



**Installation**  
**Operation**  
**Maintenance**  
**Troubleshooting**  
Version 2.1, Oct/11



*Biscayne E.L.*

# INDEX

---

Dear Customer	3
Product Description	3
Classifications	4
General Data	8
Technical Specifications	9
Technical Specifications and Product Label	9
Transportation and Storage Conditions	9
Product Symbols	10
Packing Symbols	10
Dimensions	11
Installation	12
Special Care for Installation	12
Fixing the Chair to the Floor	12
Operation	13
Foot Control	13
Light Activation through Foot Control	13
Headrest	13
Maintenance	14
Recommendations for the Dental Equipment Maintenance & Operation	14
Replacing the Fuse	14
Cleaning the Equipment	15
Precautions	15
Troubleshooting	16
Warranty	17
Final Considerations	18

# DEAR CUSTOMER

---

Congratulations! All of us at Summit Dental Systems want you to know that your Biscayne E.L. Chair has been built with the finest materials available. The assembly and testing was completed by technicians devoted to making Summit Dental Systems products perform to all prescribed specifications. Our five year limited warranty is just one of the ways we express our confidence that you will be completely satisfied with your purchase. We appreciate your support and look forward to meeting your future professional needs through our expanding product line.

This manual is a general presentation of your product and it will give you important details to help you solve possible problems. Please read this manual thoroughly and keep it for future reference.

## PRODUCT DESCRIPTION

---

The Biscayne E.L. Dental Chair was designed for the seating of patients during dental treatments. It features automatic movements used to work with left-handed and right-handed professionals. Automatic movements are powered by a DC motor.

The chair is operated by a foot control, that has 7 control functions including adjustment of the dental light intensity, seat and backrest movements, return to initial entry/exit position, and a programmable preposition which is set by the professional.

The chair has an innovative and modern round-edged design that includes a curved backrest which provides patients with ultimate comfort and allows for the best working position for the professional.

The base is ergonomically designed, made of steel, and protected by debrun antiskid. It has 2 holes that allow for the option of fastening the dental chair to the floor.

The chair has a steel-built structure with a resistant, smooth, high-shine, round-edged coating. It is coated in smooth epoxy coating, polymerized at 482°F (250°C), with phosphate process resistant to rust and cleaning products.

The headrest is removable and height adjustable. Round-edged fixed armrests are designed to ease the patient access and improve the professional's productivity by avoiding unnecessary movements and making cleaning much easier.

### **IMPORTANT:**

- This equipment is for professional use only. It must be operated and utilized by specialized professional (certified professional, according to the legislation of the country) and following the instructions of the manual.
- It is the user's responsibility to only use this equipment if it is in good working condition to protect themselves, the patients, and others from dangerous situations.
- This equipment should not be used in the presence of inflammable anesthetics or products that may cause an explosion.
- To guarantee the safe functioning of your equipment, use only the Summit Dental Systems assembly configurations (Dental Chair, Delivery Units, Assistant's Instrumentation, and Dental Light) supplied by Summit Dental Systems authorized Dealers/Technical Assistance.

# CLASSIFICATIONS

---

- According to the type of protection against electric shock: CLASS I.
- According to the mode of operation: CONTINUOUS DUTY.
- According to the degree of protection against electric shock: TYPE B EQUIPMENT.
- According to the degree of protection against ingress of water: ORDINARY (IPX0) PROTECTION.
- According to the degree of safety of application in the presence of a flammable anesthetic mixture with air, oxygen, or nitrous oxide: EQUIPMENT NOT SUITABLE FOR USE IN THE PRESENCE OF A FLAMMABLE ANAESTHETIC MIXTURE WITH AIR, OR WITH OXYGEN, OR NITROUS OXIDE.

### Guidance and manufacturer's declaration – electromagnetic emissions

The Biscayne E.L. Chair is intended for use in the electromagnetic environment specified below. The customer or the user of the Biscayne E.L. Chair should assure that it is used in such an environment.

EMISSION TEST	COMPLIANCE	ELECTROMAGNETIC ENVIRONMENT GUIDANCE
RF Emissions CISPR 11	Group 1	The Biscayne E.L. Chair 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.
RF Emissions CISPR 11	Class B	The Biscayne E.L. Chair 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.
Harmonic Emissions IEC 61000-3-2	Class A	
Voltage Fluctuations/ flicker emissions IEC 61000-3-3	Complies	

### Guidance and manufacturer's declaration – electromagnetic immunity


The Biscayne E.L. Chair is intended for use in the electromagnetic environment specified below. The customer or the user of the Biscayne E.L. Chair should assure that it is used in such an environment.

IMMUNITY TEST	IEC 60601 TEST LEVEL	COMPLIANCE LEVEL	ELECTROMAGNETIC ENVIRONMENT GUIDANCE
Electrostatic Discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Main power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	± 1 kV differential mode ± 2 kV common mode	Main power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5% $U_T$ (> 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 < 5% $U_T$ (> 95% dip in $U_T$ ) for 5 sec	< 5% $U_T$ (> 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 < 5% $U_T$ (> 95% dip in $U_T$ ) for 5 sec	Main power quality should be that of a typical commercial or hospital environment. If the user of the Biscayne E.L. Chair requires continued operation during power mains interruptions, it is recommended that the Biscayne Chair be powered from an uninterrupted power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE:  $U_T$  is the a.c. mains voltage prior to application of that test level.

### Guidance and manufacturer's declaration – electromagnetic immunity

The Biscayne E.L. Chair is intended for use in the electromagnetic environment specified below. The customer or the user of the Biscayne E.L. Chair should assure that it is used in such an environment.

IMMUNITY TEST	IEC 60601 TEST LEVEL	COMPLIANCE LEVEL	ELECTROMAGNETIC ENVIRONMENT GUIDANCE
<p>Conducted RF IEC 61000-4-6</p> <p>Radiated RF IEC 61000-4-3</p>	<p>3 Vrms 150 kHz to 80 MHz</p> <p>3 V/m 80 MHz to 2.5 GHz</p>	<p>3 Vrms</p> <p>3 V/m</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the Biscayne E.L. Chair, including cables, than the recommended separation distance calculated from equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = 1.2 \sqrt{P}$ $d = 1.2 \sqrt{P} \text{ 80 MHz to 800 MHz}$ $d = 2.3 \sqrt{P} \text{ 800 MHz to 2.5 GHz}$ <p>where <math>P</math> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <math>d</math> is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters as determined by an electromagnetic site survey<sup>a</sup> should be less than the compliance level in each frequency range<sup>b</sup>.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol</p> <div style="text-align: center;">  </div>

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 peoples.

<sup>a</sup> Fields strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateurs radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To access 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 Biscayne E.L. Chair is used exceeds the applicable RF compliance level above, the Biscayne E.L. Chair should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Biscayne E.L. Chair.

<sup>b</sup> Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

**Recommended separation distance between  
portable and mobile RF communications equipment and the Biscayne E.L. Chair**

The Biscayne E.L. Chair is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Biscayne E.L. Chair can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Biscayne E.L. Chair as recommended below, according to the maximum output power of the communications equipment.

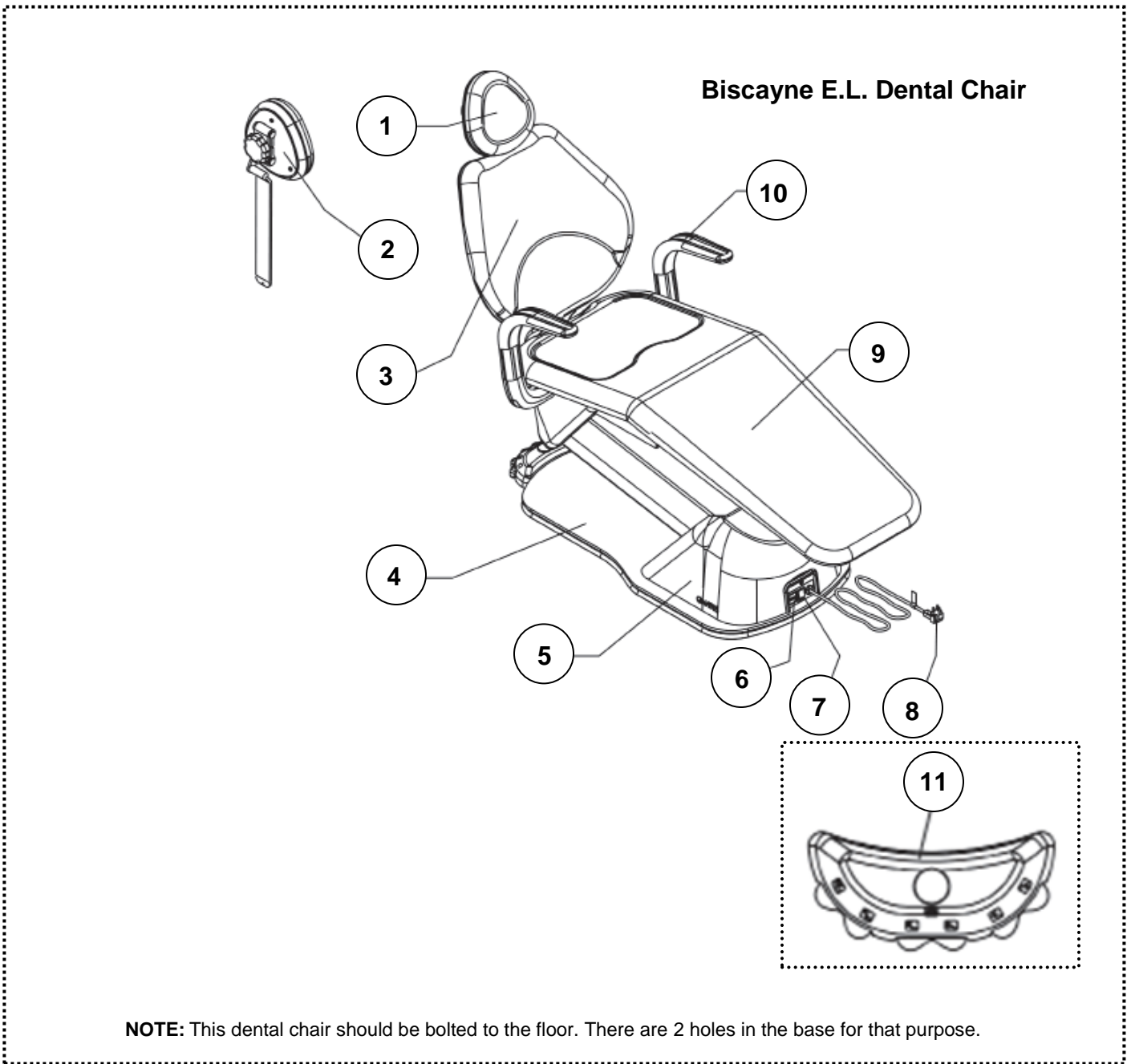
RATED MAXIMUM OUTPUT POWER OF TRANSMITTER W	SEPARATION DISTANCE ACCORDING TO FREQUENCY OF TRANSMITTER m		
	150 kHz to 80 MHz $d = 1.2 \sqrt{P}$	80 MHz to 800 MHz $d = 1.2 \sqrt{P}$	800 MHz to 2,5 GHz $d = 2.3 \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance  $d$  in meters (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.

# GENERAL DATA





- 01) Headrest
- 02) Headrest Bi-articulated (optional)
- 03) Backrest
- 04) Base
- 05) Motor Cover
- 06) Fuse
- 07) On/off switch
- 08) Power Cord
- 09) Seat
- 10) Biscayne E.L. Swivel Armrest (L/R optional)
- 11) Foot Control with 7 Functions

# TECHNICAL SPECIFICATIONS

Nominal Tension	Frequency	Consumption	Power
115V~/220V~	50Hz/60Hz	1.3A	200VA

- **Product classification:**  
According to norm NBR IEC 60601-1
- **Supply voltage:** 115V~ / 220v ~
- **Frequency:** 50 Hz / 60 Hz
- **Electric shock protection type:**  
Class I equipment.
- **Intermittent Operation:**  
T-on 1min. - T-off 4min.
- **Water leak protection:**  
IPX0 – All the chair, excepting foot control  
IPX1 – foot control
- **Power:** 1.3 A
- **Protection fuses:**  
250V, 6.3A Type T
- **Rising capacity:** 441lb (200 Kg)
- **Delivery unit tray's maximum load capacity:**  
SDS 1402 – 2.2lb (1 Kg)  
SDS 1407 – 4.4 (2 Kg)
- **Net Weight:** 229.3lb (104Kg)
- **Gross Weight:** 302.7lb (137.3Kg)




---

1-010-1002 **Biscayne E.L Dental Chair**


**SN 002509101002**

115V 50/60HZ, 1.3A Fuse 6.3Amp, 250V Type T  
Duty Cycle for Motor ON/OFF 1 min on, 4 min off


---

Class I  
Equipment



---



**SUMMIT DENTAL SYSTEMS**  
6277 NW 28th Way - Ft Lauderdale, FL 33309 - USA  
www.summitdental.com (954) 730-3636

**5-Mar-2010**

---

**EC REP**

MT Promedt Consulting GmbH  
Altenhofstrasse 80  
D-66386 St. Ingbert, Germany

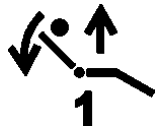
## Transportation and Storage Conditions

The equipment must be transported and stored with the following observations:

- Fragile! Should not suffer drop or receive impact.
- With the arrows pointing upward.
- With humidity protection, not to be exposed to rain, water drops, or wet floor.
- In temperatures from 10.4 °F (-12°C) to 122 °F (50°C).
- Maximum stacking indicates on the packaging the number of boxes that can be stacked during the transportation and storage.

# TECHNICAL SPECIFICATIONS

## Product Symbols



Preposition "1"



Preposition "2"



Raises seat



Lowers seat.



Raises backrest



Lowers backrest



Return to entry/exit position



Returns to exit/spitting position



Activation of the dental light



Emergency Stop



Type B equipment



Off



Protective Grounding Point



On



Warning: Consult the manual

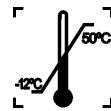
**NOTE:** Class I Equipment

**NOTE:** Some of the symbols above are exclusive for some foot control models

## Packing Symbols



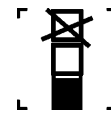
The equipment must be protected from exposure to direct sun light during storage and transportation.



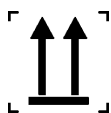
Temperature limit for storing and transportation of package



Equipment can't get wet, rained on, or placed on a wet floor during transportation or storage.



Maximum stacking determines the maximum number of boxes which can be stacked during transportation and storage.



Package to be transported and stored with the arrows up.

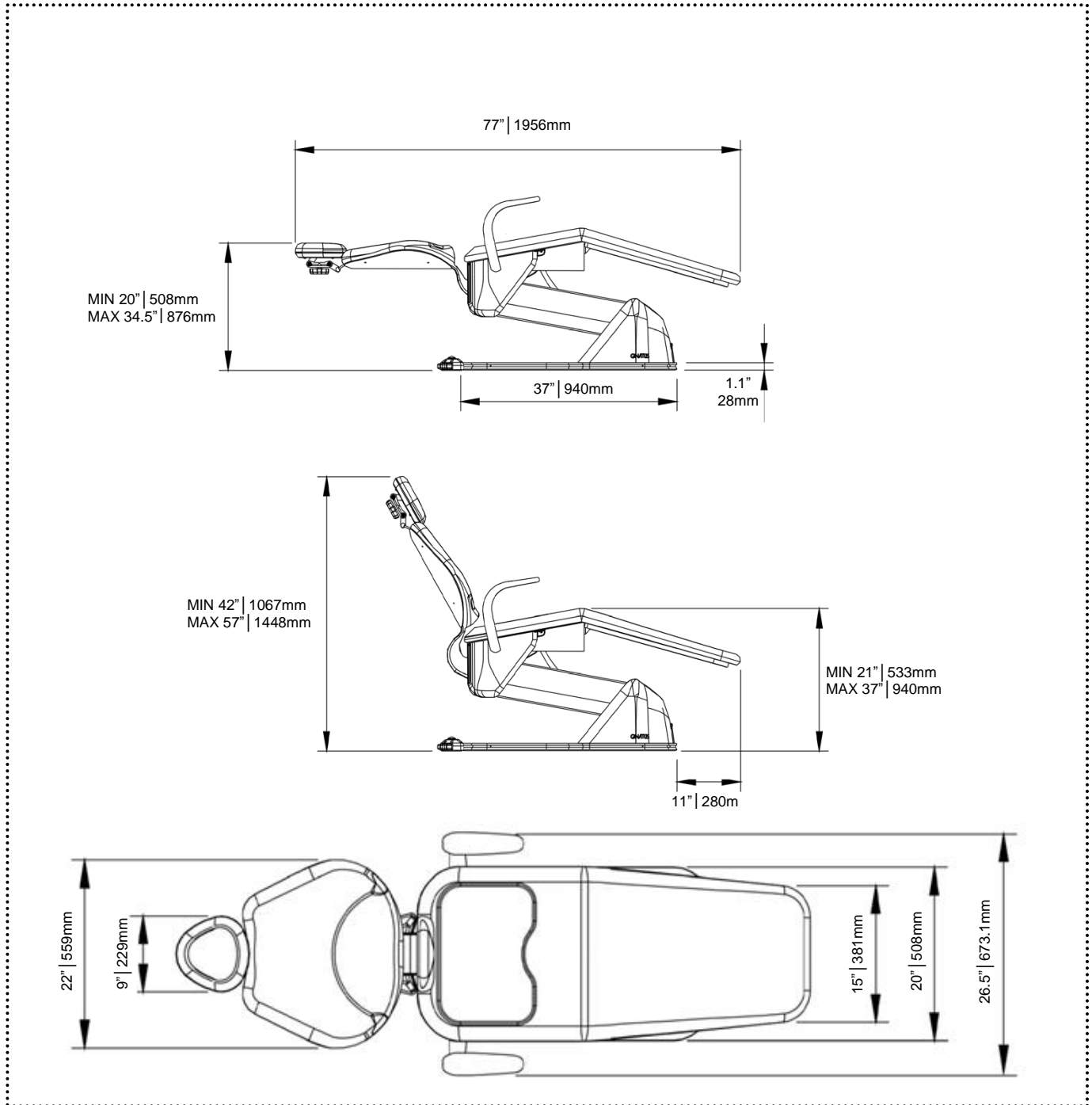


Package to be transported and stored with care (fragile! Should not suffer drops or receive impact)

# TECHNICAL SPECIFICATIONS

## Dimensions

### Biscayne E.L. Dental Chair (without a built-in junction box)



# INSTALLATION



The installation for this equipment requires the assistance of a specialized technician authorized by Summit Dental Systems.

- This equipment should only be installed by a specialized technician authorized by Summit Dental Systems, and not doing so could result in loss of warranty, for only he possesses the information, tools, and training necessary to complete the task.
- Summit Dental Systems is not responsible for damages or accidents caused by poor installation performed by a technician that is not authorized by Summit Dental Systems.
- Equipment is only ready for operational use after being properly installed and tested by a specialized technician authorized by Summit Dental Systems.

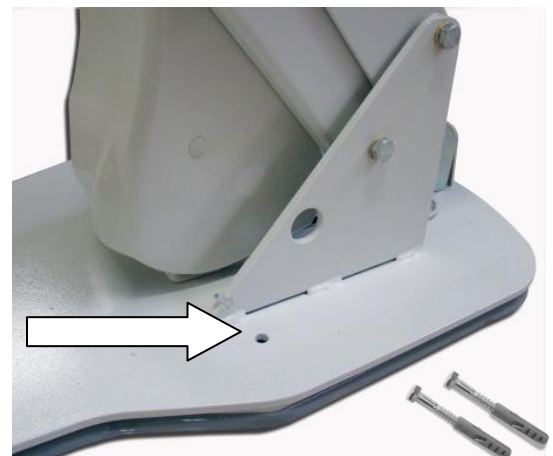
## Special Care for Installation

- Check the electric net; it must be compatible with the specified one in the equipment.
- Install the equipment in an adequate location, protected from solar rays and humidity.
- Verify that the outlet is grounded; it must be turned off correctly.
- Verify that the master switch of the equipment is at the position "0".
- **ATTENTION:** This equipment should only be used with the power cord supplied by Summit Dental Systems; otherwise it may increase emissions or decrease the immunity of the equipment.
- When moving the chair, never lift it by the seat (where the patient's leg support is); lift it by the base of the structure.

**IMPORTANT:** The Summit Dental Systems dental set is dimensioned so that the stability of the set composed of a Dental Chair, Delivery Unit, Dental Light and Assistant's Instrumentation remains stable in normal conditions of use. If, by option of the customer, it is necessary to install other accessories to the dental set, Summit Dental Systems informs you that the evaluation of the stability is the customer's responsibility, and suggests that in this case the base of the dental chair is fastened to the floor by means of the holes already furnished in its base. This is a precautionary measure so that the added weight does not jeopardize the stability of the set.

### How to fix the dental chair base to the floor:

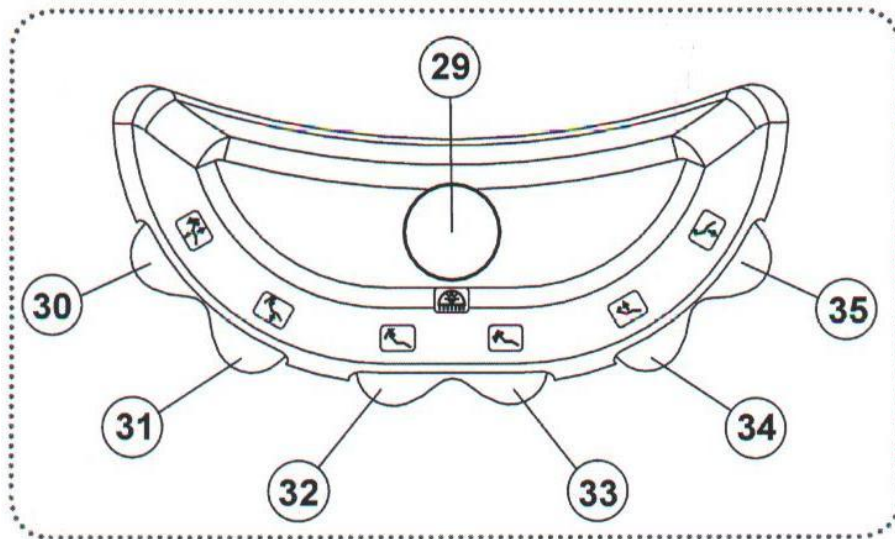
Mark the floor, stick with 12mm drill, insert two S12 screw plastic plugs in the holes, place the chair aligned to the holes and fix it using 3/8" x 90mm hex head steel screws and washers.



Base pierced for fastening the dental chair to the floor: 2 holes located on the side of the bearings "outside" covered by the finishing cover of the motor.

# OPERATION

## Foot Control with 7 Functions



- 29 - Activation of Dental Light
- 30 - Preposition 1
- 31 - Initial entry/exit position
- 32 - Raise backrest
- 33 - Lower backrest
- 34 - Raise seat
- 35 - Lower seat

### How to turn on the dental light (Foot control with 7 functions)

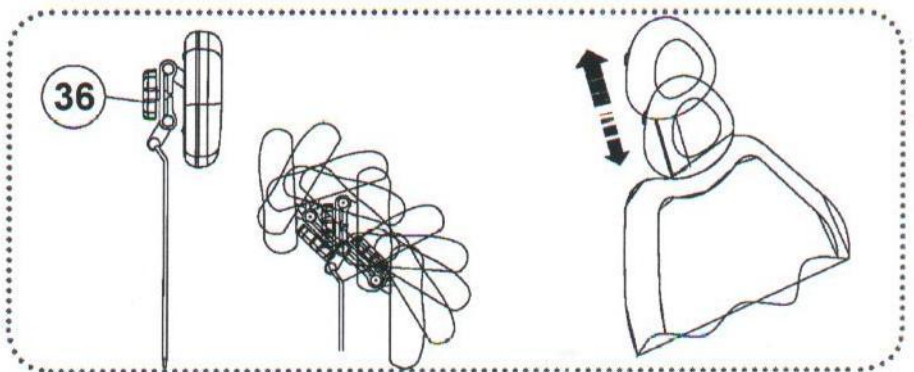
To turn on the dental light, press the middle button (29) on the top of the foot control. To modify the luminosity, keep it pressed. The luminosity will increase or diminish gradually, according to the specifications of the Dental Light (consult the Dental Light Owner Manual). To turn off, activate the button (29) again.

After pressing the "Initial entry/exit position" (31) key any other operation will trigger the "Stop". Foot control with 7 functions features one programmable preposition. Just move the chair to the desired position and press the button "1" (30) for 3 seconds.

### Double Articulated Headrest

To move the headrest, turn knob (12) counterclockwise until headrest is loose. Adjust the headrest to the desired position and then tighten the knob back by turning it clockwise.

To adjust height, just move it vertically.



# MAINTENANCE

## Recommendations for the Dental Equipment Maintenance and Operation

Your Summit Dental Systems equipment has been designed and developed according to the standards of modern technology. Similar to other kinds of equipment, it requires special care, which is many times neglected due to several reasons and circumstances.

Therefore, here are some important reminders for your daily routine. Try to follow these simple rules, which will save you a lot of time and will avoid unnecessary expenses once they become a part of your working procedures.

- The equipment should only be operated by properly qualified and trained technicians and dental professionals.
- If the need of maintenance occurs, use only the service of a Summit Dental Systems authorized dealer/technician.
- Do not expose plastic components into contact with chemical used in routine dental treatment such as: acids, mercury, acrylic liquids, amalgams, etc.
- Switch off the equipment when not in use for a prolonged amount of time.
- Always keep the equipment clean before next the procedure.
- Do not modify any part of the equipment. Do not disconnect the cable or any other connections without necessity.

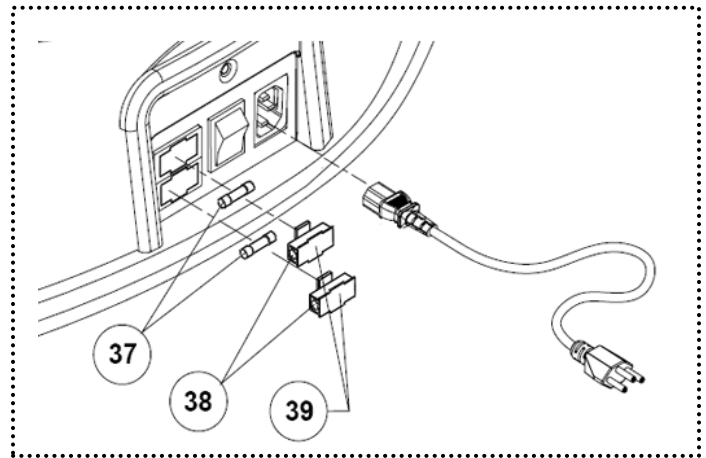
### **Summit Dental Systems will not be responsible for:**

- Use of the equipment other than that for which it is intended.
- Damage caused to equipment, professional, or patients due to improper installation procedures, faulty maintenance, and incorrect operation that is contrary to the correct use as described in this user's manual.

## Replacing the Fuse

With the aid of a screwdriver, loosen the fuse holder cover (39) and then replace the fuse (37) with the spare fuse (38).

**Note:** The spare fuse (38) comes with the equipment. After making the first change, it is advisable that there always be a spare fuse (6.3A) (see page 06).



# MAINTENANCE

---

## Cleaning the Equipment

### Disinfect between each use:

- Before cleaning the equipment, turn the chair's power switch off.
- Avoid spilling water or other liquids inside the equipment that could cause short circuits.
- Do not use abrasive materials or steel wool for cleaning; do not use organic solvents or detergents that contain solvents such as ether, stain removers, gasoline, etc.

Because there are hundreds of cleaners, conditioners and disinfectants available, it is impossible for manufacturers to test them all. The manufacturer of the cleaner or disinfectant to be used should be contacted for them to state whether or not the disinfectant will damage equipment surfaces including upholstery. A solution of mild non-ionic detergent and water is recommended for routine surface cleaning. Never use abrasives.


### Unacceptable Disinfectants

The following chemicals may damage equipment and upholstery:

- Alcohol based solutions
- Acetone
- Bleach
- Phenol
- Foam spray products

# PRECAUTIONS

---

-  Certify the correct voltage when you plug in your equipment.
- Install your equipment in a proper place protected from solar rays and humidity.
- When moving the chair, never lift it by the seat (where the patient's leg support is); lift it by the base of the structure.
- The plastic parts can't be in contact with most chemical substances used in dentistry treatments (i.e. acids, mercury, acrylic liquids, amalgams, etc).
- Whenever equipment is not in use, turn the chair's power switch to off.

# TROUBLESHOOTING

---

In case of an abnormality, check to see if the problem is related to any of the items listed in Troubleshooting. If you cannot solve the problem, disconnect the power cord from the power outlet and contact your Summit Dental Systems authorized dealer/technician.

Problem	Probable Cause	Solution
<ul style="list-style-type: none"><li>- Chair is not working</li></ul>	<ul style="list-style-type: none"><li>- Plug is disconnected from socket</li><li>- Power is cut</li><li>- Main switch is off</li><li>- Burned fuse(s)</li></ul>	<ul style="list-style-type: none"><li>- Connect plug to socket</li><li>- Wait until power is back</li><li>- Switch the main switch on</li><li>- Replace fuse(s)</li></ul>

**ATTENTION:** Any other problem that could happen with this equipment should only be repaired by a Summit Dental Systems authorized technician. Any misuse, negligence or maintenance not performed by a Summit Dental Systems authorized technician will result in the loss of the warranty.

# WARRANTY

Summit Dental Systems (SDS) warrants its products against defects in materials or workmanship from the date of shipment to the Buyer as follows:

**Summit Dental Systems (SDS) Equipment:**

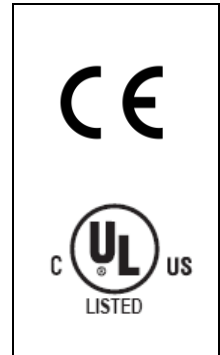
Chairs, Delivery Units, Cuspidors, Lights  
 Zipclave Sterilizer  
 Control Block Diaphragm (part of Delivery Unit)  
 All Upholstery, Stools, All Plastic Covers, and Cabinets  
 Zipclave Heating Element & Zipclave Gasket

**Warranty Period:**

5 Years  
 3 Years Limited Parts  
 Lifetime  
 1 Year  
 1 Year

Summit Dental Systems' sole obligation under the warranty is to provide parts for repair, or at its option, to provide a replacement product (excluding all labor and shipping fees). "In any action, BUYER'S remedies are limited to the warranty described above. BUYER shall not be permitted to claim lost profits, reliance, special, incidental, or consequential damages in any proceedings." The warranty does not cover damage from improper installation or maintenance, accident or misuse. The warranty does not cover damage resulting from the use of cleaning disinfecting or sterilization chemicals and processes. Failure to follow instructions provided in Summit Dental Systems' Operation and Installation Manuals (Owner's Guides) may void the warranty. In the event Warranty service must be performed to correct any defect, only an authorized Summit Dental System dealer may perform any and all warranty repairs. Any repairs by unauthorized dealers, technicians, or repairmen may void the warranty.

- In the case of a defective warranty item, a copy of the replacement invoice, model and serial number of the product under which it was replaced, and a description of symptoms of the defect must be returned with the part within 30 days of the replacement invoice date to Summit Dental Systems, 6277 NW 28<sup>th</sup> Way, Ft. Lauderdale, FL 33309, USA, in order to receive credit. Any and all expenses for freight, labor to perform warranty service, and purchase of spare parts are the responsibility of the buyer. Any fraudulent claims made may void the warranty. Any additional warranty that may be provided by an authorized Summit Dental Systems dealer is the sole responsibility of said dealer.
- SDS reserves the right to make changes or improvements on any products without being required to modify existing equipment in a like manner.



**Please complete and retain for your records the following Information:**

In case of warranty part replacement/repair or when ordering a part, please call your authorized Summit Dental Systems dealer and have the following information available:

<b>Owners' Name:</b>	<b>Phone #:</b>
<b>Model #:</b>	<b>SDS Serial #:</b>
<b>Dealer:</b>	<b>Phone:</b>
	<b>Purchase Date:</b>

## FINAL CONSIDERATIONS

---

The most important aspect related to equipment care is that concerning spare parts. To guarantee the maximum life span of your equipment, use only **original Summit Dental Systems spare parts**. They are sure to follow the technical specifications and standards required by Summit Dental Systems.

We must also point out to you our network of authorized dealers. Only dealers within this network will be able to keep your equipment well maintained for they count on technical assistants who have been trained and possess specific tools for the correct maintenance of your equipment.

Questions and Information: Summit Dental Systems Call Center 1-800-275-3368.

**Manufacturer/ Distributor:**



MT Promedt Consulting GmbH  
Altenhofstrasse 80  
D-66386 St. Ingbert, Germany

