Instructions for use
INTRAmatic contra-angle 20 ES - REF 1.003.4830

KaVo. Dental Excellence.

Distributed by:
KaVo Dental GmbH
Bismarckring 39
D-88400 Biberach
Tel. +49 7351 56-0
Fax +49 7351 56-1488

Manufacturer:
Kaltenbach & Voigt GmbH
Bismarckring 39
D-88400 Biberach
www.kavo.com

CE 0124

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1 User instructions

Dear user,
Congratulations for purchasing this KaVo quality product. Following the instructions below will allow you to work smoothly, economically and safely.

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Symbols

	Refer to chapter Safety/Warning
	Important information for users and technicians

	Thermodisinfectable
	Sterilisable in steam up to 135°C (275°F)
CE	CE mark (Communauté Européenne). A product with this mark meets the requirements of the applicable EC directive.
▶	Action request

Target group

This document is intended for dentists and their assistants. The section on starting up is also intended for service technicians.

1.1 Warranty terms and conditions

The following warranty conditions apply to this KaVo medical device:

KaVo provides the end customer with a warranty of proper function and guarantees zero defects in respect of material and processing for a period of 12 months from data of invoice, subject to the following conditions:
In case of justified complaints, KaVo will honor its warranty with a free replacement or repair. Other claims of any nature whatsoever, in particular with respect to compensation, are excluded. In the event of default, gross negligence or intent, this shall only apply in the absence of mandatory legal regulations to the contrary.
KaVo cannot be held liable for defects and their consequences that have arisen or may arise from to natural wear, improper handling, cleaning or maintenance, non-compliance with operating, maintenance or connection instructions, calcination or corrosion, contaminated air or water supplies or chemical or electrical factors deemed abnormal or impermissible in ac-

cordance with KaVo's instructions for use or other manufacturer's instructions. The warranty does not usually cover lamps, light conductors made of glass and glass fibres, glassware, rubber parts and the colourfastness of plastic parts.
Defects or their consequences that can be attributed to interventions on or changes made to the product by the customer or a third party not authorised by KaVo are excluded from the warranty.
Service warranty claims will only be accepted if the product is submitted along with proof of purchase in the form of a copy of the invoice/delivery note. The dealer, purchase date, unit number or type and serial number must be clearly visible on this document.

2 Safety

2.1 Description of safety instructions

	Warning symbol

Structure



⚠ DANGER

The introduction describes the type and source of the danger.
This section portrays the possible consequences of non-observance.

- ▶ The optional step covers necessary measures for avoiding hazards.

Description of danger levels

The safety instructions cited herein with the three levels of danger will help avert property damage and injury.

	⚠ CAUTION **CAUTION** indicates a hazardous situation that can cause damage to property, or mild or moderate physical harm.

	⚠ WARNING **WARNING** indicates a hazardous situation that can cause death or serious injury.



⚠ DANGER

DANGER
indicates the maximum hazard level. indicates a directly hazardous situation that can cause death or serious injury.

2.2 Purpose – Intended use

This medical device is

- Only intended for dental treatment. Any other type of use or alteration to the product is impermissible and can be hazardous. The medical device is intended for the following uses: Removal of carious material, cavity preparation, removal of fillings, processing of surfaces, and polishing and smoothing tooth and restoration surfaces.
- A medical device according to relevant national statutory regulations.

According to these provisions, this medical device may only be used for the described application by a knowledgeable user. The following must be observed:

- the applicable health and safety regulations
- the applicable accident prevention regulations
- these instructions for use

According to these regulations, the user is required to:

- Only use equipment that is operating correctly
- use the equipment for the proper purpose
- to protect himself, the patient and third parties from danger.
- to avoid contamination from the product

2.3 Safety instructions



⚠ CAUTION

Premature wear and malfunctioning from improper storage during long periods of nonuse.
Reduced production time.

- The instrument must be cleaned, serviced and stored dry if it has not been used for a long period.



⚠ WARNING

Hazard to the care provider and patient
Damage, irregular noise during operation, excessive vibration, unusual build-up of heat or if the cutter or grinder cannot be firmly held.

- Stop work and seek service support.



⚠ CAUTION

Hazard from improperly putting away instruments.
Injury and infection caused by chucked cutters or grinders.
Damage to the chucking system when the instrument fails.

- After treatment, place the cutter or grinder properly in the cradle without the tool.



Note

For safety reasons, we recommend that the tool holder system be checked annually after the warranty period expires.

Authorized to repair and service KaVo products:

- Technicians at the KaVo branches throughout the world
- Technicians specially trained by KaVo

To ensure proper function, the medical device must be set up according to the methods described in the KaVo instructions for use, and the care products and methods described therein must be used. KaVo recommends specifying a service interval at the dental office for a licensed shop to clean, service and check the functioning of the medical device. This service interval should take into account the frequency of use.
Service may only be provided by repair shops that have undergone training by KaVo and that use original KaVo replacement parts.

3 Product description



INTRAmatic contra-angle handpiece 20 ES (**Mat. no. 1.003.4830**)

3.1 Technical Specification

Drive speed	
identification	1 blue ring

Transmission	1 : 1
Maximum speed	

With pushbutton chuck.

Short handpiece cutters or grinders can be used.

The contra-angle handpiece can be mounted on all INTRAmatic (LUX) motors, and motors with a connection in accordance with ISO 3964 / DIN 13940.

3.2 Transportation and storage conditions



⚠ CAUTION

It is hazardous to start up the medical device after it has been stored refrigerated.
This can cause the medical device to malfunction.

- Prior to start-up, very cold products must be heated to a temperature of 20°C to 25°C (68°F to 77°F).

	Temperature: -20°C to +50°C (-4°F to +122°F)
	Relative humidity: non-condensing

	Air pressure: 700 hPa to 1,060 hPa (10 psi to 15 psi)
	Protect from moisture

4 First use



⚠ WARNING

Hazard from nonsterile products.
Infection danger to the care provider and patient.

- ▸ Before first use and after each use, sterilise the medical device.

4.1 Check the amount of water



⚠ CAUTION

Overheating of the tooth due to lack of cooling water.
Thermal damage to the pulp.

- ▸ Adjust the water amount for the spray head to a min. of 50 cm^3/min!



⚠ CAUTION

Hazard from insufficient spray water.
Insufficient spray water can cause the medical device to overheat and damage the tooth.

- ▶ Check the spray water channels and clean the spray nozzles with the nozzle needle **Mat. no. 0.410.0931** if necessary.

5 Operation

5.1 Attach the medical device



⚠ CAUTION

Removing and attaching the handpiece while the drive motor is rotating.
Damage to the catch.

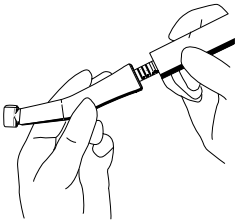
- Never attach or remove the handpiece while the device is rotating!



⚠ WARNING

Damage to the medical device.
A medical device that is not properly locked in place can release from the motor coupling and fall off.

- Carefully pull on it before each treatment to ensure that the medical device is securely locked on the motor coupling.



- Place the medical device on the (LUX) motor coupling and lock it into place.

- Before each treatment, pull on the medical device to see if it is securely seated in the motor coupling.

5.2 Remove the medical device

- Remove the medical device from the (LUX) motor coupling in an axial direction.

5.3 Insert the milling cutters or diamond grinders



Note

Only use carbide cutters or diamond drill bits that correspond to ISO 1797-1 type 1, are made of steel or hard metal and meet the following criteria:
- Shaft diameter: 2.334 to 2.35 mm
- Overall length: max. 22 mm



⚠ WARNING

Use of impermissible cutters or grinders.
Injury to the patient or damage to the medical device.

- Observe the instructions for use, and use the cutter or grinder properly.
- Only use cutters or grinders that do not deviate from the indicated data.



⚠ CAUTION

Injury from using worn cutters or grinders.
Cutters or grinders can fall out during treatment and injure the patient.

- Never use cutters or grinders with worn shafts.



⚠ CAUTION

Injury hazard from cutters or grinders.
Infections or cuts.

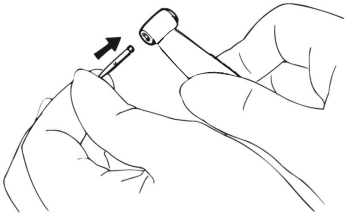
- Wear gloves or fingerstalls.



⚠ CAUTION

Hazard from defective chucking system.
The cutter or grinder can fall out and cause injury.

- Pull on the cutter or grinder to check if the chucking system is okay and the cutter or grinder is securely held. Wear gloves or a thimble to check, insert, or remove the bits to prevent injury and infection.



- Insert the cutter or grinder into the segment of the head drive by twisting the tool slightly, and push to the stop.

- Check that the tool is seated by pulling on it.

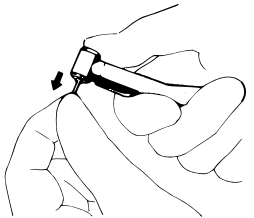
5.4 Removing the milling tool or diamond grinder.



⚠ WARNING

Hazard from rotating cutter or grinder.
Lacerations and damage to the chucking system.

- Do not touch the cutter or grinder when it is rotating!
- Never press the pushbutton while the cutter or grinder is rotating!
- Do not touch soft tissue with the head/tip that can heat and burn the soft tissue.
- Remove the cutter/grinder from the contra-angle handpiece after treatment to avoid injury and infection when putting it away.



- After the cutter or grinder has stopped rotating, press the push button with your thumb and pull out the cutter or grinder.

6 Preparation methods according to ISO 17664

6.1 Preparations at the site of use



⚠ WARNING

Hazard from nonsterile products.
An infection hazard exists from contaminated medical devices.

- ▸ Observe suitable personal protective measures.

- ▸ Remove residual cement, composite or blood at the site of use.
- ▸ Dry the medical device to prepare it for transportation.
  (Do not place it in a solution, etc.).
- ▸ Prepare the medical device directly after treatment.
- ▸ Remove the cutter or grinder from the medical device.

6.2 Cleaning



⚠ CAUTION

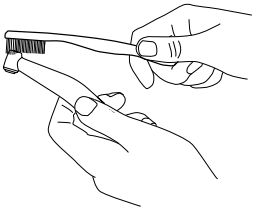
Malfunctions from cleaning in the ultrasonic unit.
Defects in the product.

- ▶ Only clean in a thermodisinfector or manually.

6.2.1 Cleaning: Manual cleaning - external

Required accessories:

- Tap water 30°C ± 5°C (86°F ± 10°F) or a 60 to 70% alcohol solution
- Brush such as a medium hard toothbrush



- Brush off under flowing tap water, or clean with a 60-70% alcohol solution.

6.2.2 Cleaning: Automated external cleaning

KaVo recommends thermodisinfectors in accordance with ISO 15883-1, e.g. Miele G 7781/G 7881

(Validation was performed with the program "VARIO-TD", the cleaner "neodisher® mediclean", the neutraliser "neodisher® Z" and rinse "neodisher® mielclear" and only refers to the material compatibility with KaVo products.)

- The program settings and cleansers and disinfectants that must be used can be found in the instructions for use of the thermodisinfector.
- Directly after automated cleaning, treat the medical device with the care products and systems provided by KaVo.

6.2.3 Cleaning: Manual cleaning - internal

For a medical device with KaVo CLEANspray and KaVo DRYspray.

- Cover the medical device with the KaVo CLEANpac bag, and place it on the corresponding care adapter. Press the spray button three times for 2 seconds each time. Remove the medical device from the spray attachment and let the cleaner work for one minute.
- Then rinse for 3-5 seconds with KaVo DRYspray.

See also: Instructions for use for the KaVo CLEANspray/KaVo DRYspray.



Note

KaVo CLEANspray and KaVo DRYspray for manual interior cleaning are only available in the following countries:
Germany, Austria, Switzerland, Italy, Spain, Portugal, France, Luxembourg, Belgium, Netherlands, United Kingdom, Denmark, Sweden, Finland and Norway.
In other countries,only automated interior cleaning with thermodisinfectors in accordance with ISO 15883-1.

6.2.4 Cleaning: Automated internal cleaning

KaVo recommends thermodisinfectors in accordance with ISO 15883-1, e.g. Miele G 7781/G 7881

(Validation was performed with the program "VARIO-TD", the cleaner "neodisher® mediclean", the neutraliser "neodisher® Z" and rinse "neodisher® mielclear" and only refers to the material compatibility with KaVo products.)

- The program settings and cleansers and disinfectants that must be used can be found in the instructions for use of the thermodisinfector.
- Directly after automated cleaning, treat the medical device with the care products and systems provided by KaVo.

6.3 Disinfection

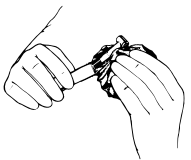


⚠ CAUTION

Malfunctioning from using a disinfectant bath or chlorine-containing disinfectant.
Defects in the product.

- ► Only disinfect in a thermodisinfector or manually.

6.3.1 Disinfection: Manual disinfection - external



KaVo recommends the following products based on material compatibility. The microbiological efficacy must be ensured by the disinfectant manufacturer.

- Microcide AF by Schülke&Mayr (liquid or cloths)
- FD 322 by Dürr
- CaviCide by Metrex

Required tools:
- Cloths for wiping off the medical device.

- Spray the disinfectant on a cloth, then thoroughly wipe down the medical device and leave the disinfectant to soak in according to the instructions from the disinfectant manufacturer.



Note

Observe the instruction for use for the disinfectant.

6.3.2 Disinfection: Manual disinfection - internal

To effectively set up, the inside of the machine must be cleaned automatically in a cleaning and disinfection unit in accordance with ISO 15883-1. (The inside of this product should not be disinfected manually.)

6.3.3 Disinfection: Machine disinfection - external and internal

KaVo recommends thermodisinfectors in accordance with ISO 15883-1,

e.g. Miele G 7781/G 7881

(Validation was performed with the program "VARIO-TD", the cleaner "neodisher® mediclean", the neutraliser "neodisher® Z" and rinse "neodisher® mielclear" and only refers to the material compatibility with KaVo products.)

- The program settings and cleansers and disinfectants that must be used can be found in the instructions for use of the thermodisinfector.
- Directly after automated disinfection, treat the medical device with the care products and systems provided by KaVo.

6.4 Drying

Manual drying

- Blow off the outside and inside the compressed air until no water drops are visible.

Machine drying

The drying procedure is normally part of the cleaning program of the thermodisinfector.



Note

Please observe the instructions for use of the thermodisinfector.

6.5 Care products and systems - Servicing



⚠ CAUTION

Sharp cutters or grinders in the medical device.
Injury hazard from sharp and/or pointed cutters or grinders.

- Remove the cutter or grinder.



⚠ CAUTION

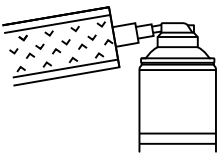
Premature weary and malfunctions from improper servicing and care.
Reduced production time.

- Regularly perform proper care.

Note

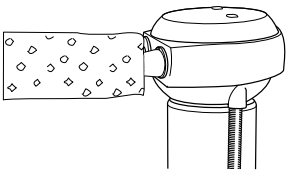
KaVo only guarantees that its products will function properly when the care products are used that are listed as accessories since they were tested for proper use on our products.

6.5.1 Care products and systems - Servicing: Care with KaVo Spray



KaVo recommends servicing the project twice daily (at noon and in the evening after hours), after each time the machine is cleaned, and before each sterilisation.

- ▸ Remove the cutter or grinder.
- ▸ Cover the product with the Cleanpac bag.



- Place the product on the cannula, and press the spray button for one second.

6.5.2 Care products and systems - Servicing: Care with the KaVo SPRAYrotor

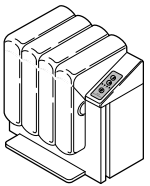
KaVo recommends servicing the project twice daily (at noon and in the evening after hours), after each time the machine is cleaned, and before each sterilisation.

- Place the product on the appropriate coupling of the **KaVo SPRAYrotor** and cover it with a Cleanpac bag.
- Servicing the product.

See also: Instructions for use **KaVo SPRAYrotor**

6.5.3 Care products and systems - Servicing: Care with KaVo QUATTROcare

Cleaning and care unit with expansion pressure for effective cleaning and care.



KaVo recommends servicing the project twice daily (at noon and in the evening after hours), after each time the machine is cleaned, and before each sterilisation.

- Remove the cutter or grinder.
- Servicing the product.

6.6 Packaging



Note

The sterilisation bag must be large enough for the instrument so that the bag is not stretched.
The quality and use of the sterilisation packaging must satisfy applicable standards and be suitable for the sterilisation procedure.

- Individually weld the medical device in the sterilised item packaging (such as KaVo STERIclave bags **Mat. no. 0.411.9912**)!

6.7 Sterilisation

Sterilise in a steam steriliser (Autoclave) EN 13060/ISO 17665-1



⚠ CAUTION

Premature weary and malfunctions from improper servicing and care.
Reduced production time.

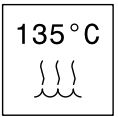
- ▶ Before each sterilisation cycle, treat the medical device with KaVo care products.



⚠ CAUTION

Contact corrosion from moisture.
Damage to product

- Immediately remove the product from the steam steriliser after the sterilisation cycle!



The medical device is temperature resistant up to 138°C (280.4°F).

KaVo recommends for example
- STERIclave B 2200/ 2200P by KaVo
- Citomat/ K-series by Getinge

Depending on the device, select a suitable method from the following gravitation methods.

Autoclave with a triple pre-vacuum for least four minutes at 134°C ± 1°C (273°F ± 1.8°F)
Autoclave using the gravitational method: sterilise for at least 10 min. at 134°C ± 1°C (273°F ± 1.8°F)
Autoclave using the gravitational for at least 60 min. at 121°C ± 1°C (250°F ± 1.8°F)
Follow the manufacturer's instructions for use.

6.8 Storage

Prepared products must be stored protected germ-free from dust in a dry, dark and cool room.



Note

Observe the expiration date of the sterilized item.

7 Tools

Obtainable from dental and medical suppliers

Material summary	Mat. no,
Instrument stand 2151	0.411.9501
Cleanpac 10 units	0.411.9691
Cellulose pad 100 units	0.411.9862
Nozzle needle	0.410.0931
Silicone hose 150 mm	0.593.0252
KaVo CLEANspray	1.007.0579
KaVo DRYspray	1.007.0580

Material summary	Mat. no,
KaVo Spray 2112 A	0.411.9640
ROTAspray 2142 A	0.411.7520
QUATTROcare plus Spray 2108 P	1.005.4525

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