SERTAIN®

Operating and Care Instruction Manual for

S4100EW

BARIATRIC CARE CHAIR

• CAREFULLY READ AND UNDERSTAND INSTRUCTIONS BEFORE USING CHAIR •

M-031 WI - 363rev0 **061207**

SAFETY WARNINGS

- This manual MUST be read and understood before use of this product.
- The electrical system of this chair is designed to be used with a 240V power source.
- Do not allow the battery back-up system to fully discharge before connecting to mains supply.
- Do not continue to operate the handset by repeatedly pressing the buttons if any of the functions will not move.
- Do not continually operate the chair functions. Doing this may cause the thermal fuse in the control box to cut off power.
- Do not force the operation of any part of the chair. Doing so may cause damage. Refer to the manual for correct operation of the chair.
- Keep the chair away from any source of open flame.
- Do not use the system in the presence of flammable gases (such as anaesthetics agents). We recommend that this system is used under the guidance of a healthcare professional.
- The use of this system is only part of an overall care plan. The patient must still be re-positioned regularly.
- The control unit should only be serviced by authorised personnel. Return to your authorised distributor for repair.
- Switch off the electrical supply to the chair and disconnect from power source before cleaning and inspection.
- Care should be exercised that power cords are not in the way of any mechanism or moving parts.
- Children **MUST NOT** be allowed to operate chair or controls **AT ANY TIME**. Any child in the vicinity of the chair **MUST BE SUPERVISED AT ALL TIMES**.
- For any information on the Electrical System please turn to Section 5 - Technical Data.

1. INTRODUCTION

Thank you for choosing another quality Sertain Product. This manual is your guide to operating, cleaning and routine maintenance of the Sertain S4100EW Bariatric Care Chair. It must be kept with the chair at all times.

2. PRODUCT DESCRIPTION

The Sertain S4100EW Bariatric Care Chair provides comfort and pressure care for those who are immobile, at risk of developing pressure sores, and above the average weight level.

The S4100EW has the following features:-

- Electrically operated reclining backrest.
- Electrically operated seat tilting. Forward tilt of 6° and rearward tilt of 20°.
- Electrically operated legrest adjustment (includes spline function).
- Fold out padded footrest.
- Drop down arms.
- Swing-away head wings.
- Pressure area management seating system.
- 700mm seat width.
- 350kg maximum weight capacity.
- 150mm central locking twin wheel castors.
- Emergency battery back-up system.
- CARER and CLIENT friendly operation.

3. OPERATING INSTRUCTIONS

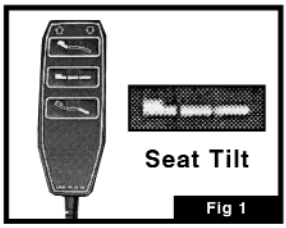


Fig 1

1. **Seat Tilt Adjustment** - Electric Function

   Before adjusting seat angle, make sure it is safe to do so. Make sure the client is positioned safely, including limbs, clothing, etc. and that no item (equipment, persons, etc) obstruct the path of the chair, to prevent injury to client or carer.
   Press the appropriate button on handset until the seat is in the desired position.

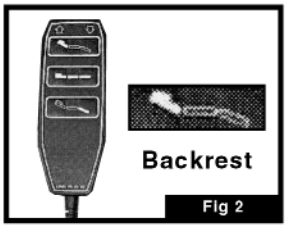


Fig 2

2. **Backrest Adjustment** - Electric Function

   Before adjusting backrest, make sure it is safe to do so. Client must be positioned correctly, including limbs, clothing, etc. Make sure no item (equipment, persons, etc) obstruct the path of the backrest, to prevent injury to client or carer. Press the appropriate button on handset until backrest is at the desired position.

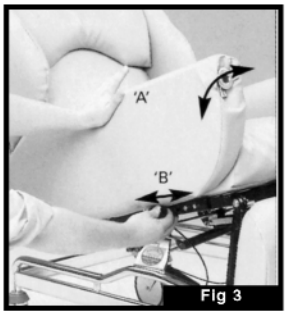


Fig 3

3. **Lower & Raise Armrest**

   Releasing of armrest. First make sure the brakes are applied and client is in a safe position. Apply pressure on the armrest at 'A'. Pull the white release knob at 'B' (see figure 3) towards the front of the chair. Lower armrest.

   To Return Armrest To Lock Position: Make sure the client is positioned correctly. Make sure no body parts or clothing etc. are in the way. Raise armrest to upright position. Apply pressure on the armrest at 'A'. Make sure the locating pin has fully returned to locked position (ref. 'B').

   Removable Arms - Refer 11

Fig 4

4. **Swing Away Head Wings**

   Make sure client is safe. While applying light pressure at 'E', lift pin-pull at 'F', locate wing to desired position. Release pin-pull each time you want to reposition.

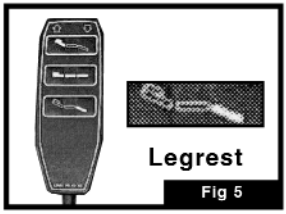


Fig 5

5. **Adjust Legrest** - Electric Function

   Before adjusting legrest, make sure it is safe to do so. Make sure the client is positioned safely, including limbs, clothing, etc. and that no item (equipment, persons, etc) obstruct the path of the legrest, to prevent injury to client or carer.
   Press the appropriate button on handset until the legrest is at the desired position.

DO NOT USE CHAIR UNTIL YOU HAVE FULLY

3. OPERATING INSTRUCTIONS (cont)


Fig 6

6. Adjust Footrest (Models with this feature)
Make sure the client is correctly positioned. Lift padded legrest cushion only and fold out footrest (see figure 6). Before lowering legrest to forward transfer the client or use stand-up lifter, footrest must be folded down under legrest cushion.

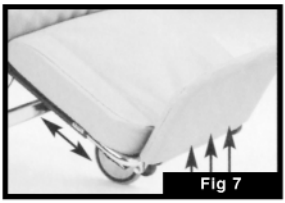


Fig 7

7. Adjust legrest length
Unfasten the three 'loop and hook' straps from the underside of legrest – shorten or lengthen legrest to desired position and re-fasten straps.

Always make sure the 'loop and hook' straps have been fully re-fastened with sufficient grip.

NOTE: LEGREST MUST NOT BE SAT ON

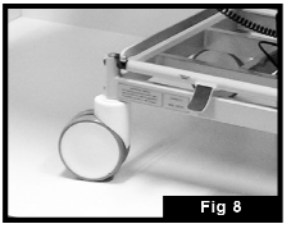


Fig 8

8. Central Locking Castors
Press down on left side pedal to activate brake. Press down on right side pedal to activate tracking. Mid-position is neutral. Make sure you have castors fully engaged in desired position before procedure.

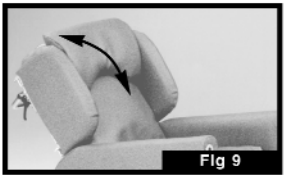


Fig 9

9. Adjust Headrest (All models)
Remove flap from velcro at rear and reposition.

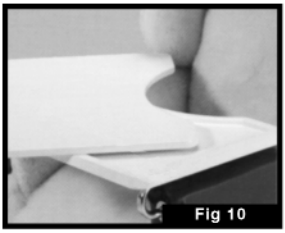


Fig 10

10. Fit Tray (All models)
Tray locating pins are situated on the front of the chair arm directly under tray receiving tube.

Disengage locating pins (pull pin down and 1/4 turn), slide the table arms into desired position, engage locking pins (1/4 turn in reverse).

NOTE: Make sure pins are located and locked securely for client and carer's safety.

READ AND UNDERSTOOD INSTRUCTIONS

3. OPERATING INSTRUCTIONS (cont)

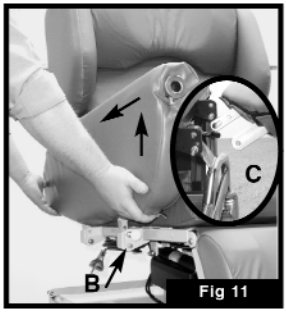


Fig 11

11. Removable Armrest (Models with this feature)
To remove Armrest: First make sure that the brakes are applied and client is positioned safely, including limbs, clothing, etc. Pull the white release knob at 'B' (see fig. 3) towards the front of the chair. Lift Armrest at front and slide back towards the rear of chair to disengage from locational pivot point pin (see inset 'C').
When replacing Armrest, make sure that the brakes are applied, the client is positioned safely and no body parts, clothing, etc. are in the way. Place Armrest in location holes, making sure that the pivot pin is through the keyhole opening. Ensure that the Armrest is pushed back securely into the lock position.

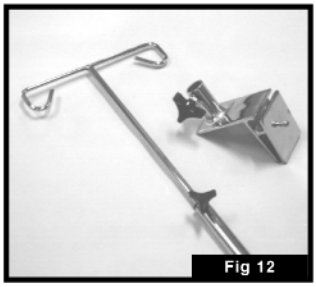


Fig 12

12. IV Pole (optional).

The Photos, below, are for illustration purposes only and may not feature the product you have purchased.

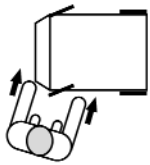
4. ASSISTANCE TO STAFF EDUCATION

OH & S and CHAIR POSITIONING

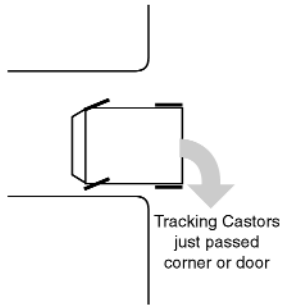
(FOR CHAIRS WITH TRACKING CASTORS)

❶

Corridor Manoeuvring and through doorways



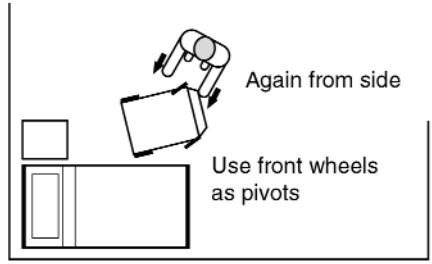
Stand at side and use body weight. "Back safety"



NOTE:
Tracking Castors are designated by the 'GREEN' tabs on the front castors.

❷

Tracking Castors – (Taking chair close to wall/Bed)



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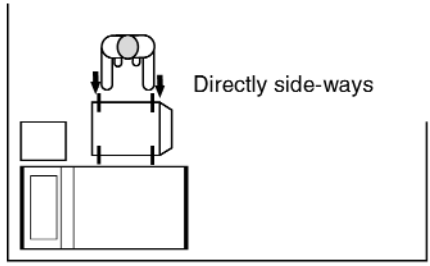
As above with tracking castors 'off'

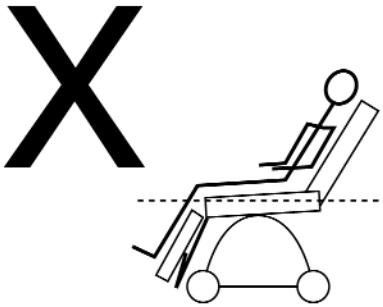


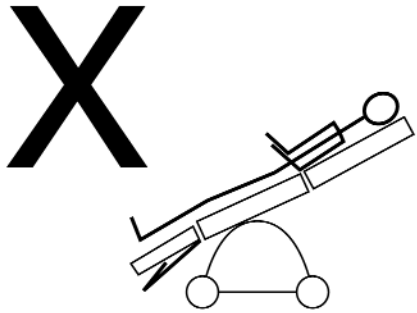
NOTE: REMEMBER!! In any manoeuvre, the safety of the Client and Carer is paramount.
This is only a guide and does not take the place or override your OH & S training or Client handling techniques. This must be approved by those responsible persons in your organisation before use.
E. & O. E.

4. ASSISTANCE TO STAFF EDUCATION (cont)

REMEMBER! POSITION YOUR CLIENT CORRECTLY

These simple ideas may decrease the incidence of the Patient/Client sliding forward in the chair and increase their safety

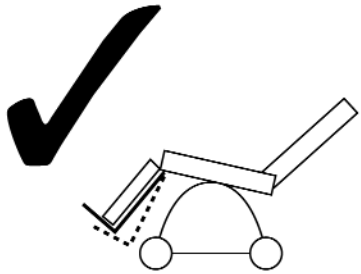




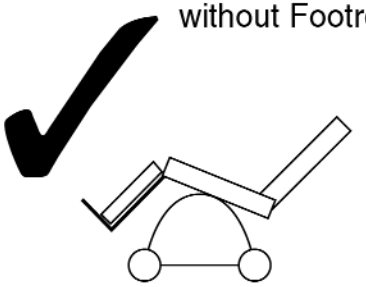
Patients/Clients tend to slide in the above positions …
'You can't go to sleep on a slippery-dip'

REMEMBER! Make sure Client is well positioned into the chair!

POTENTIAL SOLUTION 1: FOOTREST



POTENTIAL SOLUTION 2: SEAT TILT with/ without Footrest



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E. & O. E.

5. TECHNICAL DATA

• Overall Width	980mm
• Overall Height (with backrest up)	1200mm
• Overall Length (with backrest down and legrest up)	1850mm
• Seat Width	700mm
• Seat Depth	670mm
• Backrest Height (from top of seat)	640mm
• Armrest Height (from top of seat)	160mm
• legrest Length (not extended)	440mm
• legrest Length (extended)	550mm
• Seat Height (tilted forward)	570mm
• Seat Height (normal position)	610mm
• Forward Tilt of Seat (0^0 = horizontal)	6^0
• Rearward Tilt of Seat (0^0 = horizontal)	20^0

NOTE: All measurement are in mm and are without covers depressed.

TECHNICAL DATA & SPECIFICATIONS OF ELECTRONICS

CB10 & CB12 CONTROL BOXES

According to Australian Standard AS3200.1-1990

Approval and Test Specifications: Medical electrical equipment Part 1-1990: Genera; requirements for safety.

CB10 "T" Mark Approval. Licence No, 7068
CB12 "T" Mark Approval. Licence No, 7091

According to European Standard EIEC 601.1/, N60601-1: 1990

Medical electrical equipment Part 1: General requirements for safety

CB10 Approvals from DEMKO, SEMKO, NEMKO, FIMKO & TÜV RHEINLAND
CB10 Approvals from TÜV RHEINLAND

RATINGS

Input CB10
240 VAC ±10%, 50 Hz to AS3200.1
230 VAC ±10%, 50 Hz to EN60601-1: 1990
0.6 Amp input current
0.8 Amp input fuse

Input CB12
240 VAC ±10%, 50 Hz to AS3200.1
230 VAC ±10%, 50 Hz to EN60601-1: 1990
0.6 Amp input current.
1.0 Amp input fuse

5. TECHNICAL DATA (cont)

Output CB10
24 VDC nominal
70 VA output power
10 Amp battery fuse
Duty Cycle at 70 VA output power:
5% maximum, 3 min./ hour to AS3200.1
10% maximum, 6 min./ hour to EN60601-1

Output CB12
24 VDC nominal
70 VA output power
10 Amp battery fuse
Duty Cycle at 70 VA output power:
10% maximum, 6 min./ hour to AS3200.1
10% maximum, 6 min./ hour to EN60601-1

FEATURES AND OPTIONS

Microprocessor controls for memory and parallel drives (CB10M, CB10P and CB14).
Isolating safety transformer.
Thermal fuse fitted in transformer.
Double insulated, Class II equipment.
CB12 available with protective earth connector. Class II equipment.
Type B equipment.
Rated for indoor use.
Electronic Overload Protection, EOP, provides current cut-off protection to the actuators.
In-built voltage regulation and charging of battery kit if fitted.
Black or Grey colour available.
Available for connection of 1 to 4 actuators.
Available in three protection ratings: **IP51** CB10 & CB12
IP65 CB10 only
IP66 CB10 & CB12, for Wash Tunnels.

PROTECTION RATINGS

The control boxes, actuators and handsets are available in four protection ratings: IP51, IP54, IP65 and IP66. The protection rating chosen is based on the method of cleaning for the particular bed so refer to the manufacturer's manual for the specifications.

DEFINITIONS

From the standard BS EN60529: 1992
Degrees of protection provided by enclosures (IP Code)

IP51: **5:** Protection against dust – limited degrees (no harmful deposit).
1: Protection against vertically falling drops of water.
Provides:
Complete protection against contact with live or moving parts inside the enclosure. Protection against harmful deposits of dust.
Protection against drops of condensed water.
Units with IP51 ratings are not normally labelled IP51.

5. TECHNICAL DATA (cont)

IP54: **5:** Protection against dust – limited degrees (no harmful deposit)
4: Protection against water sprayed from all directions. Limited ingress permitted.
Provides:
Complete protection against contact with live or moving parts inside the enclosure.
Protection against harmful deposits of dust.
Protection against water sprayed from any direction.
Units are labelled IP54.

IP65: **6:** Totally protected against dust.
5: Protection against low-pressure jets of water from all directions. Limited ingress permitted.
Provides:
Complete protection against contact with live or moving parts inside the enclosure.
Protection against ingress of dust.
Protection against water jets from any direction.
Units are labelled IP65.

IP66: **6:** Totally protected against dust
6: Protection against strong jets of water from all directions. Limited ingress permitted.
Provides:
Complete protection against contact with live or moving parts inside the enclosure.
Protection against ingress of dust.
Protection against stronger water jets and temporary submersion.
Incorporating high temperature materials for wash tunnels.
Tested 100% for air tightness during manufacture.
Units are labelled IP66

CODE DESCRIPTION FOR THE CB10 & CB12 CONTROL BOXES

The control box will have a nameplate label, which states the Type Code, Part Code and a Date Code. The nameplate is usually located on the connection face or on the back face of the control box. Early models of the CB10 control box have a specification label on the connection face of the control box. The specification label states general specifications and standards compliances.

5. TECHNICAL DATA (cont)

Type Code Breakdown:

CB10 X-XX-XX-24

24		Rated output voltage 24VDC
AT		Transformer with battery
0T		Transformer only
01		One actuator port
02		Two actuator ports
03		Three actuator ports
04		Four actuator ports
–		Standard control type
(blank)		
M[2]		Memory control type
P[2]		Parallel control type
Q[2]		Memory & Parallel control type

Type Code Breakdown:

CB12 X-XX-XX-24

24		Rated output voltage 24VDC
AT		Transformer with battery
BT		Transformer with external battery (BA1800)
0T		Transformer only
01		One actuator port
02		Two actuator ports
03		Three actuator ports
04		Four actuator ports
–		Without mains cut off
(blank)		
F		With mains cut off

IP Rating is normally stated on the nameplate label.

Replacement battery kits are ordered separately

For CB12 Part number: BA1201
For CB10 Part number: BA1001

[2] M, P and Q are CB10 versions with micro controller. These control boxes requires actuators fitted with reed switch.

5. TECHNICAL DATA (cont)

CONTROL BOX DESCRIPTION

The function of the control box is to:

- ✓ Transform and rectify the AC supply voltage to a safe low nominal voltage of 24 VDC
- ✓ House the battery kit and maintain a full charge to the batteries on CB1X-XX-AT-24 or CB12-XX-BT-24 models. The CB12-XX-BT-24 model uses an external battery pack.
- ✓ Provide the switching and direction control of each actuator function when a button on the handset is pushed.
- ✓ Provide current overload protection to the actuators.
- ✓ Indicate low battery condition, CB12 only.

A slight reduction in speed of operation will be noticed when operating from the battery only. The control box should be connected to the mains supply whenever possible to insure that full charging of the batteries is maintained; this will also ensure maximum battery life.

CB10 and CB12 Control boxes can be specified with or without provision for battery kits. The battery kit allows normal operation of the bed functions without mains power supply for a limited time.

Control boxes are available in standard configurations to individually operate 1, 2, 3 or 4 actuators. Control boxes are also available in microprocessor controlled versions which provide memory position or parallel control or a combination of both. Specialised software can be designed to provide anti collision and auto recline features. CB14 is the microprocessor version of the CB12 control box.

CB12 control boxes are also available as a special version, CB12H, which is specially customised for a particular bed.

CB12 control box

SPLINE FUNCTION

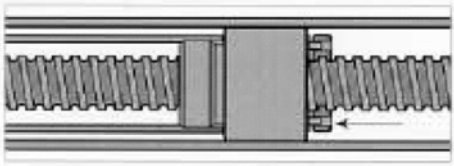
This is a mechanical option that allows the actuator to only push; it cannot pull with any force. This is a useful feature on a backrest to reduce the risk of damage to people's limbs if they have been caught between pinch points when lowering the backrest. The option is available on all LA28, LA32 and LA34 actuators. In addition, a similar function can be achieved with the electric spline (or safety switch), on LA32 and LA34 actuators only, which senses the actuator pulling in tension and shuts-off the power.

SAFETY NUT

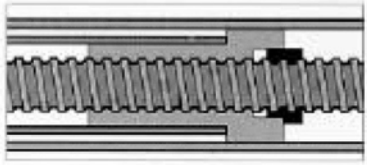
This is a secondary back-up nut, which follows the primary nut on the main lead screw of the actuator. Should a failure of the primary nut occur then the load will automatically be picked up by the safety nut and thus prevent the actuator from collapse. This secondary nut will allow the load to hold or be lowered/retracted (not raised) once; the actuator will not function again and the operator will know it is time to change the actuator. A safety nut can prevent serious accidents occurring, should an actuator fail.

The safety nut is only for compressive loads on the actuator although the LA34 is also available with a safety nut in pull. Typical models with safety nut are the ball screw versions type's LA32.KAS and LA32.KSM. The LA32.KSM incorporates both the safety nut and spline feature. The safety nut feature is common on the main HiLo lift of hospital beds and applications such as patient lifters. The LA34 actuator has a safety nut fitted as standard.

5. TECHNICAL DATA (cont)



Ball screw actuator with safety nut actuators LA32.KAS



Safety nut for acme screws

Quick Release actuators

A quick release is typically used on a bed backrest and allows the patient to be lowered to a flat position very quickly in case of an emergency such as a cardiac arrest. Model LA32.50F actuators have a special clutch arrangement operated by a cable control. When activated the spindle is disconnected from the motor drive, which allows the actuator to retract very quickly. These actuators are usually fitted with either an electric safety switch or free wheel (similar to a spline) function to prevent the actuator from pulling with any force. The LA34 quick release actuator can be modulated during lowering and has a factory adjusted damping control.

Model LA32.50F Quick release usually fitted with electric safety switch (electric spline)

Model LA32.50FW Quick release with freewheeling which means that the actuator cannot pull with any force. This also has the advantage that the backrest can be quickly raised manually to put the patient in the upright position.

Model LA32.50FWH Same features as the LA32.50FW but with a dampening feature which provides a resistance to the actuator retracting. This can improve the control and smoothness during fast lowering of the backrest.

Model LA34 Same as the LA32.50FH, quick release with damped movement

34xxxFxxxxxxxxx when retracting the actuator.

VARIATIONS & OPTIONS

PROTECTION RATINGS

IP51 versions must not be sprayed or washed down. IP54 versions are sealed to resist water sprayed from all directions. IP65 versions are sealed to resist splashing water from all directions. IP66 versions are sealed to resist both high pressure and high temperature spray typically found in wash tunnels. Refer to the sections titled Cleaning & Disinfection and Technical Data & Specifications for further information.

The IP ratings can be identified on the name labels or specification plates attached to the units. IP51 versions are not normally identified as IP51 but IP54, IP65 and IP66 are clearly marked. If no IP marking is apparent then assume that the unit in question is IP51 rated.

5. TECHNICAL DATA (cont)

DO'S & DON'TS

DO'S

Do keep the control box plugged into the mains supply whenever possible. This will extend the battery life (if the control box is fitted with batteries). A large number of cycles can be obtained from operating solely on the batteries, but battery lifetime is reduced with frequent discharging.

✓ Do inspect all cables particularly the mains power cable for any damage; replace where necessary.

✓ Do stow the mains power cable and the HB handset when transporting the bed.

✓ Do clean the actuators, control box, handset and attendant control panel at regular intervals to remove dust and dirt.

✓ Do maintain the batteries correctly, see Battery Maintenance & Replacement.

DON'T'S

✘ Don't allow the batteries to fully discharge before connecting to the mains supply. The batteries are a lead-acid gel cell type that can be trickled charged continuously (batteries used for standby) and have a high current discharge capacity. The batteries are not the nickel cadmium type and must not be periodically fully discharged. Life is greatly reduced by deep or complete discharging of the batteries. The best lifetime is performed by charging the batteries as often as possible.

✘ Don't continue to operate the handset by repeatedly pressing the buttons if the bed function will not move or the actuator will not function. If this occurs then the actuator has either reached its end position, the load is too great or there is a problem.

✘ Don't exert excessive force on the handset cable as this may break off the wires inside the cable and prevent some or all of the operations.

✘ Don't continually operate the bed functions. The system is not designed as an exercise machine and continuous operation will cause the thermal fuse in the control box transformer to cut off power to the transformer; the control box will then require servicing. Refer to the bed manufacturer's manual for the specified duty cycle.

6. CLEANING and MAINTENANCE

GENERAL MAINTENANCE

The following should be checked and adjusted if required, at a minimum two monthly intervals:

- All nuts and bolts on pivot points:
  a. if they are loose, tighten without restricting pivot operation.
  b. If they are worn replace with a suitable fastener.

- All functions of chair - ie. backrest, seat tilt, legrest, footrest, wings and arms, directional lock, braking system - refer to supplier for any repairs required.

- Upholstery inspection - any tears, rips, parts missing, etc - refer to supplier of chair for replacement parts

- Castors:
  - check condition and ensure they are freewheeling and bearings are not loose;
  - remove any hair and grime build-up;
  - check that directional lock and brake functions both work correctly;
  - **Please Note:** All pintles must be checked at regular intervals. They must fully and firmly fitted in tube and locating device. Retaining screw must be tight. All faulty parts must be replaced immediately.

MAINTENANCE, INSPECTION & STORAGE of ELECTRICAL COMPONENTS

MAINTENANCE

The control box, handset, attendant control panel and actuator units are considered to be maintenance free and require no regular maintenance other than inspections.

The exceptions to this are:

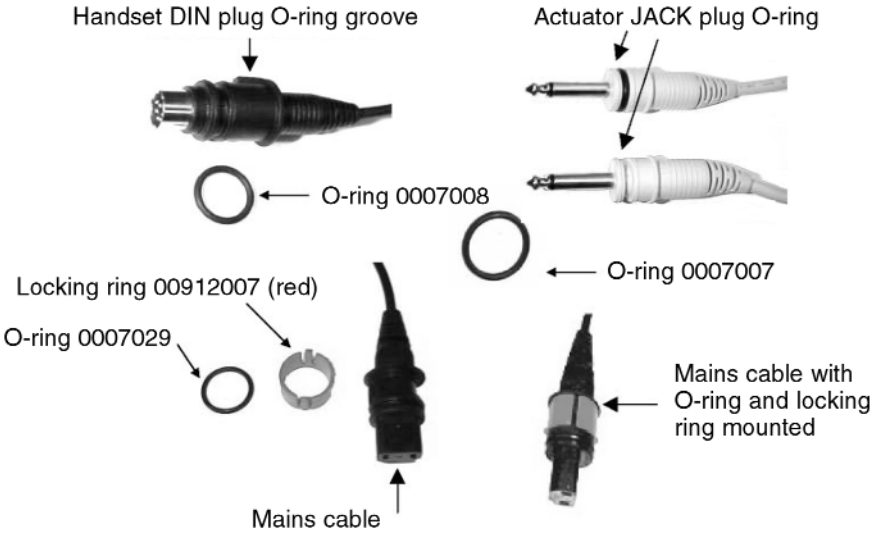
- Replacement of the O-rings, used on the actuator cable jack plug and the handset DIN plugs, and
- Maintenance/replacement of the batteries if fitted. Regular inspection of ventilation hole and sintered plug replacement. Replacement of the battery kit is generally required every 3-4 years depending on the duty cycle and the use of the batteries.

It is recommended that the O-rings used on the actuator jack cable, handset and attendant control panel DIN plug are replaced every 12 months to maintain IP65 and IP66 protection ratings. It is not necessary to use O-rings on the IP51 and IP54 protection ratings but it is advisable, in order to reduce the chance of water entering the control box should it be accidentally washed down. Only original Linak O-rings and locking rings are to be used:

O-ring for actuator cable (jack plug)	Part number 0007007
O-ring for handset & ACP (DIN plug)	Part number 0007008
O-ring for mains cable plug in CB12	Part number 0007029
Locking ring for mains cable in CB12, red	Part number 00912007
Securing comb for cables mounted in CB12, black	Part number 00912010

6. CLEANING and MAINTENANCE (cont)

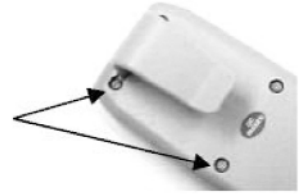
The O-ring grooves in the cable jack and DIN plug must be checked for dirt and damage to the sealing faces before installing the new O-rings. A very light smear of Vaseline can be applied to the O-ring to make the connection into the control box easier.



Securing comb for cables mounted in CB12 black, part number 00912010

Battery Kit replacements may only be performed by maintenance staff on control boxes with IP51 protection rating (see section on battery kit changes). Control Boxes sealed to IP65 and IP66 protection standards must be returned to Linak Australia or an authorised service provider for a battery kit change and to be resealed.

Screw (2 off) retaining the support bracket.
Part Number for support bracket
grey 032126 & black 032033



The HB40 handset has a support bracket (hook) which can be broken with rough treatment. This may be replaced by maintenance staff on HB40 units (IP51 only) by removing the 2 retaining screws and fitting a new support bracket.

6. CLEANING and MAINTENANCE (cont)

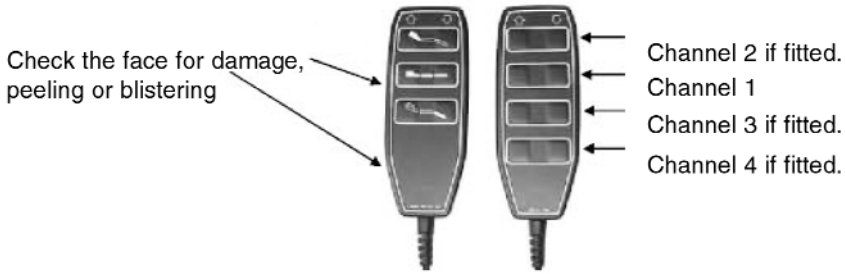
INSPECTIONS

Regularly check the power cable, actuator and handset cables for external damage, cuts, nicks or stretching. Also check that all connections into the control box are fully engaged.

After every 6 months or 30 washing cycles also examine the attachment of the green LED cover found on the connection face of the CB10 control box, and also the face of the handset and ACP front cover for damage, peeling or blistering. If any of these conditions are present then the units should be returned for repair.

Under no circumstances should the lower housing part of the CB10 or CB12 control box which houses the transformer and the electronics be opened. Opening the lower housing part of the control box will break the seal and void the warranty. Unauthorised repairs or modifications to the control box are dangerous, return the unit for service to Linak Australia.

With 240VAC mains power to the CB10 or CB12 control box the green LED will glow. If this does not occur then remove the control box and return for repair. The green LED will not glow when operating off the battery only or if a CB12 with mains cut off is used.



BATTERY MAINTENANCE & REPLACEMENT

Battery Kit changes are only permitted on Model CB10-XX-AT-24 or CB12-XX-AT-24 control boxes with IP51 protection ratings. In order to maintain IP65 and IP66 protection ratings the control boxes with these ratings are to be returned to Linak Australia or an authorised service provider.

The batteries must be replaced every 4 years, but their life may be shorter depending on their usage. Deep discharging of the batteries significantly reduces their life. Connect the control box to the mains power as often as possible, this keeps the batteries fully charged and allows them to have an optimal life span. Continuous connection to the mains power will not damage the batteries, as the charging circuit in the control box senses when the batteries are approaching a fully charged level and reverts to a trickle charge. If the bed is not being used or is in storage for a long period of time, the batteries must be charged every 3 months due to the self-discharging characteristics of the batteries.

6. CLEANING and MAINTENANCE (cont)

The batteries are nominally 24 volt and when fully charged produce an output voltage of 26 volt. Battery voltage below 18 volt indicates significant discharging of the batteries. Continuous deep discharging of the batteries will considerably reduce battery life. Maximum battery life is achieved by keeping the batteries fully charged. The batteries are lead acid gel type and do not require regular discharging or deep discharging. Discharging the batteries will dramatically decrease their life.

It is recommended to test the function of the batteries once a year.

REPLACEMENT BATTERIES

The batteries must only be replaced by the following compatible types:

CB10, 4 required	Kobe	1.2-6 (6Volt, 1.2Ah)
	Yuasa	1.2-6 (6Volt, 1.2Ah).
CB12, 2 required	PBQ	1.2-12 (12volt, 1.2Ah)
	Kobe	1.2-12 (12volt, 1.2Ah)

Loose batteries must be maintained by charging at least once every 6 months. The batteries, which come as a set, must be supplied with identical production codes.

Interpretation of the production codes are as follows:

Kobe:	XX(day)XX(month)X(year)X(production line number).
PBQ:	X(year)XX(week no.)X(day of week)
Yuasa:	X(year)XX(month)XX(day)XX(serial number).

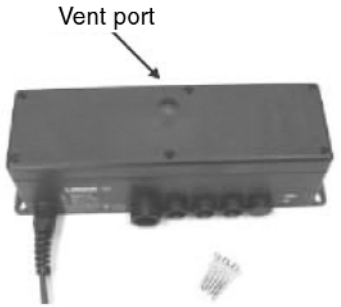
Before mounting the batteries into the battery compartment, make sure that they are correctly connected. This can be done by comparing the connections to the drawing supplied on the inside of the battery compartment. Make sure that all connections are tight and clean.

PROCEDURE

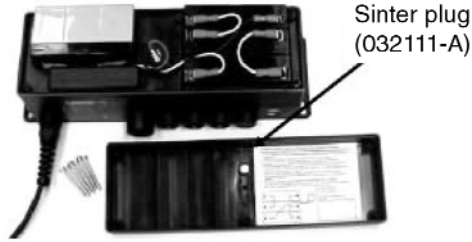
1. Switch the mains power supply off and disconnect the plug from the mains socket.
2. Remove the screws holding the top of the battery cover to the control box: 4 screws on the CB12, 6 screws on the CB10.
3. Hinge the top cover open, being careful not to damage the Part Number Label.
4. Remove all the batteries including the connection wires.
5. Replace the battery kit using replacement part number BA1001 for CB10 or BA1201 for CB12.
6. Remount the connection wires and plug; follow the circuit and directions shown on the label inside the top cover.
7. Install the battery kit back into the control box.
8. Replace the screws retaining the top cover. The tightening torque has to be approx 1Nm (Newton meter), do not over tighten.

6. CLEANING and MAINTENANCE (cont)

CB10 BATTERY KIT CHANGE. FOR IP51 RATINGS ONLY

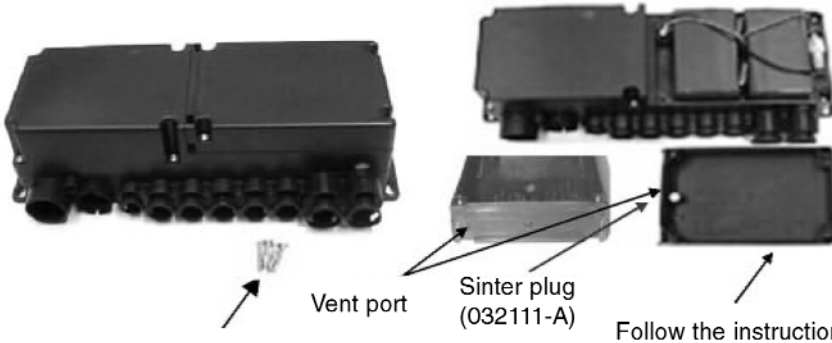


Remove the 6 screws holding the top



Follow the diagram.

CB12 BATTERY KIT CHANGE FOR IP51 RATINGS ONLY



Remove the 4 screws holding the top

Follow the instruction label. Remove and replace the battery kit

BATTERY VENTILATION (all models)

WARNING!
The Ventilation hole must be kept clear.

The battery chamber has a ventilation hole for airing of the battery chamber and preventing build up of any gas or pressure. A danger of explosion exists if the ventilation point is covered or blocked.
If the control box has been physically damaged it must be sent back to an authorised workshop for inspection and repair, regardless of the IP Rating.
On IP65 and IP66 versions there is a sintered gas permeable plastic plug placed in the battery ventilation hole. The ventilation hole must be regularly checked, to ensure that the hole is not blocked by dirt or debris. If it has been blocked then replace the plug.

6. CLEANING and MAINTENANCE (cont)

If the hole is blocked there is a risk of a pressure build up, which may result in a battery explosion. The sintered plug is removed by disassembling the battery cover and pulling the plug out using a self-tapping screw. The ventilation hole can then be cleared using a 1mm pin through the hole. A new sintered plug (part number 032111-A) can then be inserted back into the hole.

IMPORTANT WARNING!
If the above maintenance procedures are not adhered to, there is a risk of explosion.

CB12 CONTROL BOX, CHARGING CIRCUIT
The Linak CB12 control boxes are available in AT and BT versions that incorporate battery back up. In the AT version the battery is internally mounted and in the BT version the battery is externally connected. These control boxes also include a low voltage buzzer that indicates when the battery voltage is too low. There are some features of the charging circuit and buzzer that should be pointed out to the end users of the equipment.

1. On CB12 control boxes manufactured before August 1997 (see date code on label)
   The low voltage buzzer will operate when the battery voltage drops below 18 ± 0.5 volts. If the batteries are not charged once the buzzer has sounded then there is a risk that the buzzer will continue to sound and flatten the batteries. To initiate the charging cycle in the CB12 it is necessary to plug the power cable in to a power socket, turn the mains power ON and then operate any one of the handset buttons (functions). If the handset buttons are not operated the batteries will not charge even though the power is ON.
   For storage, maximum recommended time interval between fully charging the battery is 2 months. Minimum charging time is 6 hours.

2. On CB12 control boxes manufactured from August 1997 and later (see date code on label) (Excluding CB12 with mains cut off, option 'F')
   The low voltage buzzer will only operate if the handset is being operated and the battery voltage drops below 18 ± 0.5 volts.
   The charging cycle is initiated by plugging the power cable into a power socket and turning the power on. It is not necessary to operate the handset.

For storage, maximum recommended time interval between fully charging the battery is 3 months. Minimum charging time is 6 hours.

CB10 CONTROL BOX, CHARGING CIRCUIT
The charging cycle is initiated by plugging the power cable into a power socket and turning the power on. It is not necessary to operate the handset.
For storage, maximum recommended time interval between fully charging the battery is 3 months. Minimum charging time is 12 hours.

6. CLEANING and MAINTENANCE (cont)

CLEANING AND DISINFECTION OF ELECTRICAL SYSTEM

The materials used in the control boxes, handsets and actuators are resistant to many detergents and disinfectants commonly used in the hospital and care sectors.

Units with IP51 protection ratings must not be washed down. Disconnect the mains power cable and use a slightly damp cloth to wipe over.

The control box materials used in IP66 protection ratings are resistant to hot and cold water and softeners.
Organic solvents like halogenide / aromatic hydrocarbons and ketones must not be used.

Units rated to IP66 protection ratings are suitable for cleaning in wash tunnels, which correspond to those, manufactured by KLEINDIENST, type Clean-Station ES3-387, provided that the following conditions are observed:

- All handset and actuator cable connections must be secure and be fully inserted into the control box before the bed enters the wash tunnel. The O-ring seals on the cable plugs must be intact. Check the locking ring is in place on CB12.
- The cleaning and disinfection cycle in wash tunnels must not exceed 10 minutes.
- Pressures on jet nozzles in wash tunnels must not exceed 10 bar.
- Distance between the jet nozzles and electric or actuator parts must be at least 300mm.
- Water temperature must not exceed 85°C.
- Chilling with cold water is not permitted.

It is recommended to run the actuators in to their minimum stroke length before washing them to avoid degreasing of the spindle tubes.

The following must be observed as regards to detergents and disinfectants:
- They must not be strongly alkaline or acidic (pH-value 6-8).
- They must not contain corrosive or caustic matters.
- They must not contain chemicals that will change the surface structure or adhesive ability of the plastics.
- They must not dissolve grease.

Cleaning by means of a hand controlled jet pipe, which is for example connected to a steam cleaner, is not permitted, since it is not possible to maintain a minimum distance of 300 mm to the electric parts.

GENERAL CLEANING INSTRUCTIONS

NB. These should be carried out on a weekly (minimum) basis.

DO NOT MACHINE WASH. DO NOT DRY CLEAN

Regular cleaning of headrest, arms and seat cushions is important to remove body oils, which can cause hardening of vinyls. To clean, wipe with a cloth or sponge which has been moistened in warm soapy water, then dry with a soft, clean cloth. The use of mild non-abrasive pure soap is recommended. Stubborn grime may require gentle scrubbing with a soft brush. We suggest cleaning with the REGENCY MEDICAL'S approved Vinyl Cleaner/Protectant which adds plasticiser to keep vinyl supple.

FOR TREATING SPECIFIC STAINS, ALWAYS REMEMBER THAT PROMPT ATTENTION YIELDS MORE COMPLETE REMOVAL.

WARNING: Never use furniture polishes, abrasive cleaners or steel wool. Regular use of cleaners containing hydrocarbons or similar additives may cause damage to the vinyl and harden the surface. Strong solvents, eg. Acetones are detrimental to the vinyl surface. Avoid exposure to excessive heat and non-colour-fast dye stuffs found in some articles of clothing as they may transfer to the fabric surface. Sunlight will also shorten the life of most vinyls.

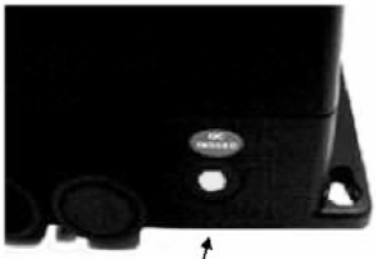
This is a guide only and the manufacturer does not accept any liability/responsibility for use thereof. the above maintenance program is comprehensive but not exhaustive.

7. TROUBLE SHOOTING PROCEDURES

The following is a guideline only to general troubleshooting and the manufacturer's manual should be consulted for specific details first. Always check that the handset and actuator connections to the control box or extension cables are secure and fully engaged.

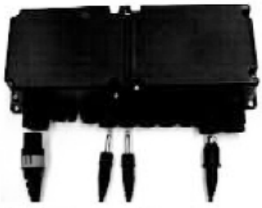
The Linak Actuator System is very reliable. Problem areas normally relate to the parts subject to abuse such as the handset, which can be dropped, run over, have the cable stretched and be generally abused. The battery backup system is reliable but people forget to plug in the control box and switch it on to allow the batteries to charge; eventually the batteries flatten and cause the actuators and the bed functions to slow down and perhaps stop particularly when lifting heavy patients. So when problems occur suspect these two areas initially. Plugging in the control box to the mains supply should immediately restore power to the bed functions although it will take some time for the batteries to fully recharge. If this does not happen then first check that there is mains supply available and then check the control box to see if the green LED light is ON. If the LED light is not ON with the mains supply connected and power switched on then replace the control box. The mains power cable on the CB12 can be replaced in the field.

Should there be any burning, unusual smells or noise then turn off the mains power, remove the mains plug from the power socket and disconnect the handset and actuator connections from the control box. Send the suspected units for inspection. DO NOT OPERATE FURTHER.



CB10 LED indicating mains ON

CB12 LED indicating mains ON



CB 12 shown with mains cable with locking ring, two cables with jack plug from actuators and cable with DIN plug from Handset

The securing comb shown locks all actuators and handset cables into the control box.

Mains cable on CB12 ocked into position.

7. TROUBLE SHOOTING PROCEDURES (cont)

PROBLEM	POSSIBLE CAUSE	ACTION
Chair functions are slow particularly when raising. a) With batteries mounted b) Without batteries mounted	a) Control box is not plugged in and the batteries are flat or not charged. b) Actuator or transformer in control box is defective. Try another actuator on the same control box to isolate the problem.	a) Plug in the control box to the mains supply. Check the capacity of the batteries. b) Return faulty unit for service.
No chair function operates at all	Control box is not plugged in and the batteries are flat or not fitted. Fuse in the control box is blown. Control box is faulty.	Check that the control box is plugged into the mains supply. Check the green LED on the control box is ON with the mains supply connected and power switched ON. If not then replace the control box.
	Handset not plugged into the control box.	Check the handset and extension cable connections to the control box. It is possible to hear a slight click from the relays in the CB when the handset buttons are operated.
	Handset damaged and/or is faulty.	Substitute a handset that is working. Replace the faulty handset.
	Actuators are not plugged into the control box.	Check actuator connections to the control box.
	For single actuator chair functions the actuator may be faulty.	If the control box and handset appear to be operating correctly and the actuator connection is correct then replace the actuator. Substitute with another actuator first if possible.
Not all chair functions operate or only move in one direction	Handset, extension cables or connections are faulty.	Check the handset and extension cable connections to the control box. Substitute a handset or extension cable that is working. Replace handset and extension cable.
	Control box faulty.	If substituting the handset makes no difference then listen for the relay click in the control box when pushing the handset buttons. If there is no click apparent on some of the functions then the control box should be replaced.
	Actuator faulty.	If possible on multiple function chairs interchange the actuator plug connections at the control box and determine if the fault stays with the actuator or with the control box. Replace whichever item the fault stays with. If interchanging is not possible then substitute an actuator that is working.

7. TROUBLE SHOOTING PROCEDURES (cont)

PROBLEM	POSSIBLE CAUSE	ACTION
Actuator cannot lift full load.	Excessive load.	Check that there are no obstructions or bending in the chair mechanism and check that the load capacity is not exceeded.
	Actuator motor is damaged.	Replace actuator.
Piston rod will only move inwards and not outwards (on actuator with safety nut)	Safety nut is worn or has been damaged or spindle is bent.	Replace actuator.
Unusual noise from actuator.	Actuator is worn or has been damaged or spindle is bent	Replace actuator.

8. WARRANTY

Refer to separate Warranty Card.

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