DENTAL CHAIR AND UNIT

OPERATING MANUAL

IMPORTANT

This manual provides operating instruction for BELMONT SP-CIELA. The instructions contained in this booklet should be thoroughly read and understood before operating the cahir and unit. After the installation is completed, file this manual and refer back to it for future maintenance.



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1. OVERALL VIEW AND MAJOR PARTS



Fig.1-1 Overall View

MAJOR PARTS

- 1 Headrest
- 2 Backrest
- 3 Seat
- 4 Legrest
- 5 Footrest
- 6 Armrests
- 7 Stick Switch for Headrest Control
- 8 Stick Switch for Chair Manual Control
- 9 Power Supply Panel
- 10 Preset Panel
- 11 Cupfiller Nozzle
- 12 Bowl Flush Nozzle
- 13 Cuspidor Bowl
- 14 Assistant Side Control Panel
- 15 Saliva Ejector Handpiece

- 16 3-way Syringe
- 17 Vacuum Handpiece
- 18 Assistant Holder
- 19 Assistant Arm
- 20 Base Cover
- 21 Foot Control
- 22 First Arm
- 23 Second Arm
- 24 Semi-Balance Arm
- 25 Handpiece Holder
- 26 Weste Receptacle Holder
- 27 Main Control Panel
- 28 Film Viewer
- 29 Doctor Table
- 30 Light Pole
- 31 Dental Light

2. DIMENSIONS AND SPECIFICATIONS

2-1. DIMENSIONS



Fig.1-2 Dimensions

2-2. SPECIFICATIONS

Seat Height	450 ~ 710mm by Electric Hydraulic System
Seat Tilt Angle	$-0 \sim 20^{\circ}$ coodinated with Backrest
Backrest Angle	$-0 \sim 82^{\circ}$ by Electric Hydraulic System
Legrest Angle	$0 \sim 80^{\circ}$ by Electric Hydraulic System
Footrest Extending Stroke	230mm by Electric Hydraulic System
Headrest Adjustable Angle	- 32° by Electric Hydraulic System
Headrest Extending Stroke	120mm by Electric Hydraulic System
Doctor Table Height	735 ~ 855 by Manual Control
Doctor Table Swing Stroke	1600mm by Manual Control
Suitable Air Pressure	-0.49 Mpa
Suitable Water Pressure	-0.1 - 0.19 Mpa
Power Consumption 115V, 50/60Hz	- 680/640W
220V, 50/60Hz	- 680/680W
240V, 50/60Hz	- 870/870W
Net Weight	- 221.5kg (Base Mount Type)
	226.5kg (Cart Type)

3. OPERATING INSTRUCTIONS 3-1. CHAIR MAIN SWITCH AND MASTER SWITCH

- (1) Chair Main Switch (**Fig.3-1**)
 - Turn the chair main switch on located on the right hand side the base cover. A green lamp in the chair main switch illuminates.
- (2) Master Switch (Fig.3-2 and Fig.3-3)
 - Turn the master switch on located on the right hand side under the doctor table. The power indicator on the main control panel illuminates and the indication of the function indicator turns to (**SP**). The master switch turns the air , water and electric power ON/OFF at the utility section.
 - Note : Before operation, confirm the air compressor is fully charged. The chair can be operated when the chair main switch and the master switch are both ON position.

ACAUTION

Turn off the master switch and the chair main switch in long term interval.

3-2. MAIN CONTROL PANEL











(4) Timer Function (**Fig.3-3**)

Press the function switch and turn the indication of function indicator to (F1).

Set timer by pressing (\bigstar) button or (\checkmark) button located on the main control panel.

The timer setting is indicated in the function indicator.

The timer setting increases by pressing (\bigstar) button by 10 seconds segment and it decreases by pressing (\checkmark) button by 10 seconds segment.

The timer function can be set maximum 9 minutes 90 seconds.

Example : Timer setting 3 minutes 20 seconds is indicated as (32) in the function indicator.



Function Switch

Momentarily press the bowl flush switch, timer function starts to count down and peep sound informs end of setting time.

While working timer function, the timer indicator is flahing on the main control panel. After ending timer function, the indication of function indicator turns to (SP) automatically.

Note : 4 kinds of timer setting time can be memorized in the timer function.





Fig.3-4 Main Control Panel

(5) Handpiece Control Switches (Fig.3-4)

Handpiece Spray Switch

Indicator

Ć

A. Handpiece Spray Switch

When the handpiece is taken from the holder and depress the foot controller, spray water comes out from handpiece when the handpiece spray switch is ON position.

Momentarily press the handpiece spray switch and turn out the indicator, then spray water stops.

When the master switch is turned on, the handpiece spray switch turns on and the indicator illuminates automatically.

Light Pack Switch

Rotation Indicator



Electric Motor Rotational Direction Switch



Electric Motor Maximum **Rotational Speed Switch**

B. Light Pack Switch (Option)

Momentarily press the light pack switch, the indicator illuminates and the fiber optic power turns on until the light pack switch is pressed again.

C. Electric Motor Rotational Direction Switch (Option) The electric motor rotational direction can be changed by momentarily

pressing the electric motor rotational direction switch and the rotational direction is indicated on the indicator.

E. Electric Motor Maximum Rotational Speed Switch (Option)

The electric motor maximum rotational speed can be adjusted by pressing the electric motor maximum rotational speed switch and the maximum speed is indicated on the indicator. The electric motor maximum rotational speed can be adjusted by three steps.





Headrest Control Switches Fig.3-5 Main Control Panel

Before operating the chair, confirm safety for the patient and the operator.

- (6) Chair Auto Positioning Switches (Fig.3-5)
- A. Preset Operation

The chair can be memorized two preset positions. (Preset 1 and Preset 2) Momentarily press (1) button, the chair moves to preset 1 position and stops automatically. (Preset 2 is operated by (2) button.)

B. Auto-return Operation

Momentarily press (0) button, the chair returns to the initial position (The seat is the lowest and the backrest is the upright position with the footrest retracted.) and stops automatically.

Note : The footrest can be operated only by preset and auto-return movements.

C. Last Position Memory Operation

Momentarily press (**LP**) button at the reclined backrest position (treatment position), the backrest raises up to the mouth rinsing position and stops automatically. Momentarily press (**LP**) button again, the backrest returns to the previous treatment position and stops automatically.

D. Emergency Stop (Safety Stop)

During automatic procedure (preset, auto-return and last position memory), momentarily pressing any chair control button on the main control panel or any stick switch on the chair base will cancell the automatic movement immediately.

- (7) Chair Headrest Control Switches (Fig.3-5)
- A. Headrest Extension

Keep pressing (\bigstar) button until the headrest is lifted up to the desired position.

B. Headrest Lowering

Keep pressing (\checkmark) button until the headrest is lowered to the desired position.

C. Headrest Rasing

Keep pressing (\neg) button until the headrest is raised up to the desired position.

D. Headrest Reclining

Keep pressing (\blacktriangleright) button until the headrest is reclined to the desired position.

3-3. DOCTOR TABLE CONTROL KNOBS (Fig.3-6)

The handpiece spray water and air adjustment knobs, the syringe flow adjustment knobs are located right hand side under the doctor table.

- Handpiece Spray Water Adjustment Knobs For individual handpiece spray water adjustment, the handpiece spray water adjustment knobs are lined up from the front side HP1, HP2 and HP3. The handpiece holder numbers are from the facing left hand side HP1, HP2 and HP3.
- (2) Handpiece Spray Air Adjustment Knob The handpiece spray air adjustment knobs controls the flow of spray air to all handpieces.
- (3) Doctor Table Syringe Flow Adjustment Knobs The doctor table syringe flow adjustment knobs control air and water to the doctor side syringe. The yellow capped knob is the air control knob, the blue capped knob is the water control knob.
 - **Note** : Turning a flow adjustment knob counterclockwise increases flow volume and turning clockwise decreases.

3-4. FILM VIEWER (Fig.3-7)

Momentarily press the film viewer switch, the film viewer turns on and momentarily press the film viewer switch again, the film viewer turns out.

3-5. ASSISTANT SIDE CONTROL PANEL (Fig.3-8)

The assistant side control panel is located on the front side of the cuspidor unit.

- (1) Bowl Flush Switch Refer to 3-2, (1).
- (2) Cupfiller Switch Refer to 3-2, (2).
- (3) Chair Auto Positioning Switches Refer to 3-2, (6).
- (4) Service Water Outlet The service water outlet provides quickconnect water.
- (5) Service Water Outlet Control Knob The water volume of service water outlet can be adjusted by the service water outlet control knob.
- (6) Service Air Outlet The service air outlet provides quick-connect air.







Fig.3-7 Film Viewer



Fig.3-8 Assistant Side Control Panel

3-6. CUSPIDOR UNIT CONTROL PANEL (Fig.3-9)

The Cuspidor unit control panel is located in the cuspidor unit body.

- Water Heater Switch The water heater switch allows warm water for the cupfiller.
- (2) Cupfiller Flow Control Knob The cupfiller flow control knob adjusts the cupfiller to suitable flow volume.
- (3) Bowl Flush Flow Control Knob The bowl flush flow control knob adjusts the bowl flush flow to optimum rinse action.
- (4) Assistant Side Syringe Flow Control Knobs The assistant side flow control knobs adjust the assistant side syringe air and water. The yellow capped knob is the air flow control knob, the blue capped knob is the water flow control knob.
 - **Note** : Turning a flow control knob counterclockwise increases flow volume and turning clockwise decreases flow volume.



Fig.3-9 Cuspidor Unit Control Panel

3-7. ASSISTANT SIDE INSTRUMENT HOLDER

Pick up the instrument (Saliva Ejector or Vacuum Handpiece) from the assistant holder and it starts working automatically.

Return the vacuum handpiece to the assistant holder and it stops after 8 seconds working. Return the Saliva ejector to the assistant holder and it stops immediately.

3-8. FOOT CONTROL (Fig.3-10)

Pick up a handpiece from handpiece holder and depress the foot control pedal, the handpiece bar starts turning and spray water and air comes out from the handpiece.

Handpiece rotation speed can be controlled by adjustment of depressing the foot control. During air handpiece running, the drive air pressure is indicated in the pressure gauge.

Note : Handpiece spray water and air can be cancelled by the handpiece spray switch on the main control panel. Refer to 3-2, (4).

Safety Lock System

During running handpiece, the lock indicator on the main control panel illuminates and the chair can not be operated for safety.

First Priority System

During the first taken handpiece is running, another handpiece can not be operated for safety.



Fig.3-10 Foot Control

3-9. STICK SWITCHES

The manual mode stick switch and the headrest control stick switch are located on the chair base.



Fig.3-11 Stick Switches

(1) Manual Mode Stick Switch (Fig.3-11)

A. Seat Lifting	Keep pressing the manual mode stick switch to upward until the seat is	S
	lifted up to the desired position.	

- B. Seat Lowering ------ Keep pressing the manual mode stick switch to downward until the seat is lowered to the desired position.
- C. Backrest Reclining ----- Keep pressing the manual mode stick switch to left hand side until the backrest is reclined to the desired position.
- D. Backrest Raising ------ Keep pressing the manual mode stick switch to right hand side until the backrest is raised up to the desired position.

(2) Headrest Control Stick Switch (Fig.3-11)

- A. Headrest Extension ---- Keep pressing the headrest control stick switch to left hand side until the headrest is extended to the desired position.
- B. Headrest Lowering ----- Keep pressing the headrest control stick switch to right hand side until the headrest is lowered to the desired position.
- C. Headrest Raising ------ Keep pressing the headrest control stick switch to upward until the headrest raised up to the desired position.
- D. Headrest Reclining ---- Keep pressing the headrest control stick switch to downward until the headrest is reclined to the desired position.

3-10. SAFETY LOCK DEVICE

The SP-CIELA is equipped with the safety lock devices to prevent accidental crush or damage.

- (1) Foot Control Lock System During running handpiece, the lock indicator illuminates on the main control panel and the chair can not be operated by any switch.
- (2) Doctor Table First Arm Lock Device (Fig.3-12) When the first arm is turned under the backrest (The first arm is turned into 30 degrees into the backrest side), the lock indicator illuminates and the chair can not be operated by any switch.
- First Arm First Arm Lock Area
- (3) Semi-Balance Arm Lock Device When the doctor table is lifted up by something, Fig.3-12 Doctor Table First Arm Lock System the lock indicator illuminates and the chair can not be operated by any switch.

3-11. SEMI-BALANCE ARM LOCK KNOB (Fig.3-13)

While supporting the doctor table by a hand, loosen the lock knob by turning counterclockwise and adjust the height of doctor table. After adjustment the doctor table height, tighten the lock knob firmly.

3-12. ARMREST (Fig.3-14)

The sitting right hand side armrest can be rotated by pulling outward.

3-13. DENTAL LIGHT

(1) Mode Selection Switch (Fig.3-15)
 The mode selection switch is located on the transformer housing.
 Switching mode can be changed by the mode

Switching mode can be changed by the mode selection switch.

- Sensor mode : The dental light switching is controlled by the touchless sensor switch.
- Manual mode : The dental light switching is controlled by the mode selection switch. In manual mode, the touchless sensor switch can not be used.
- (2) Touchless Sensor Switch (Fig.3-16) The touchless sensor switch is located on lower parts of the dental light head. In sensor mode, the dental light switching can be controlled by approaching a palm to the touchless sensor switch about 60mm.
- (3) Intensity Control Switch (Fig.3-16) The intensity control switch is located on lower part of the dental light yoke. The dental light intensity of illumination can be controlled by the intensity control switch.
- High : Turn the intensity control switch to H position
- Medium : Turn the intensity control switch to M position
- Low : Turn the intensity control switch to L position
 - **Note** : Dental light switching can be operated by the extra switch on the main control panel. Refer to 3-2, (3).







Fig.3-14 Armrest









4. SUPPORT FUNCTIONS



(1) Timer Memory Mode 4 kinds of timer setting time can be memorized in the timer function.

(2) How to memorize timer setting time.

Press the function switch and the indication of function indicator change to (F1).

Set timer setting time by pressing (\bigstar) and (\checkmark) button. Setting time is indicated in function indicator. (Refer to 3-2, (4).)

Momentarily press **the store switch** and press (**0**) button. Now setting time is memorized in (**0**) button.

In the same way, 4 kind of timer setting time can be memorized in (0), (1), (2) and (LP) buttons.

(3) How to use timer memory mode.

Press **the function switch** and the indication of function indicator change to (**F1**). Momentarily press (**0**) button and press the cupfiller switch, timer starts to count down. The end of setting time is informed by a peep sound. In the same way, 4 kinds of timer setting time can be selected by (**0**), (**1**), (**2**) or (**LP**) button.

4-2. CONTROL PANEL SWITCHING SOUND ON/OFF (Fig.4-1)

Control panel switching sound ON/OFF can be selected. Press **the function switch** and change the indication of function indicator to (**F1**). A single pressing of **the extra switch** can select switch sound ON or OFF alternately. In case where switch sound is ON position, the extra switch indicator illuminates. After selection of switching sound ON/Off, keep pressing **the function switch** and return the indication of function indicator to (**SP**).

4-3. FLUSH OUT SYSTEM (Fig.4-1)

The SP-CIELA is equipped with 2 types of flush out system. Short time flush out is to flush out water to clean the handpiece water lines. Long time flush out is to flush out water to clean the handpiece, the cupfiller and the bowl flush lines.

(1) Short Time Flush Out (Flush Out for Handpiece Water Line)

Press **the function switch** and change the indication of function indicator to (**F1**). Pick up the handpieces from holder and set them in bowl. Keep pressing **the handpiece spray switch** and turn indication of the function indicator to (**C1**). Water comes from the handpieces and it stops automatically after about 20 second flush out.

(2) Long Time Flush Out (Flush Out for Unit Water Line)

Pick up the handpieces from holder and set them in bowl, remove the cup from the cupfiller. Keep pressing **the handpiece spray switch** in (**F1**) mode and turn indication of the function indicator to (**C2**). Water comes from the handpieces and it stops automatically after about 5 minutes flush out. Then after the indication of function indicator turn to (**C3**) and water comes from the cupfiller nozzle and the bowl flush nozzle and it stops automatically after about 5 minutes flush out. After flush out, the indication of function indicator returns to (SP) automatically.

Note : During working the flush out system, momentary press of **the function switch** will cancel the flush out immediately.

4-4. FIBER OPTIC HANDPIECE LIGHTING MODE (Fig.4-2)



Electric Motor Rotation Direction Switch

Fig.4-2 Main Control Panel

Fiber optic handpiece is optional. The SP-CIELA is equipped with 2 types of fiber optic handpiece lighting mode.

Mode 1 : During the fiber optic handpiece running, the fiber optic light illuminates.

Mode 2 : When the fiber optic handpiece is picked up from the holder, the fiber optic light illuminates. After returning the handpiece to the holder, the fiber optic light illuminates about 4 seconds and it turns out automatically.

Setting Fiber Optic Lighting Mode

Press the function switch and turn the indication of function indicator to (F1). A single press of the light pack switch can select Mode 1 or Mode 2 alternately. After setting fiber optic lighting mode, press the function switch and return to (SP) mode.

4-5. CANCELLATION AND RESET OF HANDPIECE HOLDER FUNCTION

In case when the main switch is switched off without handpiece set into each holder completely, the function indicator indicates (**HE**) with buzzer sound and the handpiece holder function is cancelled.

The handpiece corresponding to cancelled handpiece holder can not be operated.

If handpiece holder function is cancelled, set handpiece into each holder completely, once turn off the master switch and again turn on. The handpiece holder function is reset.

Also cancellation and reset of handpiece holder can be operated on the main control panel. Press the function switch, and turn to (**F1**) mode. Press **the electric motor rotational direction switch**. In case that all handpiece is set into the holders completely, all handpieces are reset. In case that the handpiece is not set into the holder completely, this handpiece holder's function is cancelled with buzzer sound and the function indicator indicates (**HE**).

Note : After setting handpiece into each holder completely, turn off the master switch to prevent from cancellation of handpiece holder function.

5. CARE AND MAINTENANCE

After daily operation or in long term interval, lower the chair down to the lowest position with footrest fully retracted and turn off the master switch and chair main switch. Before turning off the master switch, confirm setting all handpieces in handpiece holders completely.

5-1. CLEANING CHAIR

Do not drench the chair for cleaning. Do not use polishing powder, solvents and strong disinfectant for cleaning.

Upholstery can be cleaned with a weak neutral detergent. Paint parts, metal parts and plastic parts can be cleaned with a weak ethanol.

5-2. CLEANING UNIT

Do not drench the unit for cleaning. Do not use polishing powder, solvents and strong disinfectant for cleaning.

(1) Basket strainer (Fig.5-1) Take out the basket strainer and the drain cap in centre of cuspidor bowl and clean it.



Cuspidor Bowl Fig.5-1 Basket Strainer



- A. Unscrew and remove the top portion of each handpiece and clean the stainer located inside the handpiece. (Fig.5-2)
- B. Remove the hoses from the cuspidor body by turning the lock rings counterclockwise and clean them. (Fig.5-3)
- C. After daily operation, run two cups of clean water through Vacuum and Saliva Ejector to clean inside.
 - **Note** : After cleaning the handpieces, apply a white vaseline lightly on the rubber parts (O-Rings) and screws for long life.





Fig.5-2 Vacuum and Saliva Ejector Handpiece

Fig.5-3 Vacuum and Saliva Ejector Hose

- (3) Vacuum Solid Collector (Fig.5-4)Open the side panel of cuspidor body and take out the solid collector container and the filter and clean them.
- (4) Drain Valve for Air Filter in Utility Section (**Fig.5-5**)

Open the drain valve in the utility section once a week to drain off the water from the air filter.

- (5) Disinfection
 - A. 3-way syringe tip, vacuum tip, saliva ejector tip and vacuum silicon rubber tip are autoclavable.
 - B. All tubings and hoses can be cleaned with a weak ethanol.



Fig.5-4 Vacuum Solid Collector



Fig.5-5 Drain Valve in the Utility Section

DECLARATION OF CONFORMITY

CE CONFORMITY

We hereby declare that the products listed below comply with the essential requirements of the EMC(electromagnetic compatibility) Directive, 89/336/EEC,91/263/EEC, 92/31/EEC,93/68/EEC.

These products have been designed and manufactured in accordance with harmonized European standard EN60601-1-2:1993.

DENTAL CHAIRS	DENTAL UNITS	DENTAL LIGHTS
CLESTA BEL-7 SP Series PRO Series 037 039 SUPREME Series NEOFORM BEL-PEDO BEL-ORTHO	CLESTA Series SP Series PALM	Representative in EU:
		One St. Andrews Way, Bow, London E3 3PA U.K. Tel: (44) 171 515 0333
Manufacturer's Signature:		Fax: (44) 171 987 3596
P. matsus	Date: 3/ 3/	1,1996
Tadateru Matsui Director, Manager of Qualit Environmental Control Dep	ty & t.	

TAKARA BELMONT CORPORATION

1-1, 2-Chome, Higashi-shinsaibashi ,Chuo-ku,Osaka,Japan TEL : (06) 213-5945

FAX : (06) 212-3680 Printed in Japan Rev.001 0005MA

2. DIMENSIONS AND SPECIFICATIONS (EUROPE TYPE)

2-1. DIMENSIONS



Fig.1-2 Dimensions

2-2. SPECIFICATIONS

Seat Height		-487 ~ 787mm by Electric Hydraulic System
Seat Tilt Angle		$-0 \sim 20^{\circ}$ coodinated with Backrest
Backrest Angle		-0 ~ 82° by Electric Hydraulic System
Legrest Angle		-0 ~ 80° by Electric Hydraulic System
Footrest Extending Stroke		-230mm by Electric Hydraulic System
Headrest Adjustable Angle		- 32° by Electric Hydraulic System
Headrest Extending Stroke		- 120mm by Electric Hydraulic System
Doctor Table Height		-735 ~ 855 by Manual Control
Doctor Table Swing Stroke		- 1600mm by Manual Control
Suitable Air Pressure		$-5 \mathrm{kg}/\mathrm{cm}^2$
Suitable Water Pressure		$-1 \sim 2 \text{kg}/\text{ cm}^2$
Power Consumption	115V, 50/60Hz	680/640W
	220V, 50/60Hz	680/680W
230/240V, 50/60H		z 870/870W
Net Weight		- 221.5kg (Base Mount Type)
		226.5kg (Cart Type)

After Ser. No. DCQ090252

SP-CIELA CART DIMENSIONS

DIMENSIONS

-mm-



