

DENTAL CHAIR

CLAIR

**OPERATING
INSTRUCTIONS**

IMPORTANT

**This manual provides operating instructions for the BELMONT CLAIR CHAIR.
The instructions contained in this booklet should be thoroughly read and
understood before operating the chair.**

**After the installation is completed, keep this manual in a safe place and refer to it for
future maintenance.**



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Intended Use of the Product

This product is intended for the exclusive use for diagnoses, treatments and relative procedures of dentistry, and must be operated or handled by the qualified dentists or by dental staffs under the supervision of the dentist.

Such dentists or dental staffs should instruct and/or assist the patients to approach to and leave from the product.

Patients should not be allowed to operate or handle the product unless he/she is so instructed.

Important Notes

In case of a malfunction, please contact your dealer.

Do not disassemble or attempt to repair.

Disassembly, repair or modifications should only be done by a qualified repair technician.

Attempts at disassembly, repair or modifications may lead to abnormal operation and accidents.

1. OVERALL VIEW AND MAJOR COMPONENTS

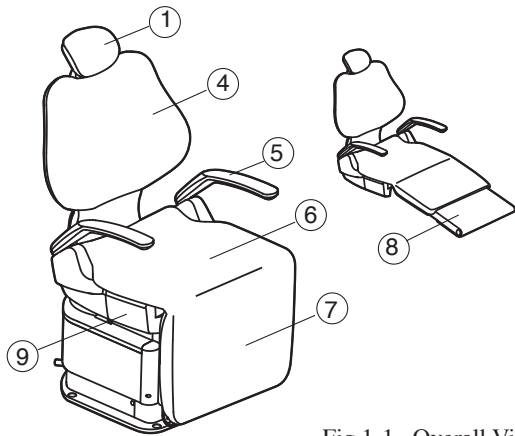
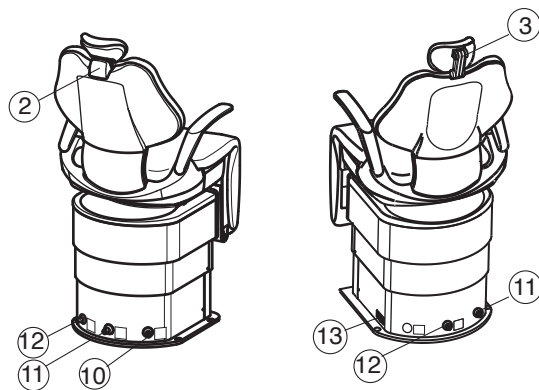


Fig.1-1 Overall View

Power Headrest Type

Twin Axis Headrest Type

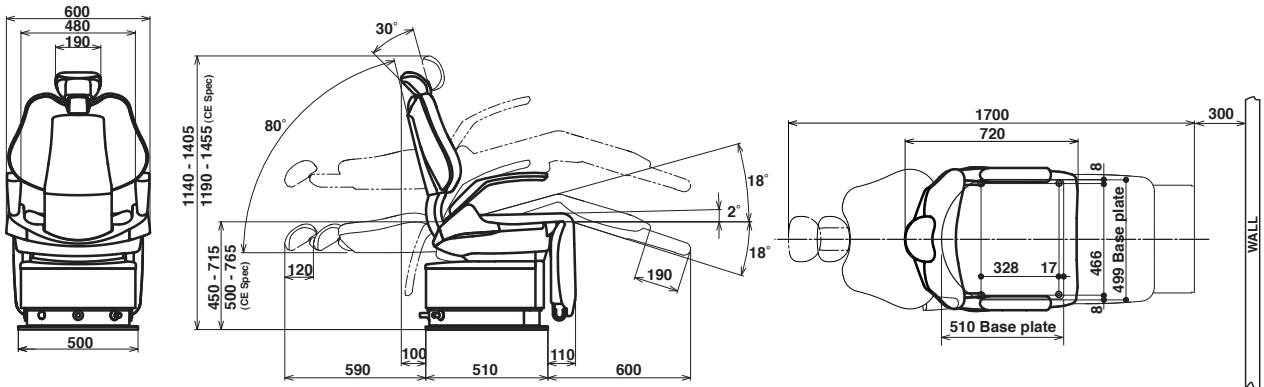


Major Components

- | | | |
|-----------------------|-------------------------------------|--------------------------------|
| 1. Headrest | 6. Seat | 11. Stick Switch for Manual |
| 2. Power Headrest | 7. Footrest | 12. Stick Switch for Auto Mode |
| 3. Twin Axis Headrest | 8. Roll up Legrest | 13. Power Switch |
| 4. Backrest | 9. P.C.Board Box Cover | |
| 5. Armrest | 10. Stick Switch for Power Headrest | |

2. DIMENSIONS AND SPECIFICATIONS

2-1. DIMENSIONS -mm-



2-2. SPECIFICATIONS

- | | | |
|---------------------------------|--|--------------------------------------|
| Seat Initial Height | : 450mm (500mm CE Spec.) | |
| Seat Lifting Stroke | : 265mm | |
| Backrest Movement | : 0° ~ 80° above Horizontal | |
| Tilting Mechanism | : Backrest Synchronized Tilting (2° ~ 16° above Horizontal) | |
| Auto Movements | : 2-Preset, 1-Last Position Memory and 1-Auto Return | |
| Maximum Load | : 135kg (Patient weight) | |
| Control Voltage | : DC12V | |
| Power Consumption | : 230V, 50Hz, 2.0A | |
| Net Weight | : 150 kg | |
| Service Life | : 10 years | |
| Protection Level Electric Shock | : Class I Type B | |
| Environmental requirements | : Ambient Temperature | Operating +10 ~ +40°C |
| | | Storage/Transportation -20 ~ +70°C |
| | Humidity | Operating 30 ~ 75% |
| | | Storage/Transportation 10 ~ 95% |
| | Atmospherical pressure | Operating 700 ~ 1060hPa |
| | | Storage/Transportation 600 ~ 1060hPa |

3. OPERATING INSTRUCTIONS

3-1. MAIN SWITCH (Fig.3-1)

Turn on the main switch located on the left side of the pump cover.
A green lamp in the main switch will illuminate.

CAUTION

Operate the main switch by hand only.
Turn off the main switch after daily operation.

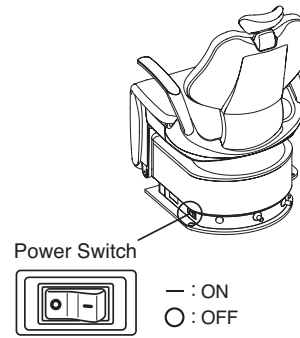


Fig.3-1 Main Switch

3-2. CONTROLS

CAUTION

Before operating the chair, confirm that it is safe for the patient and the operator.

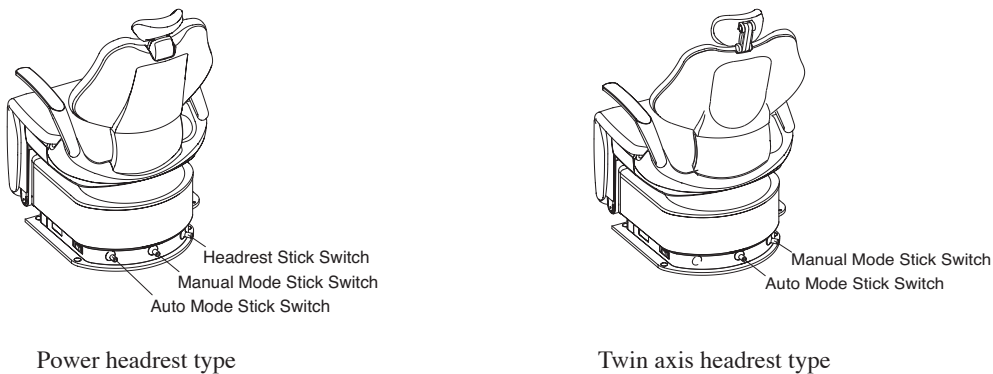
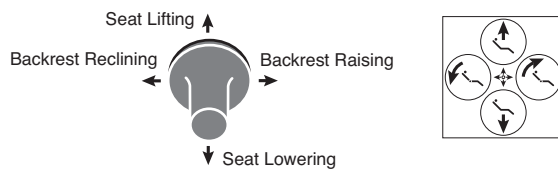


Fig.3-2 Control Switch

3-2-1. Manual Mode Control



1) Seat Lifting

Keep depressing the manual mode stick switch upward until the seat is lifted up to the desired position.

2) Seat Lowering

Keep depressing the manual mode stick switch downward until the seat is lowered to the desired position.

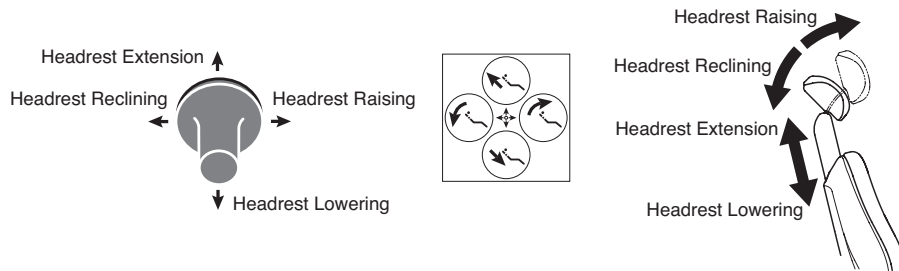
3) Backrest Reclining

Keep depressing the manual mode stick switch to left side until the backrest is reclined to the desired position.

4) Backrest Raising

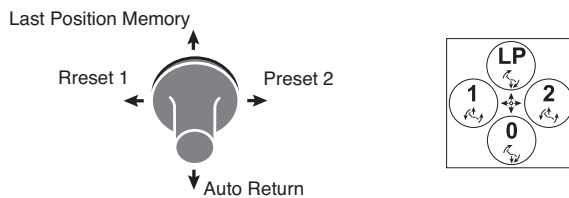
Keep depressing the manual mode stick switch to right side until the backrest is raised up to the desired position.

3-2-2. Power Headrest Control



- 1) Headrest Extension
Keep depressing the headrest stick switch upward until the headrest is lifted up to the desired position.
- 2) Headrest lowering
Keep depressing the headrest stick switch downward until the headrest is lowered to the desired position.
- 3) Headrest Raising
Keep depressing the headrest stick switch to right side until the headrest is raised up to the desired position.
- 4) Headrest Reclining
Keep depressing the headrest stick switch to left side until the headrest is reclined to the desired position.

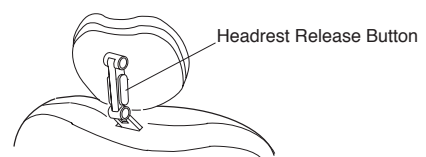
3-2-3. Auto Mode Control



- 1) Preset Control
The chair has two preset positions. (Preset-1 and Preset-2)
Momentarily depress the auto mode stick switch to left side, the chair will move to the preset-1 position automatically. (Preset-2 is operated by right side.)
- 2) Auto Return
Momentarily depress the auto mode stick switch downward, the chair will return to the initial position. (The seat is fully lowered and the backrest is in the upright position.),
- 3) Last Position Memory
Momentarily depress the auto mode stick switch upward while in the reclined backrest position (treatment position), the backrest will raise to the mouth rinsing position automatically.
Momentarily depress the auto mode stick switch upward again, the backrest will recline to the previous treatment position automatically.
- 4) Emergency Stop
During automatic movement (Preset, Auto return and Last position memory), by depress of any side of the stick switches the automatic movement will be cancelled immediately.
Important : Do not depress the auto mode stick switch for over 3 seconds, because the memorized position in auto mode may be changed.

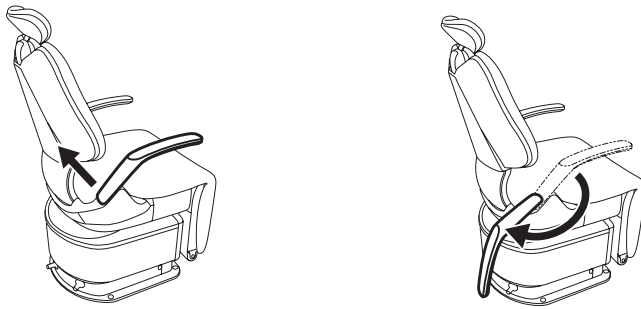
3-3. TWIN AXIS HEADREST (OPTIONAL)

- 1) Height Adjustment
Press down or pull up the headrest to the desired height.
- 2) Angle Adjustment
Press the headrest release button on headrest mechanism and move to desired position.



3-4. ARMREST ROTATION

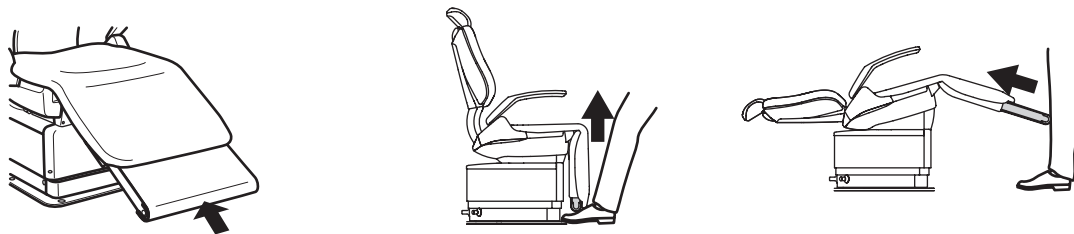
Pull up the armrest, then rotate the armrest to clockwise direction.



3-5. SAFETY LOCK DEVICE (Fig.3-3)

All chair movements can be stopped automatically by the safety lock device when pressure is detected to the end of footrest. If the safety device has been activated, simply operate the base up button and remove the object causing the safety device to activate from this area.

Note : Seat lifting and backrest raising can be operated when the safety lock device is activated.



4. AUTO MODE POSITION ADJUSTMENT

4-1. Preset position Adjustment

Two preset positions can be set.

- 1) Set the seat and the backrest to the desired preset position by manual mode stick switch.
- 2) Keep depressing the auto mode stick switch to left side until buzzer sounds (in about 3 seconds), then release it.
- 3) The position is memorized for Preset-1.
- 4) Preset-2 can be memorized by depressing the auto mode stick switch to right side, as following 1 to 3.

4-2. Mouth Rinsing Position Adjustment

Mouth rinsing position in last position memory movement can be adjusted.

- 1) Set the backrest to the desired mouth rinsing position by manual control.
- 2) Keep depressing the auto mode stick switch upward until buzzer sounds (in about 3 seconds) and release the button.
- 3) This backrest position is memorized as the mouth rinsing position.

5. CARE AND MAINTENANCE

Other than cleaning, no scheduled maintenance of the chair is required.

⚠CAUTION

Turn OFF the main switch at the lowest seat position after daily operation and for a long term interval.

⚠CAUTION

All surfaces can be cleaned with DURR FD333 cleaner (or equivalent).
Spray the cleaner (DURR FD333) onto a cloth and wipe the surfaces with the cloth.
Do not drench the chair and unit. Wipe all surfaces dry after cleaning.

6. ELECTROMAGNETIC COMPATIBILITY

Medical electrical equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in this manual.

Portable and mobile RF communications equipment can affect medical electrical equipment.


The equipment or system should not be used adjacent to other equipment. If adjacent or stacked use is necessary, the equipment or system should be observed to verify normal operation in the configuration in which it will be used.

Guidance and manufacture's declaration - electromagnetic emissions		
The CLAIR(CHAIR) is intended for use in the electromagnetic environment specified below. The customer or the user of the CLAIR(CHAIR) should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The CLAIR (CHAIR) uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The CLAIR (CHAIR) is suitable for use in all establishments, including 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	

Guidance and manufacture's declaration - electromagnetic immunity			
The CLAIR(CHAIR) is intended for use in the electromagnetic environment specified below. The customer or the user of the CLAIR(CHAIR) should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 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%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a 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 40% U_T (60% dip in U_T) for 5 cycle 70% U_T (30% dip in U_T) for 25cycle <5% U_T (>95% dip in U_T) for 5 s	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycle 70% U_T (30% dip in U_T) for 25cycle <5% U_T (>95% dip in U_T) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the CLAIR (CHAIR) requires continued operation during power mains interruptions, it is recommended that the CLAIR (CHAIR) be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	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.
NOTE U_T is the a.c. mains voltage prior to applications of the test level.			

Guidance and manufacture's declaration - electromagnetic immunity

The CLAIR (CHAIR) is intended for use in the electromagnetic environment specified below. The customer or the user of the CLAIR (CHAIR) should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz outside ISM bands ^a	3 Vrms	<p>Portable and mobile RF communications equipment should be used no closer to any part of the CLAIR(CHAIR), including cables, than the recommended separation distance calculated from the equation applications to the Frequency of the transmitter.</p> <p>Recommended separation distance $d = 1.2\sqrt{P}$</p>
Radiated RF IEC 61000-4-3	3V/m 80 MHz to 2.5 GHz	3 V/m	<p>$d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2.5 GHz</p> <p>Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,^a should be less than the compliance level in each frequency range.^b</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> <div style="text-align: center;">  </div>

NOTE 1 At 80 MHz and 800MHz, the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by adsorption and reflection from structures, objects and people.

- a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) **telephones and land mobile radios**, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the CLAIR(CHAIR) is used exceeds the applicable RF compliance level above, the CLAIR(CHAIR) **should be observed to verify normal operation**. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the CLAIR(CHAIR).
- b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.

Essential performance (purpose of IMMUNITY testing)

Unless operated by the switches for chair control, the CLAIR (CHAIR) does not make any movements, except for sounding a buzzer and switching on/off the indicator.

**Recommended separation distances between
Portable and mobile RF communications equipment and the CLAIR(CHAIR)**

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

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	80 MHz to 800 MHz $d = 1.2\sqrt{P}$	800 MHz to 2.5 GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (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 and 800MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by adsorption and reflection from structures, objects and people.

NOTE



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The logo features a stylized square icon with a white square inside, followed by the word 'Belmont' in a large, outlined, sans-serif font.

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