stomdevice

LM feel the difference

LMErgo



User manual

for LM-ErgoVet built-in device

(Ultra Standard and UltraLED Standard)

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Important!

Read this manual carefully before using the product.

How to read this manual

This manual contains instructions for several models of scalers. Each chapter starts with a section with general instructions which is followed by sections with additional information. If there are any questions regarding the contents of this manual, please contact LM-Instruments Oy.

Trademarks

LM-Instruments is a trademark owned by LM-Instruments Oy.

Manufacturer

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Safety

Intended use

This scaler is designed for veterinary dentistry purposes. It is designed for removal of biofilm or calculus on teeth and other dental work where the ultrasonic vibration is beneficial. The scaler should only be used by veterinary dental professionals trained in the proper use of scaling devices. Do not use it for human dentistry or other applications where it is not intended. If you are unsure about your application, please contact your local dealer or place of purchase.

General requirements

Installation and service of the product is only to be performed by authorized service personnel. The product must be connected to electricity supply and water supply meeting the requirements specified in the Technical data section on page 19.

Contraindications

Do not use the scaler on patients with cardiac pacemakers. The scaler may disturb the function of the pacemaker.

General precautions

- The product is not suitable for use in the presence of flammable gases.
- Only use the product in combination with LM and Amdent scaler tips.
- If the handpiece tubing is damaged or worn-out, it must immediately be replaced to avoid exposing the user or the patient to electric hazard.

Sécurité

Utilisation

Cet appareil est conçu pour les objectifs dentaires vétérinaire. Il est conçu pour l'enlèvement de tartre ou de calculs sur la denture et autre travail dentaire où la vibration ultrasonique est avantageuse. Cet appareil doit être exclusivement manipulé par des professionnels dentaires vétérinaire ayant suivi une formation relative à l'utilisation correcte des dispositifs de détartrage. Si vous êtes incertain de votre application, veillez à contacter votre concessionnaire local ou lieu d'achat.

Exigences générales

L'installation et le service du produit doivent seulement être effectués par le personnel de service autorisé. Le produit doit être branché sur l'alimentation en électricité et l'alimentation en eau répondant aux exigences déterminés dans la section Fiche technique à la page 19.

Contre-indications

Ne pas utiliser l'appareil pour les patiens munis d'un pace maker cardiaque. L'ultrasons peut déranger la fonction du pace maker.

Précautions générales

- Le produit ne doit pas être utilisé en présence de gaz inflammable.
- Utilisez uniquement le produit en combinaison avec les inserts LM-Instruments et Amdent.
- Si le flexible d'une pièce à main est endom magé ou usé, remplacez-le sans délai afin d'éviter l'exposition de l'utilisateur ou du patient au danger électrique.

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Safety notices in this manual / Notifications de sécurité dans ce manuel



WARNING
AVERTISSEMENT

Warning indicates a potentially dangerous situation. Non-observance may lead to death or injury.

« *Avertissement* » indique une situation potentiellement dangereuse. Le non-respect peut entrainer des préjudices corporels, voire la mort.



Caution
Prudence

Caution indicates a potentially harmful situation. Non-observance may damage the equipment.

« *Prudence* » indique une situation potentiellement nocive. Le non-respect peut endommager l'appareil.



Note
Note

Note indicates a situation where special notice should be observed.

« *Note* » indique une situation requérant le respect d'une mise en garde spéciale.

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1 Unpacking

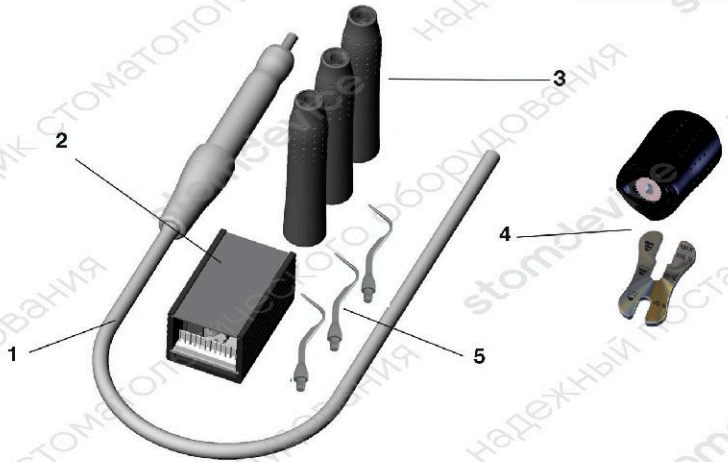
1.1 General content of delivery

1. Handpiece incl. tubing
2. Electronic unit (installed inside the unit)
3. LM-ErgoGrips (type and quantity depending on what was ordered)
4. Tip wrenches (type and quantity depending on what was ordered)
5. Tips (type depending on what was ordered)

Note

This chapter describes the components of the delivery and can be used as a checklist when unpacking. Contact your place of purchase if anything is missing.

For a description of the features of the equipment, read the Equipment description section on page 7.



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2 Equipment description

2.1 General description

LM-ErgoVet Ultra Standard and UltraLED Standard are piezo ultrasonic scalers that are supposed to be mounted in a dental unit. The ultrasonic power can be regulated to provide a wide range of settings. The LM-ErgoVet built-in scaler is equipped with LM-ErgoVet Ultra Standard or LM-ErgoVet UltraLED Standard handpiece. The tips can easily be changed during the treatment and can also be cleaned and autoclaved together with the individual LM-ErgoGrips in the same procedure.

2.2 Handpiece with LED additional description

The light will illuminate when the foot control is depressed.

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2.3 Symbols



Attention! Consult accompanying documents.



Consult accompanying documents.



Medical electrical equipment classified by ETL with respect to electric shock, fire, mechanical, and other specified hazards in accordance with the Safety Standards ANSI/AAMI ES 60601-1 and CAN/CSA C22.2 No 60601-1:08.



Withstands autoclave temperature 135 °C (275 °F).



Compliance label indicating compliance with the Medical Device Directive 93/42/ECC.

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Type B applied part according to the degree of protection against electrical shock.



Input



Output



Please do not throw the equipment into the domestic refuse. Please use the return and collection systems available in your country for the disposal of this product.

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3 Operating instructions

3.1 General

Mode of operation

With cooling fluid, the scaler can be operated continuously. Recommended flow: 20 ml/min. Without cooling fluid, the scaler may only be operated for shorter periods, see caution.

Operating without cooling fluid is recommended only for special clinical treatments, for example, crown removal and thixotropic cementing when cooling of the treated surface is not necessary. When performing root canal treatments, the canal must be filled with fluid.



Caution

Without cooling fluid, the maximum operating time, for the scaler handpiece, is 2 minutes followed by a cooling down period of 8 minutes. Operating the scaler for more than 2 minutes may cause overheating and damage of the scaler handpiece.

After above cycle has been repeated 2 times, the scaler handpiece has to cool down for at least 60 minutes.

Before treatment

- To rinse the water line, hold the handpiece over the bowl. Depress the foot switch and allow the water to flow for at least 30 seconds.
- Gently slide the LM-ErgoGrip on to the handpiece.



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- Carefully place the tip in the torque wrench.



- Use the torque wrench and screw the tip clockwise on to the scaler handpiece. Tighten until resistance and the torque wrench slides. The torque wrench prevents the tip from being overtightened.



WARNING

A tip that is bent, altered, scratched or worn more than 2 mm will lose performance and must be exchanged. Prolonged use may cause tip breakage and injury to the patient.

Do not use nickel-titanium files, since they easily break at high frequencies.

The operator should be aware of that ultrasonic instruments with small diameters are subject to breakage at any time. If not used correctly or with too much power or force the instrument will break.

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Scaling

1. Set the ultrasonic power to minimum position.
2. Keep the handpiece over the bowl and depress the foot control to activate the scaler. Adjust the waterflow on the unit.
3. Adjust the ultrasonic power according to the working mode marked on each tip (see below).
4. Keep the patient's lips, cheeks, and tongue out of the way of the tip and perform treatment according to the following instructions.

WARNING

New tips are not sterile upon delivery. Sterilize before use according to the clinic's routines.

Keep the patient's lips, cheeks, and tongue out of the way of the activated tip, since contact may cause burns.

Note

At low power settings there will be no spray.

Working mode			
Code			
Max power	100 %	70 %	40 %

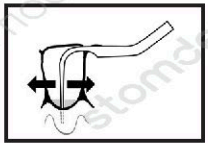
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How to use the scaler

The side of the tip-end shall be applied to the tooth so that the movement of the tip is parallel to the surface of the tooth. The first 2 mm of the tip are the most efficient! Place the tip on the tooth surface before activating the foot switch.

Normal scaling rarely requires more than 50 % power level of each working mode. However, hard to remove calculus might require a higher power setting.

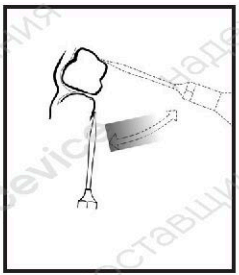
Ensure that contact between the tip and the tooth surface is maintained during scaling. Keep moving the tip slowly back and forth and let the instrument do the work. Use short and long strokes so that the whole surface of each tooth is scaled.



The tip is normally aimed towards the toothpocket.

To keep the tip working parallel to the surface of each tooth, it is important to follow the anatomy of the tooth.

With the correct power setting, appropriate pressure against the tooth (approximately 20 grams but not exceeding 50) and the tip operating parallel to the surface, treatment will be gentle, quiet and efficient.



If, during the treatment, a squeaking sound is heard (loud and dominating), the pressure against the tooth might be too low or the tip not parallel to the surface of the tooth.

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After treatment

1. Screw off the tip, counter-clockwise, with the torque wrench.
2. Squeeze the LM-ErgoGrip gently at the top and at the same time slide it off the handpiece. Do not squeeze too hard at the LM-ErgoGrip as this can make the removal difficult.
3. Clean and sterilize the equipment according to the General cleaning procedure section on page 15.

Caution

Do not sterilize any scaler accessories using dry heat or chemical autoclaves. This may damage the material.



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4 Cleaning and maintenance

4.1 General cleaning procedure

After each treatment

1. Wipe off the handpiece and the hose with a soft cloth. Use a 45 % isopropanol and detergent solution.
2. Wash the LM-ErgoGrip, the tip and the tip wrench, and autoclave according to the clinic's routines.



Caution

Do not sterilize any scaler accessories using dry heat or chemical autoclaves. This may damage the material.

Do not immerse the handpiece in any fluid. Moisture may permeate into it and damage the ultrasonic generator.

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4.2 Autoclave temperatures

Autoclave in steam at 134 °C (max 135 °C) for at least 3 minutes.

Scaler tips	
Torque wrenches	
LM-ErgoGrip	

4.3 Maintenance

Handpiece

Inspect the handpiece hose daily to insure that the equipment is in good condition without mechanical damage.



Note

Do not keep ultrasonic handpiece soaked in disinfectant. This may damage the handpiece.

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Tips

When a tip is bent, altered, scratched or worn more than 2 mm it will lose performance and must be exchanged. Check the tip length weekly by comparing the tip to a tip check card.



WARNING

A tip that is bent, altered, scratched or worn more than 2 mm will lose performance and must be exchanged. Prolonged use may cause tip breakage and injury to the patient.

The operator should be aware of that ultrasonic instruments with small diameters are subject to breakage at any time. If not used correctly or with too much power or force, the instrument will break.

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5 Troubleshooting

The tip does not vibrate properly	Check that the tip is firmly tightened. Check that the tip is not worn more than acceptable according to the Maintenance section on page 17. If the problem is not resolved, try another tip, preferably unused.
The tip threads don't fit smoothly onto the handpiece	If the tip threads are damaged, blow off the handpiece threads with compressed air and try another tip, preferably unused. Throw away the damaged tip. If the problem still remains, contact your dealer for service instructions, because the handpiece threads might be damaged.
Insufficient fluid flow	Set the water control on the unit to fully open. If the fluid flow is still insufficient, remove the tip and inspect if fluid comes out of the handpiece. If yes, replace the tip. If not, replace the handpiece.
The handpiece is overheated	Check that the fluid flow is sufficient (recommended: 20 ml/min).
If problems cannot be resolved according to this troubleshooting guide, please contact your dealer for further service support.	

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6 Technical data

Input voltage (different models)	24 Vac, 50-60 Hz or 24-32 Vdc ± 10 %	
Output	Maximum 10 W, 24 kHz - 28 kHz, automatic tuning	
Ambient temperature	Transport & storage	-40 °C to 70 °C (-40 °F to 158 °F)
	Operation	10 °C to 40 °C (50 °F to 104°F)
Relative humidity	Transport & storage	10 % to 100 %
	Operation	10 % to 95 %
Water consumption	10 ml/min - 50 ml/min	

Further technical descriptions on request. The manufacturer provides the qualified technical staff of the dealer or distributor with necessary information for service of the equipment.

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7 Warranty

The manufacturer hereby warrants that the LM-Instruments scaler will be free from defects arising from faulty materials or workmanship ("Limited Warranty"). This Limited Warranty does not cover the ultrasonic scaling tips. This Limited Warranty applies only if the LM-Instruments scaler and/or the LM-Instruments ultrasonic scaling tips are installed and used by the customer according to the instruction furnished herein, is connected to a proper power supply, is not misused or abused, and there is no evidence of tampering, mishandling, neglect, accidental or wilful damage or modifications. The customer must contact the authorized dealer from whom the LM-Instruments ccaler and/or ultrasonic scaling tips were purchased to request repair or replacement under this Limited Warranty. This Limited Warranty is void if service or repair is performed by persons not authorized by the manufacturer. Normal wear and tear is specifically excluded from this Limited Warranty. Manufacturer disclaims any express warranty not provided herein and any implied warranty, guarantee or representation as to suitability for any particular purpose, performance, quality, and absence of hidden defects, and any remedy for breach of contract, which but for this provision, might arise by implication, operation of law, custom of trade, or course of dealing, including implied warranties of merchantability and fitness for a particular purpose, except as provided in this limited warranty. The manufacturer further disclaims any responsibility for losses, expenses, inconveniences, special, indirect, secondary, or consequential damages arising from ownership or use of the product.



WARNING
No modification of the product is allowed.

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