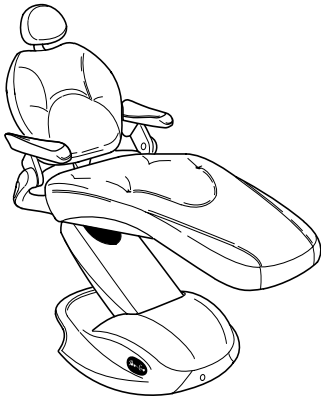
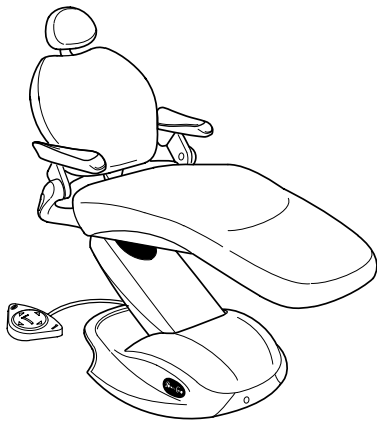


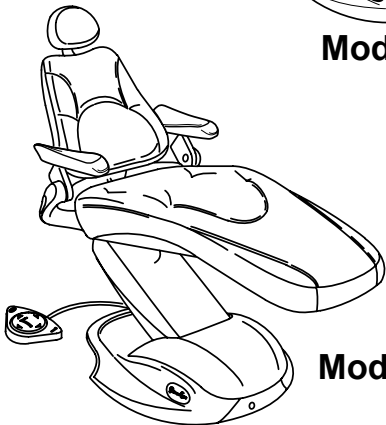
Pelton & Crane



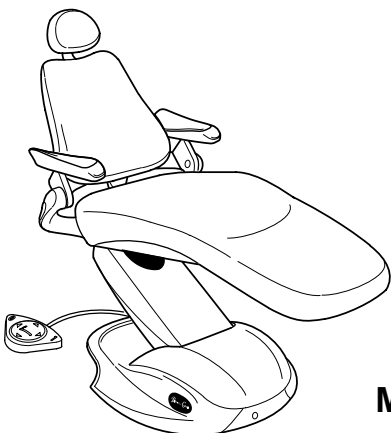
Model: 3001



Model: 3002



Model: 3003



Model: 3004

Spirit 3000 Series Dental Chair USE AND CARE

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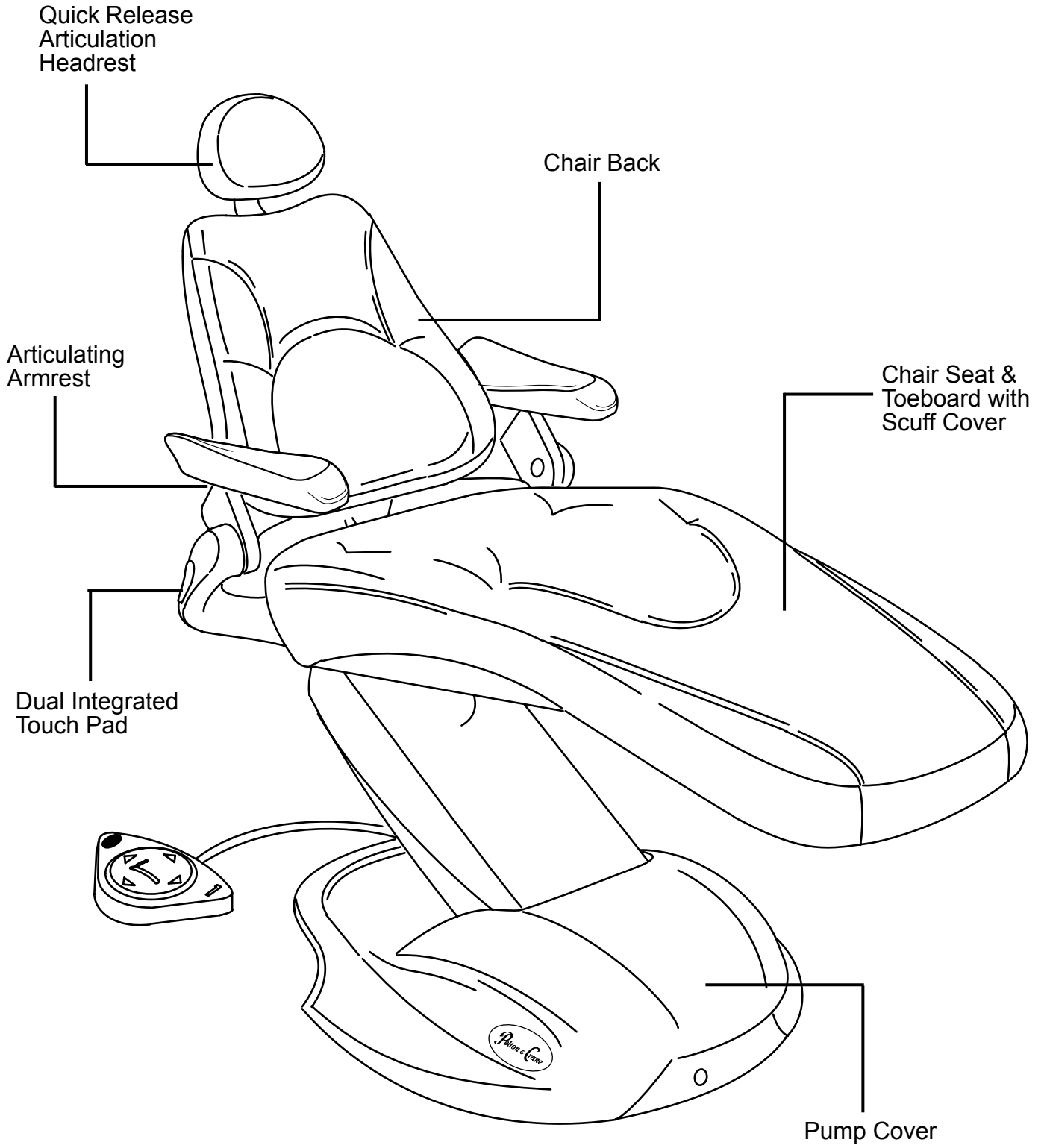
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Technical Support

Technical assistance is available Monday through Friday,
8:00 am to 6:00 pm (Eastern Standard Time).

Phone: 800-659-5922
Fax: 704-659-7255
Customer Service: 800-659-6560


OVERVIEW





GENERAL INFORMATION

DEFINITION OF SYMBOLS

The following symbols and terms are defined as follows:

 **WARNING:** Failure to carefully follow the described procedure may result in damage to the equipment and/or injury to the patient/operator.


 Risk of electrical shock present. Make sure power is disconnected before attempting this procedure.


 See operating instructions.


 (AC) Alternating current.


 Protective earth (Ground)


 Manufacturing Date


 Waste Electrical and Electronic Equipment.


 Type B Applied part.

 Conforms with the Essential Requirements of the European Medical Device Directive 93/42/EEC for Class I Devices.

 Conforms with the Essential Requirements of the European Medical Device Directive 93/42/EEC for 0473 Class IIa Devices.

 Indicates conformity to General Requirements for Safety is certified by Intertek Testing Services.

 General mandatory action required, important to follow instruction. Not a caution.

 Warning, strong magnetic field.

Authorized European Representative:
 Medical Device and QA Services
 76, Stockport Road
 Timperley, Cheshire, WA15 7SN
 United Kingdom
 e-mail: info@mdqas.com

PRODUCT DISPOSAL

Contact your local authorized dealer for proper disposal of the device to ensure compliance with your local environmental regulations.

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 device to another electrical circuit or physical location.

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. Only use authorized accessories and devices.


OBTAINING TECHNICAL LITERATURE


The manufacturer will make available on request circuit diagrams, component parts lists, descriptions, calibration instructions or other information that will assist technical personnel to repair and replace serviceable items.

STORAGE CONDITIONS:

-55°C to +50°C
 10% to 90% Relative Humidity

 **WARNING:** Only authorized service technicians should attempt to service this equipment. Use of other than authorized technicians will void the warranty.

 **WARNING:** Use only original replacement parts. All repairs should be performed by an authorized dealer and/or their representatives.

 **WARNING:** This product is intended for use by trained dental/medical professionals only.

ELECTRICAL SPECIFICATIONS

Volts	Cycles	Amps
115 VAC	60 HZ	8 A ~
230 VAC	50 HZ	4 A ~

All fuses are labeled at point of use. Replace fuses only with type and rating as indicated.


IEC Medical Device Classification


Classification: 1
 Type: B
 Operation Mode: Intermittent - 5% Duty Cycle


GENERAL INFORMATION


SAFETY


Review the following safety precautions to avoid injury and prevent damage to this equipment. Use this product only as specified.


 **WARNING:** A dental chair may include magnets in the construction of the device which may temporarily affect the function/programming of some implantable pacemakers or defibrillators. If the implanted device is programmed to respond to a magnet, people who have these types of devices should avoid dental chairs with magnets.


 This product is designed for use in an indoor, temperature-controlled, office environment.


 **WARNING:** No modification of this equipment is allowed.


 **WARNING:** To avoid risk of electric shock, this equipment must be connected **only** to supply mains with protective earth.


 **WARNING:** Use a licensed electrician for all wiring.


 **WARNING:** Power cords and their associated parts cannot be substituted without increased risk of electric shock or fire. We recommend the use of original equipment replacement parts only. Power cords must be installed by qualified personnel. Make sure all service loops, strain reliefs, and cord guards are in place and that line, neutral and ground wires are secured.

 **WARNING:** This product must be disinfected before use.


 **WARNING:** Failure to disinfect equipment between patients could expose user/patient to cross contamination and bio-burden/bio-contamination.


 **WARNING:** Maximum load rating for this chair is 450 lbs. To avoid personal injury and/or damage to the chair, do not exceed this limit.


 **WARNING:** Use caution when using arm rests for leverage when exiting the chair, as arms may move and cause patient to fall or get injured.


 **WARNING:** To avoid possible injury and/or damage to the chair, do not apply full body weight on the headrest, backrest, toeboard or armrest(s). Doing so may cause the chair to tip.

To avoid instability, do not extend components on poles (i.e. lights, monitors, units) to the extreme extended position simultaneously on the same side of the chair.

 **WARNING:** Do not operate chair when any cover is removed. Doing so may result in injury to the operator.

 **WARNING:** Do not place knees or legs under chair arm support when chair is being lowered.

 **WARNING:** To avoid injury, discontinue use of chair if oil is seen leaking from chair hydraulic system and have serviced by an authorized dealer.

 **WARNING:** Use caution when filling the hydraulic reservoir to avoid overflow and spillage.

As manufacturers of electro-medical products we can assume responsibility for safety-related performance of the equipment only if maintenance, repair and modifications are carried out only by us or agencies we have authorized for this purpose, and if components affecting safe operation of the chair that may be needed are replaced with original factory authorized parts.

We suggest that you request a certificate showing the nature and extent of the work performed, from those who carry out such work, and specify that the certificate show any changes in rated parameters or working ranges, as well as the date, the name of the firm and a signature.

REGULATORY INFORMATION

Technical Description

The dental chair is used to position the patient so that the oral cavity is in the desired position for the dentist to perform various dental procedures. Dental chairs can be either hydraulically or electromechanically operated. There are two dynamic functions: the base (up/down) and the back (incline/recline). These functions are activated by use of either a footswitch or a hand-operated touch pad.

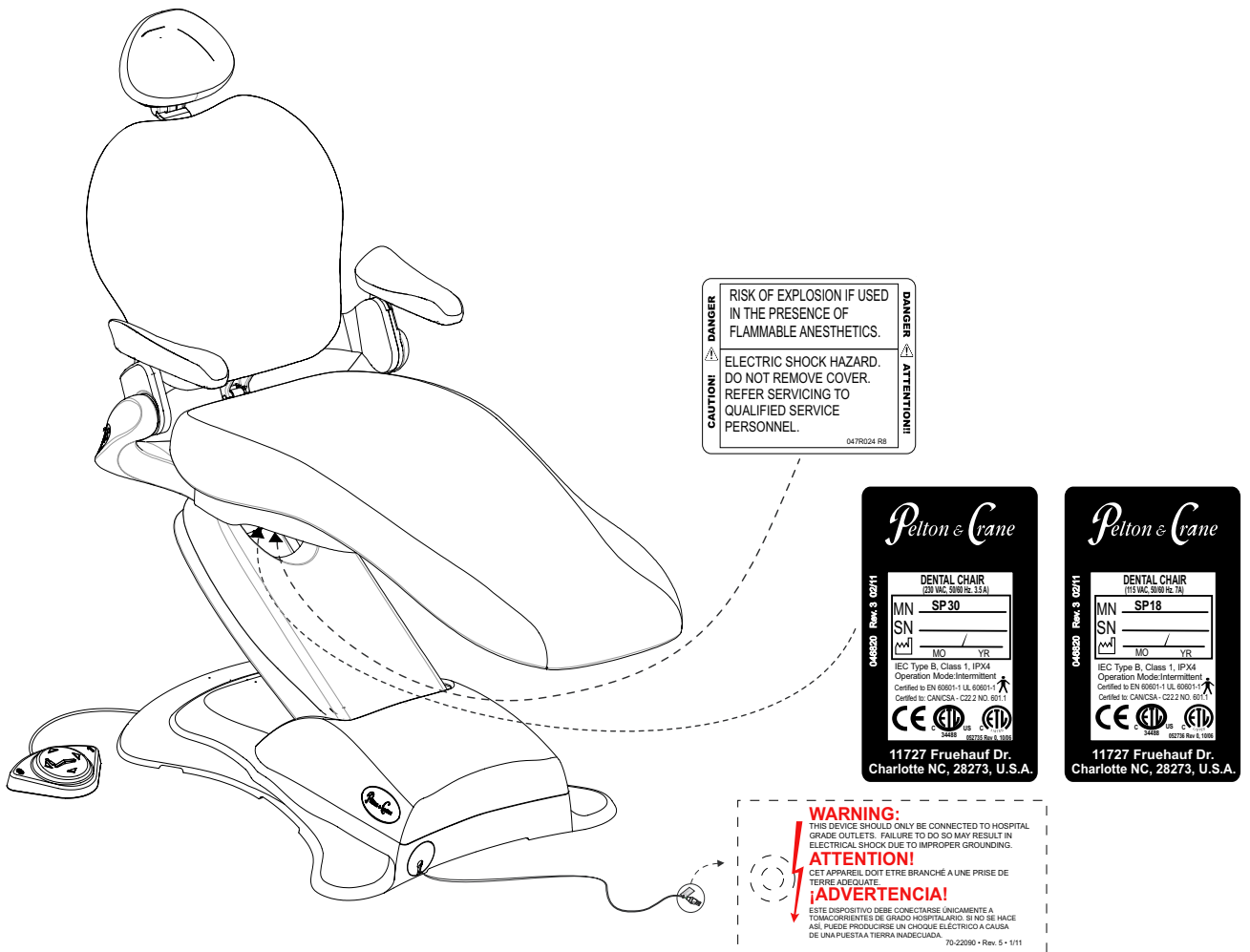
The dental chairs have the provision to mount additional dental equipment including over-the-patient delivery systems. For this purpose the chair must provide a stable foundation for both the patient and the additional equipment.

Power to the chair is either 115 or 230 volts. The power is delivered to a microprocessor controlled printed circuit board. Software in the microprocessor controls the movement of the chair. The dentist can program some chair models to preset positions.

CE The dental chair is classified as a Class I device per FDA CFR 21, Health Canada, and under rule 1 of Annex IX of the MDD 93/42/EEC.

Product Identification

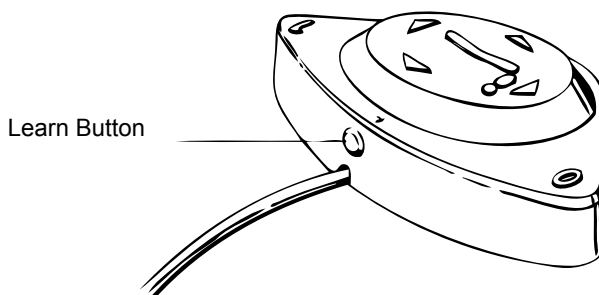
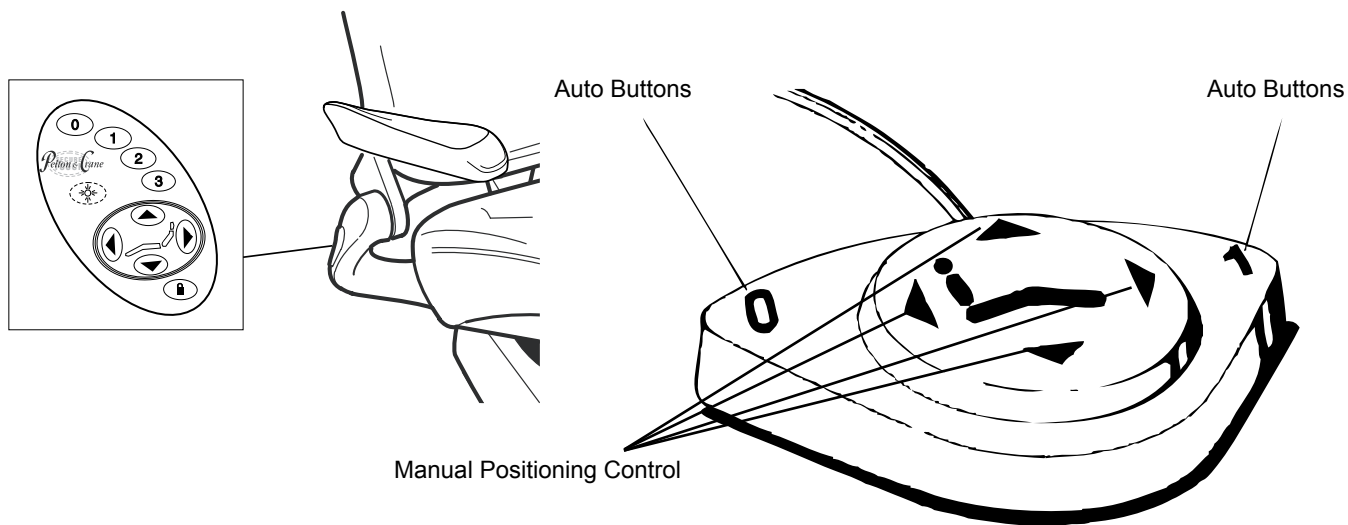
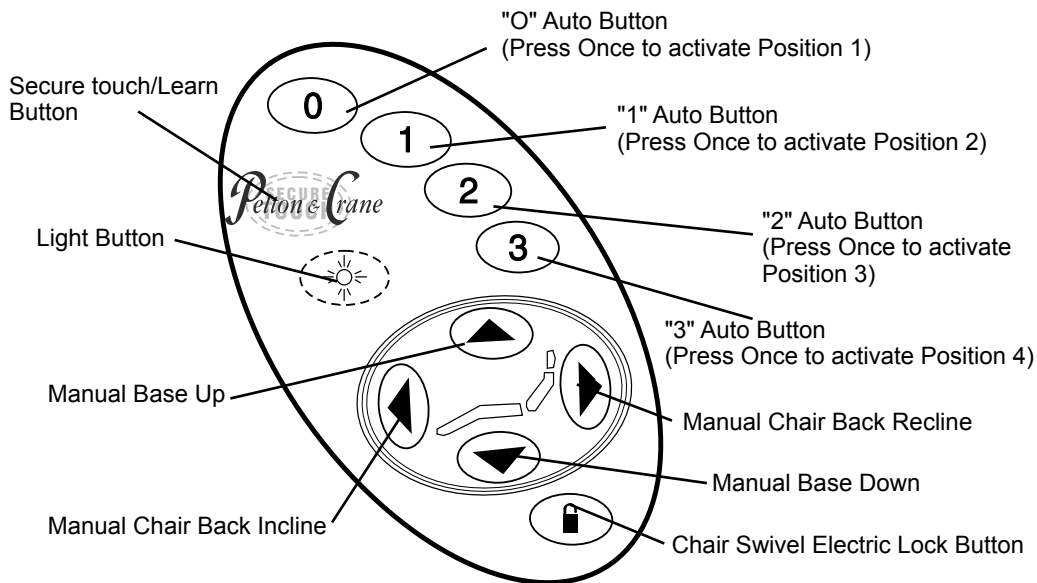
This dental chair can be identified by its product label, located inside or underneath the chair seat. This label states the chair model and serial number, electrical specifications, manufacture date and safety classification. Note the **SAMPLE** labels shown below.



OPERATION

Chair Control

The chair can be controlled by the dual integrated touch pads located on the arm supports or the optional foot control. The chair is factory set with pre programmed positions which can be accessed by preset buttons on either controller. These buttons can be custom programmed by following the instructions below. Programmed positions set on either controller are available on the other controller.



OPERATION

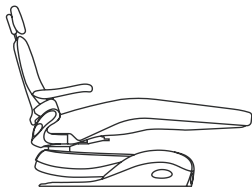
Programming the Auto Buttons

STORING POSITIONS 1,2,3 & 4

1. Using the manual buttons, adjust the chair into the desired position.
2. Press and hold the unmarked LEARN button, the chair will beep once to confirm. Continue holding the LEARN button, while pressing desired auto ("0", "1", "2", "3") button **TWO TIMES**.
3. Listen for two quick beeps to confirm the position has been set. To program the 2nd, 3rd, & 4th auto button, repeat procedure.

TO OPERATE — Press the same auto button once.

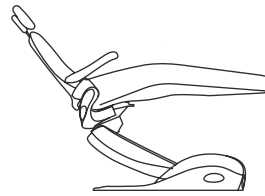
Typical Programming Positions



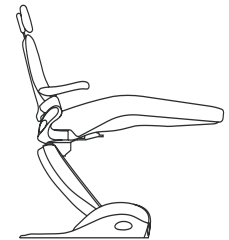
POSITION 1: Entry/Exit



POSITION 2: Work position

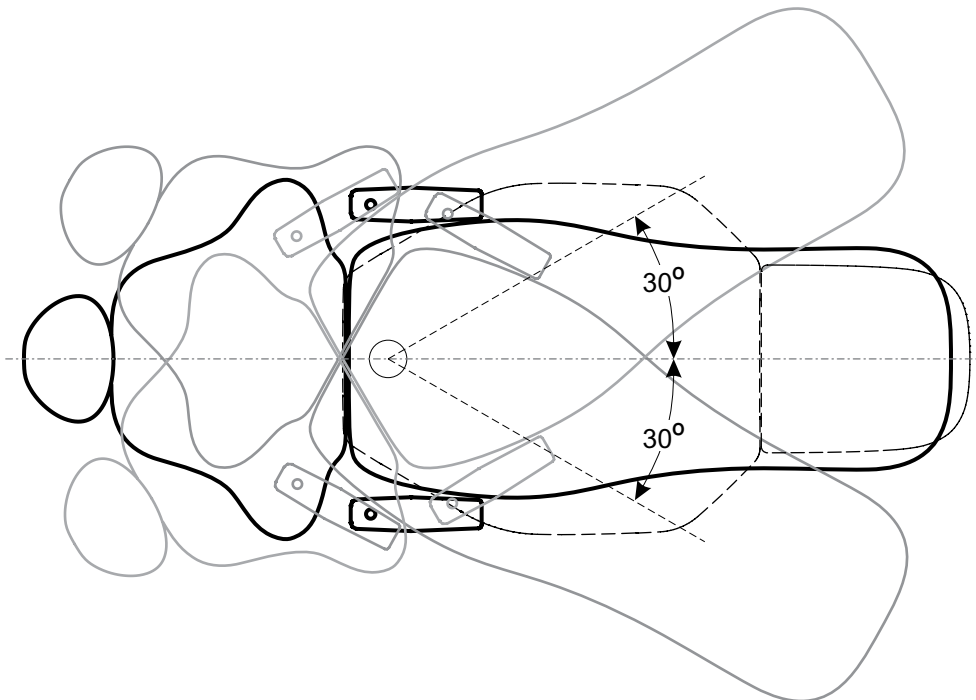


POSITION 3: Second work position



POSITION 4: X-Ray position

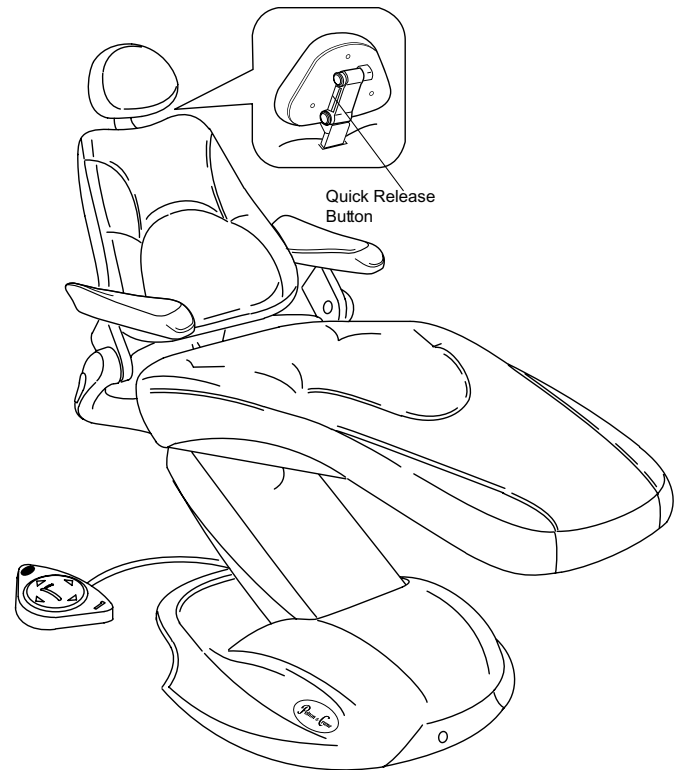
CHAIR SWIVEL LOCK RELEASE: The chair rotates 60° at 10° intervals. To position the chair, press the chair swivel lock release button to unlock the brake mechanism. Once the chair is in the desired position, release button.



OPERATION

Articulating Headrest

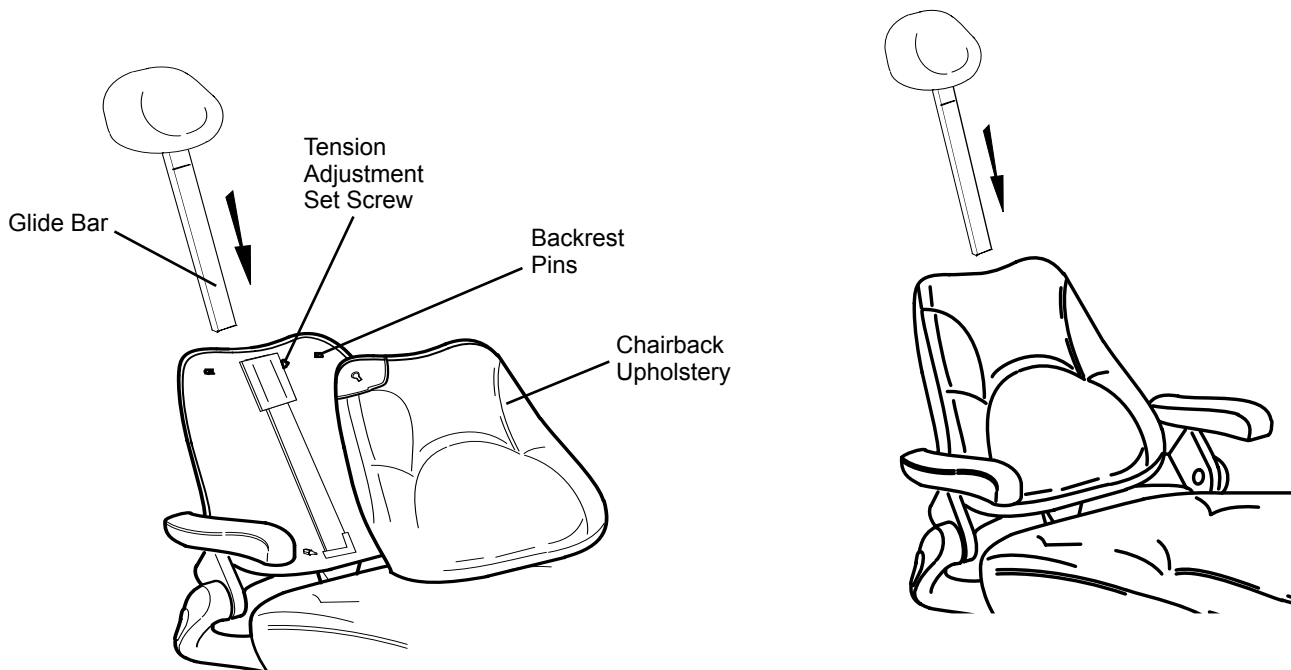
The articulating headrest can be adjusted by depressing the Quick Release Button and situating the headrest in the desired position. Release the button to lock headrest into place.



WARNING: Support the patient's head when adjusting the headrest.

Headrest Tension Adjustment

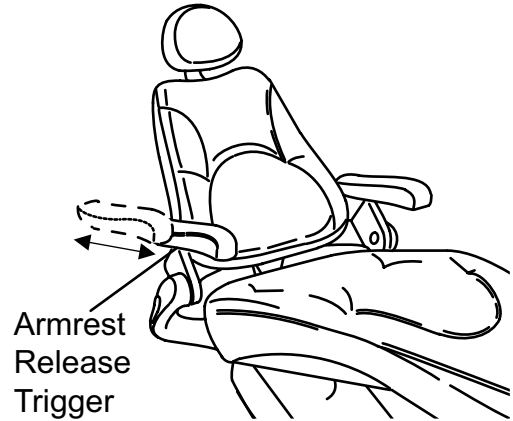
Separate the chair back upholstery from the backrest by lifting up on the backrest upholstery to release the cushion from the backrest pins. Locate the tension adjustment set screw and turn screw clockwise to increase tension to the glide bar or counterclockwise to decrease tension. Once tension is set, reattach upholstery and slide glide bar into chairback.



OPERATION

Armrest

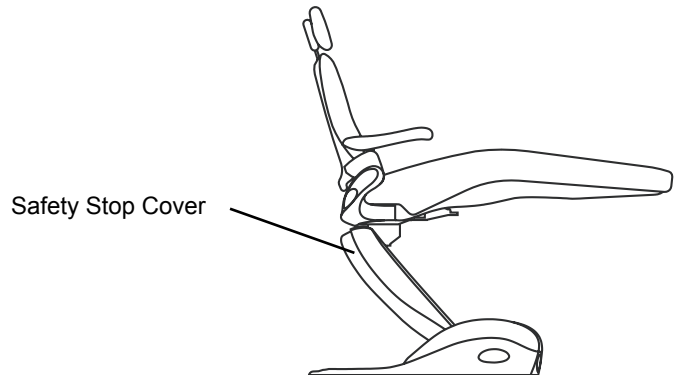
The armrest is designed to allow the armrest to articulate with the angle of the seat back. The sliding armrest mechanism is activated by lifting the armrest release trigger and sliding the armrest until it reaches the exit position. To return the armrest to the operating position slide the arm forward until it locks in place.



WARNING: Do not use the armrest for leverage while entering or exiting the chair. Risk of injury could occur to the patient.

Safety Stop Cover

Located on lower back cover. This is a safety feature with dual switches that will stop all downward movement of the chair base if triggered.



WARNING: Do not place anything under the chair base cover while the chair is operating, as injury could result if the safety circuit fails.

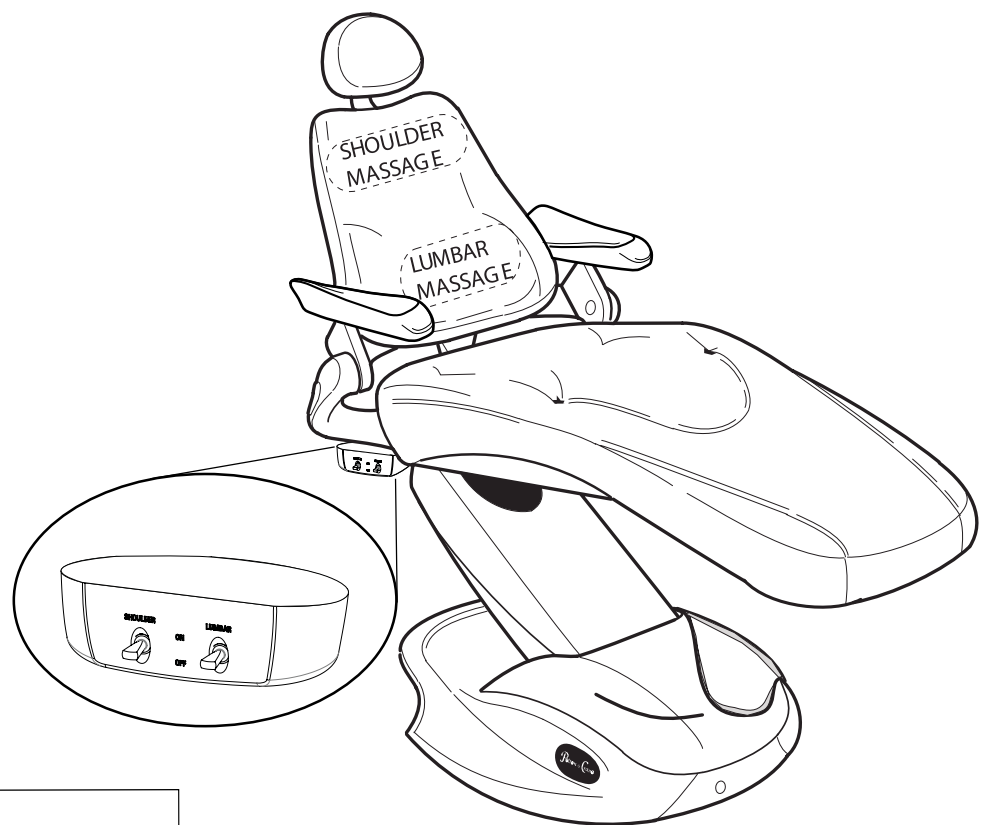
OPERATION

ERGOSOOOTHE™ MASSAGE OPTION

ErgoSoothe™ Massage bladders are located in the backrest cushions. These bladders are air driven and will fluctuate as the massage is in process.

To activate the massage functions, flip the switches to “ON” position and flip the switch to “OFF” position to deactivate the massage.

If only the shoulder area is to be massaged, flip the shoulder switch to “ON” and keep the lumbar switch in the “OFF” position or vice versa.



WARNING:

ErgoSoothe MUST BE SUPPLIED WITH A 1/4" OD, 80-100 PSI AIR SUPPLY LINE. THE PRESSURE REGULATOR IS PRE-SET AND CAN NOT BE ADJUSTED. IF THE RELIEF VALVES BEGIN VENTING, TURN OFF THE CONTROL SWITCHES AND CONTACT A PELTON & CRANE AUTHORIZED SERVICE TECHNICIAN FOR REPAIR.

OPERATION

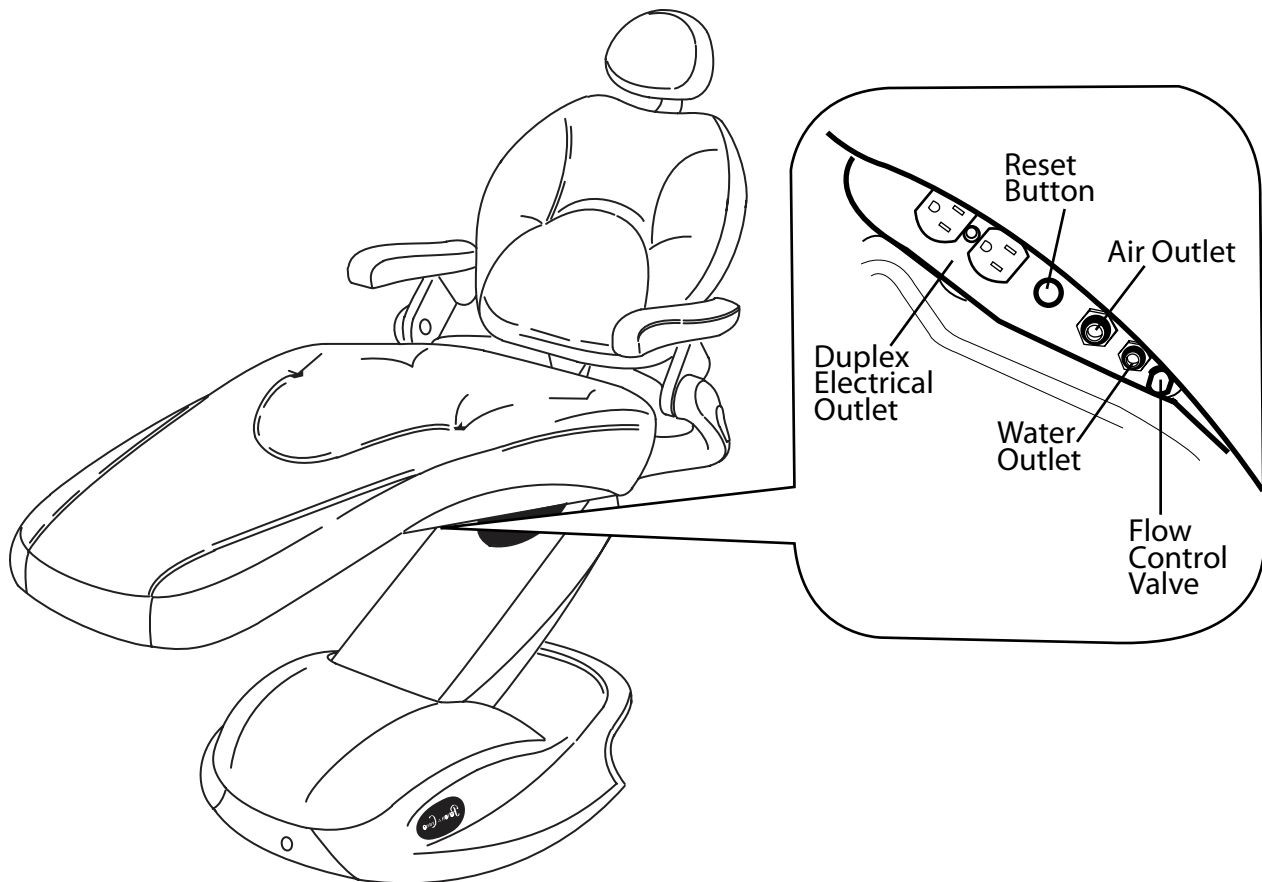
Optional Air / Water Outlets and Electrical Outlet

The optional air / water outlets and electrical outlets are conveniently located underneath the seat and are attached to the seat rail. These outlets can accommodate extra auxiliary equipment that is within the user's reach.

The outlet is rated at a maximum of 1.5 amp. per outlet. If the 4 amp. circuit breaker should open, reset by pressing reset button.

The water outlet accepts 1/4" QD fitting and has an integral shut-off valve. Next to the water outlet is a control valve to adjust flow from the water outlet.

The air outlet accepts a 3/8" QD fitting and has an integral shut-off valve.



CLEANING, DISINFECTING & STERILIZATION

Equipment can be cleaned with a solution of mild detergent and warm water. A variety of surface disinfectants are available for use in dental treatment rooms. Some of these can cause discoloration of painted, plated or anodized surfaces with repeated use. This can be minimized by careful adherence to the disinfectant manufacturer's instructions and by frequent washing with soap and water.

IMPORTANT: Do not use powdered cleansers, scouring pads or abrasive scrubbers on any of the painted, plastic or metal surfaces of this dental unit. To remove dried-on material, use a soft-bristled brush and a solution of mild detergent.

Disinfection & Sterilization

Infection Control in the dental office continues to be a high priority for our customers and end users. OSHA, the ADA and the CDC are also involved in this complex issue. The Manufacturer will not attempt to specify the required intervals for disinfection nor can it recommend the overall best surface disinfectant. Please refer to the Infection Control Recommendations published by the American Dental Association for further information. The question is often asked, "What should I use to disinfect my dental unit, chair and light?" This question is more complex than it seems because of the wide variety of products on the market as well as formulations of the products changing to meet the needs of increased asepsis.

Barrier Technique

The Manufacturer strongly advocates the barrier technique be used whenever possible to preserve the finish and appearance of the equipment. Wherever possible disposable barriers should be used and changed between patients. The barrier technique will ensure maximum long term durability of the surfaces and finishes of the equipment.

Chemical Disinfection

Regardless of the chemical disinfectant used, it is imperative that the equipment be thoroughly washed with mild soap and warm water at least once per day. This wash down will minimize the harmful effects of chemical disinfectant residues being allowed to accumulate on the equipment. When using chemical disinfectants, always pay strict attention to the disinfectant manufacturer's directions. When using concentrated disinfectants, measure the concentrate carefully and mix according to package directions. Disinfectant solutions that are relatively harmless to surfaces at their recommended strengths can be corrosive at higher than recommended dilution ratios.

Unacceptable Disinfectants

These disinfectants will harm the surface finishes of dental equipment and are not recommended. Use of these products will void your warranty.

Chemical Composition

Strong Phenols/Phenol Alcohol combinations
Sodium Hypochlorite/Household Bleach
Sodium Bromide
Strong Alcohol
Household Cleaners (Dental Equipment Only)
Citric Acids
Iodophors**
Ammonium Chloride
Accelerated Hydrogen (0.5%)

Conditionally Acceptable Disinfectants*

These disinfectants have been found to be the least harmful to the equipment surfaces by our test methods.

Chemical Composition

Quaternary Ammonium

****Iodophor-based disinfectants will cause yellow staining on many surfaces.**



WARNING: Disinfect only by wiping, no spray disinfection. Please be aware that Pelton & Crane expressly rejects any claims for warranty or damages when using other cleaning and disinfections solutions.



WARNING: *The Manufacturer makes no representation as to the disinfectant efficacy of these products. We make no warranty expressed or implied that these disinfectants will not damage the surface finishes. Damage and discoloration of the surface finishes are not covered under the warranty.

CLEANING, DISINFECTING, & STERILIZATION

Cleaning Dental Chair Upholstery

NOTE: As with all cleaning products, first clean a small inconspicuous area to ensure the material will not discolor or fade. It is recommended that each stain be cleaned in a step by step manner using the sequence below:

1. Regular Cleaning
A Solution of %10 household liquid dish soap with warm water applied with a soft damp cloth. Rinse with clean water and wipe dry. Cleaning frequency depends upon use. It is recommended that upholstery be cleaned between patients.
2. Stubborn Stains
Use detergent cleaners such as Formula 409 or Fantastik. Wipe using a soft cloth or bristle brush. Rinse with clean water and wipe dry.
3. More Difficult Stains
Carefully clean the stained area with lighter fluid (naphtha) or rubbing alcohol. Apply with a soft white cloth and rub gently. Rinse with clean water and wipe dry.
4. Ultra Leather Upholstery
Clean spots with mild soap and water or an ordinary household cleaner such as Fantastik or 409 cleaners. Wipe off any soap residue with a clean damp cloth.

Air dry or dry quickly with the warm setting on a hair dryer.

For stubborn stains use a mild solvent.

Disinfect ultra leather upholstery with a 5:1 bleach solution.

Dry cleanable by conventional methods using commercial dry cleaning solvent.

Other Tips

Always apply cleaners with a soft white cloth. Avoid the use of paper towels.

When using strong cleaning solutions such as alcohol, it is advisable to first test in an inconspicuous area.

Never use harsh solvents or cleaners that are intended for industrial use.

To restore luster, a light coat of spray furniture wax may be used. Apply to chair; allow to set for 30 seconds. Lightly buff dry with a clean dry cloth.

EMI

MEDICAL ELECTRICAL EQUIPMENT ELECTROMAGNETIC COMPATIBILITY (INSTRUCTIONS FOR USE)

ELECTROMAGNETIC COMPATIBILITY

Electrical medical devices are subject to special EMC safety measurements and as a result the equipment must be installed according to the Pelton and Crane installation instruction manual.

PORTABLE ELECTRONIC DEVICES

Portable and mobile high frequency electronic communications equipment may interfere with electronic medical devices.

STATIC SENSITIVE DEVICES

Where labeled this equipment contains static sensitive devices that require special precautions when handling. At a minimum a grounded wrist strap that is connected to ground stud should be worn to reduce the possibility of damage to the unit.



MEDICAL ELECTRICAL EQUIPMENT ELECTROMAGNETIC COMPATIBILITY (TECHNICAL DESCRIPTION)

ELECTROMAGNETIC COMPATIBILITY

This equipment has been tested and found to comply with the requirements for medical devices of IEC 60601-1-2 and is intended to be installed in a typical medical environment.

ACCESSORY USE

Using accessory devices not specified by Pelton and Crane for use with their equipment may result in an increase of electromagnetic emissions and/or a decrease in electromagnetic immunity of the system.

INTERFERENCE FROM OTHER EQUIPMENT

If other equipment is used adjacent to or stacked with the Pelton and Crane equipment the system must be observed to verify normal operation.

Guidance and manufacturer's declaration-electromagnetic emissions		
The Model SP3000 intended for use in the electromagnetic environment specified below. The customer or the user of the SP3000 should assure that it is used in such an environment.		
Emissions Test	Compliance	Electromagnetic Environment Guidance
RF emissions CISPR-11	Group 1	The SP3000 chairs use RF energy only for its internal function. Therefore, their emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR-11	Class A	The SP3000 chairs are suitable for use in all establishments, other than 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	

Recommended separation distances between portable			
The Model SP3000 intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the SP3000 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the SP3000 as recommended below, according to the maximum output 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 to 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.			

Guidance and manufacturer's declaration-electromagnetic immunity			
The Model SP3000 Dental Chairs are intended for use in the electromagnetic environment specified below. The customer or the user of the SP3000 should assure that it is used in such an environment.			
Immunity Test	IEC60601 Test Level	Compliance Level	Electromagnetic Environment Guidance
ELECTROSTATIC DISCHARGE (ESD) IEC 61000-4-2 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% Where labeled, a ground strap (connected to ground lug) should be worn to reduce the possibility of damaged to the unit when servicing.
ELECTRICAL FAST TRANSIENT/BURST IEC 61000-4-4	+/-2 kV for power supply lines +1-1 kV for input output lines	+/-2 kV for power supply lines Not applicable, No I/O lines	Mains power quality should be that of typical commercial or hospital environment.
SURGE IEC61000-4-5	+/-1 kV differential mode +/-2 kV common mode	+/-1 kV differential mode +/-2 kV common mode	Mains power quality should be that of 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	<5% U_T (>95% dip in U_T) for 0.5 cycle	Mains power quality should be that of typical commercial or hospital environment. If the user of the SP3000 requires continued operation during power mains interruptions, it is recommended that the SP3000 be powered by an uninterrupted power supply or battery.
	40% U_T (60% dip in U_T) for 5 cycles	40% U_T (60% dip in U_T) for 5 cycles	
	70% U_T (30% dip in U_T) for 25 cycles	70% U_T (30% dip in U_T) for 25 cycles	
	<5% U_T (>95% dip in U_T) for 5 seconds	<5% U_T (>95% dip in U_T) for 5 seconds	
POWER FREQUENCY (50/60 HZ) MAGNETIC FIELD IEC61000-4-8	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.
U_T is the AC. mains voltage prior to application of the test level.			

