# Laguna 2.0 Electromechanical Patient Chair


## Installation, Operation & User Manual

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TPC

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# SAFETY INFORMATION

## WARNING SYMBOLS

The dental chair is marked with important safety labels:

### ELECTRICAL GROUNDING POINT
Location: Front left side of the chair, steel base frame, under the plastic cover
This symbol indicates the main electrical grounding point.

### ⚠ RISK CLASS SYMBOL
Location: Back of the dental chair
Includes product identification based on the manufacturer's serial number and date of manufacture.

### FUSE LABEL
Location: Under the pump cover on the front left side of the chair frame
Indicates fuse specifications. 15 Amp 5x 20mm Fuse

## CRITICAL SAFETY WARNINGS

### ⚠ READ ALL SAFETY INFORMATION BEFORE OPERATING THE CHAIR

- **Maximum weight capacity: 600 lbs.** - Do not exceed, or damage may occur
- **Single patient use only** - Do not allow more than one patient in the chair at a time
- **Do not stand on the dental chair** - Use only as intended
- **Keep away from flammable liquids** - Do not operate near flammable substances
- **Maximum continuous operation: 3 minutes** - Allow chair to rest between extended uses
- **Keep liquids away from electrical components** - Risk of shock or equipment damage

## HANDLING AND STORAGE PRECAUTIONS

- Do not store the dental chair on its side or upside down
- Do not stack more than 4 packaged chairs on top of each other
- Use an approved pallet jack or forklift to move the dental chair
- Do not attempt to move stacked dental chairs
- Only store the dental chair in a dry, cool place

## ELECTRICAL SAFETY

### ⚠ KEEP LIQUIDS AWAY FROM ELECTRICAL CONNECTIONS

Most electrical control switches are NOT hermetically sealed. When a switch gets wet, it can self-activate or short out, damaging system components. To prevent costly equipment damage:

- **DO NOT spray disinfectants directly at or into electrical switches and controls**
- Spray cleaning solutions onto a cloth first, then wipe down control surfaces
- Do not saturate the cloth
- Disconnect the main power cord when checking fuses and cleaning the electrical areas of the chair

## LIFTING AND INSTALLATION

### ⚠ CAUTION: Use proper lifting techniques to prevent injury

The dental chair is heavy. The lift handles on the backrest are designed to assist with positioning during installation only. Do not use the chair armrest as a lift point.

## Technical Specifications

- **Power Requirements:** 110V AC
- **Consumed Amperage:** 6 AMP
- **Fuses:** Two 15 Amp, 250V, 5x20mm glass fuses
- **Maximum Weight Capacity:** 600 lbs.
- **Maximum Continuous Operation:** 3 minutes
- **Control Voltage:** Low-voltage electrical system

# GENERAL INFORMATION

## Product Description

The Laguna 2.0 is an electromechanical patient chair designed for dental procedures. It features 2 programmable preset positions, an adjustable backrest and base, and a safety plate system to prevent accidental damage under the chair's cantilever.

## Chair Components

The Laguna 2.0 includes the following major components:

- Chair base with dual motors (base height and backrest angle)
- Upholstered seat and backrest
- Double Articulating headrest with friction mount
- Rotating armrests
- Foot control panel
- Safety plate under cantilever cover
- Main PCB control board
- 24V transformer and power system

# INSTALLATION INSTRUCTIONS

## Unpacking the Chair

1. Remove the main cover from the chair base. The chair is secured to a pallet with 4 bolts.


2. Locate the lift handles on the back of the chair. These are temporary installation aids.



3. Remove the 4 shipping bolts that secure the chair to the pallet from the base of the dental chair.

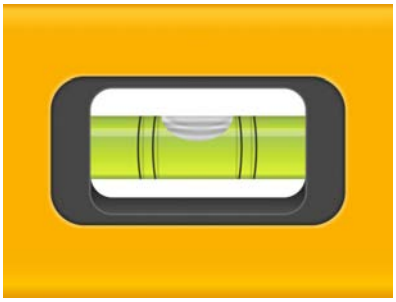
4. Use the lift handles to position and slide the chair straight back to remove it from the pallet.

## Leveling the Chair

After placing the chair in its final location:

1. Locate the leveling lugs and install them in the holes that were previously used to secure the chair to the pallet.

2. Adjust the leveling lugs to compensate for uneven flooring. This ensures the chair sits level and stable.
3. Test stability by gently pressing on different areas of the chair base.
4. In some cases, it's advised to install a rubber mat below the base of the chair if the surface is uneven.
5. If you need to secure the chair base to the floor surface, you can use the leveling lug holes to secure the base plate to the floor.



## Installing the Backrest Support

1. Remove the lift handles from the backrest mount by removing the two 14mm bolts.

2. Secure the backrest support to the mounting hub using the four 6mm Allen bolts provided. You do not need to remove the plastic cover.

3. Gently slide the backrest hub between the mounting plate and the plastic cover until properly seated.
4. Tighten all bolts securely, checking that the backrest moves smoothly through its full range of motion.

# UPHOLSTERY INSTALLATION

## Installing the Backrest Upholstery

**Required hardware:** Bolts and nuts (included in package)

1. Locate the nuts and bolts shown. Attach the nuts to the bolts and place them in the backrest frame as shown. Adjust the nuts so that the head of the bolt and the back of the nut can slide up and down with minimal resistance in the backrest frame. Once the spacing is adjusted, remove the bolts with the nuts still attached, and try to maintain the consistent spacing.

2. Place the bolts into the backrest as shown.

3. Slide the upholstery into the backrest bracket. Press gently on the backrest upholstery side so that all four bolts are aligned. Apply pressure to the top of the upholstery and lock it into place.

## Installing the Seat Frame and Cushion

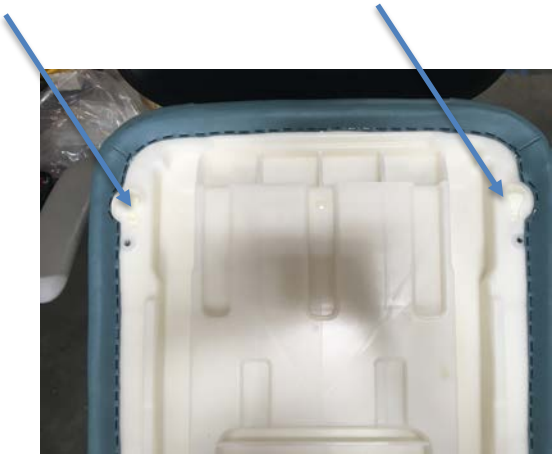
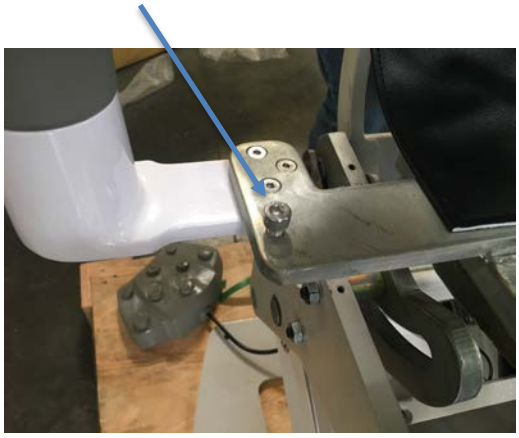
**Required hardware:** Two Allen bolts.

1. Remove the two 4 mm Allen bolts (M6 X 1.0) that are pre-installed into the chair frame extensions.
2. Install the leg extension and replace the two Allen bolts you previously removed.



**Required hardware:** Two Allen bolts with washers.

1. Place the seat cushion on the seat frame. Align the two Allen bolts with the cutout notches in the upholstery. You may adjust the height of the Allen screw if the upholstery is loose.

2. Secure the seat cushion to the seat frame using the two 6MM Allen screws and washers.

## Installing the Headrest cushion

**Required hardware:** Three 2.5MM Allen screws

1. Insert the headrest stem into the backrest mounting point.
2. Adjust the headrest to the desired initial height using the friction mount system.
3. Place the plastic cover over the headrest cushion.

4. Attach the headrest cushion to the headrest stem using the three 2.5MM Allen screws.

## Electrical Connection

1. Locate the main power cord (rated for the appropriate voltage). 110V AC
2. Ensure the main power switch is in the OFF position before connecting.
3. Connect the power cord to a properly grounded electrical outlet.
4. Turn on the main power switch. When illuminated, power is ON.
5. If the switch does not illuminate when in the UP position, check the two 15 Amp fuses located to the right of the switch. **Disconnect the main power cord before checking fuses.**
6. Fuse specifications: 15 Amp, 250V, 5x20mm glass fuses.

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# CONTROLS OVERVIEW

## Foot Control Panel

The foot control panel allows hands-free operation of the chair. It includes the following functions:

**Chair Base Controls**

- **To raise the base:** Press down on the upper area of the foot control
- **To lower the base:** Press down on the lower area of the foot control

**Backrest Controls**

- **To raise the backrest:** Press down on the right side of the foot control
- **To recline the backrest:** Press down on the left side of the foot control

**Preset Programming**

**To program a preset position:**

1. Manually move the chair to the desired position
2. Press and hold the preset switch (P1, P2) on the foot control
3. After 3-5 seconds, you will hear a confirmation beep
4. The position is now saved to that preset

**Note:** The chair must be in normal operation mode (not in motion) when programming presets.

**Preset Recall**

To recall a saved preset position, press the corresponding preset button (P1, P2). The chair will automatically move to the saved position.

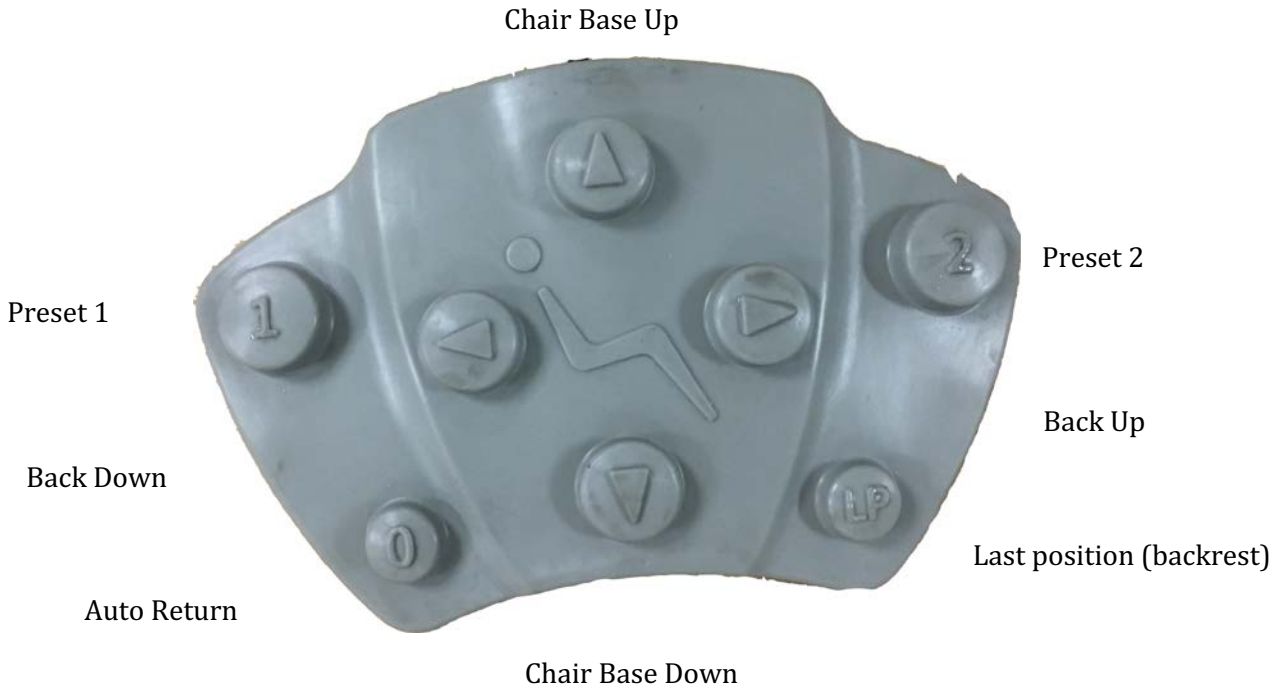
**Auto Return Feature**

By pressing the "LP" position button, the chair backrest will travel to the last programmed position automatically.

## Manual Controls

**Chair Movement Buttons**

- **Chair Base Up** - Raises the chair base
- **Chair Base Down** - Lowers the chair base
- **Backrest Up** - Raises the backrest
- **Backrest Down** - Reclines the backrest
- **Preset 1, 2,** - Recalls saved positions
- **LP** - Returns to last position (backrest)
- **Auto Return** – Puts the chair in the exit position. (base down and backrest up)



# Safety Plate System

**Purpose:** A safety plate is provided under the cantilever cover to stop the motion of the chair when an object is accidentally caught underneath.

## Armrest Rotation

- Grasp the end portion of the armrest firmly
- Pull upward slightly to disengage the locking mechanism
- Turn the armrest outward to the desired position
- Release - the armrest will lock in the new position
- The armrest will lock every 90 degrees

## Headrest Adjustments

The headrest height can be adjusted simply by pulling the headrest up or down:

A friction mount system incorporated in the backrest holds the headrest in position
Pull up to raise the headrest
Push down to lower the headrest
No tools or releases required
The angle of the articulating headrest can be changed:
Locate the slide bar on the headrest stem
Release the slide bar (pull or slide depending on model)
Adjust the headrest to the desired angle
Re-engage the slide bar to lock the position

# CHAIR CALIBRATION Gen1 PCB

## Motor Calibration Procedure

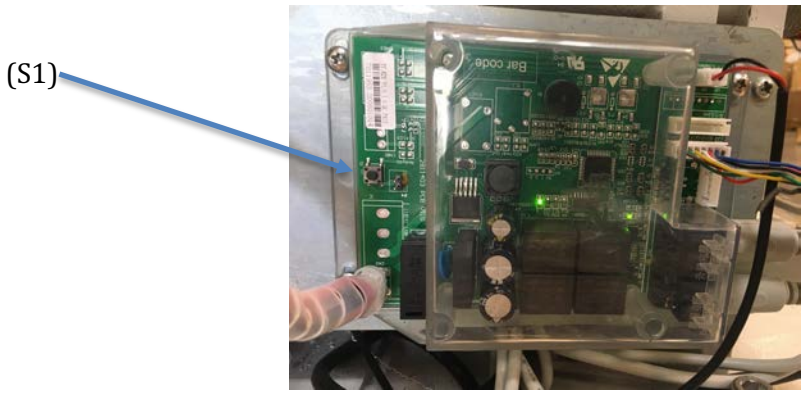
To recalibrate the chair motors and travel back to factory default settings, perform the following procedure:

**When calibration is needed:**

- The chair does not go low enough or high enough
- Motors have been adjusted or replaced
- Chair's behavior is inconsistent

**Calibration steps:**

1. Remove the pump cover from the base of the chair to gain access to the main PCB board.
2. Locate the switch labeled "S1" on the PCB board.




3. Press and hold the "S1" switch for 10 seconds. The chair will automatically recalibrate the motors.
4. Once complete, the chair base and backrest will be lowered completely.
5. Press "S1" again to exit recalibration mode.
6. Lift the base and backrest to verify you have full travel range from each of the motors.
7. Replace the pump cover.

## Verifying Calibration

After calibration, test all chair functions:

- Move the chair base to its highest and lowest positions
- Move the backrest through its full range of motion
- Test all preset positions
- Verify smooth operation without unusual sounds

# CHAIR CALIBRATION Gen2 PCB

## Motor Calibration Procedure

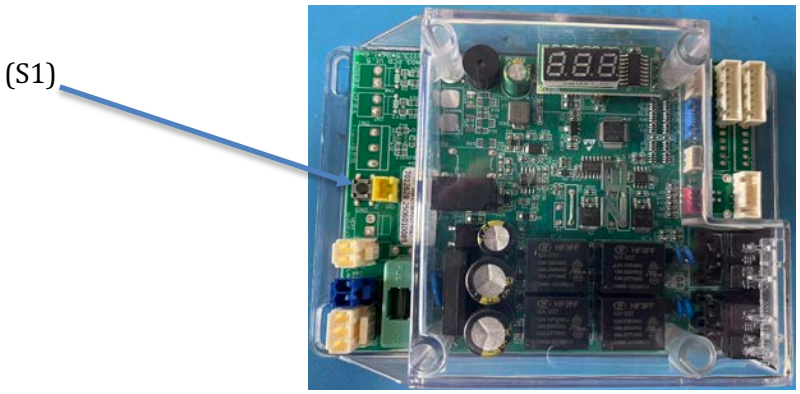
To recalibrate the chair motors and travel back to factory default settings, perform the following procedure:

**When calibration is needed:**

- The chair does not go low enough or high enough
- Motors have been adjusted or replaced
- The chair's behavior is inconsistent

**Calibration steps:**

1. Remove the pump cover from the base of the chair to gain access to the main PCB board.
2. Locate the switch labeled "S1" on the PCB board.




3. Press and hold the "S1" switch for 10 seconds. The chair will automatically recalibrate the motors.
4. Once complete, the chair base and backrest will be lowered completely.
5. Press "S1" again to exit recalibration mode.
6. Lift the base and backrest to verify you have full travel range from each of the motors.
7. Replace the pump cover.

## Verifying Calibration

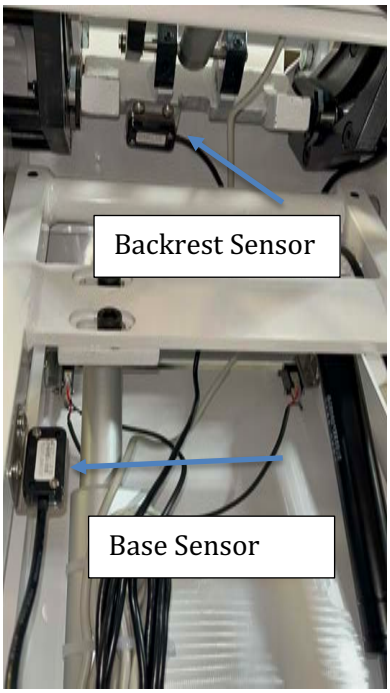
After calibration, test all chair functions:

- Move the chair base to its highest and lowest positions
- Move the backrest through its full range of motion
- Test all preset positions
- Verify smooth operation without unusual sounds

## ⚠ Calibration Failure Troubleshooting

If **chair calibration fails**, perform the following checks:

1. **Inspect Limit Sensors**
   - Ensure the screws **securing the limit sensors are tight**.
   - Loose screws can alter the sensor **angle**, which may affect calibration accuracy.
2. **Verify Sensor Connections**
   - Confirm that all **limit sensor connectors** are **securely plugged into the main PCB**.
   - Reseat any loose connectors to ensure proper contact.



## ⚙️ Using Gen 2 Boards with Laguna 2.0 Chairs

The **Gen 2 control boards** are compatible with **all Laguna 2.0 chairs**.
However, note that **not all Laguna 2.0 chairs** are equipped with **digital position sensors**.

## 🔄 Dual System Switching Method

1. While the **dental chair's mainboard is powered ON**, insert the **jumper into the yellow port** on the mainboard.
   - The **digital display** will change to indicate a system **with a decimal point**.
   - **Removing the jumper** will switch to the **other system**.
2. After each system change, **press the Reset button** to initialize the new configuration for normal operation.

## 💡 System Status Indicators

| System Type | Display Format | Description |
|---|---|---|
| **Angle Sensor System** | XXX (no decimal point) | Indicates that the chair is operating with **angle sensors** installed. |
| **Memory Motor System** | XX.X (with decimal point) | Indicates that the chair is operating with the **memory motor configuration**. |


Jumper


No Jumper

# CARE AND MAINTENANCE

## Routine Maintenance

No specialized maintenance is required except normal care and cleaning. However, regular inspection is recommended to ensure safe operation.

## Cleaning Upholstery and Plastic Components

**Daily cleaning:**

- Clean vinyl upholstery and plastic components with mild soap and water
- Use barrier covers on chairs for asepsis and to reduce wear

**Disinfecting procedure:**

1. Clean dirt and stains with mild soap and water first
2. Moisten an applicator with disinfectant
3. Gently wipe the material with the disinfectant
4. **Do not allow the disinfectant to soak in or dry on the surface**
5. Immediately wipe off with soap and water

**Important notes:**

- Surface disinfecting chemicals will eventually cause some discoloration of upholstery
- This is normal wear and does not affect function
- Regular use of barrier covers will extend upholstery life

## Electrical Component Protection

⚠ **CRITICAL: KEEP LIQUIDS AWAY FROM ELECTRICAL CONNECTIONS**

- **DO NOT spray disinfectants directly at or into electrical switches and controls**
- Spray cleaning solutions onto a cloth first
- Wipe down control surfaces with a lightly dampened cloth
- Do not saturate the cloth
- Keep switches dry to avoid costly equipment damage or failure

## Periodic Inspections

Regularly check the following:

- **Upholstery condition** - Look for tears, excessive wear, or loose mounting
- **Bolt tightness** - Ensure all mounting bolts remain secure
- **Armrest movement** - Armrests should rotate smoothly but not too easily
- **Headrest friction** – The Headrest should hold its position without slipping
- **Electrical connections** - Ensure no loose wires or damaged connectors
- **Safety plate function** - Test that the safety plate engages when obstructed

## When to Contact Service

Contact your TPC dealer or authorized service technician if:

- The chair makes unusual noises during operation
- Motors sound strained or squealing
- The chair does not respond to controls
- Electrical switches malfunction
- Any safety features do not operate properly

⚠ **WARNING:** Any action not recommended by the manufacturer may cause risk of injury or shock. Only authorized service technicians should attempt to service TPC equipment.

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# WARRANTY INFORMATION

## TPC 5 Year Limited Warranty

All TPC products sold are guaranteed to be free from defects in workmanship and materials under the following terms:

**Coverage Periods**

**5 Year Warranty Coverage:**

- Main drive motors and parts
- Main chair PCB (circuit board)
- Transformer
- Major cast components

**1 Year Warranty Coverage:**

- Upholstery
- Armrests
- Plastic components
- All other parts and components

**What is Covered**

TPC will repair or replace any defective part at no charge during the applicable warranty period. All parts must be returned to TPC for inspection and warranty verification.

**What is NOT Covered**

This guarantee does not cover:

- Normal wear or stains on surface finishes
- Damage resulting from improper installation
- Damage from misuse or accidents
- Damage incurred during shipping and handling
- Labor charges for installation or removal
- Shipping charges to/from the TPC facility

**Shipping Damage Claims**

All claims against the freight carrier must be initiated at the time damaged items are received. Filing the claim is the responsibility of the customer.

**Service Requirements**

⚠ **IMPORTANT:** Only authorized service technicians should attempt to service TPC equipment. Service performed by unauthorized technicians may result in a voided warranty.

**Product Modifications**

TPC continuously improves its products and reserves the right to make modifications without prior notification. TPC is not obliged to modify previously manufactured items.

## Chair Limitations and Usage Guidelines

To maintain warranty coverage and ensure safe operation:

- **Do not exceed the maximum weight capacity of 600 lbs** or damage may occur
- **Do not allow more than one patient to sit in the chair at one time**
- **Do not stand on the dental chair**
- **Do not operate the dental chair around any flammable liquids**
- **Do not exceed the maximum mode of operation time of 3 minutes**
- **Keep liquids away from electrical components**

## Contact Information

**For additional information, contact your TPC dealer**

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# TROUBLESHOOTING GUIDE

## Common Issues and Solutions

| Problem | Possible Cause | Solution |
|---|---|---|
| **Dental chair does not move up or down. Chair makes no sound.** | No power | Check power source and verify outlet has power |
| | Blown fuse | Check both 15 Amp fuses; replace if needed |
| | Power switch off | Check that main power switch is in ON position and illuminated |
| | Blown transformer | Check transformer voltage (should be 24V AC); replace if defective |
| **Dental chair will not move, but makes a beep sound when controls are pressed** | Safety switch plate engaged | Check safety plate under chair for obstructions; remove any objects caught underneath |
| **Chair makes squealing noise when motor is running** | Damage to drive extension | Inspect drive extension for damage; replace motor if needed |
| **Dental chair does not go low enough or high enough** | Motor travel has been adjusted | Recalibrate the chair motors (refer to page 13 of manual) |
| | Obstruction in travel path | Check for objects blocking full range of motion |
| **Unable to program preset positions 1, 2, or 3** | Incorrect programming procedure | Move chair to desired position; press and hold preset button for full 2 seconds until confirmation beep |
| | Damaged main PCB | If secondary beep is not heard after 10 seconds of holding preset button, PCB may be damaged; contact service technician |
| **Chair is on but there is no control from the touchpad** | Touchpad not connected | Check that touchpad cable is securely connected to main PCB |
| | Touchpad burnt out | Test with alternate touchpad; replace if defective |
| **Headrest does not stay in the position set** | Set screws in backrest are loose | Tighten set screws in backrest mount to increase friction |
| | Friction mount worn | Contact service technician for replacement parts |
| **Chair armrest moves too easily** | Mounting screw is loose | Tighten screw that holds armrest assembly together |