Nitram
INFECTION PREVENTION
DAC Universal
DAC Universal
Combination Autoclave - cleans, lubricates & sterilizes 6 instruments in 12 minutes

All in one fully automated process

Internal cleaning

Lubrication

External cleaning

Sterilization

Béziers, France - Dentist Dr. Christian Bodart
“The fast and fully automated process of the DAC Universal enables our assistant to help more at the chair or do administrative work. My associate and I are sure that we have made the best choice for our dental office.”
To give the user full flexibility and compliance to sterilization norm EN 13060, the DAC Universal offers four sterilization programs.

• 134 °C, 3-minute sterilization (standard program. Total cycle time: 12 min.)
• 134 °C, 3-minutes sterilization (wrapped program. Total cycle time: 14:30 min.)
• 121 °C, 15-minute sterilization (gentle program. Total cycle time: 24 min.)
• 134 ºC, 18-minute sterilization (standard program. Total cycle time: 27 min.)

The unique cleaning program of the DAC Universal ensures the highest level of instrument hygiene. The automated internal cleaning ensures the removal of bioburden from the instrument's inner channels, which are not accessible through manual cleaning. The external cold & hot washes ensure the removal of residuals on the outside of the instrument. The cleaning process is performed according to the norm ISO 15883 and its efficacy is tested by several leading dental institutions and universities.

The lubrication system of the DAC Universal is tested and approved by the leading international manufactures of handpieces and turbines KaVo, W&H and Sirona. The fully automatic lubrication process is carried out using an exactly dosed amount of oil, reducing the oil consumption. Proper maintenance helps extending the lifetime of the instruments. As the procedure is carried out in a closed system, no unpleasant oil fumes are released into the clinic environment.

Aabyhoej, Denmark - Dentist Ole Steffensen

“The DAC Universal is an extremely efficient autoclave, which can handle the complete process for turbines and contra angles between each patient due to the short cycle time.”
Saving time

Save time in your clinic with the unique fully automated cleaning, lubrication and sterilisation processes of the DAC Universal combination autoclave.

Additional lids are available for even faster handling, giving you the opportunity to process up to 30 instruments per hour. Moreover, the DAC Universal is a highly versatile autoclave providing cycles for wrapped, unwrapped and solid instruments.

Traditional workflow

1. Cleaning: 2 min.
2. Lubrication: 3 min.
4. Ready: 24-56 min.

Workflow with DAC Universal

1. Mounting: 30 sec.
2. Cleaning/lubrication/sterilization: 12 min.
3. Ready 12:30 min.

Brescia, Italy - Dentists Dr. Bazzoli, Mainetti e Treccani

“Not only have the employees benefited from the DAC Universal but so have the patients; as the assistants now have more time for the patients.”
- while securing proper hygiene for all types of instruments

Unwrapped instruments
Using the standard lid of the DAC Universal, you will have up to six thoroughly cleaned, lubricated and sterilized handpieces ready for use. The three standard cycles secure full hygiene while the wide range of adaptors ensures genuine universal capability for different handpieces and turbines.

Wrapped instruments
For instrument storage or invasive treatments, a special lid and program for wrapped instruments is available. This program must be performed in addition to a standard cycle and provides up to three sterilized wrapped instruments.

Solid instruments
An additional basket provides the possibility of cleaning and sterilizing solid instruments in one fast and fully automatic procedure. This eliminates the risk of incorrect handling as well as protecting the clinical staff from possible sharps injuries.

Hamburg, Germany - Dr. med. dent. Axel Posorski
"Now we are not only saving time by having a machine, which can handle all three processes in one fully automated cycle, we also get a better results and have more time for the patients."
Cleaning before sterilization

Several studies have shown that contamination between patients is possible. Bacteria can be retracted into the handpieces or turbines during use, due to the backsuction created inside the instrument. These bacteria are subsequently expelled into the mouth of the next patient. Studies have also shown that even instruments with anti-retraction systems are in danger of being contaminated. Cleaning and sterilization of handpieces and turbines between each patient is the only way to prevent risk of cross contamination through contaminated instruments. This is only achievable through an efficient automated cleaning process.

The efficacy of steam sterilization depends on the ability of the steam to reach all surfaces of the instrument. If bioburden is present inside the instrument, the steam might not be able to reach its surfaces and a successful sterilization can not be expected.

Furthermore, if the handpieces and turbines are not cleaned thoroughly, bioburden can accumulate inside the instrument. This poses a potential risk of damage to the instrument.

A successful sterilization can not be expected without proper pre-cleaning!

The DAC Universal has been thoroughly tested by several independent laboratories and universities. All results emphasize the undisputable cleaning efficacy of the combination autoclave.

According to a study conducted at the Vienna University Hospital the “DAC Universal was found to meet the general requirement according the ISO 15883, in respect to the cleaning efficacy. Moreover, it showed an excellent cleaning performance for the soil test especially developed for handpieces.”

Passau, Germany - Dr. med. dent. Rolf Linseisen

“The DAC Universal plays a fundamental part in securing optimal hygiene procedures in our modern clinic and at the same time it ensures total process safety.”

Same instruments – same use
- same sterilisation but only one has continuously been cleaned.

Oil, debris, blood cells, salvia, etc.
will not be removed by sterilisation, only by proper cleaning.
Likewise, studies at the Charité Berlin Medical University conclude that the DAC Universal “ensures a safe automated handling of instruments and eases the daily activities at the clinic. The device complies with all complex requirements for hygiene and cleanliness.”

For further info:

**Bioburden – How clean is clean?**
Dr. Mikael Zimmerman; DPRE, 2007 (May)

**Cross-contamination potential with dental equipment**
D. Lewis, et. al.; The Lancet, 1992 (vol. 340 No. 8830)

**Eine saubere Sache**
Heike Martini et al.; ZWP Special, 2009 (no. 10)

**Evaluation of the cleaning efficacy of instruments for processing of handpieces**
Dr. Schmid-Schwap, et al.; Hygiene & Medizin, 2008 (no. 12)

**Internal contamination of air-driven low-speed handpieces and attached prophy angles**

**Risk of Hepatitis B virus transmission via dental handpieces and evaluation of an antisuction for prevention of transmission**
Tao Hu, et al.: Infection control and hospital epidemiology, 2007 (vol. 28, no. 1)

**The in vivo contamination of air-driven low-speed handpieces with prophylaxis angles**

The focus on dental hygiene procedures has never been as high as it is today. As transmission risks are increasing and the pathways of infections in dental clinics are far better understood, the need for effective infection control is more important than ever.

The risk of cross contamination is emphasized by a recent study conducted by the French Public institution, Institut de Veille Sanitaire, which works for the Ministry of Health. The study estimates that every year 200 patients are contaminated with Hepatitis B in French dental clinics. The group recommended that standard precautions and best practices for sterilization are carried out in all dental clinics.

**Stérisisation et porte-instruments rotatifs.**
L’information Dentaire, 2009, (n° 22)

A large number of moving parts are compressed into modern handpieces and turbines in order to provide up to an astonishing 400,000 rpm. This converts the internal lumen of these instruments into a maze of small recesses, which are extremely difficult to clean.

“Since we bought the DAC Universal in April 2004, we have experienced a much longer lifespan of our instruments, which has led to great savings on repairs.
NitraDem water treatment systems - water supply the easy way

**High quality water and constant monitoring**
The NitraDem water treatment systems provide high quality demineralized water to both your DAC Universal and other autoclaves. To ensure the best working conditions for your autoclaves, the water quality is constantly being monitored.

**Easy handling**
You no longer have to worry about handling heavy water containers. Moreover, the extremely easy handling of the NitraDem water treatment systems allows you to focus on other important tasks of the busy day-to-day activities in the clinic. The high water quality is achieved by the ion exchange system of the NitraDem filter. The filter itself is easily changed.

**For every need**
Two different NitraDem water treatment systems are available according to your specific need; from manual tapping to direct connection of up to three autoclaves.

**Recommended for your autoclave**
To secure a constant flow of high quality water to the DAC Universal or any other autoclave, it is recommended to use any of the two NitraDem water treatment systems.

Lystrup, Denmark - Dental assistant, Jette Chirholm
«With the NitraDem Direct Connect, the water supply for both our DAC Universal and B-autoclave has become fully automated. This allows us to focus on other tasks in the clinic.»
NitraDem Direct Connect

The NitraDem Direct Connect allows direct connecting between the water treatment system and up to three autoclaves. With the NitraDem Direct Connect, your consumption of demineralized water will become fully automated. The NitraDem Direct Connect conforms to the European Norm EN 1717 created to prevent the backflow of water into the public water system. The NitraDem Direct Connect has a total of three water outlets. Please note that the technical specifications of some autoclaves might reduce the number of operational water outlets. Example of recommended installation: DAC Professional, DAC Universal & Water Pistol. For further info please contact your supplier.

NitraDem E/A

This small user-friendly and economic water treatment system offers the same high water quality as NitraDem Direct Connect. With NitraDem E/A, you can manually feed demineralized water into your DAC Universal or any other autoclave. A water pistol is available for even easier handling.

Aarhus, Denmark - Dentist Hans Lück

“Both our autoclaves are connected directly to the NitraDem Direct Connect, which is very straight-forward to operate. Furthermore, we are pleased that the filter rarely needs to be changed.”
701012 Nitram Oil
200 ml (white), 6 pcs.
Lubrication for use in DAC Universal with serial No. < 13 999

701020 Nitram Oil #2
200 ml (blue), 6 pcs.
Lubrication for use in DAC Universal with serial No. > 14 000

708199 Filter, 6 pcs
For collecting wastewater from the drain

700006 Lid with optional adapters
For use in the DAC Universal with serial No. > 14 000

722000 Lid for wrapped instruments and sterile filter
For use in the DAC Universal with serial No. > 14 000

722020 Sterile filter
722021 Exchange filter for Sterile filter
For cleaning & sterilising solid instruments

700040 Draintank
For collecting wastewater from the drain

700009 Service Kit
Maintenance box for the clinic containing o-rings, filters, etc.

700006 Lid with optional adapters

750200 NitraClean (100 pcs)
For further cleaning efficiency. Removes oil residues from the surface of the instruments. Chamber cleaning detergent.

700023 Lid holder
700027 Set containing Lid holder and Lid with optional adapters

700031 Complete basket
For cleaning & sterilising solid instruments

700018 Holder for indicator
To be used for validating the DAC Universal autoclave. Place the biological indicator and/or the chemical indicator integrator in the clip and place the clip on the lid of the autoclave

700019 Spore tester
To be used for validating the DAC Universal combination autoclave. Place the biological or chemical indicator inside the tester. Close the spore tester and place it on the E-type click adapter for handpieces (700101)

750102 Water pistol
Water pistol for the NitraDem control panels

750140 NitraDem E/A
750130 NitraDem Direct Connect
For installing the NitraDem control panels

750002 NitraDem filter
Disposable filter for the NitraDem panel

750002 NitraDem filter
Disposable filter for the NitraDem panel
The broadest selection of adapters on the market

- **700101** E-type adapter for handpieces
- **700110** Kavo turbine adapter
- **700112** Adapter for Kavo handpiece heads
- **700120** W&H Turbine adapter
- **700130** Sirona turbine adapter

- **700131** Sirona T1 Classic adapter
- **700150** NSK Phatelus adapter
- **700155** NSK Pana QD adapter
- **700140** Bien Air turbine adapter
- **700145** Castellini turbine adapter

- **700190** Micro Mega turbine adapter
- **700181** Star swivel adapter
- **700182** Adapter for Star attachment
- **700192** Adapter for EMS Scaler
- **700193** Adapter for EMS Scaler with light

- **700165** Midwest adapter for quick connect (4,5,6 holes)
- **700167** Midwest adapter for fixed back-end (4,5,6 holes)
- **700180** Midwest XGT/Stylus turbine adapter
- **700185** Adapter for Midwest attachment
- **700186** Morita (PAR-D) turbine adapter

- **700187** Morita (PAR-O) turbine adapter
- **700160** Lares turbine adapter
- **700188** Yoshida turbine adapter
- **700189** OSADA OFJ-MZL adapter
- **700170** Adapter for Borden 2/3 holes
Sterilization EN 13060
According to the European norm for Small Steam Sterilizer manufacturers, EN 13060, autoclaves are divided into three categories. The norm does not recommend any specific type of autoclave, but simply describes the three different categories in order for the manufacturers to know within which limits to operate. DAC Universal is a type S-autoclave conform with EN 13060.

Cleaning ISO 15883
The international standard ISO 15883-5 specifies the test soils and methods to use for demonstrating cleaning efficiency in washer-disinfectors in different countries.

The DAC Universal is tested and approved according to both ISO 15883-1:2006 annex C and ISO 15883-5:2005, annex J, which are applicable to surgical instruments including dental handpieces and turbines.

Safety & Quality
User safety is a primary concern for Nitram Dental. The DAC Universal combination autoclave features a safety ring that prevents anything from being caught between the chamber and the lid. Moreover, the lubrication process is carried out in a closed system. This prevents the release of oil fumes into the clinic environment. A built-in water conductivity sensor measures the water quality and activates an alarm if the water quality in the tank deteriorates. The production of the DAC Universal is certified according to the ISO 9001:2008 and ISO 13485:2003 standards by Lloyd's Register Quality Assurance. Safety requirements are performed according to IEC61010 2nd edition and approved by UL International. The DAC Universal carries the CE mark.

Specifications
- Voltage: The DAC Universal is a multiple-voltage machine, which means that it can operate at any voltage level between 90-120V & 190-240V.
- Power consumption: 1100W
- Water quality: Demineralized or distilled water below 3 µS
- Water tank capacity: 2.0 l
- Oil bottle capacity: 0.2 l
- Total height of machine (open): 60 cm
- Total height of machine (closed): 35 cm
- Width of machine: 36 cm.
- Depth of machine: 37 cm.

Installation - the following installations are necessary:
- Pressurized air
- Electricity
- Demineralized water
- Drain

Validation
International validation products as steam chemical indicators, biologic indicators and sporetesters can be used in the DAC Universal. Please find the relevant DAC Universal accessories for this purpose in the accessories section in this brochure or on www.nitramdental.com. For further information please contact your authorized DAC Universal dealer.

The DAC Universal can be validated according to ISO 15883-1 & 2 and EN ISO 17665.

Documentation
The DAC Universal offers a full range of documentation possibilities. Depending on the needs of your clinic, it is possible to connect either a printer or data logger to the DAC Universal. You can also connect the autoclave directly to the clinic network. By using either of these three methods, the DAC Universal will produce a transcript of the required parameters according to EN 13060 and ISO 15883.

Your dealer:

www.nitramdental.com