Instructions for use

KaVo PiezoLED Ultraschall Scaler

KAVO
Dental Excellence

Distributed by:
KaVo Dental GmbH
Bismarckring 39
D-88400 Biberach
Phone +49 (0) 7351 56-0
Fax +49 (0) 7351 56-1488

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

CE 0124

Table of contents

1 User instructions

1.1 User guide

Requirement
Read these instructions prior to first startup to avoid misuse and prevent damage.

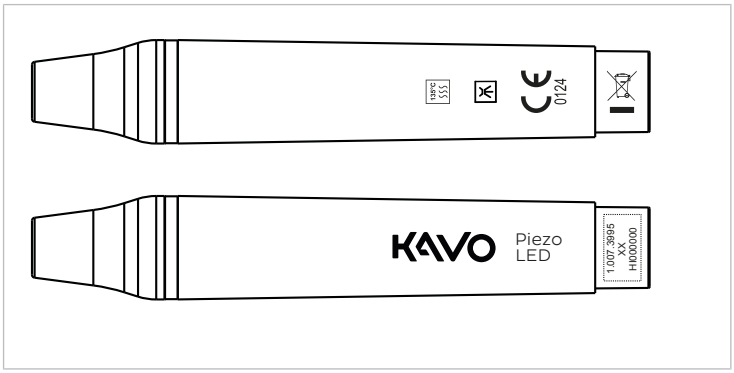
1.1.1 Abbreviations

Abbre-viation	Explanation
IfU	Instructions for use
CI	Care instructions
AI	Assembly instructions
TI	Technician's instructions
SC	Safety checks
IEC	International Electrotechnical Commission
RI	Repair instructions
RK	Retrofitting kit
AS	Assembly set
EP	Enclosed parts
EMC	Electromagnetic compatibility
PI	Processing instructions

1.1.2 General marks and symbols

	Refer to the chapter on Safety/Warning symbol
	Important information for users and service technicians
▶	Action request

REF	Material number
CE 0124	CE mark according to Medical Devices Directive EC 93/42
	Disposal instructions, intended use
135 °C	Can be steam-sterilised at 134 °C -1 °C / +4 °C (273 °F -1.6 °F / +7.4 °F)
	Thermodisinfectable



Hazard levels

The warning and safety notes in this document must be observed to prevent personal injury and material damage. The warning notes are designated as shown below:

⚠ DANGER

In cases which – if not prevented – directly lead to death or severe injury.

⚠ WARNING

In cases which – if not prevented – could lead to death or severe injury.

⚠ CAUTION

In cases which – if not prevented – could lead to minor or moderate injury.

NOTICE

In cases which – if not prevented – could lead to material damage.

1.1.3 Target group

1.2 Service

KaVo Customer Service:
+49 (0) 7351 56-1000
service.einrichtungen@kavokerr.com or service.treatmentunits@kavokerr.com
Please refer to the serial number of the product in all inquiries!
For further information, please visit: www.kavo.com

1.3 Transport and storage

1.3.1 Damage in transit

In Germany

Note
Failure on the part of the recipient to comply with any of the above-mentioned obligations will mean that the damage will be considered to have arisen only after the time of delivery (according to the General German Freight Forwarders' Terms and Conditions, Art. 28).

If the packaging is visibly damaged on delivery, please proceed as follows:
1. The recipient of the package must record the loss or damage on the delivery receipt. The recipient and the representative of the shipping company must sign this delivery receipt.
2. Leave the product and packaging in the condition in which you received it.
3. Do not use the product.
4. Report the damage to the shipping company.
5. Report the damage to KaVo.
6. Consult with KaVo first, before returning a damaged product.
7. Send the signed delivery receipt to KaVo.

If the product is damaged but there was no discernable damage to the packaging on delivery, proceed as follows:
1. Report the damage to the shipping company immediately and no later than 7 days after delivery.
2. Report the damage to KaVo.
3. Leave the product and packaging in the condition in which you received it.
4. Do not use a damaged product.

Outside Germany

Note
If the recipient fails to comply with any of the above-mentioned obligations, the damage will be considered to have arisen only after the time of delivery (according to CMR law, Chapter 5, Art. 30).

Note
KaVo shall not be held liable for damage arising from transportation.
The shipment must be checked on arrival.

If the packaging is visibly damaged on delivery, please proceed as follows:
1. The recipient of the package must record the loss or damage on the delivery receipt. The recipient and the representative of the shipping company must sign this delivery receipt.
   Without this evidence, the recipient will not be able to assert a claim for damages against the shipping company.
2. Leave the product and packaging in the condition in which you received it.
3. Do not use the product.

If the product is damaged but there was no discernable damage to the packaging on delivery, proceed as follows:

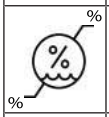
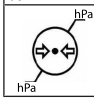
1. Report any damage to the shipping company immediately and no later than 7 days after delivery.
2. Leave the product and packaging in the condition in which you received it.
3. Do not use a damaged product.

1.3.2 Information on the packaging:

Note

Please keep the packaging in case you need to return the product for servicing or repair.

The symbols printed on the outside are for transportation and storage, and have the following meaning:

	Transport upright with the arrows pointing upwards!
	Fragile - protect against impact!
	Protect from moisture!
	Permissible stacking load
	Temperature range
	Humidity
	Air pressure

1.4 Disposal

Note

Any waste which is generated must be recycled or disposed of in strict compliance with all applicable national regulations in a manner which is safe both for people and the environment.

If you have any questions regarding proper disposal of the KaVo product, please contact the KaVo branch.

1.5 Disposal of electronic and electrical devices

Note

According to EC directive 2012/19 concerning waste electrical and electronic equipment, this product is subject to the cited directive and must be disposed of accordingly within Europe.

For more information, please visit www.kavo.com or contact your specialised dental supplier.

For final disposal:

To return an electrical device, you need to proceed as follows:

1. On the homepage www.enretec.de of enretec GmbH, you can download a form for a disposal order under the menu item eom. Download the disposal order or complete it as an online order.
2. Enter the corresponding information to complete the order, and submit it as an online order or by fax +49 (0)3304 3919 590 to enretec GmbH.
   The following contact options are also available for questions and for initiating a disposal order:
   Phone: +49 (0) 3304 3919-500
   Email: eom@enretec.de and
   Postal address: enretec GmbH, Geschäftsbereich eomRECYCLING®
   Kanalstraße 17
   D-16727 Velten
3. A unit that is not permanently installed will be picked up at the office.
   A permanently installed unit will be picked up at the curb at your address on the agreed date.
   The owner or user of the device will have to bear the cost of disassembly, transportation and packaging.

International

For country-specific information on disposal, contact your dental supplier.

2 Safety

2.1 Infection hazard

Patients, users or third parties could be infected by contaminated medical devices.

- Take suitable personal protective measures.
- Follow the instructions for use of the components.
- Before initial startup and after each use, reprocess the product and accessories appropriately.
- Carry out the reprocessing as described in the instructions for use. The procedure has been validated by the manufacturer.
- If you deviate from this procedure, it is essential to make sure that the reprocessing is effective.
- Reprocess the product and accessories appropriately before disposal.

2.2 Technical condition

A damaged device or components could injure patients, users and third parties.

- Only operate devices or components if they are undamaged on the outside.
- Check that the device is working properly and is in satisfactory condition before each use.
- Have parts with sites of breakage or surface changes checked by the Service.
- The device should be cleaned, serviced and stored in a dry location, according to instructions, if it will not be used for a longer period.
- If any of the following defects on the product or accessories occurs, stop working and have the service personnel carry out repair work:
  - Malfunctions
  - Damage
  - Irregular noise
  - Excessive vibration
  - Untypical heating
  - Tip is not seated firmly

2.3 Accessories and combination with other equipment

Use of un-authorised accessories or un-authorised modifications of the device could lead to injury.

- Only use accessories that have been approved for combination with the product by the manufacturer.
- Only use KaVo Piezo tips.
- Only use accessories that are equipped with standardised interfaces.
- Do not make any modifications to the device unless these have been approved by the manufacturer of the product.
- Do not use the PIEZO ultrasonic scaler and tips on non-KaVo components!

There is a risk of confusing the tips and tips from other manufacturers.

① KaVo tip ② Non-KaVo tip

- Please note the labelling on the tips.
- Please note the characteristic feature of KaVo tips, i.e. the low-positioned thread.
- Keep the enclosed torque wrench on the handpiece when the handpiece is not in use!

2.4 Qualification of personnel

Application of the product by users without the appropriate medical training could injure the patients, the users or third parties.

- Make sure that the user has read and understood the instructions for use.
- Only employ the device if the user has the appropriate medical training.
- Observe national and regional regulations.
- Check the tip for secure attachment before treatment.
- Make sure that the oscillating Piezo scaler tip does not contact soft tissues, e.g. by placing it on the lip while using it.
- After treatment, place the medical device properly in the cradle without the tool.

2.5 Service and repair

Repairs, servicing and safety checks may only be performed by trained service personnel. The following persons are authorised to do this:

- Service technicians of KaVo branches after the appropriate product training
- Service technicians of KaVo authorised dealers after the appropriate product training

Observe all the following items during servicing work:

- Have the service and testing tasks carried out according to the Medical Device Operator Ordinance.
- After servicing, interventions and repairs of the device and before re-use, have the service personnel perform safety checks on the device.
- KaVo recommends specifying in-house service intervals where the medical device is brought to a professional shop for cleaning, servicing and a function check. Define the service interval depending on the frequency of use.

2.6 Electromagnetic fields

Electromagnetic fields might interfere with the functions of implanted systems (such as pacemakers).

High-frequency communications devices may interfere with medical electrical devices.

- Ask patients if they have a cardiac pacemaker or other system implanted before you start the treatment.
- If the device needs to be used in the immediate vicinity of other equipment, monitor the device or system for malfunctions.

3 Product description

3.1 Intended use

The user must ensure that the unit works properly and is in satisfactory condition before each use.

Indications for use:

This KaVo product is designed for use in dentistry only and may only be used by trained medical personnel. Any other type of use is not permitted.
"Proper use" includes compliance with all instructions for use and the inspection and maintenance intervals.

All pertinent guidelines and/or national laws, national regulations, and the rules of technology applicable to this KaVo medical device for startup and use of medical devices for the intended purpose must be applied and complied with.

The ultrasound handpiece is designed for dental applications using KaVo PIEZO Scaler Tips in the following areas:

Piezo Scaler Tips (Scaling):
- Removal of calculus and concretions (supragingival and subgingival)
- Removal of deposited pigments

Piezo Paro Tips (periodontic therapy):
- Scaling and root smoothing
- Subgingival concretions

Piezo Endo Tips and files (endodontics):
- Preparation and cleaning of root canals
- Retrograde preparation of root canals

Piezo Prep Tips (preparation):
- Cavity preparation

Piezo Cem Tips:
- Cementation of restorations

Contraindication

The ultrasonic vibrations of PIEZOsoft products might interfere with pacemakers and defibrillators. KaVo does not recommend treatment of patients who have pacemakers or defibrillators.

Proper use:

It is a responsibility of the user:
- to only use equipment that is operating correctly,
- to protect him or herself, the patient and third parties from hazards, and
- to prevent contamination from the product

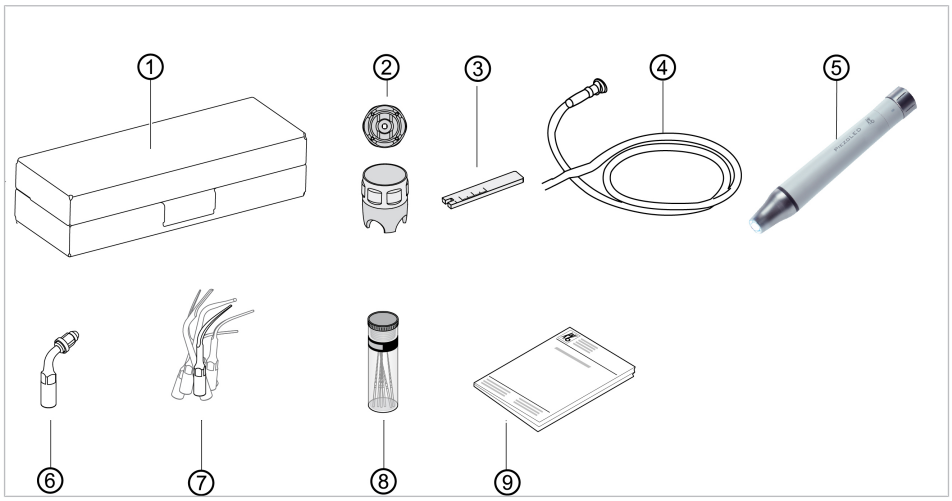
The applicable national legal regulations must be observed during the use of the device, in particular the following:

- Applicable regulations governing the connection and start-up of medical devices.
- Current occupational safety regulations.
- Current accident prevention regulations.

Operators, equipment managers and users in Germany are obliged to operate their equipment in compliance with the medical device law.

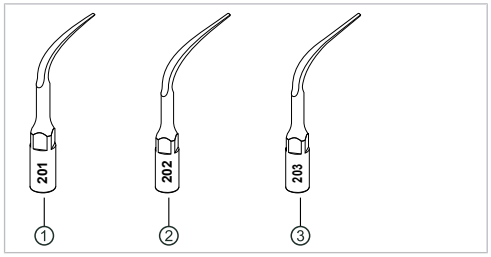
3.2 Product

3.2.1 Ingredients



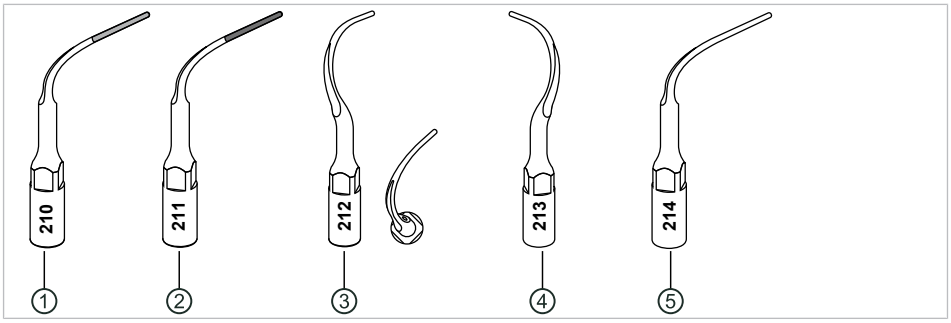
① Steri-Box ¼ DIN (general description for boxes of 5 and 6 each)
② Torque wrench
③ Wrench for file holder
④ PIEZO Scaler hose R1300
⑤ PiezoLED handpiece
⑥ Piezo Endo Tip 222 file holder
⑦ Tips (general description)
⑧ File container (5 units)
⑨ Instructions for use

3.2.2 PIEZO Scaler Tips



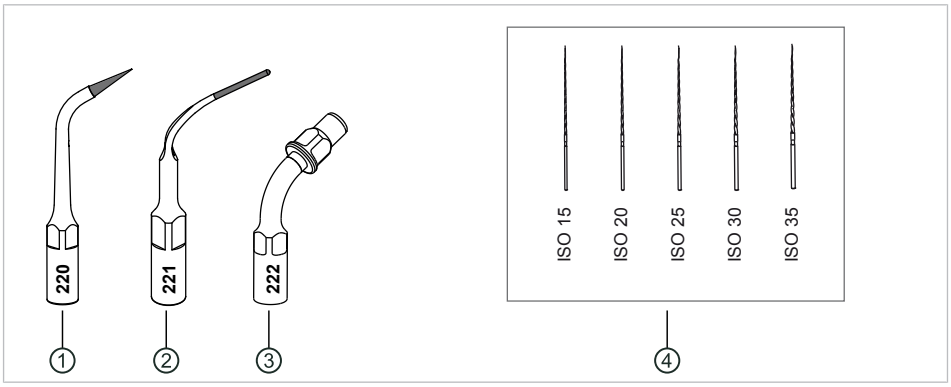
① Piezo Scaler Tip 201
② Piezo Scaler Tip 202
③ Piezo Scaler Tip 203

3.2.3 PIEZO Paro Tips



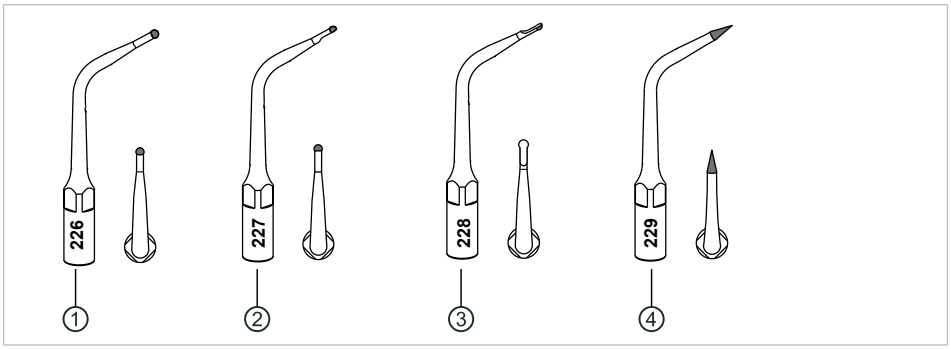
① Piezo Paro Tip 210
② Piezo Paro Tip 211
③ Piezo Paro Tip 212
④ Piezo Paro Tip 213
⑤ Piezo Paro Tip 214

3.2.4 PIEZO Endo Tips



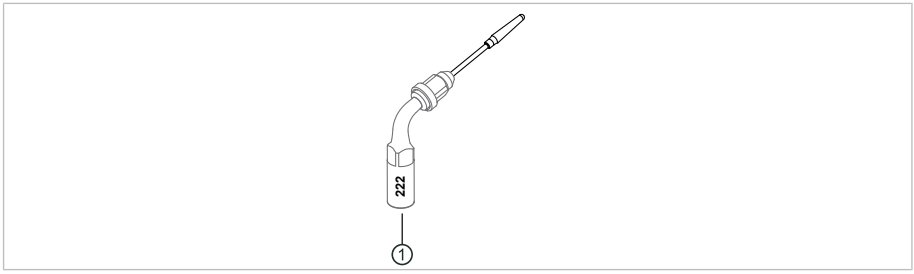
① Piezo Endo Tip 220
② Piezo Endo Tip 221
③ Piezo Endo Tip 222
④ Piezo Endo Tip files (ISO 15 to ISO 35)

3.2.5 PIEZO Prep Tips



① Piezo Prep Tip 226
② Piezo Prep Tip 227
③ Piezo Prep Tip 228
④ Piezo Prep Tip 229

3.2.6 PIEZO Implant Tips Set



① Piezo Endo Tip 222 with Piezo Implant Tip

3.3 Technical Data

Classification 93 / 42 EEC	Class IIa
Classification EN 60601-1	Application part type BF
Installation category DIN EN 60664	CAT II

Electrical system

Supply voltage	33 V DC
Power consumption	20 VA
Ultrasound specifications	max. output power: 12 Watt, frequency range: 24-32 kHz
ON-time	With fluid: continuous operation, with / without fluid: working cycle, 10 % for max. 10 min.

Operating conditions

Temperature	+10 °C to +40 °C (+50 °F to +104 °F)
rel. humidity	30 % to 75 %
Height	3,000 m
Air pressure	700 to 1060 hPa (10 psi to 15 psi)
Degree of soiling	P2

3.4 Transport and storage conditions

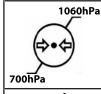
NOTICE

Startup of the medical device after it has been stored strongly refrigerated.

Failure of the medical device

- Prior to startup, strongly refrigerated products must be allowed to warm up to a temperature of 20 °C to 25 °C (68 °F to 77 °F).

	Temperature: -20°C to +55°C (-4°F to +131°F)

	Relative humidity: 10% RH to 95% RH absence of condensation
	Air pressure: 500 hPa to 1060 hPa (7 psi to 15 psi)
	Protect from moisture

4 First use

⚠ WARNING

Hazard from non-sterile products.
Infection hazard for dentist and patient.
- ▸ Prior to initial startup and after each use, reprocess the product and accessories.

See also:
6 Reprocessing method in accordance with ISO 17664, Page 36

⚠ WARNING

Dispose of the product in appropriate manner.
Infection hazard.
- ▸ Reprocess and sterilise the product and accessories before disposal.

4.1 Reduce germ count in aerosols

The use of oscillating dental tips and the requisite rinsing fluid causes the production of an aerosol spray mist.
KaVo recommends to reduce the germ count by using Oxygenal in the treatment centre.

This reduces the germ count in the spray mist.
The bacterial level in the fluid-containing tubes is reduced.

4.2 Attaching the tips

NOTICE

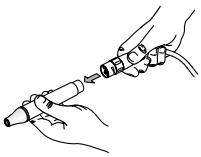
Cleaning the connecting pieces with compressed air.
Irreparable damage to the system.
- ▸ Never apply compressed air directly to sites of contact and orifices.

⚠ CAUTION

Incorrect position of the tip.
Not an appropriate spray pattern of the rinsing fluid.
Overheating of the dental substance and soft tissue.
Damage due to burn injuries.
mechanical damage to the dental substance.
- ▸ Position tip correctly.
- ▸ Check for noises when you start up the tip. Noises may indicate that the tip is not clamped tightly enough in the tip holder.

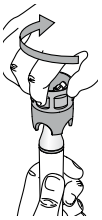
- ▸ In order to ensure perfect electronic connection, the individual components must be dry.

Note
It is imperative to use only the enclosed torque wrench for attachment of the tips on the handpiece with the appropriate torque. The enclosed torque wrench is a combination of a torque wrench and an individual file holder. It ensures installation in accordance with the pertinent specifications, orderly storage of the tips, and provides protection against injury or contamination.



- Mount the handpiece on the coupling.

- Screw-on the tips.



- Tighten the tips with the torque wrench by another quarter of a turn.

⇨ This ensures that the appropriate torque is applied.

4.3 Attaching the file holder

NOTICE

Incorrect attachment of the screws.

Failure to treat the sensitive tips gently.

- a) Use only the enclosed wrench for attaching the file holder on the handpiece.
- b) Use only the enclosed wrench for attaching the tips and files in the chuck.
- c) Tighten the union nut of the chuck only if files or tips have been placed in the chuck.
- d) Do not tighten the screws excessively.

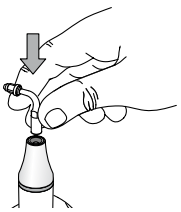
⚠ CAUTION

Incorrect position of the file or tip.

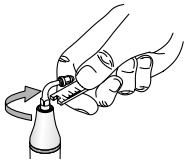
Not an appropriate spray pattern of the rinsing fluid. Fracture of the files, scratching along the walls of the root canal, and inadvertent enlargement of the apical foramen.

- Position file or tip correctly.
- Check for noises when you start using the file or tip. Noises may indicate that the file or the tip is not clamped tightly enough in the file holder.

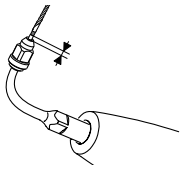
Position the file



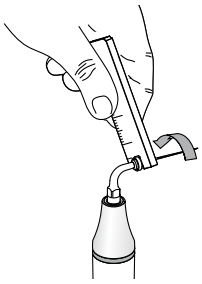
- Screw the file holder onto the handpiece.



- Attach the file holder to the handpiece with the torque wrench.



- Slide the file into the file holder until the mark is reached.



- Gently tighten the union nut screwed sleeve with the torque wrench.

5 Operation

⚠ CAUTION

Working with non-sterile handpieces.

Non-sterile handpieces and tips can elicit bacterial or viral infections.

- Sterilise all handpieces and tips prior to each use.

See also:

6 Reprocessing method in accordance with ISO 17664, Page 36

⚠ CAUTION

Sharp-edged tips.

Risk of injury.

- Leave the enclosed torque wrench on the PiezoLED handpiece when it is not being used!

⚠ CAUTION

Risk of burn injury due to oscillating PIEZOscaler tip.

During the use of the PIEZOscaler tip, contact to non-cooled parts can lead to burn injuries.

- Make sure that the oscillating PIEZOscaler tip does not contact soft tissues, e.g. by placing it on the lip while using it.

⚠ CAUTION

Working with dry PIEZO Tips.

The working tip of the instruments heats up very quickly during dry work.

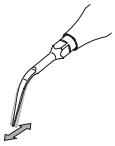
- Ensure that there is sufficient rinsing fluid at all times.
- Work with dry tips only if this option is expressly stated.

NOTICE

Work on restorations and dental prostheses.

Damage to restorations and dental prostheses.

- Use tips on metal or ceramic restorations and dental prostheses only if this option is expressly stated.



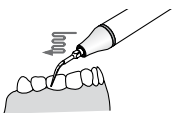
Piezo Tips vibrate in a controlled back-and-forth motion. For identical power settings of the device, a longer and thinner tip produces less clinical output.

Notes regarding the working procedure

Note

The insertion depth of the PIEZO Tip must be at a distance of 1 mm from the colour marker.

- Always keep the tip tangential to the tooth surface during treatment.
  Never touch the tip frontally against the enamel.
  Point the instrument tip against the tooth surface only if this option is expressly stated.



- Perform brush-like motions with little lateral pressure with the handpiece.

- For more gentle treatments, select a longer tip.
  For treatments with higher clinical output, select a shorter tip.

Notes regarding the use of diamond-coated tips

The diamond-coated tips are highly efficient.

- Use the tips with sufficient fluid at all times.

⇨ This prevents damage to hard and soft tissues.

⇨ Rapid wear of the tips is prevented.

If very strong pressure is applied to the instrument tip, the ultrasound vibrations are less than optimal.

- Apply only gentle pressure to the tip.

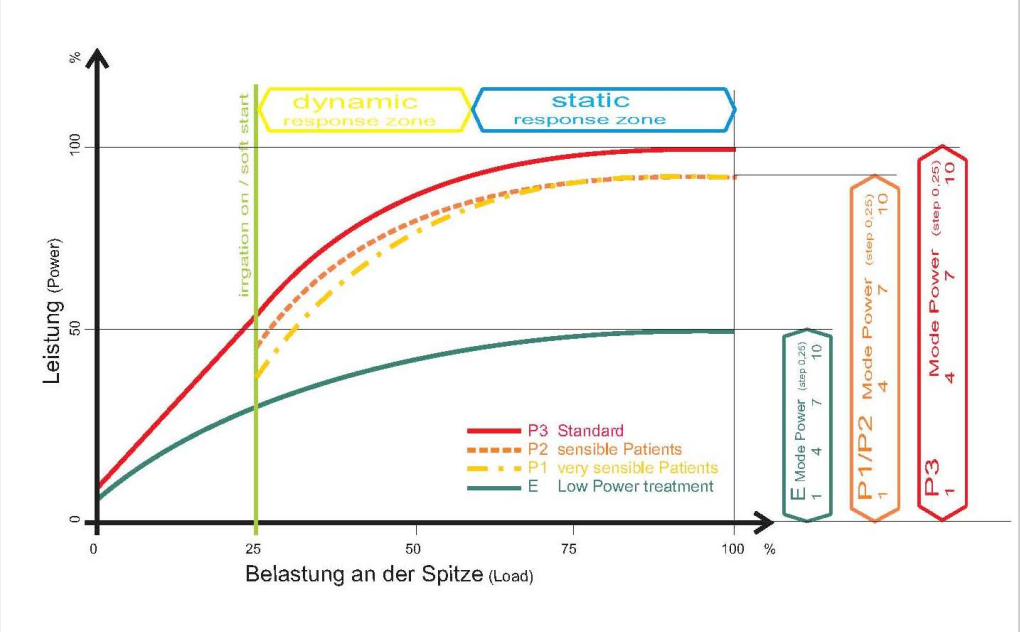
⇨ This ensures optimal performance and protection of the tissue.

⇨ The wear and tear on the tip is minimal.

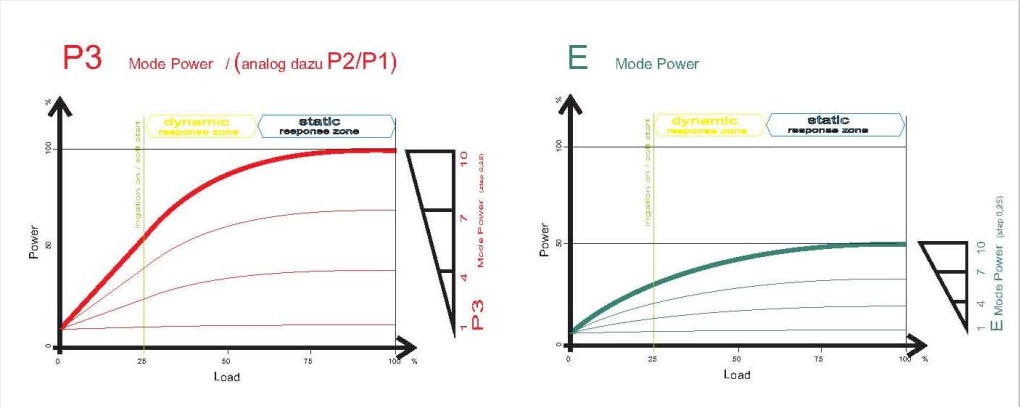
A worn coating reduces the efficiency of the tip significantly.

- Before use, check visually if the diamond-coating is in good shape.
- Always use a mouth protector when you use the handpiece.
- Always check for correct position of the mouth protector.

5.1 Operating mode P3 / P2 / P1 / E



Power output as a function of operating mode and tip load



Power output as a function of device pre-setting (foot control) and tip load (shown using modes P3 and E as examples)

Note

Stay in the range of dynamic response to ensure that the treatment is gentle. The output is adjusted according to load.

5.2 General operating settings on the treatment unit

- The mode is selected on the treatment unit
- The output is controlled by means of the foot control or display
- Pre-select spray water by means of the foot control or display
- Adjust the spray water by means of the adjustment ring on the PIEZOscaler

▸ Comply with the instructions for use and specific operation of the respective treatment unit.

5.3 Tip-related information

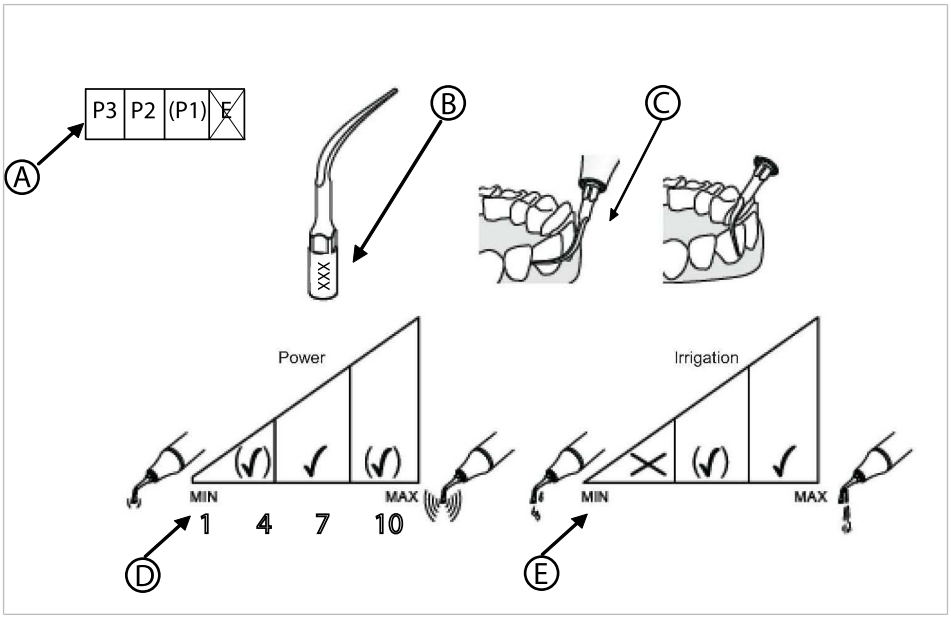
- Information concerning permissible modes
- Information concerning permissible output
- Information concerning permissible spray water volume

Explanations concerning the operating mode:

P3	P2	(P1)	E

Icon	Explanation
	permissible
( )	possible
X	non-permissible

Example,



A Operating mode
B Product identification
C Indication
D Permissible power setting
E Permissible spray water volume

5.4 Scaling tips

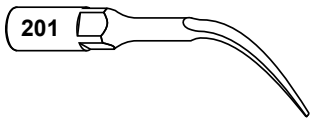
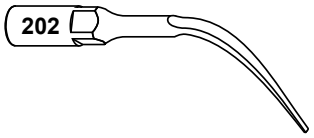
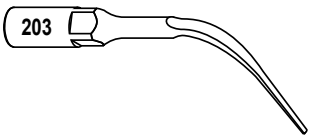
⚠ CAUTION

Instrument tip heats up too rapidly.

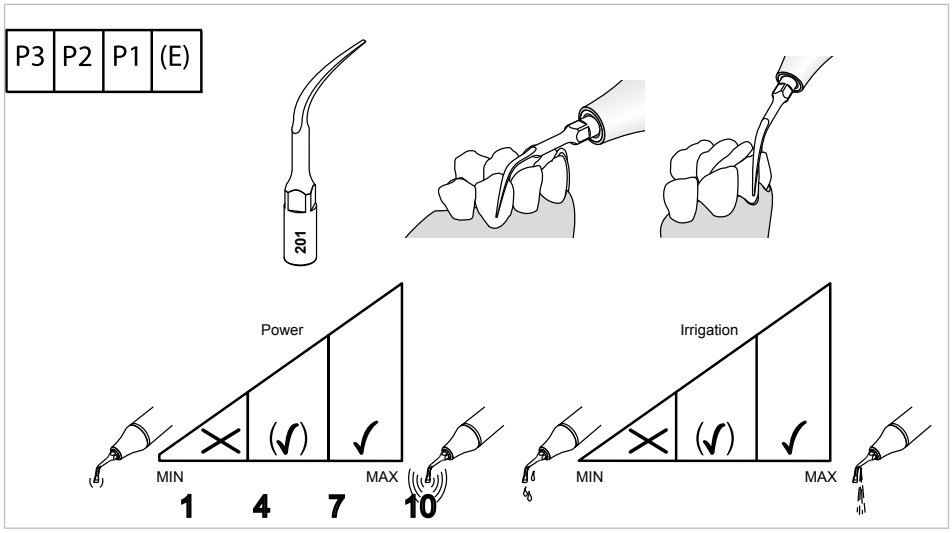
Tooth is cooled insufficiently.

- Distance from tip with spray mist suction.
- Cooling power must be ensured.

5.4.1 Select tip

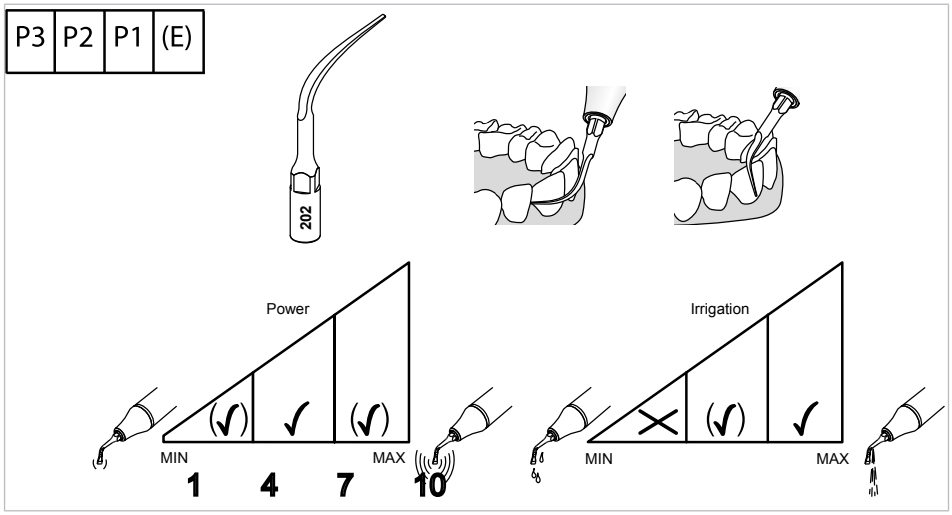
	Piezo Scaler Tip 201	Universally-applicable scaling tip for the removal of supragingival calculus in all quadrants.
	Piezo Scaler Tip 202	Paro tip for the removal of supra- and subgingival concretions in all quadrants, in particular in the interdental spaces and sulcus.
	Piezo Scaler Tip 203	Delicate Paro tip for the removal of subgingival deposits on root surfaces and for rinsing pockets with antimicrobial solutions. Also suitable for periodontal recall treatments.

5.4.2 Using the PIEZO Scaler Tip 201



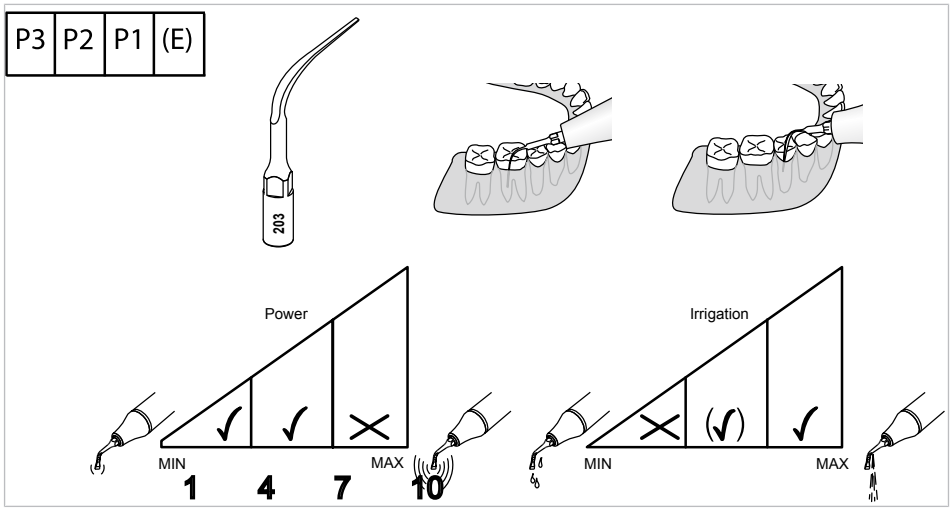
Power	High, for hard concretions.
	Medium, as a standard.
	Low, for pain-sensitive patients and recall treatments.
Flow rate	High to medium.

5.4.3 Using the PIEZO Scaler Tip 202



Power	High, for hard concretions and first treatments.
	Medium, for pain-sensitive patients.
Flow rate	High to medium.

5.4.4 Using the PIEZO Scaler Tip 203



Power	High, for hard concretions.
	Medium, as a standard.
	Low, for pain-sensitive patients or recall treatments.
Flow rate	High to medium.

5.5 Paro tips

⚠ CAUTION

Instrument tip heats up too rapidly.

Tooth is cooled insufficiently.

- Keep a distance from tip with spray mist suction.
- Cooling power must be ensured.

⚠ CAUTION

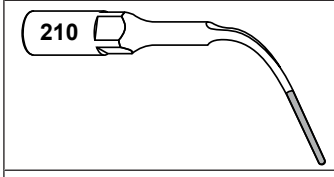
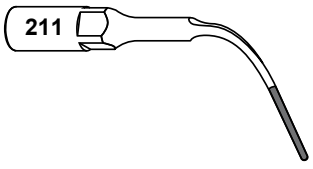
Incorrect usage.

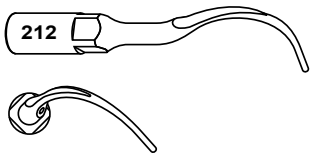
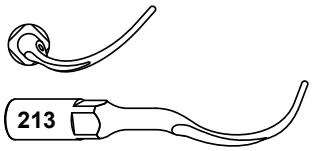
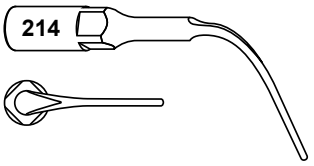
Damage to the surface of the tooth

- Never point the instrument tip directly at the tooth surface.
- Never touch the tip frontally against the enamel.

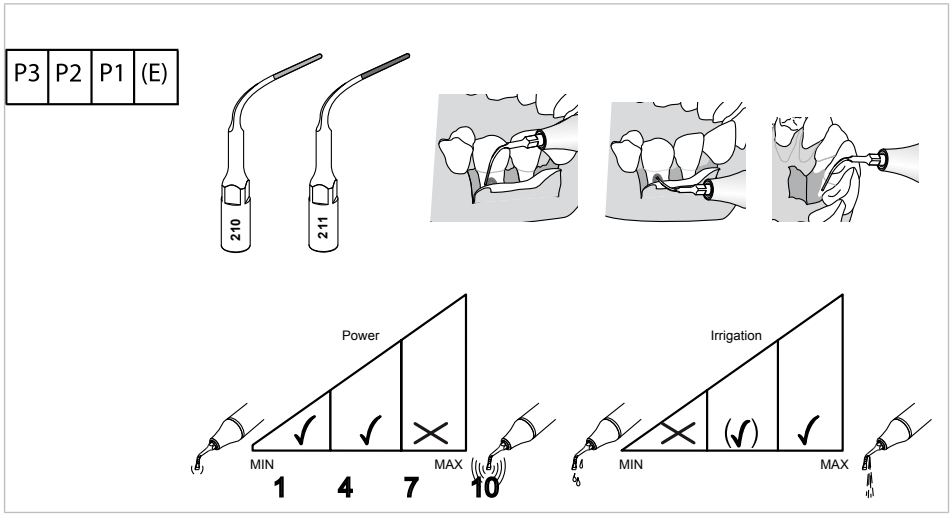
All lateral surfaces (including front and back) of the curved tips can be used for treatment.

5.5.1 Select tip

	Piezo Paro Tip 210	Diamond-coated tip with 15 µm-grain for surface polishing after cleaning and shaping.
	Piezo Paro Tip 211	Diamond-coated tip with 70 µm-grain for thorough root cleaning under direct view (flap procedure) and smoothing of restoration overhang and extension of furcation roofs.

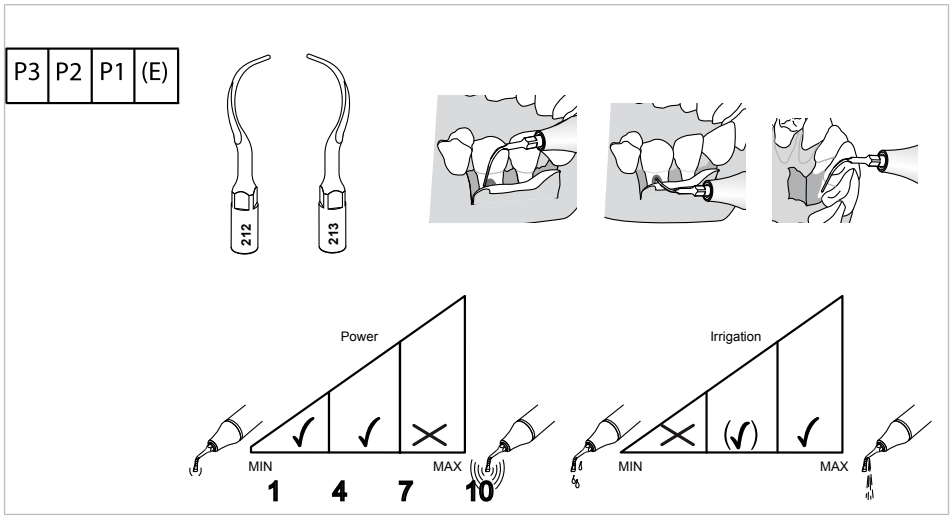
	Piezo Paro Tip 212 curved left	For periodontal debridement, particularly well-suited for approximal surfaces and root furcations that are difficult to access.
	Piezo Paro Tip 213 curved right	
	Piezo Paro Tip 214	For rinsing and disinfection of periodontal gingival pockets.

5.5.2 Using the PIEZO Paro Tip 210 and PIEZO Paro Tip 211



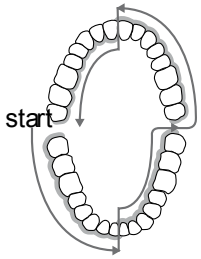
Power	Low to medium.
Flow rate	High to medium.

5.5.3 Using the PIEZO Paro Tip 212 and PIEZO Paro Tip 213



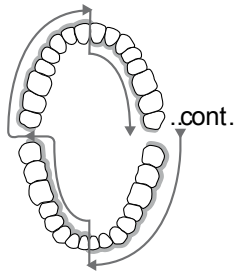
Power	No more than medium, even with hard concretions.
	Low, as a standard.
Flow rate	High to medium.

Only a single change of tips is required for treatment of the entire dentition.



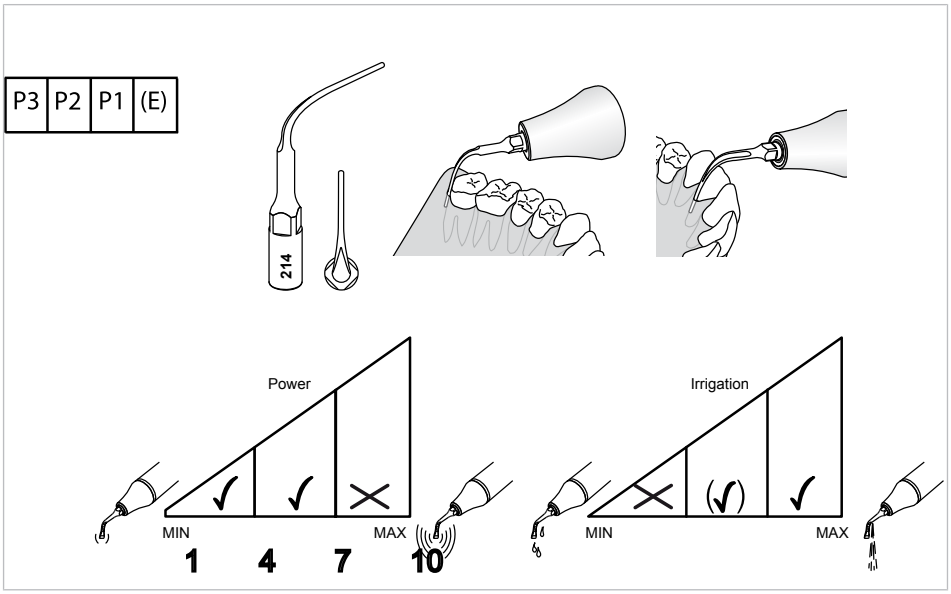
- Guide the Piezo Paro Tip 212 (curved left) in the direction of the arrow. Work only with low lateral pressure.

- Change tips.



- Guide the Piezo Paro Tip 213 (curved right) in the direction of the arrow. Work only with low lateral pressure.

5.5.4 Using the PIEZO Paro Tip 214

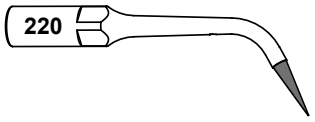
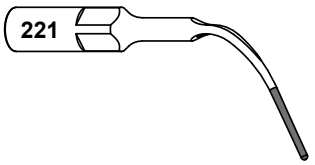
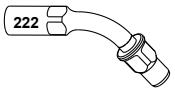
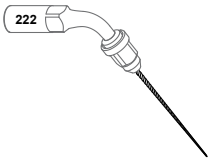


Power	No more than medium, even with hard concretions.
	Low, as a standard.
Flow rate	High to medium.

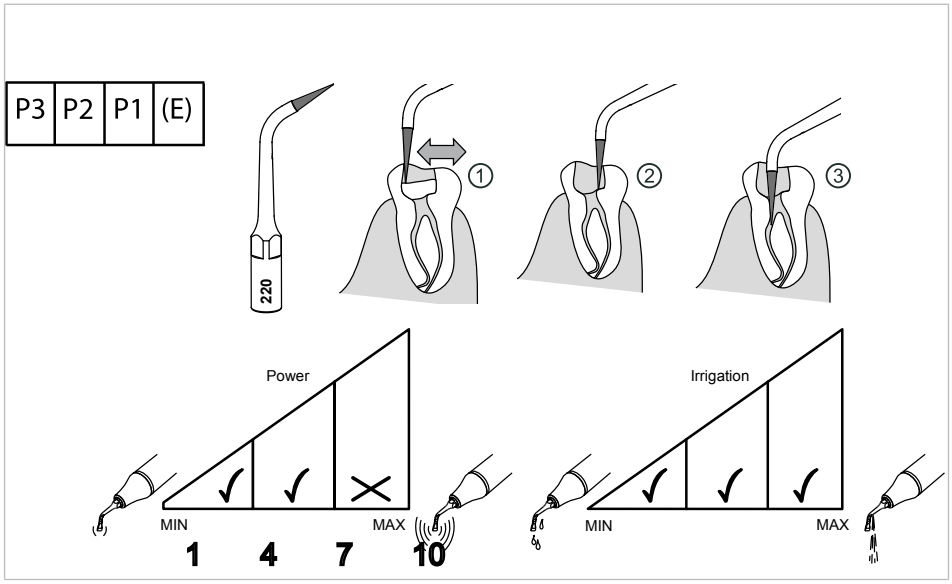
5.6 Endo tips

5.6.1 Select tip

The tips are well-suited for work on the pulp cavity, work on coronal root parts and effective revision treatment of root canals, e.g. for removal of fractured instrument tips or files or removal of filling materials.

	Piezo Endo Tip 220	Cone-shaped and diamond-coated tip for the detection of root canals and the removal of calcifications in the coronal third of the root canal system.
	Piezo Endo Tip 221	Slender diamond-coated tip for the removal of steps and other obstructions and for the formation of a straight access to a fractured part of a tip in the root canal.
	Piezo Endo Tip 222	File holder for Piezo Endo Tip and Piezo Implant Tip Set. **Also refer to:** Scaling tips
	Piezo Endo Tip files	Stainless steel files for the preparation, cleaning, and disinfection of the root canal system for use with a file holder. Use Endo mode only.

5.6.2 Using the PIEZO Endo Tip 220



Power	Low to medium.
Flow rate	Low to high.

- ▸ Remove calcifications without applying pressure to the tip.

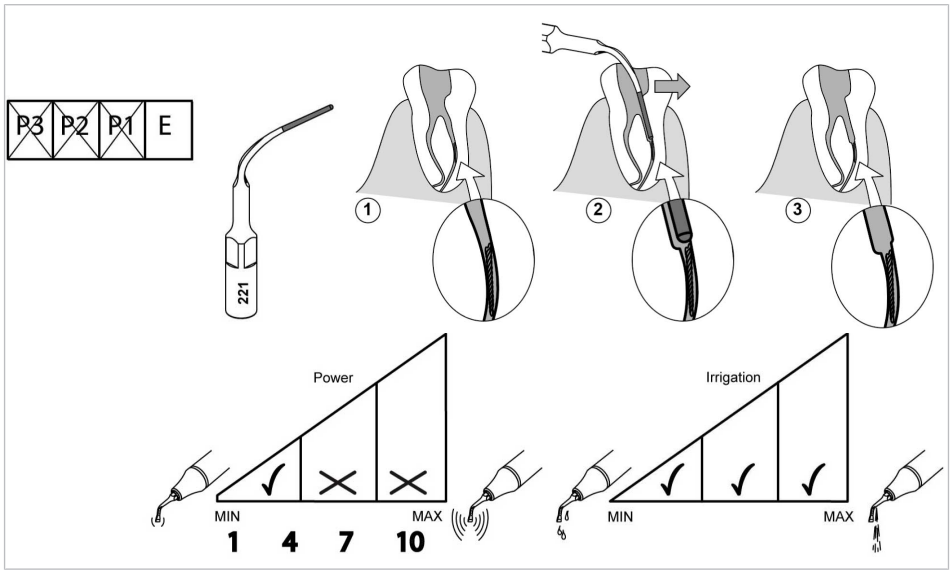
5.6.3 Using the PIEZO Endo Tip 221

⚠ CAUTION

Axial pressure on fractured tip.

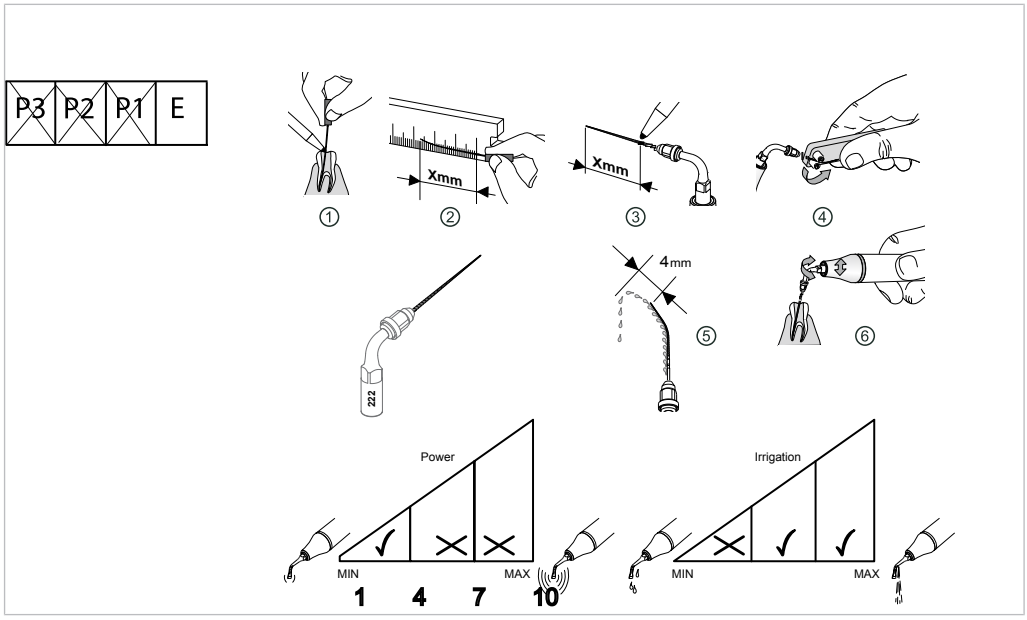
The fractured part of the tip being pushed further into the root canal.

- Avoid contacting the fractured part of the tip.
- Do not apply pressure in axial direction on the tip.



Power	Low.
Flow rate	Low to high.

5.6.4 Using PiezoLED Endo files with file holder



Power	Low, max. 30 %.
Flow rate	Medium to high.

Work with Endo files

- Measure the length of the root canal ①.

- Mark the length of the root canal, e.g. with water-resistant felt-tip pen, on the file ②.
- Mark Endo file ③.
- Bend file to shape ④.
- Keep tip upright, activate rinsing and ultrasound function, and ensure that the liquid jet projects 4 mm beyond the tip of the file ⑤.
- Activate the file for 4 seconds. Ensure that the file is never activated for more than 10 seconds ⑥.

⚠ CAUTION

Incorrect usage and lack of checking

Fracturing of the file

- Work in Endo mode only.
- Activate file in the presence of rinsing fluid or outside of the root canal only.
- Produce a guiding canal using a manual file.
- Frequently check the file for symptoms of fatigue and replace the file as early as possible on a prophylactic basis.

Produce a guiding canal using a manual file

⚠ WARNING

The patient swallows or aspirates loose parts or substances.

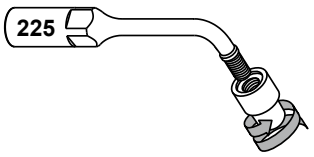
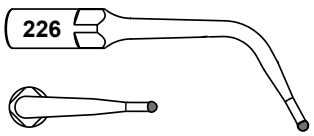
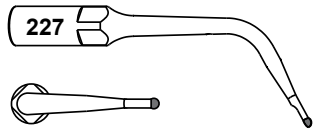
Danger of suffocation.

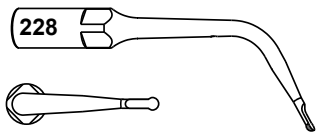
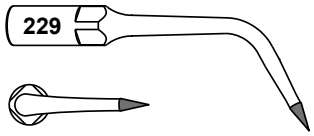
- Before each treatment, insert a dental dam for safety reasons.

- If required, adapt a manual file of size ISO 15 to the shape of the root canal.
- File the inside of the root canal proceeding with slow, circling up-and-down motions using the "stepback" procedure.
- Produce a guiding canal.
- Retract the file slowly and careful apply only gentle pressure.

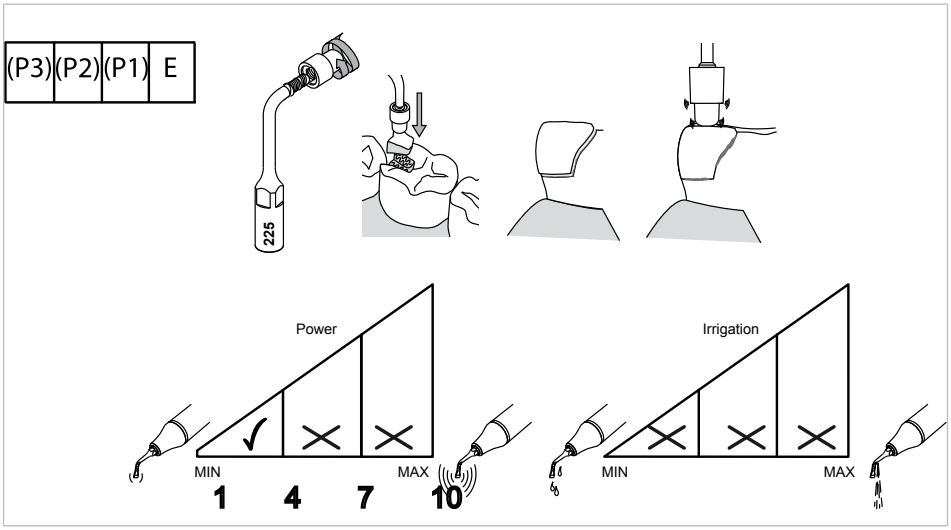
5.7 Preparation tips

5.7.1 Select tip

	Piezo Cem Tip 225	For cementing ceramic inlays, onlays, and veneers with highly thixotropic, dual-curing composite cements.
	Piezo Prep Tip 226	Diamond-coated tip for exposure of small occlusal and buccal defects.
	Piezo Prep Tip 227	Diamond-coated tip for slanting and finishing mesial margins of cavities.

	Piezo Prep Tip 228	Diamond-coated tip for slanting and finishing distal margins of cavities.
	Piezo Prep Tip 229	Diamond-coated tip for cleaning and enlarging fissures prior to sealing.

5.7.2 Using the PIEZO Cem Tip 225



⚠ CAUTION

Production of heat if the permissible activation time and period of usage is exceeded.

Risk of burn injury!

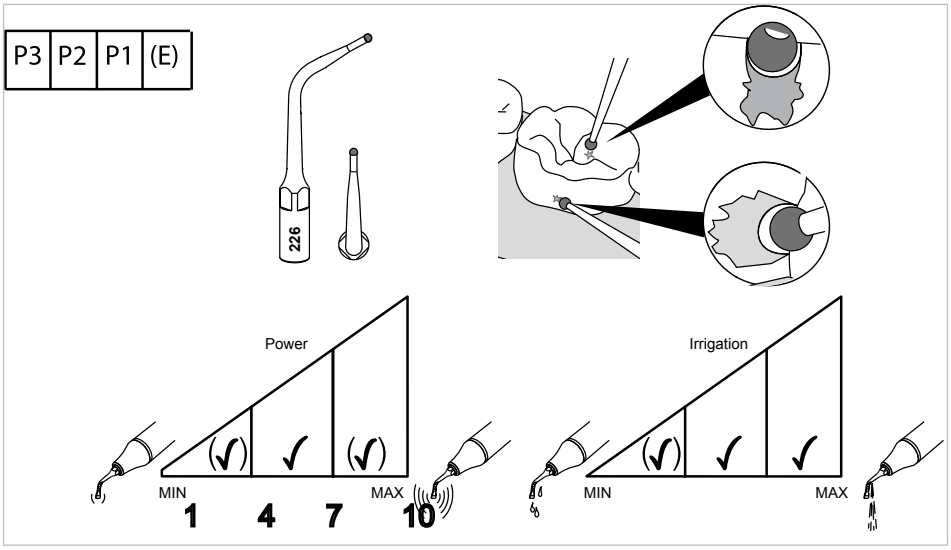
Damage to the tooth surface.

- Do not exceed a maximum activation period of 1 minute and a maximum period of use of 10 minutes.

In contrast to other Piezo Tips, the Piezo Cem Tip 225 is used without rinsing fluid.

The ultrasound vibrations of the tips are transferred via the inlay or onlay to the composite dental cement. The composite has thixotropic properties. It becomes liquefied briefly when exposed to ultrasound and is distributed evenly throughout the cavity.

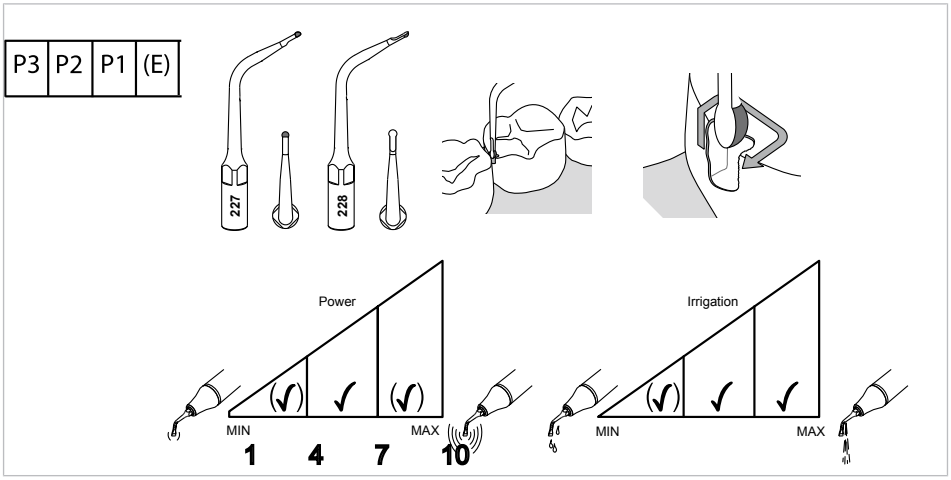
5.7.3 Using the PIEZO Cem Tip 226



Power	Medium, as a standard.
	High or low, according to need.
Flow rate	Medium to high.

- Place the tip at the defect and then guide it into the defect with gentle pressure.

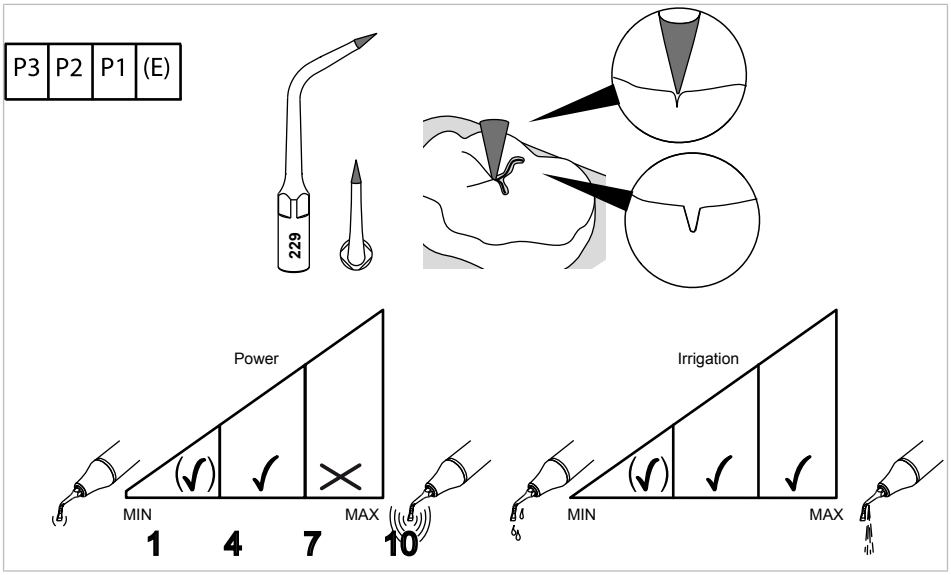
5.7.4 Using the PIEZO Prep Tip 227 and PIEZO Prep Tip 228



Power	Medium, as a standard.
	High or low, according to need.
Flow rate	Medium to high.

- Place the tip at the margin of the cavity and then guide slowly over the margin of the cavity applying gentle pressure.

5.7.5 Using the PIEZO Prep Tip 229

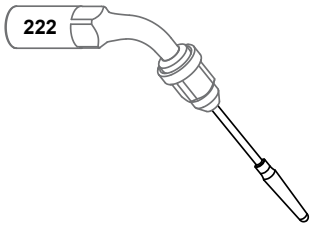


Power	Medium to low.
Flow rate	Medium to high.

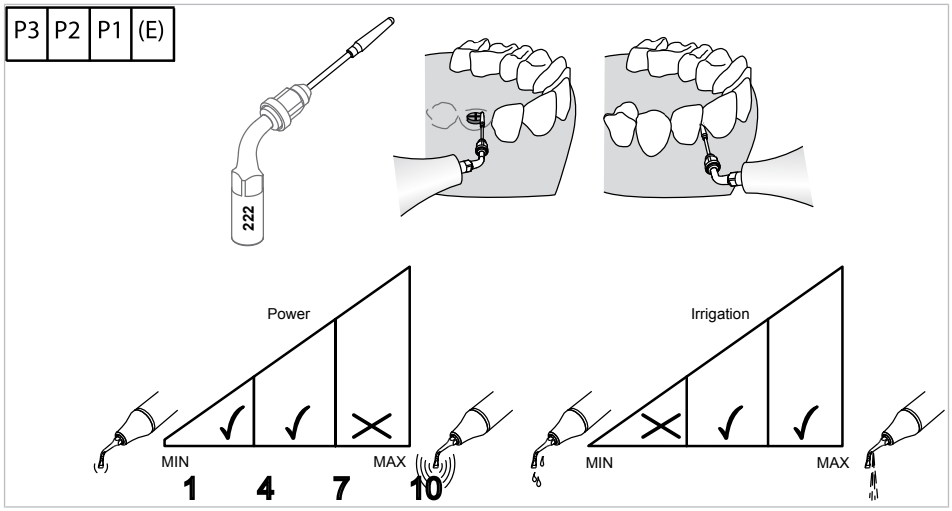
- Place the tip at the fissure and then guide it through the fissure with gentle pressure.

5.8 Implant Set

5.8.1 Select tip

	Piezo Implant Tip Set	For removing plaque and calculus from implant surfaces and restorations made of metal or ceramics. For cleaning the surfaces of dental prostheses. Must be used in conjunction with Piezo Endo Tip 222. **Also refer to:** Endodontics tips

5.8.2 Using the PIEZO Implant Tip Set 222



Power	Low or medium with hard concretions.
Flow rate	High to medium.

⚠ CAUTION

Swallowing or aspiration of a loosened or fractured fragment.

Danger of suffocation!

- Ensure that the plastic coating of the tip is not worn or damaged.

⚠ CAUTION

Selected power level is too high or maximum.

Fracturing of tips

- Use the approved power levels only.

6 Reprocessing method in accordance with ISO 17664

⚠ CAUTION

Reprocessing and re-use of expired products.

Infection hazard!

- Use disposable products a single time only.
- Replace reusable products complying with the usage cycles specified by the manufacturer.

⚠ CAUTION

Inadequate sterilisation.

Infection hazard.

- Sterilise only after cleaning and disinfection are complete.
- Ensure that the disinfection solution does not foam.
- Make sure to use only freshly prepared solutions.
- Make sure to use adequately validated instruments and product-specific procedures for cleaning/disinfection and sterilisation only.
- Make sure to comply with the applicable parameters in each cycle.
- Make sure to comply with the concentrations and exposure times specified by the manufacturer of the cleaning agents and disinfectants.

NOTICE

Damage due to improper cleaning and disinfection.

Restricted function or damage to the device.

- Clean external surfaces only!
- Use a soft cloth and suitable cleansers and disinfectants exclusively!
- Do not use solvents or aggressive chemicals!

NOTICE

Damage from liquids on the inside of the device

Improper use of liquids can lead to restricted function or damage inside the device.

- Make sure that no cleaning or disinfection liquids ingress into the inside of the device!
- Do not place medical devices in disinfection baths!

Note

Improper service and care can cause premature wear and malfunctioning.
KaVo guarantees that its products will function properly only when the disinfectants listed by KaVo are used, since these have been tested for proper use in combination with KaVo products and for their proper use.

Note

Make sure to comply with the local legal regulations and the hygiene provisions of the hospital or clinic. Moreover, make sure to comply with the additional requirements regarding the inactivation of prions.

KaVo recommends reprocessing the instrument as soon as possible after use.

The aim of the reprocessing of reusable instruments is to reduce the overall germ count and attain sterility of the product. This is the only way to exclude the risk of infection upon reuse of these products.

- First clean all parts of the assembly.
- Then perform a sterilisation with steam.

Service life

- The products have been developed with a large number of thermal disinfection and/or sterilisation cycles in mind.
- However, the thermal and chemical stress during each preparation for reuse cause the products to age.
- If the number of sterilisation cycles is limited, this will be clearly stated in the product-specific instructions.
- The use of ultrasonic cleaners and strong cleaning and disinfection liquids (alkaline pH value > 9 or acidic pH value < 5) might reduce the service life of the products. Under these circumstances, the manufacturer accepts no liability.
- The products must not be exposed to temperatures above 138 °C.

6.1 Preparations at the site of use

⚠ WARNING

Hazard from non-sterile products.

There is a risk of infection from contaminated medical devices.

- ▸ Take suitable personal protective measures.

- ▸ Remove the tip from the medical device.
- ▸ Remove all residual cement, composite or blood immediately.
- ▸ Reprocess the medical device as soon as possible after treatment.
- ▸ The medical device must be dry when transported to reprocessing.
- ▸ Do not place in solutions or similar substance.

6.2 Reprocessing after surgery

Any treatment after an operation must be carried out without delay, no later than maximally 30 minutes after completion of the operation. For more information, if required, please refer to the respective product-specific Instructions for Use.

Note

Use distilled water exclusively.

Only distilled/deionised water that is sterilised or contains a low number of microbes (< 10 cfu/ml) only, may be used in all rinsing steps. Only use distilled/deionised water with a sufficiently low endotoxin and particle concentration (e.g. aqua purificata as specified in Pharm. Eur. or USP).

Rinse-off outer surfaces

- ▸ Carefully remove any soiling on the outside with distilled water and a soft brush or cloth.
- ▸ Then rinse the surface of the product.

6.3 Cleaning

NOTICE

Never reprocess this medical device in an ultrasonic cleaner.

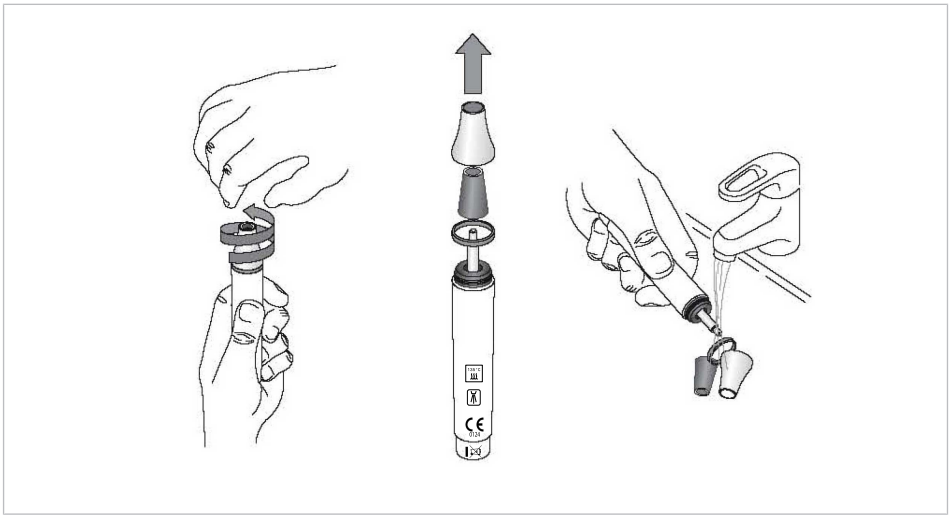
Malfunction and material damage.

- ▸ Clean manually or in a washer disinfector only.

The subsequent cleaning/disinfection must be started within 2 hours.

6.3.1 Cleaning of handpieces

Manual external cleaning



- Unscrew sealing cap and fibre optic conductor.
- Gently clean the individual parts under running water using a soft brush or a soft cloth.
- Attach disposable syringe (at least 50 ml) to the nozzle of the product.
- Rinse all product lumens (e.g. rinsing and suction connections) at least five times in the flow direction. Do not rinse against the flow direction.
- Rinse the external housing of the handpiece thoroughly.

Manual internal cleaning

- Distilled, deionised water
- (aqua purificata as specified in Pharm. Eur. or USP)
  - with microbial count < 10 cfu/ml or sterilised
  - with sufficiently low endotoxin and particle concentration
- Attach disposable syringe to the back nozzle.
- Rinse in the normal flow direction, do not rinse against the flow direction.
- If an aldehyde-free cleaning and disinfection solution is used, subsequently rinse at least thrice with distilled or deionised water.

Automated external and internal cleaning

NOTICE

Incorrect reprocessing with oiling care agents

Reduced illumination power by the fibre optics becoming turbid.

- Remove the fibre optics before reprocessing.
- Do not use oiling agents for reprocessing.

KaVo recommends washer disinfectors according to EN ISO 15883-1, which are operated using alkaline cleaning agents having a maximum pH value of 10.

The validation was conducted with a BHT INNOVA 1080 washer disinfector using the "P3 (VARIO-TD)" programme, the "neodisher® MediZym" cleaning agent, and deionised water in the final rinse.

- For programme settings as well as cleansers and disinfectants to be used, please refer to the Instructions for Use of the washer disinfector.

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

6.3.2 Cleaning of tips, endo files, file holders, endo wrenches, torque wrenches

Note
Matching cleaning adapters are needed for cleaning of the KaVoPIEZO tips.

Note
For exposure times and concentrations of disinfection agents, please refer to the instructions of the manufacturers.

- Place the products in the disinfection solution at least for as long as specified by the manufacturer of the disinfection agent.
- Remove all contamination from the outer surface by careful brushing using a soft brush or soft cloth.
- Rinse the inside of products thoroughly at least five times using fresh distilled or deionised water (at least 50 ml).
- If the final rinse is not clear or if the product continues to contain visible contamination, the cleaning process must be repeated.

6.4 Disinfection

NOTICE
Use of the disinfectant bath or chloride-containing disinfectants.
Malfunction and material damage.
- Do not disinfect the device in the disinfection bath or through the use of chloride-containing disinfectants.

6.4.1 Disinfection of handpieces

Note
Disinfectant concentration
For times and concentrations, please refer to the instructions of the manufacturers of the cleaning/disinfection agent.

Manual external disinfection

KaVo recommends the following products based on compatibility of the materials. The microbiological efficacy must be confirmed by the disinfectant manufacturer.

- Mikrozid AF made by Schülke & Mayr (liquid or cloths)
- FD 322 made by Dürr
- Incidin (cloths or liquid) made by EcoLab
- CaviCide made by Metrex

- Attach disposable syringe (at least 50 ml) to the nozzle of the product.
- Rinse all product lumens (e.g. rinsing and suction connections) at least five times in the flow direction.
  Do not rinse against the flow direction.

- If the final rinse is not clear or if the product continues to contain visible contamination, the cleaning process must be repeated.
- Clean the surface with alcohol-based disinfection cloths.
- Dry the products with filtered compressed air (max. 3 bar).
- If required, dry again at a clean place.
- Package products immediately after drying (see section on Packaging and Sterilisation).

Automated external and internal disinfection

KaVo recommends washer disinfectors according to EN ISO 15883-1, which are operated using alkaline cleaning agents having a maximum pH value of 10.
The validation was conducted with a BHT INNOVA 1080 washer disinfector using the "P3 (VARIO-TD)" programme, the "neodisher® MediZym" cleaning agent, and deionised water in the final rinse.

- For programme settings as well as cleansers and disinfectants to be used, please refer to the Instructions for Use of the washer disinfector.

The drying procedure is normally part of the cleaning programme of the washer disinfector.

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

6.4.2 Disinfection of tips, endo files, file holders, endo wrenches, torque wrenches

- Place the products in the cleaning solution at least for as long as specified by the manufacturer of the cleaning/disinfection agent.
- Remove all contamination from the outer surface by careful brushing using a soft brush or soft cloth.
- Rinse the inside of products thoroughly at least five times using fresh distilled or deionised water (at least 50 ml).
- If the final rinse is not clear or if the product continues to contain visible contamination, the cleaning process must be repeated.

Note
Optionally, a washer disinfector can be used for automated disinfection.

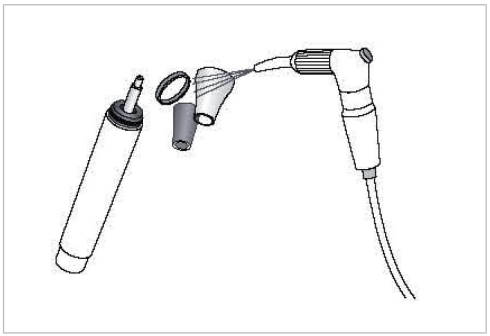
KaVo recommends washer disinfectors according to EN ISO 15883-1, which are operated using alkaline cleaning agents having a maximum pH value of 10.
The validation was conducted with a BHT INNOVA 1080 washer disinfector using the "P3 (VARIO-TD)" programme, the "neodisher® MediZym" cleaning agent, and deionised water in the final rinse.

- For programme settings as well as cleansers and disinfectants to be used, please refer to the Instructions for Use of the washer disinfector.

6.5 Drying

6.5.1 Drying of handpieces

Manual Drying



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

6.5.2 Drying of tips, endo files, file holders, endo wrenches, torque wrenches

- Dry the products with filtered compressed air (max. 3 bar).
- If required, dry again at a clean place.
- Package products immediately after drying (see section on Packaging and Sterilisation).

6.6 Servicing

⚠ CAUTION

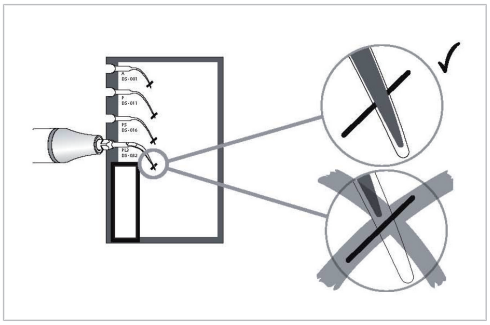
Use of third-party components.
Injury to dentist or patient.
- Use original components only.

Carry out the following tests before each use:
- Check handpiece and hose for visible damage prior to use.
- Check tips for visible damage and wear and tear prior to use.
- Replace damaged or worn parts.

Check the PIEZO Tips

Note
Use of worn tips
Ultrasound tips are subject to wear and tear and become shorter during use. Worn tips are less effective and might cause pain to the patient.

KaVo recommends using the components only for the specified service life.



- Check scaler tips regularly using the PiezoLED tip card.
- Replace tips with worn diamond coating.
- Check O-rings of handpieces regularly for damage.

6.7 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 comply with applicable standards and be suitable for the sterilisation procedure!

- The medical device must be packed before sterilisation.

6.8 Sterilisation

6.8.1 Sterilisation of handpieces

Sterilisation in a steam steriliser (autoclave) ISO 17665-1

NOTICE

Improper service and care.

Premature wear and reduced product service life.

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

NOTICE

Contact corrosion due to moisture.

Damage to product.

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

⚠ WARNING

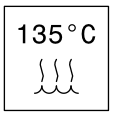
Handpieces are non-sterile

Non-sterile handpieces and tips can cause bacterial or viral infections.

- Sterilise handpieces before each use.
- After each use, reprocess the instruments according to the instructions.
- Use only reprocessed instruments in your work.

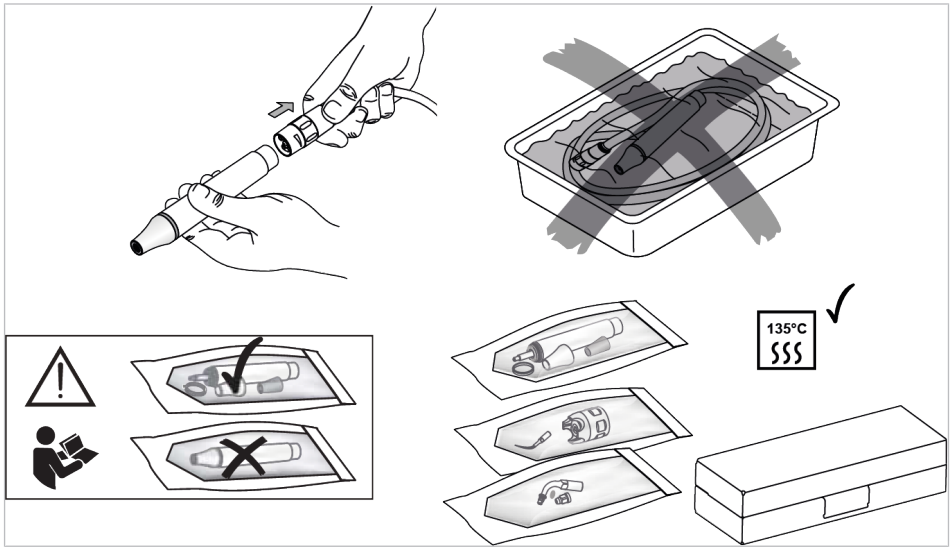
Note

Please comply with the applicable current national regulations governing the re-use and supply of equipment.



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

- Place the cleaned and disinfected handpieces separately in sterilisation packages and weld them to be sealed, (e.g. KaVo STERIclave bags **Mat. no. 0.411.9912**).



Steriliser with a triple pre-vacuum for at least 4 minutes at 134 °C ± 1 °C (273.2 °F ± 33.8 °F)
For range of applications, please refer to the manufacturer's Instructions for Use.

Only for handpieces with fibre optic conductor sleeve

- If the fibre optic conductor sleeve**Mat. no. 1.007.4021** looses its brightness due to sterilisation, replace the fibre optic conductor sleeve.

The light source in the handpiece cannot be replaced.

6.8.2 Sterilisation of tips, endo files, file holders, endo wrenches, torque wrenches

Note

The maximal number of sterilisation cycles must not be exceeded.

Note

The use of hot-air sterilisation and radio-sterilisation is not permissible (causes destruction of the products). KaVo shall not be held responsible if non-permissible procedures such as ethylene oxide, formaldehyde, and low temperature plasma sterilisation are used.

Note

Only cleaned and disinfected products may be sterilised.

Note
Please comply with the applicable current national regulations governing the re-use and supply of equipment.

- Place the cleaned and disinfected tips, endo files, file holders, endo wrenches and torque wrenches separately in sterilisation packages (e.g. KaVo STERIclave bags **Mat. no. 0.411.9912**) and weld them to be sealed or sterilise them in a sterilisation cassette (e.g. KaVo sterilisation cassette **Mat. no. 0.411.9101**).

Sterilisation container requirements:

- DIN EN 868-8 and ISO 11607-1
- Resistant up to 138 °C with appropriate permeability for steam
- Regular servicing

The requirements also apply to double disposable sterilisation packages.

Permissible sterilisation apparatus:

- Sterilisation apparatus with validated cycle parameters
- Sterilisation apparatus with non-validated cycle parameter which comply with DIN EN ISO 14161-1

Permissible procedures:

Procedure	Time /Temperature
Fractionated pre-vacuum	3 to 20 minutes at 132 °C/ 134 °C
Steam sterilisation apparatus (AAMI TIR no. 12, DIN EN ISO 14161-1, DIN EN ISO 17665-1) (DQ, IQ, OQ and PQ)	138 °C

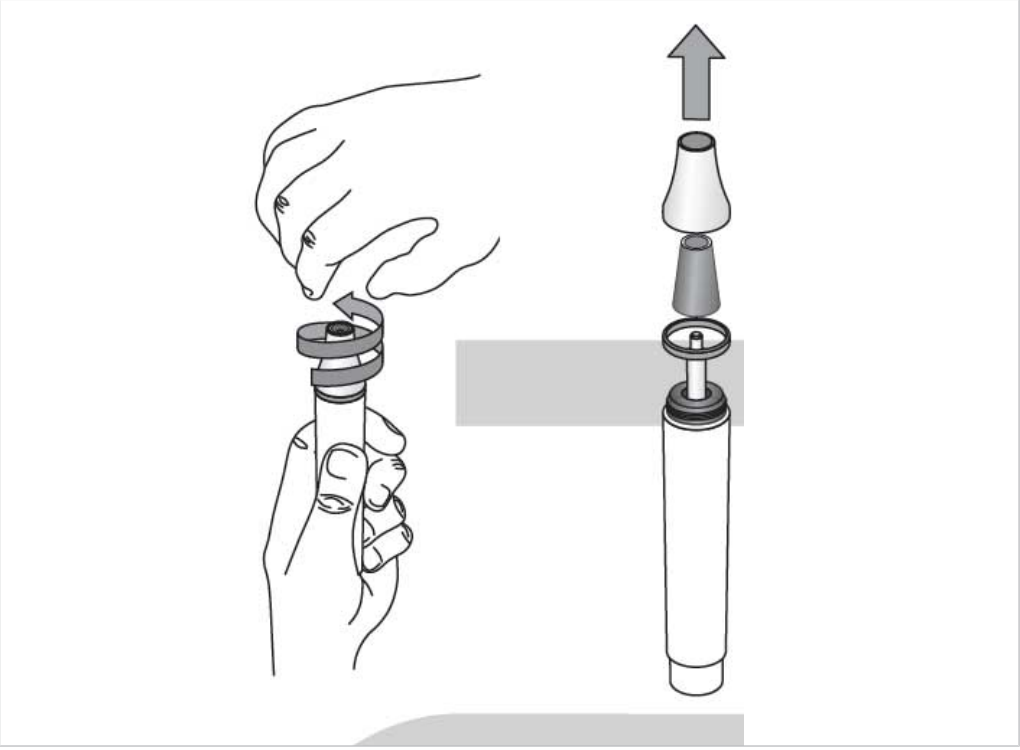
6.9 Storage

- Reprocessed products should be stored protected from dust with minimum exposure to germs in a dry, dark and cool place.
- Comply with the expiry date of the sterilised items.

7 Troubleshooting

Malfunction	Cause	Remedy
No rinsing or flow rate too low.	Tip or handpiece obstructed. Incorrect setting on setting ring on handpiece.	▸ Check device for obstructions and carefully remove any obstruction with compressed air. ▸ Use a different handpiece in order to check if the handpiece is obstructed. ▸ If the obstruction cannot be removed, ship the handpiece to a KaVo authorised repair centre. ▸ Comply with the instructions in the Instructions for Use of the device. ▸ Check the spray volume setting on the handpiece and correct it, if required.
No spray water or flow rate too low.	Spray water is not selected on the device.	▸ Correct spray water selection on the device.
No ultrasonic vibrations.	Device error.	▸ Comply with the instructions in the Instructions for Use of the device.
Decreasing or insufficient ultrasonic output.	Tip is clamped incorrectly or worn. The handpiece no longer works correctly.	▸ Comply with the instructions in the Instructions for Use of the device. ▸ Check if the tip is clamped correctly and re-tighten with the torque wrench, if required. ▸ Check the tip for wear and replace it, if required. ▸ Check the handpiece with a different tip. ▸ Ship the handpiece and the tip to a KaVo authorised repair centre.
Fracturing of a file or tip, possibly inside the cavity or in the root canal.		▸ Ensure that all fragments are removed. ▸ Compare the total length of the fragments to a new file or a new tip to verify that all fragments have been removed. ▸ Attempt to rinse out the fractured file or instrument tips in root canals using maximal liquid supply of a file (no ultrasound). ▸ Comply with the instructions for the use of the Piezo Endo Tip 221 which was developed especially for this purpose.
Diamond-coated tips no longer work efficiently.	The tip is damaged or worn.	▸ Visually inspect the diamond-coating and replace the tip, if applicable.

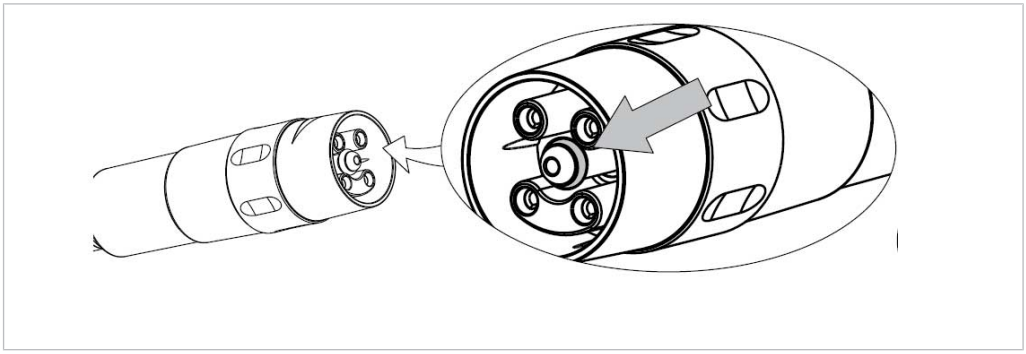
7.1 Replacing defective parts



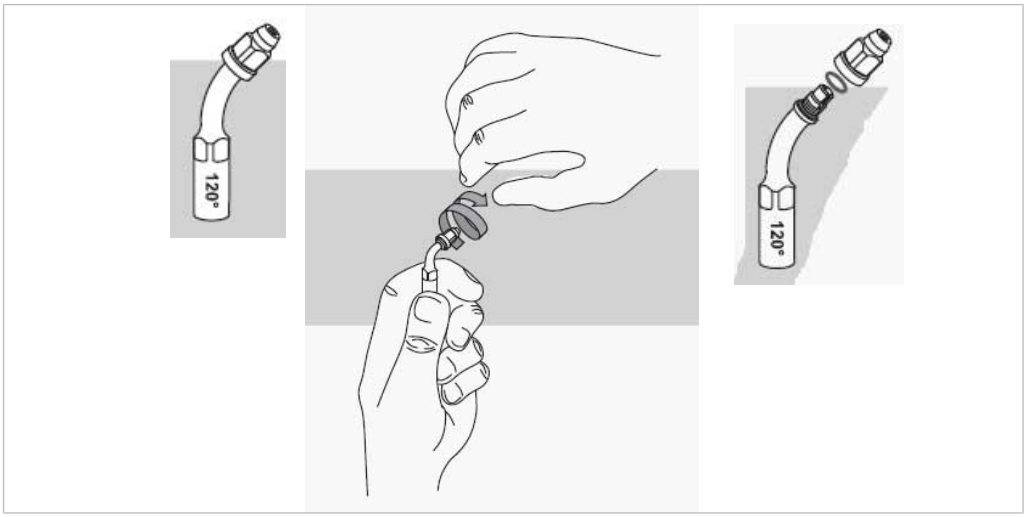
- Unscrew the sleeve and fibre optic conductor sleeve.
- Take off flat gasket
- Replace defective parts.
- Follow the reverse sequence for assembly.

Note

The guide light (if present) might loose its brightness due to sterilisation which might reduce the total light intensity of the handpiece. In this case, please replace the optic fibre conductor sleeve. The light source in the handpiece cannot be replaced.



- Take-off the O-ring
- Replace defective O-ring.



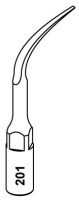
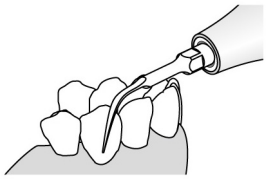
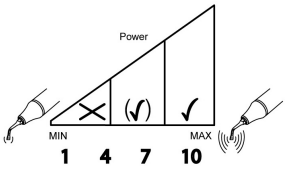
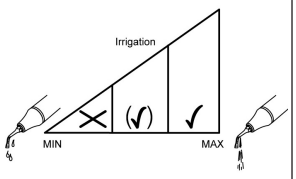
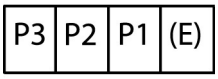
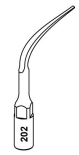
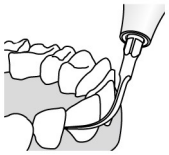
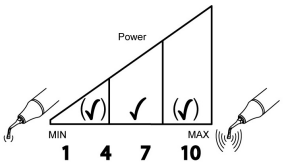
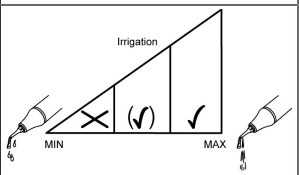
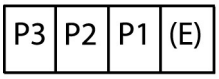
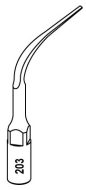
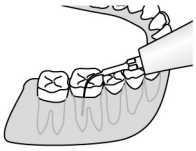
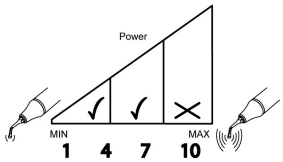
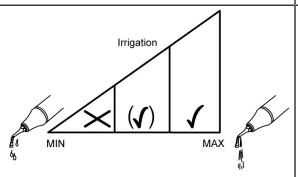
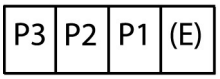
- Unscre the nut carefully.
- Take-off the O-ring.
- Replace defective parts.
- Follow the reverse sequence for assembly.

8 Accessories and consumables

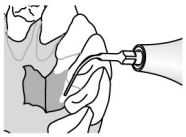
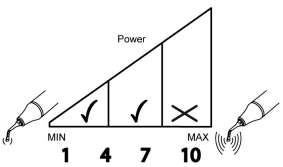
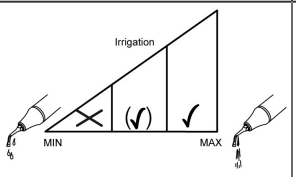
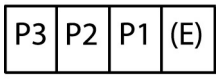
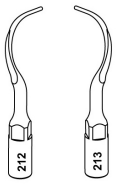
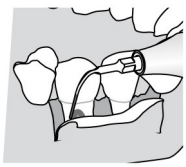
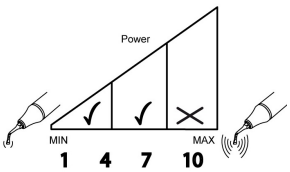
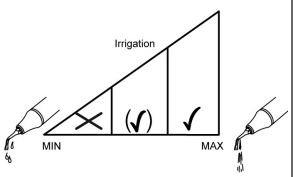
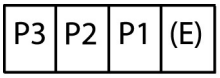
Mat.No.	Material summary
1.007.4004	Piezo Scaler Tips
1.007.4006	Piezo Paro Tips tip set
1.007.4008	Piezo Implant Tips tip set
1.007.4011	Piezo Endo Tips file set
1.007.4014	Piezo Implant Refill
1.007.4015	CEM attachment
1.007.4024	PIEZO Scaler Tips 201 (incl. torque wrench)
1.007.4026	PIEZO Scaler Tips 202 (incl. torque wrench)
1.007.4027	PIEZO Cem Tips 225 (incl. torque wrench)
1.007.4028	PIEZO Scaler Tips 203 (incl. torque wrench)
1.007.4032	PIEZO Paro Tips 212 (incl. torque wrench)
1.007.4033	PIEZO Paro Tips 213 (incl. torque wrench)
1.007.4034	PIEZO Paro Tips 214 (incl. torque wrench)
1.007.4035	PIEZO Prep Tips 226 (incl. torque wrench)
1.007.4036	PIEZO Prep Tips 227 (incl. torque wrench)
1.007.4037	PIEZO Prep Tips 228 (incl. torque wrench)
1.007.4038	PIEZO Prep Tips 229 (incl. torque wrench)
1.007.4039	PIEZO Paro Tips 210 (incl. torque wrench)
1.007.4040	Piezo Endo Tips 220 (incl. torque wrench)
1.007.4041	Piezo Endo Tips 221 (incl. torque wrench)
1.007.4042	PIEZO Paro Tips 211 (incl. torque wrench)
1.007.4043	Piezo Endo Tips 222 (incl. torque wrench)
1.007.4016	Piezo tip card
1.007.4020	Piezo Endo wrench
1.007.3004	Piezo torque wrench
1.007.3995	PiezoLED handpiece
1.007.4002	PIEZO Scaler hose R1300
1.007.3997	Steri-Box 5pcs
1.007.3998	Steri-Box 6pcs
1.007.4917	PiezoLED sleeve
1.007.4021	PiezoLED fibre optics conductor sleeves
1.007.4916	PiezoLED flat gasket
1.007.6959	O-ring 1.15 x 1.0
1.007.4793	Piezo Endo 222 nut
1.007.4794	Piezo Endo 222 O-Ring 1.5 x 1.0

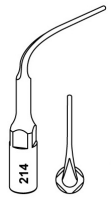
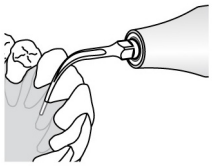
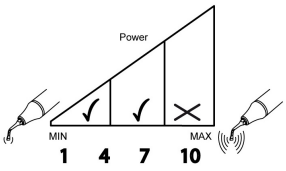
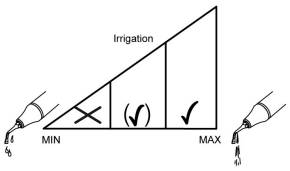
9 Tips: Rapid Overview

Piezo Scaler Tips

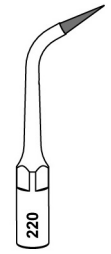
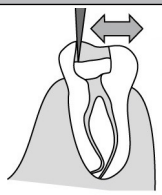
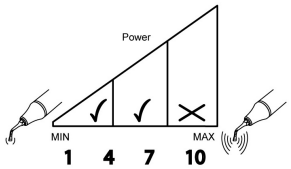
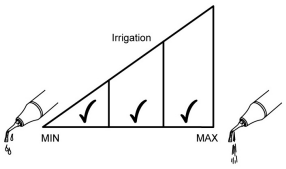
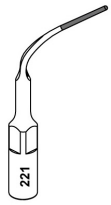
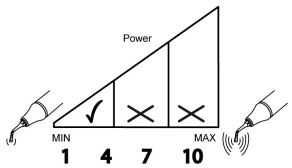
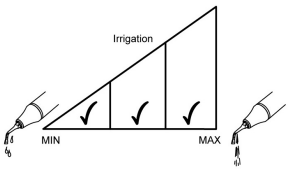
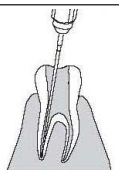
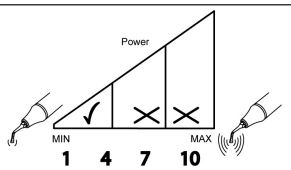
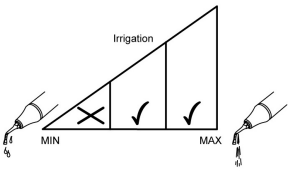
Product identification	Indication	Permissible power setting	Permissible spray water volume	Operating mode
 Scaler 201				
 Scaler 202				
 Scaler 203				

Piezo Paro Tips

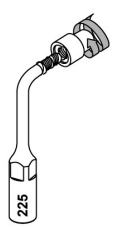
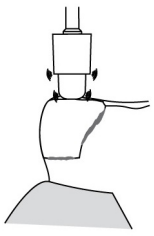
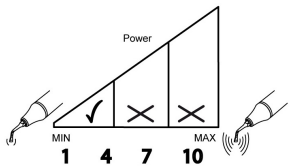
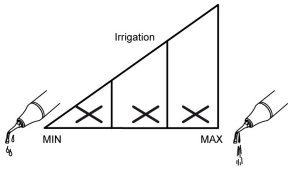
Product identification	Indication	Permissible power setting	Permissible spray water volume	Operating mode
 Paro 210 + 211				
 Paro 212 + 213				

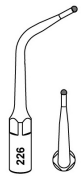
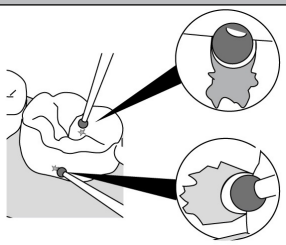
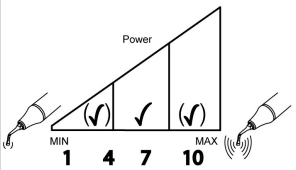
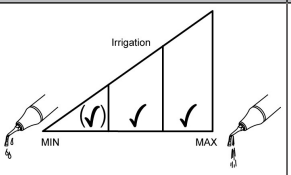
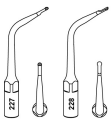
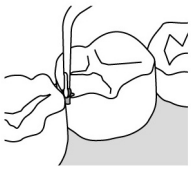
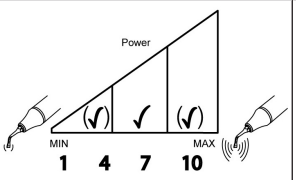
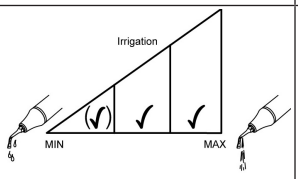
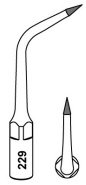
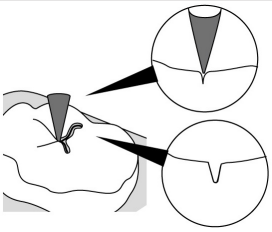
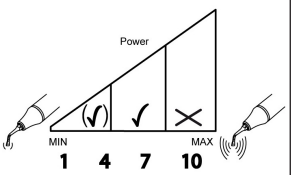
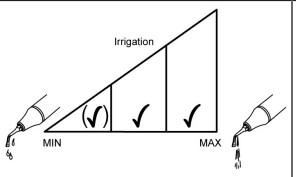
Product identification	Indication	Permissible power setting	Permissible spray water volume	Operating mode
 Paro 214				P3 P2 P1 (E)

Piezo Endo Tips

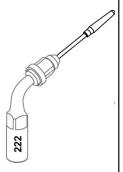
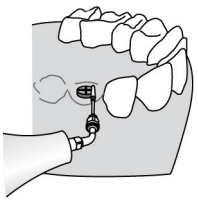
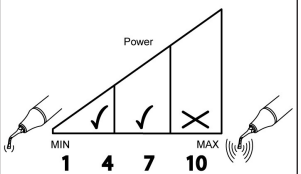
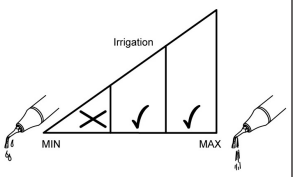
Product identification	Indication	Permissible power setting	Permissible spray water volume	Operating mode
 Endo 220				P3 P2 P1 (E)
 Endo 221				P3 P2 P1 E
 Endo files				P3 P2 P1 E

Piezo Prep Tips

Product identification	Indication	Permissible power setting	Permissible spray water volume	Operating mode
 Cem 225				(P3) (P2) (P1) E

Product identification	Indication	Permissible power setting	Permissible spray water volume	Operating mode
 Prep 226				P3 P2 P1 (E)
 Prep 227 + 228				P3 P2 P1 (E)
 Prep 229				P3 P2 P1 (E)

Piezo Implant Tips

Product identification	Indication	Permissible power setting	Permissible spray water volume	Operating mode
 Implant 222				P3 P2 P1 (E)

10 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 workmanship for a period of 12 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 kind 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 chemical 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, optical fibres 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.

1.007.7061 · Fk · 20180606 - 08 · en

KAVO
Dental Excellence