rinse

WRAPPED lid

The following graph shows temperature (°C) and pressure (bar) during the standard program with the WRAPPED lid, with standard settings, holding time 3 min and a total cycle time of 20 min:

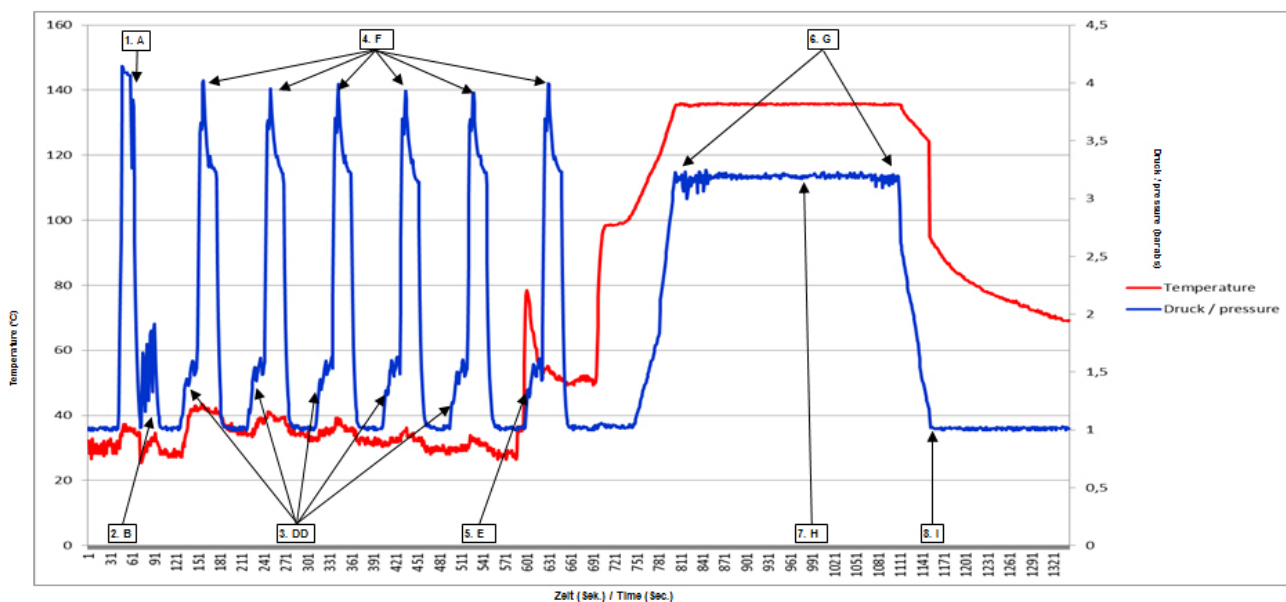


WRAPPED lid

1.A	Pressure test with air
2.F	Drain chamber
4.H	Sterilization
6.I	Ventilation of the chamber, open lid
3.J	Back-Flush of the channels with steam
5.N	Drying

FLEX lid

The following graph shows temperature (°C) and pressure (bar) during the standard program with the FLEX lid, with standard settings, holding time 3 min and a total cycle time of 22 min:



FLEX lid

1.A	Pressure test with air
2.B	Internal flush of the channels with water
3.D	5x External cold rinse
5.E	1x External warm rinse
4.F	Drain chamber
6.G	Back-Flush of the channels with steam
7.H	Disinfection
8.I	Ventilation of the chamber, open lid

The table below gives an overview of what is performed during which programs mentioned in "Functions [→ 20]".

Type test according to EN13060 related to programs on the DAC UNIVERSAL Sterilization cycle type S	Wrapped instrument load	Solid instrument load	Handpieces and turbines
Air leak	x	x	x
Dynamic chamber	x		
Empty chamber	x	x	x
Solid load, unwrapped		x	x
Solid load, single wrapped	x		
Dryness, solid load, unwrapped		x	x
Dryness, solid load, single wrapped	x		
Non-condenseble gasses	x	x	x
Microbiological test MBI	x	x	x

3.6 Electromagnetic compatibility

In order to prevent possible risks caused by electromagnetic interference, no medical electrical or other equipment should be used near the DAC UNIVERSAL. The DAC UNIVERSAL complies with the currently valid standards for electromagnetic compatibility (IEC 60601-1-2).

Only medical devices that comply with IEC 60601-1 may be connected to the DAC UNIVERSAL. Any non-medical devices connected must also comply with the IEC 60601-1-1 standard for medical devices.

The DAC UNIVERSAL does not cause any harmful interference; it can be impaired by electromagnetic interference emitted by other devices, which can lead to malfunctions.

The DAC UNIVERSAL is referred to as "UNIT" below.

3.6.1 Electromagnetic emission

The **UNIT** is intended for operation in the electromagnetic environment specified below.

The customer or user of the **UNIT** should make sure that it is used in such an environment.


Emission measurement	Conformity	Electromagnetic environment - guidelines
RF emissions according to CISPR 11	Group 1	The UNIT uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions according to CISPR 11	Class B	The UNIT is intended for use in all facilities, including residential areas and in any facilities connected directly to a public power supply providing electricity to buildings used for residential purposes.
Harmonics according to IEC 61000-3-2	Class A	
Voltage fluctuations / flicker according to IEC 61000-3-3	coincides	

3.6.2 Interference immunity

The **UNIT** is intended for operation in the electromagnetic environment specified below.

The customer or user of the **UNIT** should make sure that it is used in such an environment.

Interference immunity tests	IEC 60601-1-2 test level	Compliance level	Electromagnetic environment - guidelines
Electrostatic discharge (ESD) according to IEC 61000-4-2	± 6 kV contact discharge ± 8 kV air discharge	± 6 kV contact discharge ± 8 kV air discharge	Floors should be made of wood or concrete or finished with ceramic tiling. If the floor is covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst according to IEC 61000-4-4	± 1 kV for input and output lines ± 2 kV for power supply lines	± 1 kV for input and output lines ± 2 kV for power supply lines	The quality of the line power supply should be that of a typical commercial or hospital environment.
Surge voltages according to IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode voltage	± 1 kV differential mode ± 2 kV common mode voltage	The quality of the line power supply should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and variations of the power supply according to IEC 61000-4-11	<5% U_T for ½ period (>95% dip of U_T) 40% U_T for 5 periods (60% dip of U_T) 70% U_T for 25 periods (30% dip of U_T) <5% U_T for 5sec. (>95% dip of U_T)	<5% U_T for ½ period (>95% dip of U_T) 40% U_T for 5 periods (60% dip of U_T) 70% U_T for 25 periods (30% dip of U_T) <5% U_T for 5sec. (>95% dip of U_T)	The quality of the line power supply should be that of a typical commercial or hospital environment. If the user of the UNIT requires it to continue functioning following interruptions of the power supply, it is recommended to have the UNIT powered by an uninterruptible power supply or a battery.
Magnetic field of power frequencies (50/60 Hz) according to IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Note: U_T is the AC supply voltage prior to application of the test level.			
			Portable and mobile radio equipment must not be used within the recommended working clearance from the UNIT and its cables, which is calculated based on the equation suitable for the relevant transmission frequency. Recommended working clearance:

Interference immunity tests	IEC 60601-1-2 test level	Compliance level	Electromagnetic environment - guidelines
Conducted RF disturbance IEC 61000-4-6	3 V _{eff} 150 kHz to 80 MHz ¹	3 V _{eff}	$d = [1, 2] \sqrt{P}$
Radiated RF interference IEC 61000-4-3	3 V/m 80 MHz - 800 MHz ¹ 3 V/m 800 MHz - 2.5 GHz ¹	3 V _{eff} 3 V _{eff}	$d = [1, 2] \sqrt{P}$ at 80 MHz - 800 MHz $d = [2, 3] \sqrt{P}$ at 800 MHz - 2.5 GHz with P as the power rating of the transmitter in watts (W) according to the transmitter manufacturer's specifications and d as recommended safety distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey ² should be less than the compliance level ³ in each frequency range. Interference is possible in the vicinity of equipment bearing the following graphic symbol. 

1. The higher frequency range applies at 80 MHz and 800 MHz.
2. The field strengths of fixed transmitters, such as base stations of radiotelephones and mobile agricultural radio broadcast services, amateur radio stations, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. A site survey is recommended to assess the electromagnetic environment due to fixed RF transmitters. If the measured field strength in the location in which the **UNIT** is used exceeds the applicable RF compliance level above, the **UNIT** should be observed to verify normal operation. If unusual performance characteristics are observed, it may be necessary to take additional measures such as reorientation or repositioning of the **UNIT**.
3. Over the frequency range 150kHz to 80 MHz, field strengths should be less than 3 V/m.

3.6.3 Working clearances

Recommended working clearances between portable and mobile HF communication devices and the UNIT

The UNIT is intended for operation in an electromagnetic environment, where radiated RF interference is checked. The customer or the user of the UNIT can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the UNIT - depending on the maximum output power of the communication device, as shown below.

Power rating of the transmitter [W]	Working clearance according to transmission frequency [m]		
	150 kHz - 80 MHz	80 MHz - 800 MHz	800 MHz - 2.5 GHz
	$d = [1, 2] \sqrt{P}$	$d = [1, 2] \sqrt{P}$	$d = [2, 3] \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

The recommended safety distance d in meters (m) can be determined for transmitters, whose maximum power rating is not specified in the above table, using the equation that belongs to the corresponding column, wherein P is the maximum power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1

The higher frequency range applies at 80 MHz and 800 MHz.

Note 2

These guidelines may not apply in all cases. The propagation of electromagnetic waves is influenced by their absorption and reflection by buildings, objects and persons.

3.7 Safety devices

Safety valve	The safety valve was developed according to the EN 4126-1 standard and calibrated according to the EN 764-7 standard. The safety valve in the DAC UNIVERSAL opens when the relative pressure in the chamber exceeds 3.5 bar.
Absolute pressure sensor	The DAC UNIVERSAL has an absolute pressure sensor and adjusts automatically to changed pressure levels. The absolute pressure is indicated on the display. When it is open, the pressure indicated on the display corresponds with the actual ambient pressure. When the DAC UNIVERSAL is turned on, but it is not being used, the pressure indicated on the display is always approx. 1 bar, when it is at sea level. If air pressure is high, the pressure will be approx. 1.03 bar and if pressure is low approx. 0.98 bar.
Watchdog relay	When the microprocessor in the DAC UNIVERSAL does not send a signal to the two watchdog relays, they switch off the power supply to the pumps, valves, motor, and steam generator.
Safety ring	When the safety ring is activated, the motor stops the lid immediately. The safety ring has 9 contacts. The safety is tested before the start of every cycle. The circuit is always tested when the power supply is switched on.
Electrical safety	Before the DAC UNIVERSAL leaves the factory, an electrical safety test is conducted according to EN61010-1. Fuses are attached to the main circuit board to protect against electrical overload.
Software safety	The software has a number of display messages (error codes) that interrupt the process if pressure, temperature, etc. do not comply with the target values during the cycle.
Sterilization/disinfection control system	The sterilization/disinfection control system regulates the pressure and corresponding temperature simultaneously. If temperature or pressure are above or below the thresholds for sterilization/disinfection, a error message is shown on the display.

3.8 Transport

CAUTION

The bottom plate of the DAC UNIVERSAL can be hot.

CAUTION

When handling the DAC UNIVERSAL it is important to grab the autoclave underneath the machine with two hands.
It is important to get a firm hold of the machine, as it is quite heavy. It is not recommended to lift the DAC UNIVERSAL and carry it over a long distance.
Carrying the DAC UNIVERSAL over a short distance can cause problems for persons who are not used to lift objects as heavy as the DAC UNIVERSAL.
The DAC UNIVERSAL weighs approximate 23 kilograms/51 pounds.
Separately, the lid (inclusive 6 adapters) weighs approximate 1.7 kilograms/3.75 pounds.

4 Installation

4.1 Requirements of the location / Ambient conditions

Requirements

To find a suitable location for the DAC UNIVERSAL, observe the following requirements:

- Open, well-ventilated area
- Position in the unclean area directly adjacent to the clean area in the hygiene room
- Level, heat-resistant countertop
- Close to a compressed air and power source
- Recommended minimum distance from the wall: 10 cm
- Recommended minimum height: 70 cm

CAUTION

Risk of crushing

The recommended minimum height for installing the DAC UNIVERSAL is 70 cm, in order to prevent injuries when removing the lid.

If the DAC UNIVERSAL needs to be switched off completely, the power plug must be accessible.

Ambient conditions

The DAC UNIVERSAL may be used only indoors under the following ambient conditions:

- Relative humidity from 60% to max. 80%
- Up to an altitude of 2,000 m above sea level
- Room temperature between 16°C and 26°C (61°F and 79°F)
- Fluctuations in electrical supply should remain within $\pm 10\%$ of the nominal voltage
- Transient overvoltage according to installation category II
- Pollution degree 2

4.2 Installation of DAC UNIVERSAL connections

IMPORTANT

Only technicians trained by the manufacturer with a training certificate issued by the manufacturer are qualified to install, service, repair, and maintain the DAC UNIVERSAL.

IMPORTANT

Please note that the DAC UNIVERSAL must be warmed up to room temperature before being connected.

4.2.1 Power supply



The DAC UNIVERSAL must be connected to a supply voltage of 90 VAC – 120 VAC or 190 VAC – 240 VAC, 50 – 60 Hz, 1.100 W, at a grounded socket.

IMPORTANT

Several power plugs are supplied with the DAC UNIVERSAL in some countries. Please use only the power plug suitable for your country to connect the DAC UNIVERSAL to the socket.

4.2.2 Compressed air connection



The air pressure must be between 5 and 8 bar (short-term air consumption: approx. 60 L/min at 5 bar).

The compressed air fed into the DAC UNIVERSAL must be dry and free of any oil residue. Please contact the supplier or the manufacturer of your compressed air unit if you have any questions.

The scope of supply includes an air filter (20 microns) that must be installed between the compressor and the DAC UNIVERSAL to prevent particles of dirt from entering into the DAC UNIVERSAL.

4.2.3 Water connection



Water is used for reprocessing the instruments in the DAC UNIVERSAL.

NOTICE

In DAC UNIVERSAL, only demineralized or distilled water can be used to ensure a long life of the instruments and the unit. Tap water contains too much calcium carbonate, which damages the instruments and the DAC UNIVERSAL.

NOTICE

For optimal function, water conductivity of < 3.0 µS/cm is required.

There are two options for the water supply to the DAC UNIVERSAL:

- Permanent water connection.
The DAC UNIVERSAL is connected to a permanent water conditioning system. NitroDem Direct Connect is recommended as water supply for the DAC UNIVERSAL.
- Manual filling of the water tank with demineralized/distilled water.
See "Filling the water tank [→ 69]" for detailed procedure.



4.2.3.1 Permanent water connection

IMPORTANT

Observe local regulations for backflow protection when connecting the DAC UNIVERSAL to permanent water supply. According to EN1717 an air gap is required as backflow protection of Category 5 water."

The following must be observed when connecting the DAC UNIVERSAL to a permanent water supply:

To operate the DAC UNIVERSAL with a water conditioning unit, it must be switched to "Automatic water supply". This is done via the menu system, see "Menu system DAC UNIVERSAL ADVANCED [→ 77]" or "Menu system DAC UNIVERSAL STANDARD [→ 165]".

If you use a permanent water supply and have not installed a siphon, please empty the waste water tank once a day or whenever it is full, see "Remove and clean the drain tank [→ 131]".

NOTICE

A water filter (20 µm) must be installed upstream of the DAC UNIVERSAL to ensure that the water is clean.

4.2.3.2 Manual filling of the water tank

If no permanent water connection is selected, the integrated water tank must be filled with water manually.

See "Filling the water tank [→ 69]" for the procedure.

4.2.4 Waste water connection

NOTICE

Do not start a cycle if the DAC UNIVERSAL is not connected to the drain tank or drainage system.

The DAC UNIVERSAL works only in a one-way water system, i.e. used water (waste water) is not reused.

Therefore, the "Drain" connection on the back of the DAC UNIVERSAL must be connected either to:

- A waste water tank, see "Connecting the waste water tank [→ 52]" or
- A siphon, see "Connecting the siphon [→ 52]"

IMPORTANT

Dispose of the waste water according to the national guidelines and the applicable regulations for waste disposal.

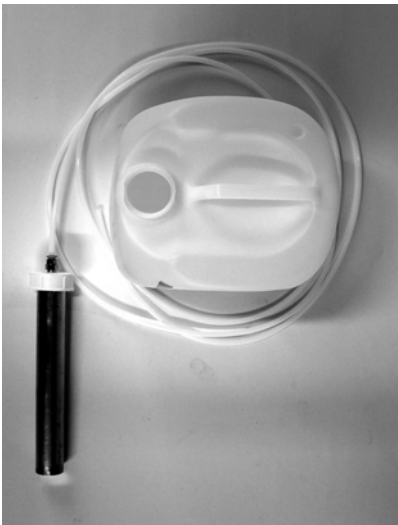
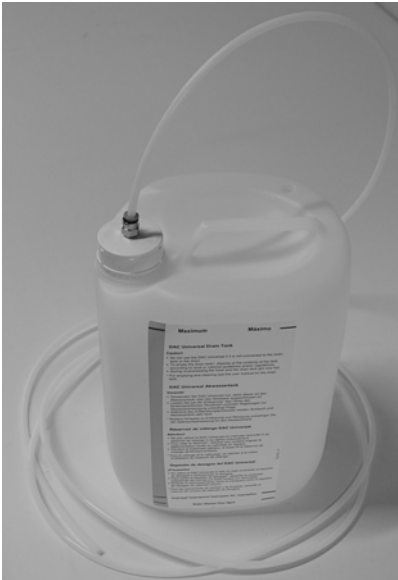


4.2.4.1 Connecting the waste water tank

IMPORTANT

A drain tank other than the original one must not be used.

If the DAC UNIVERSAL is not connected directly to the waste water drain, a drain tank with the condensation tube must be installed to collect waste water from the reprocessing process.



For this connection, a size 6/4 mm PTFE tube must be used. The PTFE tube may be no more than 3 m long. A suitable tube is included with the drain tank.

- ✓ You are wearing your protective gear.
- ✓ The PTFE tube is at hand.
- 1. Make sure that the drain system is clear and no counter pressure can build up.
- 2. Empty and clean the drain tank once a week or when it is full (content reaches the highest mark on the label).

4.2.4.2 Connecting the siphon

For connecting the drain connection with the syphon, a size 6/4 mm PTFE tube must be used. The PTFE tube may be no more than 3 m long.



- ✓ Wear appropriate protective gear.
- ✓ The PTFE tube is at hand.
- 1. Make sure that the drain system is clear and no counter pressure can build up.
- 2. The DAC UNIVERSAL can be connected directly to the waste water.

4.3 Using the lubrication concentrate

The NitramOil #2 bottle is not yet mounted when the unit is delivered. The bottle must be mounted and oil pumped through the hoses before the first use of the DAC UNIVERSAL.

For further information how to mount a oil bottle, see "Adding/replacing the lubrication concentrate [→ 66]".

4.4 Mounting adapters

Up to 6 instruments can be reprocessed simultaneously in the DAC UNIVERSAL. The instruments are connected to the STANDARD lid or the FLEX lid using adapters. These adapters are not yet mounted when the unit is delivered.

See "Adapters for the STANDARD lid [→ 219]" for an overview of all adapters available for the STANDARD lid.

See "Adapters for the FLEX lid [→ 238]" for an overview of all adapters available for the FLEX lid.

4.4.1 Mounting adapters on the STANDARD lid

Maximum length of the instruments



The six adapter positions on the STANDARD lid are each marked with dots that correspond with the adapter position number.

The maximum length at position 1 is 145 mm / 5.70 inches (total length of instrument and adapter).

The maximum length at the other positions (2-6) is 160 mm / 6.30 inches (total length of instrument and adapter).

Fastening the adapter to the STANDARD lid



- ✓ The STANDARD lid and the 6 adapters are available.
- 1. Place the gasket on the STANDARD lid so the gasket matches the screw holes.
- 2. The flat side of the adapter base is turned towards the center column as shown. Fasten the adapter to the STANDARD lid with the two screws supplied.
- 3. Tighten the screws with the 1.5 mm Allen wrench on the STANDARD lid included with the DAC UNIVERSAL.

IMPORTANT

When mounting the adapters it is important that all O-rings, gaskets and screws are new.

4.4.2 Mounting adapters on the FLEX lid

The FLEX lid can contain 6 instruments in total, in 4 different configurations. These are following:

- 3 ultrasonic scaler handpieces or sprayvit nozzles and 3 scaler tips w/ torque wrench at a time.
- 4 ultrasonic scaler handpieces or sprayvit nozzles and 2 scaler tips w/ torque wrench at a time.
- 5 ultrasonic scaler handpieces or sprayvit nozzles and 1 scaler tips w/ torque wrench at a time.
- 6 ultrasonic scaler handpieces or sprayvit nozzles.

The adapters are setup according to preferences and instruments in the practice.



Fastening the adapter to the FLEX lid

IMPORTANT

When mounting the adapters it is important that all O-rings, gaskets and screws are new.

✓ The FLEX lid and the 6 adapters are available.

1. Place the O-rings on the FLEX lid in there meant fitting at each of the 6 adapter locations.



2. Place the adapter over the O-ring. Make sure that the flat side of the adapter base is turned towards the center column as shown.





3. Tighten the adapter with the 2 screws using the provided 1.5 mm Allen wrench.

4.5 Setting the display language on the DAC UNIVERSAL STANDARD

We recommend that the main language in your country or the language most familiar to the users of the DAC UNIVERSAL is selected as display language.

There are 6 languages available:

- English (UK)
- French (F)
- German (D)
- Spanish (SP)
- Italian (I)
- Swedish (S)

Process

- ✓ The DAC UNIVERSAL is switched on.
 1. Press the "Menu/Enter"-Key to go to menu level 1.
 2. Press the "Up" or "Down"-Key until "Settings" is selected.
 3. Press the "Menu/Enter"-Key to confirm the selection.
 4. Press the "Up" or "Down"-Key until "Language" is selected.
 5. Press the "Menu/Enter"-Key to confirm the selection.
 6. Press the "Up" or "Down"-Key until the desired language is selected.
 7. Press the "Menu/Enter"-Key to confirm the selection.
 8. Press the "Clear"-Key until the normal display reappears.
- ↳ The desired display language has been selected.



4.6 Connecting to a documentation device

The batch can be documented with a printer, using the practice software (or network) or a USB data logger system (e.g. Segosoft or DIOS).

Printer

A thermal printer is available as a DAC UNIVERSAL accessory. This is used for documenting the reprocessing cycle.

See "Printer [→ 242]" for the technical data and version of the printer.



USB data logger

Using a USB data logger, every batch is saved on a USB stick. To save the data, they must be transferred to a computer in the practice daily.

Documentation software

The software receives all available protocol data, checks the process parameters, and saves the cycle protocol on a USB stick. It signals if the cleaning and sterilization/disinfection process has proceeded correctly. The data on the USB stick are automatically transferred to the practice computer. The process is approved, signed digitally, and archived on the practice computer by the assistant.

Contact your authorized dealer to purchase a USB stick or the sterilization software:

The languages available on the print out/data transfer are English, German & French. These can be selected when installing the documentation device as shown in „Connecting to a documentation device DAC UNIVERSAL ADVANCED [→ 57]" or „Connecting to a documentation device DAC UNIVERSAL STANDARD [→ 58]".

4.6.1 Connecting to a documentation device DAC UNIVERSAL ADVANCED

To connect a documentation device to the DAC UNIVERSAL
ADVANCED, please proceed as follows:

- ✓ The DAC UNIVERSAL is switched on.
- 1. Connect the documentation device to the serial interface RS 232 of the DAC UNIVERSAL using a serial cable.

- 2. Enter the "printer" menu section.

- 3. Enter the "printer ON" menu section and confirm by pressing the "Down"-Key.
- 4. Return to the "printer" menu section by pressing the "Up"-Key once.
- 5. Enter the "printer language settings" menu section.

- 6. Use the "Left/Right"-Keys accordingly to select the language the print should be printed in.
- 7. Confirm the selection by pressing the "Down"-Key.
- 8. Return to the ready screen.
- ↵ The documentation device is connected.



4.6.2 Connecting to a documentation device DAC UNIVERSAL STANDARD

To connect a documentation device to the DAC UNIVERSAL STANDARD, please proceed as follows:

- ✓ The DAC UNIVERSAL is switched on.
- 1. Connect the documentation device to the serial interface RS 232 of the DAC UNIVERSAL using a serial cable.
- 2. Press the "Menu/Enter"-Key to go to menu level 1.
- 3. Press the "Up" or "Down"-Key until "Settings" is selected.
- 4. Press the "Menu/Enter"-Key to confirm the selection.
- 5. Press the "Up" or "Down"-Key until "Printer" is selected.
- 6. Press the "Menu/Enter"-Key to confirm the selection.
- 7. Press the "Up"- or "Down"-Key until "ON / OFF" is selected.
- 8. Press the "Menu/Enter"-Key to confirm the selection.
- 9. Press the "Up" or "Down"-Key until "On" is selected.
- 10. Press the "Menu/Enter"-Key to confirm the selection.
 - ↳ The documentation device is connected
- 11. Press the "Clear"-Key once.
- 12. Press the "Up" or "Down"-Key until "Printout Language" is selected.
- 13. Press the "Menu/Enter"-Key to confirm the selection.
- 14. Press the "Up" or "Down"-Key until the appropriate language is selected.
- 15. Press the "Menu/Enter"-Key to confirm the selection.
- 16. Press the "Clear"-Key until the normal display reappears.
 - ↳ Printer language is set.



4.7 Validation

The DAC UNIVERSAL has been type tested and works tested according to requirements from applicable standards. The standards also specify installation and performance tests upon installation and use.

The manufacturer recommends performing validation of the DAC UNIVERSAL as specified by the local authorities. The authorized dealer can supply information on local validation procedures.

5 Operation DAC UNIVERSAL ADVANCED

5.1 Regular activities

The DAC UNIVERSAL was installed by a service technician according to the instructions in the "Installation [→ 49]" section.

See below for an overview of the activities that must be conducted during the regular use of the DAC UNIVERSAL.

Activities and relevant chapter in the Operating Instructions
„Pre- and post-reprocessing of instruments [→ 59]“
„Checking the reprocessing result with an indicator / PCD test device [→ 59]“
Replacing the lubrication concentrate, see "Adding/replacing the lubrication concentrate [→ 66]"
„Checking oil supply to the chamber of the DAC UNIVERSAL ADVANCED [→ 122]“
„Filling the water tank [→ 69]“
"Checking water supply to the chamber of the DAC UNIVERSAL ADVANCED [→ 122]"

5.1.1 Pre- and post-reprocessing of instruments

IMPORTANT

Please follow the regulations and guidelines applicable in your country in your practice.

IMPORTANT

Please follow the instrument manufacturer's instructions when handling the instruments.

IMPORTANT

The chuck of the instruments must be lubricated regularly after a mechanical cleaning according to the requirements of the instrument manufacturer.
 If possible let oil remain over night in the instrument and run a cycle later in the DAC UNIVERSAL.

5.1.2 Checking the reprocessing result with an indicator / PCD test device

IMPORTANT

Please follow the regulations and guidelines applicable in your country in your practice.

Installation / major repairs:

Before using the DAC UNIVERSAL after installation or larger repairs, we recommend checking the sterilization result using a Class 5 chemical indicator and/or a PCD test device.

See "Testing with a chemical indicator [→ 60]" for details of the procedure.

See "Testing with a PCD process challenge device [→ 64]" for details of the procedure.

Daily monitoring:

The manufacturer recommends using a chemical indicator for every cycle.

A Class 5 chemical indicator is used for testing with the standard or sensitive program.

See "Testing with a chemical indicator [→ 60]" for details of the procedure.

Weekly monitoring:

The manufacturer recommends using a chemical indicator in a PCD test device once a week to simulate a steam penetration test and confirm and ensure proper sterilization.

See "Testing with a PCD process challenge device [→ 64]" for details of the procedure.

The manufacturer also recommends testing for protein residue after a cycle using a protein detector once a week to check the cleaning quality. The manufacturer recommends conducting the test with "MediSafe MediCheck™". You can obtain it from your dealer or at "<http://www.medisafegmbh.com/katalog/en/MediCheck-Protein-residue-test.html>".

See "Testing with a protein residue test [→ 66]" for details of the procedure.

5.1.2.1 Testing with a chemical indicator

IMPORTANT

Use a commercial chemical indicator (Class 5), e.g. 3M™ Comply™ SteriGage™ for the standard/sensitive program.

IMPORTANT

Use a commercial chemical indicator (Class 6), e.g. gke Steri-Record C-S-P-6-SV2 for the prion program.

IMPORTANT

All chemical indicators used in the DAC UNIVERSAL must be coated or non-paper chemical indicators.

IMPORTANT

Follow the manufacturer's instructions for use when using a chemical indicator.

An indicator holder and a chemical indicator are required for batch testing.

The STANDARD indicator holder is used for the STANDARD lid and for wrapped instruments on the WRAPPED lid, see "Using a chemical indicator with the WRAPPED lid [→ 62]".

The FLEX indicator holder is used for the FLEX lid.

The appropriate indicator holder is used with a Class 5 chemical indicator, when using the standard or sensitive program.

The appropriate indicator holder is used with a Class 6 chemical indicator, when using the prion program.

A chemical indicator can be used in combination with the appropriate indicator holder for batch control of the sterilization process of unwrapped instruments.

For reprocessing of solid instruments no holder is needed, see „Using a chemical indicator with the BASKET lid [→ 62]“.

While the FLEX lid is only for High-level thermal disinfection, the instruments are exposed to the same sterilization process as performed with the STANDARD lid. Therefore the same chemical indicators are used for batch control of instruments reprocessed on the FLEX lid.

The manufacturer recommends using a chemical indicator for every cycle.

The Class 5 chemical indicator monitors the time, temperature and pressure parameters of the standard and sensitive programs.

A Class 6 chemical indicator monitors the time, temperature and pressure parameters of the prion program.

⚠ WARNING

If the chemical indicator indicates that the test was not passed, do not use the instruments that were reprocessed after the time of the last successful check.
Do not continue to use the DAC UNIVERSAL.
Please contact your authorized dealer.

5.1.2.1.1 Using a chemical indicator with the STANDARD lid



1. Attach the chemical indicator in the smaller of the two brackets on the STANDARD indicator holder.



2. Attach the STANDARD indicator holder in the groove on the center post of the STANDARD lid.
3. Start a cycle. See "Reprocessing with the STANDARD lid DAC UNIVERSAL ADVANCED [→ 99]" for the detailed procedure.
4. After the end of the cycle, check that the chemical indicator indicates the sterilization test was passed.

5.1.2.1.2 Using a chemical indicator with the BASKET lid



1. Attach the chemical indicator to the metal bracket of the BASKET lid.
2. Start a cycle. See "Reprocessing with the BASKET lid DAC UNIVERSAL ADVANCED [→ 104]" for the detailed procedure.
3. After the end of the cycle, check that the chemical indicator indicates the sterilization test was passed.

5.1.2.1.3 Using a chemical indicator with the WRAPPED lid



1. Attach the chemical indicator in the smaller of the two brackets on the STANDARD indicator holder.



2. Attach the STANDARD indicator holder to one of the three wire brackets of the WRAPPED lid so the brackets of the indicator holder point to the center of the lid.
3. Press the STANDARD indicator holder toward the lid as far as possible.
4. Attach a wrapped instrument between the wires at each of the two empty positions.
5. Start a cycle. See "Reprocessing with the WRAPPED lid DAC UNIVERSAL ADVANCED [→ 110]" for the detailed procedure.
6. After the end of the cycle, check that the chemical indicator indicates the sterilization test was passed.

5.1.2.1.4 Using a chemical indicator with the FLEX lid



1. Attach the chemical indicator in the smaller of the two brackets on the FLEX indicator holder.



2. Attach the FLEX indicator holder in the groove on the center post of the FLEX lid.
3. Start a cycle. See "Reprocessing with the FLEX lid DAC UNIVERSAL ADVANCED [→ 115]" or "Reprocessing with the FLEX lid DAC UNIVERSAL STANDARD [→ 187]" for the detailed procedure.
4. After the end of the cycle, check that the chemical indicator indicates the disinfection test was passed.

5.1.2.2 Testing with a PCD process challenge device

The PCD (process challenge device) is used in combination with a chemical indicator to simulate a steam penetration test and confirm proper sterilization.

Checking using a PCD test device is necessary in the following cases:

- Before using a DAC UNIVERSAL after initial installation
- After major repair work
- As part of routine weekly testing



IMPORTANT

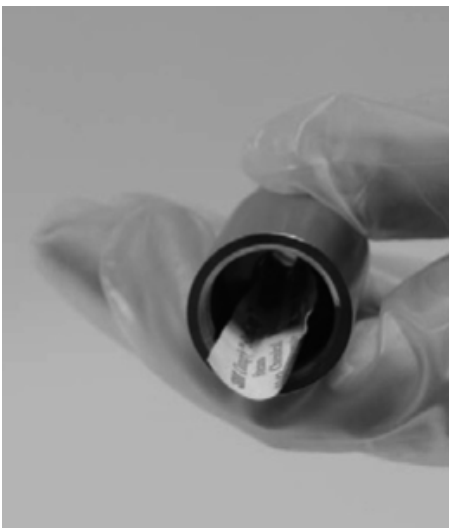
An ISO/INTRAmatic adapter is needed to mount a PCD test device to the STANDARD lid.

Process

- ✓ The DAC UNIVERSAL is switched on and ready for a cycle.
 - ✓ Up to 5 instruments are in the DAC UNIVERSAL ready for reprocessing, see "Pre- and post-reprocessing of instruments [→ 59]".
1. Remove the STANDARD lid from the holder on the DAC UNIVERSAL.
 2. Place the STANDARD lid on the counter or put it in the optional lid holder.
 3. First twist the PCD test device in the middle counterclockwise.
 4. Fold the chemical indicator into a V-shape.
 5. Put the chemical indicator into the PCD test device.
 6. Twist the PCD test device clockwise to close.

IMPORTANT

Twist the PCD test device completely closed.
A proper check of the PCD test device is not ensured if it is partly open.





7. Press the PCD test device onto the ISO/ INTRAmatic adapter until you hear and feel a slight click.
8. Put instruments into the other 5 adapters as usual.

IMPORTANT

Select a situation typical for your daily routine. This usually means that you attach instruments to all six adapters.

9. Pull lightly on the instruments to ensure that they are firmly attached to the adapters.
10. Start a standard cycle, see reprocessing with the STANDARD lid for details of the procedure.

⚠ CAUTION

Danger of burning!

Allow the extremely hot instruments to cool down after the end of the cycle.



11. Remove the PCD test device from the adapter by pressing the small button at the bottom of the adapter while pulling on the PCD test device.

⚠ CAUTION

Danger of burning!

The PCD test device may be hot.

12. Unscrew the PCD test device counterclockwise and remove the chemical indicator.
13. Evaluate the chemical indicator according to the manufacturer's instructions.

5.1.2.3 Testing with a protein residue test

The protein test, e.g. „MediSafe MediCheck™. MediSafe MediCheck™ is a quick protein test for all surfaces after the cleaning process. It is a quick test for detecting proteins on surfaces. It is not intended to be used as a microbiological monitoring tool. The protein test changes color from green to purple if protein residue is found on the swab. The more proteins are found on the swab, the darker the fluid becomes. If the color becomes purple in fewer than 15 minutes, the test need not be continued, as contamination is very high. The test is time and temperature sensitive; it is therefore important to conduct the test at room temperature (20-25°C / 68-77°F). The change in color is assessed after 15 minutes at room temperature (alternatively 15 min. at 55°C / 131°F or 30 min. at 37°C / 98.6°F).

MediSafe "MediCheck™" is available at:
"<http://www.medisafegmbh.com/katalog/en/MediCheck-Protein-residue-test.html>"

5.1.3 Adding/replacing the lubrication concentrate

The NitramOil #2 bottle is not yet mounted when the unit is delivered. The bottle must be mounted and oil pumped through the hoses before the first use of the DAC UNIVERSAL.



(Safety) information for the lubrication concentrate

⚠ CAUTION
Risk of explosion Do not hold the NitramOil #2 bottles near an open flame.
NOTICE
Use only NitramOil #2 for the DAC UNIVERSAL.
IMPORTANT
In case of fire: There is maximum 200 ml / 0.043 imperial gallons of oil in the DAC UNIVERSAL. There is no danger that dangerous or harmful gases can develop in case of fire.

NOTICE

The oil must be stored and handled at temperatures below 50°C / 122°F. Follow all warnings on the handling, use, and disposal of the oil. This information is in the safety data sheet. The safety data sheet for NitramOil #2 is available at www.sirona.com.

IMPORTANT

No toxic, harmful, or dangerous gases arise during the handling, use, or removal of NitramOil #2. The oil is pumped directly from the bottle into the DAC UNIVERSAL.

Inserting the oil bottle

- ✓ The lid of the DAC UNIVERSAL water tank is open.
- 1. Remove the red transport plug on the oil dispenser. Please keep this plug (it can be placed on the bottle after it is screwed in).
- 2. Remove the lid from the new NitramOil #2 bottle.
- 3. Insert the oil bottle thread down into the thread of the oil dispenser (next to the water tank).



- 4. Turn the oil bottle carefully clockwise until you meet resistance.
 - 5. Close the lid of the water tank.
- ↪ The oil bottle is now inserted in the DAC UNIVERSAL.



Replacement of the oil bottle

IMPORTANT

The oil bottle must be replaced when the "Low oil" message appears on the display.

- ✓ The lid of the DAC UNIVERSAL water tank is open.
- 1. Unscrew the empty oil bottle counterclockwise and remove it from the oil dispenser.

IMPORTANT

If the oil bottle is not completely empty, small quantities of oil may leak out of the bottle. Wipe the oil away with an absorbent cloth.

- 2. Insert the new oil bottle thread down into the thread of the oil dispenser (next to the water tank).
- 3. Turn the oil bottle carefully clockwise until you meet resistance.
- 4. Close the lid of the water tank.
 - ↳ The oil bottle has been replaced.

Tip: You can also remove a partially used oil bottle that is not yet empty from the DAC UNIVERSAL and insert it again at a later time.

5.1.4 Pumping lubrication concentrate through the system

When a new bottle of lubrication concentrate has been inserted, you must check whether oil is pumped into the chamber.

See "Checking oil supply to the chamber of the DAC UNIVERSAL ADVANCED [→ 122]" for the procedure.

5.1.5 Filling the water tank

IMPORTANT

Remember to empty the drain tank when it is full, see „Remove and clean the drain tank [→ 131]”.

If no permanent water connection is selected, the DAC UNIVERSAL water tank must be filled with water manually.

1 filled water tank corresponds to approx. 2 complete cycles of the standard program.

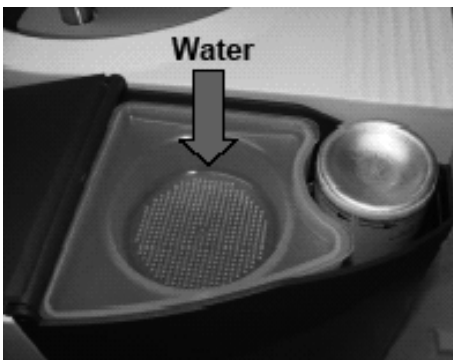
Capacity of the water tank: 1.8 liters / 0.40 imperial gallons

Minimum filling of the water tank: 0.6 liters / 0.13 imperial gallons for a standard program at 134°C / 273°F

1. Open the lid of the water tank.
2. Fill demineralized/distilled water (water conductivity < 3.0 µS/cm) through the sieve into the water tank (min. 0.6 liter, max. 1.8 liter).

NOTICE

Pour the water into the tank carefully, otherwise the water can spill into the interior of the unit next to the tank where it can cause a short circuit.



5.1.6 Pumping water through the system

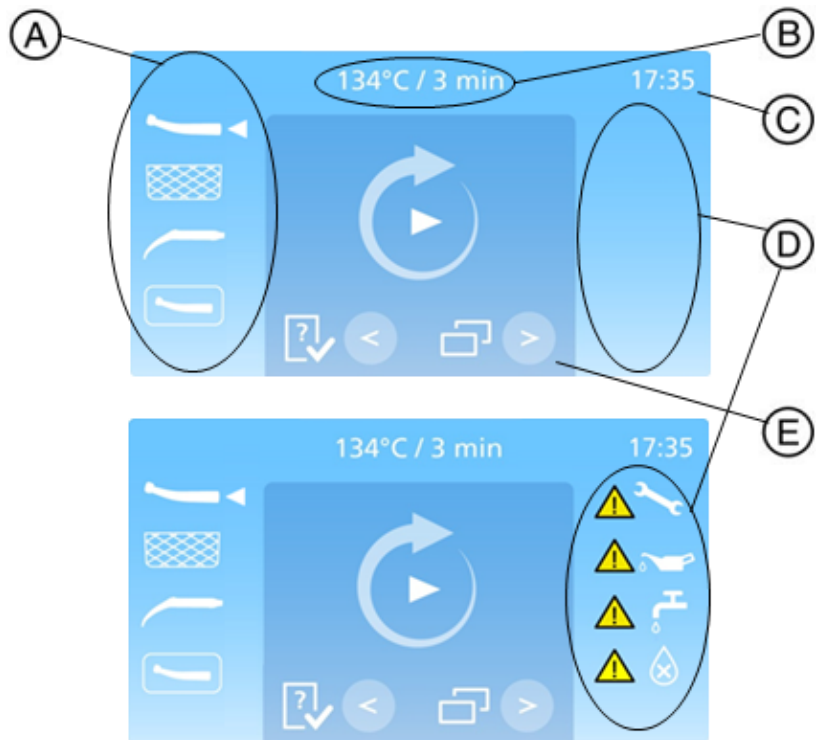
Before the DAC UNIVERSAL can be started, you must check whether water flows into the chamber.

See "Checking water supply to the lids of the DAC UNIVERSAL ADVANCED [→ 123]" for the procedure.

5.2 Using the menu and display information DAC UNIVERSAL ADVANCED

With the DAC UNIVERSAL ADVANCED a graphical user interface has been introduced.

The ready screen is the primary screen, which allows the user to get an overview of the status of the machine. It is displayed when the autoclave has been started and the automatic heating is completed.



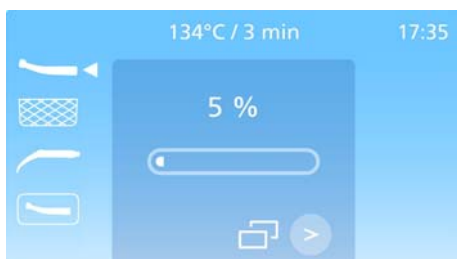
A	The selected lid is shown on the left hand side of the ready screen. The lids are listed as following: <ul style="list-style-type: none"> • STANDARD lid • BASKET lid • WRAPPED lid • FLEX lid
B	The selected program is displayed at the top of the ready screen. The program is shown as temperature/holding time.
C	The current time is always displayed in the top right hand corner.
D	Warning messages are displayed in the right side of the ready screen. These warnings are as following: <ul style="list-style-type: none"> “Service needed” appears after 2 years or 3.000 cycles. “Low oil” appears when there’s insufficient oil quantity in the oil bottle. “Low water” appears when there’s insufficient water quantity in the water tank. “Bad water quality” appears when the water quality isn’t good enough. The water quality needs to be 3.0 µS/cm or better.
E	The dark blue field of the ready screen indicates that the autoclave is ready to run a cycle. The Check & Clean section can be entered by pressing the “Left”-Key while the menu can be entered by pressing the “Right”-Key.

5.2.1 Display information DAC UNIVERSAL ADVANCED

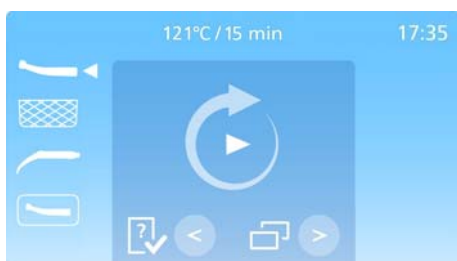
The display will show the current system status. Below examples of these status messages are shown. Please notice that these examples are from running a standard program with the standard lid. If another lid is chosen the arrow indicating the lid type would point to the selected lid.

The display indicates the current status of the system as follows:

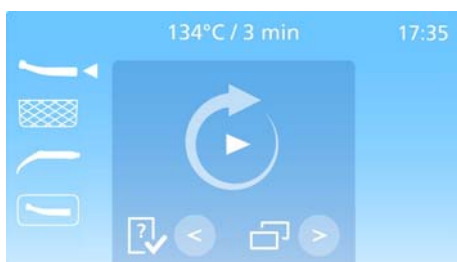
The DAC UNIVERSAL has been switched on and is heating.



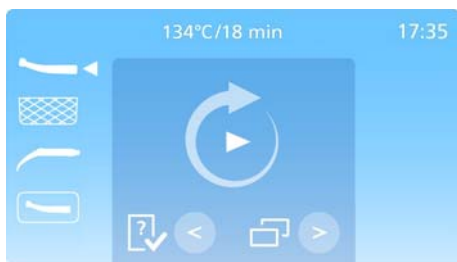
The DAC UNIVERSAL has been switched on and is heating.



The machine is ready to run the sensitive program:
121°C, 15 minutes holding time.



The machine is ready to run the standard program:
134°C, 3 minutes holding time.



The machine is ready to run the prion program: 134°C, 18 minutes holding time.



Indicates that the WRAPPED lid has been selected for the current program.
The user shall confirm that this cycle is in fact being run with this lid by pressing the "Right"-Key. If not the cycle is aborted by pressing the "Up"-Key.
Instruments being used with the WRAPPED lid must have been sterilized before wrapping.



Indicates that the BASKET lid has been selected for the current program. The user shall confirm that this cycle is in fact being run with this lid by pressing the “Down”-Key. If not the cycle is aborted by pressing the “Up”-Key.



Indicates that the FLEX lid has been selected for the current program. The user shall confirm that this cycle is in fact being run with this lid by pressing the “Down”-Key. If not the cycle is aborted by pressing the “Up”-Key.



The „Start/Stop“-Key has been pressed and cycle will start when safety ring is pressed. The cycle number is displayed on the right side of the symbol (here seen as 2106).



The operation has been started and the lid is closing.



Indicates that the lid is securely closed to begin cycle.



Indicates internal cleaning of spray channels. This is only performed with the STANDARD and FLEX lids.



Oil is internally added to lubricate the instruments.
This is only performed with the STANDARD lid.



Cold & warm rinse.
Chamber is filled with water for external cleaning, instruments are pulse washed and a little oil is expelled. Afterwards the steam-pump is started and the chamber is heated.



Chamber warming up to chosen program temperature and pressure.



Stabilizing to chosen temperature and pressure.



Steam is being pushed through the instrument channels before and after the sterilization (High-level disinfection only for the FLEX lid) cycle.
For BASKET and WRAPPED lids the steam is blown into the chamber instead.



Count down of the sterilization (High-level disinfection only for the FLEX lid) time - corresponding to the chosen program.



Expel (If set in the menu at level 1, 2 or 3) - by air being blown through the instruments.

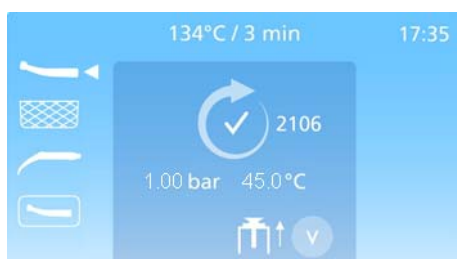
For BASKET and WRAPPED lids this dries the instruments from the outside.



The cycle has been completed.

The lid will open a bit.

The cycle number is displayed on the right side of the ready screen symbol (here seen as 2106).



Indicates that the cycle has been completed.

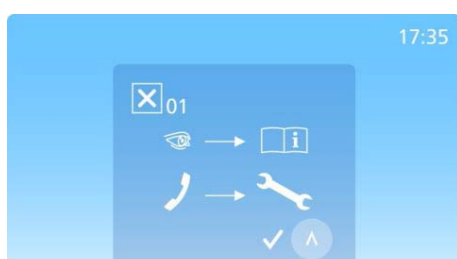
The cycle number is displayed on the right side of the ready screen symbol (here seen as 2106).

When the "Down"-Key is pressed, the DAC UNIVERSAL will open completely and can be unloaded.



Service needed - is displayed simultaneously with a 2 second acoustic alarm.

Indicates that it's been two years or 3000 cycles since the last service was performed or the DAC UNIVERSAL was put into use for the first time. Reminds the user that a service is recommended.

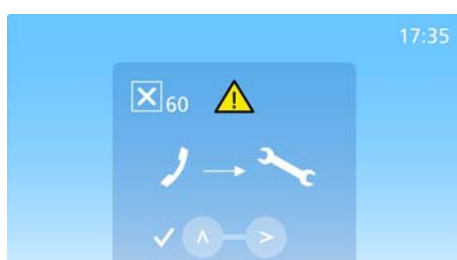


The error code is displayed in the top left hand corner;

General error – is displayed simultaneously with an acoustic alarm.

The error code is displayed in the top left hand corner. Please find this error code in "Display messages DAC UNIVERSAL ADVANCED [→ 140]".

Press the "Up"-Key to return.

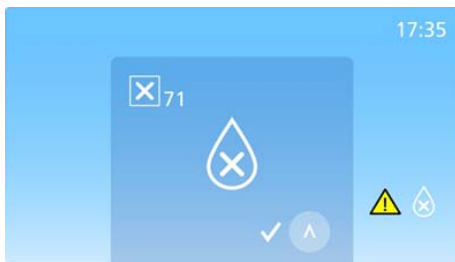


The error code is displayed in the top left hand corner;

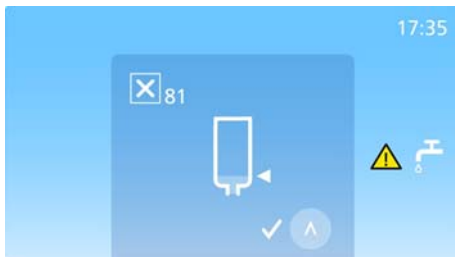
Sterilization error - is displayed simultaneously with an acoustic alarm.

The error code is displayed in the top left hand corner.

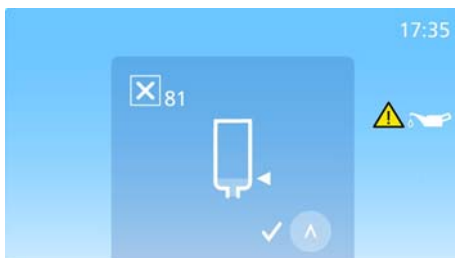
Please find this error code in "Display messages DAC UNIVERSAL ADVANCED [→ 140]". Press the "Up"-Key and the "Right"-Key at the same time to return.



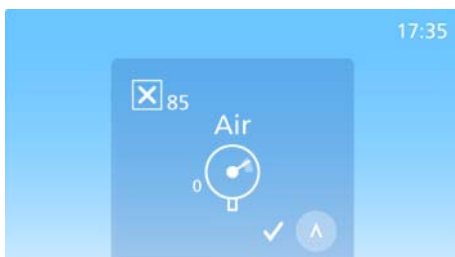
The error code is displayed in the top left hand corner;
Displays when the water quality is insufficient.
The water quality needs to be 3.0 $\mu\text{S}/\text{cm}$ or better.
For further troubleshooting, see "Display messages DAC UNIVERSAL ADVANCED [→ 140]".
Press the "Up"-Key to return.



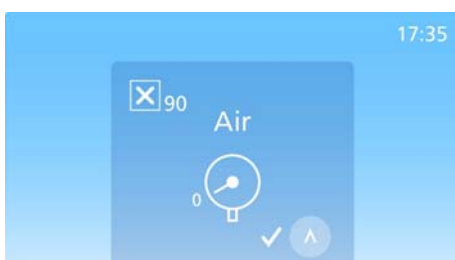
The error code is displayed in the top left hand corner;
Displays when water is needed.
For further troubleshooting, see "Display messages DAC UNIVERSAL ADVANCED [→ 140]".
Press the "Up"-Key to return.



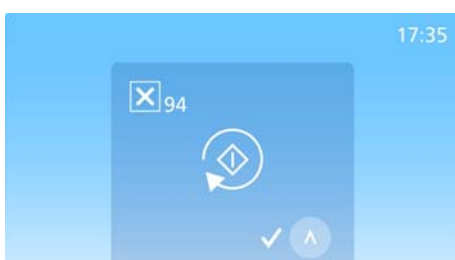
The error code is displayed in the top left hand corner;
Displays when oil is needed.
For further troubleshooting, see "Display messages DAC UNIVERSAL ADVANCED [→ 140]".
Press the "Up"-Key to return.



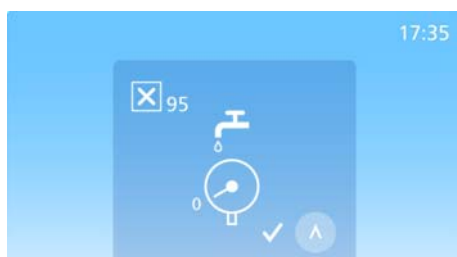
The error code is displayed in the top left hand corner;
Appears when the air pressure is too high.
Check and see if pressurized air of 5-8 bars is connected to the air inlet.
For further troubleshooting, see "Display messages DAC UNIVERSAL ADVANCED [→ 140]".
Press the "Up"-Key to return.



The error code is displayed in the top left hand corner;
Appears when the air pressure is too low.
Check and see if pressurized air of 5-8 bars is connected to the air inlet.
For further troubleshooting, see "Display messages DAC UNIVERSAL ADVANCED [→ 140]".
Press the "Up"-Key to return.



The error code is displayed in the top left hand corner;
The DAC UNIVERSAL has used oil during standby.
For further troubleshooting, see "Display messages DAC UNIVERSAL ADVANCED [→ 140]".
Press the "Up"-Key to return.

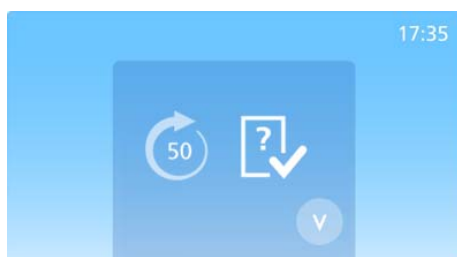


The error code is displayed in the top left hand corner;
Low water.

Make sure the DAC UNIVERSAL is supplied with water from the water treatment system.

For further troubleshooting, see "Display messages DAC UNIVERSAL ADVANCED [→ 140]".

Press the "Up"-Key to return.

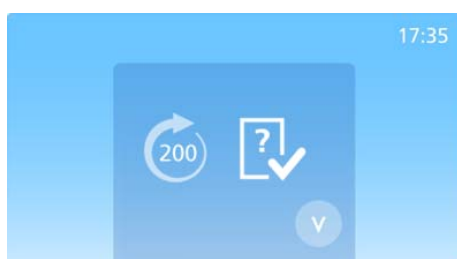


Check & Clean needed - is displayed simultaneously with a 2 second acoustic alarm. Appears after every 50 runs.

Indicates that the cleaning and maintenance in accordance with the Check & Clean must be performed.

Press the "Down"-Key to confirm.

For cleaning and maintenance instructions, see „Cleaning and maintenance DAC UNIVERSAL ADVANCED [→ 121]".



User maintenance needed - displays every 200 runs, simultaneously with a 2 second acoustic alarm.

Indicates that User Maintenance needs to be performed. For cleaning and maintenance instructions, see „Cleaning and maintenance DAC UNIVERSAL ADVANCED [→ 121]".



Danger the chamber, lid and instruments are hot. Please be careful when opening the chamber completely by pressing the "Down"-Key.




5.2.2 Menu system DAC UNIVERSAL ADVANCED

5.2.2.1 Menu overview DAC UNIVERSAL ADVANCED










Description

















The DAC UNIVERSAL has a structured menu system, which has the ready screen at the top. Under the ready screen, there is a left hand menu and a right hand menu.

















Left hand menu















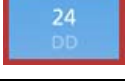

Level 1	Level 2	Level 3	Level 4	Level 5	Description
					Ready Screen
					Check oil
					Check water

















Right hand menu














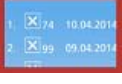
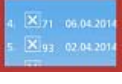

Level 1	Level 2	Level 3	Level 4	Level 5	Description
					Ready Screen
					Program selection
					134°C/3 min
					134°C/18 min
					121°C/15 min
					Manual control
					Open chamber
					Close chamber
					Manual oil operation

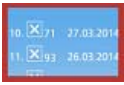
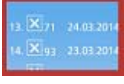
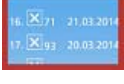


Level 1	Level 2	Level 3	Level 4	Level 5	Description
					Check oil in chamber
					Manual water operation
					Check water in chamber
					Manual water channels
					Check water bottom adapter
					Drain chamber
					Drain tank
					Flow Test
					Process
					Result
					Settings
					Oil settings
					Oil 1
					Oil 2
					Oil 3
					Ambient sensitivity

Level 1	Level 2	Level 3	Level 4	Level 5	Description
					Ambient sensitivity 0
					Ambient sensitivity 1
					Ambient sensitivity 2
					Ambient sensitivity 3
					Ambient sensitivity 4
					Printer
					Printer ON
					Printer OFF
					Repeat last print
					Printing
					Printer language settings
					English language
					English
					French language
					Rinse cycles
					Rinse cycles 4

Level 1	Level 2	Level 3	Level 4	Level 5	Description
					Rinse cycles 5
					Rinse cycles 6
					Oil expel
					Oil expel 1
					Oil expel 2
					Oil expel 3
					Oil expel 4
					Oil expel 5
					Expel:
					Expel 0
					Expel 1
					Expel 2
					Expel 3
					Set date
					Choose date
					Choose month

Level 1	Level 2	Level 3	Level 4	Level 5	Description
					Choose year
					Confirm date setting
					Set time
					12 hour clock
					Choose AM/PM hours
					Choose minutes
					Confirm time setting
					24 hour clock
					Choose hours
					Choose minutes
					Confirm time setting
					Display brightness
					30%
					40%
					50%
					60%

Level 1	Level 2	Level 3	Level 4	Level 5	Description
					70%
					80%
					90%
					100%
					Automatic water
					Automatic water ON
					Automatic water OFF
					History
					Cycles
					Cycle history
					Service
					Next service
					Errorbuffer
					Errors 1-3
					Errors 4-6
					Errors 7-9

Level 1	Level 2	Level 3	Level 4	Level 5	Description
					Errors 10-12
					Errors 13-15
					Errors 16-18
					Info
					Details

5.2.2.2 Navigation in the menu structure DAC UNIVERSAL ADVANCED



The current position in the menu structure is shown in the top left hand corner of the screen. This is indicated by the menu icon and the icon of the overlying category.

- ✓ The display shows the ready screen.
- 1. Press “Right”-Key to enter the menu system.
- 2. Scroll through different options by pressing the “Right”- or “Left”-Keys accordingly.
- 3. Notice the difference in the downward symbol:
 If the symbol is an arrow, the “Down”-Key is pressed to move deeper into the menu structure.
 If the symbol is “ok”, the “Down”-Key is pressed to confirm a selection.
- 4. Press the “Up”-Key to return to previous layers of the menu.
- 5. Press the “Up”-Key again, until returned to the ready screen.



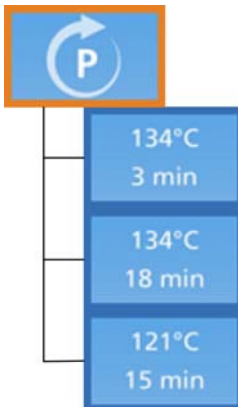
5.2.2.3 Menu options DAC UNIVERSAL ADVANCED



The menu system is designed to offer the user a seamless interaction with the DAC UNIVERSAL. For an overview of the structure behind this interface consult the diagram in "Menu overview DAC UNIVERSAL ADVANCED [→ 77]".

The menu is started from the ready screen, which leads to 5 underlying categories. These categories enable the user to perform different tasks with the DAC UNIVERSAL.

5.2.2.3.1 Program selection



The program selection menu enables the user to select the appropriate program. Please refer to section „Programs and program selection [→ 33]“ for details.

5.2.2.3.2 Manual control



Manual control is used to manually carry out tasks with the DAC UNIVERSAL.

These manual tasks are:

- Open chamber
- Close chamber
- Manual oil operation
- Manual water operation
- Manual water channels
- Drain Tank
- Drain chamber
- Flow Test

Open chamber

Opens chamber lid.



Close chamber

Closes chamber lid (The lid must be inserted first).



Manual oil operation



Oil can be manually pumped to the chamber by selecting this option. This can be used to ensure that the DAC UNIVERSAL is able to lubricate the instruments correctly.

Please see section „Checking oil supply to the chamber of the DAC UNIVERSAL ADVANCED [→ 122]“ for further instructions.

IMPORTANT

After using the manual oil operation the chamber and connecting hoses needs to be cleaned for oil residue, see section "Drain the chamber" in "Drain the water tank via the menu [→ 125]".

Manual water operation



Water can be manually pumped to the chamber by selecting this option. This can be used to ensure that the DAC UNIVERSAL is able to bring water to the chamber correctly.

Please see section „Checking water supply to the chamber of the DAC UNIVERSAL ADVANCED“ for further instructions.

IMPORTANT

After using the manual water operation the chamber and connecting hoses needs to be cleaned for water residue, see section "Drain the chamber" in "Drain the water tank via the menu [→ 125]".

Manual water channels:



Water can be manually pumped through the bottom adapter in the chamber by selecting this option. This can be used to ensure that the DAC UNIVERSAL is able to bring water to the internal water channels of the STANDARD and FLEX lids.

Please see section „Checking water supply to the lids of the DAC UNIVERSAL ADVANCED [→ 123]“ for further instructions.

IMPORTANT

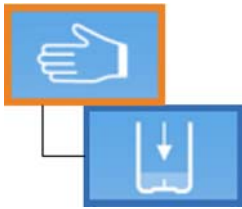
After using the manual water operation the chamber and connecting hoses needs to be cleaned for water residue, see section "Drain the chamber" in "Drain the water tank via the menu [→ 125]".

Drain tank



The water tank can be drained through the water inlet on the backside of the autoclave. If there's an automatic water system connected to the inlet, this must be removed first.

Drain chamber



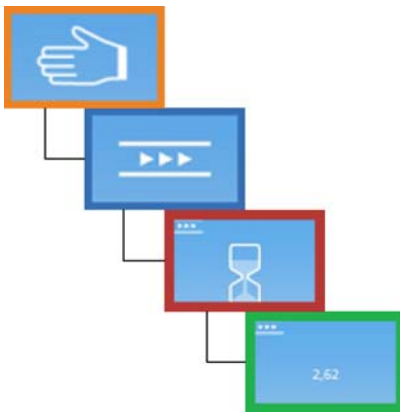
Drains the chamber through the drain outlet. Select this function, if there's residue in the chamber that needs to be drained. An empty lid must be inserted into the autoclave.

About 60 seconds after starting this operation the lid will reopen.

The chamber should then be empty. If not, the operation can be repeated.

Flow Test

Measures the supply air quantity.



5.2.2.3.3 Settings

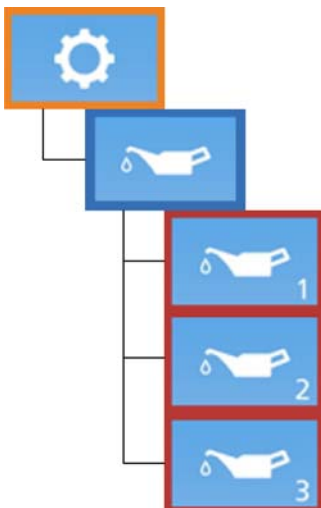


The settings section of the menu is used to alter the user changeable settings of the DAC UNIVERSAL. Some of these settings alter the way the cycles are completed. Please always be careful when altering these settings.

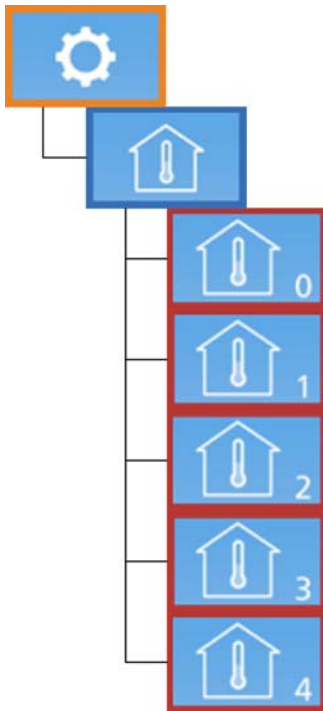
5.2.2.3.3.1 Oil settings

The oil settings make it possible to change the level of lubrication the instruments receive during a cycle.

- Level 1: standard setting
- Level 2: 25% more oil than level 1
- Level 3: 50% more oil than level 1



5.2.2.3.3.2 Setting ambient sensitivity



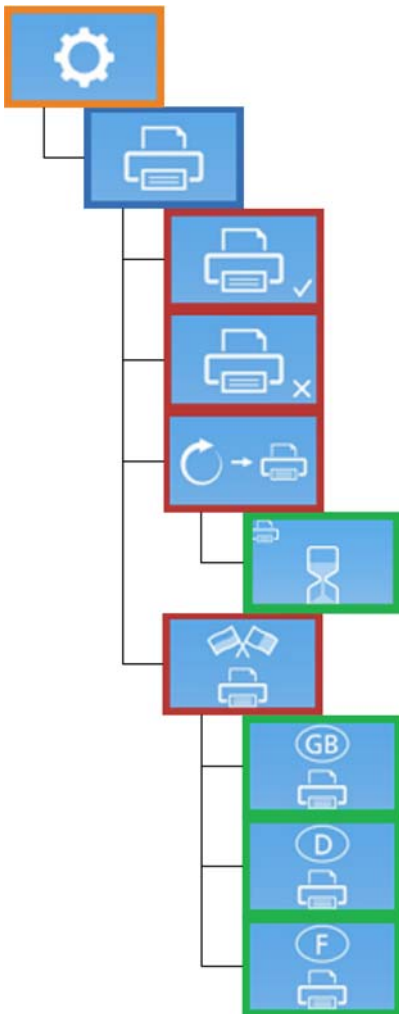
Standard setting: Level 1 (low ambient temperature sensitivity).

- Level 0: ambient temperature sensitivity deactivated (For clinics with a high / normal temperature).
- Level 1: Low ambient temperature sensitivity.
- Level 2: Medium ambient temperature sensitivity.
- Level 3: High ambient temperature sensitivity.
- Level 4: Maximum ambient temperature sensitivity (for clinics with a very low temperature).

When there is a low temperature in the practice/clinic, we recommend increasing the ambient temperature sensitivity somewhat – see „Requirements of the location / Ambient conditions [→ 49]“.

Please note that activating or increasing the level of sensitivity can potentially prolong the total cycle time and increase power consumption.

5.2.2.3.3.3 Printer settings

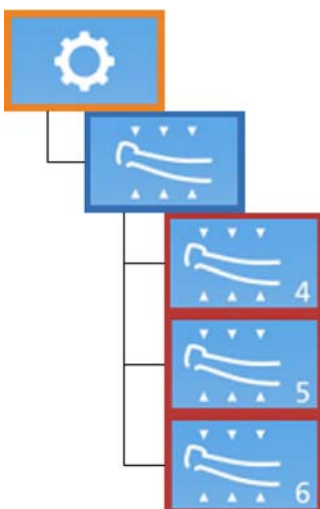


The printer settings enable the user to control the printer attached to the serial port of the DAC UNIVERSAL.

These settings are:

- **Printer ON:**
If a printer is connected to the autoclave, the cycle info will be printed.
- **Printer OFF:**
Nothing will be printed
- **Repeat last print:**
The last print will be printed again.
- **Printer language settings:**
Through these options, the user is able to select which language the print should be printed in. The available languages are English, German & French.

5.2.2.3.3.4 Rinse cycles



The number of rinse cycles performed doing a total cycle can be adjusted, using these settings.

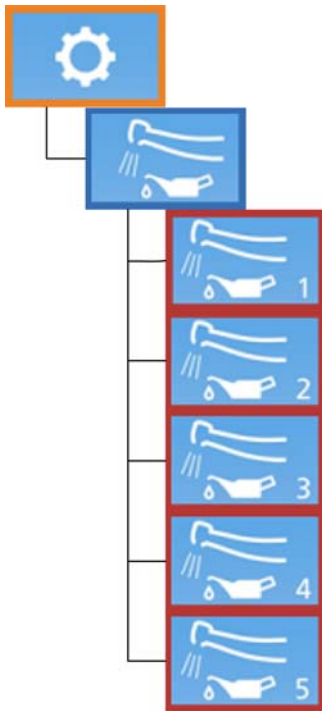
Standard setting: 4 rinse cycles (3 cold + 1 warm).

This can be increased to a maximum of 6 rinse cycles (5 cold + 1 warm)

The "Flex" lid will always use 6 rinse cycles (5 cold + 1 warm).

Please note that the total cycle time is prolonged and water consumption increased by using more than 4 rinse cycles.

5.2.2.3.3.5 Oil expel



Condensation and excess oil are purged from the instruments with air.

Standard setting: Level 1.

The maximum is level 5.

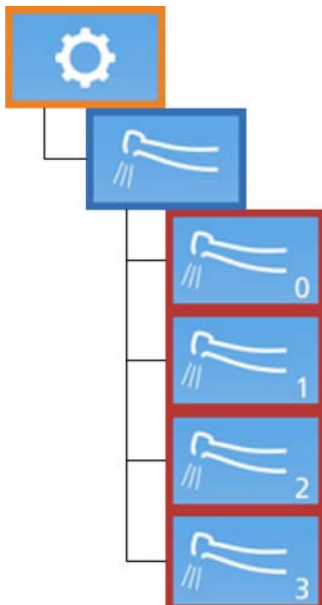
Please note that oil is purged before sterilization and that increasing oil purging prolongs the total cycle time.

Level 1 is recommended for instruments of the manufacturers W&H, KaVo, NSK, and most other instruments.

Level 3 is recommended for Sirona T1 CLASSIC/TE.

However, please observe the manufacturer's instructions for use with each instrument.

5.2.2.3.3.6 Expel



Purge instruments with air after sterilization.

Standard setting: 0. The maximum is level 3.

- Level 0: no blowing
- Level 1: 50 sec. effective blowing time
- Level 2: 100 sec. effective blowing time
- Level 3: 150 sec. effective blowing time

Please note that increasing the blowing time prolongs the total cycle time.

WARNING

If processing instruments for invasive surgical treatments, Expel function cannot be used without prior installation of a sterile-filter.

Level 1 is recommended for instruments of the manufacturers W&H, KaVo, NSK, and most other instruments.

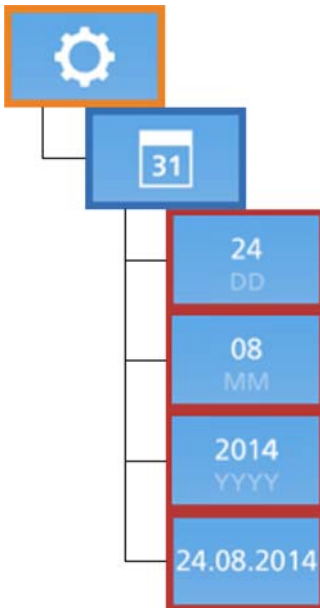
Level 3 is recommended for Sirona T1 CLASSIC/TE.

However, please observe the manufacturer's instructions for use for each instrument.

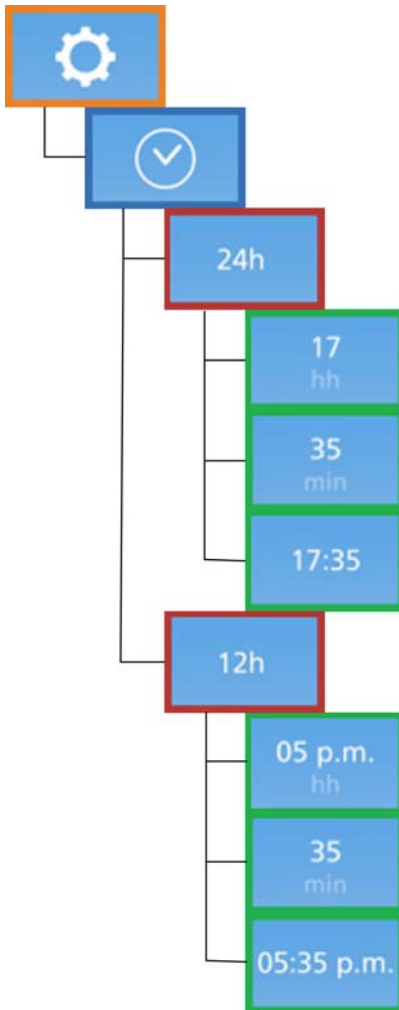
5.2.2.3.3.7 Set date

The date can be set on the DAC UNIVERSAL using these settings.

1. Choose the current date using the “Left/Right”-Keys accordingly.
2. Press the “Down”-Key to confirm the selection.



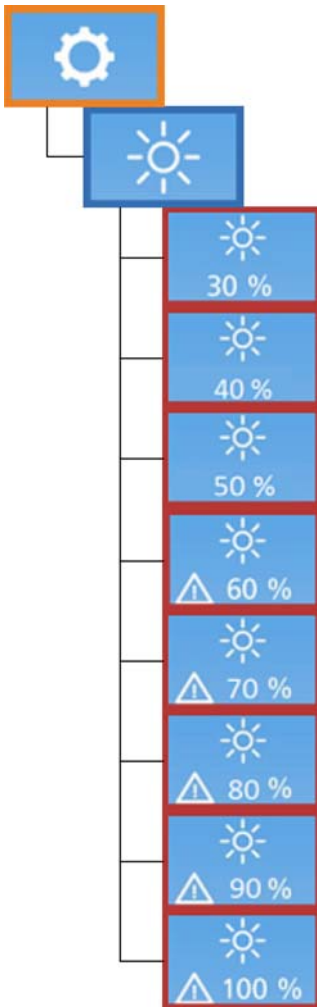
5.2.2.3.3.8 Set time



The time can be set on the DAC UNIVERSAL using these settings. The clock can be set as a 12 hour clock or 24 hour clock.

1. Choose the desired clock format using the “Left/Right”-Keys accordingly.
2. Press the “Down”-Key to confirm the selection.
3. Choose the hours and minutes using the same procedure.
4. Confirm the time setting by pressing the “Down”-Key.

5.2.2.3.3.9 Display brightness



This section allows the display brightness to be changed.

The brightness is adjustable in 10% steps, from 30 – 100%.

Brightness settings from 60% and above are marked with a warning symbol on the display. This warning indicates that these brightness settings are not recommended, since using high brightness settings results in accelerated aging of the display, resulting in this turning darker over time.

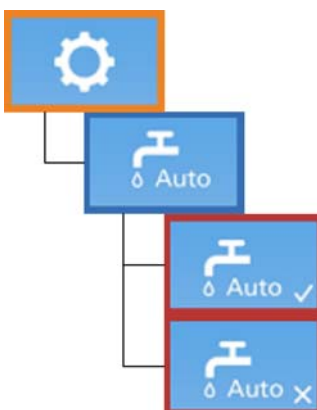
When the display ages it will darken and the brightness settings can then be adjusted to 60% or more to compensate.

If the display is no longer readable even when the brightness settings are adjusted to 100%, please contact your authorized dealer.

To adjust the display's brightness:

1. Choose the appropriate brightness, using the "Left/Right"-Keys accordingly.
2. Press the "Down"-Key to confirm the selection.

5.2.2.3.3.10 Automatic water



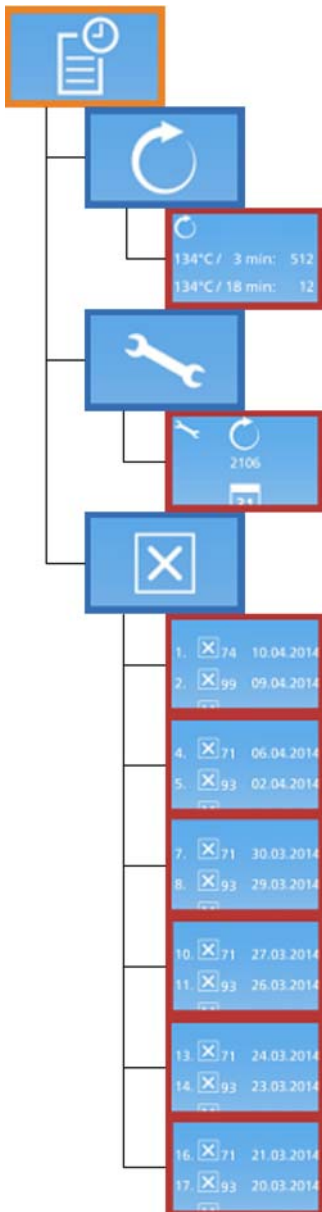
This setting enables the DAC UNIVERSAL to automatically fill the water tank from an external water conditioning system, connected to the DAC UNIVERSAL. If such a system is connected to the autoclave:

1. Set this setting to "ON", using the "Left/Right"-Keys.
2. Otherwise set it to OFF, hereby allowing for manual filling of the water tank.
3. Press the "Down"-Key to confirm the selection.

5.2.2.3.4 History

The History section persists of 3 subcategories:

- **Cycles:**
Shows the number of cycles completed for each of the 3 programs.
- **Service:**
Displays the remaining cycles until the next service or the date (dd/mm/yyyy) on which a service must be completed.
- **Errorbuffer:**
The errorbuffer collects and stores the last 18 errors the device has encountered. This list is viewable with 3 listed errors at a time. Each error is displayed with a sequence number then the error code and the date it was encountered. Example:



The lower the sequence number, the newer the error is. An error marked with the sequence number 1, is the newest error. While an error marked with sequence number 18 is the oldest. The oldest error will then be deleted from the errorbuffer whenever a new error is detected.

5.2.2.3.5 Info

Enter this section to view the serial number and software version of the DAC UNIVERSAL.



5.2.3 Standard settings and Resetting the menu DAC UNIVERSAL ADVANCED

Standard settings

Program	134°C / 273°F, Sterilization time 3 min.
Printer:	Off
Language:	UK
Oil expel:	1
Oil settings:	1
Rinse cycles:	4
Expel:	0
Ambient temperature sensitivity:	1
Automatic water:	Off
Brightness:	30 %

Only for Japan: ambient temperature sensitivity is set at 4. Please note this when resetting the menu to standard settings the ambient temperature sensitivity will be set to 1.

Resetting the menu system

To reset the menu to the default settings, please proceed as follows:














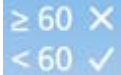

- ✓ The display shows the ready screen.
- Press the "Down"-Key and the "Left"-Key simultaneously for more than two seconds.
- ↩ The properties in your menu are reset to the default settings.

















5.2.4 Symbol definitions DAC UNIVERSAL ADVANCED





Refer to this list to see the definition of symbols used on the display of the DAC UNIVERSAL.

For symbols not explained here see

- „Display information DAC UNIVERSAL ADVANCED [→ 71]“
- „Menu overview DAC UNIVERSAL ADVANCED [→ 77]“
- „Menu options DAC UNIVERSAL ADVANCED [→ 83]“

Symbol	Description
	Menu system.
	Press "Right"-Key to enter the menu system.
	Check & Clean.
	Press the "Left"-Key to enter the Check & Clean section.
	Return.
	Press the "Up"-Key to abort and return.
	Press the "Down"-Key to approve and continue.
	Press the "Up"-Key to confirm.
	Press the "Down"-Key
	Press the "Down"-Key to open the lid.
	Look for.
	Oil.
	Oil count.
	Below 60 is OK, above or equal to 60 is NOT ok.
	Water.

Symbol	Description
	Cycle.
	Progress bar.
	STANDARD lid
	STANDARD lid is selected.
	BASKET lid
	BASKET lid is selected.
	FLEX lid
	FLEX lid is selected.
	WRAPPED lid
	WRAPPED lid is selected.
	Press safety ring to start cycle number.
	Look in the operating instructions.
	Call your authorized dealer.
	Warning the instruments has not been thermally disinfected or sterilized.
	Warning the contents are hot.
	50 Cycles.

Symbol	Description
	200 Cycles.
	Press the "Right"-Key to approve and continue.
	Warning service needed
	Error message

5.3 Reprocessing with the DAC UNIVERSAL ADVANCED

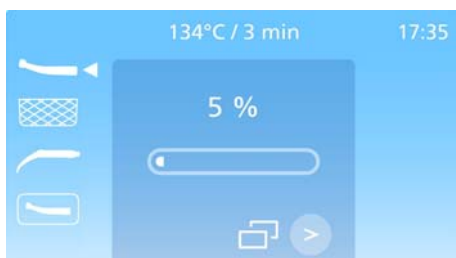
5.3.1 Switching ON/OFF/Standby mode DAC UNIVERSAL ADVANCED

Switch-on

The DAC UNIVERSAL will power up and heat the steam generator once the DAC UNIVERSAL is connected to a power socket. Unless the DAC UNIVERSAL was put into standby mode before having been disconnected from the power socket. In this case the DAC UNIVERSAL will restart in standby mode and will therefore have to be taken out of this by pressing the "Start/Stop"-Key.

IMPORTANT

The DAC UNIVERSAL cannot be started until the steam generator is properly heated.



The heating phase of the DAC UNIVERSAL takes 10-12 minutes. During this heating phase, the display indicates the temperature to be reached in %. When this is done, the DAC UNIVERSAL will display the ready screen.

Standby

To switch the DAC UNIVERSAL to standby mode, press the "Start/Stop"-Key for more than 2 seconds.

Switch off

To switch off the DAC UNIVERSAL, press the "Start/Stop"-Key for more than 2 seconds.

The manufacturer recommends pulling the power cord out of the socket at night to separate the DAC UNIVERSAL from the power grid.

5.3.2 Reprocessing with the STANDARD lid DAC UNIVERSAL ADVANCED



The STANDARD lid is used for reprocessing unwrapped rotating handpieces.

Tip: If there are many instruments to be reprocessed or to ensure the instruments will be available again quickly, we recommend using a second STANDARD lid.

5.3.2.1 General placement of instruments DAC UNIVERSAL ADVANCED



WARNING

If instruments are attached to an unsuitable adapter or if instruments are damaged, sterilization and cleaning may fail. In this case, reprocessing of the instruments must be repeated.

NOTICE

All instruments must be placed straight onto the respective adapter to prevent damage to the O-rings.

NOTICE

The instruments must be easy to attach to the adapters. If the instrument does not attach to the adapter easily, it can be damaged. The manufacturer does not accept responsibility for instruments that are damaged due to being subjected to force.

NOTICE

Make sure that the maximum permissible height of the instruments is not exceeded, see "Mounting adapters [→ 53]".

NOTICE

Instruments are damaged by inadequate lubrication.

IMPORTANT

If the DAC UNIVERSAL is started with fewer than 6 instruments placed in the lid, the lubrication function is not deactivated at the empty positions. To prevent oily instruments, we recommend placing instruments in all 6 positions of the lid.

General attachment

Place the instruments on their respective adapters of the STANDARD lid.

Depending on the instrument and the kind of adapter, you must press or click the instrument onto the adapter, activate a snap lock on the adapter, or tighten a threaded ring on the instrument.

Please make sure that you hear a slight "click" when you place the instrument on the adapter.

Pull lightly on the instrument to ensure that it is firmly attached to the adapter.

General placement



! WARNING

Rotate the head of the instrument to the center post so the instrument heads do not point at each other, as shown on the picture.

Placement is described in the separate sections if it deviates from the general placement described here.

See "Adapters for the STANDARD lid [→ 219]" for detailed instructions on the individual adapters.

5.3.2.2 Start cycle on the STANDARD lid DAC UNIVERSAL ADVANCED

! WARNING

The instruments may not be wrapped when using the STANDARD lid, as cleaning, lubrication, and sterilization would then fail.

IMPORTANT

Do not start the DAC UNIVERSAL without a lid inserted into the lid holder.

Process

- ✓ All settings of the DAC UNIVERSAL were preset according to "Regular activities [→ 59]".
 - ✓ The DAC UNIVERSAL is switched on and ready for operation.
 - ✓ The maximum number of 6 instruments are ready for reprocessing.
 - ✓ The STANDARD lid is at hand.
1. Remove the STANDARD lid from the holder on the DAC UNIVERSAL.
 2. Place the STANDARD lid on the counter or put it in the optional lid holder.
 3. Plug each instrument onto the corresponding adapter in the STANDARD lid. See "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" for more information on attaching

the instruments. The adapters can be replaced if necessary, see "Mounting adapters [→ 53]".

4. Attach a Class 5/6 chemical indicator in the STANDARD indicator holder in the groove on the center post of the STANDARD lid or attach the PCD test device onto the ISO/INTRAmatic adapter. See "Checking the reprocessing result with an indicator / PCD test device [→ 59]" for more information on using the chemical indicator / PCD test device.
5. Insert the STANDARD lid in the cover holder of the DAC UNIVERSAL in such a way that the instruments are pointing down.



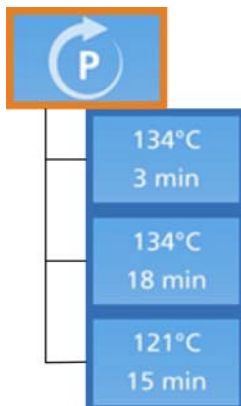
NOTICE

Make sure that the lid is inserted all the way into the holder so that the instrument heads do not touch the wall of the chamber. Make sure there are no objects in the chamber.

NOTICE

The DAC UNIVERSAL and/or the instruments can be damaged if a lid is not inserted correctly.

- ↪ There are instruments on the STANDARD lid; the DAC UNIVERSAL is still open and ready for a cycle.

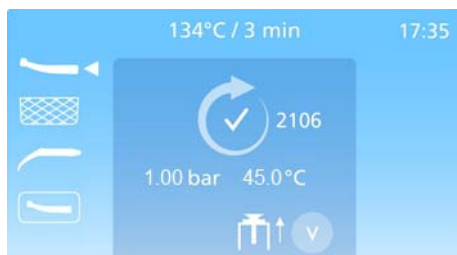


6. Enter the "program selection" menu section.
7. Press the "Left/Right"-Keys accordingly to select the desired program.
8. Press the "Down"-Key to confirm the selection.
9. Return to the ready screen.
 - ↪ The selected program is displayed at the top of the ready screen. The program is shown as temperature/holding time.

IMPORTANT

If no program is selected, the standard program for reprocessing is used.

10. Make sure the STANDARD lid is selected. If not press the "Up/Down"-Keys accordingly, to select this lid.
11. Press the "Start/Stop"-Key to start the cycle.
 - ↪ A prompt to press down on the safety ring will appear on the display.
12. Press down on the safety ring to start the cycle. If the safety ring is not pressed within 20 seconds, you must choose the lid and press the "Start/Stop"-Key again
 - ↪ The STANDARD lid of the DAC UNIVERSAL closes as soon as the safety ring is pressed.



- ☞ The DAC UNIVERSAL automatically runs the cleaning, lubrication and sterilization cycle.
- ☞ The display shows at any time which phase the DAC UNIVERSAL is in, see section "Display information DAC UNIVERSAL ADVANCED [→ 71]".
- ☞ When the selected cycle is completed the display will indicate as seen on the picture.
- ☞ The lid moves about halfway out of the chamber. This indicates that a cycle has been completed and the instruments have been sterilized.
- ☞ The cycle number is shown next to the completed cycle symbol.

CAUTION

Danger of burning!

Never hold your head directly over the DAC UNIVERSAL or touch the inserted lid, while the DAC UNIVERSAL opens, as steam comes out of the unit upon completion of a cycle.

WARNING

After completion of the cycle, make sure that all instruments are still properly attached to the STANDARD lid or the adapters. If instruments have fallen into the chamber during the cycle or if an instrument is no longer properly attached after the end of a cycle, cleaning and sterilization have failed. In this case, reprocessing of the instruments must be repeated.

13. Press the "Down"-Key.

- ☞ The STANDARD lid will open completely.

CAUTION

Danger of burning!

Even when the STANDARD lid is half or completely open, the instruments are still hot. Allow the extremely hot instruments to cool down after the process.

CAUTION

Danger of burning!

The metal part of the lid is very hot. Please touch only the plastic part of the STANDARD lid at the end of the cycle.



14. Remove the STANDARD lid from the holder on the DAC UNIVERSAL at the end of the cycle to allow the instruments to cool down faster.
15. Place the STANDARD lid on the counter or put it in the optional lid holder.

IMPORTANT

When they are cooling, the heads of the instruments should point upwards to prevent corrosion.

16. Check the instruments visually to make sure they are dry.
17. Check the instruments visually to make sure they have been cleaned.
18. Check the cycle number, properly conducted cycle on your documentation (printer, software, etc.): For sterilization, "Sterilization, time, ok" must be indicated.
19. Check whether the dark status bar of the chemical indicator is in the "ACCEPT" range.
 - ↳ If everything is correct, reprocessing was successful.
20. Document the cycle according to the work instructions applicable in your practice.
21. Remove every instrument from the STANDARD lid. See "Attaching instruments to the respective STANDARD lid adapters [→ 220]" for detailed instructions on removing the individual instruments.
 - ↳ The instruments can now be used again.
 - ↳ Sterilization of unwrapped instruments is not sufficient for invasive procedures. After unwrapping the instruments another sterilization must be conducted in the DAC UNIVERSAL or a class B sterilizer (e.g. DAC PROFESSIONAL). For sterilizing wrapped instruments in DAC UNIVERSAL, see "Reprocessing with the WRAPPED lid DAC UNIVERSAL ADVANCED [→ 110]".

5.3.3 Reprocessing with the BASKET lid DAC UNIVERSAL ADVANCED

The BASKET lid is used for reprocessing unwrapped solid instruments.



5.3.3.1 Start cycle on the BASKET lid DAC UNIVERSAL ADVANCED

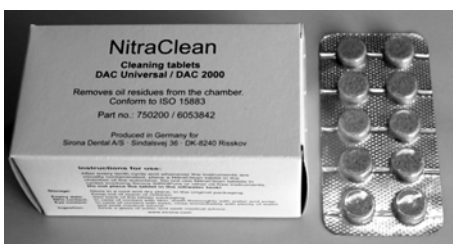
WARNING

The instruments may not be wrapped when using the BASKET lid, as cleaning and sterilization would then fail.

IMPORTANT

Do not start the DAC UNIVERSAL without a lid inserted into the lid holder.

- ✓ All settings of the DAC UNIVERSAL were preset according to "Regular activities [→ 59]".
- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- ✓ A maximum of 5 solid instruments have been prepared for reprocessing.
- ✓ The BASKET lid is at hand.



- ✓ A NitraClean cleaning tablet is at hand.
- 1. Remove the BASKET lid from the holder on the DAC UNIVERSAL.
- 2. Place the BASKET lid on the counter or put it in the optional lid holder.



3. Open the snap lock on the basket and take the small lid off the basket.



4. Put maximum 5 solid instruments into the basket, if possible with the sharp tip down. The solid instruments must be placed in the basket so that the wire lid of the basket can be closed.



5. Attach the Class 5/6 chemical indicator to the metal bracket of the BASKET lid. See "Using a chemical indicator with the BASKET lid [→ 62]" for more information on using a chemical indicator.



6. Place the small lid back on the basket.



7. Close the basket.

IMPORTANT

There is a metal cylinder in the middle of the small lid. The long part must point toward you when closing.

IMPORTANT

Make sure the small lid of the basket closes easily and no instruments are caught.

! WARNING

Place a NitraClean tablet in the empty chamber. See "NitraClean cleaning tablet [→ 241]" for more information on using a NitraClean tablet.

8. Insert the BASKET lid in the cover holder of the DAC UNIVERSAL in such a way that the basket points down.

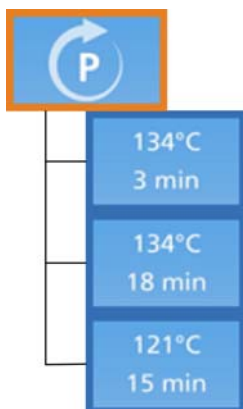
NOTICE

Make sure that the lid is inserted all the way into the holder so that the basket does not touch the wall of the chamber. Make sure there are no objects (other than the NitraClean tablet) in the chamber.

NOTICE

The DAC UNIVERSAL, the BASKET lid, and/or the instruments can be damaged if the BASKET lid is not inserted correctly.

↪ The solid instruments are in the BASKET lid; the DAC UNIVERSAL is still open and ready for a cycle.



9. Enter the "program selection" menu section.
10. Press the "Left/Right"-Keys accordingly to select the desired program.
11. Press the "Down"-Key to confirm the selection.
12. Return to the ready screen.
 - ↳ The selected program is displayed at the top of the ready screen. The program is shown as temperature/holding time.

IMPORTANT

If no program is selected, the standard program for reprocessing is used.

13. Make sure the BASKET lid is selected. If not press the "Up/Down"-Keys accordingly, to select this lid.

IMPORTANT

If no lid is selected the STANDARD lid is set as default.



14. Press the "Start/Stop"-Key to start the cycle.
 - ↳ A prompt appears on the display, as seen on the picture, asking the user to confirm that the BASKET lid is in fact inserted into the DAC UNIVERSAL.
15. Press the "Down"-Key to confirm that the BASKET lid is inserted into the DAC UNIVERSAL.
 - ↳ A prompt to press down on the safety ring will appear on the display.

16. Press down on the safety ring to start the cycle. If the safety ring is not pressed within 20 seconds, you must choose the lid and press the "Start/Stop"-Key again.
 - ↳ The BASKET lid of the DAC UNIVERSAL closes as soon as the safety ring is pressed.
 - ↳ The DAC UNIVERSAL automatically runs the cleaning and sterilization cycle.
 - ↳ The display shows at any time which phase the DAC UNIVERSAL is in, see section "Display information DAC UNIVERSAL ADVANCED [→ 71]".
 - ↳ When the selected cycle is completed the display will indicate as seen on the picture.
 - ↳ The lid moves about halfway out of the chamber. This indicates that a cycle has been completed and the instruments have been sterilized.
 - ↳ The cycle number is shown next to the completed cycle symbol.



CAUTION

Danger of burning!

Never hold your head directly over the DAC UNIVERSAL or touch the inserted lid, while the DAC UNIVERSAL opens, as steam comes out of the unit upon completion of a cycle.

! WARNING

After completion of the cycle, make sure that all solid instruments are still in the basket. If instruments have fallen into the chamber during the cycle, cleaning and sterilization have failed. In this case, reprocessing of the instruments must be repeated.

17. Press the "Down"-Key.

↳ The BASKET lid will open completely.

! CAUTION

Danger of burning!

Even when the BASKET lid is half or completely open, the instruments are still hot. Allow the extremely hot instruments to cool down after the process.

! CAUTION

Danger of burning!

The metal part of the lid is very hot. The plastic part of the basket can be hot. Please touch only the plastic part of the BASKET lid at the end of the cycle.



18. Remove the BASKET lid from the holder on the DAC UNIVERSAL at the end of the cycle to allow the instruments to cool down faster.

19. Place the BASKET lid on the counter or put it in the optional lid holder.

20. Check the instruments visually to make sure they are dry.

21. Check the instruments visually to make sure they have been cleaned.

22. Check the cycle number, properly conducted cycle on your documentation (printer, software, etc.): For sterilization, "Sterilization, time, ok" must be indicated.

23. Check whether the dark status bar of the chemical indicator is in the "ACCEPT" range.

↳ If everything is correct, reprocessing was successful.

24. Document the cycle according to the work instructions applicable in your practice.

25. Open the snap lock on the basket and take the small lid off the basket.

26. Remove the solid instruments from the BASKET lid.

27. Place the small lid back on the basket.

↳ The solid instruments can now be used again.

↳ Sterilization of unwrapped instruments is not sufficient for invasive procedures. After unwrapping the instruments another sterilization

must be conducted in the DAC UNIVERSAL or a class B sterilizer (e.g. DAC PROFESSIONAL). For sterilizing wrapped instruments in DAC UNIVERSAL, see "Reprocessing with the WRAPPED lid DAC UNIVERSAL ADVANCED [→ 110]".

5.3.4 Reprocessing with the WRAPPED lid DAC UNIVERSAL ADVANCED

The WRAPPED lid is used for reprocessing wrapped rotating handpieces and wrapped solid instruments.

IMPORTANT

The WRAPPED lid can not be used for the FLEX lid instruments. To get FLEX lid instruments sterilized, a class B sterilizer (e.g. DAC PROFESSIONAL) is necessary.



IMPORTANT

The WRAPPED lid is intended only for sterilizing wrapped instruments. Do not reprocess any unwrapped instruments in the WRAPPED lid.

WARNING

Before using the WRAPPED lid, the sterile filter included with the unit must be installed by a qualified service technician.

IMPORTANT

See "Functions with the WRAPPED lid [→ 23]" for compatibility and the exact requirements of the WRAPPED lid.

IMPORTANT

Packing-/wrapping material used with the WRAPPED lid in the DAC UNIVERSAL must be in accordance with EN868. Sealable paper bags and sealable transparent bags or tubes made of porous material and plastic composite film must be filled to only 3/4 of their total volume.

IMPORTANT

Overfilling may strain the seams.

There must be at least 30 mm space underneath the sealing rim between the sterilized product and the seam to be sealed

WARNING

If the wrapping of the wrapped instruments has been damaged, the instruments need to be rewrapped and resterilized.

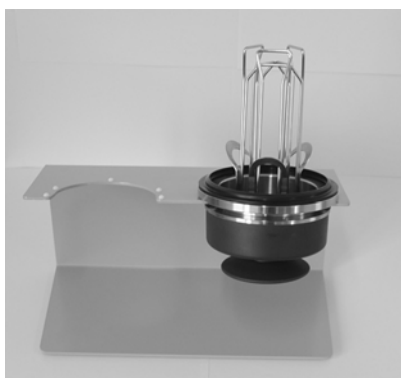
5.3.4.1 Start cycle on the WRAPPED lid DAC UNIVERSAL ADVANCED

IMPORTANT

The wrapped instruments to be reprocessed must first have been cleaned and sterilized in one of the 3 standard cycles for unwrapped instruments, see "Reprocessing with the STANDARD lid DAC UNIVERSAL ADVANCED [→ 99]" or "Reprocessing with the BASKET lid DAC UNIVERSAL ADVANCED [→ 104]".

IMPORTANT

Do not start the DAC UNIVERSAL without a lid inserted into the lid holder.



- ✓ All settings of the DAC UNIVERSAL were preset according to "Regular activities [→ 59]".
 - ✓ The DAC UNIVERSAL is switched on and ready for operation.
 - ✓ The maximum 3 instruments (2 when using a chemical indicator) were reprocessed and wrapped individually.
 - ✓ The WRAPPED lid is at hand.
1. Remove the WRAPPED lid from the holder on the DAC UNIVERSAL.
 2. Place the WRAPPED lid on the counter or put it in the optional lid holder.
 3. A class 5/6 chemical indicator can be attached in the STANDARD indicator holder. Clamp the STANDARD indicator holder to one of the three wire brackets of the WRAPPED lid so that the brackets of the STANDARD indicator holder point to the center of the lid. Press the STANDARD indicator holder as far as possible toward the lid. See "Testing with a chemical indicator [→ 60]" for more information on using a chemical indicator.
 4. Attach one wrapped instruments to each of the 3 wire brackets on the WRAPPED lid. Slide the wrapped instrument into the clamping mechanism consisting of a large and a small wire bracket. Slide the film of the wrapped instrument between the large wire bracket and the metal bracket to fasten the instrument firmly.

IMPORTANT

Rotating handpieces must be inserted with the head facing down.

IMPORTANT

The transparent side of the pouch should face outwards.

IMPORTANT

Make sure the instruments are firmly clamped into the brackets so they do NOT fall out during the cycle. After placing the instrument wrapped in a pouch in the wire brackets, pull the instrument lightly to make sure that it is properly attached between the brackets.

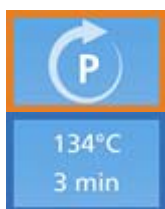
5. After placing the instrument wrapped in a pouch in the wire brackets, pull the instrument lightly to make sure that it is properly attached between the brackets.
6. Insert the WRAPPED lid in the cover holder of the DAC UNIVERSAL.

NOTICE

Make sure that the lid is inserted all the way into the holder and the wrapped instruments do not touch the wall of the chamber. Make sure there are no objects in the chamber.

NOTICE

The DAC UNIVERSAL and/or the instruments can be damaged if the WRAPPED lid is not inserted correctly.



- ↳ The instruments are on the WRAPPED lid; the DAC UNIVERSAL is still open and ready for a cycle.

IMPORTANT

Only the standard program is available for the WRAPPED lid.

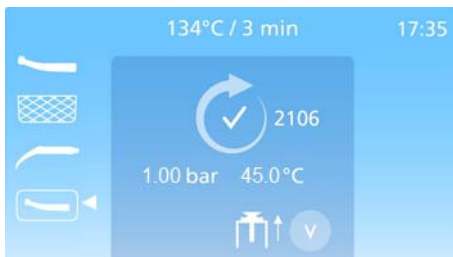
7. Make sure the WRAPPED lid is selected. If not press the "Up/Down"-Keys accordingly, to select this lid.

⚠ WARNING

If no lid is selected the STANDARD lid is set as default.



8. Press the "Start/Stop"-Key to start the cycle.
 - ↳ A prompt appears on the display, as seen on the picture, asking the user to confirm that the WRAPPED lid is in fact inserted into the DAC UNIVERSAL.
9. Press the "Right"-Key to confirm that the WRAPPED lid is inserted into the DAC UNIVERSAL.
 - ↳ A prompt to press down on the safety ring appears on the display.
10. Press down on the safety ring to start the cycle. If the safety ring is not pressed within 20 seconds, you must choose the lid and press the "Start/Stop"-Key again.
 - ↳ The WRAPPED lid of the DAC UNIVERSAL closes as soon as the safety ring is pressed.
 - ↳ The DAC UNIVERSAL automatically runs the sterilization cycle.
 - ↳ The display shows at any time which phase the DAC UNIVERSAL is in, see section "Display information DAC UNIVERSAL ADVANCED [→ 71]".



- ↪ When the selected cycle is completed the display will indicate as seen on the picture.
- ↪ The lid moves about halfway out of the chamber. This indicates that a cycle has been completed and the instruments have been sterilized.
- ↪ The cycle number is shown next to the completed cycle symbol.

⚠ CAUTION

Danger of burning!

Never hold your head directly over the DAC UNIVERSAL or touch the inserted lid, while the DAC UNIVERSAL opens, as steam comes out of the unit upon completion of a cycle.

⚠ WARNING

After completion of the cycle, make sure that all instruments are still properly attached to the WRAPPED lid. If instruments have fallen into the chamber during the cycle, sterilization has failed. In this case, the cycle must be repeated.

11. Press the "Down"-Key.

- ↪ The WRAPPED lid will open completely.

⚠ CAUTION

Danger of burning!

Even when the WRAPPED lid is half or completely open, the instruments are still hot. Allow the extremely hot instruments to cool down after the process.

⚠ CAUTION

Danger of burning!

The metal part of the lid is very hot. Please touch only the plastic part of the WRAPPED lid at the end of the cycle.

- 12.** Remove the WRAPPED lid from the holder on the DAC UNIVERSAL at the end of the cycle to allow the instruments to cool down faster.
- 13.** Place the WRAPPED lid on the counter or put it in the optional lid holder.
- 14.** Check the instruments visually to make sure they are dry.
- 15.** Check the instruments visually to make sure they have been cleaned.
- 16.** Check the cycle number, properly conducted cycle on your documentation (printer, software, etc.): For sterilization, "Sterilization, time, ok" must be indicated.





- 17.** Check whether the dark status bar of the chemical indicator is in the "ACCEPT" range.
 - ↳ If everything is correct, reprocessing was successful.
- 18.** Document the cycle according to the work instructions applicable in your practice.
- 19.** Remove every instrument from the WRAPPED lid. Pull every wrapped instrument singly from the respective bracket.
 - ↳ The instruments can now be used again. They can also be stored for later use.

5.3.5 Reprocessing with the FLEX lid DAC UNIVERSAL ADVANCED



The FLEX lid is used to clean and thermally disinfect ultrasonic scaler handpieces, scaler tips, airflow nozzles and sprayvit nozzles.

IMPORTANT

The FLEX lid is only for cleaning and high-level disinfection.

Tip: If there are many instruments to be decontaminated or to ensure the instruments will be available again quickly, we recommend using a second FLEX lid.

5.3.5.1 General placement of instruments DAC UNIVERSAL ADVANCED



NOTICE

All instruments must be placed straight onto the respective adapter to prevent damage to the O-rings.

NOTICE

The instruments must be easy to attach to the adapters. If the instrument does not attach to the adapter easily, it can be damaged. The manufacturer does not accept responsibility for instruments that are damaged due to being subjected to force.

WARNING

If instruments are attached to an unsuitable adapter or if instruments are damaged, disinfection and cleaning may fail. In this case, reprocessing of the instruments must be repeated.

General attachment

Place the instruments on their respective adapters of the FLEX lid.

Depending on the instrument and the kind of adapter, you must press or click the instrument onto the adapter, activate a snap lock on the adapter, or tighten a threaded ring on the instrument.

Please make sure that you use the lever on the side of the adapter (if applicable) and hear a slight "click" when you place the instrument on the adapter.

Pull lightly on the instrument to ensure that it is firmly attached to the adapter.

General attachment of scaling tips

WARNING

Scaler tips must be inserted with the associated torque wrench. The torque wrench should remain on the tip during the whole process.

1. The scaler tip was unscrewed from the ultrasonic handpiece with the torque wrench and the tip remains in the torque wrench.
2. Ensure that the torque wrench is correctly attached to the tip

NOTICE

Tips have to be screwed straight onto the adapter so they can't jam up.

General placement

The instruments should not be leaning on each other; otherwise they can be attached as preferred by the user.

Placement is described in the separate sections if it deviates from the general placement described here.

See "Adapters for the FLEX lid [→ 238]" for detailed instructions on the individual adapters.

5.3.5.2 Start cycle on the FLEX lid DAC UNIVERSAL ADVANCED

WARNING

The instruments may not be wrapped when using the FLEX lid, as cleaning and disinfection would then fail.

IMPORTANT

Do not start the DAC UNIVERSAL without a lid inserted into the lid holder.



- ✓ All settings of the DAC UNIVERSAL were preset according to "Regular activities [→ 59]".
 - ✓ The DAC UNIVERSAL is switched on and ready for operation.
 - ✓ The maximum number of 6 instruments are ready for reprocessing.
 - ✓ The FLEX lid is at hand.
1. Remove the FLEX lid from the holder on the DAC UNIVERSAL.
 2. Place the FLEX lid on the counter or put it in the optional lid holder.
 3. Plug each instrument onto the corresponding adapter in the FLEX lid. See "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" for more information on attaching the instruments. The adapters can be replaced if necessary, see "Mounting adapters [→ 53]".
 4. Attach a Class 5/6 chemical indicator in the FLEX indicator holder in the groove on the center post of the FLEX lid. See "Checking the reprocessing result with an indicator / PCD test device [→ 59]" for more information on using the chemical indicator / PCD test device.
 5. Insert the FLEX lid in the cover holder of the DAC UNIVERSAL in such a way that the instruments are pointing down.

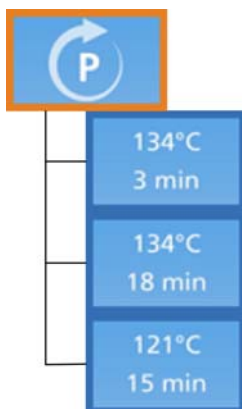
NOTICE

Make sure that the lid is inserted all the way into the holder so that the instrument heads do not touch the wall of the chamber. Make sure there are no objects in the chamber.

NOTICE

The DAC UNIVERSAL and/or the instruments can be damaged if a lid is not inserted correctly.

- ↪ There are instruments on the FLEX lid; the DAC UNIVERSAL is still open and ready for a cycle.



6. Enter the "program selection" menu section.
7. Press the "Left/Right"-Keys accordingly to select the desired program.
8. Press the "Down"-Key to confirm the selection.
9. Return to the ready screen.
 - ↳ The selected program is displayed at the top of the ready screen. The program is shown as temperature/holding time.

⚠ WARNING
 If no program is selected, the standard program for reprocessing is used.

10. Make sure the FLEX lid is selected. If not press the "Up/Down"-Keys accordingly, to select this lid.

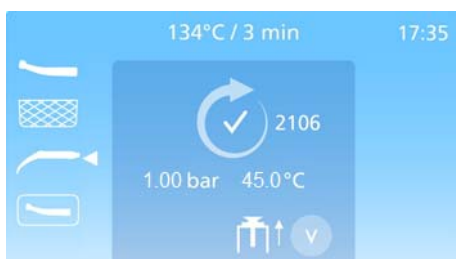
IMPORTANT
 If no lid is selected the STANDARD lid is set as default.



11. Press the "Start/Stop"-Key to start the cycle.
 - ↳ A prompt appears on the display, as seen on the picture, asking the user to confirm that the FLEX lid is in fact inserted into the DAC UNIVERSAL.

12. Press the "Down"-Key to confirm that the FLEX lid is inserted into the DAC UNIVERSAL.
 - ↳ A prompt to press down on the safety ring will appear on the display.

13. Press down on the safety ring to start the cycle. If the safety ring is not pressed within 20 seconds, you must choose the lid and press the "Start/Stop"-Key again
 - ↳ The FLEX lid of the DAC UNIVERSAL closes as soon as the safety ring is pressed.
 - ↳ The DAC UNIVERSAL automatically runs the cleaning and high-level disinfection cycle.
 - ↳ The display shows at any time which phase the DAC UNIVERSAL is in, see section "Display information DAC UNIVERSAL ADVANCED [→ 71]".



- ↳ When the selected cycle is completed the display will indicate as seen on the picture.
- ↳ The lid moves about halfway out of the chamber. This indicates that a cycle has been completed and the instruments have been reprocessed.
- ↳ The cycle number is shown next to the completed cycle symbol.

⚠ CAUTION

Danger of burning!

Never hold your head directly over the DAC UNIVERSAL or touch the inserted lid, while the DAC UNIVERSAL opens, as steam comes out of the unit upon completion of a cycle.

⚠ WARNING

After completion of the cycle, make sure that all instruments are still properly attached to the FLEX lid or the adapters. If instruments have fallen into the chamber during the cycle or if an instrument is no longer properly attached after the end of a cycle, cleaning and high-level disinfection have failed. In this case, reprocessing of the instruments must be repeated.

14. Press the "Down"-Key.

↳ The FLEX lid will open completely.

⚠ CAUTION

Danger of burning!

Even when the FLEX lid is half or completely open, the instruments are still hot. Allow the extremely hot instruments to cool down after the process.

⚠ CAUTION

Danger of burning!

The metal part of the lid is very hot. Please touch only the plastic part of the FLEX lid at the end of the cycle.



15. Remove the FLEX lid from the holder on the DAC UNIVERSAL at the end of the cycle to allow the instruments to cool down faster.

16. Place the FLEX lid on the counter or put it in the optional lid holder.

IMPORTANT

When they are cooling, the heads of the instruments should point upwards to prevent corrosion.

17. Check the instruments visually to make sure they are dry.

18. Check the instruments visually to make sure they have been cleaned.

19. Check the cycle number, properly conducted cycle on your documentation (printer, software, etc.): For high-level disinfection, "High-level disinfection, time, ok" must be indicated.

20. Check whether the dark status bar of the chemical indicator is in the "ACCEPT" range.

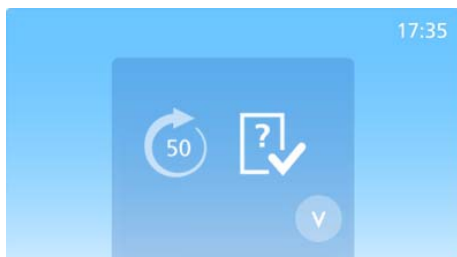
↳ If everything is correct, reprocessing was successful.

21. Document the cycle according to the work instructions applicable in your practice.



- 22.** Remove every instrument from the FLEX lid. See "Attaching instruments to the respective STANDARD lid adapters [→ 220]" for detailed instructions on removing the individual instruments.
- ↳ The instruments can now be used again.
 - ↳ High-level disinfection of unwrapped instruments is not sufficient for invasive procedures. Instruments must be wrapped and a sterilization must be conducted in a class B sterilizer (e.g. DAC PROFESSIONAL).

6 Cleaning and maintenance DAC UNIVERSAL ADVANCED



After every 50 cycles, the DAC UNIVERSAL will give a 2-second acoustic alarm and the display will indicate as shown on the left. This message reminds the user that the weekly cleaning/maintenance according to the Check & Clean (C&C) is due. The Check & Clean is included with the DAC UNIVERSAL.

The table below shows how often cleaning/maintenance should be carried out. The numbers at the far left of the table correspond with the subsections in the chapter.

The frequencies indicated are based on approx. 10 complete cycles per day. If the DAC UNIVERSAL is used more frequently, please adjust the cleaning/maintenance intervals accordingly.

Spare parts and consumables for the DAC UNIVERSAL are available from your local authorized dealer. Please see "Accessories [→ 218]" and "Consumables, spare parts, and tools [→ 245]" for the respective REFs.

Overview of tasks to be carried out.

Task	Frequency			
	Weekly or every 50 cycles*	Every 4 weeks or every 200 cycles	Every 3rd month	Every 2nd year or every 3000 cycles
1. Check oil supply to the chamber	✓			
2. Check water supply to the chamber	✓			
3. Check water supply on the lids	✓			
4. Check oil supply on the lid	✓			
5. Drain the watertank/chamber	✓			
6. Cleaning the water tank	✓			
7. Cleaning the drain filter	✓			
8. Remove and clean the waste water tank	✓			
9. Checking the adapters and the respective O-rings	✓			
10. Cleaning the empty chamber	✓			
11. Cleaning the housing of the unit	✓			
12. Cleaning the lids	✓			
13. Checking the safety ring		✓		
14. Changing the drain filter		✓		
15. Changing the O-rings on the adapters			✓	
16. Service by qualified technician				✓

* according to the Check & Clean

6.1 Checking oil supply to the chamber of the DAC UNIVERSAL ADVANCED

Frequency: weekly or every 50 cycles (whichever comes first).

In order to make sure that the DAC UNIVERSAL is able to lubricate the instruments correctly, the oil flow to the chamber needs to be tested.

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- ✓ The NitramOil #2 bottle is properly screwed into the DAC UNIVERSAL.
- ✓ The lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.

1. Enter the "manual oil operation" menu section, by pressing the "Left"-Key.
2. Press the "Down"-Key.
 - ↳ The oil dispenser will start to pump and oil flows through the bottom adapter into the chamber.
3. Repress the "Down"-Key when oil is visible.
 - ↳ The display of the DAC UNIVERSAL counts the number of times the oil dispenser pumps.



IMPORTANT

If the number indicated is >60 and there is no oil in the chamber, please contact your authorized dealer.

- ↳ The water and oil residue that is in the chamber and hoses will need to be drained and cleaned out, see section "Drain the chamber" in "Drain the water tank via the menu [→ 125]".

6.2 Checking water supply to the chamber of the DAC UNIVERSAL ADVANCED

Frequency: weekly or every 50 cycles (whichever comes first).

In order to make sure that the DAC UNIVERSAL is able to bring water to the chamber correctly, this operation needs to be tested.

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- ✓ The lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.

1. Enter the "manual water operation" menu section.
2. Press the "Down"-Key.





↪ Water is pumped through the internal hoses.

3. Repress the „Down“-Key, when water is visible in the chamber.
↪ The water and oil residue that is in the chamber and hoses will need to be drained and cleaned out, see section "Drain the chamber" in "Drain the water tank via the menu [→ 125]".

6.3 Checking water supply to the lids of the DAC UNIVERSAL ADVANCED

Frequency: weekly or every 50 cycles (whichever comes first).

In order to make sure that the DAC UNIVERSAL is able to bring water to the chamber and internal channels of the STANDARD & FLEX lids correctly, this operation needs to be tested.

IMPORTANT

The water supply to the lid needs only to be checked for the STANDARD and FLEX lids, since these are the only ones with internal water channels.

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
 - ✓ The lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.
 - ✓ You are wearing your protective gear.
 - ✓ The STANDARD lid, FLEX lid (if owned) and black lid extension piece for water are at hand.
 - ✓ The STANDARD lid, the FLEX lid and the chamber are cooled down.
1. Attach the black lid extension piece for water to the bottom of the lid.
 2. Place the other end of the black lid extension piece for water on the bottom adapter in the bottom of the chamber.



3. Assure the lid is attached vertically on the bottom adapter, as shown.
4. Enter the "manual water channels operations" option by pressing the "Left"-Key from the ready screen, following by the "Right"-Key.
 5. Press the "Down"-Key.

- ↳ Water is pumped through the internal water hoses and channels of the lid.
- 6. When water is visible from underneath the lid's top plate; observe that water is flowing freely from the 6 different adapters.
- 7. Repress the "Down"-Key.
- 8. Remove the black extension piece for water from the chamber and the lid.
- 9. Repeat the process for all available STANDARD and FLEX lids.
- 10. Press the "Up"-Key to return to the ready screen.
- ↳ The water and oil residue that is in the chamber and hoses will need to be drained and cleaned out, see section "Drain the chamber" in "Drain the water tank via the menu [→ 125]".

6.4 Checking oil supply to the STANDARD lid of the DAC UNIVERSAL ADVANCED

Frequency: weekly or every 50 cycles (whichever comes first).

In order to make sure that the DAC UNIVERSAL is able to lubricate the instruments correctly, the flow through the internal oil channels of the STANDARD lid needs to be tested.

IMPORTANT

The oil supply to the lid needs only to be checked for the STANDARD lid, since this is the only one with internal oil channels.

IMPORTANT

This test will use water to test the internal oil channels, not oil.

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
 - ✓ The lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.
 - ✓ You are wearing your protective gear.
 - ✓ The STANDARD lid and the white lid extension piece for oil are at hand.
 - ✓ The STANDARD lid and the chamber are cooled down.
1. Attach the white lid extension piece for oil to the bottom of the lid.
 2. Place the other end of the white lid extension piece for oil on the bottom adapter in the bottom of the chamber.





3. Assure the lid is attached vertically on the bottom adapter, as shown.
4. Enter the "manual water channels operations" option by pressing the "Left"-Key from the ready screen, following by the "Right"-Key.
5. Press the "Down"-Key.
 - ↳ Water is pumped through the internal oil hoses and channels of the lid.
6. When water is visible from underneath the lid's top plate; observe that water is flowing freely from the 6 different adapters.
7. Repress the "Down"-Key.
8. Remove the white extension piece for oil from the chamber and the lid.
9. Repeat the process for all available STANDARD lids.
10. Press the "Up"-Key to return to the ready screen.
 - ↳ The water and oil residue that is in the chamber and hoses will need to be drained and cleaned out, see section "Drain the chamber" in "Drain the water tank via the menu [→ 125]".

6.5 Drain the water tank of the DAC UNIVERSAL ADVANCED

Frequency: weekly or every 50 cycles (whichever comes first).

IMPORTANT

If you have installed the DAC UNIVERSAL with a permanent water connection, please turn off the water.

You have the following options for emptying the water tank:

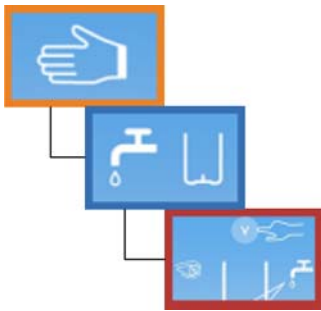
- Drain the water tank via the menu
- Drain the water tank via a hose



6.5.1 Drain the water tank via the menu

Pump water into the chamber

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- ✓ The water supply is disconnected (for a permanent water supply).
- ✓ The STANDARD lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.



1. Enter the "manual water operation" menu section.
2. Press the "Down"-Key.
 - ↳ Water is pumped into the chamber.
3. When the chamber is 3/4 filled with water, press the "Down"-Key to stop pumping.

Drain the chamber

1. Insert the STANDARD lid back into the lid holder of the DAC UNIVERSAL.
2. Press the "Up"-Key to return to the "Manual control" menu section.
3. Navigate through the "Drain chamber" option, using the "Left/Right"-Keys accordingly.
4. Press the "Down"-Key to confirm.
 - ↳ The unit closes automatically.
 - ↳ The tank is emptied.
 - ↳ The lid opens again automatically after 60 seconds.

IMPORTANT

If the water tank and/or chamber are not completely empty, repeat all sections from the beginning until both are completely empty.

IMPORTANT

If you have installed the DAC UNIVERSAL with a permanent water connection, please remember to turn the water back on.

IMPORTANT

If there is no permanent water connection, fill the water tank with demineralized or distilled water (water conductivity < 3.0 µS/cm).

6.5.2 Drain the water tank via a hose



- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- ✓ The lid of the DAC UNIVERSAL is inserted.

IMPORTANT

Steps 1-3 are required only if there is a permanent water connection.

1. Switch off the water of your water conditioning system.
2. Open the "Water" quick coupling at the back of the DAC UNIVERSAL unit by twisting it counterclockwise.
3. Detach the hose.



4. Attach a 6/4-mm hose to the "Water" quick coupling at the back of the unit and twist it clockwise firmly.
5. Place the end of the hose in a sink or bucket.

IMPORTANT

The DAC UNIVERSAL must be placed higher than the sink/bucket to allow the water to drain out.

↳ The hose for draining the water tank is installed.

6. Insert the STANDARD lid in the cover holder of the DAC UNIVERSAL.

7. Enter the "drain tank" menu section.

8. Press the "Down"-Key to confirm.

↳ The water is drained from the tank through the hose into the drain/sink or into a bucket.

↳ This process takes approx. 5-10 minutes.

9. Press the "Up"-Key when the water tank is completely empty.

10. Press the "Up"-Key until the ready screen reappears.

↳ The water tank is empty.

11. Open the "Water" quick coupling by twisting it counterclockwise.

12. Detach the hose used for draining the water tank.

IMPORTANT

Step 13 is required only if there is a permanent water connection.

13. Reattach the normal 6/4-mm hose to the "Water" quick coupling at the back of the unit and twist it clockwise firmly.

IMPORTANT

If you have installed the DAC UNIVERSAL with a permanent water connection, please remember to turn the water back on.

IMPORTANT

If there is no permanent water connection, fill the water tank with demineralized or distilled water (water conductivity < 3.0 $\mu\text{S}/\text{cm}$).

6.6 Cleaning the water tank

Frequency: weekly or every 50 cycles (whichever comes first).

✓ The water tank is empty, see "Drain the water tank of the DAC UNIVERSAL STANDARD [→ 196]".

✓ The DAC UNIVERSAL is switched off.

1. Remove the sieve from the water tank



2. Grasp the recesses of water tank with both hands.

3. Wriggle the water tank carefully until it comes loose.



4. Lift the water tank straight out of the DAC UNIVERSAL.





5. Clean the water tank with warm water (maximum 50°C / 122°F).



6. Clean the filter with warm water (maximum 50°C / 122°F).



7. Clean the float in the water tank carefully with a moist cloth.



8. Wipe the tank dry with a clean cloth.



9. Wipe the sieve dry with a clean cloth.

10. Grasp the recesses of water tank with both hands again.

11. Insert the water tank back into the DAC UNIVERSAL.

12. Wriggle slightly until the water tank is firmly in place.

NOTICE

When inserting the water tank, make sure the float is put through the opening in the water tank.

13. Place the sieve back on the water tank.

14. For manual water supply: Fill demineralized or distilled water (water conductivity < 3.0 $\mu\text{S}/\text{cm}$) into the water tank.

15. Reconnect the DAC UNIVERSAL to the power supply.

⚡ The DAC UNIVERSAL is now switched on and ready for operation again.

6.7 Cleaning the drain filter

Frequency: weekly or every 50 cycles (whichever comes first).

IMPORTANT

At approx. 10 cycles per day, the drain filter must be changed every 4 weeks, see "Changing the drain filter [→ 138]"

- ✓ The DAC UNIVERSAL is switched off and cooled down.
- ✓ You are wearing your protective gear.
- ✓ The filter key included with the unit is at hand.



1. Unscrew the lid of the filter housing using the filter key.



2. Unscrew the drain filter from the filter housing counterclockwise using the filter key.

3. Clean the drain filter thoroughly under running water.
4. Screw the drain filter onto the filter housing clockwise using the filter key.

NOTICE

Tighten the drain filter well without using force.

5. Screw the lid of the filter housing back on clockwise with the filter key.

NOTICE

Tighten the filter housing well without using force.

6.8 Remove and clean the drain tank

Frequency:

If using manual water: Weekly or every 50 cycles (whichever comes first) or when it is full.

If using automatic water: Daily or every 50 cycles (whichever comes first) or when it is full.

NOTICE

Do not start a cycle if the DAC UNIVERSAL is not connected to the drain tank or drainage system.



- ✓ The DAC UNIVERSAL is switched off and cooled down.
- ✓ The waste water tank is cooled down.
- ✓ You are wearing your protective gear.



1. Unscrew the lid of the drain tank.



2. Remove the condensation tube.
3. Empty the waste water tank. Dispose of the waste water according to the national guidelines and the applicable regulations for waste disposal.
4. Rinse the waste water tank thoroughly with hot water and then empty it again completely.
5. Soak a soft cloth in hot water and wring it out well. Use the cloth to clean the exterior of the waste water tank and the condensation tube.



6. Fill the clean waste water tank with water up to the lowest mark on the label.



7. Add isopropyl alcohol (alcohol $\geq 70\%$) up to the second mark on the label. This prevent the growth of bacteria in the drain tank.
 8. Replace the condensation tube and screw the lid on firmly.
 9. Place the drain tank no more than 3 m from the DAC UNIVERSAL and at a lower height.
- ↪ The waste water tank is cleaned and emptied.

6.9 Checking the adapters and the respective O-rings

Frequency: weekly or every 50 cycles (whichever comes first).

CAUTION

Danger of burning!

The metal part of the lid is very hot at the end of the cycle. Please allow the lid to cool down before cleaning it.

IMPORTANT

At approx. 10 cycles per day, the O-rings have to be replaced very 3 months. see "Changing the O-rings on the adapters [→ 139]".

IMPORTANT

If an O-ring on the adapters is damaged or missing, replace it, see "Changing the O-rings on the adapters [→ 139]".

Process



- ✓ The lid is at hand and cooled down.
- 1. Place the lid on the counter or put it in the optional lid holder.
- 2. Check the attachment of the adapters to the lid by pulling each adapter lightly.
- 3. If an adapter is loose, tighten the screws with the 1.5 mm Allen wrench included with the unit.
- 4. Repeat for all available STANDARD or FLEX lids.

6.10 Cleaning the empty chamber of the DAC UNIVERSAL ADVANCED

Frequency: weekly or every 50 cycles (whichever comes first).

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- ✓ The STANDARD lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.
- ✓ There is no water or oil in the chamber or the hoses.
- 1. Clean the empty chamber with a lint-free cloth and a solution of 70% isopropyl alcohol alcohol.



IMPORTANT

The chamber may not be cleaned with agents containing chlorine.



- 2. Insert the STANDARD lid in the cover holder of the DAC UNIVERSAL.

NOTICE

No instruments may be on the STANDARD lid.

NOTICE

Make sure that the lid is inserted all the way into the holder.

NOTICE

Make sure there are no objects in the chamber.



3. Place a NitraClean tablet in the empty chamber. See "Functions with the BASKET lid [→ 22]" for more information on using a NitraClean tablet.
 - ↳ If the standard program (134°C/3 min) is already selected, jump to nr. 7 below.
4. Enter the "program selection" menu section.
5. Press the "Down"-Key to confirm the selection hereby selecting the standard program.
6. Return to the ready screen.
7. Make sure the STANDARD lid is selected otherwise use the "Up/Down"-Keys accordingly on the ready screen, to select the STANDARD lid.
8. Press the "Start/Stop"-Key to start the cycle.
 - ↳ A prompt to press down on the safety ring appears on the display.
9. Press down on the safety ring to start the cycle. If the safety ring is not pressed within 20 seconds, you must choose the lid and press the "Start/Stop"-Key again.
 - ↳ The STANDARD lid of the DAC UNIVERSAL closes as soon as the safety ring is pressed.
 - ↳ The DAC UNIVERSAL automatically runs the cleaning and sterilization cycle.
 - ↳ The display shows at any time which phase the DAC UNIVERSAL is in, see section "Display information DAC UNIVERSAL ADVANCED [→ 71]".
 - ↳ When the selected cycle is completed the display will indicate as seen on the picture. The lid moves about halfway out of the chamber.



⚠ CAUTION

Danger of burning!

Never hold your head directly over the DAC UNIVERSAL when it opens and do not hold the lid firmly, as steam comes out of the unit when it opens.

10. Press the "Down"-Key.
 - ↳ The STANDARD lid will open completely.

⚠ CAUTION

Danger of burning!

The metal part of the lid is very hot. Please touch only the plastic part of the lid at the end of the cycle.

11. Remove the STANDARD lid from the holder on the DAC UNIVERSAL at the end of the cycle.
 12. Place the STANDARD lid on the counter or put it in the optional lid holder.
- ↪ The chamber and hoses are clean.

6.11 Cleaning the housing of the unit



Frequency: weekly or every 50 cycles (whichever comes first).

- ✓ The DAC UNIVERSAL is switched off and cooled down.
- The DAC UNIVERSAL is switched off and cooled down.

IMPORTANT

The surface may not be cleaned with agents containing chlorine.

6.12 Cleaning the lids

Frequency: weekly or every 50 cycles (whichever comes first).

⚠ CAUTION

The metal part of the lid is very hot at the end of the cycle. Please allow the lid to cool down before cleaning it.



1. Clean all available lids with warm water
2. Clean the lids with a solution of 70% isopropyl alcohol.

IMPORTANT

The lid may not be cleaned with agents containing chlorine.

6.13 Checking the safety ring of the DAC UNIVERSAL ADVANCED



Frequency: every 4 weeks or every 200 cycles (whichever comes first).

✓ The DAC UNIVERSAL is switched on and ready for operation.

1. Insert the STANDARD lid in the cover holder of the DAC UNIVERSAL.

NOTICE

No instruments may be on the STANDARD lid.

NOTICE

Make sure that the lid is inserted all the way into the holder.

NOTICE

Make sure there are no objects in the chamber.

↳ If the standard program (134°C/3 min) is already selected, jump to nr. 5 below.

2. Enter the "program selection" menu section.
3. Press the "Down"-Key to confirm the selection hereby selecting the standard program.

IMPORTANT

If no program is selected, the standard program is used.

4. Return to the ready screen.
5. Make sure the STANDARD lid is selected otherwise use the "Up/Down"-Keys accordingly on the ready screen, to select the STANDARD lid.
6. Press the "Start/Stop"-Key to start the cycle.



- ↪ A prompt to press down on the safety ring appears on the display.
- 7. Press down on the safety ring to start the cycle. If the safety ring is not pressed within 20 seconds, you must choose the lid and press the "Start/Stop"-Key again.
 - ↪ The lid closes.
- 8. While the lid is closing, please press on the safety ring and then release it.
 - ↪ The lid moves up again for 5 seconds, message 86 appears on the display, and an acoustic signal sounds.
- 9. Press the "Up"-Key until the ready screen reappears.
 - ↪ The lid holder of the DAC UNIVERSAL moves up completely.

⚠ CAUTION

If the check does not proceed as described above, the DAC UNIVERSAL may not continue to be used. Please contact your authorized dealer.

6.14 Changing the drain filter

Frequency: every 4 weeks or every 200 cycles (whichever comes first).

IMPORTANT

The drain filter should be cleaned weekly or every 50 cycles, see "Cleaning the drain filter [→ 130]".

- ✓ The DAC UNIVERSAL is switched off and cooled down.
- ✓ You are wearing your protective gear.
- ✓ The filter key included with the unit is at hand.

1. Unscrew the lid of the filter housing using the filter key.



2. Unscrew the drain filter from the filter housing counterclockwise using the filter key.
3. Dispose of the drain filter with the practice waste. Observe the relevant regulations in your country.
4. Screw a new drain filter onto the filter housing clockwise using the filter key.

NOTICE

Tighten the drain filter well without using force.

5. Screw the lid of the filter housing back on clockwise with the filter key.

NOTICE

Tighten the filter housing well without using force.

- ↳ The drain filter has been replaced.

6.15 Changing the O-rings on the adapters

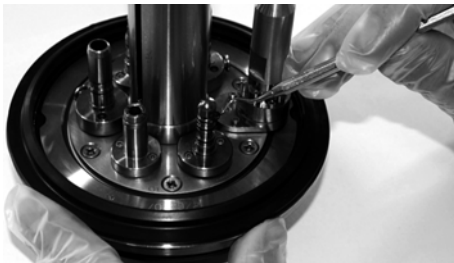
Frequency: every 3 months or every 600 cycles (whichever comes first).

Some adapters have internal O-rings that must be replaced by your service technician during servicing.

See "Consumables, spare parts, and tools [→ 245]" for an overview of which adapters require O-rings.

- ✓ The STANDARD lid is at hand.

1. Remove the O-rings from the adapters using a dental probe or other instrument.
2. Slide the O-rings to the notches on the adapter.



⚠ WARNING

If the O-rings are not moved correctly to the notches on the adapter, the instruments and the O-rings can be damaged. Correct sterilization is not ensured.

6.16 Biennial Service

Frequency: every 2nd year or every 3000 cycles (whichever comes first).

When 2 years has passed or 3000 cycles, since the last service or the DAC UNIVERSAL was put into use for the first time, the screen "Service needed" will be displayed, simultaneously with a 2 second acoustic alarm.

When this happens a qualified technician must perform service on the DAC UNIVERSAL, in order to ensure the performance of the DAC UNIVERSAL.

7 Display messages DAC UNIVERSAL ADVANCED



Should the DAC UNIVERSAL encounter a display message, this will be shown on the display as seen on the picture. The error symbol is displayed in the top left corner followed by the code of the concerning error.

For some display messages that could be easy solvable, by the user, additional pictograms are shown, to help the user understand the display message and start troubleshooting.

If the display message is not immediately recognized by the user, the display message must be located in the list and the appropriate actions taken, see "Display messages and what they mean DAC UNIVERSAL ADVANCED [→ 142]".

For display message which have occurred during sterilization an additional warning symbol is shown.

IMPORTANT

When the DAC UNIVERSAL shows a display message, a complete cycle may not have been conducted. The instruments are thus considered non-sterile and must be reprocessed again.

⚠ CAUTION

Danger of burning!

Hot steam may emerge from the chamber.

- Please do not open the DAC UNIVERSAL when the temperature is still above 104°C (219°F), see display indicator.

IMPORTANT

If the DAC UNIVERSAL shows the same display message more than once, and this is not due to lack of consumables, please contact your authorized dealer.

Reset display messages

IMPORTANT

When an error is encountered, an alarm will sound and the display message will appear in the display.

- Please note the message before resetting the alarm.
- Press the "Up"-Key to stop the alarm and return.
- ☞ When the "Up"-Key is pressed, the lid is raised in a duration of approx. 2 seconds. The lid stops until the temperature drops to less than 104°C / 219°F. Then it opens completely.






IMPORTANT


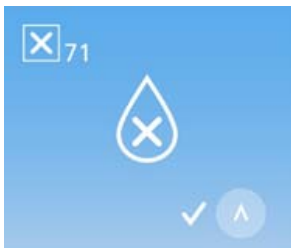


If a display message is displayed during sterilization, it is shown again when the lid opens. To delete this display message and start a new cycle, you must press the "Up"-Key and the "Right"-Key simultaneously. This is indicated on the display.





7.1 Display messages and what they mean DAC UNIVERSAL ADVANCED







The display messages each have an assigned number. The number will be visible in the top left corner, next to the error symbol (Not necessarily shown below). The unique code number for each display message is shown in the table below, combined with an explanation to the specific display message:


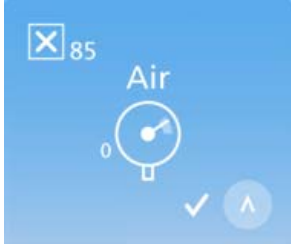




Code no.	Pictogram	Description	Corrective action
60		The chamber temperature and the theoretical steam temperature deviate from each other more than 2K.	Please contact your authorized dealer.
61		The software has not registered a change in temperature in the steam generator for 3 minutes.	Please contact your authorized dealer.
62		The temperature required for building up pressure for sterilization was not reached within 7½ minutes.	<p>Increase the level of the "Ambient temperature sensitivity" settings.</p> <p>If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank.</p> <p>If the DAC UNIVERSAL is in a room with a temperature < 16°C / 61°F, ensure that operating conditions is fulfilled.</p> <p>Press the "Up" and "Right"-Keys simultaneously to reset and then restart the DAC UNIVERSAL.</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
63		Incorrect setting of the water level switch.	Please contact your authorized dealer.

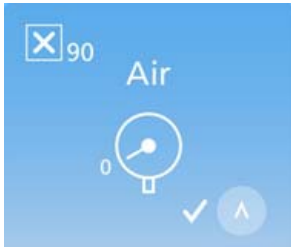



Code no.	Pictogram	Description	Corrective action
64		The safety system was activated.	Please contact your authorized dealer.
65		The safety system is defective.	Please contact your authorized dealer.
66		The temperature was too high during sterilization.	Please contact your authorized dealer.
67		The sterilization time was less than 3 minutes.	The instruments must be sterilized again. If the error occurs repeatedly, please contact your authorized dealer.
68		The pressure is too high during the pressure test.	Please contact your authorized dealer.

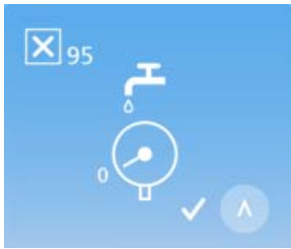


Code no.	Pictogram	Description	Corrective action
70		The pressure in the chamber does not drop quickly enough after the pressure test.	<p>Drain water from the chamber.</p> <p>Clean or change the drain filter, see "Cleaning the drain filter [→ 130]" or "Changing the drain filter [→ 138]".</p> <p>Make sure the drain hose is not blocked, defective, or kinked.</p> <p>IMPORTANT: The drain hose must be made of a heat-resistant material such as PTFE.</p> <p>Empty the drain tank if it is full.</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
71		The DAC UNIVERSAL is blocked due to insufficient water quality in the water tank.	<p>Drain the water tank if necessary. Fill it with fresh demineralized or distilled water (water conductivity < 3.0 µS/cm).</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
72		The lid will not open	<p>Remove anything blocking the lid.</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
73		The sterilization temperature was not maintained during the back-flush process..	<p>If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank.</p> <p>Press the "Up" and "Right"-Keys simultaneously to reset and then restart the DAC UNIVERSAL.</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>



Code no.	Pictogram	Description	Corrective action
74		When heating for sterilization, a temperature of 120°C / 248°F was not reached within 2.5 minutes.	<p>Increase the level of the "Ambient temperature sensitivity" settings.</p> <p>If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank.</p> <p>If the DAC UNIVERSAL is in a room with a temperature < 16°C / 61°F, ensure that operating conditions is fulfilled.</p> <p>Press the "Up" and "Right"-Keys simultaneously to reset and then restart the DAC UNIVERSAL.</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
75		Heating for sterilization from 120°C / 248°F to 134°C / 273°F exceeded 2.5 minutes.	<p>Increase the level of the "Ambient temperature sensitivity" settings.</p> <p>If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank.</p> <p>If the DAC UNIVERSAL is in a room with a temperature < 16°C / 61°F, ensure that operating conditions is fulfilled.</p> <p>Press the "Up" and "Right"-Keys simultaneously to reset and then restart the DAC UNIVERSAL.</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
76		Valve error	Please contact your authorized dealer.
77		Valve error	Please contact your authorized dealer.

Code no.	Pictogram	Description	Corrective action
78		Valve error	Please contact your authorized dealer.
79		Valve error	Please contact your authorized dealer.
80		After reducing the water, the desired sterilization temperature was not reached.	If the water level is too low, fill demineralized or distilled water (water conductivity <math>< 3.0 \mu\text{S}/\text{cm}</math>) into the water tank. Please contact your authorized dealer.
81		Low water level in the water tank or oil bottle, see DAC UNIVERSAL display	If the water level is too low, fill demineralized or distilled water (water conductivity <math>< 3.0 \mu\text{S}/\text{cm}</math>) into the water tank. Replace the NitramOil #2 bottle if it is empty, see "Adding/replacing the lubrication concentrate". If the error occurs repeatedly, please contact your authorized dealer.
82		Error in the steam generator	Please contact your authorized dealer.
83		The temperature sensor in the chamber is defective.	Please contact your authorized dealer.

Code no.	Pictogram	Description	Corrective action
84		The sterilization temperature was not maintained during sterilization.	If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank. If the error occurs repeatedly, please contact your authorized dealer.
85		The pressure sensor is defective.	Please contact your authorized dealer.
86		The safety ring was activated when the lid was closed.	Press the "Up" and "Right"-Keys simultaneously. Make sure that the lid is placed properly in the lid holder. Restart the cycle. If the error occurs repeatedly, please contact your authorized dealer.
87		The safety ring is defective.	Please contact your authorized dealer.
88		Vapor pressure was too low during sterilization.	If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank. Press the "Up" and "Right"-Keys simultaneously to reset and then restart the DAC UNIVERSAL. If the error occurs repeatedly, please contact your authorized dealer.
89		Vapor pressure was too high during sterilization.	Please contact your authorized dealer.

Code no.	Pictogram	Description	Corrective action
90		Too little pressure during the pressure test.	<p>Make sure your compressor is switched on.</p> <p>Check the seal on the lid. If it appears to have a leak, please contact your authorized dealer.</p> <p>Check whether the pressure at the "Air" connection at the back of the unit is 5-8 bar. If pressure falls significantly during use, contact the compressor supplier.</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
91		The pressure dropped during the pressure test.	<p>Check the seal on the lid. If it appears to have a leak, please contact your authorized dealer.</p> <p>Remove any dirt that may be present.</p> <p>Make sure that the lid is placed properly in the lid holder.</p> <p>Check whether the O-ring of the filter housing is properly attached.</p> <p>Replace the O-ring if it is damaged.</p> <p>Attach the O-ring of the filter housing properly.</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
92		The power supply of the DAC UNIVERSAL was interrupted or the "Up"-Key was activated during the cycle.	<p>Press the "Up" and "Right"-Keys simultaneously to reset and then restart the DAC UNIVERSAL.</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
93		The steam generator is overheated.	<p>Switch the DAC UNIVERSAL off immediately.</p> <p>Please contact your authorized dealer.</p>

Code no.	Pictogram	Description	Corrective action
95		The DAC UNIVERSAL "requested" water in standby mode more than 7 times.	<p>IMPORTANT! This error can occur only if the DAC UNIVERSAL is connected to a permanent water supply.</p> <p>Make sure the DAC UNIVERSAL is supplied with water.</p> <p>If error 95 was caused by a leak, there will be a large pool of water on the counter under the DAC UNIVERSAL.</p> <p>Check for water under the DAC UNIVERSAL. If this is the case, interrupt the water supply to the DAC UNIVERSAL and please contact your authorized dealer.</p>
96		Too little pressure during purging of instruments.	Please contact your authorized dealer.
97		No water during external cleaning.	<p>Press the "Up" and "Right"-Keys simultaneously to reset and then restart the DAC UNIVERSAL.</p> <p>If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank.</p> <p>Pump water into the chamber, as described in "Checking water supply to the chamber of the DAC UNIVERSAL ADVANCED [→ 122]", until water appears at the bottom of the chamber. If this is the case, see "Drain the water tank". If this is the case, see "Drain the water tank of the DAC UNIVERSAL ADVANCED [→ 125]".</p> <p>If no water appears in the chamber, please contact your authorized dealer.</p> <p>Empty the drain tank if it is full.</p> <p>Clean or change the drain filter.</p> <p>Make sure the drain hose is not blocked, defective, or kinked.</p> <p>IMPORTANT!</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>

Code no.	Pictogram	Description	Corrective action
98		The lid will not close.	<p>Press the "Up"-Key to reset and wait until the lid is in its highest position.</p> <p>Make sure that the lid was placed properly in the lid holder.</p> <p>Look for objects that prevent the lid from closing completely and remove them.</p> <p>Start a new cycle.</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
99		The program settings must be checked.	Please contact your authorized dealer.

7.2 Errors without a message

Description	Corrective action
Leakage.	Wipe away any water that may have been spilled after filling. If the unit continues to leak, please contact your authorized dealer.
There is water in the chamber after end of cycle	Clean or change the drain filter, see "Cleaning the drain filter [→ 130]" or "Changing the drain filter [→ 138]". Check whether the drain hose is blocked or damaged. Empty the drain tank if it is full. If the error occurs repeatedly, please contact your authorized dealer.
Condensation in the instruments.	If the instruments are to be stored for an extended period, it is important to purge them (horizontally) with compressed air to remove condensation from the instruments. Condensation can lead to rust. IMPORTANT: Use the compressed air at the pressure level (bar) recommended by the instrument manufacturer. The instruments must be wrapped after purging.
Adapter is loose.	Tighten the adapter with the Allen wrench included.
Wrong liquid.	If a liquid other than demineralized or distilled water has been filled into the water tank, the DAC UNIVERSAL may not be used. Please contact your authorized dealer.
Sterilization OFF safety ring! (A long acoustic alarm will be given simultaneously).	Your DAC UNIVERSAL technician has run a special program. Disconnect the plug of the DAC UNIVERSAL and reconnect it to the power supply. WARNING: Otherwise no sterilization will take place!
The DAC UNIVERSAL does not open.	If the lid holder on the safety ring is stuck, please first reset, see "Reset DAC UNIVERSAL ADVANCED [→ 152]". IMPORTANT: The autoclave may not be started if the lid is not in the correct position.
The DAC UNIVERSAL does not take in any water.	Check whether the automatic water intake is activated in the DAC UNIVERSAL menu, see "Menu system DAC UNIVERSAL ADVANCED [→ 77]". Check whether water from the external water supply is fed to the DAC UNIVERSAL. If the error occurs repeatedly, please contact your authorized dealer.
A metallic sound is heard when the pump is activated.	Please contact your authorized dealer.

Description	Corrective action
The oil dispenser does not dispense oil.	<p>Check whether there is oil in the NitramOil #2 bottle and whether oil is visible in the oil dispenser.</p> <p>Replace the NitramOil 2 bottle if it is empty, see "Adding/replacing the lubrication concentrate".</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
The DAC UNIVERSAL does not heat up.	<p>If the safety system was activated and the DAC UNIVERSAL does not open, please reset, see "Reset DAC UNIVERSAL ADVANCED [→ 152]".</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>

If the alarm lamp flashes, but no acoustic alarm is given, the system has reached 3000 cycles or the last servicing was 24 months ago. Please contact your authorized dealer for servicing the DAC UNIVERSAL. The DAC UNIVERSAL can still be used until servicing if "only" the alarm lamp flashes and no other message is displayed.

7.3 Reset DAC UNIVERSAL ADVANCED



If the DAC UNIVERSAL was started without attaching the lid in the lid holder and if the lid holder pressed the safety ring down and can no longer be opened, please proceed as follows:

- ✓ The DAC UNIVERSAL is switched on.
- ✓ The allen wrench included with the unit is at hand.



1. Put the Allen wrench into the small opening at the back of the unit to fasten the adapter.
2. Press the Allen wrench into the opening until you hear a slight click.
 - ↳ The lid holder of the DAC UNIVERSAL moves up somewhat.
 - ↳ Error 86 is displayed and an acoustic signal sounds.
3. Press the "Up"-Key until the ready screen reappears.
 - ↳ The lid holder of the DAC UNIVERSAL moves up completely.
 - ↳ The DAC UNIVERSAL ready for operation again.

8 Operation DAC UNIVERSAL STANDARD

8.1 Regular activities

The DAC UNIVERSAL was installed by a service technician according to the instructions in the "Installation [→ 49]" section.

See below for an overview of the activities that must be conducted during the regular use of the DAC UNIVERSAL.

Activities and relevant chapter in the Operating Instructions
„Pre- and post-reprocessing of instruments [→ 153]“
„Checking the reprocessing result with an indicator / PCD test device [→ 153]“
Replacing the lubrication concentrate, see "Adding/replacing the lubrication concentrate [→ 160]"
„Checking oil supply to the chamber of the DAC UNIVERSAL STANDARD [→ 193]“
„Filling the water tank [→ 163]“
„Checking water supply to the chamber of the DAC UNIVERSAL STANDARD [→ 193]“

8.1.1 Pre- and post-reprocessing of instruments

IMPORTANT

Please follow the regulations and guidelines applicable in your country in your practice.

IMPORTANT

Please follow the instrument manufacturer's instructions when handling the instruments.

IMPORTANT

The chuck of the instruments must be lubricated regularly after a mechanical cleaning according to the requirements of the instrument manufacturer.
 If possible let oil remain over night in the instrument and run a cycle later in the DAC UNIVERSAL.

8.1.2 Checking the reprocessing result with an indicator / PCD test device

IMPORTANT

Please follow the regulations and guidelines applicable in your country in your practice.

Installation / major repairs:

Before using the DAC UNIVERSAL after installation or larger repairs, we recommend checking the sterilization result using a Class 5 chemical indicator and/or a PCD test device.

See "Testing with a chemical indicator [→ 154]" for details of the procedure.

See "Testing with a PCD process challenge device [→ 158]" for details of the procedure.

Daily monitoring:

The manufacturer recommends using a chemical indicator for every cycle.

A Class 5 chemical indicator is used for testing with the standard or sensitive program.

See "Testing with a chemical indicator [→ 154]" for details of the procedure.

Weekly monitoring:

The manufacturer recommends using a chemical indicator in a PCD test device once a week to simulate a steam penetration test and confirm and ensure proper sterilization.

See "Testing with a PCD process challenge device [→ 158]" for details of the procedure.

The manufacturer also recommends testing for protein residue after a cycle using a protein detector once a week to check the cleaning quality. The manufacturer recommends conducting the test with "MediSafe MediCheck™". You can obtain it from your dealer or at "<http://www.medisafegmbh.com/katalog/en/MediCheck-Protein-residue-test.html>".

See "Testing with a protein residue test [→ 160]" for details of the procedure.

8.1.2.1 Testing with a chemical indicator

IMPORTANT

Use a commercial chemical indicator (Class 5), e.g. 3M™ Comply™ SteriGage™ for the standard/sensitive program.

IMPORTANT

Use a commercial chemical indicator (Class 6), e.g. gke Steri-Record C-S-P-6-SV2 for the prion program.

IMPORTANT

All chemical indicators used in the DAC UNIVERSAL must be coated or non-paper chemical indicators.

IMPORTANT

Follow the manufacturer's instructions for use when using a chemical indicator.

An indicator holder and a chemical indicator are required for batch testing.

The STANDARD indicator holder is used for the STANDARD lid and for wrapped instruments on the WRAPPED lid, see "Using a chemical indicator with the WRAPPED lid [→ 156]".

The FLEX indicator holder is used for the FLEX lid.

The appropriate indicator holder is used with a Class 5 chemical indicator, when using the standard or sensitive program.

The appropriate indicator holder is used with a Class 6 chemical indicator, when using the prion program.

A chemical indicator can be used in combination with the appropriate indicator holder for batch control of the sterilization process of unwrapped instruments.

For reprocessing of solid instruments no holder is needed, see „Using a chemical indicator with the BASKET lid [→ 156]“.

While the FLEX lid is only for High-level thermal disinfection, the instruments are exposed to the same sterilization process as performed with the STANDARD lid. Therefore the same chemical indicators are used for batch control of instruments reprocessed on the FLEX lid.

The manufacturer recommends using a chemical indicator for every cycle.

The Class 5 chemical indicator monitors the time, temperature and pressure parameters of the standard and sensitive programs.

A Class 6 chemical indicator monitors the time, temperature and pressure parameters of the prion program.

 **WARNING**

If the chemical indicator indicates that the test was not passed, do not use the instruments that were reprocessed after the time of the last successful check.
Do not continue to use the DAC UNIVERSAL.
Please contact your authorized dealer.

8.1.2.1.1 Using a chemical indicator with the STANDARD lid



1. Attach the chemical indicator in the smaller of the two brackets on the STANDARD indicator holder.



2. Attach the STANDARD indicator holder in the groove on the center post of the STANDARD lid.
3. Start a cycle. See "Reprocessing with the STANDARD lid DAC UNIVERSAL STANDARD [→ 172]" for the detailed procedure.
4. After the end of the cycle, check that the chemical indicator indicates the sterilization test was passed.

8.1.2.1.2 Using a chemical indicator with the BASKET lid



1. Attach the chemical indicator to the metal bracket of the BASKET lid.
2. Start a cycle. See "Reprocessing with the BASKET lid DAC UNIVERSAL STANDARD [→ 177]" for the detailed procedure.
3. After the end of the cycle, check that the chemical indicator indicates the sterilization test was passed.

8.1.2.1.3 Using a chemical indicator with the WRAPPED lid



1. Attach the chemical indicator in the smaller of the two brackets on the STANDARD indicator holder.



2. Attach the STANDARD indicator holder to one of the three wire brackets of the WRAPPED lid so the brackets of the indicator holder point to the center of the lid.
3. Press the STANDARD indicator holder toward the lid as far as possible.
4. Attach a wrapped instrument between the wires at each of the two empty positions.
5. Start a cycle. See "Reprocessing with the WRAPPED lid DAC UNIVERSAL STANDARD [→ 182]" for the detailed procedure.
6. After the end of the cycle, check that the chemical indicator indicates the sterilization test was passed.

8.1.2.1.4 Using a chemical indicator with the FLEX lid



1. Attach the chemical indicator in the smaller of the two brackets on the FLEX indicator holder.



2. Attach the FLEX indicator holder in the groove on the center post of the FLEX lid.
3. Start a cycle. See "Reprocessing with the FLEX lid DAC UNIVERSAL STANDARD [→ 187]" for the detailed procedure.
4. After the end of the cycle, check that the chemical indicator indicates the disinfection test was passed.

8.1.2.2 Testing with a PCD process challenge device

The PCD (process challenge device) is used in combination with a chemical indicator to simulate a steam penetration test and confirm proper sterilization.

Checking using a PCD test device is necessary in the following cases:

- Before using a DAC UNIVERSAL after initial installation
- After major repair work
- As part of routine weekly testing



IMPORTANT

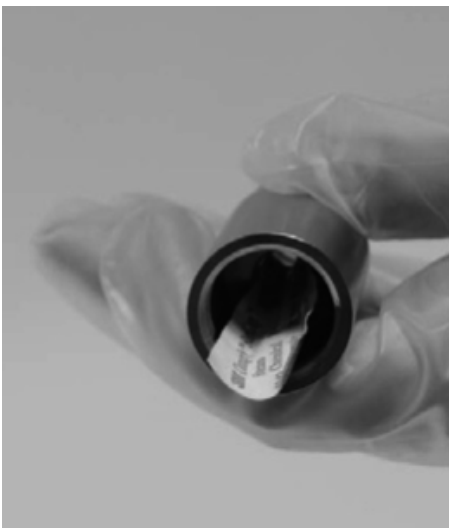
An ISO/INTRAmatic adapter is needed to mount a PCD test device to the STANDARD lid.

Process

- ✓ The DAC UNIVERSAL is switched on and ready for a cycle.
 - ✓ Up to 5 instruments are in the DAC UNIVERSAL ready for reprocessing, see "Pre- and post-reprocessing of instruments [→ 153]".
1. Remove the STANDARD lid from the holder on the DAC UNIVERSAL.
 2. Place the STANDARD lid on the counter or put it in the optional lid holder.
 3. First twist the PCD test device in the middle counterclockwise.
 4. Fold the chemical indicator into a V-shape.
 5. Put the chemical indicator into the PCD test device.
 6. Twist the PCD test device clockwise to close.

IMPORTANT

Twist the PCD test device completely closed.
A proper check of the PCD test device is not ensured if it is partly open.





7. Press the PCD test device onto the ISO/ INTRAmatic adapter until you hear and feel a slight click.
8. Put instruments into the other 5 adapters as usual.

IMPORTANT

Select a situation typical for your daily routine. This usually means that you attach instruments to all six adaptors.

9. Pull lightly on the instruments to ensure that they are firmly attached to the adapters.
10. Start a standard cycle, see reprocessing with the STANDARD lid for details of the procedure.

⚠ CAUTION

Danger of burning!

Allow the extremely hot instruments to cool down after the end of the cycle.



11. Remove the PCD test device from the adapter by pressing the small button at the bottom of the adapter while pulling on the PCD test device.

⚠ CAUTION

Danger of burning!

The PCD test device may be hot.

12. Unscrew the PCD test device counterclockwise and remove the chemical indicator.
13. Evaluate the chemical indicator according to the manufacturer's instructions.

8.1.2.3 Testing with a protein residue test

The protein test, e.g. „MediSafe MediCheck™. MediSafe MediCheck™ is a quick protein test for all surfaces after the cleaning process. It is a quick test for detecting proteins on surfaces. It is not intended to be used as a microbiological monitoring tool. The protein test changes color from green to purple if protein residue is found on the swab. The more proteins are found on the swab, the darker the fluid becomes. If the color becomes purple in fewer than 15 minutes, the test need not be continued, as contamination is very high. The test is time and temperature sensitive; it is therefore important to conduct the test at room temperature (20-25°C / 68-77°F). The change in color is assessed after 15 minutes at room temperature (alternatively 15 min. at 55°C / 131°F or 30 min. at 37°C / 98.6°F).

MediSafe "MediCheck™" is available at:
["http://www.medisafegmbh.com/katalog/en/MediCheck-Protein-residue-test.html"](http://www.medisafegmbh.com/katalog/en/MediCheck-Protein-residue-test.html)

8.1.3 Adding/replacing the lubrication concentrate

The NitramOil #2 bottle is not yet mounted when the unit is delivered. The bottle must be mounted and oil pumped through the hoses before the first use of the DAC UNIVERSAL.



(Safety) information for the lubrication concentrate

CAUTION

Risk of explosion

Do not hold the NitramOil #2 bottles near an open flame.

NOTICE

Use only NitramOil #2 for the DAC UNIVERSAL.

IMPORTANT

In case of fire: There is maximum 200 ml / 0.043 imperial gallons of oil in the DAC UNIVERSAL. There is no danger that dangerous or harmful gases can develop in case of fire.

NOTICE

The oil must be stored and handled at temperatures below 50°C / 122°F. Follow all warnings on the handling, use, and disposal of the oil. This information is in the safety data sheet. The safety data sheet for NitramOil #2 is available at www.sirona.com.

IMPORTANT

No toxic, harmful, or dangerous gases arise during the handling, use, or removal of NitramOil #2. The oil is pumped directly from the bottle into the DAC UNIVERSAL.

Inserting the oil bottle

- ✓ The lid of the DAC UNIVERSAL water tank is open.
- 1. Remove the red transport plug on the oil dispenser. Please keep this plug (it can be placed on the bottle after it is screwed in).
- 2. Remove the lid from the new NitramOil #2 bottle.
- 3. Insert the oil bottle thread down into the thread of the oil dispenser (next to the water tank).



- 4. Turn the oil bottle carefully clockwise until you meet resistance.
- 5. Close the lid of the water tank.
- ↪ The oil bottle is now inserted in the DAC UNIVERSAL.



Replacement of the oil bottle

IMPORTANT

The oil bottle must be replaced when the "Low oil" message appears on the display.
--

- ✓ The lid of the DAC UNIVERSAL water tank is open.
- 1. Unscrew the empty oil bottle counterclockwise and remove it from the oil dispenser.

IMPORTANT

If the oil bottle is not completely empty, small quantities of oil may leak out of the bottle. Wipe the oil away with an absorbent cloth.

- 2. Insert the new oil bottle thread down into the thread of the oil dispenser (next to the water tank).
- 3. Turn the oil bottle carefully clockwise until you meet resistance.
- 4. Close the lid of the water tank.
 - ↳ The oil bottle has been replaced.

Tip: You can also remove a partially used oil bottle that is not yet empty from the DAC UNIVERSAL and insert it again at a later time.

8.1.4 Pumping lubrication concentrate through the system

When a new bottle of lubrication concentrate has been inserted, you must check whether oil is pumped into the chamber.

See "Checking oil supply to the chamber of the DAC UNIVERSAL STANDARD [→ 193]" for the procedure.

8.1.5 Filling the water tank

IMPORTANT

Remember to empty the drain tank when it is full, see „Remove and clean the drain tank [→ 131]”.

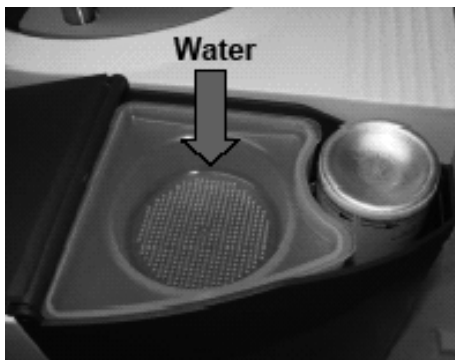
If no permanent water connection is selected, the DAC UNIVERSAL water tank must be filled with water manually.

1 filled water tank corresponds to approx. 2 complete cycles of the standard program.

Capacity of the water tank: 1.8 liters / 0.40 imperial gallons

Minimum filling of the water tank: 0.6 liters / 0.13 imperial gallons for a standard program at 134°C / 273°F

1. Open the lid of the water tank.
2. Fill demineralized/distilled water (water conductivity < 3.0 µS/cm) through the sieve into the water tank (min. 0.6 liter, max. 1.8 liter).



NOTICE

Pour the water into the tank carefully, otherwise the water can spill into the interior of the unit next to the tank where it can cause a short circuit.

8.1.6 Pumping water through the system

Before the DAC UNIVERSAL can be started, you must check whether water flows into the chamber.

See "Checking water supply to the lids of the DAC UNIVERSAL STANDARD [→ 194]" for the procedure.

8.2 Using the menu and display information DAC UNIVERSAL STANDARD

8.2.1 Display information DAC UNIVERSAL STANDARD

The display indicates the current status of the system as follows:

System status	Description
"Ready 121 °C"	The unit is ready for the sensitive program: 121°C / 250°F, Sterilization period 15 min.
"Ready 134 °C"	The unit is ready for the standard program: 134°C / 273°F, Sterilization period 3 min.
"Ready 134 °C 18min"	The unit is ready for the prion program: 134°C / 273°F, Sterilization period 18 min.
"Selected lid type:"	Choose the inserted lid type using the "Up"- and "Down"-Keys. Press the "Start"-Key to confirm.
"Press safety ring!"	The „Start“-Key has been pressed. The selected lid is shown and the safety ring must be pressed in order to start the cycle
"In progress"	The cycle starts, the lid closes.
"Door locked"	Indicates that the lid is firmly closed and reprocessing can start.
"Internal flush"	Available only for the STANDARD and FLEX lids. Cleans the water and air channels of the instruments
"Lubrication"	Available only for the STANDARD lid. The transmission channels of the instruments are lubricated.
"Cold rinse"	Fills the chamber with cold water for exterior cleaning, pulse-wash (multicyclic cleaning process) of the instruments, and oil discharge.
"Hot rinse"	Fills the chamber with warm water for exterior cleaning, pulse-wash (multicyclic cleaning process) of the instruments, and oil discharge.
"Heating"	The chamber is heated at the sterilization temperature and corresponding pressure set in the selected program.
"Stabilizing"	The selected sterilization temperature and pressure are maintained.
"Back-flush"	Saturated steam is forced through the instrument channels before and after sterilization and then extracted through the interior channels of the instruments.
"Sterilization"; "Disinfection"	The time display indicates the remaining time for the current sterilization/ disinfection process.
"Expel"/Drying (when set to level 1-3)	Standard setting: 0 Purge instruments with air after sterilization.
"Cycle complete"	The cycle is ended. The lid opens slightly.
"Press C to unload"	Indicates that the procedure is finished. Press the "Clear"-Key to open the DAC UNIVERSAL completely so the instruments can be removed.
"Start wrapped cycle? Instr. treat in std.cycle before wrap? Press "M" to confirm"	Indicates that the "Wrapped"-Key has been pressed and reminds the user that the instruments must have been reprocessed in a standard cycle before wrapping and use of the WRAPPED lid.

System status	Description
"Service needed"	(simultaneously 2 seconds of acoustic alarm is given) Indicates that two years or 3000 cycles have passed since the first use or last servicing. Reminds the user that service is recommended, see "Display messages DAC UNIVERSAL STANDARD [→ 211]".
"Error" xx	A message is displayed. The list of all display messages is provided in "Display messages DAC UNIVERSAL STANDARD [→ 211]".
"Sterilization error"/ "Disinfection error"	Sterilization/Disinfection has failed. This is displayed simultaneously with an acoustic alarm. The list of all display messages is provided in "Display messages DAC UNIVERSAL STANDARD [→ 211]".
"User Maintenance"	Is shown after 200 cycles or every 4 weeks (for 10 cycles a day). Indicates that cleaning and servicing are needed. For details, see section "Cleaning and maintenance DAC UNIVERSAL STANDARD [→ 192]".
"Low Water"	For manual filling of the water tank. Distilled water must be added.
"Low Oil"	Displayed when the NitramOil #2 lubrication concentrate is almost empty.
"Bad water quality"	Displayed when water quality is inadequate.
"Remember: User Maintenance" - Check & Clean	(simultaneously 2 seconds of acoustic alarm is given) Displayed after 50 cycles. Indicates that cleaning and servicing are due according to the Check & Clean schedule. See "Cleaning and maintenance DAC UNIVERSAL STANDARD [→ 192]" for details.

8.2.2 Menu system DAC UNIVERSAL STANDARD

8.2.2.1 Navigation in the menu structure DAC UNIVERSAL STANDARD



1. Press the "Menu/Enter"-Key to go to menu level 1.
2. Press the "Up" or "Down"-Key until the desired option is selected.
3. Press the "Menu/Enter"-Key to confirm the selection.
4. Press the "Up" or "Down"-Key on every menu level until the desired option is selected.
5. Press the "Menu/Enter"-Key to confirm the selection.
6. Press the "Clear"-Key to return to a menu level.

8.2.2.2 Menu overview DAC UNIVERSAL STANDARD

Menu level 1	Menu level 2	Menu level 3	Result / Activity / Note
<i>"Program"</i>	<i>"134 °C"</i>		Program: 134°C / 273°F, Sterilization time 3 min.
	<i>"121 °C"</i>		Program: 121°C / 250°F, Sterilization time 15 min.
	<i>"Ready 134 °C 18min"</i>		Program: 134°C / 273°F, Sterilization time 18 min.
<i>"Manual"</i>	<i>"Open"</i>		Opens the lid.
	<i>"Close"</i>		Closes the lid. The lid must be in place.
	<i>"Water"</i>		Pumps water into the chamber.
	<i>"Draintank"</i>		Empties the water tank through the "Water" inlet at the back of the unit. Automatic water supply must be interrupted.
	<i>"Draincham"</i>		Empties the chamber through the "Drain" connection. The lid must be in place. The lid is raised approx. 60 seconds after starting this function and pressing the "Menu/Enter"-Key. The chamber should then be empty. If not, the operation can be repeated.
	<i>"Flow test"</i>		Measurement of inlet air flow.
<i>"Settings"</i>	<i>"Printer"</i>	<i>"ON" "OFF"</i>	Switches the printer on or off.
		<i>"Printout language"</i>	Selects the language of the print. The available printout languages are English, German and French.
		<i>"Reprint"</i>	The last print is printed again.
	<i>"Rinse cycles"</i>	Rinse cycles (4-6)	Standard setting: 4 cleaning cycles. (3 cold, 1 warm) Can be increased to up to 6 cleaning cycles (5 cold, 1 warm). The FLEX lid will always use 6 rinse cycles (5 cold, 1 warm). Please note that the total cycle time is prolonged with more than 4 cleaning cycles and water consumption increases.
	<i>"Oil expel"</i>	1 - 5 Oil purge	Condensation and excess oil are purged from the instruments with air. Standard setting: Level 1. The maximum is level 5. Please note that oil is purged before sterilization and that increasing oil purging prolongs the total cycle time. Level 1 is recommended for instruments of the manufacturers W+H, KaVo, NSK, and most other instruments. Level 3 is recommended for Sirona T1 CLASSIC/TE. However, please observe the manufacturer's instructions for use for each instrument.
	<i>"Language"</i>	UK	English is selected as display language.
		D	German is selected as display language.
		F	French is selected as display language.
		SP	Spanish is selected as display language.
		I	Italian is selected as display language.
S		Swedish is selected as display language.	

Menu level 1	Menu level 2	Menu level 3	Result / Activity / Note
<i>"Settings"</i>	<i>"Expel"</i>	0 - 3 Purging	<p>Purge instruments with air after sterilization.</p> <p>Standard setting: 0</p> <p>Can be increased to level 3.</p> <p>Level 0: no blowing</p> <p>Level 1: 50 sec. effective blowing time</p> <p>Level 2: 100 sec. effective blowing time</p> <p>Level 3: 150 sec. effective blowing time</p> <p>Please note that increasing the blowing time prolongs the total cycle time.</p> <p>Level 1 is recommended for instruments of the manufacturers W+H, KaVo, NSK, and most other instruments. Level 3 is recommended for Sirona T1 CLASSIC/TE. However, please observe the manufacturer's instructions for use for each instrument.</p> <p>If processing instruments for invasive surgical treatments, Expel function cannot be used without prior installation of a sterile-filter.</p>
		<i>"Set year"</i> (00-99)	Setting the year.
		<i>"Set month"</i> (01-12)	Setting the month.
		<i>"Set date"</i> (01-31)	Setting the day.
		<i>"Time display unit"</i> (12h / 24 h)	Setting the time display
		<i>"Set hour"</i> (01-24)	Setting the hours.
		<i>"Set min"</i> (00-59)	Setting the minutes.

Menu level 1	Menu level 2	Menu level 3	Result / Activity / Note
<i>"Settings"</i>	<i>"Automatic water"</i>	<i>"ON "</i>	Automatic filling of the water tank by a water conditioning system connected to the DAC UNIVERSAL.
		<i>"OFF"</i>	Manual filling of the water tank.
	<i>"Oil Settings"</i>	1-3 oil settings	Oil quantity for lubrication of instruments. Standard setting: Level 1. Can be increased up to level 3. Level 1: standard. Level 2: 25% more than level 1. Level 3: 50% more than level 1.
	<i>"Ambient Sensitivity"</i>	0-4 ambient temperature sensitivity	Standard setting: Level 1 (low ambient temperature sensitivity). Level 0: ambient temperature sensitivity deactivated. Level 1: Low ambient temperature sensitivity. Level 2: Medium ambient temperature sensitivity. Level 3: High ambient temperature sensitivity. Level 4: Maximum ambient temperature sensitivity. When there is a low temperature in the practice/clinic, we recommend increasing the ambient temperature sensitivity somewhat – see "Requirements of the location / Ambient conditions [→ 49]". Please note that activating or increasing the level of sensitivity can potentially prolong the total cycle time and increase power consumption.
<i>"History"</i>	<i>"Cycles"</i>		Shows the number of cycles completed.
	<i>"Errorbuffer"</i>		Shows the latest messages. They can be selected using the "Up" or "Down"-Key.
	<i>"Service"</i>		Is displayed when the next service of the unit is due. This is indicated by the number of remaining cycles until the next service and as a date (mm/dd/yyyy) of the next service.
<i>"About"</i>			Displays the serial number of the unit and the software version.

8.2.3 Standard settings and Resetting the menu system DAC UNIVERSAL STANDARD

Standard settings

Program	134°C / 273°F, Sterilization time 3 min.
Printer:	Off
Language:	UK
Oil purge:	1
Oil settings:	1
Rinse cycles:	4
Expel:	0
Ambient temperature sensitivity:	1
Automatic water:	Off

Only for Japan: ambient temperature sensitivity is set at 4. Please note this when resetting the menu to standard settings the ambient temperature sensitivity will be set to 1.

Resetting the menu system

To reset the menu to the default settings, please proceed as follows:

- ✓ The display shows the status *"Ready 134 °C"*.
- Press the "Wrapped"-Key and the "Menu/Enter"-Key simultaneously.
- ↪ The properties in your menu are reset to the default settings, see "Menu overview DAC UNIVERSAL STANDARD [→ 166]".

8.2.4 Omitting parts of cycles DAC UNIVERSAL STANDARD

It is possible to leave out parts of cycles. This is necessary for reprocessing wrapped or solid instruments, for example.

After ending a cycle in which some parts of the cycle were deactivated, the DAC UNIVERSAL automatically reactivates the standard program.

IMPORTANT

Sterilization cannot be omitted.

Deactivating the cleaning function

For example, for reprocessing wrapped instruments with the WRAPPED lid.

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- 1. Press the "Rinse/Flush"-Key.
 - ↳ The blue LED lamp next to the "Rinse/Flush"-Key goes out.
 - ↳ Interior/exterior washing is deactivated.
- 2. Start the DAC UNIVERSAL as usual by pressing the "Start"-Key.



NOTICE

When cleaning is omitted, successful sterilization is no longer ensured. This does not apply to already reprocessed and wrapped instruments that are wrapped for sterilization in the DAC UNIVERSAL.

Deactivating lubrication

For example, for reprocessing wrapped instruments with the WRAPPED lid or for reprocessing solid instruments with the BASKET lid.

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- 1. Press the "Lubricate"-Key.
 - ↳ The blue LED lamp next to the "Lubricate"-Key goes out.
 - ↳ Lubrication is deactivated.
- 2. Start the DAC UNIVERSAL as usual by pressing the "Start"-Key.



8.3 Reprocessing with DAC UNIVERSAL STANDARD

8.3.1 Switching ON/OFF/Standby mode DAC UNIVERSAL STANDARD

Switch-on

The DAC UNIVERSAL will power up and heat the steam generator once the DAC UNIVERSAL is connected to a power socket. Unless the DAC UNIVERSAL was put into standby mode before having been disconnected from the power socket. In this case the DAC UNIVERSAL will restart in standby mode and will therefore have to be taken out of this by pressing the "Start"-Key.

IMPORTANT

The DAC UNIVERSAL cannot be started until the steam generator is properly heated.

The heating phase of the DAC UNIVERSAL takes 10-12 minutes. During this heating phase, the display indicates the temperature to be reached in %. When this is done, the DAC UNIVERSAL will display the ready screen.

Standby

To switch the DAC UNIVERSAL to standby mode, press the "Clear"-Key for more than 2 seconds.

Switch off

To switch off the DAC UNIVERSAL, press the "Clear"-Key for more than 2 seconds.

The manufacturer recommends pulling the power cord out of the socket at night to separate the DAC UNIVERSAL from the power grid.

8.3.2 Reprocessing with the STANDARD lid DAC UNIVERSAL STANDARD



The STANDARD lid is used for reprocessing unwrapped rotating handpieces.

Tip: If there are many instruments to be reprocessed or to ensure the instruments will be available again quickly, we recommend using a second STANDARD lid.

8.3.2.1 General placement of instruments DAC UNIVERSAL STANDARD



WARNING

If instruments are attached to an unsuitable adapter or if instruments are damaged, sterilization and cleaning may fail. In this case, reprocessing of the instruments must be repeated.

NOTICE

All instruments must be placed straight onto the respective adapter to prevent damage to the O-rings.

NOTICE

The instruments must be easy to attach to the adapters. If the instrument does not attach to the adapter easily, it can be damaged. The manufacturer does not accept responsibility for instruments that are damaged due to being subjected to force.

NOTICE

Make sure that the maximum permissible height of the instruments is not exceeded, see "Mounting adapters [→ 53]".

NOTICE

Instruments are damaged by inadequate lubrication.

IMPORTANT

If the DAC UNIVERSAL is started with fewer than 6 instruments placed in the lid, the lubrication function is not deactivated at the empty positions. To prevent oily instruments, we recommend placing instruments in all 6 positions of the lid.

General attachment

Place the instruments on their respective adapters of the STANDARD lid.

Depending on the instrument and the kind of adapter, you must press or click the instrument onto the adapter, activate a snap lock on the adapter, or tighten a threaded ring on the instrument.

Please make sure that you hear a slight "click" when you place the instrument on the adapter.

Pull lightly on the instrument to ensure that it is firmly attached to the adapter.

General placement

Rotate the head of the instrument to the center post so the instrument heads do not point at each other, as shown on the picture.

Placement is described in the separate sections if it deviates from the general placement described here.

See "Adapters for the STANDARD lid [→ 219]" for detailed instructions on the individual adapters.



8.3.2.2 Start cycle on the STANDARD lid DAC UNIVERSAL STANDARD

WARNING

The instruments may not be wrapped when using the STANDARD lid, as cleaning, lubrication, and sterilization would then fail.

IMPORTANT

Do not start the DAC UNIVERSAL without a lid inserted into the lid holder.

- ✓ All settings of the DAC UNIVERSAL were preset according to "Regular activities [→ 153]".
 - ✓ The DAC UNIVERSAL is switched on and ready for operation.
 - ✓ The maximum number of 6 instruments are ready for reprocessing.
 - ✓ The STANDARD lid is at hand.
1. Remove the STANDARD lid from the holder on the DAC UNIVERSAL.
 2. Place the STANDARD lid on the counter or put it in the optional lid holder.
 3. Plug each instrument onto the corresponding adapter in the STANDARD lid. See "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" for more information on attaching the instruments. The adapters can be replaced if necessary, see "Mounting adapters [→ 53]".
 4. Attach a Class 5/6 chemical indicator in the STANDARD indicator holder in the groove on the center post of the STANDARD lid or attach the PCD test device onto the ISO/INTRAmatic adapter. See "Checking the reprocessing result with an indicator / PCD test device [→ 153]" for more information on using the chemical indicator / PCD test device.
 5. Insert the STANDARD lid in the cover holder of the DAC UNIVERSAL in such a way that the instruments are pointing down.



NOTICE

Make sure that the lid is inserted all the way into the holder so that the instrument heads do not touch the wall of the chamber. Make sure there are no objects in the chamber.

NOTICE

The DAC UNIVERSAL and/or the instruments can be damaged if a lid is not inserted correctly.

- ⚠ There are instruments on the STANDARD lid; the DAC UNIVERSAL is still open and ready for a cycle.

6. Press the "Menu/Enter"-Key twice and select the desired program using the arrow keys.
7. Confirm your input by pressing the "Menu/Enter"-Key again.
8. Press the "Clear"-Key.



↳ Depending on the program selected, the following message may appear on the display: "Ready 134 °C", "Ready 121 °C" or "Ready 134 °C 18min".

↳ On the DAC UNIVERSAL, 2 LEDs light up at the left of the respective "Rinse/Flush"-Key and the "Lubricate"-Key.

IMPORTANT

If no program is selected, the standard program for reprocessing is used.

9. Press the "Start"-Key.

↳ A prompt to select the lid will appear on the display.

IMPORTANT

Deactivate lubrication by pressing the "Lubricate"-Key if the STANDARD lid holds only SIROPure instruments.

10. Select the STANDARD lid using the arrows keys

11. Press the "Start"-Key.

↳ Depending on the program selected, a prompt to press down on the safety ring may appear on the display.

12. Press down on the safety ring to start the cycle. If the safety ring is not pressed within 20 seconds, you must choose the lid and press the "Start"-Key again.

↳ The STANDARD lid of the DAC UNIVERSAL closes as soon as the safety ring is pressed.

↳ The DAC UNIVERSAL automatically runs the cleaning, lubrication (unless switched off), and sterilization cycle.

↳ You can see on the display at any time which phase the DAC UNIVERSAL is in.

↳ The following message appears on the display when the selected cycle is finished: "Press C to unload". The lid moves about halfway out of the chamber. This indicates that a cycle has been completed and the instruments have been sterilized.

CAUTION

Danger of burning!

Never hold your head directly over the DAC UNIVERSAL or touch the inserted lid, while the DAC UNIVERSAL opens, as steam comes out of the unit upon completion of a cycle.

WARNING

After completion of the cycle, make sure that all instruments are still properly attached to the STANDARD lid or the adapters. If instruments have fallen into the chamber during the cycle or if an instrument is no longer properly attached after the end of a cycle, cleaning and sterilization have failed. In this case, reprocessing of the instruments must be repeated.

13. Press the "Clear"-Key.

↪ The STANDARD lid will open completely.

⚠ CAUTION

Danger of burning!

Even when the STANDARD lid is half or completely open, the instruments are still hot. Allow the extremely hot instruments to cool down after the process.

⚠ CAUTION

Danger of burning!

The metal part of the lid is very hot. Please touch only the plastic part of the STANDARD lid at the end of the cycle.



14. Remove the STANDARD lid from the holder on the DAC UNIVERSAL at the end of the cycle to allow the instruments to cool down faster.

15. Place the STANDARD lid on the counter or put it in the optional lid holder.

IMPORTANT

When they are cooling, the heads of the instruments should point upwards to prevent corrosion.

16. Check the instruments visually to make sure they are dry.

17. Check the instruments visually to make sure they have been cleaned.

18. Check the cycle number, properly conducted cycle on your documentation (printer, software, etc.): For sterilization, "Sterilization, time, ok" must be indicated.

19. Check whether the dark status bar of the chemical indicator is in the "ACCEPT" range.

↪ If everything is correct, reprocessing was successful.

20. Document the cycle according to the work instructions applicable in your practice.

21. Remove every instrument from the STANDARD lid. See "Attaching instruments to the respective STANDARD lid adapters [→ 220]" for detailed instructions on removing the individual instruments.

↪ The instruments can now be used again.

↪ Sterilization of unwrapped instruments is not sufficient for invasive procedures. After packing the instruments, see "Pre- and post-reprocessing of instruments [→ 153]". another sterilization must be conducted in the DAC UNIVERSAL or a class B sterilizer (e.g. DAC PROFESSIONAL). For sterilizing wrapped instruments in DAC UNIVERSAL, see "Reprocessing with the WRAPPED lid DAC UNIVERSAL STANDARD [→ 182]".



8.3.3 Reprocessing with the BASKET lid DAC UNIVERSAL STANDARD

The BASKET lid is used for reprocessing unwrapped solid instruments.



8.3.3.1 Start cycle on the BASKET lid DAC UNIVERSAL STANDARD

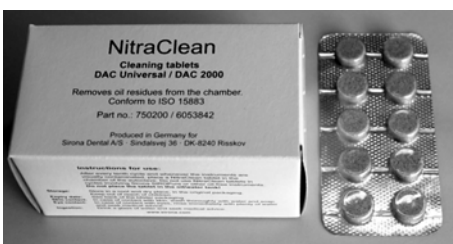
WARNING

The instruments may not be wrapped when using the BASKET lid, as cleaning and sterilization would then fail.

IMPORTANT

Do not start the DAC UNIVERSAL without a lid inserted into the lid holder.

- ✓ All settings of the DAC UNIVERSAL were preset according to "Regular activities [→ 153]".
- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- ✓ A maximum of 5 solid instruments have been prepared for reprocessing, see "Pre-treatment of solid instruments".
- ✓ The BASKET lid is at hand.



- ✓ A NitraClean cleaning tablet is at hand.
1. Remove the BASKET lid from the holder on the DAC UNIVERSAL.
 2. Place the BASKET lid on the counter or put it in the optional lid holder.



3. Open the snap lock on the basket and take the small lid off the basket.



4. Put maximum 5 solid instruments into the basket, if possible with the sharp tip down. The solid instruments must be placed in the basket so that the wire lid of the basket can be closed.



5. Attach the Class 5/6 chemical indicator to the metal bracket of the BASKET lid. See "Using a chemical indicator with the BASKET lid [→ 156]" for more information on using a chemical indicator.



6. Place the small lid back on the basket.

7. Close the basket.

IMPORTANT

There is a metal cylinder in the middle of the small lid. The long part must point toward you when closing.

IMPORTANT

Make sure the small lid of the basket closes easily and no instruments are caught.

⚠ WARNING

Place a NitraClean tablet in the empty chamber. See "NitraClean cleaning tablet [→ 241]" for more information on using a NitraClean tablet.

8. Insert the BASKET lid in the cover holder of the DAC UNIVERSAL in such a way that the basket points down.

NOTICE

Make sure that the lid is inserted all the way into the holder so that the basket does not touch the wall of the chamber. Make sure there are no objects (other than the NitraClean tablet) in the chamber.

NOTICE

The DAC UNIVERSAL, the BASKET lid, and/or the instruments can be damaged if the BASKET lid is not inserted correctly.

↪ The solid instruments are in the BASKET lid; the DAC UNIVERSAL is still open and ready for a cycle.

9. Press the "Menu/Enter"-Key twice and select the desired program using the arrow keys.
10. Confirm your input by pressing the "Menu/Enter"-Key again.
11. Press the "Clear"-Key.

- ↳ Depending on the program selected, the following message may appear on the display: *"Ready 134 °C"*, *"Ready 121 °C"* or *"Ready 134 °C 18min"*.

IMPORTANT

If no program is selected, the standard program for reprocessing is used.

12. Press the "Start"-Key.

- ↳ A prompt to select the lid will appear on the display.

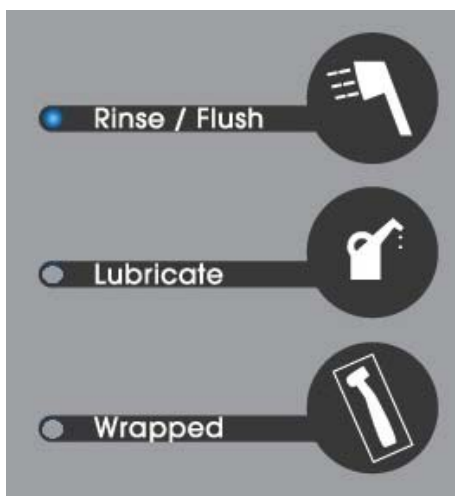
13. Select the BASKET lid using the arrows keys

14. Press the „Start“-Key twice.

- ↳ On the DAC UNIVERSAL, only the LED at the left of the "Rinse/ Flush"-Key is on.
- ↳ Depending on the program selected, a prompt to press down on the safety ring may appear on the display.

15. Press down on the safety ring to start the cycle. If the safety ring is not pressed within 20 seconds, you must choose the lid and press the "Start"-Key again.

- ↳ The BASKET lid of the DAC UNIVERSAL closes as soon as the safety ring is pressed.
- ↳ The DAC UNIVERSAL automatically runs the cleaning and sterilization cycle.
- ↳ You can see on the display at any time which phase the DAC UNIVERSAL is in.
- ↳ The following message appears on the display when the selected cycle is finished: *"Press C to unload"*. The lid moves about halfway out of the chamber. This indicates that a cycle has been completed and the instruments have been sterilized.



⚠ CAUTION

Danger of burning!

Never hold your head directly over the DAC UNIVERSAL or touch the inserted lid, while the DAC UNIVERSAL opens, as steam comes out of the unit upon completion of a cycle.

⚠ WARNING

After completion of the cycle, make sure that all solid instruments are still in the basket. If instruments have fallen into the chamber during the cycle, cleaning and sterilization have failed. In this case, reprocessing of the instruments must be repeated.

16. Press the "Clear"-Key.

- ↳ The BASKET lid will open completely.

⚠ CAUTION

Danger of burning!

Even when the BASKET lid is half or completely open, the instruments are still hot. Allow the extremely hot instruments to cool down after the process.

⚠ CAUTION

Danger of burning!

The metal part of the lid is very hot. The plastic part of the basket can be hot. Please touch only the plastic part of the BASKET lid at the end of the cycle.



17. Remove the BASKET lid from the holder on the DAC UNIVERSAL at the end of the cycle to allow the instruments to cool down faster.
18. Place the BASKET lid on the counter or put it in the optional lid holder.
19. Check the instruments visually to make sure they are dry.
20. Check the instruments visually to make sure they have been cleaned.
21. Check the cycle number, properly conducted cycle on your documentation (printer, software, etc.): For sterilization, "Sterilization, time, ok" must be indicated.
22. Check whether the dark status bar of the chemical indicator is in the "ACCEPT" range.
 - ↳ If everything is correct, reprocessing was successful.
23. Document the cycle according to the work instructions applicable in your practice.
24. Open the snap lock on the basket and take the small lid off the basket.
25. Remove the solid instruments from the BASKET lid.
26. Place the small lid back on the basket.
 - ↳ The solid instruments can now be used again.
 - ↳ Sterilization of unwrapped instruments is not sufficient for invasive procedures. After packing the instruments, see "Pre- and post-reprocessing of instruments [→ 153]". another sterilization must be conducted in the DAC UNIVERSAL or a class B sterilizer (e.g. DAC PROFESSIONAL). For sterilizing wrapped instruments in DAC UNIVERSAL, see "Reprocessing with the WRAPPED lid DAC UNIVERSAL STANDARD [→ 182]".
 - ↳ After the end of the cycle, the DAC UNIVERSAL automatically reactivates lubrication for the next cycle.

8.3.4 Reprocessing with the WRAPPED lid DAC UNIVERSAL STANDARD

The WRAPPED lid is used for reprocessing wrapped rotating handpieces and wrapped solid instruments.

IMPORTANT

The WRAPPED lid can not be used for the FLEX lid instruments. To get FLEX lid instruments sterilized, a class B sterilizer (e.g. DAC PROFESSIONAL) is necessary.



IMPORTANT

The WRAPPED lid is intended only for sterilizing wrapped instruments. Do not reprocess any unwrapped instruments in the WRAPPED lid.

WARNING

Before using the WRAPPED lid, the sterile filter included with the unit must be installed by a qualified service technician.

IMPORTANT

See "Functions with the WRAPPED lid [→ 23]" lid" for compatibility and the exact requirements of the WRAPPED lid.

IMPORTANT

Packing-/wrapping material used with the WRAPPED lid in the DAC UNIVERSAL must be in accordance with EN868. Sealable paper bags and sealable transparent bags or tubes made of porous material and plastic composite film must be filled to only 3/4 of their total volume.

IMPORTANT

Overfilling may strain the seams.

There must be at least 30 mm space underneath the sealing rim between the sterilised product and the seam to be sealed.

WARNING

If the wrapping of the wrapped instruments has been damaged, the instruments need to be rewrapped and resterilized.

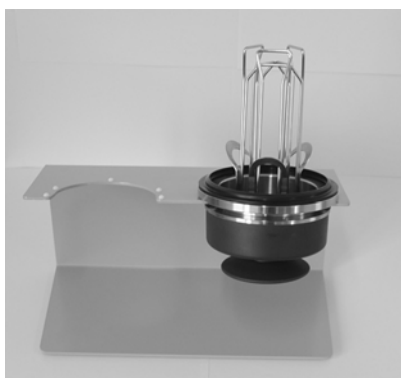
8.3.4.1 Start cycle on the WRAPPED lid DAC UNIVERSAL STANDARD

IMPORTANT

The wrapped instruments to be reprocessed must first have been cleaned and sterilized in one of the three standard cycles for unwrapped instruments, see "Reprocessing with the STANDARD lid DAC UNIVERSAL STANDARD [→ 172]" or "Reprocessing with the BASKET lid DAC UNIVERSAL STANDARD [→ 177]".

IMPORTANT

Do not start the DAC UNIVERSAL without a lid inserted into the lid holder.



- ✓ All settings of the DAC UNIVERSAL were preset according to "Regular activities [→ 153]".
 - ✓ The DAC UNIVERSAL is switched on and ready for operation.
 - ✓ The maximum 3 instruments were reprocessed and wrapped individually, see "Pre- and post-reprocessing of instruments [→ 153]".
 - ✓ The WRAPPED lid is at hand.
1. Remove the WRAPPED lid from the holder on the DAC UNIVERSAL.
 2. Place the WRAPPED lid on the counter or put it in the optional lid holder.
 3. A class 5/6 chemical indicator can be attached in the STANDARD indicator holder. Clamp the STANDARD indicator holder to one of the three wire brackets of the WRAPPED lid so that the brackets of the STANDARD indicator holder point to the center of the lid. Press the STANDARD indicator holder as far as possible toward the lid. See "Testing with a chemical indicator [→ 154]" for more information on using a chemical indicator.
 4. Attach one wrapped instruments to each of the 3 wire brackets on the WRAPPED lid. Slide the wrapped instrument into the clamping mechanism consisting of a large and a small wire bracket. Slide the film of the wrapped instrument between the large wire bracket and the metal bracket to fasten the instrument firmly.

IMPORTANT

Rotating handpieces must be inserted with the head facing down.

IMPORTANT

The transparent side of the pouch should face outwards.

IMPORTANT

Make sure the instruments are firmly clamped into the brackets so they do NOT fall out during the cycle. After placing the instrument wrapped in a pouch in the wire brackets, pull the instrument lightly to make sure that it is properly attached between the brackets.

5. After placing the instrument wrapped in a pouch in the wire brackets, pull the instrument lightly to make sure that it is properly attached between the brackets.
6. Insert the WRAPPED lid in the cover holder of the DAC UNIVERSAL.

NOTICE

Make sure that the lid is inserted all the way into the holder and the wrapped instruments do not touch the wall of the chamber. Make sure there are no objects in the chamber.

NOTICE

The DAC UNIVERSAL and/or the instruments can be damaged if the WRAPPED lid is not inserted correctly.

- ↳ The instruments are on the WRAPPED lid; the DAC UNIVERSAL is still open and ready for a cycle.
7. Press the "Wrapped"-Key to select the cycle for wrapped instruments.
 - ↳ On the DAC UNIVERSAL, only the LED at the left of the "Wrapped"-Key is on.
 - ↳ The display shows: Choose lid type WRAPPED

WARNING

If no program is selected, the standard program for reprocessing is used.

8. Press the "Start"-Key.
 - ↳ The display reads: *"Start wrapped cycle? Instr. treat in std. cycle before wrap? Press "M" to confirm"*.
9. Press the "Menu/Enter"-Key to confirm the selection.
 - ↳ Depending on the program selected, a prompt to press down on the safety ring may appear on the display.
10. Press down on the safety ring to start the cycle. If the safety ring is not pressed within 20 seconds, you must choose the lid and press the "Start"-Key again.
 - ↳ The WRAPPED lid of the DAC UNIVERSAL closes as soon as the safety ring is pressed.
 - ↳ The DAC UNIVERSAL automatically runs the standard program without cleaning or lubrication.
 - ↳ You can see on the display at any time which phase the DAC UNIVERSAL is in.
 - ↳ The following message appears on the display when the selected cycle is finished: *"Press C to unload"*. The lid moves about halfway out of the chamber. This indicates that a cycle has been completed and the instruments have been sterilized.

⚠ CAUTION

Danger of burning!

Never hold your head directly over the DAC UNIVERSAL or touch the inserted lid, while the DAC UNIVERSAL opens, as steam comes out of the unit upon completion of a cycle.

⚠ WARNING

After completion of the cycle, make sure that all instruments are still properly attached to the WRAPPED lid. If instruments have fallen into the chamber during the cycle, sterilization has failed. In this case, the cycle must be repeated.

11. Press the "Clear"-Key.
 - ↳ The WRAPPED lid will open completely.

⚠ CAUTION

Danger of burning!

Even when the WRAPPED lid is half or completely open, the instruments are still hot. Allow the extremely hot instruments to cool down after the process.

⚠ CAUTION

Danger of burning!

The metal part of the lid is very hot. Please touch only the plastic part of the WRAPPED lid at the end of the cycle.

12. Remove the WRAPPED lid from the holder on the DAC UNIVERSAL at the end of the cycle to allow the instruments to cool down faster.
13. Place the WRAPPED lid on the counter or put it in the optional lid holder.
14. Check the instruments visually to make sure they are dry.
15. Check the instruments visually to make sure they have been cleaned.
16. Check the cycle number, properly conducted cycle on your documentation (printer, software, etc.): For sterilization, "Sterilization, time, ok" must be indicated.
17. Check whether the dark status bar of the chemical indicator is in the "ACCEPT" range.
 - ↳ If everything is correct, reprocessing was successful.
18. Document the cycle according to the work instructions applicable in your practice.
19. Remove every instrument from the WRAPPED lid. Pull every wrapped instrument singly from the respective bracket.



- ↳ The instruments can now be used again. They can also be stored for later use.
- ↳ After the end of the cycle, the DAC UNIVERSAL automatically reactivates cleaning and lubrication for the next cycle.

8.3.5 Reprocessing with the FLEX lid DAC UNIVERSAL STANDARD



The FLEX lid is used to clean and thermally disinfect ultrasonic scaler handpieces, scaler tips, airflow nozzles and sprayvit nozzles.

IMPORTANT

The FLEX lid is only for cleaning and high-level disinfection.

Tip: If there are many instruments to be decontaminated or to ensure the instruments will be available again quickly, we recommend using a second FLEX lid.

8.3.5.1 General placement of instruments DAC UNIVERSAL STANDARD



NOTICE

All instruments must be placed straight onto the respective adapter to prevent damage to the O-rings.

NOTICE

The instruments must be easy to attach to the adapters. If the instrument does not attach to the adapter easily, it can be damaged. The manufacturer does not accept responsibility for instruments that are damaged due to being subjected to force.

WARNING

If instruments are attached to an unsuitable adapter or if instruments are damaged, disinfection and cleaning may fail. In this case, reprocessing of the instruments must be repeated.

General attachment

Place the instruments on their respective adapters of the FLEX lid.

Depending on the instrument and the kind of adapter, you must press or click the instrument onto the adapter, activate a snap lock on the adapter, or tighten a threaded ring on the instrument.

Please make sure that you use the lever on the side of the adapter (if applicable) and hear a slight "click" when you place the instrument on the adapter.

Pull lightly on the instrument to ensure that it is firmly attached to the adapter.

General attachment of scaling tips

WARNING

Scaler tips must be inserted with the associated torque wrench. The torque wrench should remain on the tip during the whole process.

1. The scaler tip was unscrewed from the ultrasonic handpiece with the torque wrench and the tip remains in the torque wrench.
2. Ensure that the torque wrench is correctly attached to the tip

NOTICE

Tips have to be screwed straight onto the adapter so they can't jam up.

General placement

The instruments should not be leaning on each other; otherwise they can be attached as preferred by the user.

Placement is described in the separate sections if it deviates from the general placement described here.

See "Adapters for the FLEX lid [→ 238]" for detailed instructions on the individual adapters.

8.3.5.2 Start cycle on the FLEX lid DAC UNIVERSAL STANDARD

WARNING

The instruments may not be wrapped when using the FLEX lid, as cleaning and disinfection would then fail.

IMPORTANT

Do not start the DAC UNIVERSAL without a lid inserted into the lid holder.

- ✓ All settings of the DAC UNIVERSAL were preset according to "Regular activities [→ 153]".
 - ✓ The DAC UNIVERSAL is switched on and ready for operation.
 - ✓ The maximum number of 6 instruments are ready for reprocessing.
 - ✓ The FLEX lid is at hand.
1. Remove the FLEX lid from the holder on the DAC UNIVERSAL.
 2. Place the FLEX lid on the counter or put it in the optional lid holder.
 3. Plug each instrument onto the corresponding adapter in the FLEX lid. See "General placement of instruments DAC UNIVERSAL STANDARD [→ 187]" for more information on attaching the instruments. The adapters can be replaced if necessary, see "Mounting adapters [→ 53]".
 4. Attach a suitable chemical indicator in the FLEX indicator holder in the groove on the center post of the FLEX lid. See "Checking the reprocessing result with an indicator / PCD test device [→ 153]" for more information on using the chemical indicator / PCD test device.



5. Insert the FLEX lid in the cover holder of the DAC UNIVERSAL in such a way that the instruments are pointing down.

NOTICE

Make sure that the lid is inserted all the way into the holder so that the instrument heads do not touch the wall of the chamber. Make sure there are no objects in the chamber.

NOTICE

The DAC UNIVERSAL and/or the instruments can be damaged if a lid is not inserted correctly.

↳ There are instruments on the FLEX lid; the DAC UNIVERSAL is still open and ready for a cycle.

6. Press the "Menu/Enter"-Key twice and select the desired program using the arrow keys.
7. Confirm your input by pressing the "Menu/Enter"-Key again.
8. Press the "Clear"-Key.
 - ↳ Depending on the program selected, the following message may appear on the display: "Ready 134 °C", "Ready 121 °C" or "Ready 134 °C 18min".



WARNING

If no program is selected, the standard program for reprocessing is used.

9. Press the "Start"-Key.
 - ↳ A prompt to select the lid will appear on the display.
10. Select the FLEX lid using the arrow keys.
11. Press the „Start“-Key twice.
 - ↳ On the DAC UNIVERSAL, only the LED at the left of the "Rinse/Flush"-Key is on.
 - ↳ A prompt to press down on the safety ring appears on the display.
12. Press down on the safety ring to start the cycle. If the safety ring is not pressed within 20 seconds, you must choose the lid and press the "Start"-Key again.
 - ↳ The FLEX lid of the DAC UNIVERSAL closes as soon as the safety ring is pressed.
 - ↳ The DAC UNIVERSAL automatically runs the cleaning and high-level disinfection cycle.
 - ↳ You can see on the display at any time which phase the DAC UNIVERSAL is in.
 - ↳ The following message appears on the display when the selected cycle is finished: "Press C to unload". The lid moves about halfway out of the chamber. This indicates that a cycle has been completed and the instruments have been reprocessed.

⚠ CAUTION

Danger of burning!

Never hold your head directly over the DAC UNIVERSAL or touch the inserted lid, while the DAC UNIVERSAL opens, as steam comes out of the unit upon completion of a cycle.

⚠ WARNING

After completion of the cycle, make sure that all instruments are still properly attached to the FLEX lid or the adapters. If instruments have fallen into the chamber during the cycle or if an instrument is no longer properly attached after the end of a cycle, cleaning and high-level disinfection have failed. In this case, reprocessing of the instruments must be repeated.

13. Press the "Clear"-Key.

☞ The FLEX lid will open completely.

⚠ CAUTION

Danger of burning!

Even when the FLEX lid is half or completely open, the instruments are still hot. Allow the extremely hot instruments to cool down after the process.

⚠ CAUTION

Danger of burning!

The metal part of the lid is very hot. Please touch only the plastic part of the FLEX lid at the end of the cycle.



14. Remove the FLEX lid from the holder on the DAC UNIVERSAL at the end of the cycle to allow the instruments to cool down faster.

15. Place the FLEX lid on the counter or put it in the optional lid holder.

IMPORTANT

When they are cooling, the heads of the instruments should point upwards to prevent corrosion.

16. Check the instruments visually to make sure they are dry.

17. Check the instruments visually to make sure they have been cleaned.

18. Check the cycle number, properly conducted cycle on your documentation (printer, software, etc.): For for high-level disinfection, "High-level disinfection, time, ok" must be indicated.

19. Check whether the dark status bar of the chemical indicator is in the "ACCEPT" range.

☞ If everything is correct, reprocessing was successful.

20. Document the cycle according to the work instructions applicable in your practice.



- 21.** Remove every instrument from the FLEX lid. See "Attaching instruments to the respective FLEX lid adapters [→ 238]" for detailed instructions on removing the individual instruments.
- ↳ The instruments can now be used again.
 - ↳ High-level disinfection of unwrapped instruments is not sufficient for invasive procedures. Instruments must be wrapped and a sterilization must be conducted in a class B sterilizer (e.g. DAC PROFESSIONAL).
 - ↳ After the end of the cycle, the DAC UNIVERSAL automatically reactivates lubrication for the next cycle.

9 Cleaning and maintenance DAC UNIVERSAL STANDARD

After every 50 cycles, the DAC UNIVERSAL will give a 2-second acoustic alarm and the display will show the following information: "*Remember: User Maintenance*" - Check & Clean. This message reminds the user that the weekly cleaning/maintenance according to the Check & Clean (C&C) is due. The Check & Clean is included with the DAC UNIVERSAL.

The table below shows how often cleaning/maintenance should be carried out. The numbers at the far left of the table correspond with the subsections in the chapter.

The frequencies indicated are based on approx. 10 complete cycles per day. If you use the DAC UNIVERSAL more frequently, please adjust the cleaning/maintenance intervals accordingly.

You can purchase spare parts and consumables for the DAC UNIVERSAL from your local authorized dealer. Please see "Accessories [→ 218]" for the respective REFs.

Overview of tasks to be carried out.

Task	Frequency			
	Weekly or every 50 cycles*	Every 4 weeks or every 200 cycles	Every 3rd month	Every 2nd year or every 3000 cycles
1. Check oil supply to the chamber	✓			
2. Check water supply to the chamber	✓			
3. Check water supply on the lids	✓			
4. Check oil supply on the lid	✓			
5. Drain the watertank/chamber	✓			
6. Cleaning the water tank	✓			
7. Cleaning the drain filter	✓			
8. Remove and clean the waste water tank	✓			
9. Checking the adapters and the respective O-rings	✓			
10. Cleaning the empty chamber	✓			
11. Cleaning the housing of the unit	✓			
12. Cleaning the lids	✓			
13. Checking the safety ring		✓		
14. Changing the drain filter		✓		
15. Changing the O-rings on the adapters			✓	
16. Service by qualified technician				✓

* according to the Check & Clean

9.1 Checking oil supply to the chamber of the DAC UNIVERSAL STANDARD

Frequency: weekly or every 50 cycles (whichever comes first).

In order to make sure that the DAC UNIVERSAL is able to lubricate the instruments correctly, the oil flow to the chamber needs to be tested.

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- ✓ The NitramOil #2 bottle is properly screwed into the DAC UNIVERSAL.
- ✓ The lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.

1. Press and hold the "Lubricate"-Key.

↳ The oil dispenser will start to pump and oil flows through the bottom adapter into the chamber.

2. Release the "Lubricate"-Key.

↳ The display of the DAC UNIVERSAL counts the number of times the oil dispenser pumps.



IMPORTANT

If the number indicated is >60 and there is no oil in the chamber, please contact your authorized dealer.

↳ The display disappears automatically after a short time.

↳ The water and oil residue that is in the chamber and hoses will need to be drained and cleaned out, see section "Drain the chamber" in "Drain the water tank via the menu [→ 196]".

9.2 Checking water supply to the chamber of the DAC UNIVERSAL STANDARD

Frequency: weekly or every 50 cycles (whichever comes first).

In order to make sure that the DAC UNIVERSAL is able to bring water to the chamber correctly, this operation needs to be tested.

Pump water into the chamber

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- ✓ The lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.

1. Press the "Menu/Enter"-Key to go to menu level 1.

2. Press the "Up" or "Down"-Key until "Manual" is selected.

3. Press the "Menu/Enter"-Key to confirm the selection.

4. Press the "Up" or "Down"-Key until "Water" is selected.

5. Press the "Menu/Enter"-Key to confirm the selection.





↪ Water is pumped through the internal hoses.

6. Interrupt this process as soon as water flows into the chamber by pressing the "Clear"-Key.
 7. Press the "Clear"-Key until the normal display reappears.
- ↪ The water and oil residue that is in the chamber and hoses will need to be drained and cleaned out, see section "Drain the chamber" in "Drain the water tank via the menu [→ 196]".

9.3 Checking water supply to the lids of the DAC UNIVERSAL STANDARD

Frequency: weekly or every 50 cycles (whichever comes first).

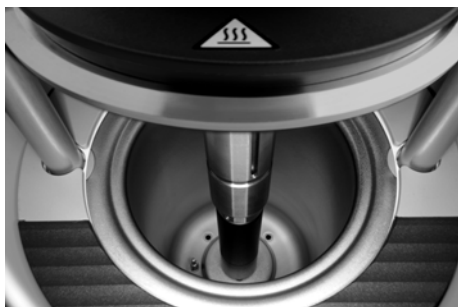
In order to make sure that the DAC UNIVERSAL is able to bring water to the chamber and internal channels of the STANDARD & FLEX lids correctly, this operation needs to be tested.

IMPORTANT

The water supply to the lid needs only to be checked for the STANDARD and FLEX lids, since these are the only ones with internal water channels.

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
 - ✓ The lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.
 - ✓ You are wearing your protective gear.
 - ✓ The STANDARD lid, FLEX lid (if owned) and black lid extension piece for water are at hand.
 - ✓ The STANDARD lid, the FLEX lid and the chamber are cooled down.
1. Attach the black lid extension piece for water to the bottom of the lid.
 2. Place the other end of the black lid extension piece for water on the bottom adapter in the bottom of the chamber.





3. Assure the lid is attached vertically on the bottom adapter, as shown.
4. Press the "Rinse/Flush"-Key and hold it down for more than 1 second.
 - ↳ Water is pumped through the internal water hoses and channels of the lid.
5. When water is visible from underneath the lid's top plate; observe that water is flowing freely from the 6 different adapters.
6. Release the "Rinse/Flush"-Key.
7. Remove the black extension piece for water from the chamber and the lid.
8. Repeat the process for all available STANDARD and FLEX lids.
 - ↳ The water and oil residue that is in the chamber and hoses will need to be drained and cleaned out, see section "Drain the chamber" in "Drain the water tank via the menu [→ 196]".

9.4 Checking oil supply to the STANDARD lid of the DAC UNIVERSAL STANDARD

Frequency: weekly or every 50 cycles (whichever comes first).

In order to make sure that the DAC UNIVERSAL is able to lubricate the instruments correctly, the flow through the internal oil channels of the STANDARD lid needs to be tested.

IMPORTANT

The oil supply to the lid needs only to be checked for the STANDARD lid, since this is the only one with internal oil channels.

IMPORTANT

This test will use water to test the internal oil channels, not oil.

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
 - ✓ The lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.
 - ✓ You are wearing your protective gear.
 - ✓ The STANDARD lid and the white lid extension piece for oil are at hand.
 - ✓ The STANDARD lid and the chamber are cooled down.
1. Attach the white lid extension piece for oil to the bottom of the lid.
 2. Place the other end of the white lid extension piece for oil on the bottom adapter in the bottom of the chamber.





3. Assure the lid is attached vertically on the bottom adapter, as shown.
4. Press the "Rinse/Flush"-Key and hold it down for more than 1 second.
 - ↳ Water is pumped through the internal oil hoses and channels of the lid.
5. When water is visible from underneath the lid's top plate; observe that water is flowing freely from the 6 different adapters.
6. Release the "Rinse/Flush"-Key.
7. Remove the white extension piece for oil from the chamber and the lid.
8. Repeat the process for all available STANDARD lids.
 - ↳ The water and oil residue that is in the chamber and hoses will need to be drained and cleaned out, see section "Drain the chamber" in "Drain the water tank via the menu [→ 196]".

9.5 Drain the water tank of the DAC UNIVERSAL STANDARD

Frequency: weekly or every 50 cycles (whichever comes first).

IMPORTANT

If you have installed the DAC UNIVERSAL with a permanent water connection, please turn off the water.

You have the following options for emptying the water tank:

- Drain the water tank via the menu
- Drain the water tank via a hose



9.5.1 Drain the water tank via the menu

Pump water into the chamber

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
 - ✓ The water supply is disconnected (for a permanent water supply).
 - ✓ The STANDARD lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.
1. Press the "Menu/Enter"-Key to go to menu level 1.
 2. Press the "Up" or "Down"-Key until "Manual" is selected.
 3. Press the "Menu/Enter"-Key to confirm the selection.
 4. Press the "Up" or "Down"-Key until "Water" is selected.
 5. Press the "Menu/Enter"-Key to confirm the selection.
 - ↳ Water is pumped into the chamber.
 6. When the chamber is 3/4 filled with water, press the "Menu/Enter"-Key or the "Clear"-Key to stop pumping





Drain the chamber

1. Insert the STANDARD lid back into the lid holder of the DAC UNIVERSAL.
2. Press the "Up"- or "Down"-Key until *"Draincham"* is selected.
3. Press the "Menu/Enter"-Key to confirm the selection.
 - ↳ The unit closes automatically.
 - ↳ The tank is emptied.
 - ↳ The lid opens again automatically after 60 seconds.

IMPORTANT

If the water tank and/or chamber are not completely empty, repeat all steps from the beginning until both are completely empty.

IMPORTANT

If you have installed the DAC UNIVERSAL with a permanent water connection, please remember to turn the water back on.

IMPORTANT

If there is no permanent water connection, fill the water tank with demineralized or distilled water (water conductivity < 3.0 µS/cm).

9.5.2 Drain the water tank via a hose

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- ✓ The lid of the DAC UNIVERSAL is inserted.

IMPORTANT

Steps 1-3 are required only if there is a permanent water connection.

1. Switch off the water of your water conditioning system.
2. Open the "Water" quick coupling at the back of the DAC UNIVERSAL unit by twisting it counterclockwise.
3. Detach the hose.
4. Attach a 6/4-mm hose to the "Water" quick coupling at the back of the unit and twist it clockwise firmly.
5. Place the end of the hose in a sink or bucket.

IMPORTANT

The DAC UNIVERSAL must be placed higher than the sink/bucket to allow the water to drain out.

↳ The hose for draining the water tank is installed.

6. Insert the STANDARD lid in the cover holder of the DAC UNIVERSAL.
7. Press the "Menu/Enter"-Key to go to menu level 1.
8. Press the "Up" or "Down"-Key until *"Manual"* is selected.





9. Press the "Menu/Enter"-Key to confirm the selection.
10. Press the "Up" or "Down"-Key until *"Drain tank"* is selected.
11. Press the "Menu/Enter"-Key to confirm the selection.
 - ↳ The water is drained from the tank through the hose into the drain/sink or into a bucket.
 - ↳ This process takes approx. 5-10 minutes.
12. Press the "Menu/Enter"-Key when the water tank is completely empty.
13. Press the "Clear"-Key until the normal display reappears.
 - ↳ The tank is empty.
14. Open the "Water" quick coupling by twisting it counterclockwise.
15. Detach the hose used for draining the water tank.

IMPORTANT

Step 16 is required only if there is a permanent water connection.

16. Reattach the normal 6/4-mm hose to the "Water" quick coupling at the back of the unit and twist it clockwise firmly.

IMPORTANT

If you have installed the DAC UNIVERSAL with a permanent water connection, please remember to turn the water back on.

IMPORTANT

If there is no permanent water connection, fill the water tank with demineralized or distilled water (water conductivity < 3.0 µS/cm).

9.6 Cleaning the water tank

Frequency: weekly or every 50 cycles (whichever comes first).

- ✓ The water tank is empty, see "Drain the water tank of the DAC UNIVERSAL STANDARD [→ 196]".
 - ✓ The DAC UNIVERSAL is switched off.
1. Remove the sieve from the water tank





2. Grasp the recesses of water tank with both hands.
3. Wiggle the water tank carefully until it comes loose.



4. Lift the water tank straight out of the DAC UNIVERSAL.



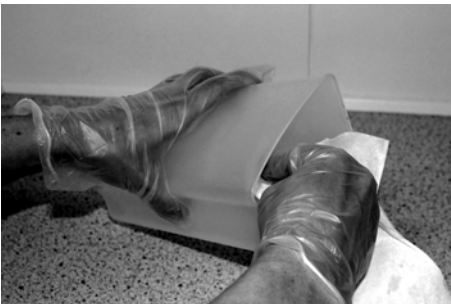
5. Clean the water tank with warm water (maximum 50°C / 122°F).



6. Clean the filter with warm water (maximum 50°C / 122°F).



7. Clean the float in the water tank carefully with a moist cloth.



8. Wipe the tank dry with a clean cloth.



9. Wipe the sieve dry with a clean cloth.



10. Grasp the recesses of water tank with both hands again.

11. Insert the water tank back into the DAC UNIVERSAL.

12. Wriggle slightly until the water tank is firmly in place.

NOTICE

When inserting the water tank, make sure the float is put through the opening in the water tank.

13. Place the sieve back on the water tank.

14. For manual water supply: Fill demineralized or distilled water (water conductivity < 3.0 $\mu\text{S}/\text{cm}$) into the water tank.

15. Reconnect the DAC UNIVERSAL to the power supply.

↪ The DAC UNIVERSAL is now switched on and ready for operation again.

9.7 Cleaning the drain filter



Frequency: weekly or every 50 cycles (whichever comes first).

IMPORTANT

At approx. 10 cycles per day, the drain filter must be changed every 4 weeks, see "Changing the drain filter [→ 209]"

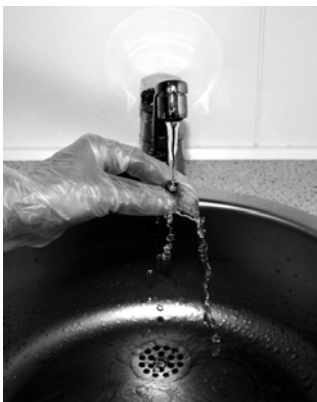
- ✓ The DAC UNIVERSAL is switched off and cooled down.
- ✓ You are wearing your protective gear.
- ✓ The filter key included with the unit is at hand.



1. Unscrew the lid of the filter housing using the filter key.



2. Unscrew the drain filter from the filter housing counterclockwise using the filter key.



3. Clean the drain filter thoroughly under running water.
4. Screw the drain filter onto the filter housing clockwise using the filter key.

NOTICE

Tighten the drain filter well without using force.

5. Screw the lid of the filter housing back on clockwise with the filter key.

NOTICE

Tighten the filter housing well without using force.

9.8 Remove and clean the drain tank

Frequency:

If using manual water: Weekly or every 50 cycles (whichever comes first) or when it is full.

If using automatic water: Daily or every 50 cycles (whichever comes first) or when it is full.

NOTICE

Do not start a cycle if the DAC UNIVERSAL is not connected to the drain tank or drainage system.



- ✓ The DAC UNIVERSAL is switched off and cooled down.
- ✓ The waste water tank is cooled down.
- ✓ You are wearing your protective gear.

1. Unscrew the lid of the drain tank.





2. Remove the condensation tube.
3. Empty the waste water tank. Dispose of the waste water according to the national guidelines and the applicable regulations for waste disposal.
4. Rinse the waste water tank thoroughly with hot water and then empty it again completely.
5. Soak a soft cloth in hot water and wring it out well. Use the cloth to clean the exterior of the waste water tank and the condensation tube.



6. Fill the clean waste water tank with water up to the lowest mark on the label.



7. Add isopropyl alcohol (alcohol $\geq 70\%$) up to the second mark on the label. This prevent the growth of bacteria in the drain tank.
 8. Replace the condensation tube and screw the lid on firmly.
 9. Place the drain tank no more than 3 m from the DAC UNIVERSAL and at a lower height.
- ↪ The waste water tank is cleaned and emptied.

9.9 Checking the adapters and the respective O-rings

Frequency: weekly or every 50 cycles (whichever comes first).

! CAUTION

Danger of burning!

The metal part of the lid is very hot at the end of the cycle. Please allow the lid to cool down before cleaning it.

IMPORTANT

At approx. 10 cycles per day, the O-rings have to be replaced every 3 months. see "Changing the O-rings on the adapters [→ 210]".

IMPORTANT

If an O-ring on the adapters is damaged or missing, replace it, see "Changing the O-rings on the adapters [→ 210]".

Process

- ✓ The lid is at hand and cooled down.
1. Place the lid on the counter or put it in the optional lid holder.
 2. Check the attachment of the adapters to the lid by pulling each adapter lightly.
 3. If an adapter is loose, tighten the screws with the 1.5 mm Allen wrench included with the unit.
 4. Repeat for all available STANDARD or FLEX lids.



9.10 Cleaning the empty chamber of the DAC UNIVERSAL STANDARD

Frequency: weekly or every 50 cycles (whichever comes first).

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
 - ✓ The STANDARD lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.
 - ✓ There is no water or oil in the chamber or the hoses.
1. Clean the empty chamber with a lint-free cloth and a solution of 70% isopropyl alcohol alcohol.



IMPORTANT

The chamber may not be cleaned with agents containing chlorine.



2. Insert the STANDARD lid in the cover holder of the DAC UNIVERSAL.

NOTICE

No instruments may be on the STANDARD lid.

NOTICE

Make sure that the lid is inserted all the way into the holder.

NOTICE

Make sure there are no objects in the chamber.

3. Place a NitraClean tablet in the empty chamber. See "Functions with the BASKET lid [→ 22]" for more information on using a NitraClean tablet.
4. Press the "Menu/Enter"-Key twice and select the standard program using the arrow keys.
5. Confirm your input by pressing the "Menu/Enter"-Key again.
 - ↳ The display shows: "Ready 134 °C".

IMPORTANT

If no program is selected, the standard program is used.

6. Press the "Start"-Key.
 - ↳ A prompt to press down on the safety ring appears on the display ("*Press safety ring!*").
7. Press down on the safety ring to start the cycle. If the safety ring is not pressed within 20 seconds, you must choose the lid and press the "Start"-Key again.
 - ↳ The STANDARD lid of the DAC UNIVERSAL closes as soon as the safety ring is pressed.
 - ↳ The DAC UNIVERSAL automatically runs the cleaning and sterilization cycle.
 - ↳ You can see on the display at any time which phase the DAC UNIVERSAL is in.
 - ↳ The following message appears on the display when the selected cycle is finished: "*Press C to unload*". The lid moves about halfway out of the chamber. This indicates that a cycle has been completed.

CAUTION

Danger of burning!

Never hold your head directly over the DAC UNIVERSAL when it opens and do not hold the lid firmly, as steam comes out of the unit when it opens.

8. Press the "Clear"-Key.
 - ↳ The STANDARD lid will open completely.

CAUTION

Danger of burning!

The metal part of the lid is very hot. Please touch only the plastic part of the STANDARD lid at the end of the cycle.

9. Remove the STANDARD lid from the holder on the DAC UNIVERSAL at the end of the cycle.
10. Place the STANDARD lid on the counter or put it in the optional lid holder.
 - ↳ The chamber and hoses are clean.

9.11 Cleaning the housing of the unit



Frequency: weekly or every 50 cycles (whichever comes first).

- ✓ The DAC UNIVERSAL is switched off and cooled down.
- The DAC UNIVERSAL is switched off and cooled down.

IMPORTANT

The surface may not be cleaned with agents containing chlorine.

9.12 Cleaning the lids

Frequency: weekly or every 50 cycles (whichever comes first).

⚠ CAUTION

The metal part of the lid is very hot at the end of the cycle. Please allow the lid to cool down before cleaning it.

1. Clean all available lids with warm water
2. Clean the lids with a solution of 70% isopropyl alcohol.

IMPORTANT

The lid may not be cleaned with agents containing chlorine.



9.13 Checking the safety ring of the DAC UNIVERSAL STANDARD



Frequency: every 4 weeks or every 200 cycles (whichever comes first).

- ✓ The DAC UNIVERSAL is switched on and ready for operation.
- ✓ The STANDARD lid of the DAC UNIVERSAL is removed and there is an unobstructed view into the chamber.

1. Insert the STANDARD lid in the cover holder of the DAC UNIVERSAL.

NOTICE

No instruments may be on the STANDARD lid.

NOTICE

Make sure that the lid is inserted all the way into the holder.

NOTICE

Make sure there are no objects in the chamber.

2. Press the "Menu/Enter"-Key twice and select the standard program using the arrow keys.
3. Confirm your input by pressing the "Menu/Enter"-Key again.
 - ↳ The display shows: *"Ready 134 °C"*.

IMPORTANT

If no program is selected, the standard program is used.

4. Press the "Start"-Key.
 - ↳ A prompt to press down on the safety ring appears on the display. (*"Press safety ring!"*).
5. Press down on the safety ring to start the cycle. If the safety ring is not pressed within 20 seconds, you must choose the lid and press the "Start"-Key again.
 - ↳ The lid closes.
6. While the lid is closing, please press on the safety ring and then release it.
 - ↳ The lid moves up again for 5 seconds, message 86 appears on the display, and an acoustic signal sounds.
7. Press the "Clear"-Key until the normal display reappears.
 - ↳ The lid holder of the DAC UNIVERSAL moves up completely.

⚠ CAUTION

If the check does not proceed as described above, the DAC UNIVERSAL may not continue to be used. Please contact your authorized dealer.

9.14 Changing the drain filter



Frequency: every 4 weeks or every 200 cycles (whichever comes first).

IMPORTANT

The drain filter should be cleaned weekly or every 50 cycles, see "Cleaning the drain filter [→ 201]".

- ✓ The DAC UNIVERSAL is switched off and cooled down.
- ✓ You are wearing your protective gear.
- ✓ The filter key included with the unit is at hand.



1. Unscrew the lid of the filter housing using the filter key.



2. Unscrew the drain filter from the filter housing counter-clockwise using the filter key.
3. Dispose of the drain filter with the practice waste. Observe the relevant regulations in your country.
4. Screw a new drain filter onto the filter housing clockwise using the filter key.

NOTICE

Tighten the drain filter well without using force.

5. Screw the lid of the filter housing back on clockwise with the filter key.

NOTICE

Tighten the filter housing well without using force.

- ↪ The drain filter has been replaced.

9.15 Changing the O-rings on the adapters

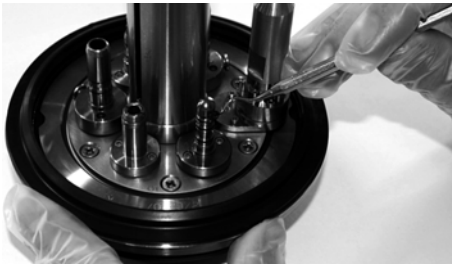
Frequency: every 3 months or every 600 cycles (whichever comes first).

Some adapters have internal O-rings that must be replaced by your service technician during servicing.

See "Consumables, spare parts, and tools [→ 245]" for an overview of which adapters require O-rings.

✓ The STANDARD lid is at hand.

1. Remove the O-rings from the adapters using a dental probe or other instrument.
2. Slide the O-rings to the notches on the adapter.



WARNING

If the O-rings are not moved correctly to the notches on the adapter, the instruments and the O-rings can be damaged. Correct sterilization is not ensured.

9.16 Biennial Service

Frequency: every 2nd year or every 3000 cycles (whichever comes first).

When 2 years has passed or 3000 cycles, since the last service or the DAC UNIVERSAL was put into use for the first time, the screen "Service needed" will be displayed, simultaneously with a 2 second acoustic alarm.

When this happens a qualified technician must perform service on the DAC UNIVERSAL, in order to ensure the performance of the DAC UNIVERSAL.

10 Display messages DAC UNIVERSAL STANDARD

Any errors that cannot be immediately recognized by the user but must be remedied are displayed on the DAC UNIVERSAL display. These error messages are indicated with a code. The display does not show any plain text error output.

WARNING

When the DAC UNIVERSAL shows a display message, a complete cycle may not have been conducted. The instruments are thus considered non-sterile and must be reprocessed again.

CAUTION

Danger of burning!

Hot steam may emerge from the chamber.

- Please do not open the DAC UNIVERSAL when the temperature is still above 104°C (219°F), see display indicator.

IMPORTANT

If the DAC UNIVERSAL shows the same display message more than once, and this is not due to lack of consumables, please contact your authorized dealer.

Reset display messages

IMPORTANT

When an error is encountered, an alarm will sound and the display message will appear in the display.

- Please note the message before resetting the alarm.
- Press on the "Clear"-Key to reset the alarm and delete the message.
- ↶ When the "Clear"-Key is pressed, the lid is raised for approx. 2 seconds. The lid stops here until the temperature drops to less than 104°C / 219°F. Then it opens completely.

IMPORTANT

If a message is displayed during sterilization, it is shown again when the lid opens. To delete this error message and start a new cycle, you must press the "Menu/Enter"-Key and the "Clear"-Key simultaneously. This is indicated on the display.

10.1 Display messages and what they mean DAC UNIVERSAL STANDARD

The display messages have the following meanings:

Code no.	Description	Corrective action
60	The chamber temperature and the theoretical steam temperature deviate from each other more than 2K.	Please contact your authorized dealer.
61	The software has not registered a change in temperature in the steam generator for 3 minutes.	Please contact your authorized dealer.
62	The temperature required for building up pressure for sterilization was not reached within 7½ minutes.	Increase the level of the "Ambient temperature sensitivity" settings. If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank. If the DAC UNIVERSAL is in a room with a temperature < 16°C / 61°F, ensure that operating conditions is fulfilled. Press the "Clear"-Key to reset and then restart the DAC UNIVERSAL. If the error occurs repeatedly, please contact your authorized dealer.
63	Incorrect setting of the water level switch.	Please contact your authorized dealer.
64	The safety system was activated.	Please contact your authorized dealer.
65	The safety system is defective.	Please contact your authorized dealer.
66	The temperature was too high during sterilization.	Please contact your authorized dealer.
67	The sterilization time was less than 3 minutes.	The instruments must be sterilized again. If the error occurs repeatedly, please contact your authorized dealer.
68	The pressure is too high during the pressure test.	Please contact your authorized dealer.
70	The pressure in the chamber does not drop quickly enough after the pressure test.	Drain water from the chamber. Clean or change the drain filter, see "Cleaning the drain filter [→ 130]" or "Changing the drain filter [→ 209]". Make sure the drain hose is not blocked, defective, or kinked. IMPORTANT: The drain hose must be made of a heat-resistant material such as PTFE. Empty the drain tank if it is full. If the error occurs repeatedly, please contact your authorized dealer.
71	The DAC UNIVERSAL is blocked due to insufficient water quality in the water tank.	Drain the water tank if necessary. Fill it with fresh demineralized or distilled water (water conductivity < 3.0 µS/cm). If the error occurs repeatedly, please contact your authorized dealer.

Code no.	Description	Corrective action
72	The lid will not open	Remove anything blocking the lid. If the error occurs repeatedly, please contact your authorized dealer.
73	The sterilization temperature was not maintained during the back-flush process..	If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank. Press the "Clear"-Key to reset and then restart the DAC UNIVERSAL. If the error occurs repeatedly, please contact your authorized dealer.
74	When heating for sterilization, a temperature of 120°C / 248°F was not reached within 2.5 minutes.	Increase the level of the "Ambient temperature sensitivity" settings. If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank. If the DAC UNIVERSAL is in a room with a temperature < 16°C / 61°F, ensure that operating conditions is fulfilled. Press the "Clear"-Key to reset and then restart the DAC UNIVERSAL. If the error occurs repeatedly, please contact your authorized dealer.
75	Heating for sterilization from 120°C / 248°F to 134°C / 273°F exceeded 2.5 minutes.	Increase the level of the "Ambient temperature sensitivity" settings. If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank. If the DAC UNIVERSAL is in a room with a temperature < 16°C / 61°F, ensure that operating conditions is fulfilled. Press the "Clear"-Key to reset and then restart the DAC UNIVERSAL. If the error occurs repeatedly, please contact your authorized dealer.
76	Valve error	Please contact your authorized dealer.
77	Valve error	Please contact your authorized dealer.
78	Valve error	Please contact your authorized dealer.
79	Valve error	Please contact your authorized dealer.
80	After reducing the water, the desired sterilization temperature was not reached.	If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank. Please contact your authorized dealer.
81	Low water level in the water tank or oil bottle, see DAC UNIVERSAL display	If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank. Replace the NitramOil #2 bottle if it is empty, see "Adding/replacing the lubrication concentrate [→ 66]". If the error occurs repeatedly, please contact your authorized dealer.
82	Error in the steam generator	Please contact your authorized dealer.
83	The temperature sensor in the chamber is defective.	Please contact your authorized dealer.
84	The sterilization temperature was not maintained during sterilization.	If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank. If the error occurs repeatedly, please contact your authorized dealer.
85	The pressure sensor is defective.	Please contact your authorized dealer.

Code no.	Description	Corrective action
86	The safety ring was activated when the lid was closed.	Press the "Clear"-Key to reset. Make sure that the lid is placed properly in the lid holder. Restart the cycle. If the error occurs repeatedly, please contact your authorized dealer.
87	The safety ring is defective.	Please contact your authorized dealer.
88	Vapor pressure was too low during sterilization.	If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank. Press the "Clear"-Key to reset and then restart the DAC UNIVERSAL. If the error occurs repeatedly, please contact your authorized dealer.
89	Vapor pressure was too high during sterilization.	Please contact your authorized dealer.
90	Too little pressure during the pressure test.	Make sure your compressor is switched on. Check the seal on the lid. If it appears to have a leak, please contact your authorized dealer. Check whether the pressure at the "Air" connection at the back of the unit is 5-8 bar. If pressure falls significantly during use, contact the compressor supplier. If the error occurs repeatedly, please contact your authorized dealer.
91	The pressure dropped during the pressure test.	Check the seal on the lid. If it appears to have a leak, please contact your authorized dealer. Remove any dirt that may be present. Make sure that the lid is placed properly in the lid holder. Check whether the O-ring of the filter housing is properly attached. Replace the O-ring if it is damaged. Attach the O-ring of the filter housing properly. If the error occurs repeatedly, please contact your authorized dealer.
92	The power supply of the DAC UNIVERSAL was interrupted or the "Clear"-Key was activated during the cycle.	Press the "Clear"-Key to reset and then restart the DAC UNIVERSAL. If the error occurs repeatedly, please contact your authorized dealer.
93	The steam generator is overheated.	Switch the DAC UNIVERSAL off immediately. Please contact your authorized dealer.
95	The DAC UNIVERSAL "requested" water in standby mode more than 7 times.	Important: This error can occur only if the DAC UNIVERSAL is connected to a permanent water supply. Make sure the DAC UNIVERSAL is supplied with water. If error 95 was caused by a leak, there will be a large pool of water on the counter under the DAC UNIVERSAL. Check for water under the DAC UNIVERSAL. If this is the case, interrupt the water supply to the DAC UNIVERSAL and please contact your authorized dealer.

Code no.	Description	Corrective action
96	Too little pressure during purging of instruments.	Please contact your authorized dealer.
97	No water during external cleaning.	<p>Press the "Clear"-Key to reset and then restart the DAC UNIVERSAL.</p> <p>If the water level is too low, fill demineralized or distilled water (water conductivity < 3.0 µS/cm) into the water tank.</p> <p>Press the "Rinse/Flush"-Key until water appears at the bottom of the chamber. If this is the case, see "Drain the water tank of the DAC UNIVERSAL STANDARD [→ 196]".</p> <p>If no water appears in the chamber, please contact your authorized dealer.</p> <p>Empty the drain tank if it is full.</p> <p>Clean or change the drain filter.</p> <p>Make sure the drain hose is not blocked, defective, or kinked.</p> <p>IMPORTANT: The drain hose must be made of a heat-resistant material such as PTFE.</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
98	The lid will not close.	<p>Press the "Clear"-Key to reset and wait until the lid is in its highest position.</p> <p>Make sure that the lid was placed properly in the lid holder.</p> <p>Look for objects that prevent the lid from closing completely and remove them.</p> <p>Start a new cycle.</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
99	The program settings must be checked.	Please contact your authorized dealer.

10.2 Errors without a message

Description	Corrective action
Leakage.	Wipe away any water that may have been spilled after filling. If the unit continues to leak, please contact your authorized dealer.
There is water in the chamber after end of cycle	Clean or change the drain filter, see "Cleaning the drain filter [→ 201]" or "Changing the drain filter [→ 209]". Check whether the drain hose is blocked or damaged. Empty the drain tank if it is full. If the error occurs repeatedly, please contact your authorized dealer.
Condensation in the instruments.	If the instruments are to be stored for an extended period, it is important to purge them (horizontally) with compressed air to remove condensation from the instruments. Condensation can lead to rust. IMPORTANT: Use the compressed air at the pressure level (bar) recommended by the instrument manufacturer. The instruments must be wrapped after purging.
Adapter is loose.	Tighten the adapter with the Allen wrench included.
Wrong liquid.	If a liquid other than demineralized or distilled water has been filled into the water tank, the DAC UNIVERSAL may not be used. Please contact your authorized dealer.
Sterilization OFF safety ring! (A long acoustic alarm will be given simultaneously).	Your DAC UNIVERSAL technician has run a special program. Disconnect the plug of the DAC UNIVERSAL and reconnect it to the power supply. WARNING: Otherwise no sterilization will take place!
The DAC UNIVERSAL does not open.	If the lid holder is stuck on the safety ring, please first reset, see "Reset DAC UNIVERSAL STANDARD [→ 217]". IMPORTANT: The autoclave may not be started if the lid is not in the correct position.
The DAC UNIVERSAL does not take in any water.	Check whether the automatic water intake is activated in the DAC UNIVERSAL menu, see "Menu system DAC UNIVERSAL STANDARD [→ 165]". Check whether water from the external water supply is fed to the DAC UNIVERSAL. If the error occurs repeatedly, please contact your authorized dealer.
A metallic sound is heard when the pump is activated.	Please contact your authorized dealer.

Description	Corrective action
The oil dispenser does not dispense oil.	<p>Check whether there is oil in the NitramOil #2 bottle and whether oil is visible in the oil dispenser.</p> <p>Replace the NitramOil 2 bottle if it is empty, see "Adding/replacing the lubrication concentrate".</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>
The DAC UNIVERSAL does not heat up.	<p>If the safety system was activated and the DAC UNIVERSAL does not open, please reset, see "Reset DAC UNIVERSAL STANDARD [→ 217]".</p> <p>If the error occurs repeatedly, please contact your authorized dealer.</p>

If the alarm lamp flashes, but no acoustic alarm is given, the system has reached 3000 cycles or the last servicing was 24 months ago. Please contact your authorized dealer for servicing the DAC UNIVERSAL. The DAC UNIVERSAL can still be used until servicing if "only" the alarm lamp flashes and no other message is displayed.

10.3 Reset DAC UNIVERSAL STANDARD



If the DAC UNIVERSAL was started without attaching the lid in the lid holder and if the lid holder pressed the safety ring down and can no longer be opened, please proceed as follows:

- ✓ The DAC UNIVERSAL is switched on.
- ✓ The allen wrench included with the unit is at hand.



1. Put the Allen wrench into the small opening at the back of the unit to fasten the adapter.
2. Press the Allen wrench into the opening until you hear a slight click.
 - ↳ The lid holder of the DAC UNIVERSAL moves up somewhat.
 - ↳ Error 86 is displayed and an acoustic signal sounds.
3. Press the "Clear"-Key until the normal display reappears.
 - ↳ The lid holder of the DAC UNIVERSAL moves up completely.
 - ↳ The DAC UNIVERSAL ready for operation again.

11 Accessories

REF	Article designation
6051739	STANDARD lid (without adapter)
6259092	WRAPPED lid incl. sterile filter
6126200	BASKET lid
6535855	FLEX lid (without adapter), with lid extension piece
6542737	Black lid extension piece for water
6588284	White lid extension piece for oil
6259852	NitraDem Direct Connect
6259109	Holder for lid
6312214	Water filter (20µm)
6078575	Air filter (20µm)
6051770	DAC UNIVERSAL thermal printer
6123462	DAC UNIVERSAL thermal printer paper, (5 rolls)
6051820	PCD test device
6051788	STANDARD indicator holder
6542489	FLEX indicator holder
6078526	Drain tank with hose
6126341	Syphon with hose
6433267	Installation kit, Syphon - for waste water installation
6433275	Installation kit, drain tank - for waste water installation

Installation kit, Syphon (REF 64 33 267) includes:

- Syphon with direct connection
- Manometer
- Water filter
- Holder for air filter
- Filter for filter housing (pack of 6)
- NitraClean tablets (pack of 100)
- Chemical indicators, Class 5 (pack of 100)

Installation kit, drain tank (REF 64 33 275) includes:

- Drain tank
- Manometer
- Water filter
- Holder for air filter
- Filter for filter housing (pack of 6)
- NitraClean tablets (pack of 100)
- Chemical indicators, Class 5 (pack of 100)

11.1 Adapters for the STANDARD lid

REF	Adapters for highspeed handpieces
6051713	Adapter for BienAir UNIFIX
6051762	Adapter for Castellini CERAMIC FREEDOM
6051861	Adapter for Borden 2/3-hole fixed connection
6051853	Adapter for MW/ISO 4/5-hole fixed connection
6051655	Adapter for KaVo MULTiflex
6051911	Adapter for Morita Alpha
6051929	Adapter for Morita CP4
6051804	Adapter for NSK PTL
6051812	Adapter for NSK QDJ
6085745	Adapter for Osada OFJ
6051697	Adapter for Sirona quick coupling R/F/B
6051671	Adapter for W&H Roto Quick
6323831	Adapter for Yoshida QUICK JOINT

REF	Straight and contra-angle handpiece adapters
6051648	Adapter for ISO/INTRAmatic and Osada HL-C
6051663	Adapter for contra-angle handpiece head
6051705	Adapter for Sirona T1 CLASSIC/TE

REF	Ultrasonic scaler
6085752	Adapter for EMS ultrasonic scaler without light
6307214	Adapter for EMS ultrasonic scaler with light

If there are many instruments to be reprocessed or to ensure the instruments will be available again quickly, we recommend using a second STANDARD lid (REF 60 51 739).

11.1.1 Attaching instruments to the respective STANDARD lid adapters

11.1.1.1 ISO/INTRAmatic and Osada HL-C adapter



The ISO/INTRAmatic adapter has been shortened to also accommodate smaller handpieces and the Osada HL-C.

Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 115]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 187]" when handling the adapters described here.

Attachment

1. Press the straight or contra-angle handpiece onto the adapter until you hear and feel a slight click.
2. Pull lightly on the straight or contra-angle handpiece to ensure that it is correctly attached to the adapter.

Removal

1. Press the small button at the bottom of the adapter and simultaneously detach the straight or contra-angle handpiece.
2. Release the button.



IMPORTANT

When using a straight or contra-angle handpiece with an exchangeable head, the head must be reprocessed separately. To reprocess the head use the contra-angle handpiece head adapter, see "Adapter for contra-angle handpiece head [→ 222]". The instrument (without head) is reprocessed on the ISO/INTRAmatic adapter.

IMPORTANT

The PCD test device is also reprocessed on the ISO/INTRAmatic adapter. See "Testing with a PCD process challenge device [→ 64]" for details.

11.1.1.2 Adapter for KaVo MULTiflex



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Press the KaVo highspeed handpiece onto the adapter until you hear and feel a slight click.
2. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal

- Hold the STANDARD lid of the DAC UNIVERSAL firmly with one hand and simultaneously detach the KaVo highspeed handpiece.

11.1.1.3 Adapter for contra-angle handpiece head



For reprocessing KaVo, BienAir, and Osada instruments with removable heads.

Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Remove the contra-angle handpiece head by twisting the ring on the handpiece clockwise while pulling the head out.
2. Then press the contra-angle handpiece onto the adapter until you hear and feel a slight click. When attaching it, make sure the two lugs at the sides of the contra-angle handpiece head click into the groove on the adapter.

Removal

- Hold the STANDARD lid of the DAC UNIVERSAL firmly with one hand and simultaneously detach the contra-angle handpiece head.

IMPORTANT

To reprocess the instrument without the head use the ISO/INTRAmatic adapter, see "ISO/INTRAmatic and Osada HL-C adapter [→ 220]".

11.1.1.4 Adapter for W&H Roto Quick



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Press the W&H highspeed handpiece onto the adapter until you hear and feel a slight click.
2. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal

1. Press the outer ring of the adapter down and simultaneously detach the W&H highspeed handpiece.
2. Release the ring.

11.1.1.5 Adapter for Sirona quick coupling R/F/B



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Press the Sirona highspeed handpiece onto the adapter until you hear and feel a slight click.
2. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal

- Hold the STANDARD lid of the DAC UNIVERSAL firmly with one hand and simultaneously detach the Sirona highspeed handpiece.



11.1.1.6 Adapter for Sirona T1 CLASSIC/TE



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Attach the T1 CLASSIC/TE straight or contra-angle handpiece to the adapter. When attaching, make sure that the tube diameters match.
2. Press the straight or contra-angle handpiece onto the adapter until you hear and feel a slight click.
3. Pull lightly on the straight or contra-angle handpiece to ensure that it is correctly attached to the adapter.

Removal

- Hold the STANDARD lid of the DAC UNIVERSAL firmly with one hand and detach the T1 CLASSIC/TE straight or contra-angle handpiece.

11.1.1.7 Bien Air UNIFIX adapter



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Press the BienAir highspeed handpiece onto the adapter until you hear and feel a slight click.
2. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal

1. Press the small button at the bottom of the adapter and simultaneously detach the BienAir handpiece.
2. Release the button.

11.1.1.8 Adapter for Castellini CERAMIC FREEDOM



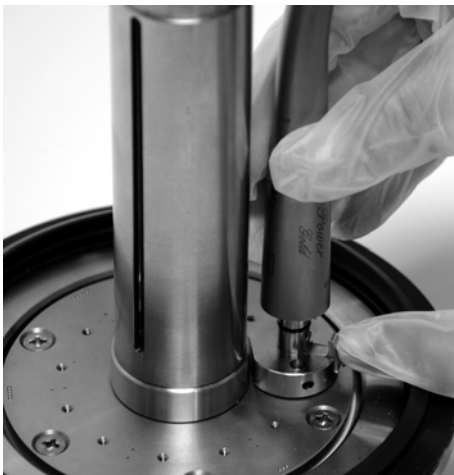
Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Press the Castellini highspeed handpiece onto the adapter until you hear and feel a slight click.
2. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal

- Press the small level at the bottom of the adapter and simultaneously detach the Castellini handpiece.



11.1.1.9 Adapter for NSK PTL



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment:

1. Press the NSK highspeed handpiece onto the adapter until you hear and feel a slight click.
2. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal:

- Press the outer ring of the adapter down and simultaneously detach the NSK handpiece.

11.1.1.10 Adapter for NSK QDJ



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Press the NSK highspeed handpiece onto the adapter until you hear and feel a slight click.
2. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal

- Press the outer ring of the adapter down and simultaneously detach the NSK handpiece.

11.1.1.11 Midwest/ISO 4/5-hole fixed connection adapter



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Attach the Midwest/ISO 4/5-hole highspeed handpiece with fixed connection to the adapter. When attaching, make sure that the various tube diameters match.
2. Press the handpiece down slightly while simultaneously twisting the threaded ring counterclockwise.
3. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal

1. Hold the handpiece firmly and simultaneously twist the threaded ring clockwise to loosen it.
2. Detach the Midwest/ISO 4/5-hole highspeed handpiece with fixed connection from the adapter.

11.1.1.12 Adapter for Borden 2/3-hole fixed connection



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Attach the Borden 2/3-hole highspeed handpiece with fixed connection to the adapter. When attaching, make sure that the various tube diameters match.
2. Hold the handpiece firmly and lift the threaded ring.
3. Then twist the ring counterclockwise to firmly attach the handpiece.
4. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal

1. Hold the handpiece firmly and simultaneously twist the threaded ring clockwise to loosen it.
2. Detach the Borden 2/3-hole highspeed handpiece with fixed connection from the adapter.



11.1.1.13 Adapter for Morita Alpha



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Press the ring at the bottom of the adapter down and attach the Morita highspeed handpiece onto the adapter as far as possible until you hear and feel a slight click.
2. Release the ring. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal

1. Press the ring at the bottom of the adapter down and simultaneously detach the Morita handpiece.
2. Release the ring.



11.1.1.14 Adapter for Morita CP4



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Press the Morita highspeed handpiece onto the adapter until you hear and feel a slight click.
2. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal

1. Press the outer ring of the adapter down and simultaneously detach the Morita handpiece.
2. Release the ring.

11.1.1.15 Adapter for Osada OFJ



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Press the ring at the bottom of the adapter down and attach the Osada highspeed handpiece onto the adapter as far as possible until you hear and feel a slight click.
2. Release the ring.
3. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal

1. Press the ring at the bottom of the adapter down and simultaneously detach the Osada handpiece.
2. Release the ring.



11.1.1.16 Adapter for Yoshida QUICK JOINT



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Press the Yoshida highspeed handpiece onto the adapter until you hear and feel a slight click.
2. Pull lightly on the highspeed handpiece to ensure that it is correctly attached to the adapter.

Removal

- Press and hold the outer ring of the adapter down and detach the Yoshida handpiece.



11.1.1.17 EMS Ultrasonic Scaler without light adapter



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Remove the cap and the O-ring of the ultrasonic scaler by twisting the cap counterclockwise.
2. Attach the EMS ultrasonic scaler without light to the adapter. When attaching, make sure the tube diameters match.
3. Press the button on the adapter and simultaneously press the ultrasonic scaler down onto the adapter until you meet resistance.

Removal

1. Press the button on the adapter and simultaneously detach the EMS ultrasonic scaler without light.
2. Release the button.



IMPORTANT

The cap and the O-ring must be cleaned according to the manufacturer's instructions.

IMPORTANT

The EMS adapter may be used with a DAC UNIVERSAL in connection with software version 3.4.31 or higher. The software version of your DAC UNIVERSAL can be found in the menu under "About", see "Info [→ 93]" or "Menu overview DAC UNIVERSAL STANDARD [→ 166]".

11.1.1.18 Adapter for EMS ultrasonic scaler with light



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 99]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 172]" when handling the adapters described here.

Attachment

1. Remove the cap and the O-ring of the ultrasonic scaler by twisting the cap counterclockwise.
2. Attach the EMS ultrasonic scaler with light to the adapter.
3. Press the button on the adapter and simultaneously press the ultrasonic scaler down onto the adapter until you meet resistance.

Removal

1. Press the button on the adapter and simultaneously detach the EMS ultrasonic scaler with light.
2. Release the button.



IMPORTANT

The cap, the fiber optic, and the O-ring must be cleaned according to the manufacturer's instructions.

IMPORTANT

The EMS adapter may be used with a DAC UNIVERSAL in connection with software version 3.4.31 or higher. The software version of your DAC UNIVERSAL can be found in the menu under "About", see "Info [→ 93]" or "Menu overview DAC UNIVERSAL STANDARD [→ 166]".

11.2 Adapters for the FLEX lid

REF	Adapter FLEX lid
6536127	Sirona Adapter for Scaler tips (FLEX lid)
6536135	Sirona Adapter Scaler TL, for SIROSONIC TL and PerioSonic (FLEX lid)
6536143	Sirona Adapter Scaler L, for SIROSONIC and SIROSONIC L (FLEX lid)
6536150	Sirona Adapter Sprayvit, for Sprayvit Düse G (FLEX lid)
6536168	Sirona Adapter Sprayvit 4000, for Sprayvit Düse 4000 (FLEX lid)

11.2.1 Attaching instruments to the respective FLEX lid adapters

Tip: If there are many instruments to be reprocessed or to ensure the instruments will be available again quickly, we recommend using a second FLEX lid.

Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 115]" or „General placement of instruments DAC UNIVERSAL STANDARD [→ 187]" when handling the adapters described here.

11.2.1.1 Adapter Scaler tips



Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 115]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 187]" when handling the adapters described here.

Attachment of the adapter

- ✓ The scaler tip was unscrewed from the ultrasonic handpiece with the torque wrench and the tip remains in the torque wrench.

IMPORTANT

The torque wrench has to be placed straight onto the adapter so they can't jam up.

1. Screw the torque wrench onto the adapter, as it is done on the ultrasonic handpiece, make sure it is screwed on tight.

IMPORTANT

The torque wrench must be firmly attached to the adapter, as normally the instrument.

2. Pull lightly on the torque wrench to ensure that it is correctly attached to the adapter.

Removal

- Screw the torque wrench off the adapter.

11.2.1.2 Adapter Scaler TL

Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 115]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 187]" when handling the adapters described here.

Attachment

1. Press the PerioSonic/SIROsonic TL handpiece onto the adapter, while the lever on the side of the adapter is operated, until you hear and feel a slight click.
2. Pull lightly on the PerioSonic/SIROsonic TL handpiece to ensure that it is correctly attached to the adapter.



Removal

- Hold the FLEX lid of the DAC UNIVERSAL firmly with one hand and simultaneously detach the PerioSonic/SIROsonic TL handpiece.

11.2.1.3 Adapter Scaler L

Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 115]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 187]" when handling the adapters described here.

Attachment

1. Press the SIROsonic/SIROsonic L handpiece onto the adapter, while the lever on the side of the adapter is operated, until you hear and feel a slight click.
2. Pull lightly on the SIROsonic/SIROsonic L handpiece to ensure that it is correctly attached to the adapter.

Removal

- Hold the FLEX lid of the DAC UNIVERSAL firmly with one hand and simultaneously detach the SIROsonic/SIROsonic L handpiece.

11.2.1.4 Adapter Sprayvit

Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 115]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 187]" when handling the adapters described here.

Attachment

1. Press the SPRAYVIT nozzle onto the adapter, while the lever on the side of the adapter is operated, until you hear and feel a slight click.
2. Pull lightly on the SPRAYVIT nozzle to ensure that it is correctly attached to the adapter.

Removal

- Hold the FLEX lid of the DAC UNIVERSAL firmly with one hand and simultaneously detach the SPRAYVIT nozzle.

11.2.1.5 Adapter Sprayvit 4000

Follow the general safety information in "General placement of instruments DAC UNIVERSAL ADVANCED [→ 115]" or "General placement of instruments DAC UNIVERSAL STANDARD [→ 187]" when handling the adapters described here.

Attachment

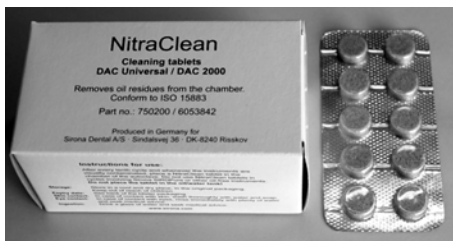


1. Press the SPRAYVIT 4000 nozzle onto the adapter, while the lever on the side of the adapter is operated, until you hear and feel a slight click.
2. Pull lightly on the SPRAYVIT 4000 nozzle to ensure that it is correctly attached to the adapter.

Removal

- Hold the FLEX lid of the DAC UNIVERSAL firmly with one hand and simultaneously detach the SPRAYVIT 4000 nozzle.

11.3 NitraClean cleaning tablet



NitraClean tablets are used for:

- Cleaning solid instruments in the BASKET lid
- Cleaning the empty chamber and internal cleaning of the hoses

The empty chamber and the hoses must be cleaned when needed, but at least in the course of cleaning and maintenance. See "Cleaning the empty chamber of the DAC UNIVERSAL ADVANCED [→ 134]" or „Cleaning the empty chamber of the DAC UNIVERSAL STANDARD [→ 205]" for more information.

IMPORTANT

Do not use NitraClean tablets in cycles involving Sirona SIROPure instruments.

IMPORTANT

NitraClean cleaning tablets may not be put in the water tank.

Please see the MSDS for further information for the NitraClean tablets.
<http://www.sirona.com/en/service/safety-data-sheets/>

11.4 Printer

Technical Data

- Serial interface: RS232



```
DAC Universal
Serial:      222973
Program:    Universal/134°C/3min
Lid type:   Standard lid
Cycle:      180
Date(d-m-y) 10-12-2014
Time(h-m-s) 11:57:59
```

```
-----
Phase:      Time:      Res:
Start       11:58:31 OK
Leakage test 11:59:04 OK
Internal cleaning 11:59:24 OK
Lubrication  11:59:55 OK
External cleaning 12:10:11 OK
Back flush   12:11:23 OK
Start holding time 12:11:55 OK
-----
```

```
Time:      °C:      bar:
12:12:02   135.7   3.19
12:12:32   135.7   3.18
12:13:03   135.7   3.18
12:13:33   135.7   3.18
12:14:04   135.7   3.18
12:14:34   135.7   3.18
12:15:05   135.7   3.21
Maximum    135.7   3.21
Minimum    135.7   3.17
Length (m-s) 03-12
-----
```

```
Sterilization 12:15:08 OK
Expel         12:17:54 OK
Process end   12:17:55 OK
Confirmation  12:18:33 OK
-----
Cycle end     12:18:34 OK
```

Output information STANDARD lid, BASKET lid and WRAPPED lid:

The following information is given by the printer:

- Serial number of the DAC UNIVERSAL
- Program
- Cycle number
- Date (DD-MM-YYYY) and time (HH:MM:SS) (Start)
- The start time of each phase and the result "OK" or "FAIL" is printed.

The phases are:

- Start
- Leakage test
- Internal cleaning
- Lubrication
- External cleaning
- Back flush
- Start of holding time

Not all of these phases are included for all lid types. The ones not included are printed as "Deactivated".

- During the sterilization process, temperature and pressure are measured and printed out every 30 seconds.
- Minimum and maximum temperature
- Minimum and maximum pressure
- Length of sterilization process
- The rest of the phases and the result "OK" or "FAIL" is printed. The phases are:
 - Sterilization (End time)

- Drying
- Process end
- Confirmation (User confirmation)
- Cycle end

Not all of these phases are included for all lid types. The ones not included are printed as "Deactivated".

If any of the phases has failed see „Display messages DAC UNIVERSAL ADVANCED [→ 140]“ or "Display messages DAC UNIVERSAL STANDARD [→ 211]".

Output information FLEX lid:

```
DAC Universal
Serial:      222973
Program:    Universal/134 °C/3min
Lid type:   Flex lid
Cycle:      181
Date(d-m-y) 10-12-2014
Time(h-m-s) 11:57:59
```

```
-----
Phase:      Time:      Res:
Start       11:58:31 OK
Leakage test 11:59:04 OK
Internal cleaning 11:59:24 OK
Lubrication  Deactivated
External cleaning 12:10:11 OK
Back flush  12:11:23 OK
Start holding time 12:11:55 OK
-----
```

```
Time:      °C:      bar:
12:12:02   135.7   3.19
12:12:32   135.7   3.18
12:13:03   135.7   3.18
12:13:33   135.7   3.18
12:14:04   135.7   3.18
12:14:34   135.7   3.18
12:15:05   135.7   3.21
Maximum    135.7   3.21
Minimum    135.7   3.17
Length (m-s) 03-12
-----
```

```
Disinfection 12:15:08 OK
Expel        12:17:54 OK
Process end  12:17:55 OK
Confirmation 12:18:33 OK
-----
Cycle end    12:18:34 OK
```

The following information is given by the printer:

- Serial number of the DAC UNIVERSAL
- Program
- Cycle number
- Date (DD-MM-YYYY) and time (HH:MM:SS) (Start)
- The start time of each phase and the result "OK" or "FAIL" is printed.

The phases are:

- Start
- Leakage test
- Internal cleaning
- Lubrication
- External cleaning
- Back flush
- Start of holding time

Not all of these phases are included for all lid types. The ones not included are printed as "Deactivated".

- During the disinfection process, temperature and pressure are measured and printed out every 30 seconds
- Minimum and maximum temperature
- Minimum and maximum pressure
- Length of disinfection process
- The rest of the phases and the result "OK" or "FAIL" is printed. The phases are:
 - Disinfection (End time)
 - Drying
 - Process end
 - Confirmation (User confirmation)
 - Cycle end

Not all of these phases are included for all lid types. The ones not included are printed as "Deactivated".

If any of the phases has failed see „Display messages DAC UNIVERSAL ADVANCED [→ 140]“ or "Display messages DAC UNIVERSAL STANDARD [→ 211]".

12 Consumables, spare parts, and tools

List of spare parts for maintenance of adapters

REF	Adapters for highspeed handpieces	ME	Spare O-ring REF	Spare O-ring designation
6051713	Adapter for BienAir UNIFIX	1	6079839	O-ring for Bien-Air adapter, small (10x)
		2	6079854	O-ring for Bien-Air highspeed handpiece. large (10x)
		1	6094051	O-ring for XGT/Stylus adapter, large (10x)
6051762	Adapter for Castellini CERAMIC FREEDOM	2	6080043	O-Ring Midwest Q adapter, large (10x)
		3	6079912	O-Ring Castellini adapter, large (10x)
6051861	Adapter for Borden 2/3-hole fixed connection			
6051853	Adapter for MW/ISO 4/5-hole fixed connection	1	6079961 *	O-ring for Midwest fixed connection, large (10x)
		2	6080027 *	O-ring for Midwest fixed connection, small (10x)
6051655	Adapter for KaVo MULTiflex	2	6079698	O-ring for KaVo adapter, small (10x)
		2	6079748	O-ring for KaVo adapter (large) (10x)
6051911	Adapter for Morita Alpha	1	6079979	O-ring for XGT/Stylus turbine, small (10x)
		1	6079789	O-ring for W&H adapter, large (10x)
		1	6198118	O-ring for W&H adapter, large US
6051929	Adapter for Morita CP4	1	6352913	O-ring for Morita CP4 adapter V2, small (10x)
		3	6352954	O-ring for Morita CP4 adapter V2, large (10x)
6051804	Adapter for NSK PTL	2	6079938 *	O-ring for NSK turbine / Sirona TE (10x)
6051812	Adapter for NSK QDJ	1	6587245	O-ring A for NSK QDJ adapter (10x)
		1	6347319	O-ring B for NSK QDJ adapter / W&H adapter, medium (10x)
		1	6587260	O-ring C for NSK QDJ adapter (10x)
		1	6587252	O-ring D for NSK QDJ adapter (10x)
6085745	Adapter for Osada OFJ	1	6085547	O-ring for contra-angle head adapter/Osada OFJ (10x)
		2	6079748	O-ring for KaVo adapter (large) (10x)
6051697	Adapter for Sirona quick coupling R/F/B	3	6079797	O-ring for Sirona/Yoshida adapter (10x)
6051671	Adapter for W&H Roto Quick	1	6079763	O-ring for W&H adapter, small (10x)
		2	6347319	O-ring for W&H turbine, medium (10x)
		1	6347293 *	O-ring for W&H turbine, large (10x)
6323831	Adapter for Yoshida QUICK JOINT	3	6079797	O-ring for Sirona/Yoshida adapter (10x)
		1	6454040 *	O-ring for Yoshida adapter, bottom/internal (10x)
		1	6454065 *	O-ring for Yoshida adapter, top/internal (10x)

* Internal O-rings on adapters may be replaced only by qualified service technicians

REF	Straight and contra-angle handpiece adapters	ME	Spare O-ring REF	Spare O-ring designation
6051648	Adapter for ISO/INTRAmatic	2	6079672	O-ring for INTRAmatic adapter (10x)
6051663	Adapter for contra-angle handpiece head	1	6085547 *	O-ring for contra-angle head adapter/Osada OFJ (10x)
6051705	Adapter for Sirona T1 CLASSIC/TE	1	6079938	O-ring for NSK turbine / Sirona TE (10x)

* Internal O-rings on adapters may be replaced only by qualified service technicians

REF	Ultrasonic scaler	ME	Spare O-ring REF	Spare O-ring designation
6085752	Adapter for EMS ultrasonic scaler without light			
6307214	Adapter for EMS ultrasonic scaler with light	1	6354406	O-ring for EMS scaler adapter with light (10x)

* Internal O-rings on adapters may be replaced only by qualified service technicians

Consumables

REF	Article designation
6259118	NitramOil #2, lubrication concentrate (blue), (6 bottles) **
6053842	NitraClean cleaning tablets - for cleaning the chamber (pack of 100)
6078583	Waste water filter for filter housing (pack of 6)
5892059	Chemical indicator, Class 5 - for batch testing (pack of 100)

** SN 104,000-199,999 & 220,000-399,999

Tools for service and maintenance

REF	Article designation
6078591	Filter key
6078518	Special Allen key for adapters

13 Disposal



In accordance with Directive 2012/19/EU and national disposal regulations regarding old electrical and electronic devices, please be advised that such items must be disposed of in a special way within the European Union (EU). These regulations require environmental friendly usage/disposal of old electrical and electronic devices. Such items must not be disposed of as domestic refuse. This has been expressed using the icon of the “crossed out trash can” since March 24, 2006, amongst other methods.

Disposal procedure

We feel responsible for our products from the first idea to their disposal. For this reason, we give you an option to return our old electronic and electrical devices.

If you wish to dispose of your devices, please proceed as follows:

In Germany

To initiate return of the electrical device, please send a disposal request to enretec GmbH. You have the following options here:

- Use the “Returning an electrical device” button under the “eom” menu item on the enretec GmbH homepage (www.enretec.de).
- Alternatively, you can also contact enretec GmbH directly.

enretec GmbH
Kanalstraße 17
16727 Velten

Tel.: +49 3304 3919-500
E-Mail: eom@enretec.de

In accordance with the national disposal regulations regarding old electrical and electronic devices (ElektroG), as the manufacturer, we assume the costs for disposing of the electrical and electronic devices in question. Disassembly, transport and packaging costs shall be borne by the owner/ operator.

Prior to disassembly / disposal of the product, it must be fully prepared (cleaned / disinfected / sterilized).

If your unit is not permanently installed, it will be collected from the practice. If it is permanently installed, it will be picked up curbside at your address by appointment.

Other countries

For country-specific information on disposal, contact your local dental dealers.

We reserve the right to make any alterations which may be required due to technical improvements.

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