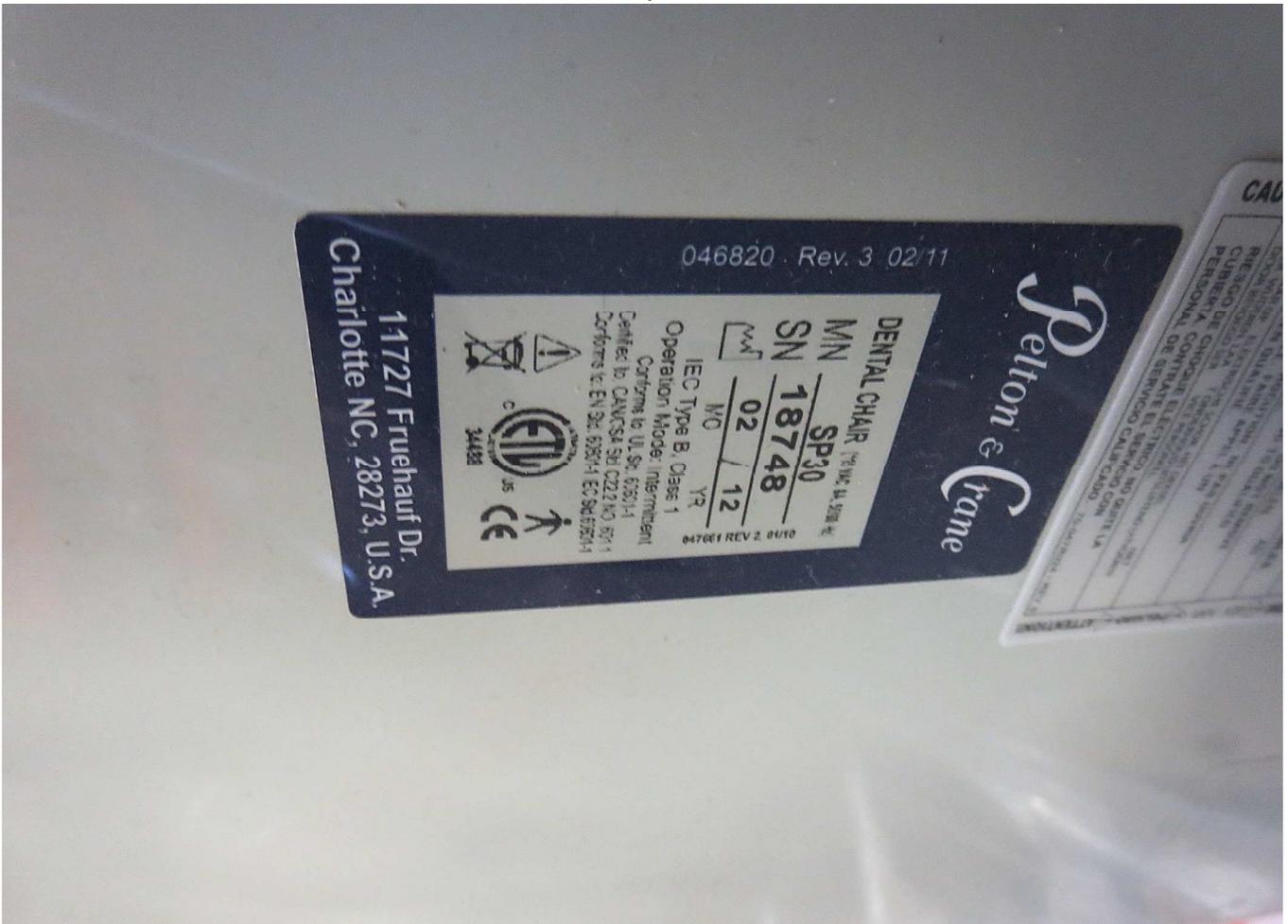
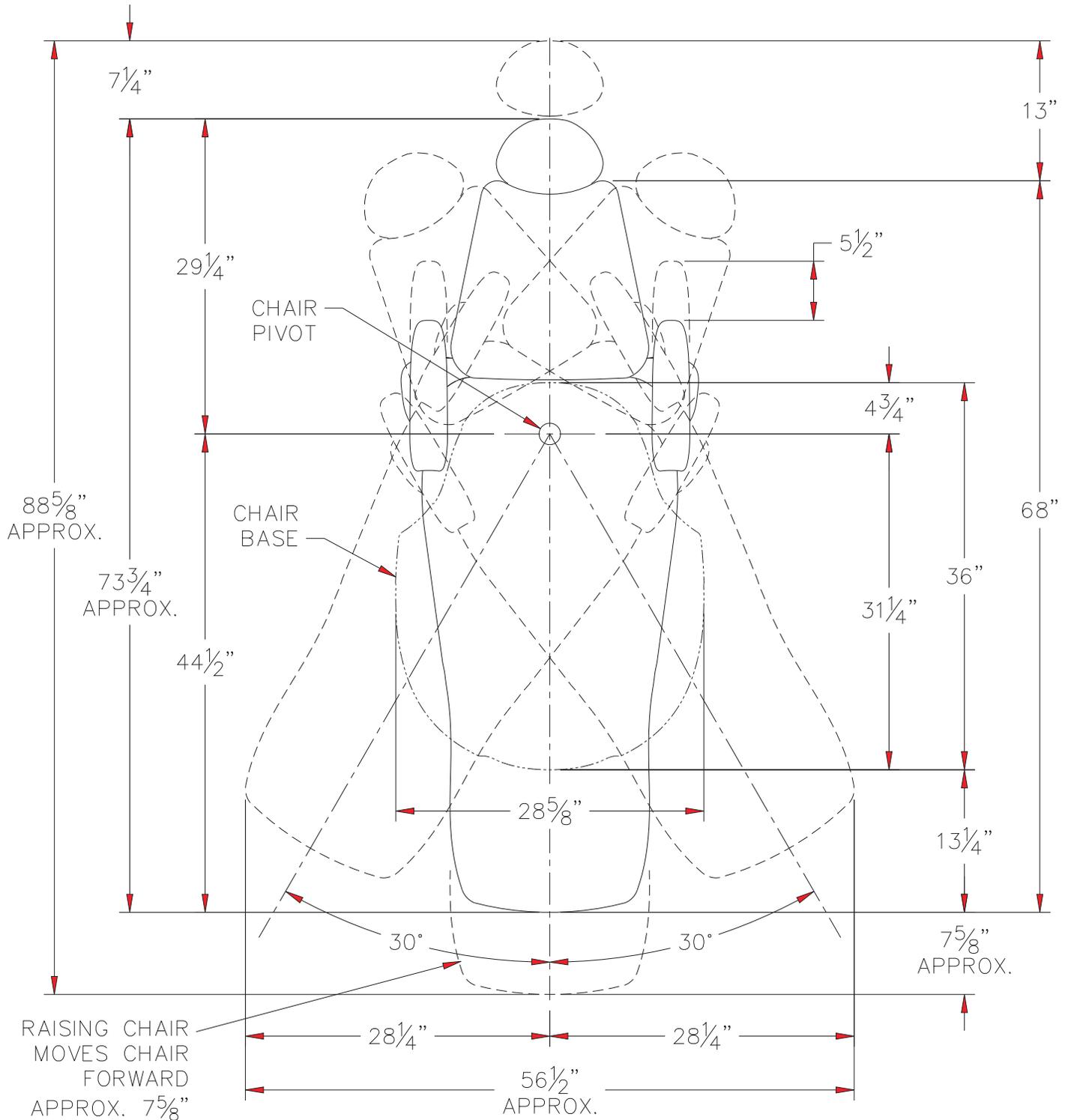




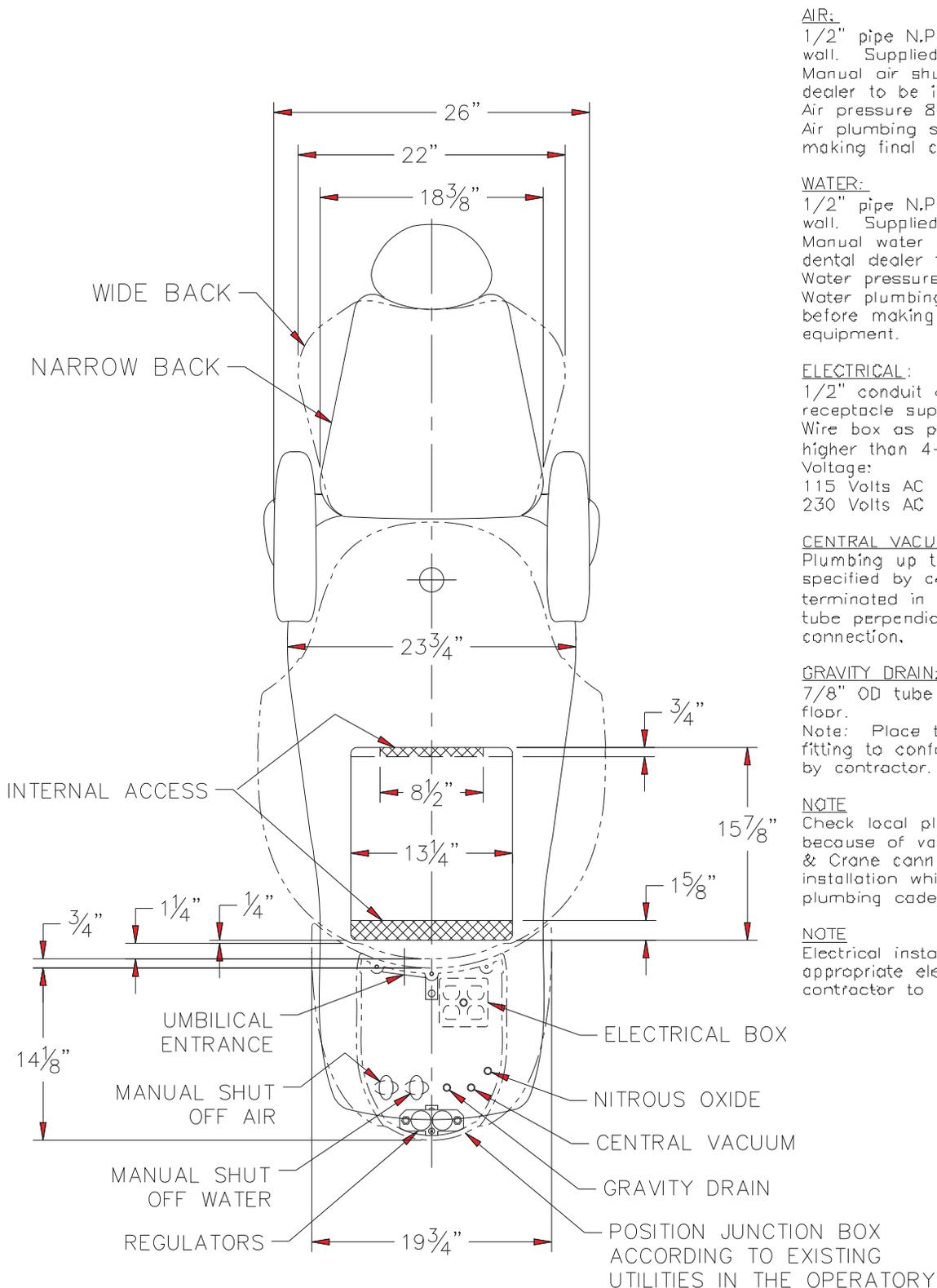
Pelton and Crane Series 3000 Dental Chair - Collins Bay Institution Warehouse





# SPiRiT 3000 CHAIR

## Dimensions w/ Junction Box Plumbing Diagram



### AIR:

1/2" pipe N.P.T. protruding 1" from floor or wall. Supplied by contractor.  
 Manual air shut-off valve supplied by dental dealer to be installed by contractor.  
 Air pressure 80-100 psi.  
 Air plumbing should be flushed clean before making final connections to dental equipment.

### WATER:

1/2" pipe N.P.T. protruding 1" from floor to wall. Supplied by contractor.  
 Manual water shut-off valve supplied by dental dealer to be installed by contractor.  
 Water pressure 40-80 psi.  
 Water plumbing should be flushed clean before making final connections to dental equipment.

### ELECTRICAL:

1/2" conduit and box with quad or equal receptacle supplied by contractor.  
 Wire box as per code with top of the box no higher than 4-1/2" above finished floor.  
 Voltage:  
 115 Volts AC 3 wire or  
 230 Volts AC 3 wire.

### CENTRAL VACUUM:

Plumbing up to utility center should be specified by central vacuum supplier and terminated in utility center with 7/8" OD tube perpendicular to floor, similar to drain connection.

### GRAVITY DRAIN:

7/8" OD tube protruding 1" from finished floor.  
 Note: Place trap in line and use vented fitting to conform with local codes. Supplied by contractor. Floor mounting only.

### NOTE

Check local plumbing codes for compliance because of varying city plumbing code. Pelton & Crane cannot be held responsible for an installation which does not meet local and plumbing codes.

### NOTE

Electrical installation must meet all appropriate electrical codes. Consult electrical contractor to provide a 115VAC receptacle.

NOTE: CUT UMBILICAL TO A LENGTH NECESSARY TO ACCOMMODATE THE JUNCTION BOX.

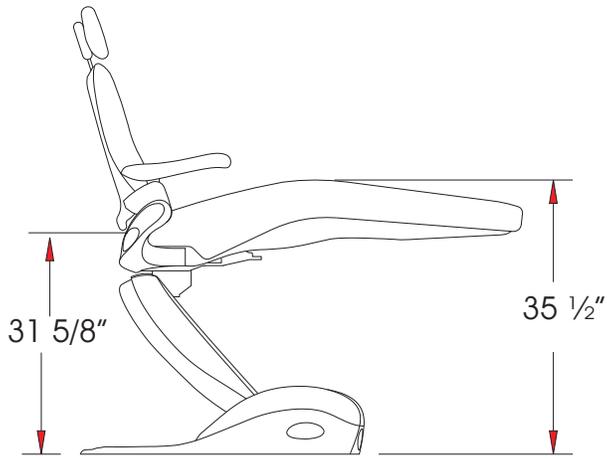
# SPIRIT 3000 CHAIR

## height Dimensions

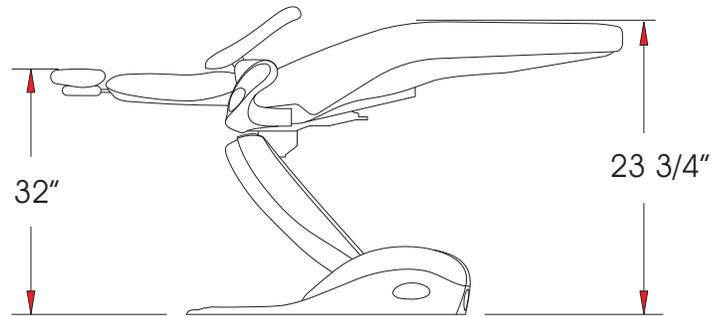
### Technical Data

**Chair Weight:** 360 lbs.

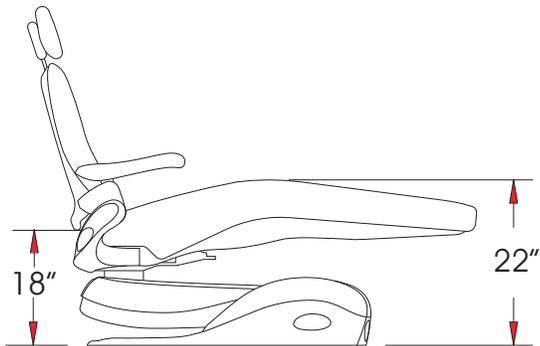
**Electrical Specifications:** 115V, 50/60 Hz 7A



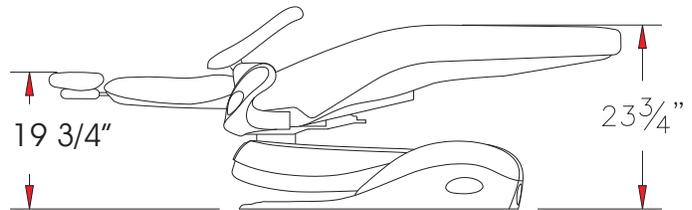
Highest Chair Position  
Chair Back Raised



Highest Chair Position  
Chair Back Lowered

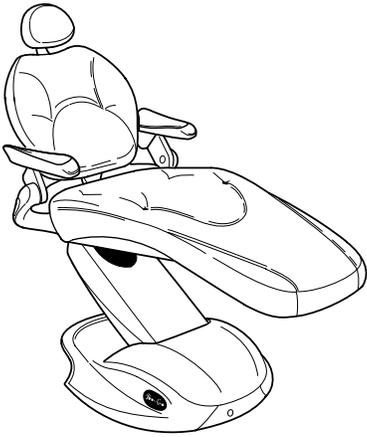


Lowest Chair Position  
Chair Back Raised

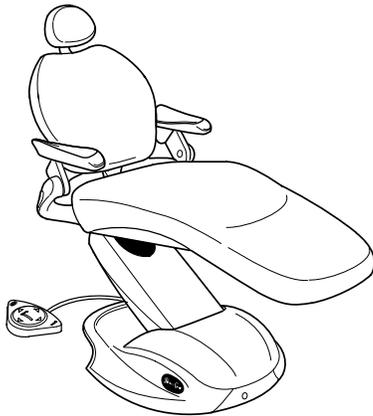


Lowest Chair Position  
Chair Back Lowered

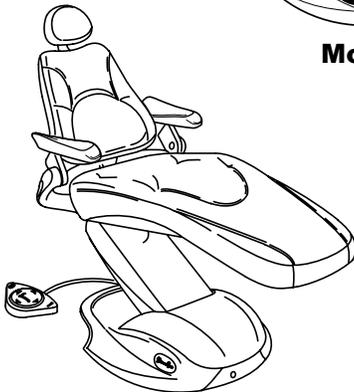
*Pelton & Crane*



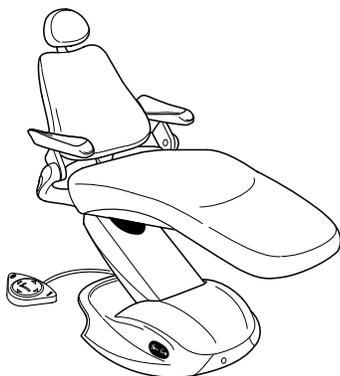
**Model: 3001**



**Model: 3002**



**Model: 3003**



**Model: 3004**

# Spirit 3000 Series Dental Chair

Installation Instructions

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## INSTALLATION INSTRUCTIONS CONTENTS

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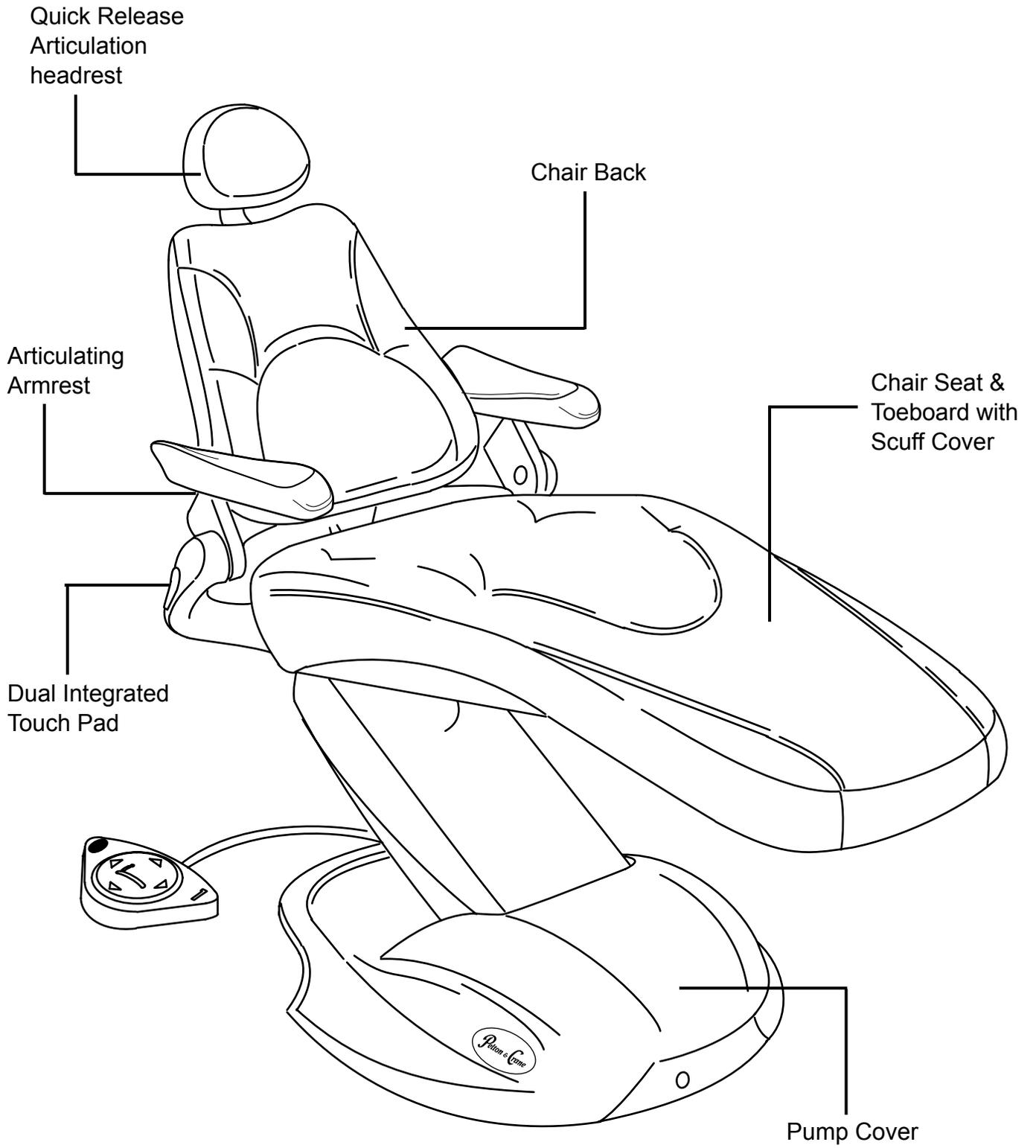
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### *Technical Support*

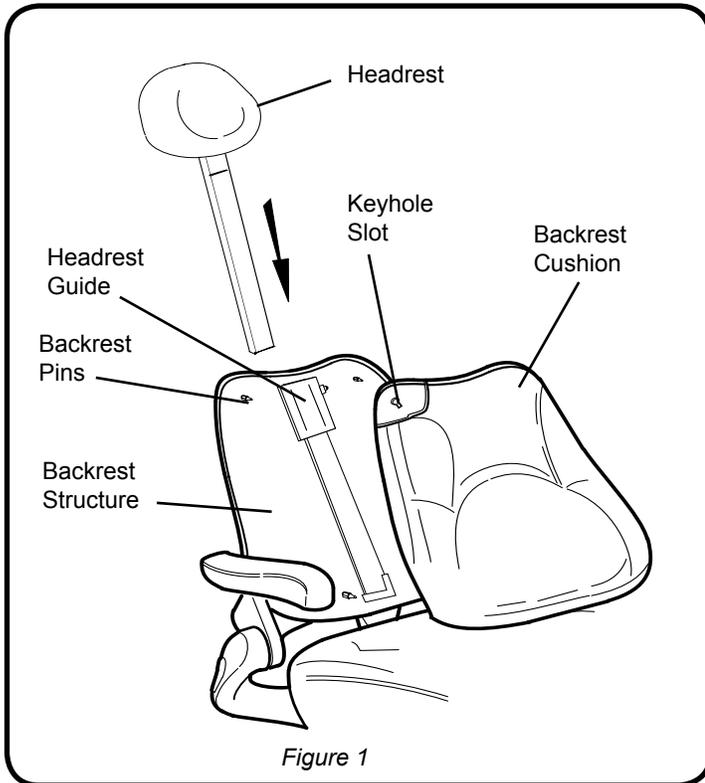
Technical assistance is available Monday through Friday,  
8:00 am to 6:00 pm (Eastern Standard Time).

Phone: 800-659-5922 Fax: 704-583-8506
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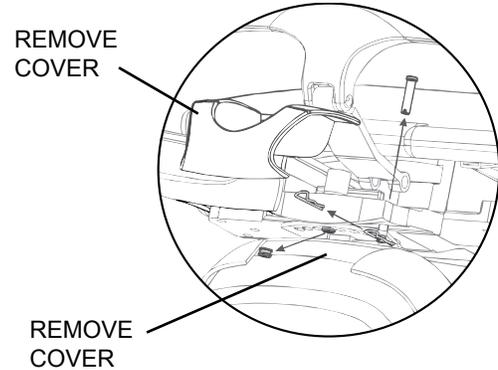
# SYSTEM OVERVIEW



## GENERAL INFORMATION



**WARNING:** Chair weight is in excess of 250 pounds. Use an assistant to safely position the chair.



**AFTER THE CHAIR IS POSITIONED AND LEVELED, REMOVE THE CLEVIS PIN AND LOCK PIN. REMOVE THE PLUG THAT IS LOCATED IN THE CENTER HOLE OF THE LOCKING PLATE.**



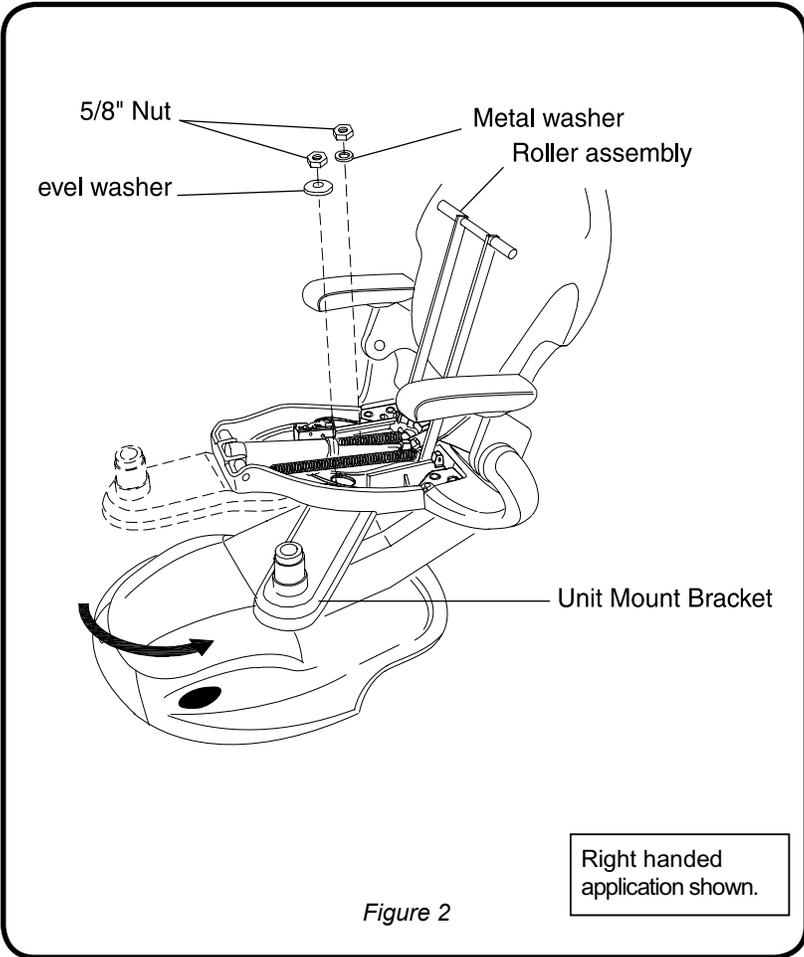
1. Remove shipping straps and carton lid from chair box. Remove the seat cushion and seat rail from the box. Finally remove the shipping container's outer sleeve.
2. Remove the four 3/8" bolts that secure the chair's base plate to the shipping pallet. Remove any other packing or straps that retain the chair to the shipping pallet.
3. Carefully slide the chair from the pallet to the location to be installed.
4. Check to see that the chair base is on a level surface and that the chair does not rock due to high or low spots on the floor. If the surface is uneven, use the supplied leveling pads found in the chair hardware kit to eliminate gaps between the floor and the chair base.

5. Locate the box containing the headrest. Lower the headrest glide bar into the headrest guides as shown in figure 1.

Position backrest cushion so that cushion keyholes are seated onto backrest pins. Standing directly behind the backrest structure, use both hands and apply downward pressure in a jogging motion until the cushion is installed (see figure 1).

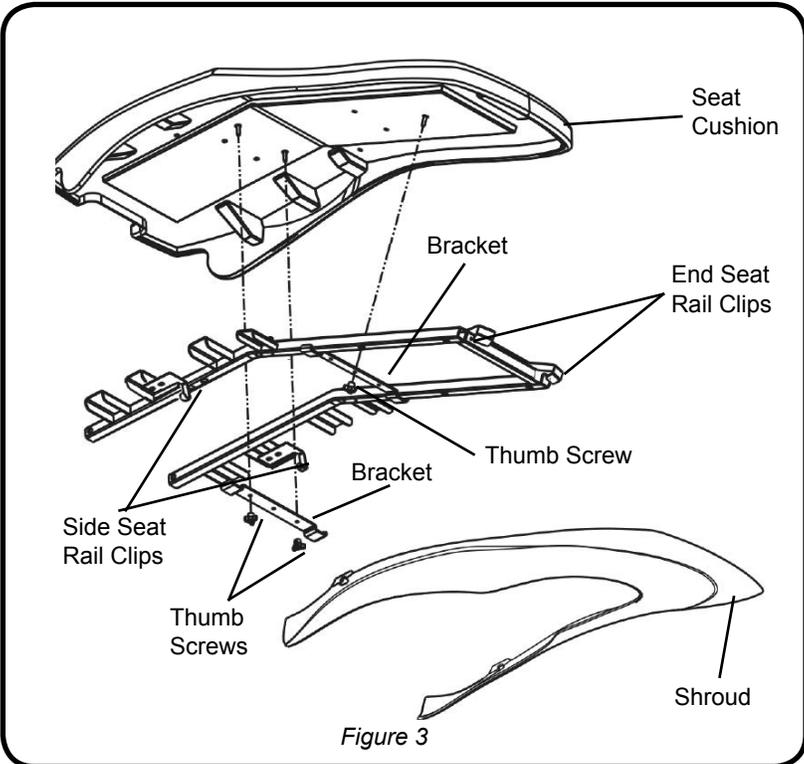
**Note:** The next two steps apply only to Spirit units with utility centers. For all others, continue with step 8.

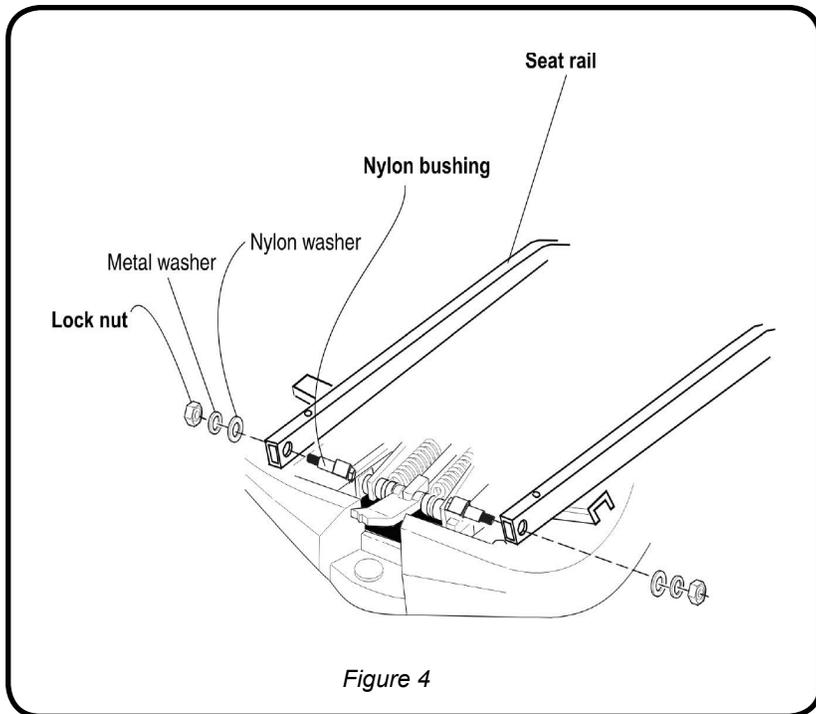
6. If the chair is to have a unit mount bracket installed it should be set up at this time. If the unit was purchased as a complete package then the unit mount bracket will be factory installed. In this case, swing the upper roller link assembly up and rest it on the chair's backrest. Loosen both nuts with a 15/16" wrench and swing the unit mount arm to its extreme left side position (for a right handed user). Retighten both nuts securely. Be careful not to nick or scratch cylinder or upper structure.
7. If the unit mount bracket is not factory installed, position the unit mounting bracket onto the chair as shown in figure 2. Install the bolt stud through the hole in the chair's upper structure and install the washer and 5/8" nut onto the bolt. Hand tightend the nut. Install the beveled washer and nut over the second threaded stud and hand tighten. Swivel the bracket to the desired position (if user is right handed place the unit mount bracket on the chair's left side). Tighten the bolt & nut securely with two 15/16" wrench. Then tighten the nut securely with a 15/16" wrench.



**Note:** It will be necessary to disassemble this assembly before installing to chair upper structure. Proceed as follows - see figure 3.

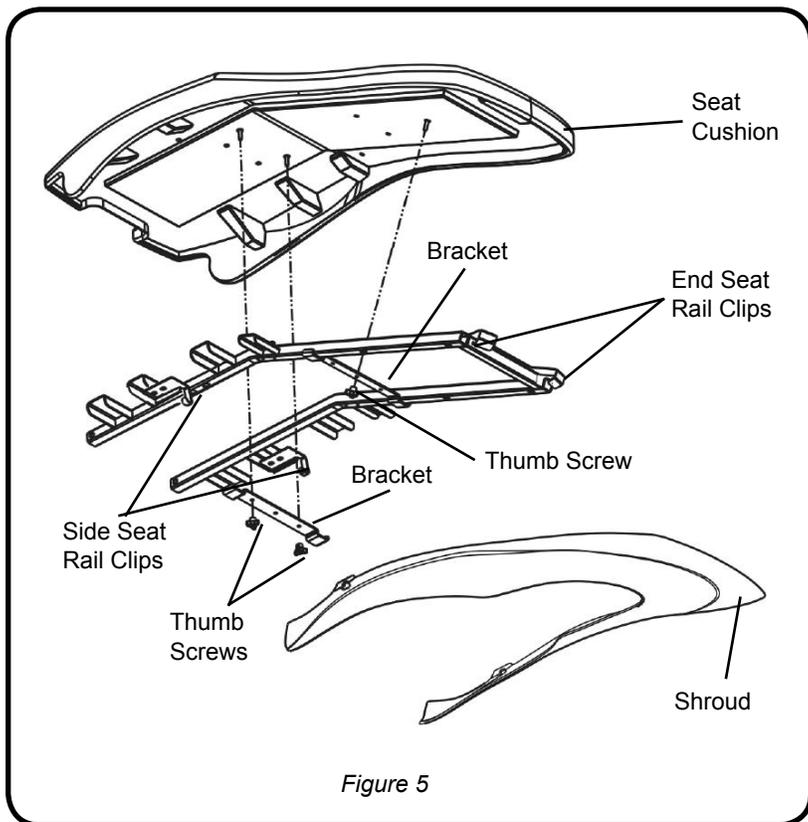
8. Remove seat rail, cushion and shroud assembly from packaging.
9. Remove shroud from four rail clips located at the end and sides of seat rail. Press the cover into clear slide rail clips. Pull shroud from the end rail clips set the shroud aside.
10. Remove the seat cushion from the seat rail by turning the three thumb screw securing the two brackets and the cushion to rail. Lift cushion away and set the cushion, brackets and thumb screws aside.





11. Locate the seat cushion rail mounting hardware which is attached to the upper structure. Remove nylon washers, metal washers, and plastic washers. It is not necessary to remove the nylon bushing.
12. Slide one of the chair rails over the nylon bushing. Pull the other chair rail over the nylon bushing. Install nylon washer, metal washer and lock nut as shown. Tighten securely but do not overtighten. Ensure that the rail pivots freely up and down and has no side-to-side play.

**NOTE:** Reinstall cushion and shroud in the reverse order described in sections 9 and 10.

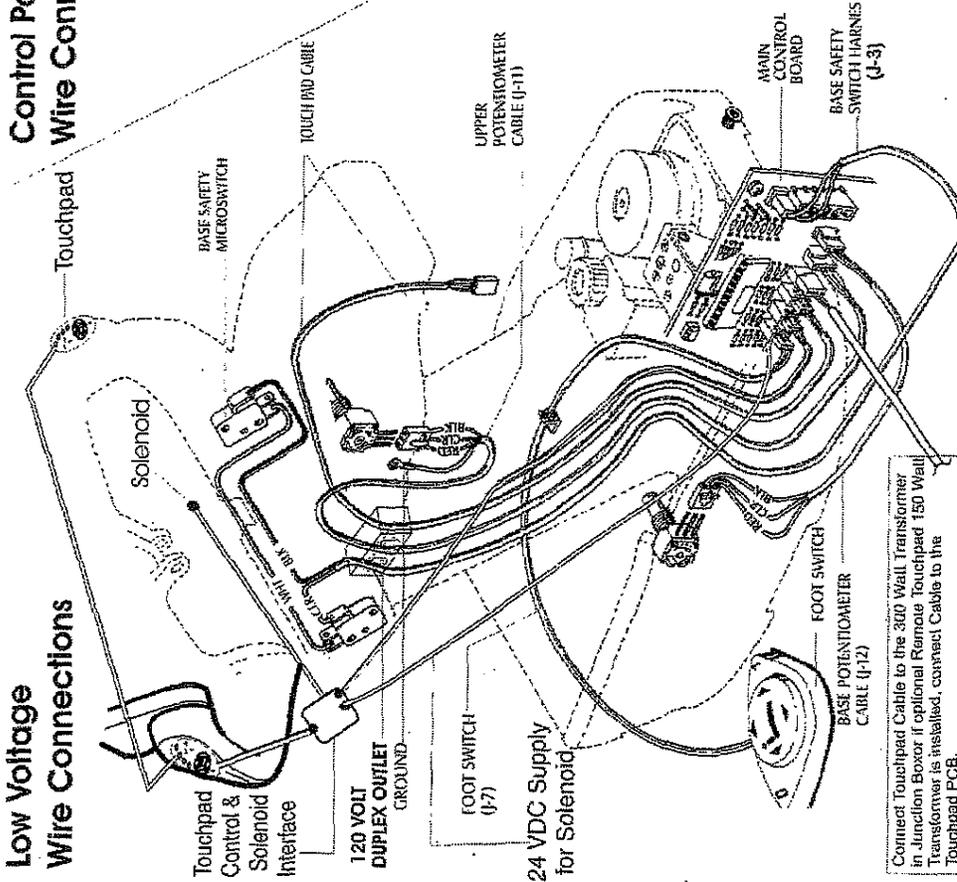


13. Reinstall seat and shroud by placing seat cushion over seat rail. Reinstall the two brackets and secure bracket and seat cushion to the seat rail using the three thumb screws. Tighten securely.
14. Insert the bottom of shroud into the end seat rail clips. Insert the top of the shroud into the top seat rail clips. See Figure 5

# 3000 DENTAL CHAIR WIRING DIAGRAM

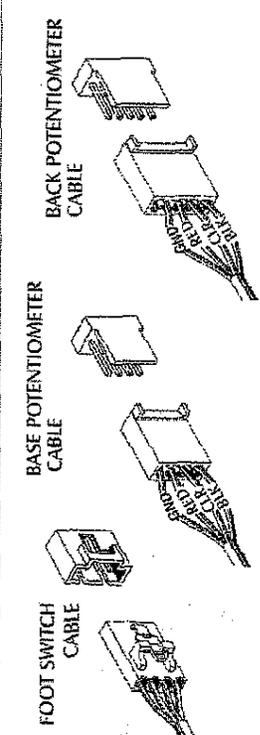
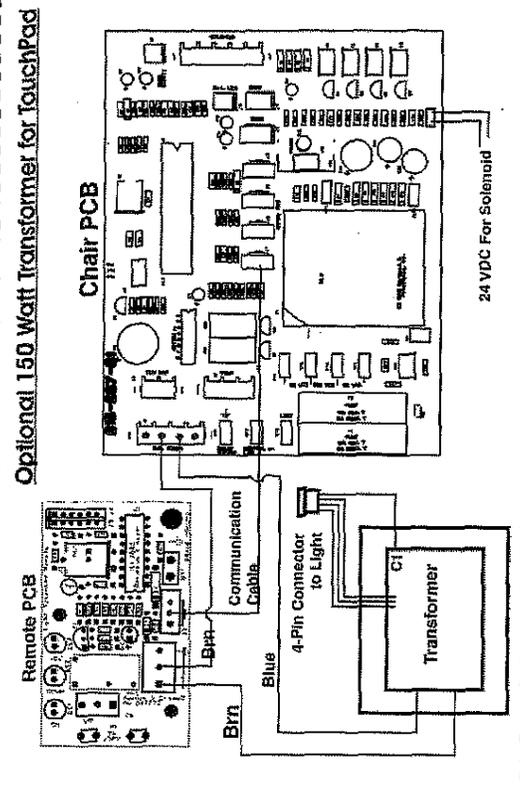
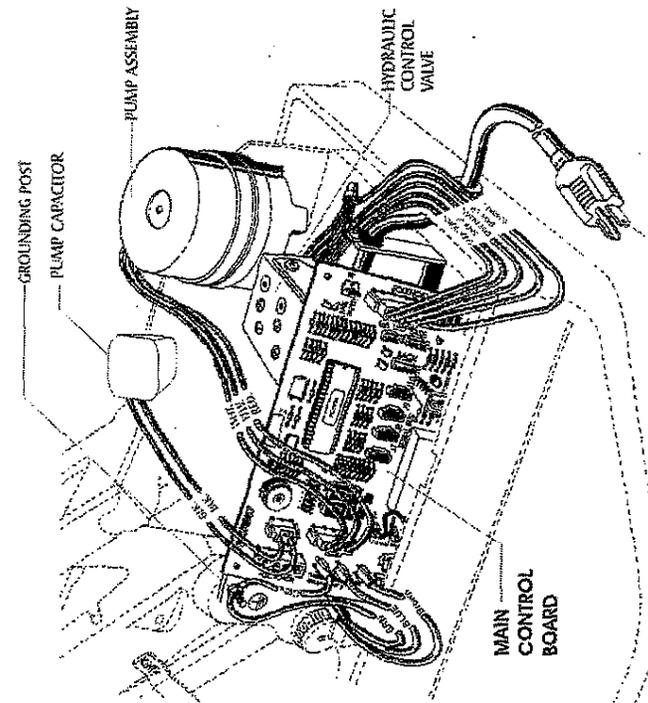
NOTE: PCB IS ORIENTED IN THE ILLUSTRATION TO SHOW PCB CONNECTIONS.

## Low Voltage Wire Connections



Connect Touchpad Cable to the 3000 Wall Transformer in Junction Box or optional Remote Touchpad 150 Wall Transformer is installed, connect Cable to the Touchpad PCB.

## Control Package Wire Connections



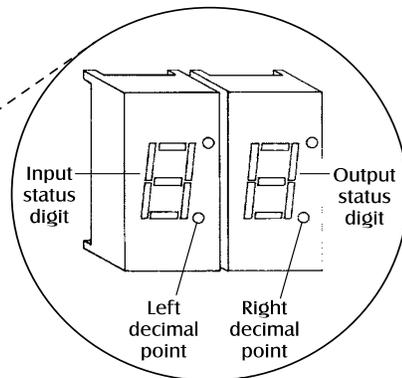
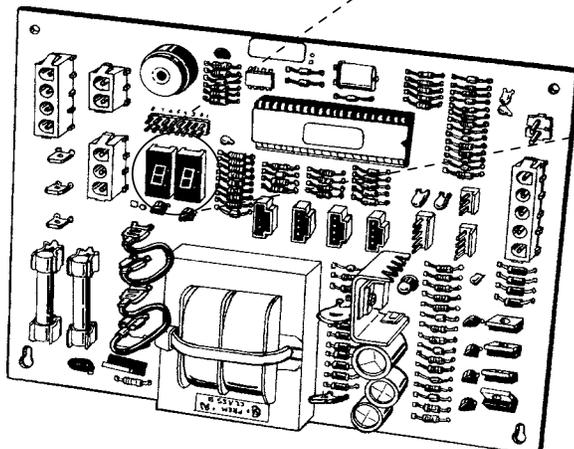
## DENTAL CHAIR DIAGNOSTIC CODES

INPUT STATUS DIGIT	INPUT STATUS	CORRECTIVE ACTION
0	No input received	Examine input device
1	Foot switch button pressed	Switch may be stuck
2	Touch pad button pressed	Switch maybe stuck
3	Foot switch and touch pad button pressed	Multiples switches stuck
4	Chair stopped due to loss of input signal	Input device or connection faulty

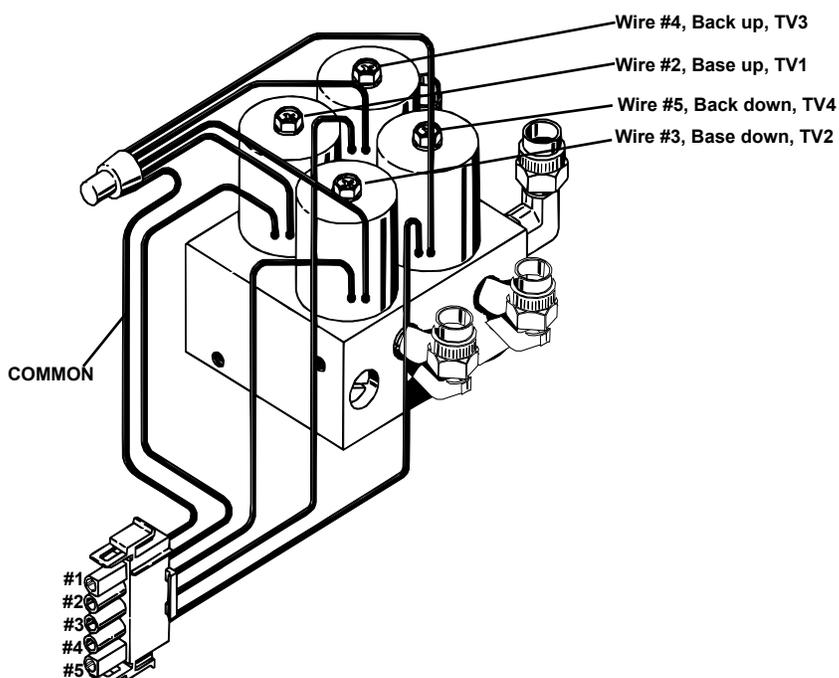
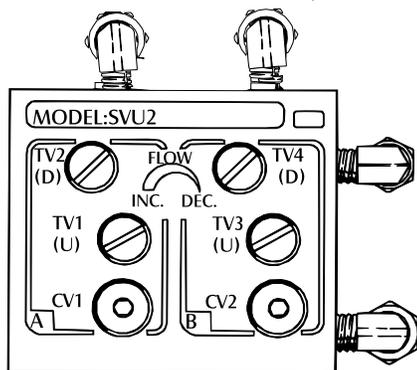
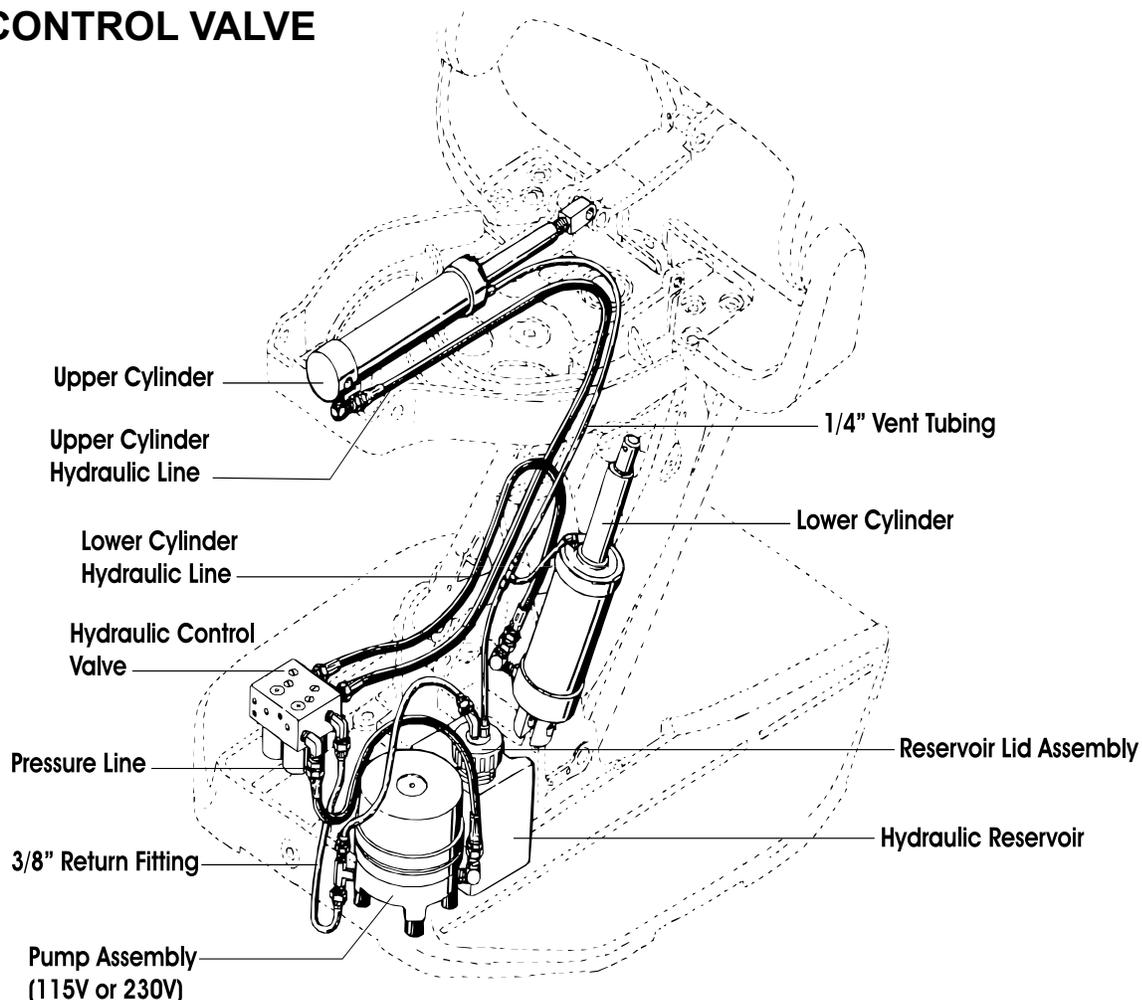
OUTPUT STATUS DIGIT	OUTPUT STATUS	CORRECTIVE ACTION
0	No motion in progress	No output present
1	Backrest in motion	Normal operation
2	Base in motion	Normal operation
3	Backrest and loose in motion	Normal operation
4	Chair stopped due to no sensed motion	Examine potentiometer
5	Backrest input received, out of soft limits	Reprogram soft limits
6	Base input received, out of soft limits	Reprogram soft limits
7	Backrest and base input received, out of soft limits	Reprogram soft limits
8	Auto position in progress	Normal operation

DIAGNOSTIC DISPLAY	OPERATING STATUS	CORRECTIVE ACTION
00	Potentiometer value too low	Calibrate potentiometer
FF	Potentiometer value too high	Calibrate potentiometer
E_	Main control board failure (replace)	Replace board
RIGHT DECIMAL	Error is for base potentiometer	Examine potentiometer
LEFT DECIMAL	Error is for back rest potentiometer	Examine potentiometer

### MAIN CONTROL BOARD DIAGNOSTIC DISPLAY



# HYDRAULIC CONTROL VALVE



**CHAIR SPEED ADJUSTMENTS**  
 Adjust screws shown to the right:  
 TV2 = Base Down  
 TV4 = Backrest Down  
 TV1 = Base Up  
 TV3 = Backrest Up  
 To **increase** speed, turn adjustment screws counterclockwise.  
 To **decrease** speed turn adjustment screws clockwise.

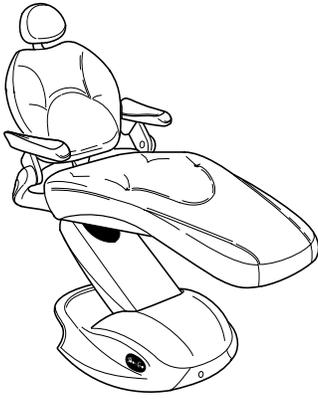


## INSTALLATION CHECKLIST

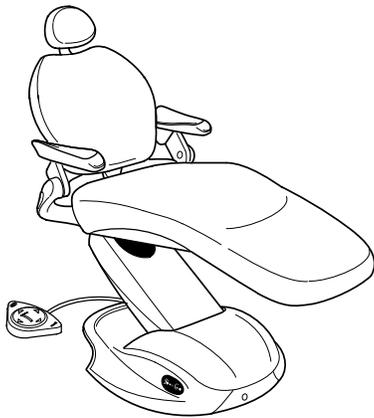
Verify the following after installation or servicing of the unit:

- All manuals are present.
- All labels are present and legible.
- No mechanical damage on new installations.
- The chair is connected to the correct power source.
- The chair is setting on a level surface.
- All connections are properly attached.
- If applicable, the cover is closed and fasteners tightened (take care not to pinch tubing on wires).
- When depressing the touchpad (if applicable), the unit/chair functions properly.
- While running the chair ensure there is nothing leaking from the tubing.
- The chair passes a high pot test.
- All terminals are connected securely.
- The chair passes a ground continuity test.
- The internal wiring is in good shape and not frayed.

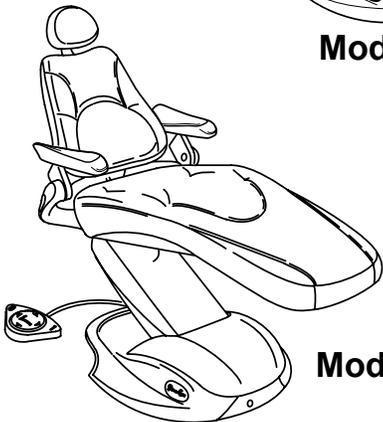
*Pelton & Crane*



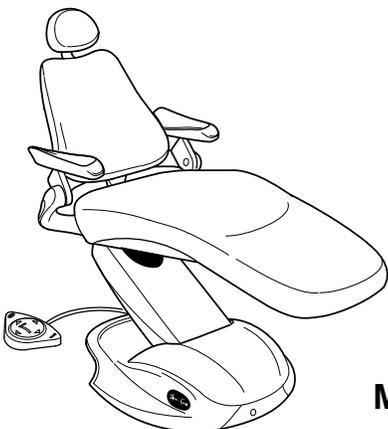
**Model: 3001**



**Model: 3002**



**Model: 3003**



**Model: 3004**

# Spirit 3000 Series Dental Chair USE AND CARE

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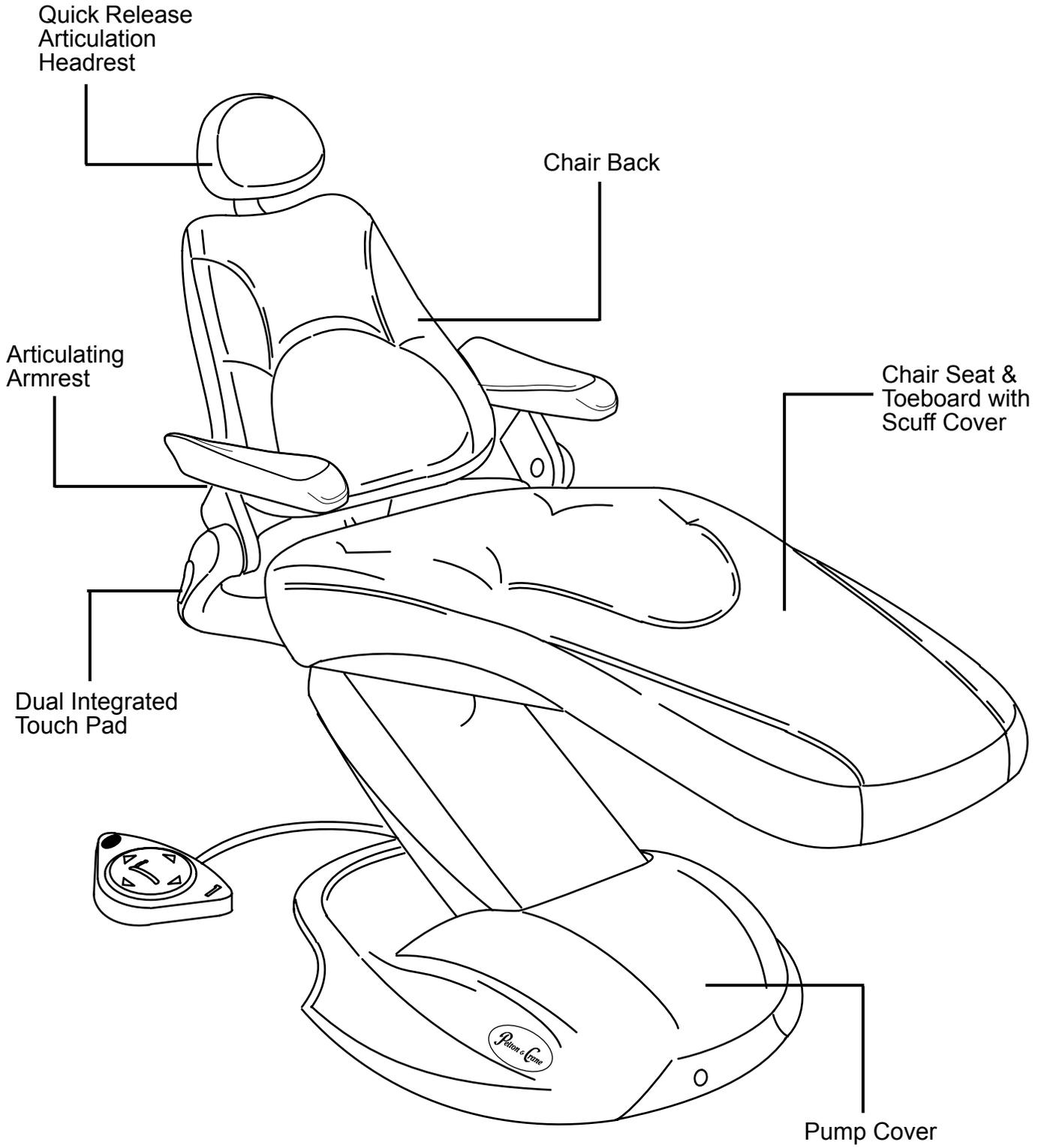
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## Technical Support

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
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# 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.

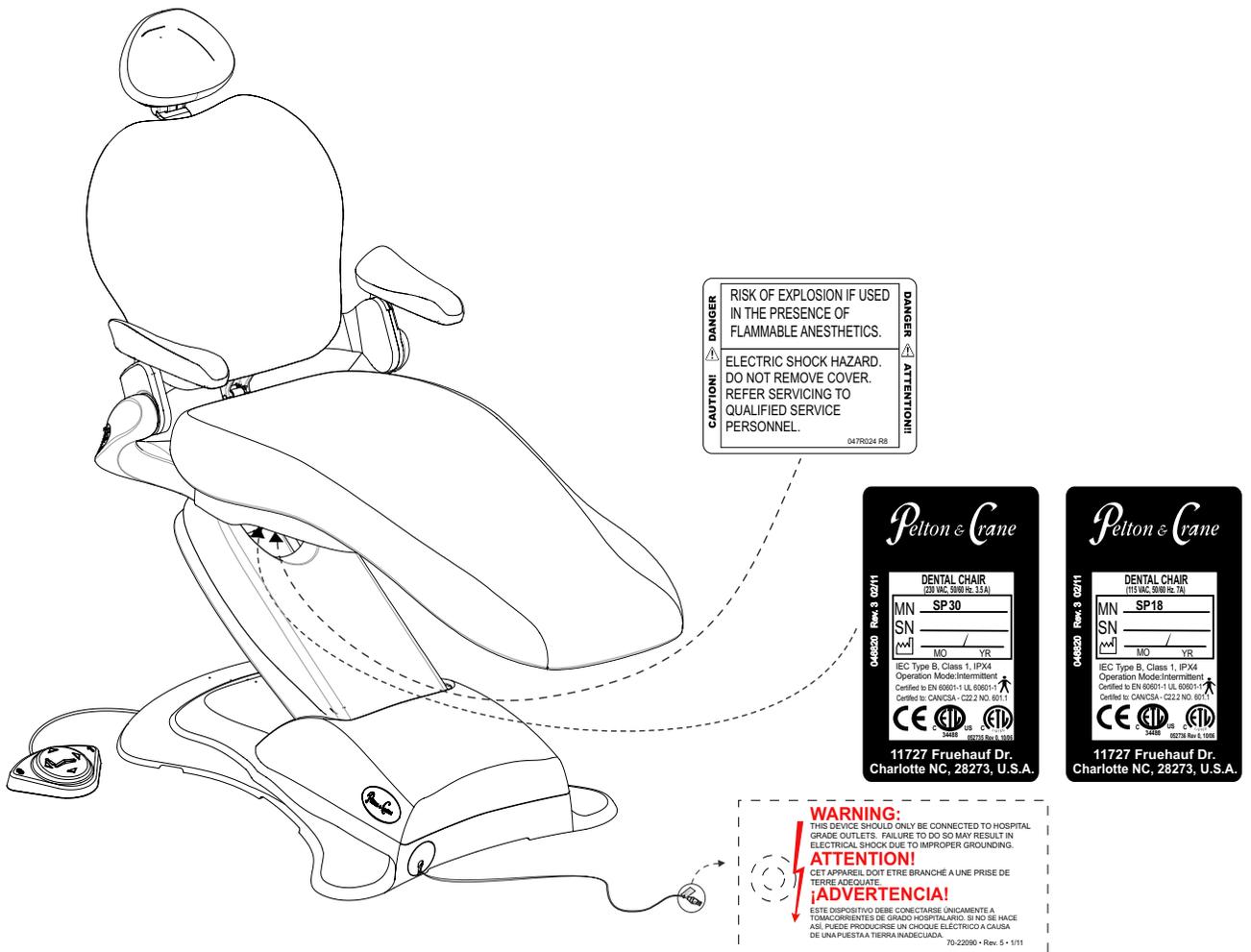
The dental chairs have the provision to mount additional dental equipment including over-the-patient delivery systems. For this purpose the chair must provide a stable foundation for both the patient and the additional equipment.

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

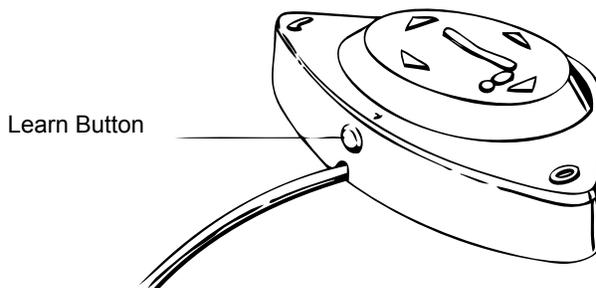
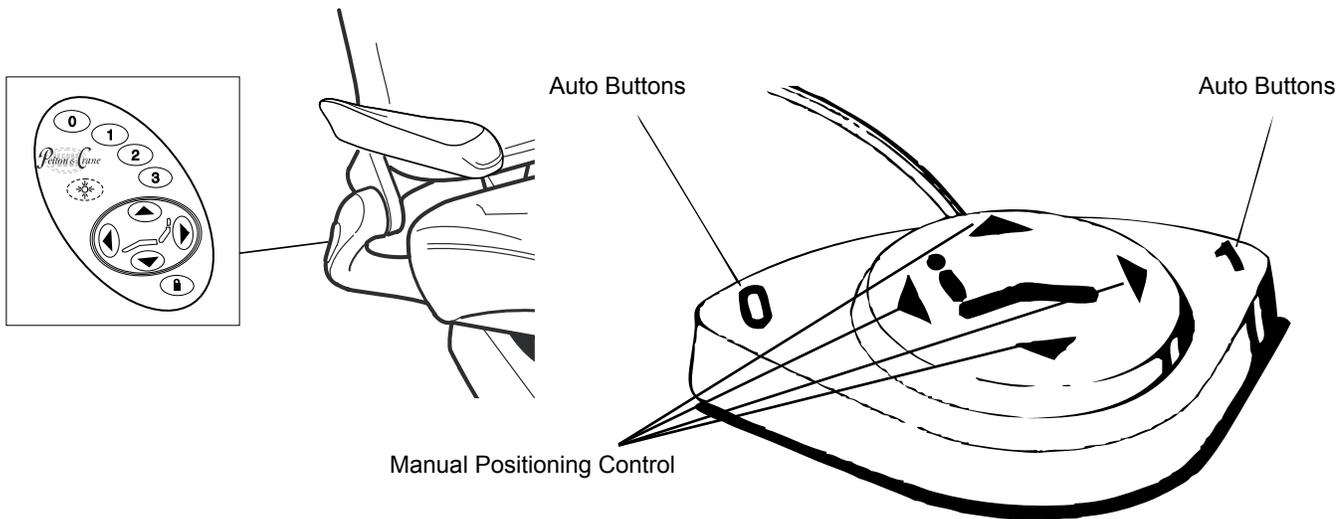
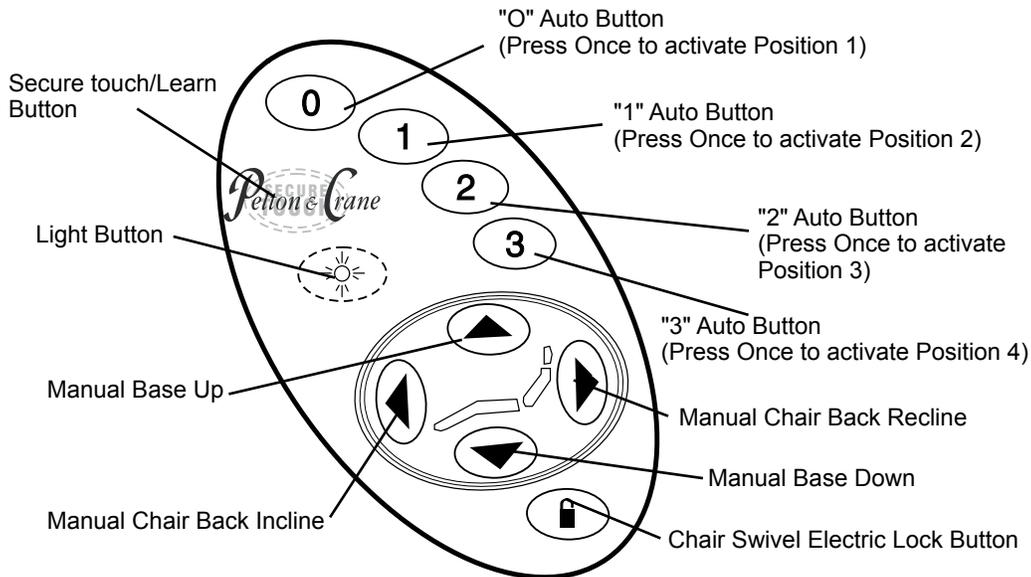
This dental chair can be identified by its product label, located inside or underneath the chair seat. This label states the chair model and serial number, electrical specifications, manufacture date and safety classification. Note the **SAMPLE** labels shown below.



# 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

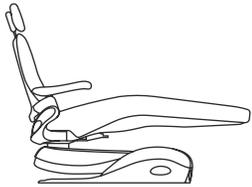
### STORING POSITIONS 1,2,3 & 4

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.

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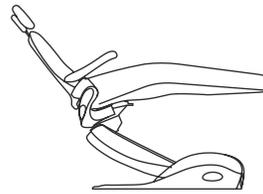
### Typical Programming Positions



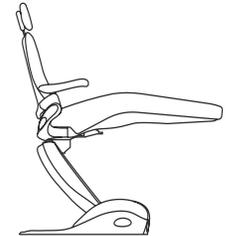
POSITION 1: Entry/Exit



POSITION 2: Work position



POSITION 3: Second work position

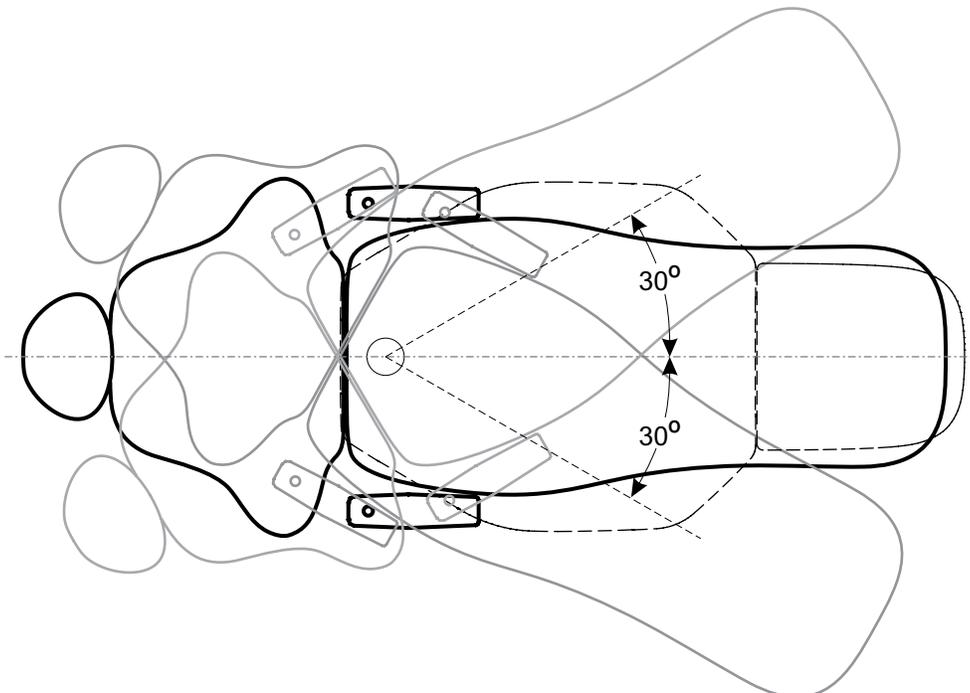


POSITION 4: X-Ray position

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**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.

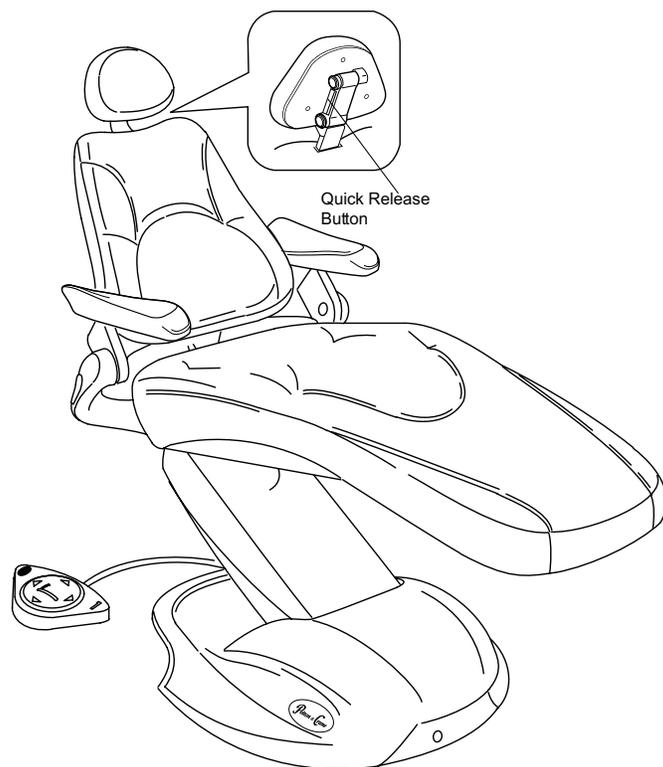
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# OPERATION

## Articulating Headrest

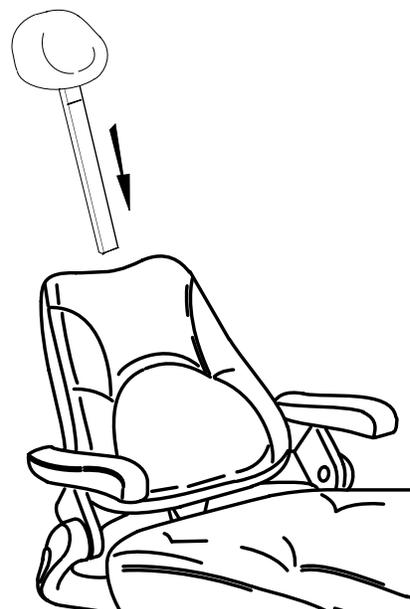
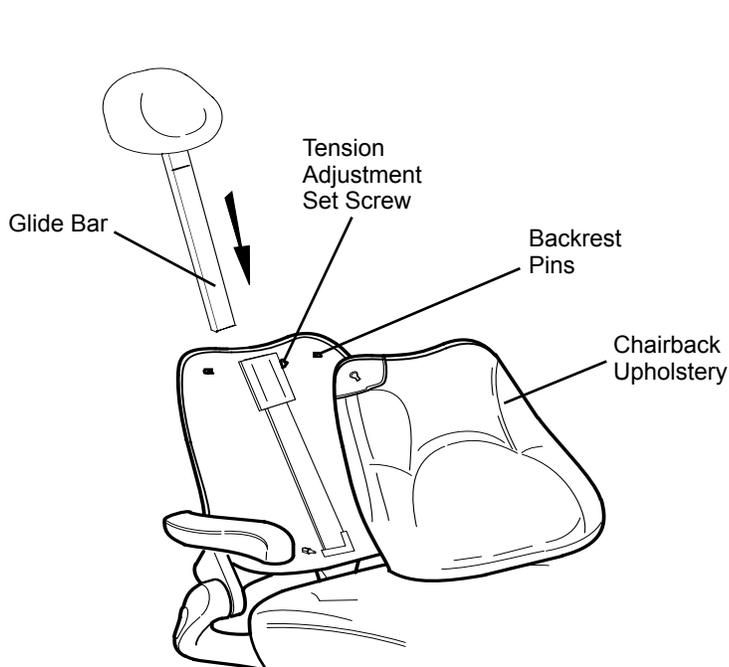
The articulating headrest can be adjusted by depressing the Quick Release Button and situating the headrest in the desired position. Release the button to lock headrest into place.



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

## Headrest Tension Adjustment

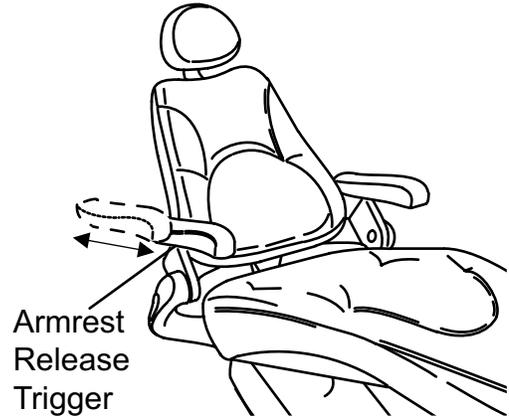
Separate the chair back upholstery from the backrest by lifting up on the backrest upholstery to release the cushion from the backrest pins. Locate the tension adjustment set screw and turn screw clockwise to increase tension to the glide bar or counterclockwise to decrease tension. Once tension is set,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



## OPERATION

### Armrest

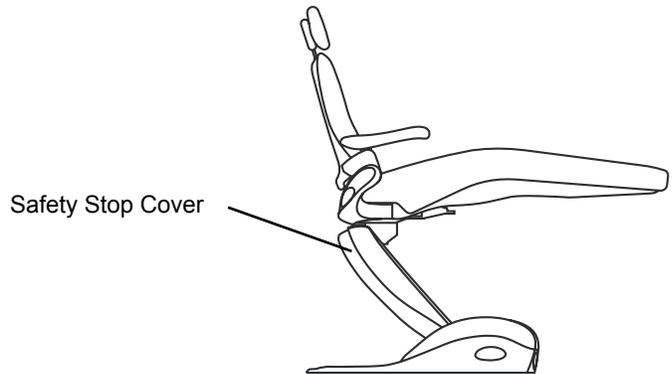
The armrest is designed to allow the armrest to articulate with the angle of the seat back. The sliding armrest mechanism is activated by lifting the armrest release trigger and sliding the armrest until it reaches the exit position. To return the armrest to the operating position slide the arm forward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

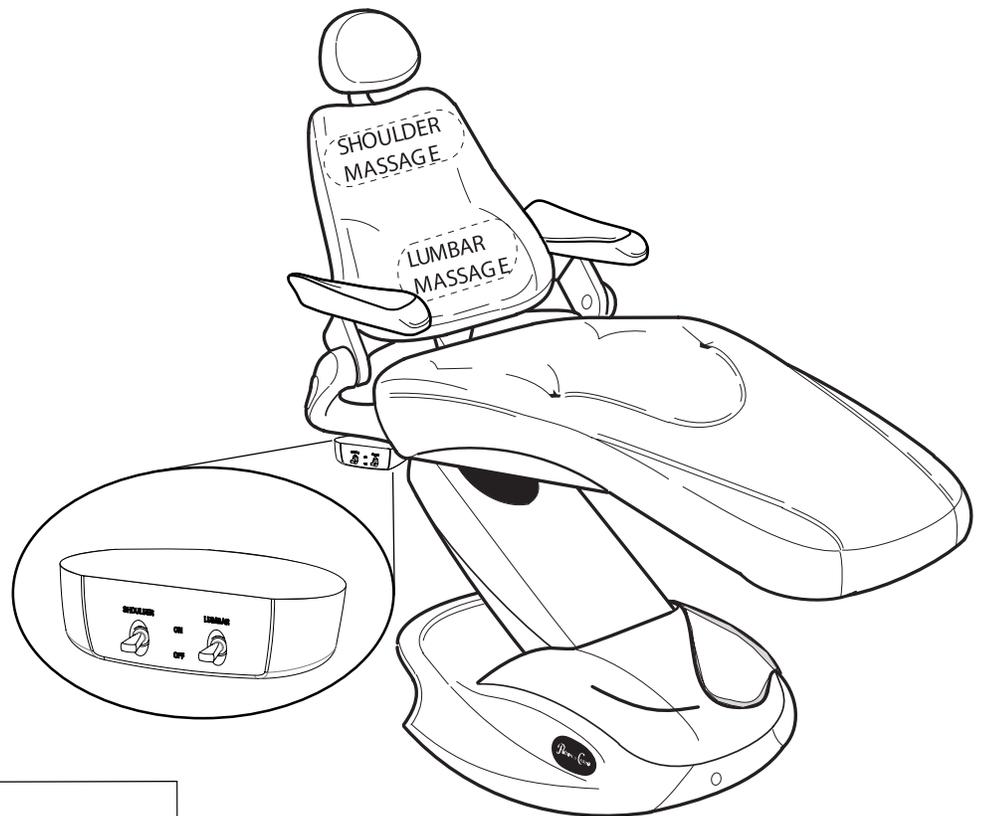
## OPERATION

### 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

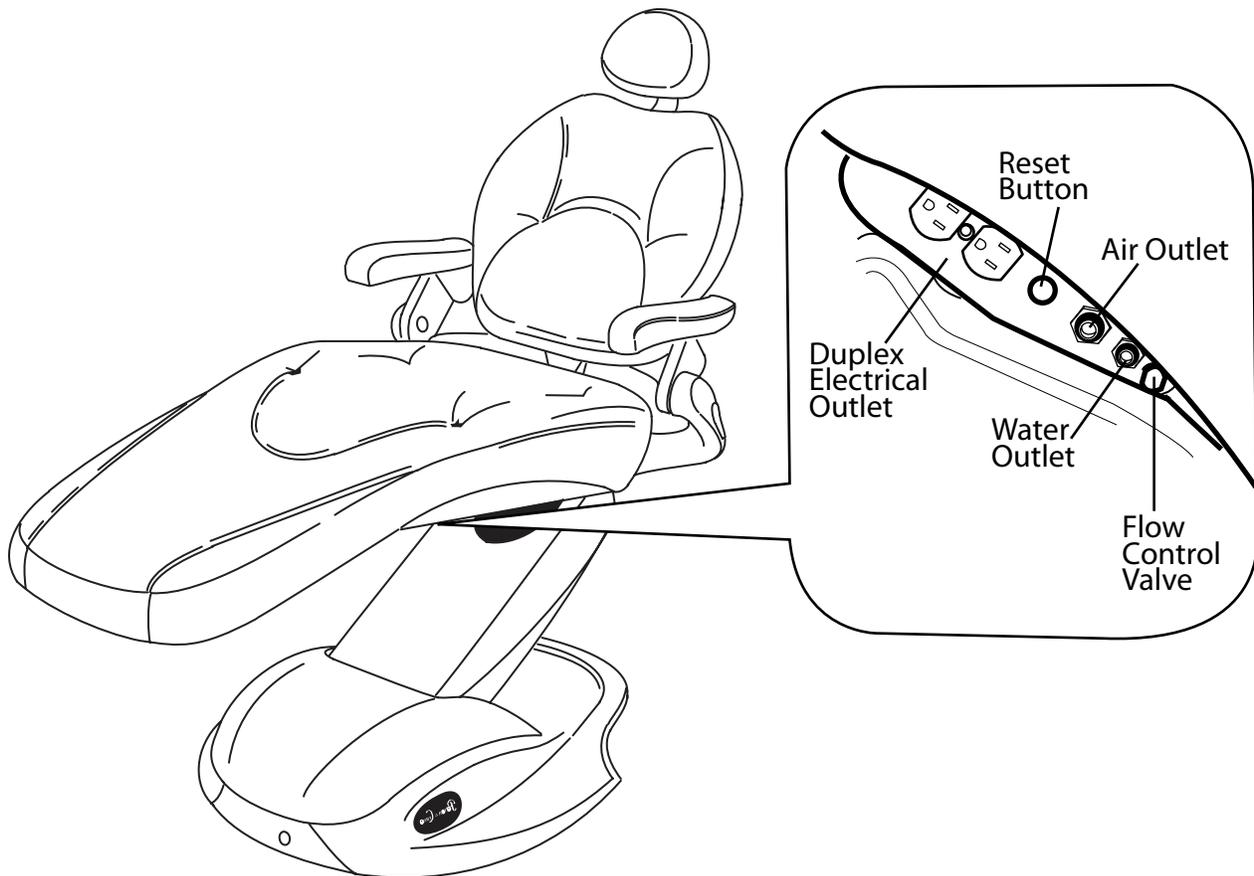
### Optional Air / Water Outlets and Electrical Outlet

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**

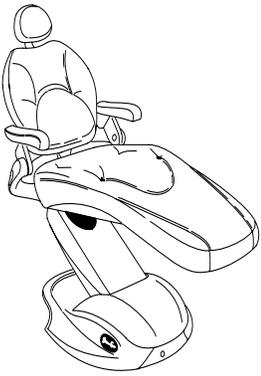
If other equipment is used adjacent to or stacked with the Pelton and Crane equipment the system must be observed to verify normal operation.

<b>Guidance and manufacturer's declaration-electromagnetic emissions</b>		
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.		
<b>Emissions Test</b>	<b>Compliance</b>	<b>Electromagnetic Environment Guidance</b>
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	

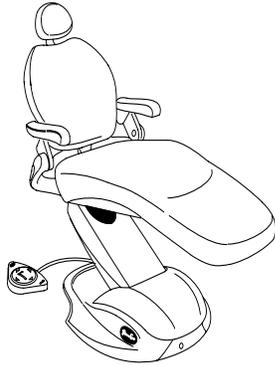
<b>Recommended separation distances between portable</b>			
The Model SP3000 intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the SP3000 can help prevent electromagnetic interference by maintaining a minimum distance between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

<b>Guidance and manufacturer's declaration-electromagnetic immunity</b>			
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.			
<b>Immunity Test</b>	<b>IEC60601 Test Level</b>	<b>Compliance Level</b>	<b>Electromagnetic Environment Guidance</b>
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.
<b>SURGE IEC61000-4-5</b>	+/-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.			

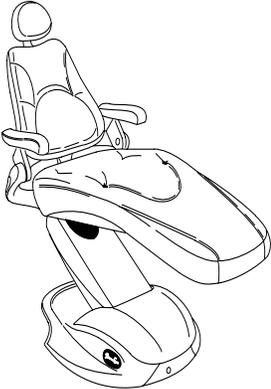
# *Pelton & Crane*



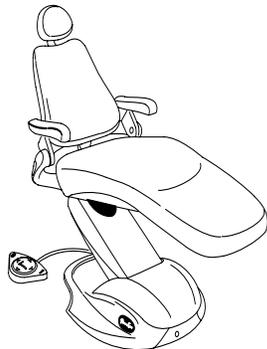
**Model 3001**



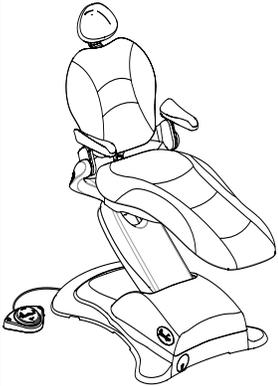
**Model 3002**



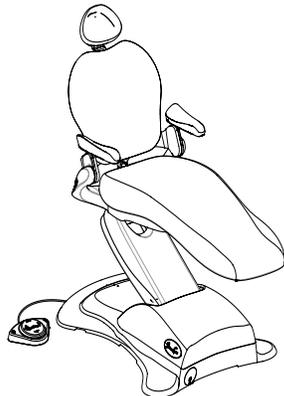
**Model 3003**



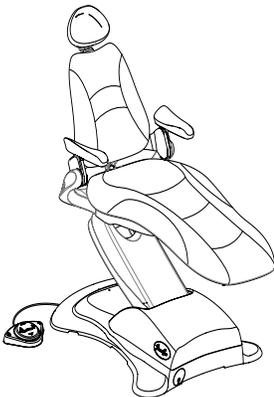
**Model 3004**



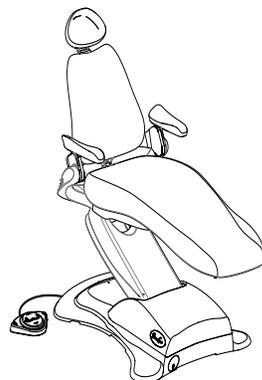
**Model 3301**



**Model 3302**



**Model 3303**



**Model 3304**

## SP30 Dental Chair Specifications

## 1.00 GENERAL

- 1.01** The dental treatment chair shall be a functional, repositional chair for support of the patient. It shall allow maximum accessibility by the doctor or assistant to the patient's oral cavity.

The dental chair shall comply with the following international regulatory standards: UL60601-1; IEC/EN60601-1; CAN/CSA C22.2 NO. 601-1, M90.

The IEC classification for the dental chair is:

Class: 1

Applied Parts: Type B

Operation Mode: Intermittent; 5% Duty Cycle

Protection: IPX0

The minimum Electrical Specifications are:

115VAC / 50 or 60 Hz / 7 Amp.

230 VAC / 50 or 60 Hz / 3.5 Amp.

Circuit diagrams, component parts lists, descriptions, or other information that will assist the user's technical personnel to carry out repair and replacement of serviceable parts to be available upon request.

- 1.02** The **Chair** shall be able to be positioned at any seat height between 20" and 35" from the floor. While reclining, the seat shall automatically tilt and toeboard shall rise to maintain the patient's legs in a comfortable position. The chair back shall be thin allowing ample leg room for the practitioner to get "close-in" for improved positioning. The chair shall have a cantilever design.
- 1.03 Armrest** shall slide back to allow easy patient entry and exit from either side of the chair and be available to the patient at all times. The armrest shall articulate with the angle of the seat back. The armrests shall lock and stay in place to provide the patient support while getting into or out of the chair.
- 1.04 Headrest** shall be adjustable in length to accommodate various patient heights.
- The headrest shall be a dual, articulating style with a quick release button that allows adjustment of the headrest cushion. The headrest shall be contoured to provide easy positioning of the patient's head.
- 1.05 Chair Upholstery** shall be available in either seamless or plush style.
- 1.06 Weight of Chair:** 285 pounds (with no optional attachments). Weight of chair with shipping pallet is approximately 340 pounds.
- 1.07 Overall Chair Dimensions:** 29"W at base x 74"L reclined in length.

## 2.00 OPERATION

- 2.01** The chair is hydraulically operated, quiet in operation and provides a stable foundation for both the patient and additional dental equipment. It provides mounting capability for right or left hand fixed units. The hydraulic system consists of 2 cylinders (one to control lift and another to control tilt) and is sealed to prevent leakage of hydraulic fluid. The 3000 Series chair lifts a minimum of 350 pounds. The 3300 Series chair can lift up to 450 pounds. Potentiometers and electrical switches guarantee repeatable operation when the operator depresses the foot or touchpad switch. Movement rates are controlled by a hydraulic control valve, which is set and tested at the factory. Potentiometers can be adjusted in the field to alter factory settings for incline, recline, up and down travel. The fluid reservoir is blow-molded to eliminate seams. Tubing is secured to barbed fittings and restraining clamps are used where necessary.
- 2.02** Power to the unit shall be 115 volts or 230 volts (voltage configurations are built and set at the factory). The power is delivered to a microprocessor controlled, printed circuit board. Software in the microprocessor controls the movement of the chair.
- 2.03** Positioning of the patient shall be by an electronic foot control that is easy to program. It shall be attached to the chair base and provide easy positioning. The integrated touchpads, located in each of the arm supports, are illustrated with icons that indicate the four positioning functions; incline, recline, chair-up, chair-down. Also present on the touch pad are icons for operating the dental light, chair swivel electric lock and programmable positions. The icons are raised to allow for quick location and good tactile feel. The foot control is sealed to prevent contamination from liquids or dust.
- 2.04** The chair swivels a minimum of +/- 30 degrees from the center of the chair. The chair brake swivel shall have seven detents of 10° and will lock the chair in position at each detent upon releasing the electric lock button.
- 2.05** The chair shall come from the factory with four auto-positions. By pressing and releasing the auto button, the chair moves into the desired position. Auto-positions are programmed by adjusting the chair to the desired position and pressing and holding the corresponding auto-button until beeping occurs.
- 2.06** Either the touchpad or the foot switch can be used to bring patients to an upright position for consultation, rinsing or impression making and then return patient to the previous operating position.
- 2.07** Two strategically located **lower truss cover switches** stop the automatic chair positioning activity if the truss mechanism encounters an obstacle. The doctor can also stop the chair movement by activating any of the other icons that trigger chair movement.

## 3.00 CONSTRUCTION

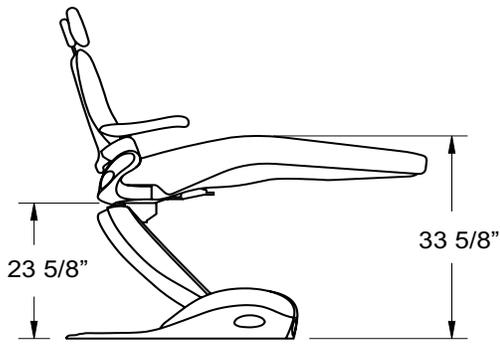
- 3.01 The **Chair** shall be of metal construction.
- 3.02 The **Base Plate** shall be made of cast aluminum, with interior ribbing for increased strength. Finish shall be powder coat, polyester.
- 3.03 The **Truss** shall be made of cast iron and house the lift cylinder.
- 3.04 The **Hydraulic Lift Mechanism** shall have two cylinders located in the lower and the upper structures of the chair. When the foot switch is activated for lifting chair, the cylinder located in the lower portion of chair shall lift and lower the chair. When the footswitch is activated for recline or incline, the cylinder located in the upper portion shall recline or incline the backrest.
- 3.05 The **Back** shall be made of cast aluminum. The recline mechanism is located in the seat through a linkage. The linkage shall connect to the lower center portion of the back frame. Centered in the back shall be a track mechanism that supports the headrest glide bar that slides up and down for headrest positioning.
- 3.06 The **Upper Structure** shall be made of cast iron. The frame is mounted to the linkage that support the recline mechanism- square steel bar.
- 3.07 The **Upper Arm Support** shall be made of aluminum casting. It shall be attached to the upper structure of the chair.
- 3.08 The **Armrest** shall be cast aluminum with an upholstered insert. The armrest slides shall be attached to the armrest tees and slides. The armrest tee shall be constructed of aluminum. The armrest covers shall be attached to the armrest support.
- 3.09 The **Electrical Control Package**- Electrical functions shall be controlled by components on the electronic control package. Limit function and lower truss cover switches shall operate at low voltages as supplied by an energy limited transformer. Line voltage motor switching shall be performed by solid state components which have no moving parts. Entire electronic package may be removed for maintenance or exchange.
- 3.10 The **Foot Switch Control** shall consist of a hard rubber cover embossed to show the functions. This cover and the base material protect the electronics needed to communicate with the electrical control package. The foot control is connected by cable to the chair.
- 3.11 The **Power Input** shall operate on 115VAC or 230VAC, single phase, 50/60 Hz. An optional light mount shall accommodate an additional load not to exceed 2 amps.

Power shall enter the chair through a standard 3-prong, grounding-type, male plug.

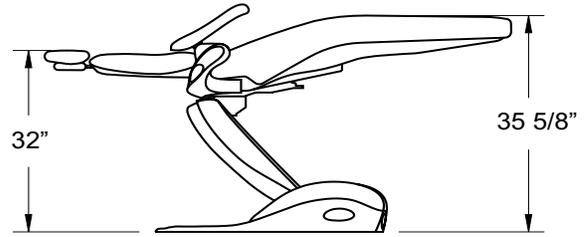
Alternately, the chair may be permanently connected to the electrical system with a master power switch accessible to the user (may be located in the junction box).

- 3.12 The **Upholstery** shall be made of plastic substrate, foam and leather material. Cushions shall have the ability to be removed and replaced. A headrest pillow shall provide positive support for the patient's head.
- 3.13 The **Pump Covers** shall be made of plastic with fire retardant coating or molded of a similar fire retardant material.

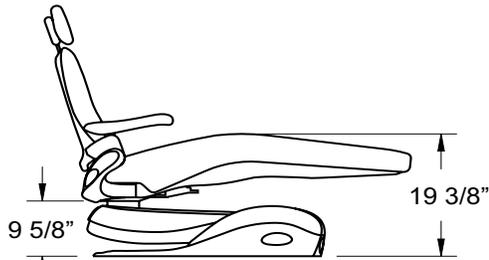
# Technical Dimensional Data (Maximum Range of Motion)



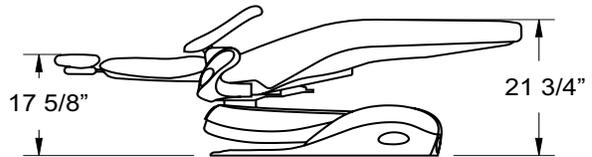
Highest Chair Position  
Chair Back Raised



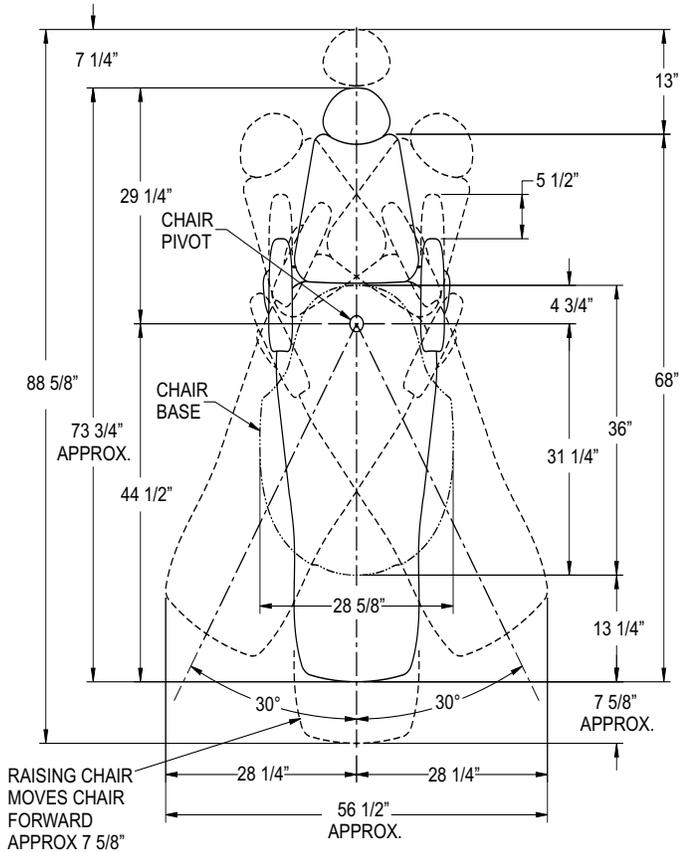
Highest Chair Position  
Chair Back Lowered



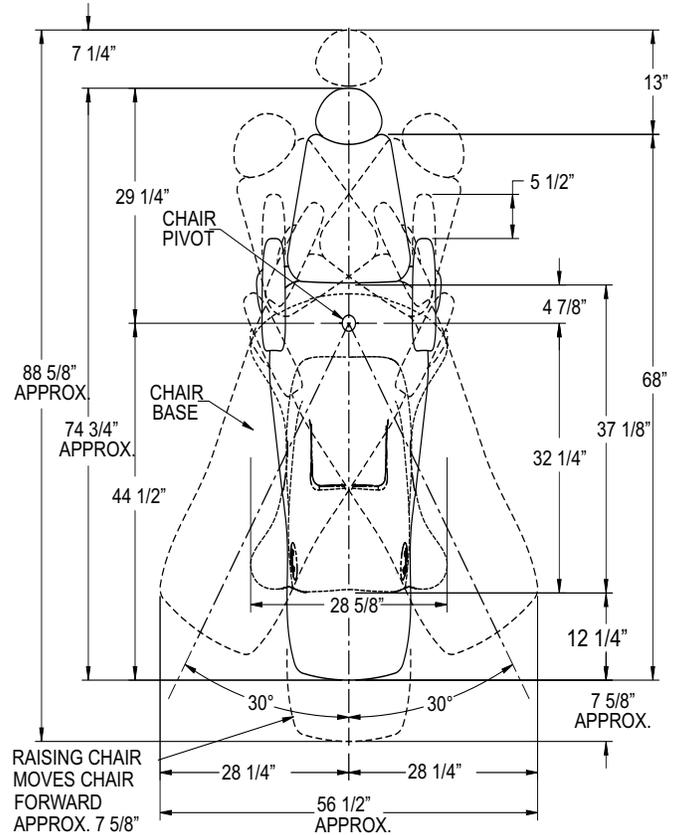
Lowest Chair Position  
Chair Back Raised



Lowest Chair Position  
Chair Back Lowered



**3000 Series**



**3300 Series**