



Endeavour Bed Service Manual



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1 Introduction



If the general use, maintenance or servicing is performed in any way other than what has been stated in this manual, it could result in damage to the bed which will not be covered under the guarantee.

Caution!

The use of accessories, additional equipment, cables or spare parts other than those offered and/ or advised by Park House Healthcare will only be permitted on under written acceptance from Park House Healthcare.

1.1 Technical Specification

| | |
|--|--|
| Length of the bed | 2280 ± 20 mm |
| Width with rails | 970 ± 20 mm |
| Maximum height | 850 ± 20 mm |
| Minimal height | 450 ± 20 mm |
| Back rest angle | 74° ± 5° |
| Thigh rest angle | 45° ± 3° |
| Trendelenburg position | 15° ± 3° |
| Anti-Trendelenburg position | 17° ± 3° |
| Castors diameter | 150 mm |
| Weight of the bed without equipment and mattress | ~200 kg |
| Maximum load | 250 kg (including accessories) |
| Voltage | 230V~ 50/60Hz |
| Maximal power consumption | 1,3 A / 230 V |
| Class of protection before electric paralysis: | II (option I) |
| Type of the part application: | B |
| Protection class | IP66 |
| Type of Operation | Intermittent (2min operating/18 min pause) |
| Usage period | 10 years |

The Endeavour Bed can be manufactured to suit specific requirements, without compromising the safety and functionality of the bed.

1.2 PRODUCT ILLUSTRATION AND FEATURES

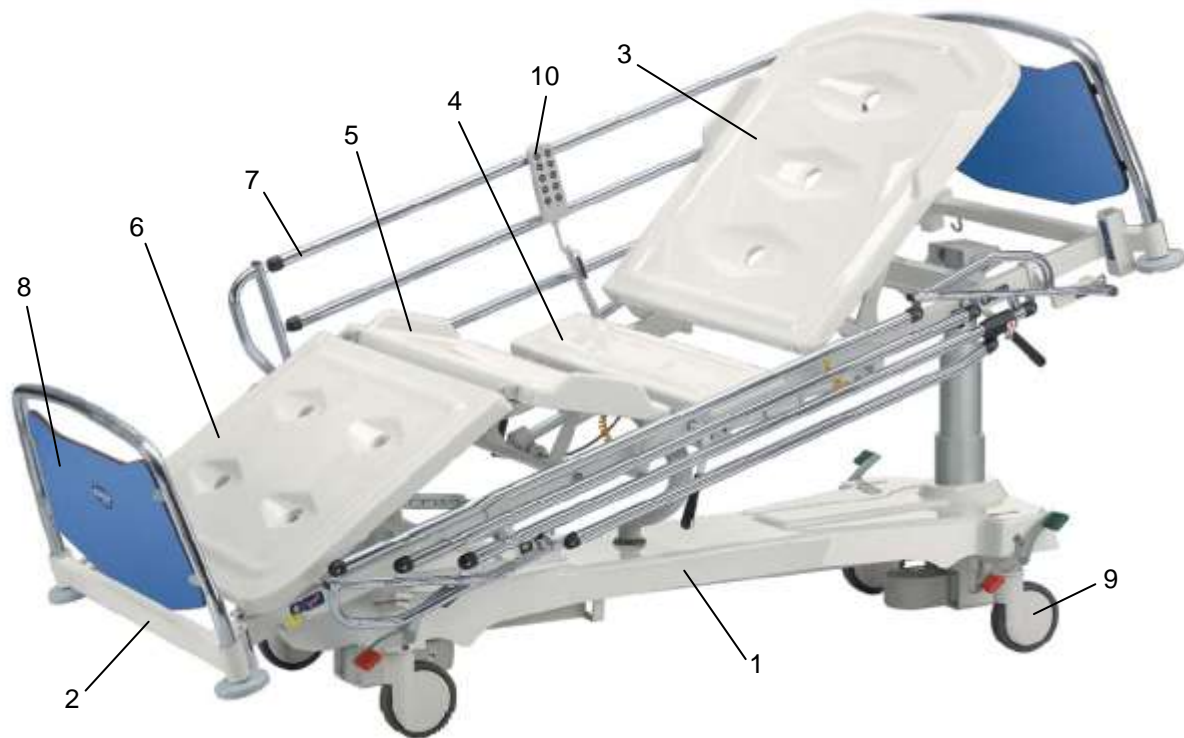


Fig. 1

| Pos. in fig. 1 | Description |
|----------------|--------------------|
| 1 | Base |
| 2 | Bed frame |
| 3 | Back rest section |
| 4 | Fixed section |
| 5 | Thigh rest section |
| 6 | Calf rest section |
| 7 | Side rail |
| 8 | Foot end (Top) |
| 9 | Castor |
| 10 | Handset |

1.3 Product Description

- Four section profiling bed made up of steel covered with powder spray.
- The bed frame are made of steel piping with a rectangular cross-section and buffers on all four corners
- Bed chassis is covered with ABS to aid cleaning
- Mattress platform sections are filled with x-ray translucent ABS.
- The steering system is fitted with a central locking system.
- The electrical functions of the bed allow the user to change the height, back rest and thigh rest angles, and trendelenburg/ anti-trendelenburg positions.
- Dual electric columns are used to change the height and trendelenburg/ anti-trendelenburg functions and electric servo-motors are used to change the backrest and thigh rest angles
- The shank segment can be adjusted by a gas spring.
- Two-column structure of the bed allows the bed length to be shortened by 100 mm, and extended by 200 mm.
- The bed frame is equipped with a hanger for storage of the power cord when it is not connected to the mains.
- The bed has an internal source of electricity which in the event of a power failure allows the bed to be placed in a safe horizontal position.
- The bed is also equipped with servo-motors which allow the backrest and the thigh rest sections to be levelled quickly to aid CPR procedures.
- Back rest and thigh rest sections have double auto-regress function.
- The bed is provided with a potential equalising clamp.
- The bed is compatible with all Park House Healthcare pressure relieving and pressure reducing mattresses.

Due to its policy of continued development and improvement, Park House Healthcare reserves the right to amend any details and specifications without notice.

Park House Healthcare reserves that all specifications and accessories can be modified or changed, with regards to construction, technology and materials, without compromising the safety and functionality of the bed

2 TRANSPORT AND FIRST USE

2.1 Transport

There is a possibility to transport the product by any covered transport means. While transporting, it is necessary to immobilize the truck and protect it against moisture.

The transport conditions are as follows:

- Temperature: -10°C to 60°C ,
- Relative humidity: 20% to 80%.

During transporting, storage and unpacking, the temperature gradient should be less than 10°C per hour.

After transporting the bed into the building where it is to be installed, it should be left for at least 12 hours prior to unpacking and installation.

Stacked storage is permissible in accordance with the packaging marking. In the absence of the marking, stacked storage is prohibited.

In case that specific transport conditions are required, please check with Park House Healthcare, particularly for low temperature transport in order to ensure safe transportation.

2.2 Unpacking and first use



If the product is installed by Park House Healthcare it is not the responsibility of the user to perform the activities described in this item.

Caution!

The bed is shipped by Park House Healthcare assembled and in a wooden, open-work chest. The bed should be unpacked indoors to protect from possible damage

Prior to installation you must:

- Read the this User Manual carefully
- Remove all packaging and materials protecting the bed



Caution!

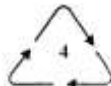
Package may be marked with following signs:



- multiuse package



- package for recycling



low-density polyethylene packaging

LDPE

Package waste is recyclable and should be segregated before removed to a disposal site.

Returnable packaging should be returned to the producer of the medical product..

- Remove any additional equipment
- Remove the wheel blocks and release the central locking system
- With help of another person carefully remove the bed from the palette and lock the brakes



Do not hold the plastic ABS covers whilst moving the bed

Caution!

- Ensure the equipment provided fits the documents enclosed
- Ensure all accessories are fitted in accordance with the instructions stated In item 4 *Optional elements*
- Install the product in its required destination ensuring the environment meets the requirements as described in *item 1.2 General requirements*
- If the place where the bed has been installed is equipped with earth grounding point you should connect the bed with it by means of earth ground wire connected to earth grounding socket in the bed connecting panel,



All electric devices connected directly with the patient should be connected to the bed earth grounding point

Caution!

- Connect the bed to the mains ensuring there is suitable electrical supply
- Check all functions are in correct working prior to patient use

All bed functions should work silently and smoothly, without stopping or creaking etc. Any noise produced from the bed and electric servo-motors does not exceed 65dB(A) measured at 1m from the bed



If any function of the bed is not working correctly the bed **must not** be used and Park House Healthcare should be informed immediately. Use of any dysfunctional equipment could result in damage to the bed which will not be covered under the guarantee

Caution!

3 EVALUATING THE CORRECT FUNCTIONING OF THE BED



All bed functions should be check thoroughly prior to first use

CAUTION!

1. Check stability of the bed when its wheels are locked - try to move the bed manually, pushing on the bed in any direction should not cause tilting.
2. Check operation of the lock of the shank segment, the mechanism should work without any jamming - check this manually by pressing down on the segment, if it is locked it should not change position
3. Check if there is no interference by manually moving the segments of the bed.
4. Check all electric functions of the bed are operating quietly and smoothly, without any creaking or scraping, see descriptions in item 3.1 *Description of electronic control panel options* for the full range of movements. Any noise produced from the bed and electric servo-motors does not exceed 65dB(A) measured at 1m from the bed.
5. Check all the steering functions of the bed
6. Check all the locking functions on the nurse control panels are operating correctly see descriptions in item 3.1 *Description of electronic control panel options*

Only when all of the above has been checked and all aspects of the bed functions are operating correctly is the bed safe for use.

If any malfunctions / faults are detected see item 6.6 '*Basic troubleshooting*'.



If any function of the bed is not working correctly the bed **must not** be used and Park House Healthcare should be informed immediately.

CAUTION!

Use of any dysfunctional equipment could result in damage to the bed which will not be covered under the guarantee

4 Service

4.1. *Maintenance activities*

To ensure longevity and safe and correct use, regular servicing of the technical functions and general condition of the bed should be carried out by Park House Healthcare or authorised and trained technical staff.



All service and repairs should be recorded and a record kept with the guarantee certificate.

Caution!

If any aspect of the service returns a negative result, it is not in a safe working condition and should not be used

| <i>Survey's subject</i> | <i>Frequency</i> |
|--|------------------|
| - Checking the overall technical condition | Every year |
| - Checking the insulation of network | |

The following checks should be performed every 6 months:

| | |
|---------|--|
| Chassis | <ul style="list-style-type: none"> ■ Test the screw joints ■ Test the performance of the central locking and the traction system ■ Test the electronic control panel |
| Bed | <ul style="list-style-type: none"> ■ Test the screw joints and protection on the ball pins ■ Lubricate with the lubricant OBEEN UF3 from OPTIMOL (supplier: CASTROL) ■ Test the side rails mechanism ■ Test the functioning of the electric servo-motors |

The checks should be performed by visual inspection and any identified malfunctions should be handled as described in clause 6.6 “*Location and removing faults*”.

4.2. Product disposal

If use of the of the Endeavour bed is no longer required, the customer is obliged to dispose of the bed correctly according to the rules of environment protection, detailed information is situated in annex 3.

4.3. Replacing the base cover

Base cover is composed of:

- Front cover [1],
- Middle cover [2],
- Back cover [3],
- Support column cover [4].



Disassembling the base covers:

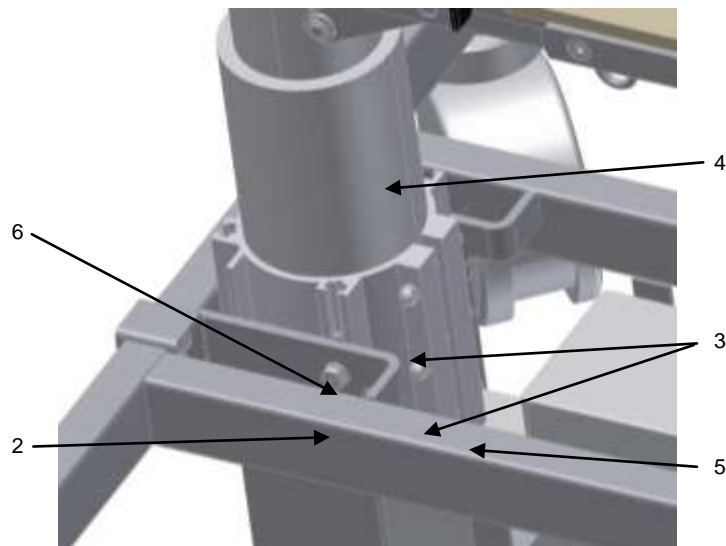
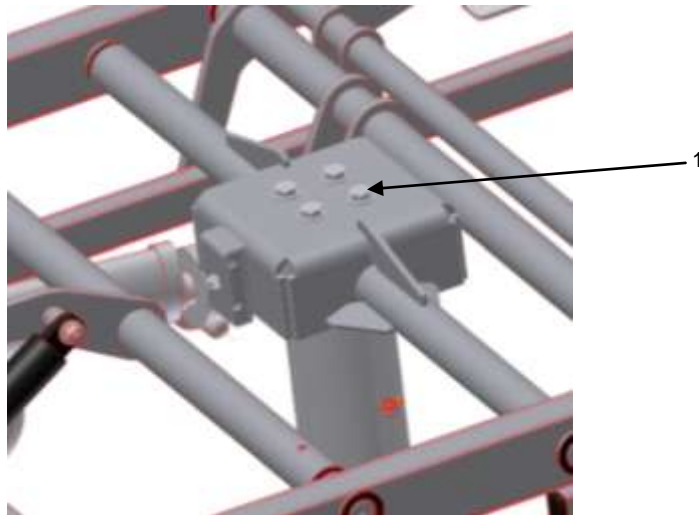
1. Unscrew the fastening support column cover screw,
2. Raise the support column covers,
3. Remove the middle cover,
4. Raise and pull out the front and back cover.

Assembling of the base cover:

1. Attach the front and back cover,
2. Attach the middle cover,
3. Lower the support column covers,
4. Screw the fastening support column screw.

4.4. Replacing the support column*Disassembling the support column:*

1. Unplug the power cord from the mains socket
2. Remove the middle cover of the base, and front or back cover, depending on which column is disassembled (point 4.3),
3. Remove the terminal socket cover in the electric control box
4. Disconnect the power cord supplying the column from electric control box,
5. Cut the insulation grip holding the column cable,
6. Support the bed frame from falling after disassembling,
7. Lower the section above the disassembled column,
8. Unscrew 4 M8 hexagon bolts [1] fastening bed frame to the column,
9. Unscrew M8 screws [2] fastening aluminum column holder to the base of the bed,
10. Loose 3 M6 internal wrenching hexagonal bolt [3] on the column holder [5],
11. Lower bed frame gently and pull out the column with caution.
12. Put the bed frame on the support.
13. Remove the column protection and column holder.

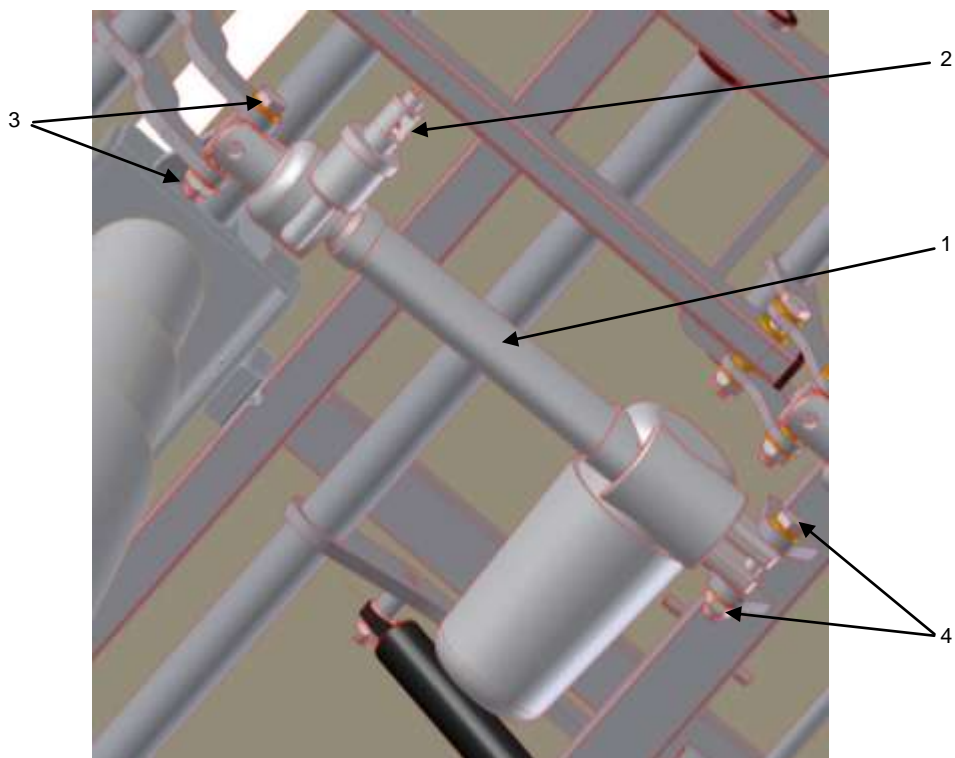


Assembling the support column:

1. Carefully place the column holder [5] on the column [4] to protect from damage,
2. Attach the plastic cover to the column,
3. Lower the bed frame,
4. Carefully place in the column into the socket in the base of the bed,
5. Put the fastening plate [6] into the gaps in the column holder [5] and set it up to screw in the M8 screws [2], that fasten the column holder to the base of the bed,
6. Connect the power cord for the column to the electric control box,
7. Put the terminal socket cover on the electric control box,
8. Pull out the column in order to screw in the column to the bed frame,
9. Set up the column to line up the bolt holes in the column fastening part with the bolt holes in the column,
10. Screw in the column to the bed frame with 4 M8 hexagonal bolts [1],
11. Screw 3 M6 screws [3] into the column holder [5],
12. Fasten the cables connected to the electric control box by the band clip,
13. Attach the base covers,

4.5. Replacing the servo-motor in the back/thigh rest section*Disassembling the servo-motor:*

1. Level the section (if possible),
2. Disconnect the bed from the mains power supply,
3. Remove the bed cover middle section (point 4.3)
4. Remove the terminal socket cover in the electric control box,
5. Disconnect the power cord supplying the servo-motor [1],
6. Remove the band clips holding servo-motor cable,
7. Pull out the plastic snap fastener blocking the cord in servo-motor CPR mechanism [2], and then pull out the cord from the servo-motor,
8. Unscrew the M10 screw [3] fastening the servo-motor to the side of the bed, support the section to prevent it from falling
9. Unscrew the M10 screw [4] fastening the servo-motor to the bed frame

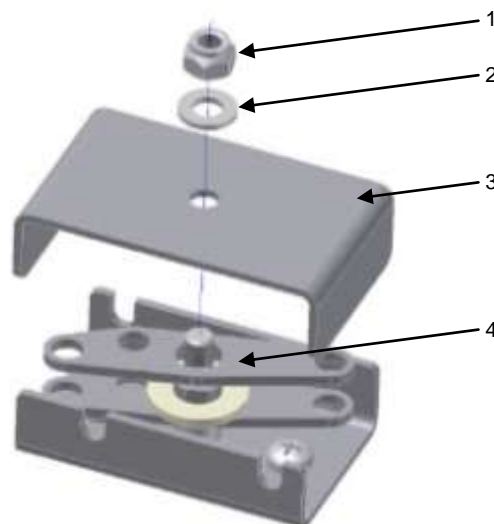


Assembling the servo-motor:

1. Mount the servo-motor by M10 screw [4] to the ear located on the bed frame,
2. Mount the servo-motor by M10 screw [3] to the ear connected to the section,
3. Put the cord into the releasing mechanism [2] of the servo-motor, and then secure it with the plastic snap fastener,
4. Connect the power cord supplying the servo-motor to the electric control box,
5. Put the terminal socket cover on the terminal control box,
6. Fasten the cables running from the bed frame to the electric control box by the band clip,
7. Attach the bed base covers,

4.6. Replacing the CPR mechanism cord

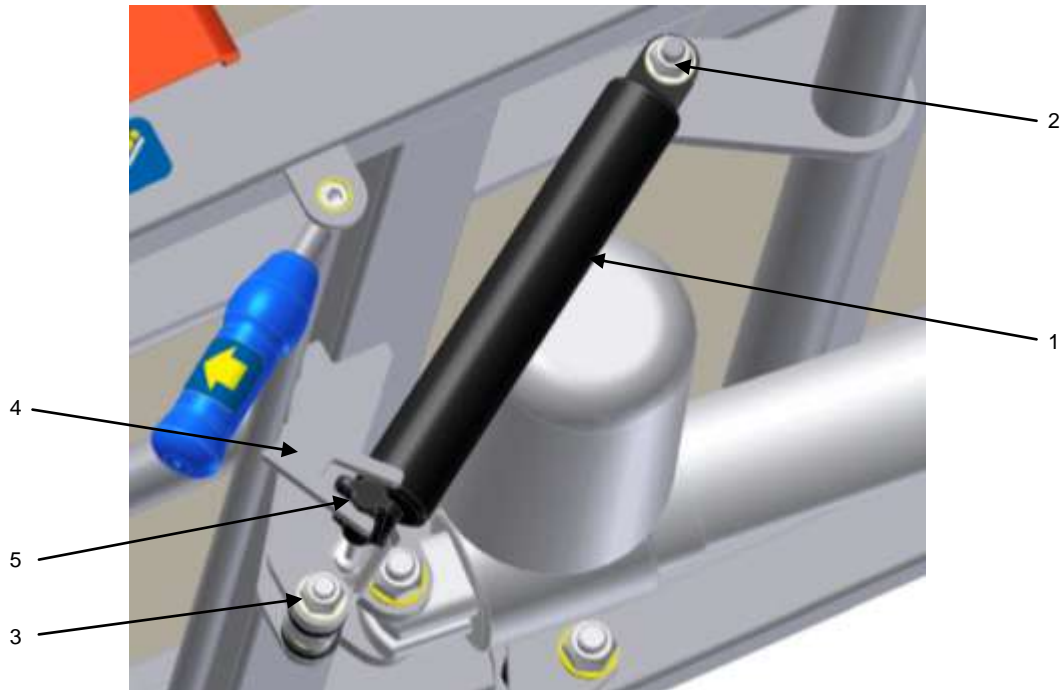
1. Disconnect the bed from the mains power supply,
2. Disconnect the cord from the servo-motor/lever
 - Servo-motor: pull out the plastic snap fastener blocking the cord in the servo-motors' CPR mechanism, and then pull out the cord from the servo-motor;
 - Lever: pull off the hood on the body of the cord, and then pull out the cord from the lever,
3. Unscrew M5 screw [1] on the cord distributor cover,
4. Remove the distributor cover [3],
5. Raise the upper plate [4] of the distributor,
6. Pull out the old cord and insert the new cord,
7. Put on the upper plate [4] of the distributor with the washer,
8. Put on the distributor cover [3],
9. Put the washer [2] on the screw,
10. Fasten the distributor by M5 screw [1].



4.7. Replacing the shank rest section gas springs

Disassembling the gas spring:

1. Disconnect the bed from the mains power supply
2. Unscrew M8 screw [2], mounting the gas spring [1] from shank section side and hold it in place to prevent it from falling
3. Unscrew M8 screw [3], mounting the gas spring to the bed frame.



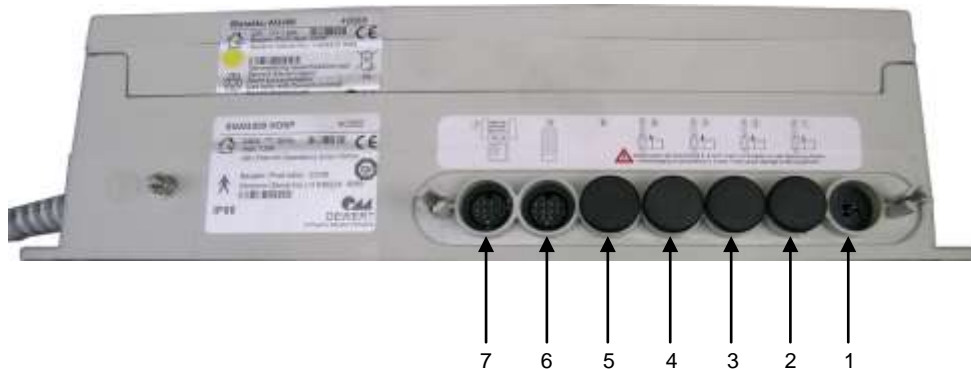
Assembling the gas spring:

1. Put on the gas spring [1], fasten it to the bed frame by a screw M8 [3],
2. Insert the release pin [5] of the gas spring into the plate [4] of the release,
3. Screw down the gas spring [1] to the ear located in the shank rest segment by M8 screw [2].

4.8. Replacing the electric control box

Disassembling the electric control box:

1. Disconnect the bed from the mains power supply,
2. Remove the middle and front cover of the bed base
3. Remove the terminal socket cover on the electric control box
4. Disconnect the cables from the electric control box,
5. Unfasten the power lead from the bed frame,
6. Unscrew the bolt mounting the box to the bed's base,



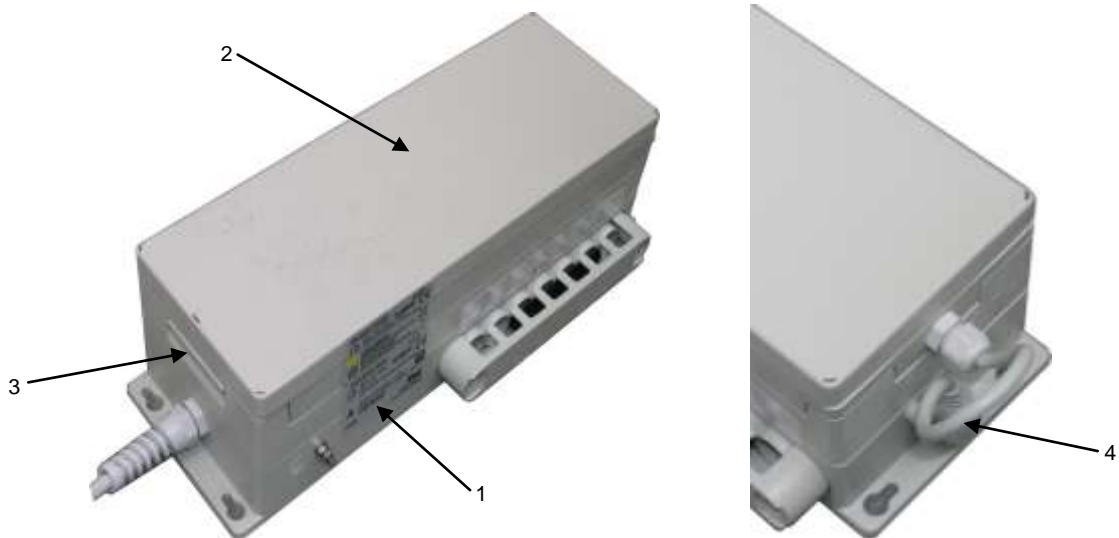
| | |
|---|--|
| 1 | <i>back rest servo-motor</i> |
| 2 | <i>thigh rest servo-motor</i> |
| 3 | <i>support column (patient's legs side)</i> |
| 4 | <i>support column (patient's head side)</i> |
| 5 | <i>non connected (optional foot control)</i> |
| 6 | <i>hand control</i> |
| 7 | <i>control panel</i> |

Assembling the electric control box:

1. Screw down the electric control panel to the bed base,
2. Connect the servo-motor, columns and control elements cables to the electric control box, according to illustration above
3. Put the terminal socket cover back on
4. Fasten the power lead to the bed frame by a click and band clip
5. Attach the base cover,

4.9. Replacing the battery

1. Disconnect the bed from the mains power supply,
2. Remove the middle cover of the base,
3. Unscrew the bolt fastening the battery cable [4] to the electric control box,
4. Disconnect the battery cable [4] from the electric control box [1],
5. Push the button [3] detaching the battery [2],
6. Raise and pull out the battery [2] from the control box [1],
7. Insert the new battery,
8. Connect the battery cable to the control box and screw the fastening bolt
9. Attach the base cover,



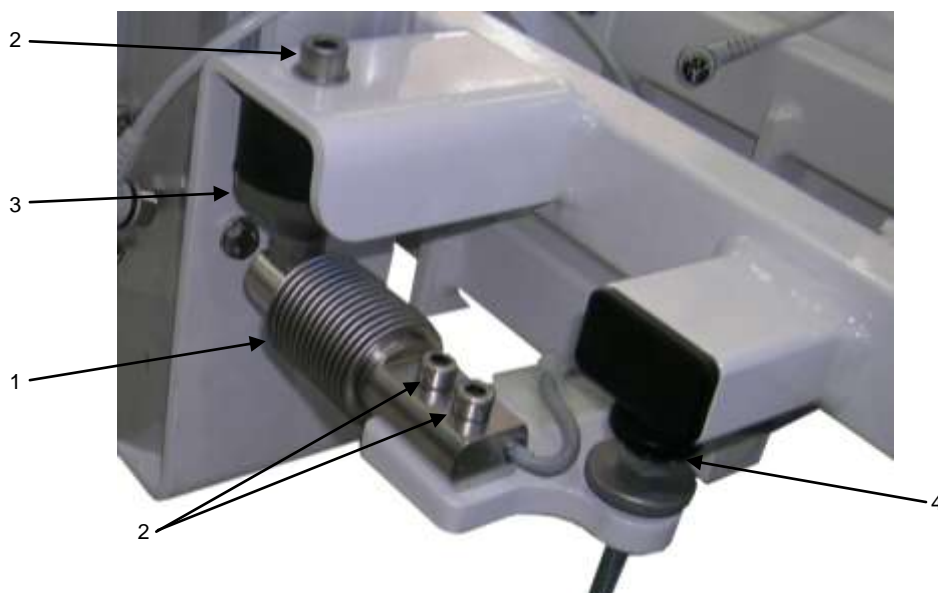
4.10. Replacing the control panels/handsets

1. Disconnect the bed from the mains power supply,
2. Remove the middle cover of the base,
3. Unfasten the band clip mounting the control panel/handset cable,
4. Disconnect the control panel/handset from the control box,
5. Connect the new control panel/handset to the electric control box,
6. Fasten the control panel/handset cable by the band clip,
7. Attach the base cover.

4.11. Replacing the scales sensor

Disassembling the scales sensor

1. Disconnect the bed from the mains power supply,
2. Remove the base covers,
3. Unscrew the bolt holding the scales controller cover and remove the cover,
4. Disconnect the cable of the disabled scales sensor,
5. Disconnect the cable from the base frame,
6. Secure the sensor by screwing on the protective element [4],
7. Unscrew the 3 screws fastening the sensor [2],



Assembling the scales sensor

1. Screw down the absorber [3] to the scales sensor [1], it could also be shifted from disabled sensor,
2. Screw down the sensor [1] to the base frame,
3. Connect the sensor cable to the scales controller,
4. Put the scales controller cover on and screw the bolt to fasten the cover,
5. Connect the sensor cable to the base frame by the band clip,
6. Attach the base covers.

4.12. Replacing the scales controller

1. Disconnect the bed from the mains power supply,
2. Remove the base covers,
3. Unscrew the bolts of the scales controller cover and remove the cover,
4. Swap the cables from the old controller to the new controller, and connect to the correct cable connections,
5. Unscrew the bolts fastening the old controller,
6. Mount the new controller,
7. Put the scales controller cover on and screw down the bolts to fasten the cover,
8. Attach the base covers.

4.13. Replacing the wheel*Disassembling the wheel:*

1. Disconnect the bed from the mains power supply,
2. Remove the base covers,
3. Adjust the central wheels lock to the unlocked position (lever [2] in horizontal position)
4. Unscrew the bolt [3] fastening the central blockade lever and then remove the lever [2],
5. Unscrew the set screw [5] partially and pull out the central blockade bar [6] so as to remove the bar from the wheel mandrel,
6. Unscrew the bolts [4] that are fastening the wheel,
7. Remove the wheel [1].

*Assembling the wheel:*

8. Make sure the wheel [1] is in the unlocked position,
9. Place the wheel into position,
10. Put in the central blockade bar [6] into the wheel mandrel,
11. Screw down the bolts [4] to fasten the wheel,
12. Put the washer on the central locking bar [6], then put lock lever, washer, then screw down the fastening screw [3]
13. Check the central locking ,
14. Attach the base covers.

4.14. *Changing the buffers*

1. Unscrew the screw [2] fixed to the buffer [1].
2. Put a new buffer [1] onto the sleeve [4].
3. Put a washer [3] and a sleeve [4] either side the new buffer [1] and screw in place securely [2].
4. Screw all elements to the threaded hole placed in the bed frame.

