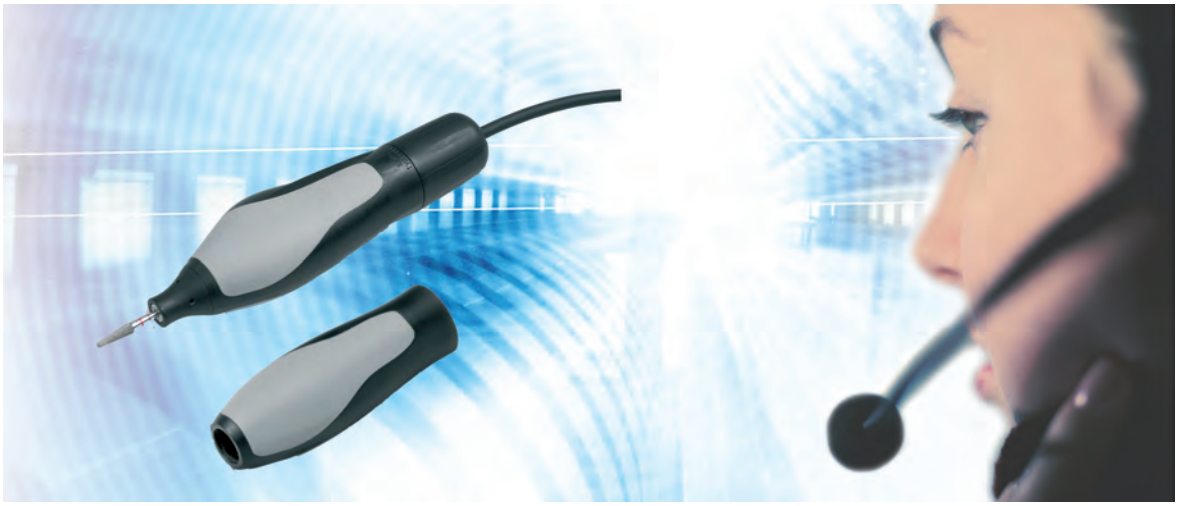
Instructions for use

K-ERGOgrip 4944



Always be on the safe side.

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

Contents

1 User instructions

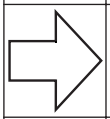
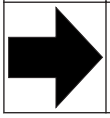
1.1 User guide

Requirement
Read these instructions prior to first use 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 Symbols

	Important information for users and technicians
	CE mark (Communauté Européenne). A product with this mark meets the requirements of the applicable EC directives.
	Action request
	Follow instructions for use! Refer to chapter Safety/Warning
	Open, remove, loosen, etc.
	Close, screw in, fasten, etc.

1.1.3 Target group

This document is for dental technicians and laboratory personnel.

1.2 Service

Service hotline:
+49 7351 56-1600
Service.Zahntechnik@kavo.com
Please indicate the product serial number in all requests!
For further information, please visit: www.kavo.com

1.3 Warranty terms and conditions

Within the scope of the applicable KaVo delivery and payment conditions, KaVo guarantees proper function, absence of defects in material and workmanship for a period of 12 months from the date of purchase as confirmed by the salesperson.
In case of justified complaints, KaVo will honour its warranty with a free replacement or repair.
The warranty does not cover defects and their consequences that arose or may have arisen due to natural wear, improper handling, cleaning or maintenance, non-compliance with operating, maintenance or connection instructions, corrosion, contaminated media supply or chemical or electrical influences deemed abnormal or impermissible in accordance with factory specifications.
The warranty does not usually cover lamps, light conductors made of glass and glass fibres, glassware, rubber parts and the colourfastness of plastic parts.
The warranty expires if defects or their consequences could possibly have arisen because the product has been modified or changed. Warranty claims can only be asserted when they are immediately reported to KaVo in writing.
This notification must be accompanied by a copy of the invoice or delivery note on which the manufacturing number is clearly visible. In addition to the guaranty, the statutory warranty claims of the purchaser also apply with a warranty period of 12 months.

1.4 Transportation and storage

1.4.1 Currently valid packaging regulations

Note
Only valid for the Federal Republic of Germany.

Dispose of and recycle the sales packaging appropriately in accordance with current packaging regulations, employing waste management or recycling companies. Comply with the comprehensive return system. KaVo has had its sales packaging licensed for this purpose. Please comply with the regional public waste-disposal system.

1.4.2 Damage in transit

In Germany

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 upon 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.

Note
If the recipient fails to comply with any of the above-mentioned obligations, the damage will be considered to have arisen after delivery
(in accordance with the General German Freight Forwarders´ Terms and Conditions, Art. 28)
.

Outside Germany

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.

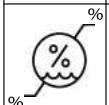
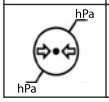
If the product is damaged but there was no discernable damage to the packaging upon delivery, proceed as follows:
1. Report any damage to the shipping company either immediately or no later than 7 days after delivery.
2. Leave the product and packaging in the condition in which you received it.
3. Do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

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

1.4.3 Information on the packaging: Storage and transportation

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

2 Safety

2.1 Description of safety instructions

2.1.1 Warning symbol

	Warning symbol

2.1.2 Structure

⚠ DANGER

The introduction describes the type and source of the hazard.
This section describes potential consequences of non-compliance.
- The optional step includes necessary measures for hazard prevention.

2.1.3 Description of hazard levels

Safety instructions distinguishing between three hazard levels are used in this document to prevent personal and property damage.

⚠ CAUTION

CAUTION
indicates a hazardous situation that can cause damage to property or mild to moderate injuries.

⚠ WARNING

WARNING
indicates a hazardous situation that can lead to serious or fatal injury.

⚠ DANGER

DANGER
indicates a maximal hazard due to a situation that can directly cause death or fatal injury.

2.2 Safety instructions

2.2.1 General information

Note
Only competent and trained personnel may use the product!

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

Users have a duty to:
- Only use equipment that is operating correctly
- Protect themselves and others against hazards.

The following persons are authorised to repair and service the KaVo product:
- Technicians of KaVo branch offices after appropriate product training.
- Specifically KaVo-trained technicians of KaVo franchised dealers.

KaVo shall not be responsible for damage caused by:
- external influences, poor media quality or faulty installation.
- The use of incorrect information.
- repair work carried out incorrectly.

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.

⚠ CAUTION

Improper maintenance or repair of the unit.

Damage to and malfunction of the unit.
- ▸ Repair and servicing work on the electronic part of the unit may be done only by skilled staff or KaVo-trained technicians.
- ▸ Use original KaVo spare parts only.

2.2.2 Product-specific

⚠ WARNING

Injury or damage from damaged functional parts.

Damage to functional parts can cause further damage or personal injury.
- ▸ Check the device, electrical cables and any accessories for possible damage to the insulation and replace if necessary.
- ▸ If functional parts are damaged: discontinue your work and repair the damage or notify a service technician!

⚠ WARNING

Risk of injury due to rotating tools.

Eye injury.
- ▸ Wear safety goggles.
- ▸ Use protective shield.

⚠ WARNING

Vapours, chips and dust may be produced during the processing of various materials.

These can damage the eyes and airways.

Use protective goggles and respiratory protection and suitable dust extraction as needed.

⚠ CAUTION

Injury or damage due to wear.

Irregular running noise, significant vibration, overheating, imbalance or insufficient grip.
- ▸ Stop work and seek service support.

⚠ CAUTION

Risk due to incorrectly stored handpiece.

Injury caused by chucked drill or grinder.

Damage to clamping system caused by handpiece falling down.

- Store the handpiece properly in a tray or tool carrier.

⚠ CAUTION

Injury or damage caused by unsuitable drills or grinders.

Drill or grinder falling out of chuck.

- Only use drills or grinders meeting the requirements of BS EN ISO 1797-1!
- Never use drills or grinders with worn shafts!
- Follow the instructions for use supplied by the drill or grinder manufacturer!

⚠ CAUTION

Damage by liquids.

Faults on electrical components.

- Protect openings of the product from any ingress of liquids.
- Do not continue using the device and contact Customer Service, if there is any ingress of liquid into the device.

⚠ CAUTION

Unsuitable speed.

Damage to the product.

Problems processing selected material.

- Check the speed setting each time you turn on the unit!

⚠ CAUTION

Premature wear and malfunctions from improper care.

Reduced product life.

- Use recommended care products only.

⚠ CAUTION

Infection risk due to dental prosthesis

Contamination of handpiece by dental prosthesis.

- Products bearing an infection risk need to be cleaned/disinfected prior to processing.

Note

Please note the instructions for use of the control unit.

3 Product description

3.1 Purpose – Intended use

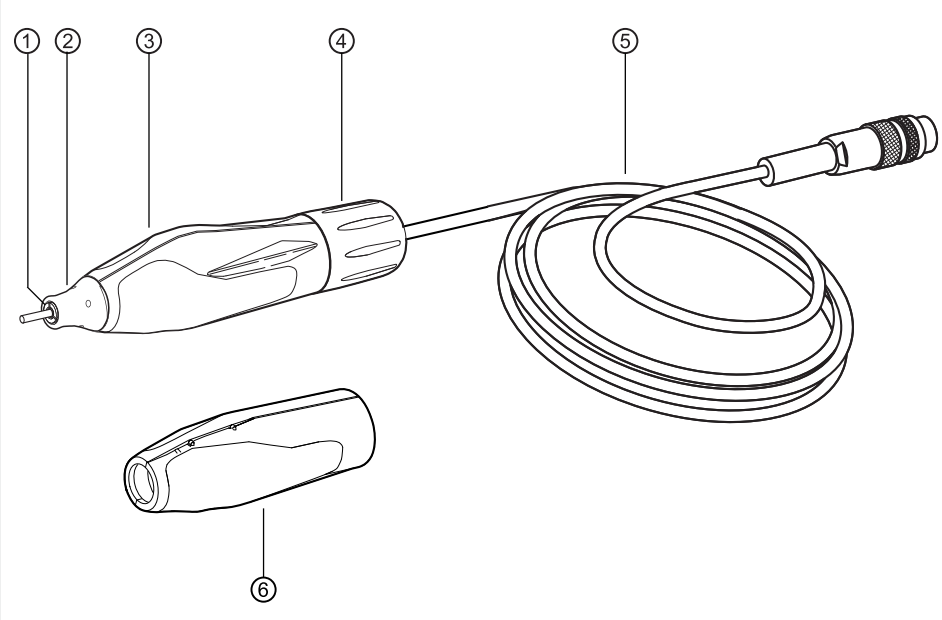
3.1.1 General

Note
Only competent and trained personnel may use the product!

In combination with KaVo control units, this KaVo product is suitable for the processing of materials in dentistry, industry and trade applications by means of rotating tools. Any other type of use is not permitted.
"Proper use" includes following all instructions for use and ensuring that all inspections and service tasks are performed.
This product has only been approved for use indoors.
The overarching guidelines and/or national laws, national regulations and the rules of technology applicable to the startup and use of the KaVo product for the intended purpose are to be applied and complied with.

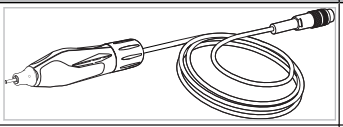
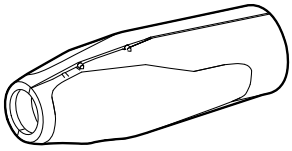
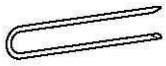
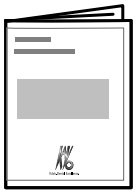
The applicable national legal regulations must be observed during the use of the device, in particular the following:
- Current occupational safety regulations.
- Current accident prevention regulations.

3.2 K-ERGOgrip 4944 handpiece



① Chuck 2.35 mm
② Tip
③ ERGO grip shell
④ Knob
⑤ Connection cable (including knob)
⑥ Replaceable grip shell

3.3 Scope of delivery

Figure	Description	Material number
	K-ERGOgrip 4944 hand-piece	**Mat. no. 1.003.7555**
	Grip sleeve	**Mat. no. 1.003.8708**
	Clamp	**Mat. no. 1.004.1148**
	Cleaning brush	**Mat. no. 0.229.3205**
	Instructions for use	

3.4 Technical Data

Speed

Range	1,000 to 50,000 rpm

Dimensions

Length	140 mm
Handpiece diameter	38 mm

Weight

Handpiece	202 g
Cable	107 g

Voltage and power

Output	160 W
Torque	7 Ncm

Ambient conditions

Permissible ambient temperature range	+5 °C to +40 °C
Permissible up to a maximal relative humidity of	80 %

Intermittent mode

Operating time	2 minutes / ON
Pause time	8 minutes / OFF

Requirements, classification

Degree of soiling	2
Overvoltage category	II

Transportation and storage conditions

Temperature range: -20°C to +70°C

Relative humidity: 5% to 95% (non-condensing)

Air pressure: 700 hPa to 1060 hPa

Note
Prior to start-up, very cold products must be heated to a temperature of
Heat to 20°C to 25°C. Avoid condensation.

4 First use

Requirement
The handpiece must only be operated and stored with the tool or test probe chucked.

Note

Do not switch the handpiece on while the chuck is open!

Note

When it is new, you can hear a soft, irregular "clicking" or "buzzing" at high speeds of the micromotor. This bearing noise is completely normal, and disappears as soon as the lubricant is evenly distributed.

The handpiece can be used on the

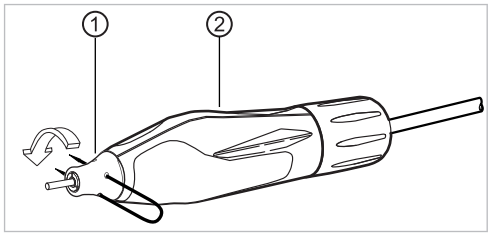
- K-Control
  - TLC 4955 knee control
  - TLC 4956 foot control
  - TLC 4957 table top control

5 Operation

Note
Note the safety instructions before each use.

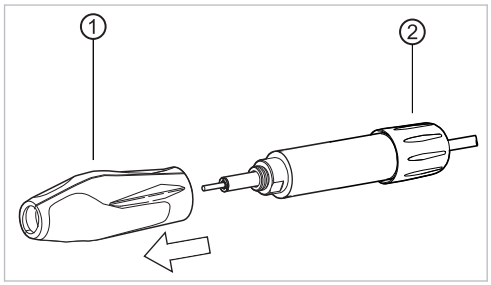
5.1 Replacing the grip sleeve

The handpiece is supplied fitted with an ERGOgrip grip sleeve.

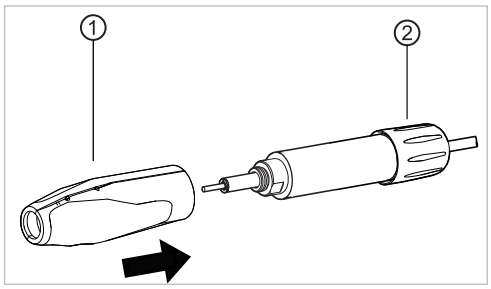


- Take hold of the handpiece by the grip sleeve ② insert the clip into the tip ① and unscrew the tip ① in the direction indicated by the arrow.
- Pull the tip ① towards you.

Note
Removing the tip may leave the felt disk loose in the tip or on the rotor. If the felt disk is on the rotor it must be removed.

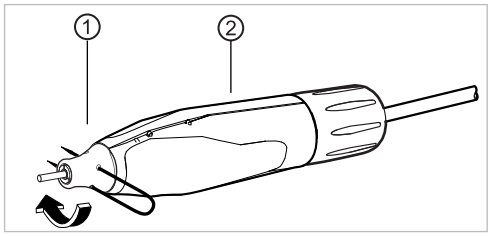


- Take hold of the handpiece by the knob ② and remove the grip sleeve ① by pulling it towards you.



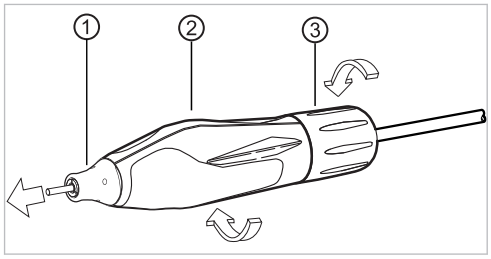
- Take hold of the handpiece by the knob ② and fit the new grip sleeve ①.

Note
If the felt disk has been removed from the rotor, it must be pushed back onto the rotor.

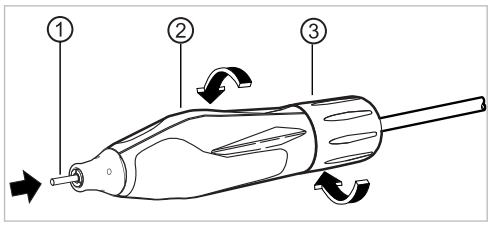


- Screw the tip ① to the handpiece ② and tighten with the clip in the direction indicated by the arrow.

5.2 Using/Changing the tool



- Turn the grip sleeve ② and knob ③ in opposite directions as indicated by the arrows until the chuck opens completely (you will hear a double-click).
- Take the tool or test probe ① out of the chuck.



- Insert a new tool or test probe ① into the chuck as far as it will go.
- Take hold of the handpiece by the grip sleeve ② and turn the knob ③ in the direction indicated by the arrow until the chuck closes completely (you will hear a double-click).

Note
Once you have inserted the tool (insert the tool as far as it will go, tool shaft length: minimum 16 mm) you need to check the functionality of the chuck. KaVo recommends a grip test at 50 N.

Note
Only use tools that work properly. Follow the instructions of the tool manufacturer.

5.3 Operation

Note
Unsuitable lighting in the workplace can give rise to what is known as the stroboscope effect.
This simulates tool standstill at certain speeds.
The problem can be solved by providing suitable lighting.

- Prior to every use, check the required speed on the control unit and modify it if necessary.

- Operate the handpiece as specified in the instructions for use of the upstream control unit.

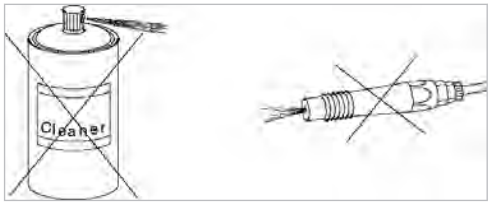
6 Maintenance

⚠ CAUTION

Ingress of dust or liquids into the handpiece.

Damage to ball bearings and O-rings.

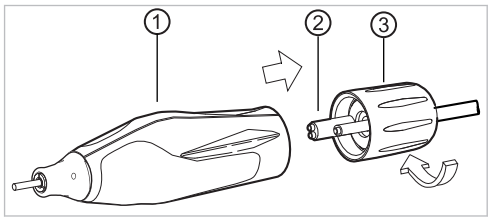
- Never use compressed air or cleaning agents (such as spray cleaners, degreasers, etc.)!



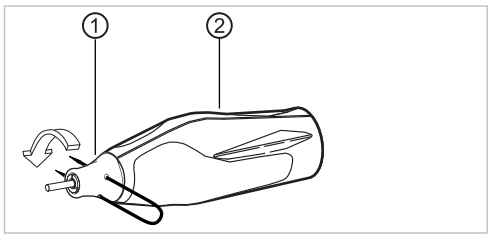
6.1 Servicing

6.1.1 Replacing ball bearings

Removing ball bearings



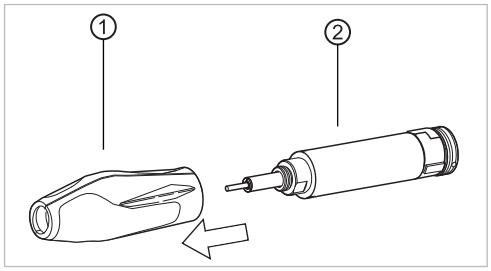
- Unscrew the knob ③ from the handpiece ① and pull off the connection cable ② in the direction indicated by the arrow.



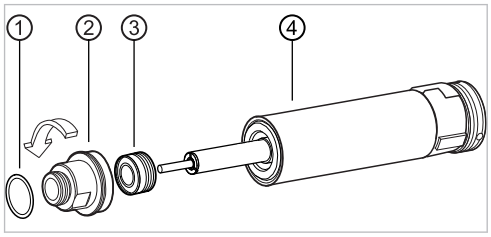
- Take hold of the handpiece by the grip sleeve ② insert the clip into the tip ① and unscrew the tip ① in the direction indicated by the arrow.
- Pull the tip ① towards you.

Note

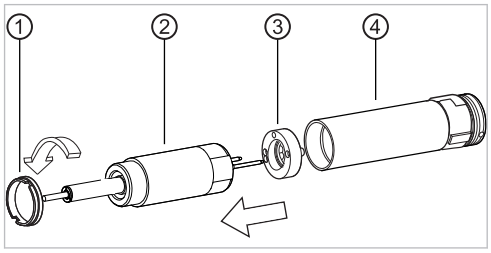
Removing the tip may leave the felt disk loose in the tip or on the rotor. If the felt disk is on the rotor it must be removed.



- Pull the grip sleeve ① towards you and off the sleeve ②.



- Remove the felt ring ① from the rotor ②.
- Using an open-ended spanner (16 mm), unscrew the bearing housing ② from the sleeve ④ in the direction indicated by the arrow and remove the bearing housing ②.
- Use a pin (diameter: 8 mm-0.02) to push the ball bearing ③ out of the bearing housing ②.



- Insert the socket wrench in the threaded ring ①, and screw the threaded ring ① out of the sleeve ④ in the direction of the arrow.
- Remove the threaded ring ① from the sleeve ④ and pull the motor unit ② off the sleeve ④.
- Take the ring ③ off the motor unit ②.

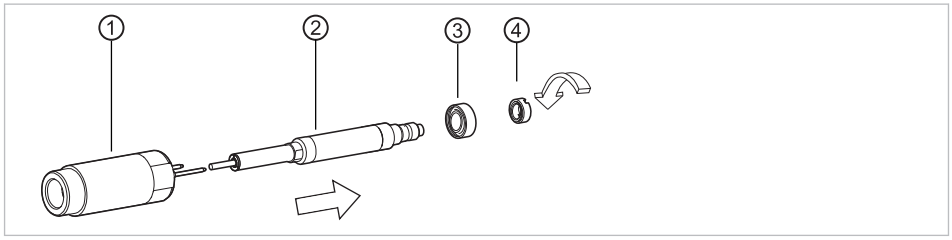
⚠ DANGER

Risks due to strong permanent-magnet field

The functions of implanted systems (such as pacemakers) can be influenced.

Metal objects can be attracted and in the event of impact may damage the permanent magnet, for example.

- Anyone with an implanted system must maintain a safety clearance of 5 metres from the rotor.
- Do not place the rotor in the vicinity of metal objects.



- Pull the rotor ② out of the stator ①.
- Hold the rotor ② with a fork wrench (7 mm), and screw off the threaded ring ④ from the rotor ② turning the socket wrench the direction of the arrow (left-hand thread).
- Remove the ball bearing ③ from the rotor ②.

Fitting the ball bearing

⚠ DANGER

Risks due to strong permanent-magnet field

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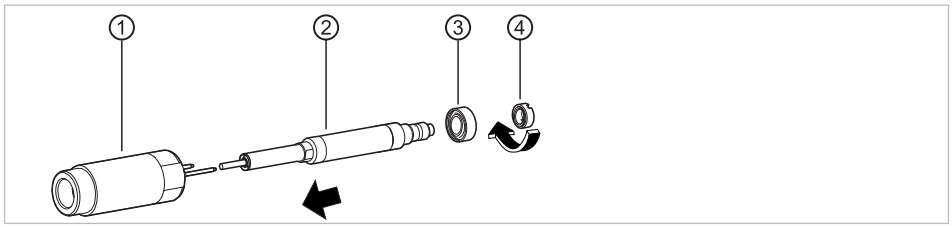
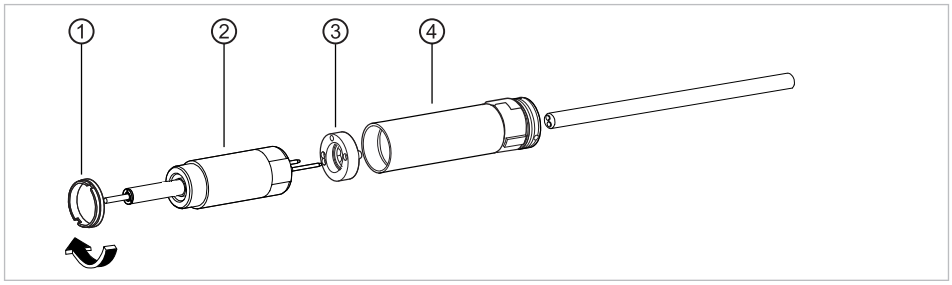
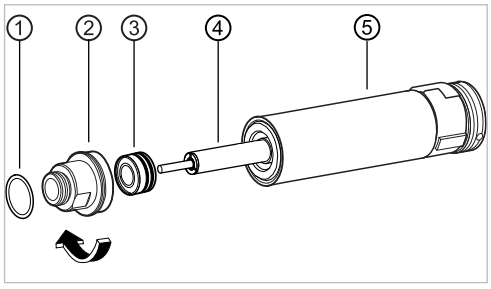


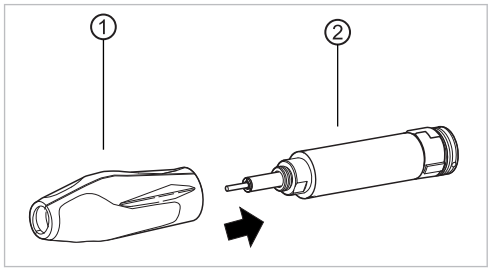
- Slide the ball bearing ③ onto the rotor ②.
- Place the threaded ring ④ on the rotor ②.
- Hold the rotor ② with a fork wrench (7 mm), and screw the threaded ring ④ tight using the socket wrench (left-hand thread).
- Push the rotor ② into the stator ①.



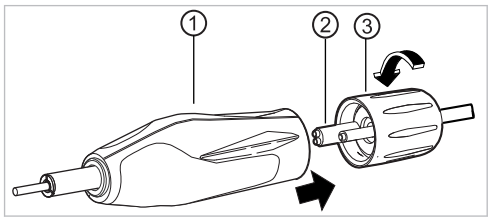
- Place the ring ③ on the motor unit ② and push into place.
- Use the docking guide to push the motor unit ② into the sleeve ④. Push the docking guide into the sleeve ④ from behind, thread the motor unit's contacts ② into the docking guide and push the motor unit ② and the docking guide into the sleeve ④ from the front.
- Screw the threaded ring ① into the sleeve ④ using the socket wrench.



- Insert the ball bearing ③ into the bearing housing ②, making sure that the ball bearing ③ is positioned correctly.
- Place the bearing housing ② on the rotor ④ and screw into place on the sleeve ⑤ using an open-ended spanner (16 mm).
- Place the felt ring ① on the rotor ②.

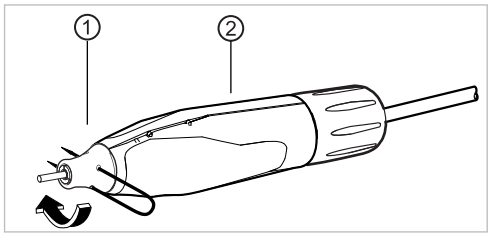


- Slide the grip sleeve ① over the sleeve ②.



- Plug the connection cable ② firmly into the handpiece ① and screw the knob ③ back onto the handpiece ①.

Note
If the felt disk has been removed from the rotor, it must be pushed back onto the rotor.

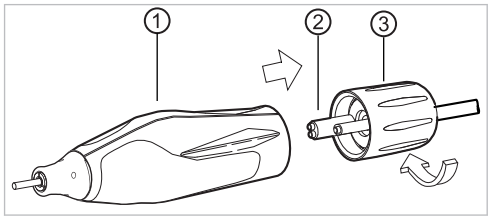


- Screw the tip ① to the handpiece ② and tighten with the clip in the direction indicated by the arrow.

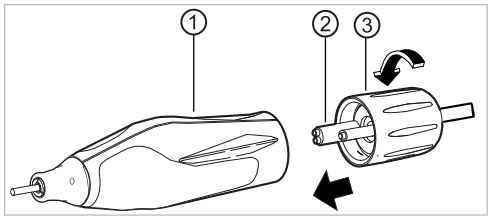
Note
Check the handpiece after exchanging the ball bearing:
Run through the speed range of the handpiece and check for unusual noise.

Note
To increase the service life of the ball bearings, KaVo recommends the following:
After changing the ball bearing, let the handpiece idle for about 60 minute at 10,000 to 15,000 rpm.

6.1.2 Replacing the cable



- Unscrew the knob ③ from the handpiece ① and pull off the connection cable ② in the direction indicated by the arrow.



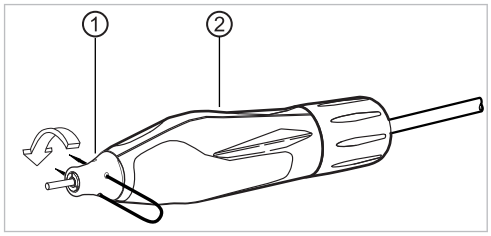
- Plug the connection cable ② firmly into the handpiece ① and screw the knob ③ back onto the handpiece ①.

Note
Check the functionality of the handpiece.

6.2 Cleaning

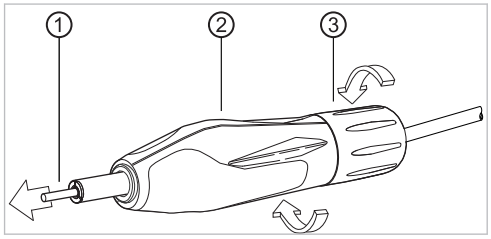
6.2.1 Weekly cleaning of chuck and handpiece section

Removing the chuck

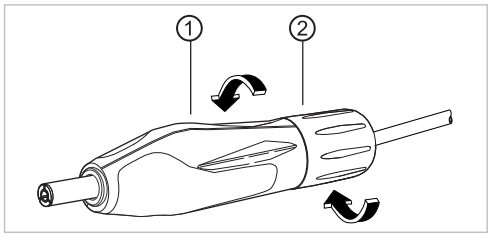


- Take hold of the handpiece by the grip sleeve ② insert the clip into the tip ① and unscrew the tip ① in the direction indicated by the arrow.
- Pull the tip ① towards you.

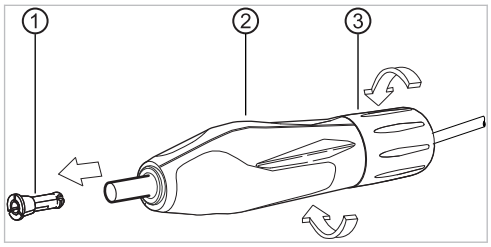
Note
Removing the tip may leave the felt disk loose in the tip or on the rotor. If the felt disk is on the rotor it must be removed.



- Turn the grip sleeve ② and knob ③ in opposite directions as indicated by the arrows until the chuck opens completely (you will hear a double-click).
- Take the tool ① out of the chuck.



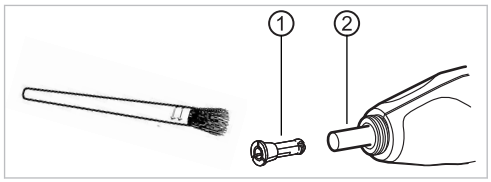
- Turn the grip sleeve ① and knob ② in opposite directions as indicated by the arrows until the chuck closes again completely. Do not use a tool to do this!



- Turn the grip sleeve ② and knob ③ in opposite directions as indicated by the arrows until the chuck ① opens again completely.

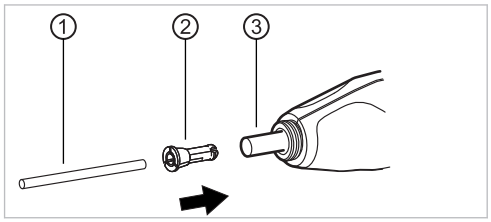
⇨ The chuck ① is released.

- Pull the chuck ① towards you.

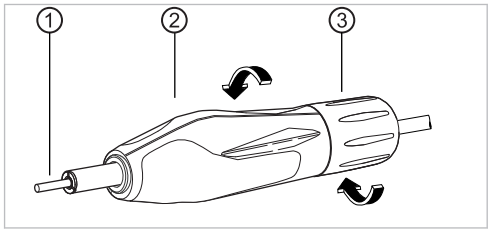


- Use the cleaning brush to clean the chuck ① and front opening ② on the handpiece.

Fitting the chuck



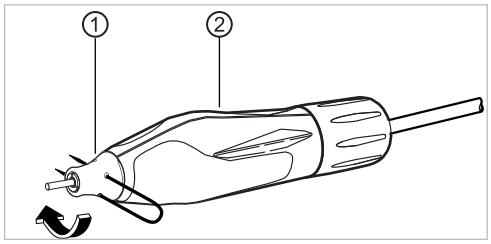
- Push the chuck ② into the opening on the handpiece ③ until it snaps into place.
- Push the tool ① as far as it will go into the chuck ②.



- Turn the grip sleeve ② and knob ③ in opposite directions as indicated by the arrows until the chuck ① closes completely.

Note

If the felt disk has been removed from the rotor, it must be pushed back onto the rotor.



- Screw the tip ① to the handpiece ② and tighten with the clip.

Note
Once you have inserted the tool (insert the tool as far as it will go, tool shaft length: minimum 16 mm) you need to check the functionality of the chuck. KaVo recommends a grip test at 50 N.

Note
Only use tools that work properly. Follow the instructions of the tool manufacturer.

6.2.2 Cleaning the grip sleeve

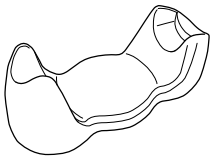
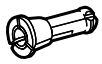
Note
Do not use oil-containing cleaning agents (e.g. white oil, orange oil)! These products can damage the soft component of the grip sleeve. Soiling, e.g. by occlusal film, can be removed with CREAM 7 scrubbing milk (manufacturer: Diversey Lever GmbH, Mannheim, Germany).

- Wipe down the grip sleeve with a moist cloth.

7 Troubleshooting

Malfunction	Cause	Remedy
The handpiece cannot rotate or temporarily shuts off.	Handpiece is blocked, clamping system may be open	▸ Close the chuck correctly with the tool in-situ.
	Cable break.	▸ Check the line including the plug-in connections, and exchange if necessary.
	Electronic fault in control unit.	▸ Check the controls and have them repaired if necessary.
The tool is not tightly held by the chuck.	Tool shaft and chuck diameters are not the same.	▸ Use a tool/chuck with a suitable diameter.
	Chuck is worn.	▸ Replace chuck.
The handpiece is noisy or heats up when running.	Ball bearing defective due to wear or soiling.	▸ Check the ball bearing and exchange if necessary.
	Prolonged operation at very high load.	▸ Rectify cause for high load. You may need to increase the speed. Use a tool with a smaller diameter.
	Electronic fault in control unit.	▸ Check the controls and have them repaired if necessary.

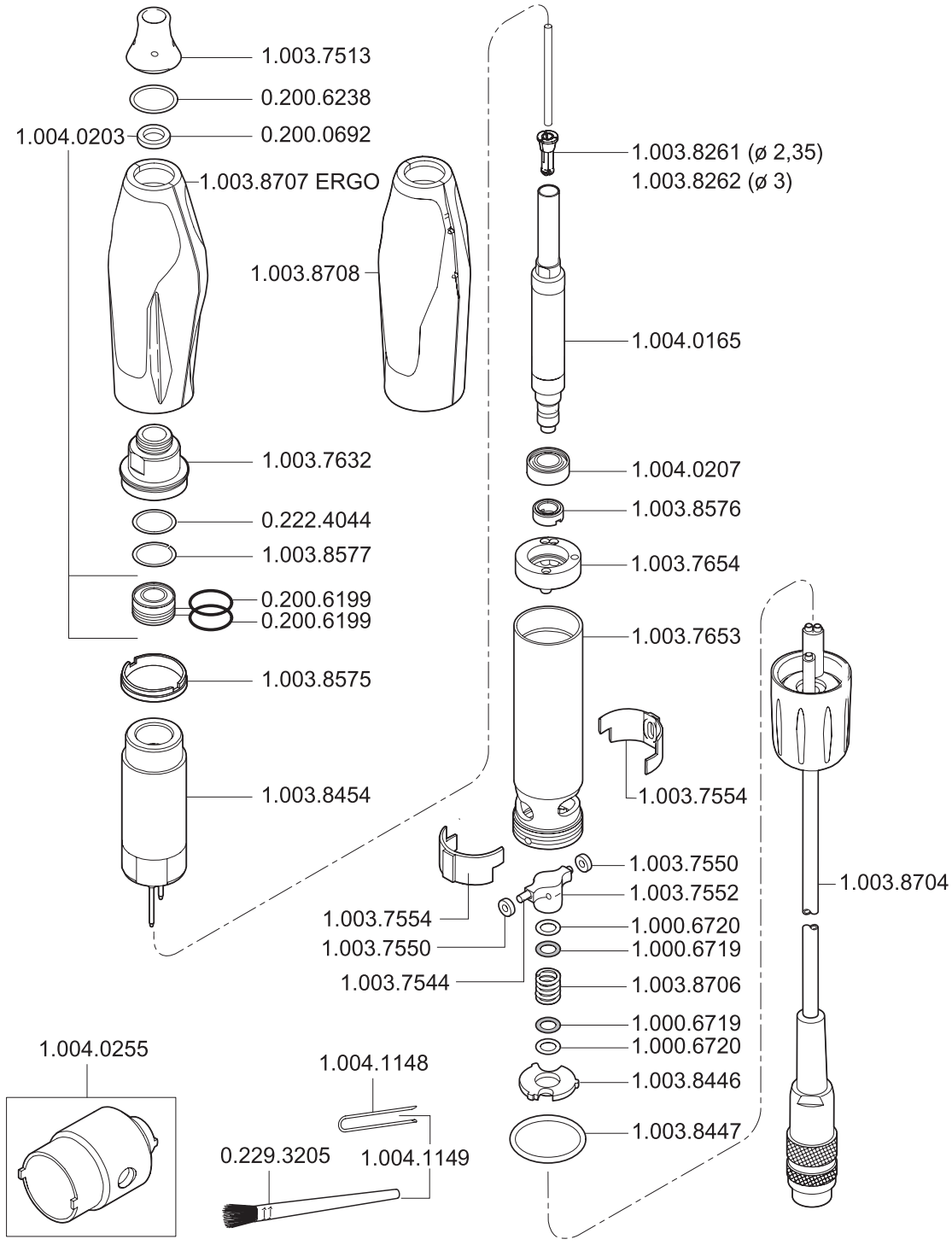
8 Accessories

Presentation	Material summary	Material number
	Handpiece tray	1.005.3460
	Chuck 3.00 mm	1.003.8262
	Socket wrench	1.004.0255
	Docking guide	1.005.3461

9 Spares

K-ERGOgrip
Mat.-Nr. 1.003.7555

05 / 2007



10 Declaration of conformity

KaVo. Dental Excellence.

EG-Konformitätserklärung
EC-Declaration of conformity
CE-Déclaration de conformité
Dichiarazione di conformità con le norme CE
Prohlášení o shodě s normami ES
Declaración de Conformidad de la CE

Manufacturer:
Kaltenbach & Voigt GmbH
Bismarckring 39
D-88400 Biberach

Controller K-Control TLC Type 4955/4956/4957
in connection with handpiece
K-ERGOgrip 4944 / POWERgrip 4941 / K5plus 4911 /
K5 – 4910 / K9 - 960 / K9 - 970 / K 9 – 4930 / K11 – 4990 / K12 - 4940

2006/95/EC	**EC Low Voltage Directive**
2004/108/EC	**EMC Directive**
EN 61010-1	**Safety requirements for electrical equipment for measurement, control and laboratory use. General requirements**
EN 61326-1	**Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements**

D — Wir erklären, dass die von uns hergestellten Produkte auf die sich diese Erklärung bezieht, mit den grundlegenden Anforderungen gemäß den Bestimmungen der obigen Richtlinie übereinstimmen. Zur Beurteilung des Erzeugnisses wurden die benannten Normen oder normative Dokumente angewandt.

GB — We declare that the products manufactured by us to which this statement refers, conform to the essential requirements according to the above-mentioned directive. The specified standards or normative documents were applied to evaluate the product.

FR — Nous déclarons que les produits que nous fabriquons, auxquels se réfère cette déclaration, sont conformes aux exigences essentielles selon les dispositions de la directive susmentionnée. Les normes ou autres documents normatifs désignés sont utilisés pour le jugement de ce produit.

IT — Dichiariamo che i prodotti da noi fabbricati, a cui si riferisce la presente dichiarazione, sono conformi ai requisiti fondamentali ai sensi delle disposizioni della direttiva summenzionata. Per la valutazione del prodotto sono stati applicati le norme o i documenti normativi citati.

CZ — Prohlašujeme, že se námi vyráběné výrobky, na které se vztahuje toto prohlášení, shodují se základními požadavky podle předpisů výše uvedené směrnice. K posouzení výrobku byly použity uvedené normy nebo normativy.

ES — Por la presente declaramos que los productos que nosotros fabricamos, y a los que hace referencia esta declaración, cumplen los requisitos básicos de conformidad con las disposiciones de la directiva arriba mencionada. Las normas o documentos normativos mencionados se aplican en la evaluación de dichos productos.

Biberach
effective date 2012-01-12

CE

Norbert Glaeske
Quality Director

1.005.4230 · Fk · 20140422 - 3 · en

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