Important!
Alternate options for accessing Instructions for Use:
Email: info.us@coltene.com or info.ch@coltene.com or info.de@coltene.com to request a printed copy or visit www.coltene.com

This manual covers the following products:

<table>
<thead>
<tr>
<th>Description</th>
<th>Voltage</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>BioSonic Suvi Elite (tap water) USA Plug Type B</td>
<td>115</td>
<td>60014239</td>
</tr>
<tr>
<td>BioSonic Suvi Elite Plus (Medicament feeder) USA Plug Type B</td>
<td>115</td>
<td>60014240</td>
</tr>
<tr>
<td>BioSonic Suvi Elite (tap water) Japan Plug Type B</td>
<td>100</td>
<td>60014243</td>
</tr>
<tr>
<td>BioSonic Suvi Elite Plus (Medicament feeder) Japan Plug Type B</td>
<td>100</td>
<td>60014244</td>
</tr>
<tr>
<td>BioSonic Suvi Elite (tap water) Euro Plug Type F</td>
<td>230</td>
<td>60014247</td>
</tr>
<tr>
<td>BioSonic Suvi Elite Plus (Medicament feeder) Euro Plug Type F</td>
<td>230</td>
<td>60014248</td>
</tr>
<tr>
<td>BioSonic Suvi Elite (tap water) UK Plug Type G</td>
<td>230</td>
<td>60014251</td>
</tr>
<tr>
<td>BioSonic Suvi Elite Plus (Medicament feeder) UK Plug Type G</td>
<td>230</td>
<td>60014252</td>
</tr>
<tr>
<td>BioSonic Suvi Elite (tap water) AUS Plug Type I</td>
<td>230</td>
<td>60014255</td>
</tr>
<tr>
<td>BioSonic Suvi Elite Plus (Medicament feeder) AUS Plug Type I</td>
<td>230</td>
<td>60014256</td>
</tr>
</tbody>
</table>

* Shaded and italicized items in the table above are not currently offered for sale.

Important!
Read this manual carefully before using the product.

Rx ONLY

Caution: Federal (USA) law restricts these units to sale on or by order of a dentist.

How to read this manual
Each chapter starts with a section with general instructions, which is followed by sections with additional information. First read the general section and then proceed to the section that applies to your product.
If there are any questions regarding the contents of this manual, please contact Coltène/Whaledent Inc.

Manufactured for:
Coltène/Whaledent Inc.
235 Ascot Parkway
Cuyahoga Falls, OH 44223 / USA
Tel. USA & Canada +1 800 221 3046
+1 330 916 8800
Fax +1 330 916 7077
info.us@coltene.com
Internet: www.coltene.com

Copyright
Copyright 2016 Coltène/Whaledent Inc. All rights reserved. The contents of this manual may be changed without notice. No part of this manual may be reproduced in any form or by any means without permission in writing from Coltène/Whaledent Inc.
Contents

1 Unpacking ................................................................. 7
  1.1 Contents .................................................................... 7
  1.2 Contents of Introkit .................................................... 8

2 Equipment description ..................................................... 9
  2.1 General description .................................................. 9
  2.2 Control panel .......................................................... 10
  2.3 Foot control pedal ..................................................... 11
  2.4 Medicament bottle .................................................... 12
  2.5 Polisher ................................................................. 12
  2.6 Symbols on the equipment ......................................... 13

3 Installation .................................................................... 15
  3.1 General installation instructions .................................. 15
  3.2 Version for tap water ................................................ 16
  3.3 General installation instructions, continued .................. 16

4 Operating Instructions .......................................................... 17
  Preparations .................................................................... 17
  4.1 Scaler ......................................................................... 17
    How to use the scaler................................................... 19
    After scaler treatment................................................ 20
    Automatic cleaning function ....................................... 20
    Cleaning & Disinfecting .............................................. 20
    Drying & Sterilizing .................................................... 21
  4.2 Elite / Elite Plus Polisher ............................................. 21
    Water Jet cleaning....................................................... 22
    Polishing power ........................................................ 23
    Air purge quick cleaning function ............................... 23
    How to use the polisher .............................................. 23
    After polish treatment ............................................... 23

5 Cleaning and maintenance .................................................. 24
  5.1 General cleaning procedures ..................................... 24
    Air purge quick cleaning ........................................... 24
    Automatic Cleaning .................................................. 24
    Cleaning of the equipment/components ....................... 24
      Cleaning, Disinfecting & Drying .............................. 24
      Sterilizing ............................................................ 25
  5.2 Routine cleaning procedures ..................................... 25
    Beginning of the day .................................................. 25
    After each treatment ................................................ 25
    End of the day ......................................................... 26
    Weekly ....................................................................... 26
  5.3 Maintenance .......................................................... 26
    Power cord, O-rings & Tips ....................................... 26
    Exchanging fuses ..................................................... 26

6 Troubleshooting Elite/Elite Plus .......................................... 27

7 Technical Data ................................................................ 31

8 Warranty and Declaration of Conformity ............................. 33
  8.1 Warranty Terms ...................................................... 33
  8.2 Certificate of Limited Warranty .................................. 34
  8.3 EMC - Guidance and manufacturer’s declaration ............ 34

9 Order Information ............................................................ 38
Safety

Indications for Use
The BioSonic Suvi Elite/Elite Plus is a combination Air Polisher and Ultrasonic Scaler. The Air Polisher is intended for use in the cleaning, surface preparation and polishing of teeth by the projection of water, air and dental powders on the tooth surface. The device removes dental plaque, soft deposits, and surface stains from pits, grooves, interproximal spaces or smooth surfaces of teeth. The BioSonic Suvi Air Polisher is also indicated for the non-surgical removal of subgingival plaque in pockets up to 5 mm after initial periodontal treatment. The Ultrasonic Scaler is intended for use in dental applications such as supra and subgingival scaling, periodontal therapy, endodontic procedures, cavity preparation and restorative dentistry.

General Requirements
Service of the product is only to be performed by authorized service personnel. The product must be connected to electric, water and compressed air supply meeting the requirements specified in the Technical data section 7. The product needs special precautions regarding EMC (Electro Magnetic Compatibility) and needs to be installed and put into service according to the EMC information provided in section 8.2. Portable and mobile RF (Radio Frequency) communications equipment can affect the product.

Contraindications
Do not use the scaler on patients with cardiac pacemakers. The scaler may disturb the function of the pacemaker. Do not use the polisher on patients with chronic obstructive pulmonary disease (COPD) or other breathing difficulties, have renal insufficiency or are on a long term steroid or diuretic therapy.

General Precautions
• The product is not suitable for use in the presence of flammable gases.
• Only use the product in combination with BioSonic 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.
• Use the original packaging when returning equipment for service.

Warnings
The product should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the product should be observed to verify normal operation in the configuration in which it will be used.
Safety notices in this manual

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

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

*Note* indicates a situation where special notice should be observed.
Carefully unpack your BioSonic Suvi Elite / Elite Plus unit and verify that all accessories and components are included according to the content lists below:

### 1.1 Contents

1. BioSonic Suvi Elite / Elite Plus unit
2. Scaler handpiece connected to unit (1 O-ring on handpiece)
3. Scaler introkit (see section 1.2)
4. Polisher introkit (see section 1.2)
5. 500 ml medicament bottle (Elite Plus) or water hose 6 mm (1/4”)
6. Air hose 6 mm (1/4”)
7a. Air polisher tubing
7b. Powder container
8. Foot control pedal
9. Foot pedal cable
10. Power cord
1.2 Contents of Introkit

Content of Scaler intro kit
2 x Scaler tips
2 x Grips
2 x Torque Wrenches
2 x Tip Check Cards

Content of Polisher intro kit
2 x Polisher nozzles
2 x Grips
1 x Bottle 180 g polishing powder
2 Equipment Description

2.1 General Description

BioSonic Suvi Elite / Elite Plus combines an effective piezoelectric scaler and an air polisher in one versatile and ergonomic appliance.

The device’s LED lights, advanced electronics, quality, and the BioSonic Suvi tips made from high-durability DuraGradeMAX™ steel enhances the execution of procedures which require great precision.

Ergonomically designed handpiece grips with soft silicone handles give the user a comfortable, relaxed grip as well as an excellent feel.

BioSonic Suvi Elite/Elite Plus is highly adaptable to any procedure or user approach. It is not only an outstanding scaling and cleaning device, but it also brings power and versatility to endodontics, implantology, restorative treatments, minimally invasive treatments and apical procedures.

The following picture describes the name of the BioSonic Suvi Elite / Elite Plus parts. More detailed information of their function are described later.

1. Scaler Handpiece
   (with an ergonomical grip and a tip mounted)
2. Scaler water flow control ring
3. Scaler handpiece tubing
4. Polisher handpiece incl. tubing
   (with an ergonomic grip and a nozzle mounted)
5. Control panel
6. Foot control pedal
7. Medicament bottle
8. Depressurization button
9. Polisher water flow control
1. AC power input
2. Fuse holder
3. Air hose coupling
4. Water hose coupling (Elite)
5. Foot control pedal connection
6. Decal serial label

### 2.2 Control Panel

1. Cleaning key
2. Scaling mode key
3. Polishing mode key
4. Working mode 1 key
5. Working mode 2 key
6. Working mode 3 key
7. StandBy indicator
8. Polishing mode indicator
9. Scaling mode indicator
10. Dry mode indicator (scaler)
    Air-Blow mode indicator (polisher)
11. Irrigation mode indicator (scaler)
    Water-Jet mode indicator (polisher)
12. Working mode 1 indicator
13. Working mode 2 indicator
14. Working mode 3 indicator
15. Cleaning mode indicator
2.3 Foot Control Pedal

**Scaling mode:**
1. Connection for foot control pedal cable
2. OFF position
3. ON position
4. Diagnostic function, turn LED light ON or OFF by a single-click on the pedal
5. Irrigation position
6. Zero power position
7. Maximum power position
8. Power regulator

**Polishing mode:**
1. Connection for foot control pedal cable
2. OFF position
3. ON position
4. Diagnostic function, turn LED light ON or OFF by a single-click on the pedal
5. Water Jet position
6. Polisher ON (Power controlled on control panel)
2.4 Medicament Bottle (Elite Plus)

BioSonic Suvi Elite Plus has a medicament dispenser system, making the device independent of a fixed water supply connection. The medicament bottle can be used for either medicament solutions or ordinary clean water. The unit contains an electrically driven air compressor. When operating the unit the compressed air forces the fluid from the bottle through the hose to the handpiece and to the tip/nozzle.

1. Medicament bottle
2. Bottle connector
3. Depressurization button
4. O-rings (3)

2.5 Polisher

1. Tubing
2. Powder container
3. Water control
4. O-ring (mounted in cap)
2.6 Symbols on the equipment

- Working mode 1
- Working mode 2
- Working mode 3
- Irrigation/Water-Jet mode
- Dry/Air-Blow mode
- Automatic cleaning function
- Scaling function
- Polisher function

Example of product serial label. The product serial label is placed on the back side of the scaler unit.

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

Caution

Consult accompanying documents.

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

Fuse

Input

Output

This appliance is labeled in accordance with European directive 2002/96/EC concerning used electrical and electronic appliances (waste electrical and electronic equipment - WEEE). This guideline determines the framework for the return and recycling of used appliances as applicable throughout the EU. The symbol on the product, or on the documents accompanying the product, indicates that this appliance may not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.
Manufacturer

Date of Manufacture

European Union Authorized Representative

IPX1
Ingress Protection Rating, Device has dripping water protection

Autoclave at 132°C

Caution: Federal (United States) laws restricts this device to sale by or on the order of a physician or dentist.
3 Installation

3.1 General Installation Instructions

Checklist

- Position the unit horizontally with the handpieces in the holders and the hoses hanging free.
- Position the unit where air is free to circulate on all sides and beneath it. Do not position the unit on a wall or next to a heat source.
- Avoid placing the unit in the immediate vicinity of sources of electromagnetic radiation, for example the Perfect TCS II or other electrosurgery equipment.
- Connect the foot control cable to the foot control pedal and at the rear side of the unit.
- Mount the scaler tubing in the groove underneath the unit, as indicated in picture below.

Connecting to the air supply

1. Verify that the air supply can be turned off.
2. Verify that the air pressure conforms to the data in the Technical data section 7.
3. Use only dry and filtered compressed air. (refer to CAUTION.)
4. Push the hose onto the quick connect coupling.

5. Connect the other end of the hose to the in house air supply.

- Do not place the unit on or next to a heat source. Excessive heat may damage the electronics.

- Consult a qualified technician for connecting the unit to the air supply. Use only a dry and filtered compressed air system otherwise clogging of the air- lines may occur.

6. Connect the other end of the hose to the air supply.
3.2 Version for Tap Water (Elite)

Connecting to the water supply

1. Verify that the water supply can be turned off.
2. Verify that the water pressure conforms to the data in the Technical data section 7.
3. Verify that the water supply fulfills the medical demands of hygiene.
4. Push the hose onto the quick connect coupling.
5. Connect the other end of the hose to the water supply.

Consult a qualified technician for connecting the scaler to the water supply.

3.3 General Installation Instructions, continued

- Verify that the voltage rating on the rear side matches the voltage of the AC power outlet.
- Verify that the AC power outlet is provided with a protective ground.
- Connect the power cord to the unit and the AC power outlet. All indicator lights will illuminate for a short period during a self check of the unit.
- The unit is in standby mode when the green indicator light is illuminated.

The unit must be connected to an AC power outlet provided with a protective ground. USA and Canada: The power cord and plug must be classified as "Hospital-Grade".
4 Operating Instructions

Preparations (Elite Plus)

1. Fill the medicament bottle with water or medicament solution according to the Medicaments that can be used, listed on page 32.

2. Screw the bottle connector onto the bottle and push it onto the connector. See picture in section 2.4

3. Check that the unit is connected to the air supply, the power cord is connected and the unit is in stand-by mode, the green indicator light is illuminated.

4.1 Scaler

1a. Attach handpiece cord onto the scaler handpiece.

1b. Gently slide the grip onto the scaler handpiece.

2. Carefully place the tip in the torque wrench.

3. Use the torque wrench and screw the tip clockwise onto the scaler handpiece. Tighten until torque wrench begins to slip. The torque wrench prevents the tip from being overtightened.

WARNING

A tip that is bent, altered, 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 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.

Do not use nickel-titanium files, since they easily break at high frequencies.
4. Turn on the scaler by pressing the key marked S on the keyboard. The blue scaling indicator light illuminates and the scaling mode is activated.

5. The indicator lights next to the working modes are flashing to remind that a working mode has to be selected. If several blue indicators are flashing instead, check that the scaler handpiece is connected. If the problem remains check the troubleshooting section. Check the recommended working mode that is marked on the base of each tip and choose the working mode by pressing the corresponding working mode key on the keyboard.

6. A second press of the “S” key activates the dry mode for scaling without water/medicament.

7. A third press of the “S” key activates the irrigation mode. The irrigation mode can also be activated in the scaling mode by pressing down the foot control pedal in the leftmost position.

8. By pressing the “S” key repeatedly, it will toggle between normal scaling, dry and irrigation mode.

9. Keep the handpiece over the cuspidor bowl or sink and depress the foot control pedal in the leftmost position and adjust the water flow with the ring on the handpiece until the water is dripping from handpiece as in picture below. Recommended flow: 20 ml/min.

10. Keep the patient’s lips, cheeks and tongue out of the way of the activated tip, since contact may cause burns because of friction heat.

At low power settings there will be no spray.
Increase the water flow if the handpiece feels too warm.

Remember to choose the right working mode when changing scaler tip during the treatment.

New tips are not sterile upon delivery. Sterilize before use per instructions in section 5.1.

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

For scaler tips without a fluid flow channel run the unit in “Dry Mode”.
Without cooling fluid, the maximum operating time, for the scaler handpiece, is 2 minutes followed by a cooling-down period of 8 minutes. Operating without cooling fluid for more than 2 minutes may cause overheating of the scaler handpiece.

After above cycle has been repeated 2 times, the scaler handpiece has to cool down for at least 60 minutes.
How to use the Elite / Elite Plus 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 control pedal. The power is regulated with the foot control pedal from 0 to 100% within each working mode.

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

![Diagram of scalers in use]

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.

![Diagram of scalers in use]

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 is not parallel to the surface of the tooth.
After Scaler Treatment

1. Run the Automatic cleaning function.

**Automatic cleaning function for the scaler and polisher**

2. Turn off the scaler or polisher by pressing the “S” or “P” key for 3 seconds. The blue function indicator turns off.

3. Make sure the water control is fully open.

4. Place the scaler and/or the polisher handpiece over the cuspidor bowl and first press the cleaning key “C” and then the “S” and/or the “P” key.

5. The cleaning cycle starts and stops automatically after 80 seconds.

6. After the cleaning cycle is finished, screw off the tip, counter clockwise, with the torque wrench.

7. Squeeze the grip gently at the top and at the same time, slide it off the handpiece. Do not squeeze the grip too hard as this can make the removal difficult.

8. Press the depressurization button (Elite Plus).

9. Pull the medicament bottle from the unit (Elite Plus).

10. Clean, disinfect and sterilize the components according to cleaning maintenance section below.

**Cleaning:**

1. Initial cleaning of the Piezo tips must begin immediately after use to prevent drying of soil and contaminants in and on the device.

2. All exterior surfaces may be soaked in surface disinfectant to remove gross soil. Examine the Piezo tip for damage and discard if excessive wear, broken tip or distortion is noted.

3. Clean thoroughly using an ultrasonic cleaner such as the Coltène/Whaledent BioSonic® Ultrasonic Cleaning System with BioSonic® UC32 Solution Concentrate.

**Disinfecting:**

1. All exterior surfaces should be disinfected using a cloth soaked with a surface disinfectant or wipe. Alternately, a 45% propanol and detergent solution can be used.

2. Do not allow the disinfectant to invade the interior of the unit or components since this may adversely affect the electronics.

3. Allow the surface disinfectant to reside on the surface for a minimum of three minutes. Do not allow the disinfectant to dry on the surface.

4. Using clean tap water on a clean cloth. Wipe away residual disinfectant.

Isopropanol based disinfectants (ex. Caviwipes®) are not recommended.

---

* CaviWipes® is not a trademark of Coltène/Whaledent.
**Drying:**
1. Use a clean dry cloth to dry exterior surfaces. Do not allow fluids to accumulate (in the case of the handpiece) as this may adversely affect the electronics.

**Sterilizing:**

Package in an FDA approved wrap prior to sterilization. Sterilization can be performed using either method A or B below:

A. In a gravity autoclave at 132°C/270°F (≥30psig) for 15 minutes with a 15-30 minute drying time.

B. In a pre-vacuum sterilizer at 132°C/270°F for 4 minutes with a 20-30 minute drying time.

**4.2 Elite / Elite Plus Polisher**

1. Unscrew the powder container from the cap and fill the powder container with BioSonic Suvi powder up to MAX.

2. Screw the container back onto the cap.

3. Connect the powder container cap to the connectors on the right side of the unit.

4. Connect the medicament bottle to the unit, see instruction section 2.4 (Elite Plus).
5. Gently slide the grip on to the polisher handpiece.

6. Screw the polisher nozzle clockwise into the handpiece. Tighten until stop.

7. Turn on the polisher by pressing the button marked "P" on the front side of the scaler. The blue polisher indicator light illuminates.

8. The light indicators next to the working modes buttons are flashing to remind that a working mode has to be selected. If several blue indicators are flashing instead, check that the polisher is connected. If the problem remains, consult the trouble shooting section. Choose working mode 2 or 3 by pressing the corresponding working mode key on the keyboard (see note).

9. A second press of the “P” key activates the Air-blow mode for cleaning with just air.

10. A third press of the “P” key activates the Water-Jet cleaning mode. No powder, but only water and air, comes out from the nozzle. The Water-Jet mode can also be activated by pressing down the foot control in the leftmost position.

11. By pressing the “P” key repeatedly, it will toggle between normal polishing, Air only and Water-Jet mode.

12. Adjusting water flow for optimal performance
   a. Point the handpiece towards the cuspidor bowl or sink.
      Depress the foot control panel to activate the polisher and adjust the water flow on the powder container. Refer to the equipment description.
   b. Hold the polisher nozzle approximately 1 cm (0.4 in.) downright from the bottom of the bowl and press the foot control pedal to activate the polisher.
   c. Slowly reduce the water flow until the powder starts to accumulate on the surface as a white spot.
   d. Increase the water flow until the spot just disappears. The air polisher is now balanced for optimum performance.

13. Perform polishing treatment according to “How to use the polisher” section on next page.

**Water-Jet Cleaning**

With the foot control pedal pressed down in the leftmost position, the “Water-jet” cleaning mode is activated supplying air and water through the nozzle for cleaning.
Polishing power
The polishing power is controlled on the control panel.

Air purge quick cleaning function
With the polisher mode active, a press on the C button will air purge the handpiece for a few seconds. Air purge the handpiece after each treatment to prevent clogging. If the Air purge is not performed the indicator next to the “C” key will flash as a reminder. Running an Air purge resets the Remind function.

How to use the Elite / Elite Plus polisher
Polishing is suitable for the following procedures:
• Efficient removal of heavy stains and dental plaque.
• Cleaning teeth prior to bleaching.
• Cleaning pits and fissures prior to sealant placement.
• Surface cleaning prior to any acid etch or bonding procedure.
• Cleaning orthodontically banded or bracketed teeth.
• Cleaning of implants.

1. Protective eyewear should be worn by the patient and operator. Contact lenses should not be worn, or a close fitting eye shield should be provided.
2. The jet should be kept constantly moving in small circles. It should not be directed at the same spot too long. The nozzle shall be held approximately 3 mm (0.12 in.) from the surface.
3. The polisher will be most effective when directing the jet downright towards the tooth although the spray should be directed away from the gingiva onto the tooth.
4. Only one or two teeth should be polished at a time, with frequent rinsing performed. An efficient intraoral evacuation system will prevent excessive build-up of fluid and increase patient comfort.

A short learning period is required by the operator, as with any new technique, until the ideal angulations, soft tissue protection and an effective treatment can be achieved.

After polisher treatment
1. Without removing the nozzle, place the polisher handpiece over the cuspidor bowl or sink and press the cleaning key “C”.
2. The polisher air purges the handpiece for a few seconds.
3. After the cleaning cycle is finished, unscrew the nozzle from the handpiece.
4. Wash the nozzle in an ultrasonic bath (40-50°C/104°F-122°F), for at least 3 minutes, before cleaning/sterilization. If ultrasonic cleaning is not possible, flush the nozzle in warm water.
5. Squeeze the grip gently at the top and at the same time slide it off the handpiece. Do not squeeze the grip too hard as this can make the removal difficult.
6. Remove the powder container.
7. Before removing the medicament bottle, press the depressurization button.
8. Pull the medicament bottle from the unit.
9. Clean and sterilize the equipment/components according to the Cleaning and Maintenance section 5.
5 Cleaning and Maintenance

5.1 General Cleaning Procedures

Air purge quick cleaning function
With the polisher mode active, a press on the C button will air purge the handpiece for a few seconds. Air purge the handpiece after each treatment to prevent clogging.

Automatic cleaning function for the scaler and polisher
1. Turn off the scaler or polisher by pressing the “S” or “P” key for 3 seconds. The blue function indicator turns off.
2. Make sure the water control is fully open.
3. Place the scaler and/or the polisher handpiece over the cuspidor bowl or sink and first press the cleaning key “C” and then the S and/or the P key.
4. The cleaning cycle starts and stops automatically after 80 seconds.

Cleaning of the equipment/components

Cleaning:
1. Initial cleaning of the Piezo tips must begin immediately after use to prevent drying of soil and contaminants in and on the device.
2. All exterior surfaces may be soaked in surface disinfectant to remove gross soil. Examine the Piezo tip for damage and discard if excessive wear, broken tip or distortion is noted.
3. Clean thoroughly using an ultrasonic cleaner such as the Coltène/Whaledent BioSonic® Ultrasonic Cleaning System with BioSonic® UC32 Solution Concentrate.

Disinfecting:
1. All exterior surfaces should be disinfected using a cloth soaked with a surface disinfectant or wipe. Alternately, a 45% propanol and detergent solution can be used.
2. Do not allow the disinfectant to invade the interior of the unit or components since this may adversely affect the electronics.
3. Allow the surface disinfectant to reside on the surface for a minimum of three minutes. Do not allow the disinfectant to dry on the surface.
4. Using clean tap water on a clean cloth, wipe away residual disinfectant.

Drying:
1. Use a clean dry cloth to dry exterior surfaces. Do not allow fluids to accumulate (in the case of the handpiece) as this may adversely affect the electronics.

Note
Always set the water flow to fully open before running the cleaning cycle.

CAUTION
The automatic cleaning function must always be performed with the polisher nozzle mounted in the handpiece.

CAUTION
Isopropanol based disinfectants (ex. Caviwipes®) are not recommended.

* CaviWipes® is not a trademark of Coltène/Whaledent.
**Sterilizing:**
Package in an FDA approved wrap prior to sterilization. Sterilization can be performed using either method A or B below:

A. In a gravity autoclave at 132°C/270°F (≥30psig) for 15 minutes with a 15-30 minute drying time.

B. In a pre-vacuum sterilizer at 132°C/270°F for 4 minutes with a 20-30 minute drying time.

**Sterilizable Components:**

<table>
<thead>
<tr>
<th>Scaler tips</th>
<th>![Scaler tip image]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polisher nozzle</td>
<td>![Polisher nozzle image]</td>
</tr>
<tr>
<td>Torque wrenches</td>
<td>![Torque wrenches image]</td>
</tr>
<tr>
<td>Grip for handpiece</td>
<td>![Grip image]</td>
</tr>
<tr>
<td>Handpiece</td>
<td>![Handpiece image]</td>
</tr>
</tbody>
</table>

**5.2 Routine Cleaning Procedures**

**Beginning of the day**
Run the automatic cleaning cycle with clean water for both the scaler and polisher. See section 5.1.

**After each treatment**
- To prevent clogging, air purge the polisher handpiece after each treatment. See instructions on page 22.
- Run the automatic cleaning cycle with clean water for both the scaler and polisher. See section 5.1.
- Wipe off the cover, control panel, handpieces and the hoses with a soft cloth. Use a surface disinfectant suitable for hard plastics.
- Wash the nozzle in an ultrasonic bath 40-50°C (104°F-122°F), for at least 3 minutes, before cleaning/sterilization. If ultrasonic cleaning is not possible, flush the nozzle in warm water.
- Wash the grip, the tip (and/or nozzle) and if necessary the scaler hand piece and sterilize according to the instructions above.
End of the day
- Run the automatic cleaning cycle with clean water for both the scaler and polisher handpiece. See instructions in section 5.1.
- Remove and wash medicament bottle, bottle cap and powder container at a maximum temperature of 65°C (149°F).
- Wipe off the powder container cap with a soft cloth. Use a surface disinfectant suitable for hard plastics.

Weekly (Elite Plus)
- With an antimicrobial cleaning agent solution in the bottle, run the automatic cleaning cycle. See instructions in section 5.1. It is recommended that a separate bottle be used for the cleaning agent solution. Follow instructions given by manufacturer with regards to the exposure time of the die cleaning agent.
- Before patient treatment; to rinse the lines from cleaning agent solution, put clean water in bottle and run the automatic cleaning cycle until clean water comes out of the handpiece.

5.3 Maintenance

Power cord
Inspect the power cord, cables and the handpiece hose daily to ensure that the equipment is in good condition without mechanical damage.

O-rings (bottle and powder container connectors, polisher nozzle)
Lubricate the O-rings regularly with a glycerine based, water soluble lubricant. Vaseline® may also be used, but it may shorten the durability life of the O-rings.

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

Exchanging fuses
1. Disconnect the power cord from the AC power outlet and the unit.
2. Open the fuse holder on the rear side of the unit.
3. Inspect the fuses for damages. Replace damaged fuses with new ones. Verify the fuse specifications according to the Technical data section 7.
4. Close the fuse holder.

* Vaseline® is not a trademark of Coltène/Whaledent.
## 6 Troubleshooting Elite / Elite Plus

<table>
<thead>
<tr>
<th>Type of problem</th>
<th>Scaler</th>
<th>Polisher</th>
<th>Please see</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Unit is not responding and no lights are lit on the control panel</td>
<td>X</td>
<td>X</td>
<td>Page 27</td>
</tr>
<tr>
<td>B. Lights are flashing on the control panel</td>
<td>X</td>
<td>X</td>
<td>Page 28</td>
</tr>
<tr>
<td>C. Difficulty in removing the grip</td>
<td>X</td>
<td>X</td>
<td>Page 28</td>
</tr>
<tr>
<td>D. Weak or no LED light</td>
<td>X</td>
<td>X</td>
<td>Page 28</td>
</tr>
<tr>
<td>E. No tip vibration</td>
<td>X</td>
<td></td>
<td>Page 29</td>
</tr>
<tr>
<td>F. Weak tip vibration</td>
<td>X</td>
<td></td>
<td>Page 29</td>
</tr>
<tr>
<td>G. Insufficient or no water flow</td>
<td>X</td>
<td></td>
<td>Page 29</td>
</tr>
<tr>
<td>H. Tip does not fit smoothly onto the handpiece</td>
<td>X</td>
<td></td>
<td>Page 30</td>
</tr>
<tr>
<td>I. Handpiece is overheated</td>
<td>X</td>
<td></td>
<td>Page 30</td>
</tr>
<tr>
<td>J. Insufficient or no water flow (Polisher)</td>
<td></td>
<td>X</td>
<td>Page 30</td>
</tr>
<tr>
<td>K. Insufficient or no powder flow</td>
<td></td>
<td>X</td>
<td>Page 30</td>
</tr>
<tr>
<td>L. Water drips from the bottom of the device onto the table</td>
<td>X</td>
<td>X</td>
<td>Page 30</td>
</tr>
</tbody>
</table>

### A. Unit is not responding and no lights are lit on the control panel

1. Check that the power cord is connected properly and double check the voltage (100/115/230V).
2. Check the fuse and replace if necessary. See section 5.3.
3. Check that the wall outlet and the fuse panel are OK.
4. If the problem still remains – contact your dealer for support and indicate Error Code E-X02.
B. Lights are flashing on the control panel

<table>
<thead>
<tr>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five blue lights on the control panel are flashing simultaneously</td>
<td>Check that the foot pedal cable is connected at both ends and is not damaged.</td>
</tr>
<tr>
<td>The blue lights next to the &quot;S&quot; and &quot;P&quot; keys are flashing alternately when pressing the foot control pedal</td>
<td>The Scaler/Polisher has not been switched on. Press the &quot;S&quot; key to select the scaler or press the &quot;P&quot; key to select the polisher.</td>
</tr>
<tr>
<td>The blue light next to the &quot;S&quot; key is flashing alternately with three other blue lights on the control panel.</td>
<td>Check that the scaler handpiece is properly connected.</td>
</tr>
<tr>
<td>The blue light next to the &quot;P&quot; key is flashing alternately with three other blue lights on the control panel.</td>
<td>Check that the polisher tubing is properly connected. Make sure to press the &quot;P&quot; key in all the way.</td>
</tr>
<tr>
<td>Two or three yellow lights are flashing in sequence.</td>
<td>The Working Mode has not been selected. Select the working mode by pressing one of the keys next to the yellow lights.</td>
</tr>
<tr>
<td>The light next to the &quot;C&quot; key flashes twice and pauses.</td>
<td>The device reminds of the need to activate the polisher cleaning cycle by pressing the &quot;C&quot; key. Please see user manual for details.</td>
</tr>
<tr>
<td>The light next to the &quot;C&quot; key is flashing continuously.</td>
<td>The cleaning function has been activated. Wait until the cleaning process has finished and the light stops flashing.</td>
</tr>
</tbody>
</table>

C. Difficulty in removing the grip from the handpiece

1. Grab the grip gently near the lens and at the same time twist and slide it off the handpiece.
2. If the problem still remains, replace the grip.

D. Weak or no LED light

1. Check that lens in the grip is clear and clean. Clean or replace if necessary.
2. If you have an additional scaler handpiece (or polisher tubing), try replacing the scaler handpiece (or polisher tubing).
3. If the problem still remains contact your dealer for support and indicate Error Code “E-S03 - No light in scaler handpiece” or “E-P03 - No light in polisher handpiece”.

28
E. No tip vibration

1. Check that the tip is firmly tightened. Preferably use a torque wrench and tighten clockwise until the torque wrench begins to slip. (The torque wrench prevents the tip from being over tightened.)

2. Check that the green light below the keys on the control panel is lit. If it is not lit, please see Section A on page 27.

3. Check that the device has been turned on by pressing the "S" key and that the blue light next to the "S" key is lit.

4. Check that the Working Mode has been selected by pressing one of the Working Mode keys and that one of the yellow lights on the control panel is lit.

5. If you have an additional handpiece, try replacing the handpiece.

6. If you have an additional foot pedal cable, try replacing the foot pedal cable.

7. If you have an additional foot control pedal, try replacing the foot control pedal.

8. If the problem still remains, contact your dealer for support and indicate Error Code “E S01 No vibration” or “E-S02 Low power / vibration”.

F. Weak tip vibration

1. Check that the tip is firmly tightened. Preferably use a torque wrench and tighten clockwise until the torque wrench begins to slip. (The torque wrench prevents the tip from being over tightened.)

2. Check that the tip is not worn out. Use a tip check card to evaluate wear or try an unused tip. Use original BioSonic Suvi tips for reliable performance.

3. If you have an additional handpiece, try replacing the handpiece.

4. If the problem still remains, contact your dealer for support and indicate “Error Code E-S02”.

G. Insufficient or no water flow (Scaler)

1. Check that dry mode is not activated i.e. that the blue light next to the crossed-out water drop is not lit. If it is lit, press the “S” key.

2. Adjust the water control ring on the handpiece to fully open (dots aligned).

3. If the unit is equipped with a medicament bottle check that the medicament bottle is properly connected (i.e. the cap is tightened and pushed in all the way onto the connector). Check that the o-rings on cap and connector are in good condition. Replace o-rings if worn. O-rings can be lubricated with a glycerine based lubricant (or Vaseline®*).

4. If the unit is connected to tap water check that the tap water hose is properly connected to the back of the device and that the tap water system is OK (tap/valve is open and the filter is OK).

5. Try another tip.

6. If the problem still remains contact your dealer for support and indicate “”Error Code E-S04”.

---

* Vaseline® is not a trademark of Coltène/Whaledent.
**H. Tip does not fit smoothly onto the handpiece**

1. Clean handpiece threads with compressed air and try a new tip.
2. If the problem still remains, the threads of the handpiece may be damaged and the handpiece needs to be replaced. Contact your dealer and indicate “Error Code E-S06”.

**I. Handpiece is overheated during use**

1. Check that the fluid flow is sufficient (at least 20 ml/min).
2. If the problem still remains, replace the handpiece and contact your dealer.

**J. Insufficient or no water flow (Polisher)**

1. Check that Air Blow mode is not activated (i.e. that the blue light next to the crossed-out water drop is not lit). If it is lit, press the “P” key.
2. Adjust water control on powder container cap to fully open.
3. If the unit is equipped with a water bottle, check that the medicament/water bottle is properly connected (i.e. the cap is tightened and pushed in all the way onto the connector). Check that the o-rings on cap and connector are in good condition. Replace o-rings if worn. O-rings can be lubricated with a glycerine based lubricant, (or Vaseline®)*
4. If the unit is equipped with a tap water connection, check that the tap water hose is properly connected to the back of the device and that the tap water system is OK (tap/valve is open and the filter is OK).
5. Gently check that the nozzle is fully tightened.
6. If you have an additional nozzle, replace the nozzle.
7. If the problem still remains contact your dealer for support and indicate Error Code E-P04.

**K. Insufficient or no powder flow**

1. Check that there is powder in the powder container and that the o-ring in the cap is in correct position.
2. If you have an additional nozzle, replace the nozzle. A clogged nozzle may be cleaned in an ultrasonic bath or in citric acid.
3. Unscrew and remove the powder container, nozzle and grip and blow with compressed air into the handpiece.
4. If the problem still remains contact your dealer for support.

**L. Water drips from the bottom of the device onto the table**

1. The BioSonic Suvi Elite/Elite Plus has a built-in water trap that removes humidity from the pressurized air coming from the compressor. The water trap condenses the humidity in the pressurized air into water which is then released underneath the device. Normally there is no water at all or a very small amount (a few drops). If the amount of water is significant, the compressor of your clinic may need service. Please contact the manufacturer or dealer of your compressor.

* Vaseline® is not a trademark of Coltène/Whaledent.
# 7 Technical Data

| Manufactured for: | Coltène/Whaledent Inc.  
|                  | 235 Ascot Parkway  
|                  | Cuyahoga Falls, OH 44223 / USA |
| Model            | Elite / Elite Plus |
| Classification   | EN60601-1: Class 1, Type B  
|                  | 93/42 EU: Medical products, class IIa |
| L x W x H        | 270 x 110 x 165 mm (without bottle and powder container) |
| Weight           | 3400 g |
| Voltage          | 100 Vac, 50-60 Hz  
|                  | 115 Vac, 50-60 Hz  
|                  | 230 Vac, 50-60 Hz |
| Primary fuse     | T500 mAh, 250 V, Ø5x20 mm (100 Vac)  
|                  | T400 mAh, 250 V, Ø5x20 mm (115 Vac)  
|                  | T200 mAh, 250 V, Ø5x20 mm (230 Vac) |
| Power cord       | Separate with protective ground plug |
| Power consumption| Max. 40 VA |
| Scaler power consumption | Max. 24 VA |
| Scaler power output | Max. 10 W (24 kHz - 28 kHz, automatic tuning) |

## Ambient Temperature

- Transport and storage: 
  - +70°C (158°F)  
  - -40°C (-40°F)

- Operation:  
  - 40°C (104°F)  
  - 10°C (50°F)

## Relative Humidity

- Transport and storage: 
  - 100%  
  - 95%  
  - 10%

- Operation:  
  - 100%  
  - 95%  
  - 10%
Medicaments that can be used with the Elite Plus Unit

- Clean water
- Cetylpyridinium chloride
- Chlorhexidine (Canal Pro™ CHX)
- Essential oils
- Hydrogen peroxide, 3% USP
- Povidine iodine, 10% solution
- Saline solution
- Sangurinara extract
- Sodium hypochlorite, 1% solution

Immediately after using any kind of medicament in the medicament bottle, run the automatic cleaning cycle with clean water in the medicament bottle for both the scaler and the polisher until clean water comes out of the handpieces.
8 Warranty and Declaration of Conformity

8.1 Warranty Terms

All items are manufactured to impeccable standards and have been developed specifically for use in dentistry and are intended to be operated only by dental professionals in accordance with the instructions contained in this guide. However, notwithstanding anything contained herein, the user shall at all times be solely responsible for determining the suitability of the product for the intended purpose and the method of its use. Any guidance on application technology offered by or on behalf of the manufacturer, whether written, verbal or by demonstration, shall not relieve the dental professional of his/her obligation to control the product and to make all professional judgments regarding its use.

Coltène/Whaledent products are manufactured from new parts or new and serviceable used parts. Regardless, our warranty terms apply. The products are guaranteed in accordance with the terms of the written Certificate of Limited Warranty.

Coltène/Whaledent Inc. provides no warranties or guarantees covering this product, expressed or implied, including, without limitation, any warranties as to merchantability or fitness for use. Coltène/Whaledent Inc. assumes no responsibility for any inconvenience, loss, injury, or direct, indirect, or consequential damage arising from the possession or use of the product.

Tampering with any of the components, misuse, negligence, alteration, water damage, accident, or lack of reasonable or proper maintenance and care will void the warranty. Any claim for damage or breakage in transit should be made at once against the carrier. If factory service is required, be certain to properly pack your equipment and return prepaid and insured to the factory. Please refer to the Certificate of Limited Warranty for warranty terms and conditions.
**8.2 Certificate of Limited Warranty**

**CERTIFICATE OF LIMITED WARRANTY**

Coltène/Whaledent (C/W) warrants this product to be free from defects in workmanship and materials for a period of twelve (24) months from the date of original purchase. During such warranty period, C/W undertakes to repair or replace this product, at its option, if such product does not function properly under normal use and service, which malfunction is due solely to a defect in workmanship or material.

This warranty does not cover any of the following:
– Damage caused by accident, abuse, misuse, neglect, alteration, transit, failure to follow manufacturer’s instructions, lack of reasonable and proper maintenance and care, or Acts of God.
– Normal wear and tear (i.e.: bulbs, fuses, etc.).
– Minor imperfections that do not materially affect the product’s performance.
– Use of the product by anyone other than a licensed dental practitioner or qualified dental hygienist.

This warranty shall become null and void if any repair or servicing of the product is made or attempted by any person not authorized by C/W, or if any part not authorized by C/W is used in any repair or servicing.

This warranty is in lieu of any and all other warranties relating to the product, expressed or implied, including, without limitation, implied warranties of merchantability and fitness for a particular purpose. In no event shall C/W be liable for direct, indirect, tort, exemplary, punitive, special, incidental, or consequential damages arising from the possession or use of the product, including but not limited to loss of use of the product, lost revenues or profits, or the cost of substitute equipment. The limitations provided for herein shall inure to the benefit of C/W’s suppliers and subcontractors.

This Certificate of Limited Warranty is valid only if it has been completed with date of purchase and dealer’s name.

If this product becomes defective during the warranty period, it must be delivered together with this Certificate of Limited Warranty and a written warranty claim to the C/W dealer from which it was originally purchased. All warranty claims must include a detailed written description of the claimed defect. The purchaser will be responsible for all costs and risks of transit, and we therefore suggest that the product be carefully packed and that it be shipped to the dealer insured for its full value.

Register your product warranty by either option 1 or 2:

**#1. Please return the following information to**

Coltene/Whaledent Inc.
235 Ascot Parkway
Cuyahoga Falls, Ohio 44223

Name and Address of Purchaser:
Distributors Name and Address:
Phone:
Email:
Model Number:
Date of Purchase:
Serial Number:

**#2. Register your product warranty at: http://warranty.coltene.com**
# 8.3 EMC - Guidance and Manufacturer’s Declaration

## Guidance and manufacturer’s declaration - electromagnetic emissions

The BioSonic Suvi is intended for use in the electromagnetic environment specified below. The customer or the user of the BioSonic Suvi should assure that it is used in such an environment.

<table>
<thead>
<tr>
<th>Emission test</th>
<th>Compliance</th>
<th>Electromagnetic environment - guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF emissions CISPR 11</td>
<td>Group 1</td>
<td>The BioSonic Suvi uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.</td>
</tr>
<tr>
<td>RF emissions CISPR 11</td>
<td>Class B</td>
<td>The BioSonic Suvi is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.</td>
</tr>
<tr>
<td>Harmonic emissions IEC 61000-3-2</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Voltage fluctuations/ flicker emissions IEC 61000-3-3</td>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>

## Guidance and manufacturer’s declaration - electromagnetic immunity

The BioSonic Suvi is intended for use in the electromagnetic environment specified below. The customer or the user of the BioSonic Suvi should assure that it is used in such an environment.

<table>
<thead>
<tr>
<th>Immunity test</th>
<th>IEC 60601 test level</th>
<th>Compliance level</th>
<th>Electromagnetic environment - guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrostatic discharge (ESD) IEC 61000-4-2</td>
<td>±6 kV contact ±8 kV air</td>
<td>±6 kV contact ±8 kV air</td>
<td>Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.</td>
</tr>
<tr>
<td>Electrical fast transient/burst IEC 61000-4-4</td>
<td>±2 kV for power supply lines ±1 kV for input/output lines</td>
<td>±2 kV for power supply lines ±1 kV for input/output lines</td>
<td>Mains power quality should be that of a typical commercial or hospital environment.</td>
</tr>
<tr>
<td>Surge IEC 61000-4-5</td>
<td>±1 kV differential mode ±2 kV common mode</td>
<td>±1 kV differential mode ±2 kV common mode</td>
<td>Mains power quality should be that of a typical commercial or hospital environment.</td>
</tr>
<tr>
<td>Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11</td>
<td>&lt;5 % $U_T$ (&gt;95 % dip in $U_T$) for 0.5 cycle 40 % $U_T$ (60 % dip in $U_T$) for 5 cycles 70 % $U_T$ (30 % dip in $U_T$) for 25 cycles &lt;5 % $U_T$ (&gt;95 % dip in $U_T$) for 5 sec</td>
<td>&lt;5 % $U_T$ (&gt;95 % dip in $U_T$) for 0.5 cycle 40 % $U_T$ (60 % dip in $U_T$) for 5 cycles 70 % $U_T$ (30 % dip in $U_T$) for 25 cycles &lt;5 % $U_T$ (&gt;95 % dip in $U_T$) for 5 sec</td>
<td>Mains power quality should be that of a typical commercial or hospital environment. The BioSonic Suvi requires continued operation during power mains interruption, it is recommended that the BioSonic Suvi be powered from an uninterruptible power supply or battery.</td>
</tr>
<tr>
<td>Power frequency (50/60 Hz) magnetic field IEC 61000-4-8</td>
<td>3 A/m</td>
<td>3 A/m</td>
<td>Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.</td>
</tr>
</tbody>
</table>

NOTE $U_T$ is the a.c. mains voltage prior to application of the test level.
**Guidance and manufacturer’s declaration - electromagnetic immunity**

The BioSonic Suvi is intended for use in the electromagnetic environment specified below. The customer or the user of the BioSonic Suvi should assure that it is used in such an environment.

<table>
<thead>
<tr>
<th>Immunity test</th>
<th>IEC 60601 test level</th>
<th>Compliance level</th>
<th>Electromagnetic environment - guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conducted RF</td>
<td>IEC 61000-4-6</td>
<td>3 Vrms</td>
<td>150 kHz to 80 MHz</td>
</tr>
<tr>
<td>Radiated RF</td>
<td>IEC 61000-4-3</td>
<td>3 V/m</td>
<td>80 MHz to 2,5 GHz</td>
</tr>
</tbody>
</table>

Portable and mobile RF communications equipment should be used no closer to any part of the BioSonic Suvi including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.

**Recommended separation distance**

\[ d = 1.2 \sqrt{P} \]

\[ d = 1.2 \sqrt{P} \quad 80 \text{ MHz to 800 MHz} \]

\[ d = 2.3 \sqrt{P} \quad 800 \text{ MHz to 2.5 GHz} \]

Field strengths from fixed RF transmitters as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range.

Interference may occur in the vicinity of equipment marked with the following symbol:

---

**NOTE 1** At 80 MHz and 800 MHz, the higher frequency range applies.

**NOTE 2** These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

\[ a \] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the BioSonic Suvi is used exceeds the applicable RF compliance level above, the BioSonic Suvi should be observed to verify normal operation. If abnormal performance is observed additional measures may be necessary, such as reorienting or relocating the BioSonic Suvi.

\[ b \] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.
The BioSonic Suvi is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the equipment can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the BioSonic Suvi as recommended below, according to the maximum output power of the communications equipment.

<table>
<thead>
<tr>
<th>Rated maximum output power of transmitter W</th>
<th>Separation distance according to frequency of transmitter m</th>
<th>150 kHz to 80 MHz</th>
<th>80 MHz to 800 MHz</th>
<th>800 MHz to 2.5 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01</td>
<td>$d = 1,2\sqrt{P}$</td>
<td>0.12</td>
<td>0.12</td>
<td>0.23</td>
</tr>
<tr>
<td>0.1</td>
<td>$d = 1,2\sqrt{P}$</td>
<td>0.38</td>
<td>0.38</td>
<td>0.73</td>
</tr>
<tr>
<td>1</td>
<td>$d = 2,3\sqrt{P}$</td>
<td>1.2</td>
<td>1.2</td>
<td>2.3</td>
</tr>
<tr>
<td>10</td>
<td>$d = 2,3\sqrt{P}$</td>
<td>3.8</td>
<td>3.8</td>
<td>7.3</td>
</tr>
<tr>
<td>100</td>
<td>$d = 2,3\sqrt{P}$</td>
<td>12</td>
<td>12</td>
<td>23</td>
</tr>
</tbody>
</table>

For transmitters rated at a maximum output power not listed above, the recommended separation distance $d'$ in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where $P$ is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

**NOTE 1** At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

**NOTE 2** These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.
## Order Information -- SUVI Elite/Elite Plus

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Unit Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>60014239</td>
<td>Biosonic Suvi Elite (tap water) USA Plug Type B</td>
<td></td>
</tr>
<tr>
<td>600014240</td>
<td>BioSonic Suvi Elite Plus (Medicament Feeder) USA Plug Type B</td>
<td></td>
</tr>
<tr>
<td>60014259</td>
<td>Medicament Feeder Bottle with connector, 500ml</td>
<td>1</td>
</tr>
<tr>
<td>60014260</td>
<td>Polishing Powder Container, Transparent</td>
<td>1</td>
</tr>
<tr>
<td>60014261</td>
<td>Handpiece - Piezo</td>
<td>1</td>
</tr>
<tr>
<td>60014262</td>
<td>Handpiece - Air Polisher with tubing and polisher bottle</td>
<td>1</td>
</tr>
<tr>
<td>60018763</td>
<td>Suvi Grip (Color: Lime)</td>
<td>4</td>
</tr>
<tr>
<td>60018764</td>
<td>Suvi Grip (Color: Lilac)</td>
<td>4</td>
</tr>
<tr>
<td>60018765</td>
<td>Suvi Grip (Color: Pink)</td>
<td>4</td>
</tr>
<tr>
<td>60018766</td>
<td>Suvi Grip (Color: Blue)</td>
<td>4</td>
</tr>
<tr>
<td>60019328</td>
<td>Subgingival Nozzle</td>
<td>1</td>
</tr>
<tr>
<td>60018486</td>
<td>Polishing Nozzle Hooked</td>
<td>1</td>
</tr>
<tr>
<td>60018485</td>
<td>Polishing Nozzle Universal</td>
<td>1</td>
</tr>
<tr>
<td>60014456</td>
<td>Torque tip wrench slim design</td>
<td>1</td>
</tr>
<tr>
<td>60014454</td>
<td>Universal tip wrench slim design (H)</td>
<td>1</td>
</tr>
<tr>
<td>60014455</td>
<td>Universal tip wrench plastic</td>
<td>1</td>
</tr>
<tr>
<td>60014457</td>
<td>Endo wrench</td>
<td>1</td>
</tr>
</tbody>
</table>

### Polishing Powders

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Unit Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>60018747</td>
<td>Cherry SBX Polishing Powder, 250g</td>
<td>4</td>
</tr>
<tr>
<td>60016748</td>
<td>Spearmint SBX Polishing Powder</td>
<td>4</td>
</tr>
<tr>
<td>60018749</td>
<td>Neutral SBX Polishing Powder</td>
<td>4</td>
</tr>
<tr>
<td>60018750</td>
<td>Lemon SBX Polishing Powder</td>
<td>4</td>
</tr>
<tr>
<td>60018751</td>
<td>Rasperry SBX Polishing Powder</td>
<td>4</td>
</tr>
<tr>
<td>60018752</td>
<td>Neutral CC Polishing Powder</td>
<td>4</td>
</tr>
<tr>
<td>Catalog No.</td>
<td>Description</td>
<td>Category</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>60014265</td>
<td>PE-31</td>
<td>Heavy Calculus Removal</td>
</tr>
<tr>
<td>60014266</td>
<td>PE-32</td>
<td>Heavy Calculus Removal</td>
</tr>
<tr>
<td>60014267</td>
<td>PE-39</td>
<td>Heavy Calculus Removal</td>
</tr>
<tr>
<td>60014268</td>
<td>PE-41A</td>
<td>Heavy Calculus Removal</td>
</tr>
<tr>
<td>60014269</td>
<td>PE-37</td>
<td>Universal tip for Scaling</td>
</tr>
<tr>
<td>60014270</td>
<td>PE-37L</td>
<td>Universal tip for Scaling</td>
</tr>
<tr>
<td>60014271</td>
<td>PE-37R</td>
<td>Universal tip for Scaling</td>
</tr>
<tr>
<td>60014272</td>
<td>PE-41P</td>
<td>Universal tip for Scaling</td>
</tr>
<tr>
<td>60014273</td>
<td>PE-41AF</td>
<td>Universal tip for Scaling</td>
</tr>
<tr>
<td>60014274</td>
<td>PE-41PF</td>
<td>Universal tip for Scaling</td>
</tr>
<tr>
<td>60014275</td>
<td>PE-33</td>
<td>Periodontics</td>
</tr>
<tr>
<td>60014276</td>
<td>PE-33L</td>
<td>Periodontics</td>
</tr>
<tr>
<td>60014277</td>
<td>PE-33R</td>
<td>Periodontics</td>
</tr>
<tr>
<td>60014278</td>
<td>PE-38</td>
<td>Periodontics</td>
</tr>
<tr>
<td>60014279</td>
<td>PE-38L</td>
<td>Periodontics</td>
</tr>
<tr>
<td>60014280</td>
<td>PE-38R</td>
<td>Periodontics</td>
</tr>
<tr>
<td>60014281</td>
<td>PE-40</td>
<td>General Scaling</td>
</tr>
<tr>
<td>60014282</td>
<td>PE-40L</td>
<td>General Scaling</td>
</tr>
<tr>
<td>60014283</td>
<td>PE-40R</td>
<td>General Scaling</td>
</tr>
<tr>
<td>60014284</td>
<td>PE-40H</td>
<td>General Scaling</td>
</tr>
<tr>
<td>60014285</td>
<td>PE-41PS</td>
<td>General Scaling</td>
</tr>
<tr>
<td>60014286</td>
<td>IM-1</td>
<td>Scaling Implant maintenance - 4/pk</td>
</tr>
<tr>
<td>60014287</td>
<td>IM-2</td>
<td>Scaling Implant maintenance - 4/pk</td>
</tr>
<tr>
<td>60014292</td>
<td>EN-1</td>
<td>Endodontics - Pulp Chamber</td>
</tr>
<tr>
<td>60014303</td>
<td>EN-14</td>
<td>Endodontics - Canal Prep</td>
</tr>
<tr>
<td>60014304</td>
<td>EN-15</td>
<td>Endodontics Canal Prep</td>
</tr>
<tr>
<td>60014305</td>
<td>EN-9</td>
<td>Endodontics - Removal of broken instruments</td>
</tr>
<tr>
<td>60014306</td>
<td>EN-10</td>
<td>Endodontics - Removal of broken instruments</td>
</tr>
<tr>
<td>60014307</td>
<td>EN-15</td>
<td>Endodontics - Removal of broken instruments</td>
</tr>
<tr>
<td>60014308</td>
<td>FH-1</td>
<td>Endodontics - File &amp; Instrument Holder</td>
</tr>
<tr>
<td>60014309</td>
<td>FH-2</td>
<td>Endodontics - File &amp; Instrument Holder</td>
</tr>
<tr>
<td>60014310</td>
<td>FH-3</td>
<td>Endodontics - File &amp; Instrument Holder</td>
</tr>
<tr>
<td>60014311</td>
<td>IH-1</td>
<td>Endodontics - File &amp; Instrument Holder</td>
</tr>
<tr>
<td>60014312</td>
<td>IH-2</td>
<td>Endodontics - File &amp; Instrument Holder</td>
</tr>
<tr>
<td>60014321</td>
<td>SP-34</td>
<td>Special Purpose</td>
</tr>
<tr>
<td>60014322</td>
<td>SP-34S</td>
<td>Special Purpose</td>
</tr>
<tr>
<td>60014323</td>
<td>SP-35</td>
<td>Special Purpose</td>
</tr>
<tr>
<td>60014324</td>
<td>SP-35A</td>
<td>Special Purpose</td>
</tr>
<tr>
<td>60014325</td>
<td>SP-35B</td>
<td>Special Purpose</td>
</tr>
<tr>
<td>60014326</td>
<td>SP-35C</td>
<td>Special Purpose</td>
</tr>
</tbody>
</table>