

DENTAL CHAIR

CLAIR

Troubleshooting

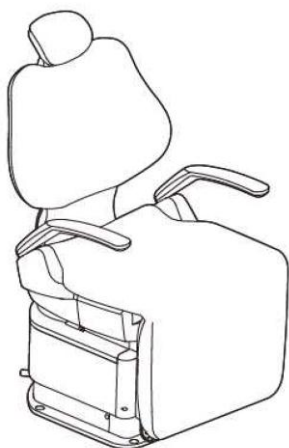


Table of Contents

Clair Chair Troubleshooting

List of Clair Chair PCB Setup Procedures

In the case of a trouble, please see troubleshooting below, so it may help you to solve the problem or to find the solutions. The troubleshooting described speculates on various problems. If the problems or symptoms are not listed here, please contact Takara Belmont.

CAUTION:

Please make sure disconnect power supply line before repair or replace defective parts. If not, it may cause injury from electrical shock. Special care must be taken when repairing the chair motor, capacitor, solenoid valve and power supply cable which parts are operated with high voltage.

High voltage parts

- * Unit in j-box : power cable, power switch, fuse, air switch, terminal block, transformer, Noise filter, 900LED Power supply PCB.
- * Chair : Motor, capacitor, solenoid valve, power cable, chair PCB (input voltage).

In the case of the repair of the chair hydraulic circuit. Make sure that the hydraulic circuit is not pressurized before removing the hydraulic parts such as motor, solenoid valve and cylinder.

Remove the chair to lowest end and fully reclined position for unpressurized chair position by “LIMIT MODE”.

Defective Part	Symptom	Check Point	Possible Cause	Solution
Chair	There is an error sounds when turn on the main switch	Check type of error sounds	Error sounds continuously as " Do ... Do... Do... " > Defective or damaged of seat potentiometer or harness	Re-tighten set screw of seat potentiometer or replace seat potentiometer assembly
			Error sounds continuously as " DoRe ... DoRe... DoRe... " > Defective or damaged of backrest potentiometer or harness	Re-tighten set screw of backrest potentiometer or replace backrest potentiometer assembly
			Error sounds continuously as " DoReMi ... DoReMi... DoReMi... " > Defective or damaged of legrest potentiometer or harness	Re-tighten set screw of legrest potentiometer or replace legrest potentiometer assembly
			Error sounds continuously as " DoReMiFa ... DoReMiFa... DoReMiFa... " > Defective or damaged of rollup potentiometer or harness	Re-tighten set screw of rollup potentiometer or replace rollup potentiometer assembly
			Error sounds as " PiPiPiPi " for five times > Chair foot switch was on when turning the power on	Check foot switch whether there is no object on foot controller of replace foot controller
			Error sounds continuously as " DoReMiFaSolLaTi " > Failure occurred in EEPROM memory of chair pcb	Replace chair pcb
	There is a buzzer sounds after auto movement	Check type of buzzer sounds	Error sound as "PiPu" for time out (60 seconds) error sound	Chair can not move until target position after pressing preset switch. Check chair movement (Especially legrest in movement occur due to damage of legrest spring) and replace the spring. *Set legrest in limit position a little forward position from vertical position*
	LP switch does not work	Check type of error sounds	Error sounds as " Pi---- " for two seconds > Chair in LP position after turning the power on	Which is not a malfunction. Press other chair operation switch and press LP switch again.
	Chair does not move at all	Check wiring of inside chair	Disconnected wirings	Connect wiring.
	Backrest reclines and seat lowers but no raising and lifting	Check motor pump of the chair	Defective capacitor	Replacement of capacitor
There is no power supply (Current voltage) to motor pump.			Check connection of motor wires (3P) > Repair	
There is power supply (Current voltage) to motor pump but motor pump does not work.			Replace motor pump	

Clair Chair Troubleshooting

Defective Part	Symptom	Check Point	Possible Cause	Solution
Chair	Chair does not move (does not lower)	Safety function is on	There is foreign object under the legrest	Remove foreign object
			Defect safety switch (micro switch) or damage harness	Replace micro switch or harness
	Each limit does not work	Check each limit	Defective limit setting	Resetting each limit positions
			Damage harness between the potentiometer and chair pcb or damage potentiometer.	Repair harness or replace potentiometer.
	There is a continuous buzzer sounds during limit setting	Check potentiometer	Potentiometer fixing position is close to the out of range position.	Re-attach the potentiometer (without continuous buzzer sound area)
	Stop position differs at preset movement	Check potentiometer	Loose set screw of potentiometer	Re-tighten set screw of potentiometer to correct position. / Re-setting of each limit position (refer to chair tech info.)
		Chair stops before setting position	Stop width of the address data is wider.	Set stop width to less side.
		Chair stops over the setting position	Stop width of the address data is less.	Set stop width to wider side.
	Legrest does not come out everything after pressing P1 or P2 switch	Check backrest angle at P1 or P2 position	Legrest angle (and rollup extension) is automatically controlled by backrest angle at preset position. Can not adjust legrest angle manually. For detail of this movement, see operating instruction.	Adjust backrest angle (more reclining position) and memorized to P1 or P2 position.
	Rollup does not come out after pressing P1 or P2 switch even backrest is full reclined position (Power Headrest)	Check power headrest position (Extension position)	There are 2 settings for interlock or not interlock between headrest position (Extension position) and rollup position. This setting can be changed to interlocking after initial setting. (Factory setting is not interlocking)	Switch interlock or not interlock function between pillow position and rollup position refer to [List of Clair Chair PCB. Setup Procedures]
Motor pump is keep running	Check relay pcb	Contact point of relay pcb is welding	Replace relay pcb	

Clair Chair Troubleshooting

Defective Part	Symptom	Check Point	Possible Cause	Solution
Chair	Chair moving (down or reclining) by itself	Chair movement stops when low pressure hose of cylinder is pinched (clamp) with tools such as long nose pliers.	Defective O-ring of inside cylinder (There are two O-rings inside of cylinder body. It may damage the O-ring for bottom side)	Replace O-ring or cylinder assy.
		Chair movement stops when low pressure hose between solenoid and oil reservoir (return hose) is pinched (clamp) with tools such as long nose pliers.	Foreign object stays around plunger of solenoid valve	Disassembly and cleaning or solenoid valve or replace it
		Chair movement does not stops when low pressure hose between solenoid and oil reservoir (return hose) is pinched (clamp) with tools such as long nose pliers.	Defective check valve inlet side of solenoid valve and oil flows in an opposite direction	Replace solenoid valve assy
	Oil leakage	Oil leakage from nipple of cylinder or solenoid valve	Loose nipple	Tighten the nipple
			Defective sealant of nipple	Fix it with seal tape and re-tighten nipple
			Defective or damage the O-ring of hi-pressure hose	Replace O-ring (P3)
		Oil leakage from oil reservoir	Damage oil reservoir or reduce sealant of bottom lid	Replace oil reservoir
			Loose hose clamp of oil reservoir hose	Tighten hose clamp
	Chair moves too fast or slow (seat lowering speed)	Check needle on the solenoid valve	According to a request from a user	Adjust speed by needle valve (Be careful not to open the needle valve too much, it will come off)
	Power Headrest moves at moment	Power headrest moves during chair up motion	Air goes into plunger guide tube of headrest up solenoid valve	Release air from solenoid valve. Remove the solenoid block with bracket from chair base. Coil part of solenoid is place the downward and operate chair backrest about 10 times.
There is noise from motor	Check hose layout around motor	Making noise due to the vibrations of motor	Rearrangement of hoses around motor	

List of Clair Chair PCB. Setup Procedures

- The work should be performed in order from Step 1 with the slide SW set to the position stated. The "□" symbol shows the SW on the PCB.
- Statement such as P 1 ⇒ B e e P means that the switch P1 is pressed and held until the buzzer sounds.
- When the slide SW is set to the LIM position (inner side), be sure to restore it to the NOL position after the work is completed.

Slide SW Position	Switch to be pressed for the first time	Switch to be pressed for the second time	Switch to be pressed for the third time	Switch to be pressed for the fourth time	Items to be Set	Overall Default	
LIM Position (Red LED illuminates.)	□MODE ⇒ B e e p				1) Overall default setting (Figures in the right column show values to be set.) (Note 4)		
	□MODE ⇒ B e e p ⇒ B e e p (Do not execute this operation.)				PCB simple test mod (Only for version 1.2 and up)		
	Move the chair up to the position to be set with the manual SW.	□STORE	Chair up			2) Setting for upper limit position	
			Chair down			2) Setting for lower limit position	
			Backrest up tilt			2) Setting for up-tilt limit position	
			Backrest lay flat			2) Setting for lay-flat limit position	
			P 1			2) Setting for leg rest OUT-limit position	
			P 0			2) Setting for leg rest IN-limit position	
			P 2			2) Setting for rollup OUT-limit position	
			L P			2) Setting for rollup IN-limit position	
			Pillow up			2) Setting for head rest upper limit position	
			Pillow down			2) Setting for head rest lower limit position	
	□MODE ①	Chair up	P 0	□STORE		7) Decrease the stop width for up operation.	0 2
			P 1	□STORE		7) Increase the stop width for up operation.	
		Chair down	P 0	□STORE		7) Decrease the stop width for down operation.	0 3
			P 1	□STORE		7) Increase the stop width for down operation.	
		Backrest up-tilt	P 0	□STORE		7) Decrease the stop width for up-tilt operation.	0 2
			P 1	□STORE		7) Increase the stop width for up-tilt operation.	
		Backrest lay-flat	P 0	□STORE		7) Decrease the stop width for lay-flat operation.	0 2
			P 1	□STORE		7) Increase the stop width for lay-flat operation.	
		P 1 ⇒ B e e p				8) Automatic acquisition of stop width	
		P 2				9) LP SW works for P3 function.	
		L P				9) LW SW works for LP function.	L P
		□MODE ⇒ B e e p	□MODE	P 0			10) Set communication speed to low. (2400 bps)
P 1						10) Set communication speed to high. (4800 bps)	
P 2						10) Set communication speed as that of NEBB Specification (9600bps, etc.)	
Backrest up-tilt					12) Prohibit backrest up-tilt either, when down operation is prohibited.	Jp-tilt prohibited	
Backrest lay-flat					12) Prohibit backrest lay-flat either, when down operation is prohibited.		
L P					13) Switch leg rest interlocking when in LP operation.	Interlock	
Pillow up					14) Switch interlock function between pillow position and rollup position.	Interlock	
Pillow down					15) Switch function to vary pillow position and gargle position.	Yes	
Pillow forward					Switch variable/fixed leg rest angle (version 1.3 and up).	Possible	
Chair up					11) Interlocking with dental light.	Interlock	
Chair down			11) Non-interlocking with dental light.				
□MODE				Abort the mode (Return to (1)).			
NOL Position (2)	P 1 ⇒ B e e p				3) Setting for P1 position		
	P 2 ⇒ B e e p				3) Setting for P2 position		
	L P ⇒ B e e p				3) Setting for gargle position		
	P 0 ⇒ B e e p				3) Setting for return position		
	□MODE ⇒ B e e p	□STORE	P 0			4) Doctor No. 0 is set.	0
			P 1			4) Doctor No. 1 is set.	
			P 2			4) Doctor No. 2 is set.	
			L P			4) Doctor No. 3 is set.	
			Return to normal status (2).				
		□MODE	P 0	□STORE		5) Disable buzzer sound.	
			Chair up	□STORE		5) Change sound for operation SW.	○
			Chair down	□STORE		5) Change sound for 4-bit input.	-
			Backrest up-tilt	□STORE		5) Change sound for serial input.	-
			Backrest lay-flat	□STORE		5) Change sound for down operation prohibition input.	○
	□MODE	P 1	□STORE		5) Change sound for all operation prohibition input.	-	
		□MODE	P 0		Leg rest IN operation		
			P 1		Leg rest OUT operation		
			Chair up		Chair up operation		
□MODE				Return to the normal status (2).			

- (Note 1) To change the sound and when multiple settings are to be changed, execute the third step as required, and press STORE once to complete the procedure.
- (Note 2) For setting stop width, press STORE once for each stop width. For setting multiple points, repeat the steps from the second step.
- (Note 3) There is no way to exit from the sound switching mode. Pressing only [STORE] without pressing any other SW will reset the present setting.
- (Note 4) By issuing the sound "Do" for "headrest (Yes)" or "one-octave higher La" for "Rollup (Yes)", you can judge the equipment status (version 1.5 or up).

JP1 terminal	
Short-circuit across 1-2	LP operation is only for backrest operation.
Short-circuit across 2-3	LP operation is for backrest + up/down operations.