ELECTROMECHANICAL PATIENT CHAIR

Laguna 2.0

Installation, Operation & User Manual

Model L2000-2.0 · Gen 1 and Gen 2 control boards



DOCUMENT
Laguna 2.0 User Manual
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TPC DENTAL
851 S. Lawson St.
City of Industry, CA 91748

CONTACT
Tech support (800) 560-8222
Office (626) 810-4337 ·
tpcdental.com

CERTIFIED ISO 9001:2015 COMPANY

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How to read this manual

Read the safety section before installing or operating the chair. Notices in this manual mean the following:

⚠ **WARNING** Risk of injury to people or damage to the chair. Follow exactly.

ⓘ **NOTE** Information that makes the job easier or the result more reliable.

1 Numbered steps are done in order.

Service sections

Section 06 is for authorized service technicians. Service by unauthorized technicians may void the warranty.

Technical support

(800) 560-8222

Have the chair's serial number ready when you call.

SECTION 01

Safety information

Read all safety information before installing or operating the chair. Keep this manual with the chair for future reference.

⚠ **WARNING** Any action not recommended by the manufacturer may cause injury or electric shock.

Safety labels on the chair

Grounding point

LOCATION

Front left of the steel base frame, under the plastic cover

MARKS

The main electrical grounding point

Risk class and product ID

LOCATION

Back of the chair

SHOWS

Risk class, serial number and date of manufacture

Fuse label

LOCATION

Under the base cover, front left of the chair frame

RATING

15 A, 250 V, 5 × 20 mm glass fuse

Weight and patient safety

600 lb

Maximum weight capacity. Exceeding it may damage the chair.

1 patient

Never allow more than one person in the chair at a time.

3 min

Maximum continuous operation. Let the chair rest between cycles.

Seated only

Never stand on any part of the chair.

⚠ **WARNING** Do not operate the chair near flammable liquids or substances.

⚠ **WARNING** Keep liquids away from electrical components. Risk of shock or equipment damage.

SAFETY, CONTINUED

Precautions

Electrical safety

⚠ **WARNING** Keep liquids away from electrical connections. Most control switches are not hermetically sealed. A wet switch can activate on its own or short out and damage system components.

- Never spray disinfectant directly at or into switches and controls.
- Do not saturate the cloth.
- Spray cleaning solution onto a cloth first, then wipe the controls.
- Unplug the main power cord before checking fuses or cleaning electrical areas of the chair.

Handling and storage

- Store upright. Never on its side or upside down.
- Stack no more than four packaged chairs.
- Move only with an approved pallet jack or forklift.
- Do not attempt to move stacked chairs.
- Store in a cool, dry place.

Lifting and installation

⚠ **CAUTION** The chair is heavy. Use proper lifting technique.

- The lift handles on the backrest mount are for positioning during installation only.
- Never lift the chair by its armrests.

Operational safety

- Only authorized service technicians should service TPC equipment. Unauthorized service may void the warranty.
- Any switch stops automatic chair movement.
- Before using any automatic function, make sure the space around the chair is clear.
- Allow the chair to rest after 3 minutes of continuous operation.

SECTION 02

Product overview

The Laguna 2.0 is an electromechanical patient chair for dental procedures. Two motors drive the base height and backrest angle. It has two programmable preset positions, auto return, and a safety plate that stops the chair if something is caught under the cantilever.

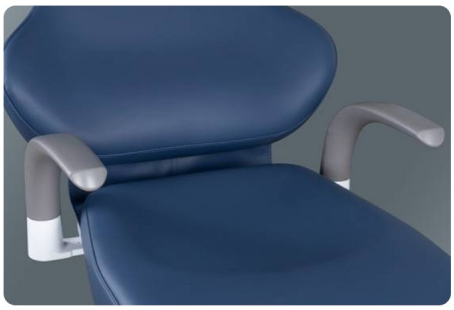


Fig. 1 Pivoting armrests



Fig. 2 Solid steel base



Fig. 3 Optional TP-2005 touchpad

Key features

- ✓ **Electromechanical lift**
  Quiet, dependable dual-motor operation
- ✓ **Preset positions**
  Two programmable presets, auto return and last position
- ✓ **Double-articulating headrest**
  Friction-mount height adjustment, no tools
- ✓ **Microprocessor control**
  Position sensors on the base and backrest
- ✓ **Safety plate**
  Stops movement if an object is caught under the chair
- ✓ **Rotating armrests**
  Easy patient entry and exit from either side

Major components

- Chair base with dual motors (base height, backrest angle)
- 24 V transformer and power system
- Foot control and optional touchpad
- Safety plate under the cantilever cover
- Main PCB control board
- Upholstered seat, backrest and headrest
- Rotating armrests
- Base and backrest position sensors

PRODUCT OVERVIEW, CONTINUED

Technical specifications

Electrical and control

Input voltage	110 V AC (220 V model available)
Current draw	6 A
Fuses	Two 15 A, 250 V, 5 × 20 mm glass
Control power	24 V AC transformer
Control boards	Gen 1 or Gen 2 main PCB
Position sensing	Base and backrest sensors
Duty cycle	3 minutes maximum continuous operation
Emergency stop	Any switch stops automatic motion

Chair

Model	`L2000-2.0`
Lift mechanism	Electromechanical, cantilever
Weight capacity	600 lb maximum
Seat height	15.5" initial, 15" lift stroke
Backrest recline	0° (horizontal) to 70°
Seat tilt	10°–20°, synchronized with backrest
Positions	2 programmable, auto return, last position
Chair rotation	Fixed
Headrest	Double-articulating, dual-axis
Warranty	5-year limited

Shipping cartons

Carton	L × W × H (in)	Weight
Chair	44 × 29 × 33	340 lb
Cushion	51 × 24 × 10	35 lb

Specifications are subject to change without notice.

SECTION 03

Installation

The chair ships bolted to a pallet. Remove the cover, find the lift handles, then take the chair off the pallet. Read the lifting precautions on page 4 first.

STEP 3.1

Remove the base cover

1. Remove the main cover from the chair base.
2. You will see the four bolts that secure the chair to the pallet.



Fig. 4 Base cover in place



Fig. 5 Cover removed

STEP 3.2

Locate the lift handles

The lift handles are mounted on the backrest mount at the back of the chair. They are temporary installation aids, used only to position the chair.

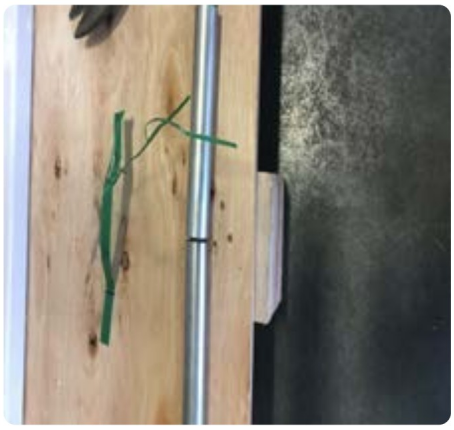


Fig. 6 Lift handles



Fig. 7 Handle on the chair



Fig. 8 Backrest mount

⚠ **WARNING** Never lift the chair by its armrests. They are not designed to carry the chair's weight.

STEP 3.3

Remove the chair from the pallet

1. Remove the four (4) shipping bolts that secure the chair base to the pallet.
2. Using the lift handles, slide the chair straight back off the pallet.
3. Position the chair in its final location.

NOTE Keep the shipping bolt holes clear. The leveling lugs install into them.



Fig. 9 Shipping bolt through the base into the pallet

STEP 3.4

Level the chair

1. Install the leveling lugs in the holes that held the chair to the pallet.
2. Adjust the lugs to compensate for uneven flooring so the chair sits level and stable.
3. Press gently on different areas of the base to check that it does not rock.



Fig. 10 Leveling lugs

UNEVEN FLOOR On an uneven surface, a rubber mat under the base is recommended.

ANCHORING To secure the base plate to the floor, use the leveling lug holes.

STEP 3.5

Install the backrest support

Hardware Four 6 mm Allen bolts (supplied)

1. Remove the lift handles from the backrest mount by taking out the two 14 mm bolts.
2. Gently slide the backrest hub between the mounting plate and the plastic cover until it is fully seated. You do not need to remove the plastic cover.
3. Secure the backrest support to the mounting hub with the four 6 mm Allen bolts.
4. Tighten all bolts, then move the backrest through its full range to confirm smooth motion.



Fig. 11 Mounting plate

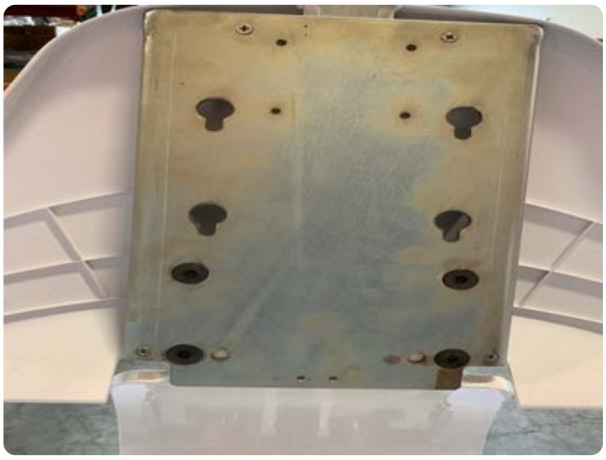


Fig. 12 Hub seated

STEP 3.6

Connect power

1. Locate the main power cord (110 V AC).
2. Make sure the main power switch is **OFF**.
3. Plug the cord into a properly grounded outlet.
4. Turn the main power switch **ON** (up position). The switch lights when power is on.
5. If the switch does not light, check the two fuses.

FUSES

Checking fuses

⚠ **WARNING** Unplug the main power cord before checking or replacing fuses.

- **Location:** to the right of the main power switch.
- **Fuse type:** two 15 A, 250 V, 5 × 20 mm glass fuses.

SECTION 04

Upholstery installation

Install the backrest upholstery first, then the seat frame and cushion, then the headrest. Work on a clean, protected surface.

STEP 4.1

Install the backrest upholstery

Hardware Bolts and nuts (included)



Fig. 13 Bolts and nuts



Fig. 14 Frame



Fig. 15 Bolts in the upholstery



Fig. 16 Bracket

1. Thread a nut onto each bolt and place the hardware in the backrest frame (Figs. 13–14).
2. Adjust the nuts until the bolt heads and the backs of the nuts slide up and down in the frame with minimal resistance.
3. Remove the bolts with the nuts still attached, keeping the same spacing.
4. Place the bolts into the back of the upholstery (Fig. 15).
5. Slide the upholstery into the backrest bracket (Fig. 16). Press gently on the sides so all four bolts line up, then press on the top to lock it in place.

NOTE Keeping the nut spacing consistent is what lets the upholstery slide in and align correctly.

STEP 4.2

Install the leg extension (seat frame)

Hardware Two M6 × 1.0 Allen bolts, pre-installed in the frame

1. Remove the two Allen bolts pre-installed in the chair frame extensions.
2. Fit the leg extension onto the frame.
3. Reinstall the two Allen bolts to secure it.

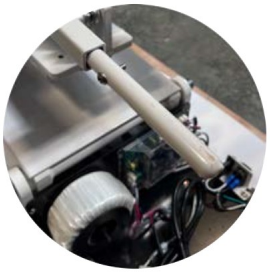


Fig. 17 Frame extension



Fig. 18 Bolt hole



Fig. 19 Bolt reinstalled

STEP 4.3

Install the seat cushion

Hardware Two 6 mm Allen screws with washers



Fig. 20 Cutout notches in the cushion



Fig. 21 Allen screws on the seat frame



Fig. 22 Screw and washer

1. Place the seat cushion on the seat frame, lining up the two Allen screws with the cutout notches in the upholstery (Figs. 20–21).
2. Secure the cushion to the seat frame with the two 6 mm Allen screws and washers (Fig. 22).

ⓘ **NOTE** If the cushion feels loose, adjust the height of the Allen screws.

STEP 4.4

Install the headrest

Hardware Three 2.5 mm Allen screws

1. Insert the headrest stem into the mounting point on the backrest.
2. Set the headrest to a suitable starting height. The friction mount holds it in place.
3. Place the plastic cover over the back of the headrest cushion (Figs. 23–24).
4. Attach the cushion to the headrest stem (Fig. 25) with the three 2.5 mm Allen screws.



Fig. 25 Headrest stem



Fig. 23 Back of the cushion



Fig. 24 Plastic cover

Before first use

- [ ] Base moves to its highest and lowest positions
- [ ] Backrest moves through its full range
- [ ] Both preset positions work
- [ ] Operation is smooth, without unusual sounds

SECTION 05

Operation

The foot control gives hands-free operation of the chair. The base and backrest move only while a button is pressed. Release it to stop.



Fig. 26 Foot control buttons

- **A** Chair base up · top
- **B** Chair base down · bottom
- **C** Backrest down (recline) · left
- **D** Backrest up · right
- **E** Preset 1 · "P1"
- **F** Preset 2 · "P2"
- **G** Auto return · "0"
- **H** Last position · "LP"

Chair base

Raise	Press the top button (A).
Lower	Press the bottom button (B).

Backrest

Raise	Press the right button (D).
Recline	Press the left button (C).

NOTE During any automatic movement (preset, auto return or last position), pressing any switch stops the chair.

OPERATION, CONTINUED

Presets and automatic positions

Program a preset position

1. Move the chair to the position you want.
2. Press and hold the preset button (P1 or P2).
3. After 3–5 seconds a confirmation beep sounds.
4. Release the button. The position is saved to that preset.

NOTE The chair must be in normal operation mode and stopped (not moving) when you program a preset.

Recall a preset

Press the preset button. The chair moves automatically to the saved position.

1 **Preset 1 · P1**
First saved position

2 **Preset 2 · P2**
Second saved position

3 **Preset 3**
Only with the optional TP-2005 touchpad

---

0 BUTTON "0"

Auto return

Moves the chair to the exit position: base down, backrest up.

Use it for quick patient entry and exit.

LP BUTTON "LP"

Last position

Returns the backrest automatically to its last position.

Use it to get back to the working position after auto return.

OPERATION, CONTINUED

Armrests, headrest and safety plate

Rotate an armrest

1. Grasp the end of the armrest firmly.
2. Lift it slightly to release the lock.
3. Turn it outward to the position you want and let go. It locks every 90°.



Fig. 27 Lift



Fig. 28 Rotate

Headrest height

A friction mount in the backrest holds the headrest in place. No tools or release needed.

- Pull up to raise.
- Push down to lower.

Headrest angle

1. Find the slide bar on the headrest stem.
2. Release it (pull or slide, depending on model).
3. Set the angle, then re-engage the slide bar to lock.



Fig. 29 Headrest

Safety plate

A safety plate under the cantilever cover stops the chair if an object is accidentally caught underneath it.

If the chair beeps when you press a control but does not move, the safety plate may be engaged:

1. Check under the chair for obstructions.
2. Remove anything caught underneath, then test the chair.



Fig. 30 Safety plate

SECTION 06 SERVICE TECHNICIANS

Motor calibration

Calibration resets motor travel to the factory default settings. The procedure is the same on Gen 1 and Gen 2 control boards.

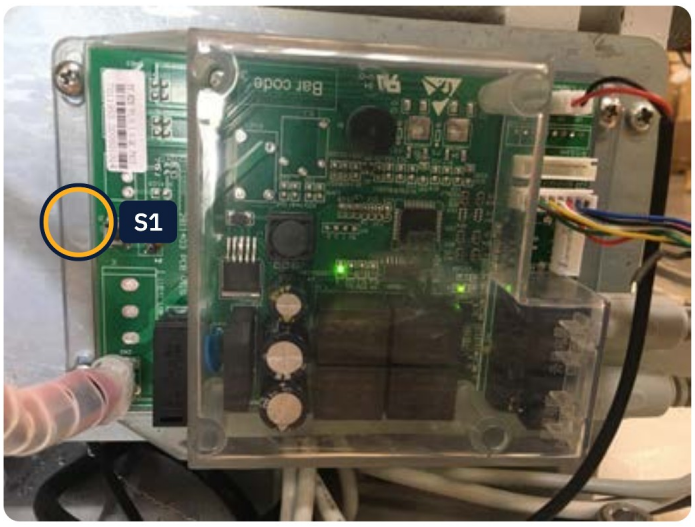


Fig. 31 Gen 1 board. S1 is at the left edge.



Fig. 32 Gen 2 board, with the 3-digit display. S1 is at the left edge.

Calibrate the motors

1. Remove the base cover to reach the main PCB.
2. Find switch **S1** on the PCB (Figs. 31–32).
3. Press and hold **S1** for 10 seconds. The chair recalibrates the motors automatically.
4. When it finishes, the base and backrest are fully lowered.
5. Press **S1** again to exit calibration mode.
6. Raise the base and backrest to confirm full travel from each motor.
7. Refit the cover.

When to calibrate

- The chair does not go low or high enough
- A motor has been adjusted or replaced
- The chair behaves inconsistently

CALIBRATION, CONTINUED

Verify calibration

After calibrating, test every chair function:

- [ ] Base reaches its highest and lowest positions
- [ ] Backrest moves through its full range
- [ ] All preset positions work
- [ ] Operation is smooth, without unusual sounds

If calibration fails

Check the limit sensors on the backrest and base (Fig. 33).

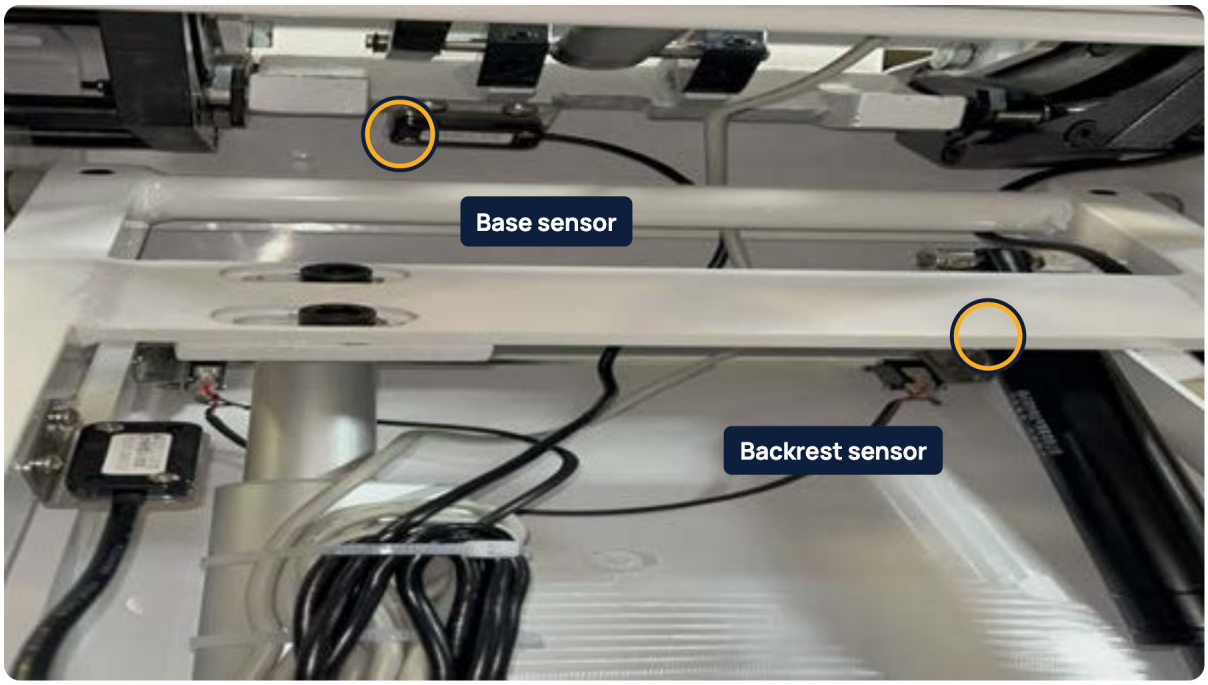


Fig. 33 Limit sensor locations

CHECK 1

Inspect the limit sensors

- Make sure the screws securing each sensor are tight.
- A loose screw can change the sensor angle and throw off calibration.

CHECK 2

Check the sensor connections

- Confirm every limit sensor connector is fully plugged into the main PCB.
- Reseat any loose connector to ensure good contact.

Then run the calibration again. If it still fails, contact TPC technical support at (800) 560-8222.

CALIBRATION, CONTINUED

Using Gen 2 boards in Laguna 2.0 chairs

Gen 2 control boards work in every Laguna 2.0 chair. Not every chair has digital position (angle) sensors, so the board has two operating systems. A jumper selects between them.



Fig. 34 No jumper

Angle sensor system



Display shows **XXX** (no decimal point). For chairs with angle sensors installed.

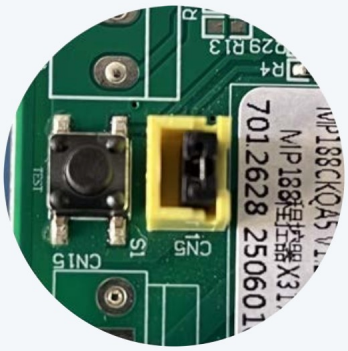


Fig. 35 Jumper inserted

Memory motor system



Display shows **XX.X** (with decimal point). For chairs with the memory motor configuration.

Switch between systems

1. With the main board powered **on**, insert the jumper into the yellow port to select the memory motor system. The display changes to show a decimal point.
2. To return to the angle sensor system, remove the jumper.
3. After every change, press the **Reset** button to start the new configuration for normal operation.

SECTION 07

Care and maintenance

The chair needs no special maintenance beyond normal cleaning. Regular inspection (page 20) is recommended to keep it operating safely.

Daily cleaning

- Clean vinyl upholstery and plastic parts with mild soap and water.
- Use barrier covers for asepsis and to reduce wear.

Disinfecting

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

NOTE Surface disinfectants will eventually discolor upholstery. This is normal wear and does not affect function. Regular use of barrier covers extends upholstery life.

Protect the electrical components

CRITICAL Keep liquids away from electrical connections.

- Never spray disinfectant directly at or into switches and controls.
- Wipe controls with a lightly dampened cloth. Do not saturate it.
- Spray cleaning solution onto a cloth first.
- Keep switches dry to avoid costly damage or failure.

CARE AND MAINTENANCE, CONTINUED

Periodic inspections

Check these items regularly.

☐	**Upholstery**	No tears, excessive wear or loose mounting
☐	**Bolt tightness**	All mounting bolts remain secure
☐	**Armrests**	Rotate smoothly, but not too easily
☐	**Headrest friction**	Holds its position without slipping
☐	**Electrical connections**	No loose wires or damaged connectors
☐	**Safety plate**	Stops the chair when obstructed

When to contact service

Contact your TPC dealer or an authorized service technician if:

- The chair makes unusual noises
- The chair does not respond to controls
- Any safety feature does not work properly
- Motors sound strained or squeal
- Electrical switches malfunction

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

SECTION 08

Troubleshooting

If a problem persists, call TPC technical support at (800) 560-8222.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Chair does not move up or down, and makes no sound	No power	Check the power source and that the outlet has power
	Blown fuse	Check both 15 A fuses; replace if needed (page 9)
	Power switch off	Turn the main power switch on; check it lights
	Failed transformer	Check transformer output (24 V AC); replace if defective
Chair will not move, but beeps when controls are pressed	Safety plate engaged	Check under the chair and remove anything caught (page 15)
Squealing noise when the motor runs	Damaged drive extension	Inspect the drive extension; replace the motor if needed
Chair does not go low or high enough	Motor travel has been changed	Recalibrate the motors (page 16)
	Obstruction in the travel path	Check for objects blocking the full range of motion
Cannot program presets	Incorrect procedure	Stop the chair, then hold the preset button until the confirmation beep (page 14)
	Damaged main PCB	No beep after 10 seconds of holding: contact a service technician
Chair is on, but the touchpad does not respond	Touchpad not connected	Check the touchpad cable is secure at the main PCB
	Touchpad failed	Test with another touchpad; replace if defective
Headrest does not hold its position	Loose set screws in the backrest	Tighten the set screws in the backrest mount
	Worn friction mount	Contact a service technician for replacement parts
Armrest moves too easily	Loose mounting screw	Tighten the screw that holds the armrest assembly

SECTION 09

TPC 5-year limited warranty

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

5 years

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

1 year

- 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.

Shipping damage claims

Claims against the freight carrier must be made when the damaged items are received. Filing the claim is the customer's responsibility.

What is not covered

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

WARRANTY, CONTINUED

Service and usage requirements

⚠ **IMPORTANT** Only authorized service technicians should service TPC equipment. Service by unauthorized technicians may void the warranty.

To keep warranty coverage

- Do not exceed the 600 lb maximum weight capacity.
- Allow only one patient in the chair at a time.
- Never stand on the chair.
- Do not operate the chair near flammable liquids.
- Do not exceed 3 minutes of continuous operation.
- Keep liquids away from electrical components.

Product modifications

TPC continually improves its products and may change them without notice. TPC is not obliged to modify previously manufactured products.

Laguna 2.0

For more information, contact your TPC dealer.

TPC DENTAL
851 S. Lawson St.
City of Industry, CA 91748
tpcdental.com

PHONE
Tech support (800) 560-8222
Office (626) 810-4337
Fax (626) 810-4245

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