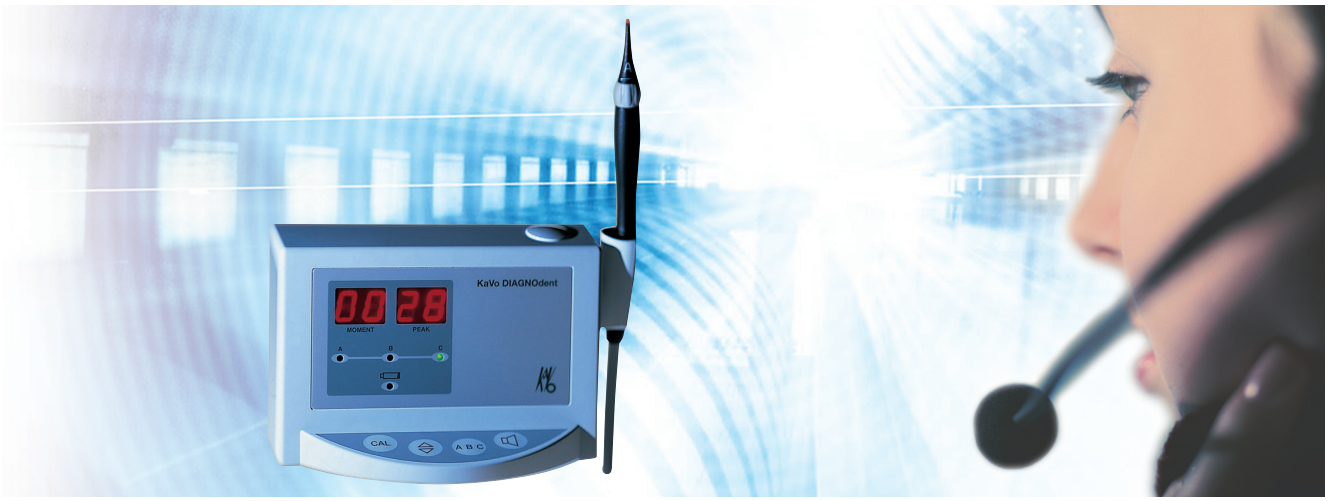
Operating Instructions
KaVo DIAGNOdent 2095
as of Serial No. 1600000



Always on the safe side.

KaVo. Dental Excellence.

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KaVo DIAGNOdent 2095

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A 1 Important notes

Please read these operating instructions carefully before operating the DIAGNOdent and keep the manual for future reference. The notes regarding operation, maintenance and installation of spare parts must be strictly observed to assure proper operation of the equipment.

The trademarks named herein are the property of their respective owners.

⚠

The DIAGNOdent
- is intended exclusively for dental treatment in regular dentistry;
- has not been approved for operation in explosive atmospheres;
- is to be used exclusively for the intended purpose; misuse may result in danger;
- is a medical product according to the applicable national statutes and regulations.

In accordance with these regulations, the equipment is to be used by properly trained operators exclusively for the application described and observing
- the applicable occupational safety regulations,
- the relevant regulations for the prevention of accidents,
- and these operating instructions.

These regulations stipulate that it is the operator's responsibility
- to use only working materials that are in perfect working condition;
- to use them exclusively for the intended purpose;
- to protect himself, patients and others against danger;
- to avoid any contamination due to the product.

Electromagnetic compatibility

In accordance with legal stipulations governing electromagnetic compatibility (EMC -DIN EN 6061-1-2,of October 2002),we must point out that:
- Medical electrical devices are subject to special measures regarding electromagnetic compatibility and must be operated in accordance with the instructions in section L.
- Portable and mobile high-frequency electronic communications equipment may interfere with electrical medical devices.

Disposal of waste and residue from equipment and of accessories after service life.
The waste produced is to be directed to the proper channels for recycling, disposal or materials recovery in a manner which is safe to humans and the environment and observing the applicable national requirements. Please contact the nearest KaVo agency with any questions you might have (see page 3).

ⓘ *Please note that the EC Directive on waste electrical and electronic equipment applies to this product. Within Europe therefore, this product must undergo special disposal.*
Full processing (disinfection /_sterilisation) must be performed before disassembly / disposal of the product, as laid down in the "Processing Methods" Section.
For more detailed information about this, please contact KaVo or your specialist dental supplier.

Safety note

Interference of radiotelephones with electromedical equipment.
To guarantee safe operation of electromedical equipment, the operation of mobile radiotelephones in the surgery or clinic should be prohibited.

Cardiac pacemakers

⚠ *Risks caused by electromagnetic fields.*

Electromagnetic fields may interfere with the functions of implanted systems (such as pacemakers).
Consult the patient before treatment.

Information on electromagnetic compatibility

Note
Based on EN 60601-1-2 concerning the electromagnetic compatibility of electromedical devices, we need to point out that:
• medical electrical devices are subject to special measures regarding electromagnetic compatibility and must be operated in accordance with KaVo assembly instructions.
• portable and mobile high-frequency communications devices can influence medical electronics.

Note
KaVo cannot guarantee that accessories, lines and transformers not delivered byKaVo will correspond with EMC requirements of EN 60601-1-2.

Disposal

Note
Any waste which is generated must be recycled or disposed of in a manner whichis safe both for people and for the environment. This must be done in strict compliance with all applicable national regulations. Questions on proper disposal of the KaVo product can be answered by the KaVobranch.

Disposal of electronics and electrical devices

Note
According to EC directive 2002/96 concerning used electrical and electronic devices, this product is subject to the cited directive and must be disposed of accordingly within Europe.
Before disassembling / disposing of the product, it must be completely processed (disinfected, sterilized) according to the section "Preparation methods"Additional information can be obtained from KaVo (www.kavo.com) or your dentalsupplier.

For final disposal, contact:

Germany

To return an electrical device, proceed as follows:
1. At the website www.enretec.de
of enretec GmbH, you can download a form fora disposal request under the menu item eom, or you can use it as an onlinerequest.
2. Fill out the form with the corresponding information, and send it as an onlinerequest or by fax
(+49(0)3304 3919 590)
to enretec GmbH.
The following avenues are also available for questions and for initiating a disposal request
Telephone: +49(0)3304 3919 500
E-mail: pickup@eomRECYCLING.com
and Mail: enretec GmbH,
eomRECYCLING Department
Kanalstraße 17
16727 Velten 3.

Your permanently installed device will be picked up in your practice, and your movable unit will be picked up at the curb at your address on the agreed deadline.
The owner or user of the device will bear the costs for disassembly, transportation and packaging.

International (EU)

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

KaVo DIAGNOdent 2095

Please read before start-up

The DIAGNOdent has been developed and manufactured in accordance with current quality and safety standards.

However, there are some items to note and precautions to take for installation and operation.

⚠

■ The DIAGNOdent is classified as a class 1 laser according to EN 60825-1: 2007

■ Approvals expire upon product modification by third parties. Only original spare parts may be used to operate and repair the unit.

■ Please observe all warning notes on the equipment and in the operating instructions.

■ Children should not operate the equipment and should not be left unattended in the vicinity of the equipment.

■ The equipment may only be supplied with the voltage specified in the operating instructions or on the equipment itself.

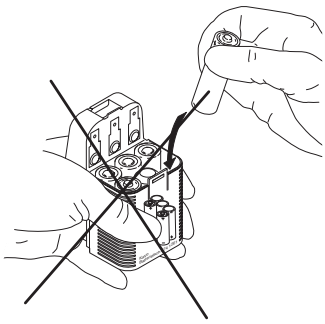
■ The use of power supply units is impermissible.

■ The user should not attempt to service the equipment beyond the steps described in these operating instructions.

Battery pack, rechargeable

⚠

Safety instructions



■ Do not use batter holder 0.574.1261 together with the charger (danger of explosion).

■ Select the appropriate adapter from the travel plug set for your country.

■ Only use the charger outside of rooms designated for medical purposes.

■ Charge the battery pack before first use.

■ After charging, remove the battery pack and unplug the AC adapter.

■ Do not use a different battery pack.

■ Remove the battery pack when the device is not used for a long time.

■ Recharge the battery pack when the battery symbol on the DIAGNOdent 2095 flashes.

■ Used or defective battery packs must be disposed of properly.

■ Follow the instructions for use of the universal charger, travel plug set and battery pack.

⚠

Notes regarding hazards

■ The battery pack may not be taken apart, opened or broken up.

■ Protect the battery pack from heat and fire. Do not store in direct sunlight.

■ The battery pack may not be shorted out and my not be stored in a box or drawer when a short can result from conductive materials.

■ Do not expose the battery pack from mechanical impact.

■ In case of leaks, the liquid may not contact skin or eyes. Upon contact, rinse the area with a copious amount of water and seek medical help.

■ Do not use any other charger.

■ Keep the battery pack away from children.

KaVo DIAGNOdent 2095

A 1.1 Introduction

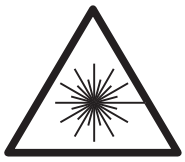
Meaning of symbols

Condition that may result in danger, damage or malfunction if ignored.

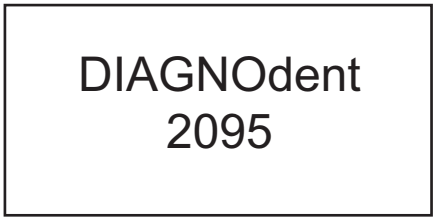
Important information for operators and technicians.

Meaning of labels on equipment

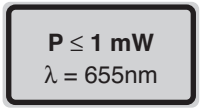
Danger notice
Caution: laser!



Classification of laser equipment



Technical data of laser beam



Nameplate

EC directive
93/42 EEC

Usage part
of Type B

VDE symbol

Read and note the content
of accompanying documents

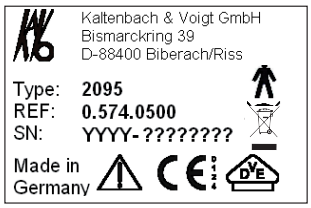
Year of manufactured YYYY

Serial number SN:

Material number REF:

Device type Type:

For information about proper
disposal, see intended purpose



A 1.2 Technical customer service

Technical service for KaVo equipment is provided primarily by the KaVo agent.

The technicians employed by the KaVo agent and the KaVo customer service technicians continuously participate in general and special training courses at the factory, and are familiar with the entire KaVo product line.

KaVo equipment should be serviced at the recommended intervals in order to guarantee continued operability and maintain the value of the equipment.

Additional information can be obtained at: www.kavo.com.

Service:

KaVo Dental GmbH
Customer Service Center
Bahnhofstraße 20
D-88445 Warthausen
07351-56 1500
www.kavo.com

Please indicate the product serial number in all requests.

KaVo DIAGNOdent 2095

A 2 Description

① Current measured value display

② Maximum value display

③ Probe

④ Ring switch

⑤ Gripping sleeve

⑥ Handpiece holder

⑦ Hose

⑧ Standard C with holder

⑨ Sound adjustment

⑩ Probe A-B-C selector

⑪ Entry of reference value

⑫ Adjustment key

⑬ Battery charge indicator

⑭ Probe A indicator for probe 1

⑮ Probe B indicator for probe 2

⑯ Probe C indicator for probe 3

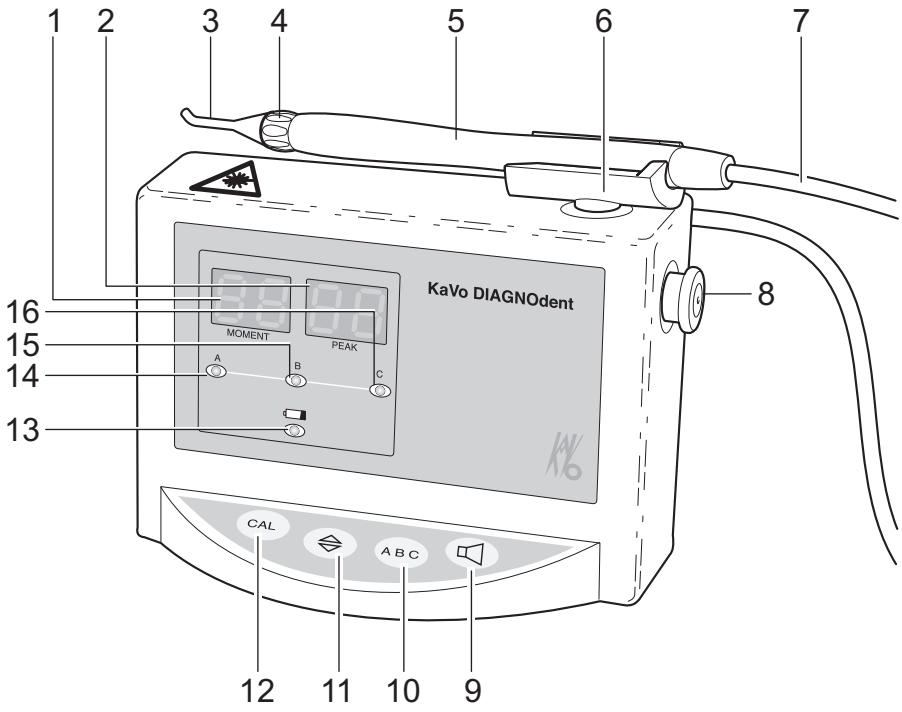
⑰ Interface

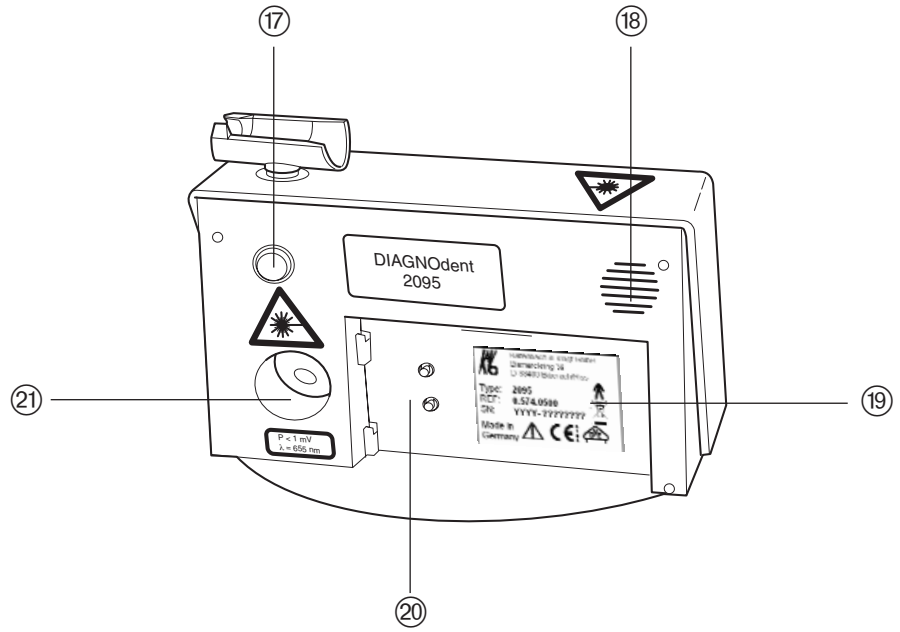
⑱ Loudspeaker

⑲ Nameplate

⑳ Battery compartment

㉑ Probe hose connector

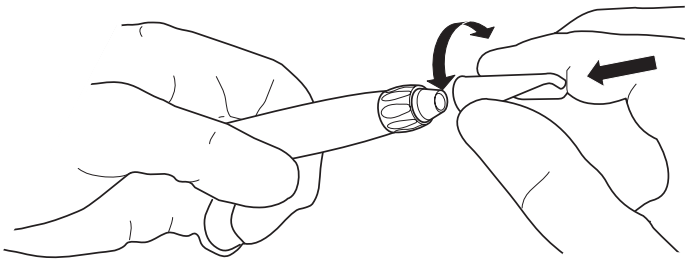




A 3 Operation / handling

Select light probe A or B and place on handpiece. Make sure the probe is properly seated.

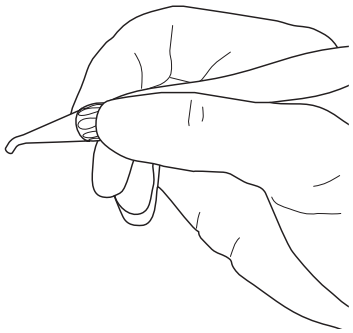
To remove, turn the probe slightly and pull off.



Turn the instrument on by actuating the ring switch on the gripping sleeve.

The display lights up and shows some numbers.

⚠ *Do not look into the laser beam.*



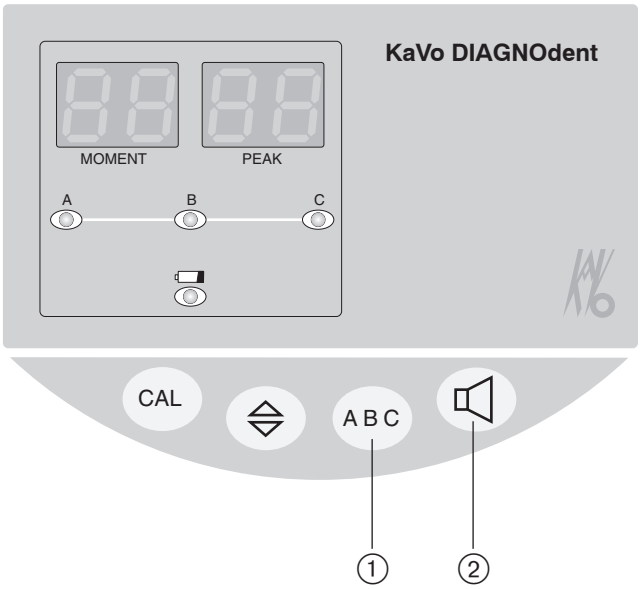
Preselect ① stored probe position A, B or C.

The green LED for A, B or C lights up.

Press the button ② to switch the audio signal off Sound OFF or S 1 on.

The following sound level settings can be chosen:

S 1
S 2
S 3
S 4

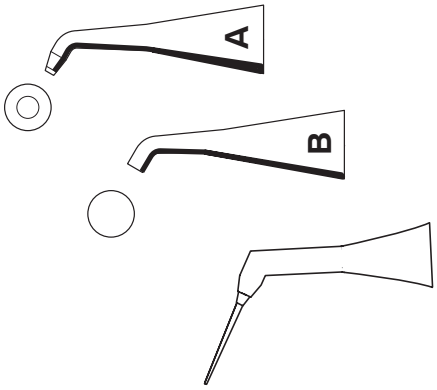


ℹ *The audio signal starts with the current display 0606; the higher the value (range: 00 to 99), the higher the frequency of the audio signal.*

A 3.1 Application

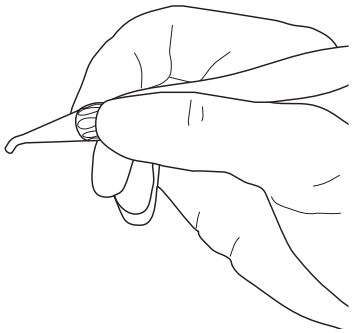
Two different probes are available:

Light probe A:	Conical shape, small measuring range
Light probe B:	The light- probe B is available as a replacement part
Perio probe:	available as a replacement part For use, see separate instructions



The handpiece is activated by actuating the ring switch. The display is initiated to values around ±0. Now you can start using the probe.

The probe is to be placed against the tooth so that the contact with the tooth surface can just be felt. Through variations in the fluorescent qualities of tooth tissues, the device continuously displays values that may be directly ascribed to the healthiness of said tooth tissues.



In addition to caries, the instrument detects plaque, discolourations, tartar and partially also fillings. A distinction among these based on the display value is not possible.

We recommend to clean and dry the tooth before diagnosis to prevent incorrectly high or low display values.

The instrument is of great benefit for minimally invasive therapy. Minute and different changes to the tooth substance can be detected and treated with the appropriate therapy.

Further use is for the detection of fissure caries.

Guide the probe gently and without pressure over the tooth surface. Do not press.

Some secondary light sources may cause interference with the detection system if allowed to fall upon the fibre optic tip. The result will be inconsistence in the displayed real-time values. Where appropriate, the effect should be assessed during application and the cause removed (e.g. by switching off the stray light).

Plaque disclosing chemicals may produce unwanted fluorescence which is detected by the DIAGNOdent and displayed as an elevated, erroneous reading. It is also possible that these chemicals may react with the DIAGNOdent probe, leading to irreversible damage.

A 3.2 Tooth constant adaptation

Place the light probe against a healthy tooth surface.

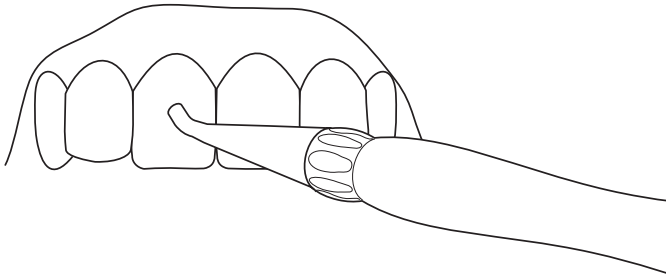
Actuate the ring switch on the gripping sleeve until 2 beps sound and the display shows SEEd .

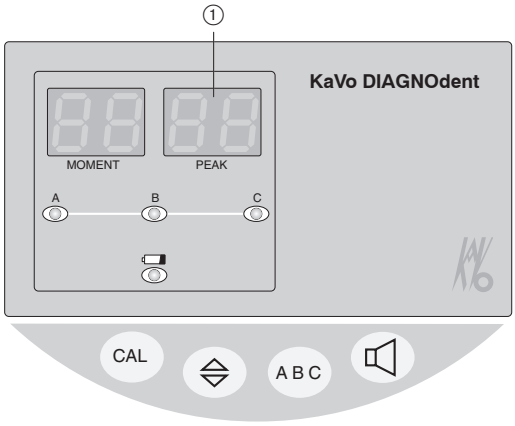
Now the instrument or probe has been adapted to the individ0ual tooth. The display value is between 00 and -9 when the probe does not contact a tooth and 0±1 when against the tooth.

To reset this patient-specific value, hold the probe in the air and actuate the ring switch until 2 beeps sound. The display shows 0000 .

To reset the maximum value ① (PEAK), hold the probe in the air and actuate the ring switch until 1 beep sounds.

The DIAGNOdent is switched off automatically after approx two or four minutes of inactivity (no measurement or button actuation).

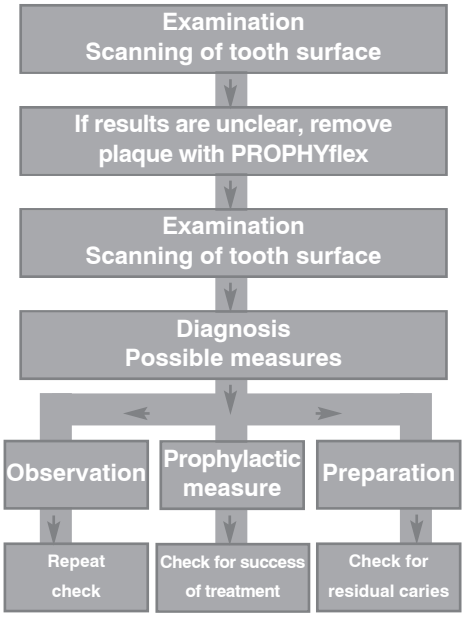




A 4 Operating principle

The DIAGNOdent increases the accuracy of detection. The method used does not present a health hazard and helps achieve an objective and accurate diagnosis.

A 4.1 Treatment flow chart



The DIAGNOdent can provide important information to support and increase the accuracy of diagnosis.

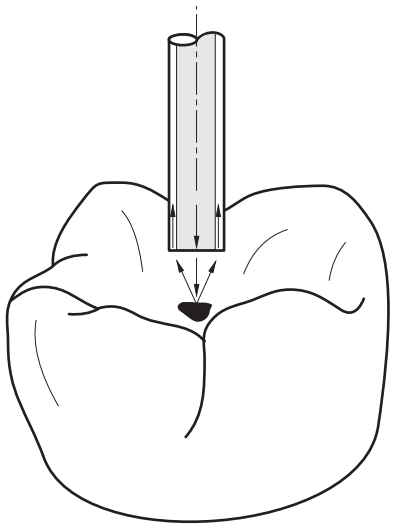
A 4.2 Function of DIAGNOdent

A changed tooth substance emits a fluorescent radiation when radiated with light of a specific wavelength. This fluorescent radiation is registered and evaluated by the instrument.

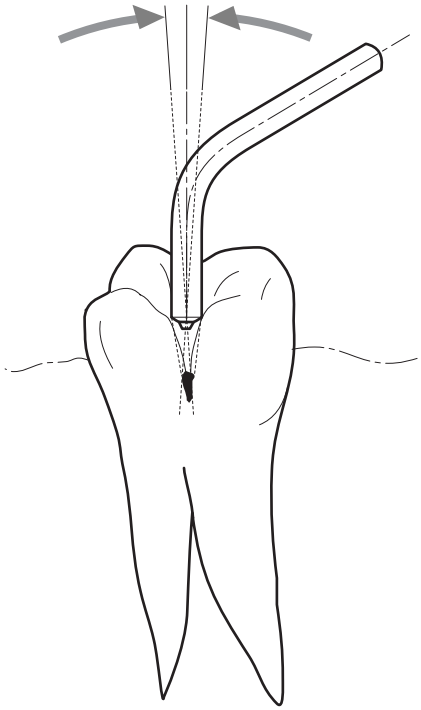
Principle

A specific light energy is supplied through the centre of the light probe and impinges on the tooth surface.

Should diseased tooth tissue be present the fluoresence, or change in the wavelength of the reflected light is detected, and passed via the peripheral fibre bundles of the handpiece lead, back to the DIAGNOdent unit for measurement and evaluation.



Careful scanning is required in fissure areas to permit detection of minimal defects.



The diffusion of light achieved by slight pendulous movements increases the accuracy of the diagnosis.

A 5 Troubleshooting

S Instrument cannot be switched on.

C No power.

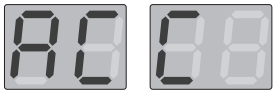
R Install battery pack correctly.

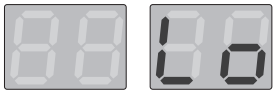
R To charge the battery pack, see the instructions for use for the universal charger

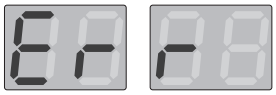
S Battery indicator flashes.

C Battery pack is low.

R At the latest, charge the battery pack when “ACC Lo“ is displayed.







S Instrument switches to ACC, then Lo.

C Batterie pack is empty.

R Charge the battery pack

S Instrument indicates an error or incorrect display.

C Break in laser beam between instrument and probe.

R Check whether gripping sleeve is properly attached to hose and probe is properly attached to gripping sleeve.

R Clean laser exit of tube (see E 1.3).

R Clean laser exit and entrance on the probe (see E 1.3).

C Fibre in probe or tube is damaged or broken.

R Replace probe with a new one.

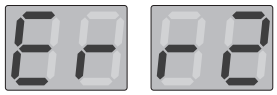
R Send faulty tube with the unit to KaVo for repair and readjustment.

C Procedure/sequence not complied with during calibration.

R Recalibrate (see D 1).

S = symptom; **C** = cause; **R** = remedy

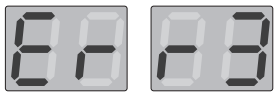
S Instrument indicates error 2.



C Memory module is defective.

R Return instrument to KaVo for repair.

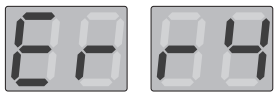
S Instrument indicates error 3.



C Error in microprocessor.

R Return instrument to KaVo for repair.

S Instrument indicates error 4.



C Laser current is excessive.

R Return instrument to KaVo for repair.

⚠

■ *No further attempts to turn on the instrument should be made.*
■ *For safety reasons, the instrument must not be opened by unauthorised personnel.*

S = symptom; **C** = cause; **R** = remedy

A 6 Hose check

Keep light probe at reference value and move tube. The display may not change.

Unscrew the hose from the unit. Hold the unit-side connector into the light.

The following should be visible on the handpiece side:

1 core light fibre in the centre
9 ring light fibres on the outside

If one of these ten light guides is not visible, the laser opening requires cleaning (see section E 1.3).

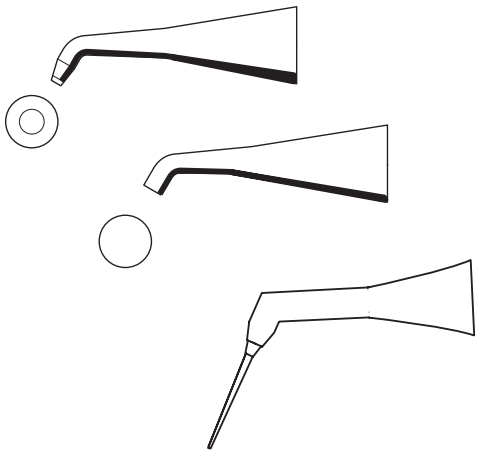
If cleaning does not eliminate the problem, return the defective hose with the unit to KaVo for repair.

A 7 Light probe check

Hold light probe A, B or Perio probe into the light.

The brightness of the glass fibres should be uniform.

From the Probe A (cone) geometric slight shadowing is possible.



KaVo DIAGNOdent 2095

B 1 Packing list

The package comprises the items listed below. Should one of these items be missing, immediately contact your supplier so that the missing item can be sent to you.

① DIAGNOdent

② Universal charger

③ Battery pack rechargeable, UNI-3600 / 6V

④ Hose

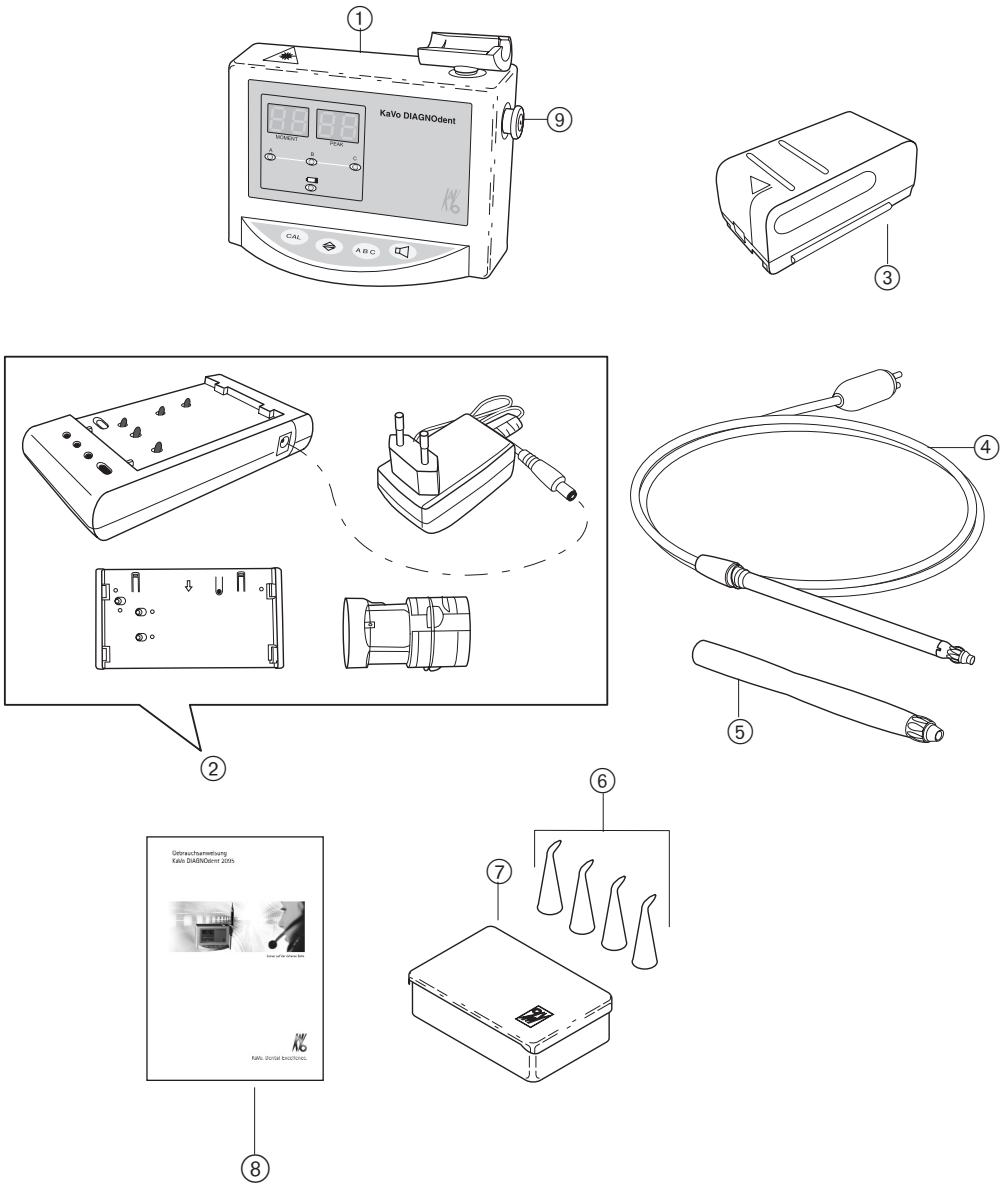
⑤ Gripping sleeve

⑥ Light probe A

⑦ Cassette

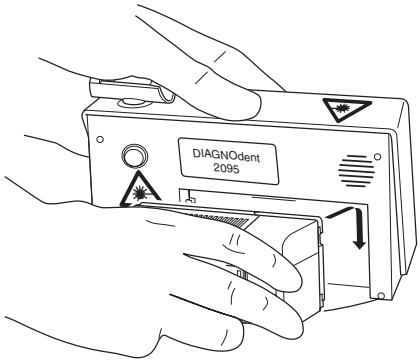
⑧ Operating instructions

⑨ Standard C with holder



B 2 Start-up

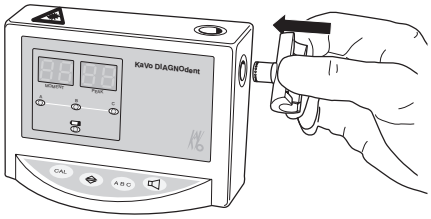
Place the battery pack in the instrument, push down and latch in.



Plug the handpiece holder into the instrument in the horizontal or vertical position.

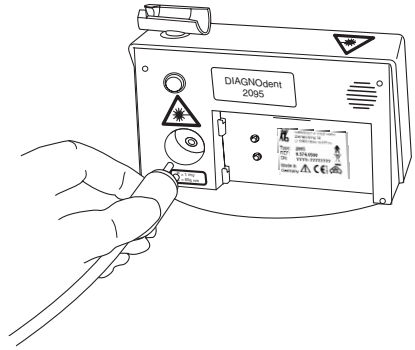
⚠ *The unused holder socket in the housing is to be closed up with the cover.*

Remove the cover from the hose connector. Plug in the hose and screw on.



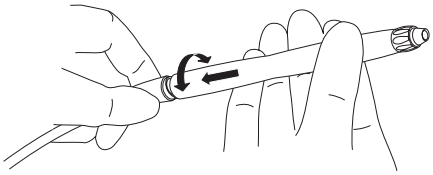
Remove the cap on the handpiece. Install the gripping sleeve by turning it slightly and latch in.

⚠ *The probes and grip sleeves are delivered non-sterile from the manufacturer. To prevent health hazards, the probes and grip sleeves must be set up before first use.*



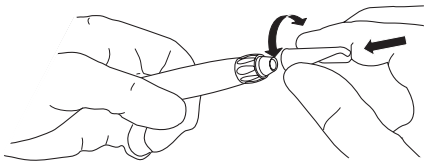
Place the light probe on the gripping sleeve by turning it slightly and latch in.

⚠ *Do not kink or pull on the hose!*



Switch on the instrument by actuating the ring switch.

The software version briefly appears on the display.



KaVo DIAGNOdent 2095

B 2.1 Checking the calibration reference value, currently stored within the DIAGNOdent matches the value of the ceramic disc mounted in the cassette box.

Press ①.

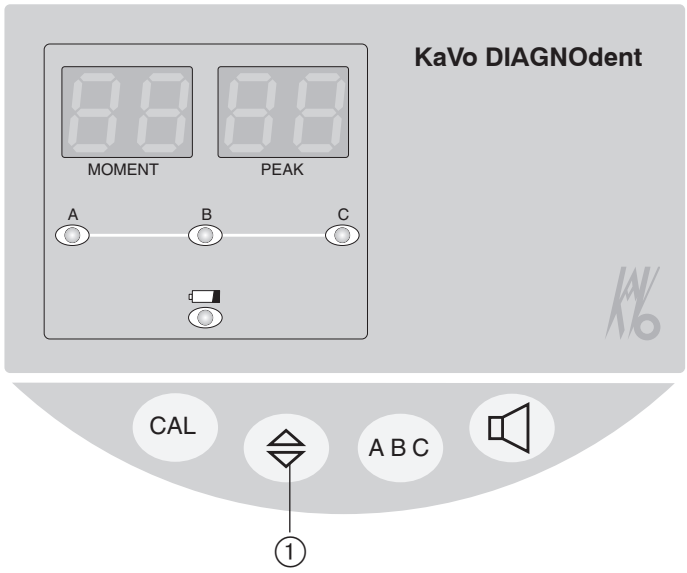
A letter and two numbers will appear on the display. e.g. .

Press the ring switch on the handpiece gripping sleeve to adjust the stored reference value, if required.

The reference value can be found engraved on the ceramic disc in the cassette box.

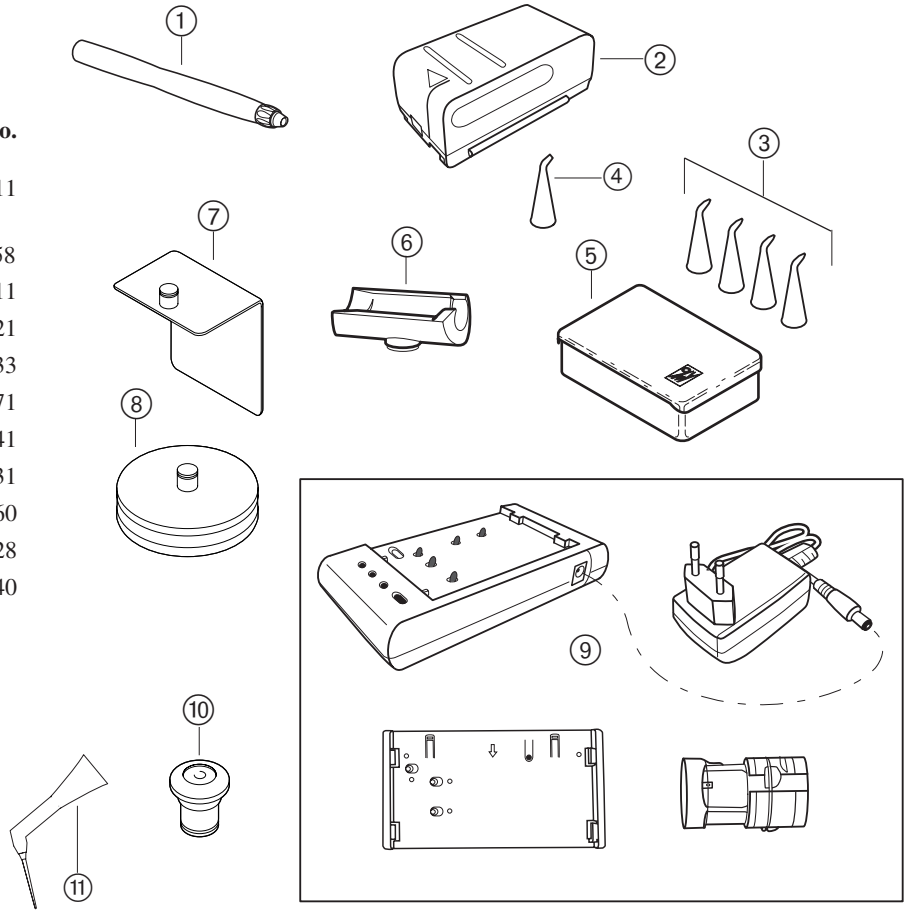
Save the adjusted value by pressing ①.
 will appear on the display.

The DIAGNOdent is now ready for use.



B 3 Accessories

Designation	Mat. no.
① Gripping sleeve	0.574.1211
② Battery pack, rechargeable UNI 3600 / 6V	1.007.5158
③ Light probe A	0.574.1311
④ Light probe B	0.574.1321
⑤ Stri cassette	1.000.1533
⑥ Handpiece holder	0.574.1271
⑦ Bracket assy.	0.574.1341
⑧ Adapter assy.	0.574.1331
⑨ Universal charger	1.007.5160
⑩ Standard C with holder	1.003.5528
⑪ Parosonde DIAGNOdent	1.004.1640



KaVo DIAGNOdent 2095

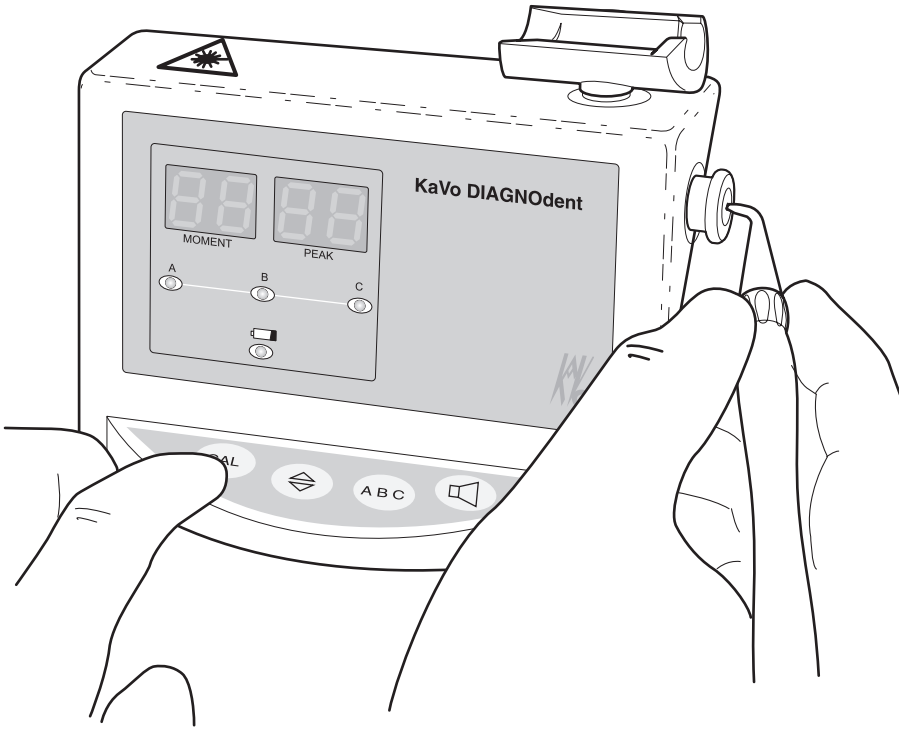
D 1 Calibration

⚠ *Calibration should be checked on a weekly basis or after each sterilisation of the probe.*

Even though this instrument has been designed using the state of the art in engineering, ageing of components and probe wear may result in display deviation.

Calibration is important if accurate diagnostic measurements are required over a fairly long period, e.g. for checking purposes over extended time periods (3 to 12 months), when probes are replaced or sterilised or disinfected regularly.

The reference value ① may be found engraved on the ceramic disc mounted in the cassette box. This is used as a "standard", during both checking and re-calibration.



⚠

- *For measurements, the ceramic disc must be at room temperature 22 °C ±2.*
- *The calibration must be checked on a weekly basis.*
- *In the event of deviations greater than ± 3, re-calibration should be carried out..*

Select the probe position with the A-B-C button.

Briefly press CAL key. The MOMENT display initially shows 0. After a few seconds, the MOMENT display changes to a two-digit number, e.g. 60 , and the PEAK display shows e.g. 6.
At the same time, a continuous tone is heard.

Hold the probe on the # value and wait until the PEAK display shows the same two-digit number as the reference, e.g. 6060, and the continuous tone is no longer heard.

The MOMENT and PEAK display must correspond to the ceramic disc reference value to within ±3 units. This indicates that the DIAGNOdent unit is correctly calibrated.

In the case of an incorrect display or "Err", see A 5 Elimination of faults.

E Setup methods according to DIN EN ISO 17664

Warning instructions

⚠ **Product damage from improper disinfection:**

Malfunctions

Only disinfect by wiping.
Do not immerse product in liquids.

⚠ **Damage from penetrating liquids:**

Malfunctions from penetrating liquids

Prevent liquid from entering the interior.

⚠ **Product damage from improper sterilisation:**

Damage to the sterilized object

No hot air sterilisation, no chemical cold sterilisation, do not sterilise with ethylene dioxide.

⚠ **Moisture:**

Non-sterility

Ensure dryness. Autoclaves with a subsequent vacuum ensure dryness.

Restriction on reuse

The probes can be sterilised more than 500 times when handled properly. The probes are subject to wear.

Site of use

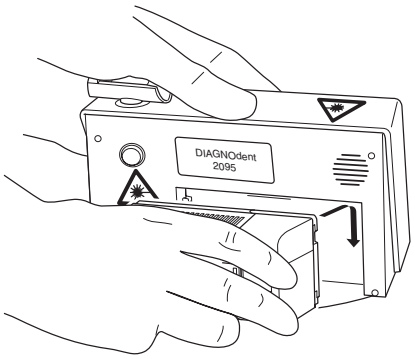
Device surface, grip sleeve, probes, reference

Storage and transport

No special recommendations. It is recommended to set up the probes and grip sleeves directly after use.

Cleaning preparations

Turn off device and remove the battery pack from the instrument.
Remove grip sleeves and probes.

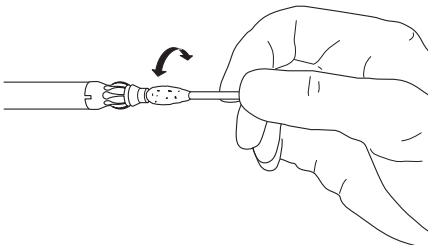


Cleaning

Remove major soiling directly after soiling with a single-use paper towel.
Note: do not use solvents or aggressive chemicals.

a) manual

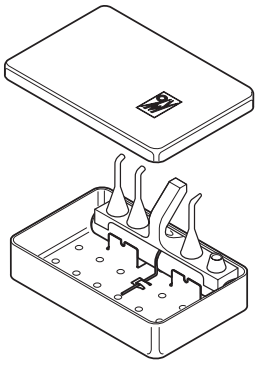
Clean the grip sleeve and probe under flowing water (tap water quality, temperature: 30 °C +/- 5 °C, flow: 2 l/min) for 30 seconds with a medium-hard toothbrush.



When the laser exit gets dirty:
Only clean the entrances and exits for the laser light on the hose with a mild rinse solution and Q-tips.
Do not use disinfectants or alcoholic cleansers.

Cleaning the unit:
Clean all the outer surfaces of the DIAGNOdent with a soft cloth and mild cleaning solution.

b) mechanical	Not applicable for this device.
Disinfection	
a) manual	Surface, handpiece and probes: Wipe with one of the disinfectants listed below.
b) mechanical	Not applicable for this device.
Allowed disinfectants	- S&M Microcid - Dürr FD 322 Use the device for the proper purpose according to the manufacturer's instructions for use.
Packaging	Probes in the probe holder of the steribox for sterilisation and subsequent storage.
Sterilisation	Sterilisation must be carried out immediatetely after cleaning. Only the grip sleeves and probes can be sterilised up to 138°C. The probes can be sterilised in the probe holder in the steribox. Insert the probes in the probe holder in the steribox in the right probe storage space. Autoclave with triple prevacuum: sterilise for at least 4 minutes with prevacuum at 134°C +/- 1. Autoclave using the gravitational method: sterilise for at least 10 min. at 134C ± 1 Autoclave using the gravitational method: sterilise for at least 60 min. at 121C ± 1 . Follow the manufacturer's instructions for use.
Storage	No special recommendations
Additional information	When sterilising several instruments in a single sterilisation cycle, do not exceed the steriliser's maximum load.



The above instructions for cleaning and sterilising were validated as suitable by the medical device manufacturer for preparing a medical device. The person preparing the device is responsible for the preparation achieving the desired result with the utilized equipment, materials and personnel in the preparation device. Normally, validation and outine monitoring of the process are required. Likewise, any deviation from the instructions by the person preparing the device should be carefully checked to see if it is effective, and potential negative consequences should be evaluated.

KaVo DIAGNOdent 2095

F 1 Technical data

Dimensions:

Width:	150 mm
Depth:	110 mm
Height:	120 mm
Weight:	0.6 kg

Voltage:	6 V 3600 mAh Internal energy supply

Light output:	≤ 1 mW

Wavelength:	655 nm

Laser class:	1

Environmental conditions Transport / Storage

Temperature:	min -30 °C max +80 °C
Humidity:	min 5% max 95%
Atmospheric pressure:	700 - 1060 hPa

K 1 Terms of guarantee

Within the framework of applicable KaVo delivery and payment conditions, KaVo guarantees proper function, freedom from flaws in material and manufacturing for a period of 12 months from the date of purchase demonstrated by the purchaser.

In case of justified complaints, KaVo will honour its warranty with a free replacementor repair. The warranty does not cover defects and their consequences that arose or mayhave 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 andglass fibres, glassware, rubber parts and the colourfastness of plastic parts. The warranty expires when defects or their consequences can arise from manipulations or changes to the product.

Warranty claims can only be asserted when theyare immediately reported to KaVo in writing. This notification must be accompanied by a copy of the invoice or delivery note onwhich the manufacturing number is clearly visible. In addition to the guaranty, thestatutory warranty claims of the purchaser also apply with a warranty period of 12 months.

L 1 EMC requirement according to EN 60601-1-2

1 Electromagnetic Transmissions		
The DIAGNODENT TYPE 2095 is for use in an environment like the one cited below. The customer or user of the DIAGNODENT TYPE 2095 should ensure that it is used in the correct environment.		
Measurements of noise transmissions	Conformance	Electromagnetic environment - guidelines
HF transmissions according to CISPR 11	Group 1	The DIAGNODENT TYPE 2095 uses HF energy only for its internal operation. Its HF transmission is therefore very low, and it is improbable that neighbouring electronic devices will be disturbed.

2 Electromagnetic Immunity			
The DIAGNODENT TYPE 2095 is for use in an environment like the one cited below. The customer or user of the DIAGNODENT TYPE 2095 should ensure that it is used in the correct environment.			
Immunity tests	IEC 60601 test level	Conformance level	Electromagnetic environment - guidelines
Discharge of static electricity (ESD) according to IEC 61000-4-2	± 6 kV e ± 8 kV atmospheric discharge	± 2/4/6 kV contact discharge ± 2/4/8 kV atmospheric discharge	Floors should be made of wood or concrete or have ceramic tiles. When the floor is made of synthetic material, the relative humidity must be at least 30%.
NOTE: V T is the alternating mains voltage before the test level is used.			

3 Electromagnetic Immunity			
The DIAGNODENT TYPE 2095 is for use in an environment like the one cited below. The customer or user of the DIAGNODENT TYPE 2095 should ensure that it is used in the correct environment.			
Immunity tests	IEC 60601 test level	Conformance level	Electromagnetic environment - guidelines
Radiated HF disturbances according to IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	Portable and mobile radio devices should not be used closer to the DIAGNODENT TYPE 2095 including the electrical lines than the recommenced safe distance calculated using the equation for the transmission frequency. Recommended safe distance: d=1.17 √P d=1.17 ? P for 80 MHz to 800 MHz d=2.33 ? P for 800 MHz to 2.5 GHz with P as the maximum rated power of the transmitter in Watts (W) according to the transmitter manufacturer, and d as the recommended safe distance in meters (m). [b] The field strength of stationary radio transmitters should be less than the conformance level at all frequencies in an on-site check. Disturbances are possible close to devices that have the following symbol. 

NOTE: At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2: These guidelines may not be applicable in every case. The spread of electromagnetic waves is absorbed and reflected by buildings, objects and people.

The ISM frequency bands (for industrial, scientific and medical applications) between 150 kHz and 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz; 26.957 MHZ to 27.283 MHz and 40.66 MHz to 40.70 MHz.

The conformance levels in the ISM frequency bands between 150 kHz and 80 MHz and the frequency range of 80 MHz and 2.5 GHz are intended to reduce the probability that mobile and portable communications equipment will produce disturbances when they are unintentionally brought near the patient. For this reason, the additional factor of 10/3 is used when calculating the recommended safe distances within these frequency ranges.

The field strength of stationary transmitters such as base stations of mobile telephones and land mobile radio devices, amateur radio stations, AM and FM, radio and television broadcasters cannot be theoretically predetermined. To determine the electromagnetic environment of stationary transmitters, a study of the location should be considered. When the measured field strength at the site where the DIAGNODENT TYPE 2095 is used exceeds the above conformance level, the DIAGNODENT TYPE 2095 should be monitored to demonstrate proper function. When unusual performance features are observed, additional measures may be necessary such as realigning or moving the DIAGNODENT TYPE 2095.

Within the frequency range of 150 kHz to 80 MHz, the field strength should be less than $3V_{eff}$ V/m.

4 Recommended safe distance between portable and mobile HF telecommunications equipment and the DIAGNODENT TYPE 2095

The DIAGNODENT TYPE 2095 is intended for use in an electromagnetic environment in which HF disturbances are controlled. The customer or the user of the DIAGNODENT TYPE 2095 can help prevent electromagnetic disturbances by maintaining the minimum distance between portable and mobile HF telecommunications devices (transmitters) and the DIAGNODENT TYPE 2095 depending on the output of the communication device as indicated below.

Rated power of the transmitter W	Safe distance depending on the transmission frequency m		
	150 kHz to 80 MHz d=1.17 √P	80 MHz to 800 MHz d=1.17 √P	800 MHz to 2.5 GHz d=2.33 √P
0.01	**0.1**	**0.1**	**0.2**
0.1	**0.4**	**0.4**	**0.7**
1	**1.2**	**1.2**	**2.3**
10	**3.7**	**3.7**	**7.4**
100	**11.7**	**11.7**	**23.3**

For transmitters whose maximum rated power is not in the above table, the recommended safe distance d in meters (m) can be calculated using the equation for the respective gap, where P is the maximum rated power of the transmitter in Watts (W) according to the manufacturer's information.
NOTE: At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2: These guidelines may not be applicable in every case. The spread of electromagnetic waves is absorbed and reflected by buildings, objects and people.

1.001.9894 Fk 20100426-05 en

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