Instructions for use
EXPERTmatic LUX E15 L - REF 1.007.5530
EXPERTmatic LUX E20 L - REF 1.007.5540
EXPERTmatic E15 C - REF 1.007.5531
EXPERTmatic E20 C - REF 1.007.5541

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CE 0124

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1 User instructions

Dear User
Congratulations on purchasing this KaVo quality product. By following the instructions below you will be able to work smoothly, economically and safely.

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Symbols

	Refer to the Chapter on Safety/Warning symbol
	Important information for users and service technicians

▶	Action request
CE	CE mark (European Community). A product bearing this mark meets the requirements of the applicable EC directive.
135 °C	Can be steam-sterilised at 134 °C -1 °C / +4 °C (273 °F -1.6 °F / +7.4 °F)
	Thermodisinfectable

Target group

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

2 Safety

2.1 Safety instructions



⚠ WARNING

Hazard to the care provider and patient.
In the case of damage, irregular running noise, excessive vibration, untypical warming or when the cutter or grinder is not held firmly.

- ▶ Stop working and contact service support.



⚠ CAUTION

Risks due to lack of control equipment.
Hazards can arise if control equipment is not available for changing the speed and the direction of rotation.

- The dental treatment unit connected must have control equipment for changing the speed and direction of rotation.
- A note is to be included in the documents accompanying the dental treatment unit, referring to responsibilities arising from safety, reliability and performance.
- The medical device may only be combined with a treatment centre released by KaVo.



⚠ CAUTION

Risk due to incorrectly stored handpiece.
Injury and infection caused by chucked cutter or grinder.

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



⚠ CAUTION

Risk of burn injury from hot handpiece head or hot handpiece lid.
Burn injuries in the mouth may be caused if the instrument overheats.

- Never touch soft tissue with the handpiece head or handpiece lid!



⚠ CAUTION

Premature wear and malfunctioning from improper storage during long periods of nonuse.
Reduced product life.

- The medical device should be cleaned, serviced and stored in a dry location, according to instructions, before long periods of nonuse.



⚠ CAUTION

Hazard from use as a light probe.
Do not use the medical device as a light probe.

- Use an appropriate light probe for additional illumination of the oral cavity or site of preparation.



Note

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

The following individuals are authorized to repair and service KaVo products:

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

To ensure proper function, the medical device must be set up according to the reprocessing methods described in the KaVo Instructions for Use, and the care products and care systems 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 depends on the frequency of use and should be adjusted accordingly.

Service may only be carried out by KaVo-trained repair shops using original KaVo replacement parts.

3 Product description



EXPERTmatic LUX contra-angle handpiece E15 L (**Mat. no. 1.007.5530**)



EXPERTmatic LUX contra-angle handpiece E20 L (**Mat. no. 1.007.5540**)



EXPERTmatic contra-angle handpiece E15 C
(**Mat. no. 1.007.5531**)



EXPERTmatic contra-angle handpiece E20 C
(**Mat. no. 1.007.5541**)

3.1 Purpose – Proper use

Purpose:

This medical device is

- intended for dental treatment only. Any other type of use or alteration to the product is impermissible and can be hazardous. The medical device is intended for the following applications: preparation of cavities, caries excavation, endodontic applications, processing of tooth and restoration surfaces.
- A medical device according to relevant national statutory regulations.

Proper use:

According to these regulations, 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, it is the responsibility of the user to:

- only use equipment that is operating correctly,
- use the equipment for the proper purpose,
- protect him or herself, the patient and third parties from danger, and
- avoid contamination from the product.

3.2 Technical Specifications E15 L / E15 C

Drive speed	max. 40,000 rpm
Identification	1 green ring
Speed transmission	5.4 : 1

With press-button chuck.

Usable with contra-angle cutters or grinders.

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

3.3 Technical Specifications E20 L / E20 C

Drive speed	max. 40,000 rpm
Identification	1 blue ring
Speed transmission	1 : 1

With press-button chuck.

Usable with contra-angle cutters or grinders.

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

3.4 Transportation and storage conditions



⚠ CAUTION

It is hazardous to start up the medical device after it has been stored strongly 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 +70°C (-4°F to +158°F)
	Relative humidity: 5% RH to 95% RH absence of condensation

	Air pressure: 700 hPa to 1060 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, prepare and sterilise the medical device if needed.



⚠ CAUTION

Damage from soiled and moist cooling air.
Contaminated and moist cooling air can cause malfunctions and lead to premature bearing wear.

- Make sure that the supply of cooling air is dry, clean and uncontaminated according to ISO 7494-2.

4.1 Check the amount of water



⚠ CAUTION

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

- Adjust the water amount for the spray cooling to a minimum 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. 0.410.0921** if necessary.

5 Operation

5.1 Attach the medical device



⚠ WARNING

Detachment of the medical device during treatment.
A medical device that is not properly locked in place can become disconnected from the motor coupling and fall off.

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



⚠ CAUTION

Removing and attaching the contra-angle handpiece while the drive motor is rotating.
Damage to the drive.

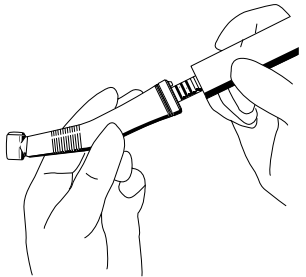
- Never attach or remove the contra-angle handpiece while the drive motor is rotating!



⚠ CAUTION

Damage
If the footswitch is pressed while you are connecting and removing the medical device, you can damage the medical device and motor coupling.

- Do not connect or remove the medical device while pressing the footswitch.



- Lightly spray O-rings on motor coupling with Mehrfunktionsspritze Spray.

- Attach the medical device to the motor coupling and turn it until the guide stud audibly snaps into place.

- Pull on the medical device to make sure that it is securely affixed to the coupling.

5.2 Remove the medical device

- Unlock the medical device from the motor coupling by twisting it slightly and then pulling it along its axis.

5.3 Inserting the milling tool or diamond grinder

Note

Only use carbide cutters or diamond burs that correspond to ISO 1797-1 type 1, are made of steel or tungsten carbide and meet the following criteria:
- shaft diameter: 2.334 to 2.35 mm
- overall length: max. 22 mm



⚠ WARNING

Use of unauthorised 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 specified data.



⚠ CAUTION

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

- Never use cutters or grinders with worn shafts.



⚠ CAUTION

Danger of injury from cutters or grinders.
Infections or cuts.

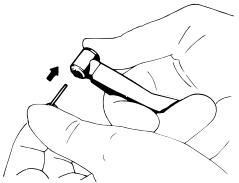
- Wear gloves or fingerstalls.



⚠ CAUTION

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

- Pull on the cutter or grinder to check that the chucking system is okay and the cutter or grinder is securely held. When checking, inserting and removing, use gloves or a fingerstall to prevent an injury or infection.



- Press the push button firmly with your thumb and simultaneously insert the milling or grinding tool until it contacts the stop.

- Check that the cutter or grinder is securely attached by pulling on it.

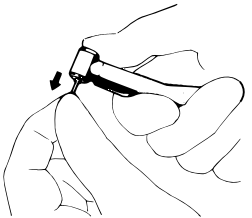
5.4 Removing the milling tool or diamond grinder



⚠ WARNING

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

- Do not touch rotating cutter or grinder.!
- Never press the press-button while the cutter or grinder is rotating!
- Remove the cutter or grinder from the contra-angle handpiece after treatment to avoid injury or infection while storing it.



- After the cutter or grinder has stopped rotating, press the press-button with your thumb and simultaneously pull out the drill bit or bur.

6 Troubleshooting

6.1 Check for malfunctions



⚠ CAUTION

Missing or damaged O-rings.
Malfunctions and premature failure.

- Make sure that all O-rings are on the coupling and undamaged.



⚠ CAUTION

Heating of the product.
Burns or product damage from overheating.

- Do not use the product if it is irregularly heated.

- The medical device is too hot while idling:
  Check the amount of cooling air.
- The medical device is too hot while working:
  Caring for the medical device.
- When the speed drops or is uneven:
  Caring for the medical device.
- An O-ring is missing on the motor coupling:
  Replace O-ring.

6.2.1 Troubleshooting: Exchanging the O-rings on the motor coupling



⚠ CAUTION

Hazard from improper care of the O-rings.
Malfunctions or complete failure of the product.

- Do not use Vaseline or other grease or oil.

Note

The O-rings on the motor coupling may only be lubricated with a cotton ball wetted with KaVo spray.

- ▸ Press the O-ring between your fingers to form a loop.
- ▸ Shove the O-ring to the front, and remove it.
- ▸ Insert new O-rings into the grooves.

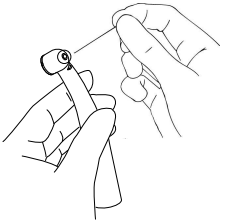
6.2.2 Troubleshooting: Cleaning the spray nozzle



⚠ CAUTION

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

- Check spray water channels and if necessary clean spray nozzles with the nozzle needle (**Mat. no. 0.410.0921**).



- Clean the water passage in the spray nozzles by using the nozzle needle (**Mat. no. 0.410.0921**).

7 Setup methods according to DIN EN ISO 17664

7.1 Preparation at the site of use



⚠ WARNING

Hazard from nonsterile products.
There is a risk of infection from contaminated medical devices.

- ▸ Take suitable personal protective measures.

- ▸ Remove all residual cement, composite or blood without delay.
- ▸ Recondition the medical device as soon as possible after treatment.
- ▸ Remove the cutter or grinder from the medical device.
- ▸ The medical device must be dry when transported for reconditioning.
- ▸ Do not place it in a solution or similar.

7.2 Cleaning



⚠ CAUTION

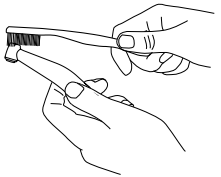
Malfunctions from cleaning in the ultrasonic unit.
Defects in the product.

- ▶ Only clean manually or in a thermodisinfector.

7.2.1 Cleaning: Manual cleaning - external

Accessories required:

- Tap water 30 °C ± 5 °C (86 °F ± 10 °F)
- Brush, e.g. medium-hard toothbrush



- Brush off under flowing tap water.

7.2.2 Cleaning: Automated external cleaning



KaVo recommends thermodesinfectors in accordance with EN ISO 15883-1 that are operated with alkaline cleaning agents at a pH value of max. 10 (e. g. Miele G 7781 / G 7881 – validation was performed with the "VARIO-TD" program, "neodisher® mediclean" cleaning agent, "neodisher® Z" neutralisation agent and "neodisher® mielclear" rinsing agent and extends only to the compatibility of materials with respect to KaVo products).

- For program settings as well as cleansers and disinfectants to be used, please refer to the Instructions for Use of the thermodisinfector (complying with max. pH value of 10).

- In order to prevent negative effects on the medical device, make sure that the interior and the exterior of the medical device are dry, and then lubricate immediately with care agents from the KaVo care system.

7.2.3 Cleaning: Manual cleaning - internal

Can only be done with KaVo CLEANspray or 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.

- Afterwards, rinse for 3-5 seconds with KaVo DRYspray.

See also: KaVo CLEANspray / KaVo DRYspray Instructions for Use

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.

7.2.4 Cleaning: Automated internal cleaning



KaVo recommends thermodesinfectors in accordance with EN ISO 15883-1 that are operated with alkaline cleaning agents at a pH value of max. 10 (e. g. Miele G 7781 / G 7881 – validation was performed with the "VARIO-TD" program, "neodisher® mediclean" cleaning agent, "neodisher® Z" neutralisation agent and "neodisher® mielclear" rinsing agent and extends only to the compatibility of materials with respect to KaVo products).

- For program settings as well as cleansers and disinfectants to be used, please refer to the Instructions for Use of the thermodisinfector (complying with max. pH value of 10).

- In order to prevent negative effects on the medical device, make sure that the interior and the exterior of the medical device are dry, and then lubricate immediately with care agents from the KaVo care system.

7.3 Disinfection

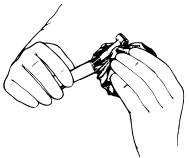


⚠ CAUTION

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

- Only disinfect in a thermodisinfector or manually.

7.3.1 Disinfection: Manual disinfection - external



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

- Mikrozid AF Liquid made by Schülke & Mayr
- FD 322 made by Dürr

- CaviCide made by Metrex

Consumables required:
- 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.

- Follow the instructions for use of the disinfectant.

7.3.2 Disinfection: Manual disinfection - internal

The efficacy of manual internal disinfection must be demonstrated by the manufacturer of the disinfection agent. With KaVo products, use only disinfection agents that have been released by KaVo with respect to the compatibility of materials (e.g. WL-cid / made by ALPRO).

- Immediately after internal disinfection, lubricate the KaVo medical device immediately with care agents from the KaVo care system.

- Follow the instructions for use of the disinfectant.

7.3.3 Disinfection: Machine disinfection - external and internal



KaVo recommends thermodesinfectors in accordance with EN ISO 15883-1 that are operated with alkaline cleaning agents at a pH value of max. 10 (e. g. Miele G 7781 / G 7881 – validation was performed with the "VARIO-TD" program, "neodisher® mediclean" cleaning agent, "neodisher® Z" neutralisation agent and "neodisher® mielclear" rinsing agent and extends only to the compatibility of materials with respect to KaVo products).

- For program settings as well as cleansers and disinfectants to be used, please refer to the Instructions for Use of the thermodisinfector (complying with max. pH value of 10).

- In order to prevent negative effects on the medical device, make sure that the interior and the exterior of the medical device are dry, and then lubricate immediately with care agents from the KaVo care system.

7.4 Drying

Manual Drying

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

Automatic Drying

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

- Follow the instructions for use of the thermodisinfector.

7.5 Care products and systems - Servicing



⚠ WARNING

Sharp cutters or grinders in the medical device.
Risk of injury from sharp or pointed cutters or grinders.

- ▶ Remove cutter or grinder.



⚠ CAUTION

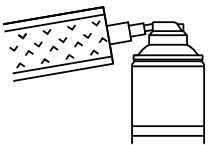
Premature wear and malfunctions from improper servicing and care.
Reduced product life.

- ▶ Perform proper care regularly!

Note

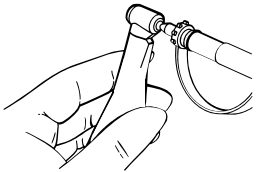
KaVo only guarantees that its products will function properly when the care products used are those listed as accessories, as they were tested for proper use on our products.

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



KaVo recommends servicing the product after each time it is used, i.e. after each automatic cleaning and before each sterilisation.

- ▸ Remove cutter or grinder.
- ▸ Cover the product with the CLEANpac bag.
- ▸ Place the product on the cannula and press the spray button for one second.

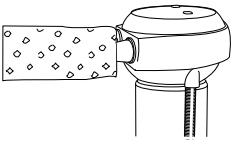


Care of chucking system

KaVo recommends cleaning and servicing the chuck system once a week.

- Remove the cutter or grinder, place the spray nipple tip in the opening and spray.

- Carry out the servicing according to the instructions in the section, "Care with KaVo Spray".



7.5.2 Care products and systems - Servicing: Care with KaVo SPRAYrotor

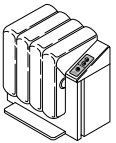
KaVo recommends servicing the product after each time it is used, i.e. after each automatic cleaning and before each sterilisation.

- ▸ Place the product on the appropriate coupling of the **KaVo SPRAYrotor** and cover it with a CLEANpac bag.
- ▸ Service the product.

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

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

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



KaVo recommends servicing the product after each time it is used, i.e. after each automatic cleaning and before each sterilisation.

- ▸ Remove cutter or grinder.
- ▸ Service the product.

Care of chucking system

KaVo recommends cleaning and servicing the chuck system once a week.

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



- Remove the cutter or grinder, place the spray nipple tip in the opening and spray.

- Subsequently treat with the care products and care systems specified.

See also: Care with KaVo QUATTROcare

7.6 Packaging



Note

The sterilisation bag must be large enough for the handpiece 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**)!

7.7 Sterilisation

Sterilisation in a steam steriliser (autoclave) in accordance with EN 13060/ ISO 17665-1



⚠ CAUTION

Premature wear and malfunctions from improper servicing and care.
Reduced product life.

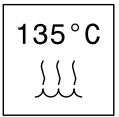
- ▶ Before each sterilisation cycle, service the medical device with KaVo care products.



⚠ CAUTION

Contact corrosion due to moisture.
Damage to product.

- Immediately remove the product from the steamsteriliserafter the sterilisation cycle!



The KaVo medical device has a maximum temperature resistance up to 138 ℃ (280.4 °F).

(Depending on the available autoclave,) select a suitable procedure from the following sterilisation processes:

- Autoclave with three times initial vacuum:
  - at least 3 minutes at 134 °C -1 °C / +4 °C (273 °F -1.6 °F / +7.4 °F)
- Autoclave using the gravitation method:
  - at least 10 minutes at 134 °C -1 °C / +4 °C (273 °F -1.6 °F / +7.4 °F) or alternatively
  - at least 60 minutes at 121 °C -1 °C / +4 °C (250 °F -1.6 °F / +7.4 °F)

▸ Use according to the manufacturer's Instructions for Use.

7.8 Storage

Prepared products must be stored, protected from germs (as far as possible) and dust, in a dry, dark, cool room.

- Comply with the expiry date of the sterilised items.

8 Tools and consumables

Available from dental suppliers.

Material summary	Mat. no.
Handpiece stand 2151	0.411.9501
Cellulose pad 100 units	0.411.9862
Cleanpac 10 units	0.411.9691
Nozzle needle	0.410.0921

Material summary	Mat. no.
KaVo CLEANspray 2110 P	1.007.0579
KaVo DRYspray 2117 P	1.007.0580
KaVo Spray 2112 A	0.411.9640
ROTAspray 2 2142 A	0.411.7520
QUATTROcare plus Spray 2140 P	1.005.4525

9 Terms and conditions of warranty

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 18 months from the date of the invoice, subject to the following conditions:
In case of justified complaints, KaVo will honour 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 shall not be liable for defects and their consequences that have arisen or may arise from natural wear, improper handling, cleaning or maintenance, non-compliance with operating, maintenance or connection instructions, calcination or corrosion, contaminated air or water supplies or chem-

ical or electrical factors deemed abnormal or impermissible in accordance with KaVo's instructions for use or other manufacturer's instructions. The warranty granted does not usually extend to lamps, light conductors made of glass and glass fibres, glassware, rubber parts, and the colourfastness of plastic parts.
All liability is excluded if defects or their consequences originate from manipulations or changes to the product made by the customer or a third party that is not authorised by KaVo.
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 or note of delivery. The dealer, purchase date, type, and serial number must be clearly evident from this document.

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