Electromagnetic Immunity

Immunity Test	IEC 60601 Test Level	Electromagnetic Environment Guidance
Electrostatic Discharge (ESD) IEC 61000-4-2	±8 kV contact ±2, 4, 8, 15 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%.
Radiated RF Immunity IEC 61000-4-3	3 V/m 80% AM at 1 kHz 80 MHz – 2700 MHz	Interferance may occur in the vacinity of equipment located with the following symbol.
Electrical Fast Transient/Burst IEC 61000-4-4	±2 kV line(s) to line(s) ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or health care environment.
Surge ICE 61000-4-5	±1 kV line(s) to line(so) ±2 kV line(s) to earth	Mains power quality should be that of a typical commercial or health care environment.
Conducted RF Immunity IEC 61000-4-6	3 Vrms & 6 Vrms 80% AM at 1 kHz 150 kHz – 80 MHz	Recommended separation distances in the presence of a transmitter: $d=1.2\sqrt{P}$ When d = distance between transmitter and dental equipment P = rated power output of transmitter.
Power Frequency (50-60 Hz) Magnetic Field IEC 61000-4-8	30 A/m	Power frequency magnetic field strength should be at levels characteristic of a typical commercial or health care environment.
Voltage Dips, Short Interruptions, and Voltage Variations on Power Supply Input Lines IEC 61000-4-11	0% dip for 0.5 cycle 0% dip for 1 cycle 70% dip for 25 cycles 0% dip for 5 seconds	Mains power quality should be that of a typical commercial or health care environment. If the user or the dental equipment requires continued operation during power mains interruptions, it is recommended dental equipment be powered from an uninterruptable power supply (UPS).

Warranty

Forest warrants its products to be free from defects in material and workmanship only. No other warranties are expressed or implied. This warranty shall extend for five years unless otherwise stated. Written notice of breach must be given to Forest within this period. Buyer's remedy for breach of this warranty is limited to repair parts or replacement of items by Forest. Factory repairs are covered for a period of 90 days. No claim for labor or consequential damages or freight will be allowed. Forest is not responsible for ensuring equipment or installation conformity to local code or regulatory requirements. Check with local code or regulatory requirements before purchase and installation of all Forest product. Field modifications that alter the electrical and /or mechanical safety of Forest products conflict with agency construction file requirements and are not sanctioned by Forest.

Warranty is void if:

Items are carelessly used or improperly maintained or installed. Damage results from using cleaning, disinfecting or sterilization chemicals and processes. Damage is the result of freight damage and as such claims must be filed with the carrier by dealer. Warranty term exceptions cover items that are normally expected service items and items not covered by Forest's warranty: Handpiece illumination tubings, heated syringe tubings & assemblies and light bulbs are warranted for six months. Power supplies, syringe buttons, HVE & SE valves are warranted for one year. Water bottles, gas springs and handpiece tubings are warranted for two years. Air & Water tubing connectors (T's), Distribution Block, Master Control Block, Flow Valves, 7000 Chassis are warranted for a maximum of 20 years. Bien-Air handpiece motors, Satelec scaler and Cavitron are covered under manufacturer's warranty. Two year upholstery warranty, excluding wear and tear. Installation of ancillary devices are warranted for two years.

Forest Dental Equipment

DTE Oregon, Inc.
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The following symbols and terms may be used throughout your guide and equipment.

Glossary of Symbols

Alert Symbols The safety notices associated with the following should be given special attention when they appear in maintenance, operating and emergency procedures in the guide.

Symboles d'alerte Les consignes de sécurité associées à la présente devraient être lues avec attention lorsqu'elles sont ajoutées aux procédures d'entretien, d'utilisation et d'urgence de ce guide.

WARNING indicates that the personal safety of the patient, end user or technician could be compromised by disregarding the WARNING. Not following instructions may result in an injury.

AVERTISSEMENT Indique que la sécurité du patient, de l'utilisateur ou du technicien peut être compromise si l'AVERTISSEMENT n'est pas respecté. Ne pas respecter les instructions peut causer des blessures.

CAUTION indicates that a particular procedure or precaution must be followed to avoid system irregularity or possible damage to the product.

MISE EN GARDE Indique qu'une procédure ou une précaution précise doit être respectée pour éviter une erreur du système ou de possibles dommages au système.

NOTE indicates special information to improve the ease of maintaining the product, or to clarify important information.

REMARQUE Indique des informations spéciales pour améliorer la facilité d'entretien du produit ou pour clarifier des informations importantes.

User Responsibility Read this guide thoroughly, including all regulatory information and product specifications before use.

2002/96/EC WEEE European Directive for Waste Electrical and Electronic Equipment. Disposal of Medical Equipment should be performed in accordance with National and Local Regulations.

2011/65/EU RoHS European Directive for Reduction of Hazardous Substances.

Applied part Type B indicates the Medical Device is applied to patient for therapy.

Conformity Assessment:
Medical Device Directive Annex VII

Conforms with the Essential Requirements of the European Medical Device Directives (93/42/EEC MDD) for Class I Devices.

0459 Conformity Assessment:
Medical Device Directive Annex II

Conforms with the Essential Requirements of the European Medical Device Directives (93/42/EEC MDD) for Class IIa Devices.

Indicates Delivery Systems conform to General Requirements for Safety and is certified by TUV Testing Services.

Indicates Dental Lights conform to General Requirements for Safety and is certified by UL Testing Services.

Indicates Dental Chairs conform to General Requirements for Safety and is certified by ETL Testing Services.

EC REP Authorized Representative Emergo Europe prinsessegracht 20 2514 ap the hague the netherlands

Manufacturer Manufacture Date

Transmitter

Interference with Electromedical Devices

To guarantee the operational safety of electromedical devices, it is recommended that the operation of mobile radio telephones in the medical practice or hospital be prohibited. Strong EMI sources such as electro surgery units or x-ray units may affect performance. If performance problems occur, move the unit to another electrical circuit or physical location. Refer to EMC pages 3 and 4.

Incompatible Units or Accessories

To guarantee the operational safety and function of this device, the use of unapproved unit or accessories is not advised. Doing so could result in potential hazard. Use authorized accessories and devices only.

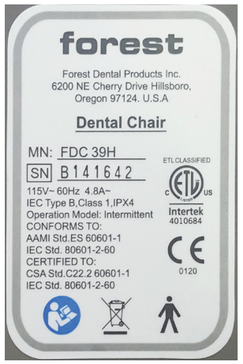
⚠ *CAUTION: To avoid electrostatic discharge (ESD) damage to electronics, always wear grounded wrist strap attached to a ground adapter (eg: Banana plug) when handling circuit boards, chair controls, and cables or working in the area of electrical circuits.*

Product Idenitfication

Product can be identified by its product label. This label states the unit model and serial number, electrical specifications, manufacture date and safety classification. Example labels shown below.

Assembled in USA of Foreign & Domestic Parts
0459
ANSI/AAMI ES60601-1
S/N: (See other label)
Dental System
DTE Oregon, Inc.
6200 ne cherry drive hillsboro oregon 97124 USA
3.6.19 • 0009-458 • Rev. A

Assembled in USA of Foreign & Domestic Parts
17UJ
ANSI/AAMI ES60601-1 (2005) + AMD1(2012)
CAN/CSA C22.2 NO. 60601-1:14
REF: DL-01
S/N: (See other label)
Inputs:16/18 VAC
1.0/0.5 A, 50-60 HZ
Dental Light
DTE Oregon, Inc.
6200 ne cherry drive hillsboro oregon 97124 USA
3.6.19 • 0009-290 • Rev. E



Serial Number: Model: _____

2019 Tested & Inspected by: _____

DTE Oregon, Inc. Forest Dental Equipment
6200 ne cherry drive hillsboro oregon 97124 USA 3.18.19 • 0009-457 • Rev. B

Technical Description/Specifications

For proper disposal of medical devices and medical waste, follow state and local requirements.

Working Environment

The equipment is to be used in a clinical environment only.

Normal Use Working Condition

Temperature: 68° F to 77° F (20° C to 25° C)
Relative Humidity: 30% to 75%

It is not safe to use the equipment where there is flammable gas or other hazards material.

Storage and Transport Conditions

The device is appropriately packaged in a box. If product is to be stored before installation, storage and handling instructions in the packaging should be adhered to. Handling and storage conditions are included on the box. If the device is not to be used for some time, ensure the water line is disinfected and flushed with air before the master switch is switched off.

Temperature: -4° F to 140° F (-20° C to 60° C)
Relative Humidity: 25% to 90%
Atmospheric Pressure: 70 to 106 KPa

This equipment has been tested and found to comply with the limits for medical devices in IEC 60601-1-2. These limits are designed to provide reasonable protection against harmful interference in a typical health care installation. In the event of interference, provide power to medical devices from separate mains supplies and/or increase the physical distance between devices. Contact Forest Dental Customer Service if you have any questions or concerns. Portable and mobile high frequency electronic communication equipment may interfere with electronic medical devices. Use of accessory devices not specified by Forest Dental in conjunction with Forest Dental devices may result in an increase of electromagnetic emissions and/or decrease in electromagnetic immunity of the dental system. If other equipment is used or adjacent to, or attached with Forest Dental equipment, the system must be observed to verify normal operation.

Electromagnetic Emissions

Emissions Test	Compliance	Electromagnetic Environment – Guidance
RF Emissions CISPR 11	Group 1	Forest Dental equipment uses RF energy only for internal function. Therefore, emissions are very low and are unlikely to cause any interferance in nearby electronic equipment.
RF Emissions CISPR 11	Class A	
Harmonic Emissions IEC 61000-3-2	Class A	Forest Dental equipment is suitable for use in all estabilishments, other than domestic establish-ments and those directly connected to the public low voltage power supply network that supplies buildings used for domestic purposes.
Voltage Fluctuations/ Flicker Emissions IEC 61000-3-3	Complies	

Recommended separation distances between portable and mobile RF communications equipment and the unit.

Forest Dental equipment is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of Forest Dental equipment can help prevent electromagnetic interferences by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Forest Dental equipment as recom-mended below, according to the maximum output of the communications equipment.

Rated maximum output power of transmitter Watts	Separation distance according to frequency of transmitter Meters		
	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: At 80 MHz to 800 MHz, the separation distance for the higher frequency range applies.*

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