

INSTRUCTIONS FOR USE

Enterprise 9600X, 9700X & 9800X



WARNING

To avoid injury, always read this Instructions for Use and accompanied documents before using the product.



Mandatory to read the Instructions for Use

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Warnings, Cautions and Notes	4
General Warnings	5
1. Introduction	7
Product overview	9
2. Clinical Applications	10
Intended use	10
Indications	10
Contra-indications	11
3. Installation	12
Weighing system	13
Electricity supply	14
Underbed light	14
Nurse call connection	15
RS232 connection (Optional)	15
Mattresses	17
4. Operation	19
Brakes and steering	19
Foot Pedal for Adjustment of Bed Height (Optional)	20
How to use the 5th Wheel (Optional)	21
Split side rails	22
CPR backrest release	24
X-ray cassette tray	25
Operation	25
Bed length adjustment	27
Bedstripper (linen shelf)	29
Lifting pole and accessory sockets	30
Drainage bag rails	31
Head and foot boards	32
Adjusting the mattress platform	33
Patient controls	34
Caregiver controls	34
Patient handset	37
Attendant Control Panel (ACP)	38
Function lockout	40
Backup battery	41
Duty cycle lockout	42
5. Advanced Features	43
Patient weighing system	43
VariZone™ patient movement detection	48
Anti-entrapment system	50
SafeSet™	51
Monitor bed status through the RS232 connection	53
Controls for television and lighting	54
6. Product Care	55
Mattress platform sections	55
Decontamination	56
Preventive maintenance	58
Troubleshooting	61
Product lifetime	63
7. Accessories	64
8. Technical Data	65
9. Warranty and Service	70
10. Electromagnetic Compatibility	71

Warnings, Cautions and Notes



WARNING

Indicates possible hazards in procedures or conditions which, if not correctly followed, could result in death, injury or other serious adverse reactions.



Caution

Indicates possible hazards in procedures or conditions which, if not correctly followed, could result in equipment damage or failure.

NOTE

Explains or amplifies a procedure or condition.

General Warnings



WARNING

Keep these instructions in a safe place; you may need to refer to them later on.

Read and understand these instructions before operating the bed.

Caregivers must be trained in the proper use of this product, its functions and controls, and any accessories.

These instructions are mandatory for the safe and effective use of this product, including the safety of patients and caregivers.

Unauthorised modifications or repairs to this product may affect its safety and will invalidate any warranty. Arjo accepts no liability for any incident, accident or reduction in performance that may occur as a result of such repairs or modifications.

To avoid the risk of electric shock, this product must only be connected to an electricity supply with a protective earth.

Do not smoke or use naked flames near this equipment and do not expose it to extremes of temperature.

Do not use electrically powered beds in the presence of flammable gases such as anaesthetic agents e.g. in operating theatres.

The bed is intended for indoor use only and should not be used outside a normal hospital environment.

Do not use accessories that have not been designed or approved for use with the bed.

The user should carry out a risk assessment before using the bed with equipment from other suppliers or manufacturers.

Always apply the brakes when the bed is stationary.

To reduce the risk of injury due to falls, lower the bed to minimum height when the patient is unattended.

Patients should not be left in the Trendelenburg position when unattended.

To reduce the risk of overbalancing, do not allow the patient to get on or off the bed when the mattress platform is in a tilted (head down or foot down) position.

Where risk assessment indicates that a patient is at high risk of entrapment owing to their medical condition or other circumstances, and where there is no medical benefit from their being left in a contoured position, place the mattress platform in the flat position when the patient is unattended.



WARNING

It is recommended to use the *Function Lockout* facility on the Attendant Control Panel to prevent unintended movement in situations where objects may press against the patient's controls.

When the bed is operated, make sure that obstacles such as feet, oxygen bottles, bedside furniture or any other objects do not restrict its movement.

To avoid potential damage or injury, do not leave oxygen bottle or any other obstacles under the bed frame while operated.

The bed can only be moved on firm surfaces. Gradients must not exceed an angle of 10 degrees.

When moving or operating the bed, take care that any accessories attached to it (e.g. lifting pole) do not strike doors, ceilings, etc.

Hold the head board or foot board when pushing or pulling the bed; do not hold the side rails or any attached accessories.

Before operating the bed, make sure the patient is positioned correctly to avoid entrapment or imbalance.

Take care when using equipment that needs to be positioned under the base frame to ensure there is no contact with any part of the bed frame or components.

Take care not to squeeze or trap trailing cables from other equipment between moving parts of the bed.

Take care not to allow clothing or bed linen to become snagged on moving parts of the bed.

When operating moving parts of the bed, ensure the bed does not come into contact with adjacent equipment which could be damaged by the bed's operation.

This product complies with the requirements of applicable standards for electromagnetic compatibility (EMC). However, medical electrical equipment requires special precautions regarding EMC and should be installed and used in accordance with the EMC information in the product service manual.

Medical electrical equipment can be affected by portable and mobile radio frequency communications equipment, e.g. cellular telephones.

If a serious incident occurs in relation to this medical device, affecting the user, or the patient then the user or patient should report the serious incident to the medical device manufacturer or the distributor. In the European Union, the user should also report the serious incident to the Competent Authority in the member state where they are located.

1. Introduction

These instructions contain information for the installation, use and maintenance of the Arjo Enterprise® 9600X, 9700X and 9800X range of acute care hospital beds.

These beds have multiple functions to provide the optimum nursing position for both patient and caregiver.

The table below shows the main features of each model.

Feature	Model Number		
	9600X	9700X	9800X
Standard nurse call connection	✓		
Audio nurse call connection		✓	✓
Control for television and lighting			✓

Standard features:

- Folding split side rails with integrated controls
- Electrical adjustment of bed height and leg section elevation
- Electrically operated retracting backrest
- Bio-Contour® advanced profiling system
- Auto-Chair facility
- Electrical adjustment of head down tilt (Trendelenburg) and foot down tilt (reverse Trendelenburg)
- Electrical adjustment of calf section vascular position
- Mattress support surface with removable panels
- Adjustable length mattress platform
- Drainage bag rails
- Underbed lights
- 125mm single wheel castors
- Patient weighing and patient egress detection
- Anti-Entrapment System
- Bedstripper (linen shelf)
- Additional brake pedals at head end

Optional features:

- SafeSet™ visual status indicators
- Patient handset
- 5th Wheel
- RS232 connection allowing transfer of bed status data
- 150mm (single or dual wheel) castors
- DIN accessory rails
- Lockable foot board and head board
- Radio translucent backrest with X-ray cassette tray
- Flat deck sheets
- IndiGo™ Intuitive Drive Assist
- Foot Pedal for Adjustment of Bed Height

NOTE

Do not combine curved deck sheets with flat deck sheets.

Optional features are specified by the customer at the time of ordering. The chosen options are indicated by the equipment model number.

The model number **REF** and serial number **SN** can be found on the specification label; this is located on the control box tray.

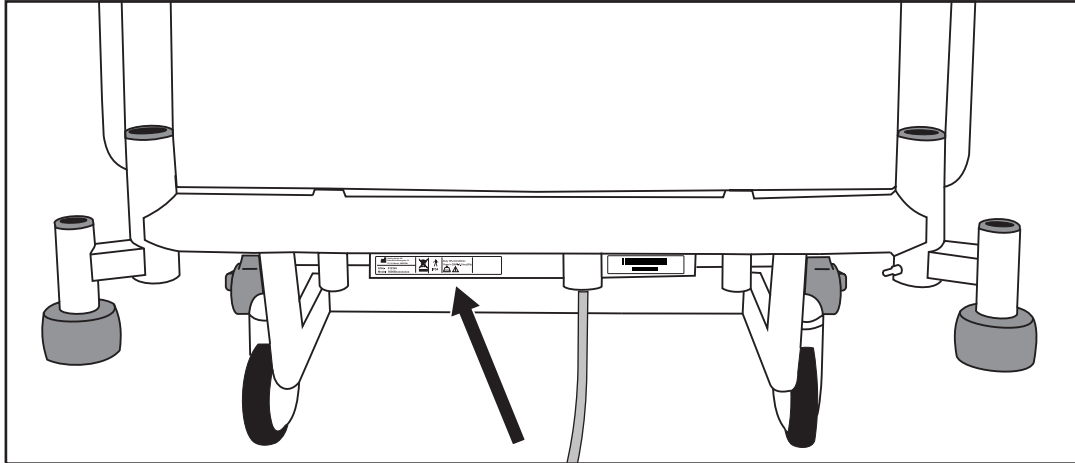


Fig. 1 - Specification label



Caution

Before using the bed, ensure that the “Power in” rating on the specification label is compatible with the local electricity supply.

Product overview

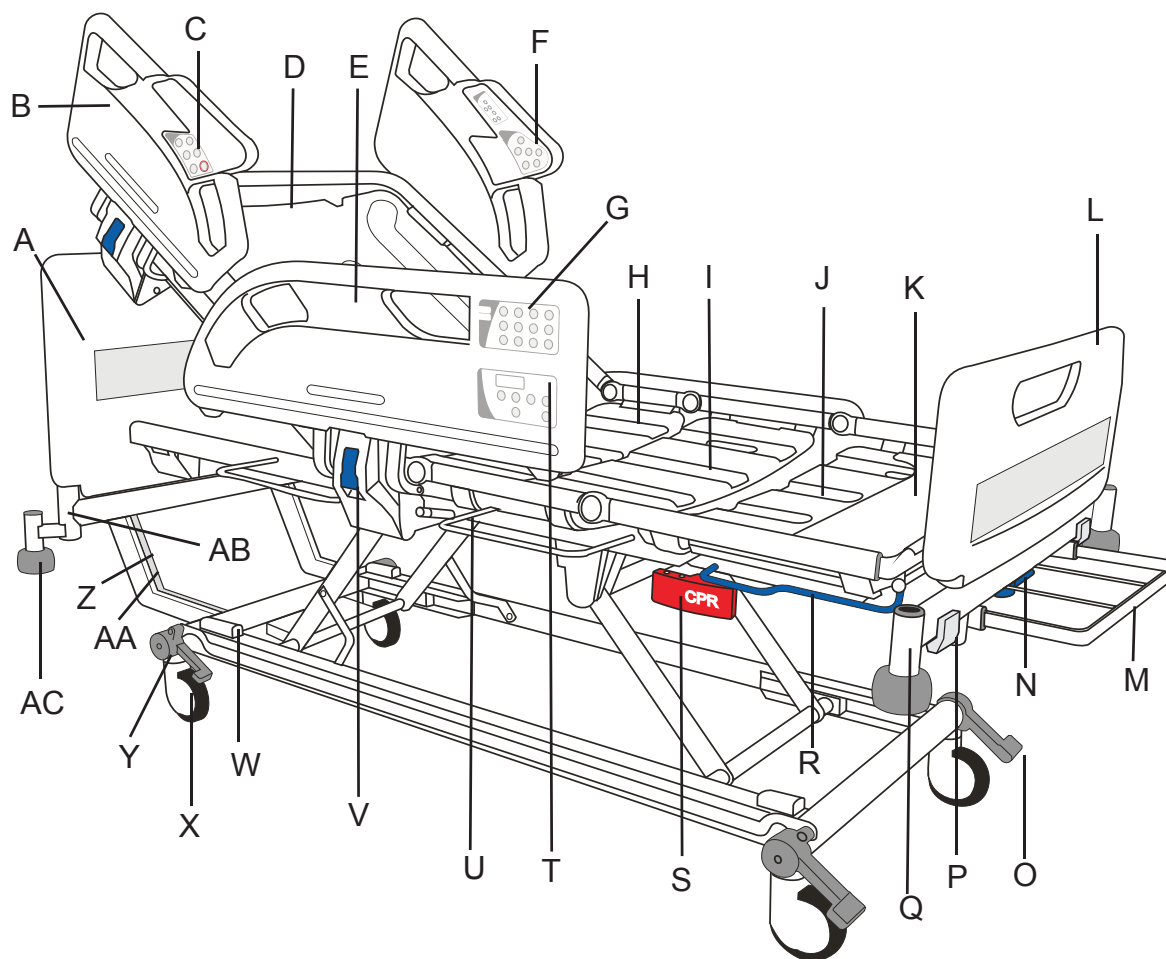


Fig. 2 - Product overview

- | | |
|---|--|
| A. Head board | P. <i>SafeSet</i> visual status indicator (Optional) |
| B. Head end split side rail | Q. Accessory socket |
| C. Caregiver controls | R. Extension catch bar |
| D. Backrest section | S. CPR release handle |
| E. Foot end split side rail | T. Weighing / movement detection system controls |
| F. Patient controls TV/lighting controls (Optional) | U. Drainage bag rail |
| G. Attendant Control Panel (ACP) | V. Split side rail release lever |
| H. Seat section | W. Anti-entrapment sensor |
| I. Thigh section | X. Castor |
| J. Calf section | Y. Head end brake pedal |
| K. Calf extension sheet | Z. Nurse call |
| L. Foot board | AA. RS232 connector (Optional) |
| M. Bedstripper (linen shelf) | AB. Lifting pole socket |
| N. Extension locking handle | AC. Roller buffer |
| O. Brake pedal / bar | |

NOTE

5th Wheel (Optional) is not shown on the picture, see page 21.

Flat deck sheets are supplied as standard when the backrest with X-ray cassette tray is present.

2. Clinical Applications



WARNING

To ensure the patient can use the bed safely, their age and condition should be assessed by a clinically qualified person.

The use of head down tilt (Trendelenburg) or foot down tilt (reverse Trendelenburg) may be contraindicated for certain medical conditions. The tilt facility should only be used under the guidance of a clinically qualified person after assessment of the patient's condition.

The weighing system is intended to provide reference data only. The weighing system is not intended to provide readings upon which medication dosage decisions are made.

Intended use The product is intended to provide support to patients during a stay in hospital or other care facility. The product allows positioning for CPR and Trendelenburg and is equipped with a weighing system. The weighing system is intended to provide reference data only. The weighing system is not intended to provide readings upon which medication dosage decisions are made.

The bed is suitable for use in the following situations:

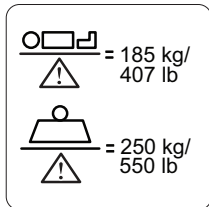
- Intensive/critical care provided in a hospital where 24-hour medical supervision and constant monitoring is required, e.g. ITU, ICU and CCU.
- Acute care provided in a hospital or other medical facility where medical supervision and monitoring is required, e.g. general medical and surgical wards.
- Long term care in a medical area where medical supervision is required and monitoring is provided if necessary, e.g. nursing homes and geriatric facilities.

Indications The bed is appropriate for high dependency patients who pose a movement and handling risk and / or whose clinical condition requires that they are positioned with minimal physical handling.

Patients with a moderate amount of independence can, at the caregiver's discretion, use the controls to adjust their own position.

The mattress platform can be positioned to assist with such clinical procedures as may be required in the Application Environments defined above.

Contra-indications



The bed is not suitable for use in the following situations:

- A domestic area, i.e. home healthcare.
- Outpatient care.
- By adult patients under 40kg (88 lb) in weight.
- By children under 12 years old.

The maximum recommended patient weight is 185kg (407 lb).

The safe working load (SWL) of the bed is 250kg (550 lb).

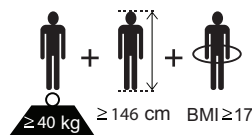
The safe working load is calculated as follows (in accordance with IEC 60601-2-52):

Maximum patient weight.....	185kg (407 lb)
Mattress	20kg (44 lb)
Accessories (including attached loads)	45kg (99 lb)
TOTAL	250kg (550 lb)



WARNING

If the combined weight of the mattress and accessories exceeds 65kg, the maximum patient weight must be reduced accordingly.



The recommended patient size is; weight equal or above 40kg (88 lb), height between 146cm (57 ins.) and 190cm (75 ins.) and BMI equal or above 17.

At the discretion of the carer, patients taller than 190cm may be accommodated by extending the bed - refer to "Bed length adjustment" on page 27. Ensure that the patient's height does not exceed the *In-bed length* shown on page 68.

3. Installation

The following chapter describes how to install the bed.



WARNING

If the power supply cord or plug is damaged, the complete assembly must be replaced by authorised service personnel. Do not remove the fitted plug, or use a rewirable plug or adapter.

Make sure the power supply cord is not stretched, kinked or crushed.

Do not allow the power supply cord to trail on the floor where it may cause a trip hazard.

Make sure the power supply cord does not become entangled with moving parts of the bed or trapped between the bed frame and head board.

Disconnect the power supply cord from the electricity supply, and store it as shown, before moving the bed.

Before the first use, or if the bed has been unused for more than three months, read and understand this IFU and test the functionality of the bed to verify correct operation. Refer to “Preventive maintenance” on page 58 for a list of functional tests.



Caution

Before the first use, or if the bed has been unused for more than three months, connect the bed to the electricity supply for at least 24 hours to allow the backup battery to recharge fully; failure to do this may reduce the life of the battery. After charging, check that the battery is fully serviceable by carrying out a battery test as shown on page 61.

Weighing system

Position the bed on a flat, level surface and apply the brakes (see page 19).

Remove the four transport locking bolts (1) and washers (2); there are two locking bolts at the head end of the bed and two at the foot end.

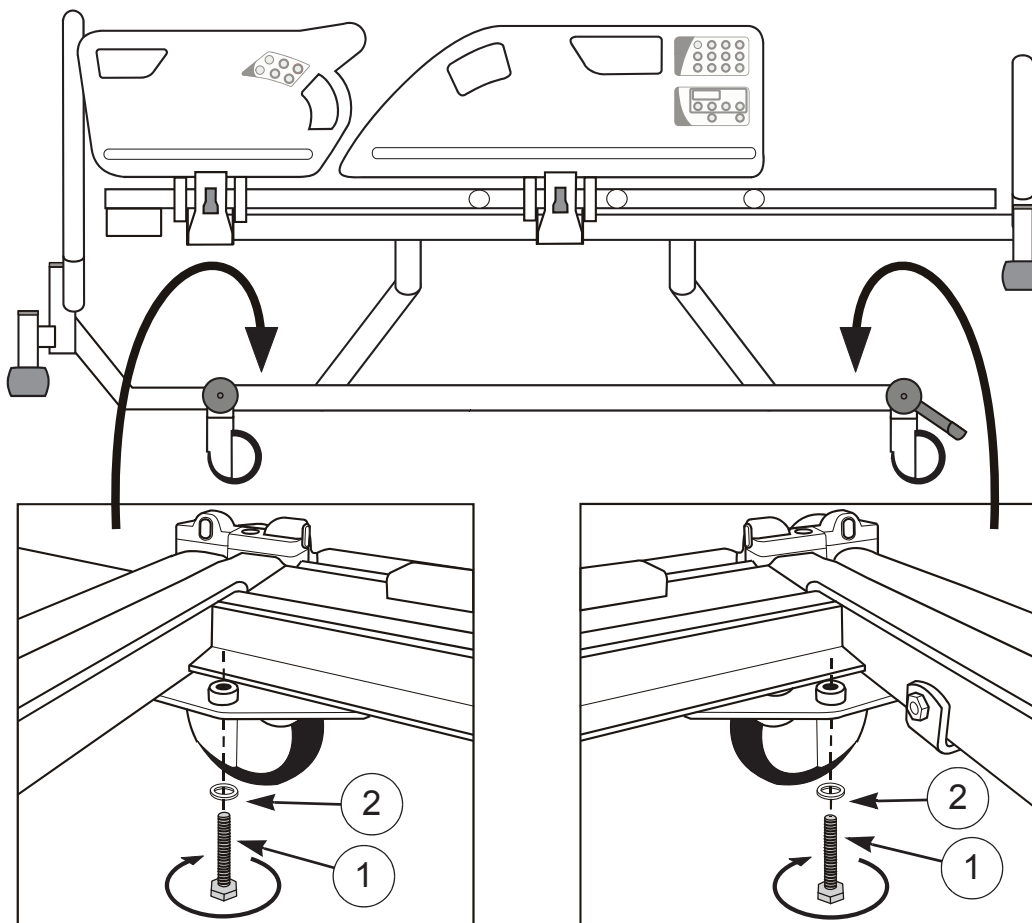


Fig. 3 - Removing the transport bolts

Retain the bolts and washers in case the bed needs to be transported at a later date.



Caution

To prevent damage to the weighing mechanism, replace the transport locking bolts and washers before transporting the bed. This is not necessary when moving the bed short distances over smooth surfaces.

When replacing the transport locking bolts care must be taken to avoid trapping or damaging any cables.

Electricity supply

Connect the mains plug to a suitable socket outlet. To ensure a reliable connection, the socket should be labelled HOSPITAL ONLY or HOSPITAL GRADE. Make sure the plug is easily accessible so it can be disconnected quickly in an emergency.

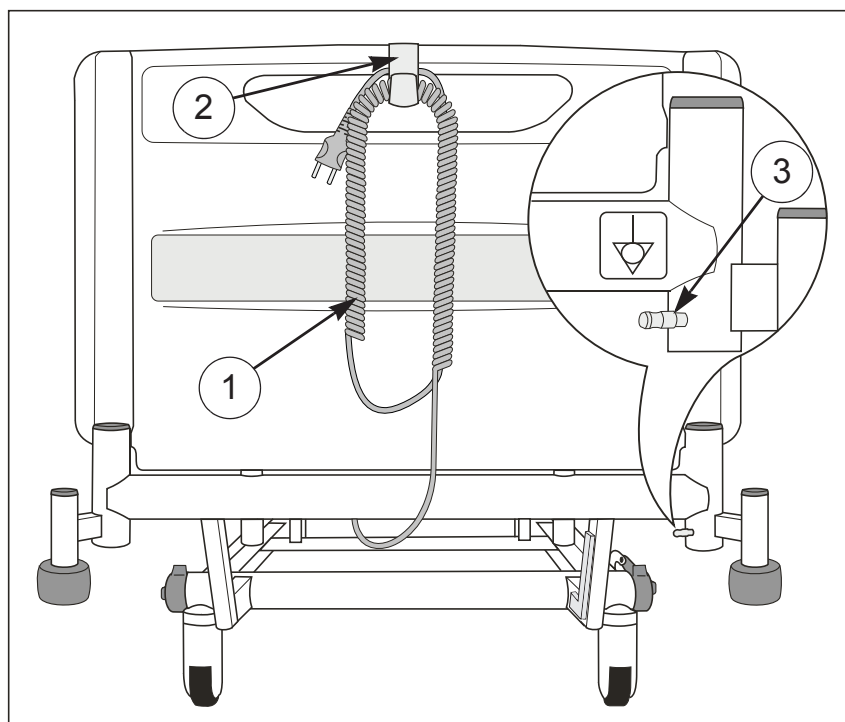


Fig. 4 - Power supply cord and potential equalisation terminal

When the bed is connected to the electricity supply, an indicator will light on the Attendant Control Panel (see page 38).

The power supply cord (1) is fitted with a plastic hook (2). When not in use or before moving the bed, clip the hook onto the head board, coil up the cable and place it over the hook as shown.

To isolate the bed from the electricity supply, disconnect the mains plug from the socket outlet.

A potential equalisation terminal (3) is located at the head end of the bed.

When other electrical equipment is within reach of the patient or caregiver, potential differences between the equipment can be minimised by connecting together their potential equalisation terminals.



Underbed light

The underbed light illuminates the floor on either side of the bed. The light can be turned on or off using the Attendant Control Panel (see page 36)

The underbed light will turn off if the bed is in its low power state. Refer to the section “Low power mode” on page 42.

Nurse call connection

Connect one end of the nurse call cable to the 37-pin D-type socket, located below the head end of the bed on the patient's right hand side.(1)

Connect the other end of the nurse call cable to a compatible nurse call system. The type of connector will vary depending on the nurse call system.

RS232 connection (Optional)

Connect one end of an RS232 cable to the 9-pin D-type socket, located below the head end of the bed on the patient's right hand side (2).

Connect the other end of the RS232 cable to a device capable of receiving data through an RS232 connection.

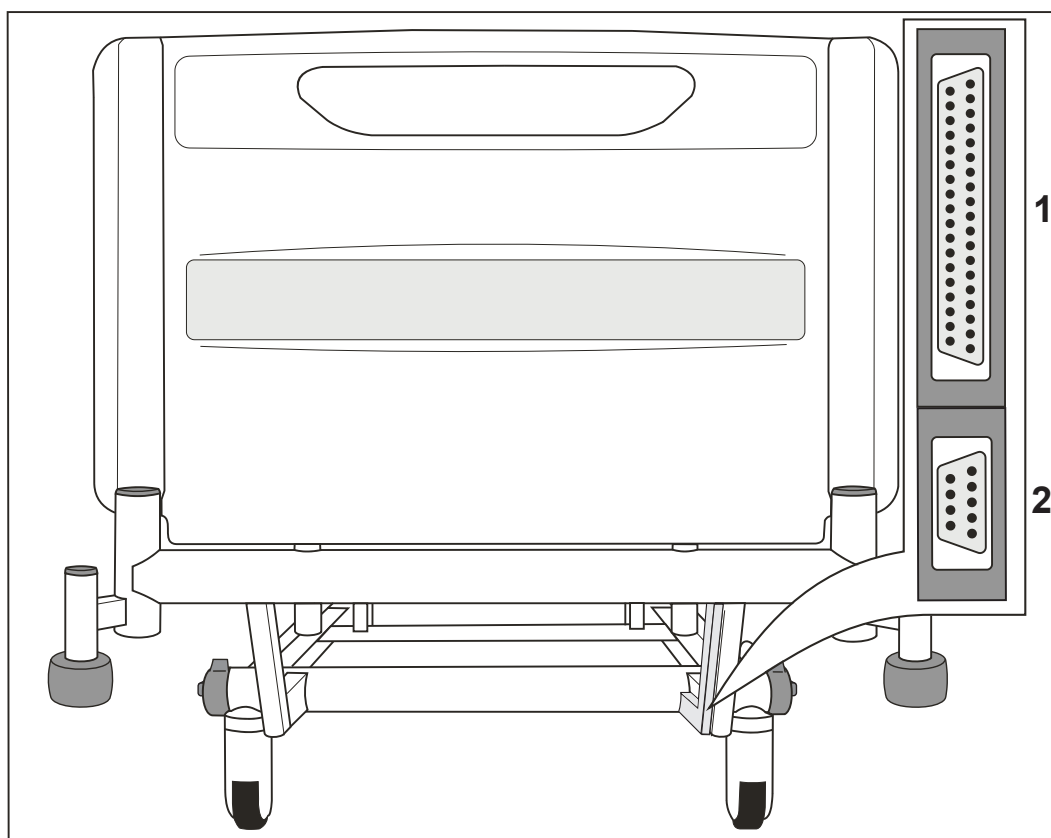


Fig. 5 - Nurse call and RS232 connections



WARNING

Data retrieved from the RS232 connection is not intended to be used to make clinical decisions. All patient diagnosis, treatment and care should be performed under the supervision of an appropriate healthcare professional.



WARNING

Connection to the nurse call and RS232 connector must be made with the correct cables. Use of the wrong cables may cause malfunction of the bed or devices connected to the nurse call or RS232 connectors.

Verify correct operation of the nurse call and RS232 system before placing a patient on the bed.

Do not allow the nurse call or RS232 cables to trail on the floor where they may cause a trip hazard.

Make sure the nurse call and RS232 cables are disconnected before moving the bed.

Do not allow the cables to touch the bed frame as this may affect the accuracy of the weighing system.



WARNING

Only connect devices designed to be used with the bed. Connecting devices not designed to be used with the bed may result in damage to the equipment or to the bed.

NOTE

Only use cables with an in-line breakaway connector (below).

Failure to do so could result in damage to the bed or to other hospital equipment.

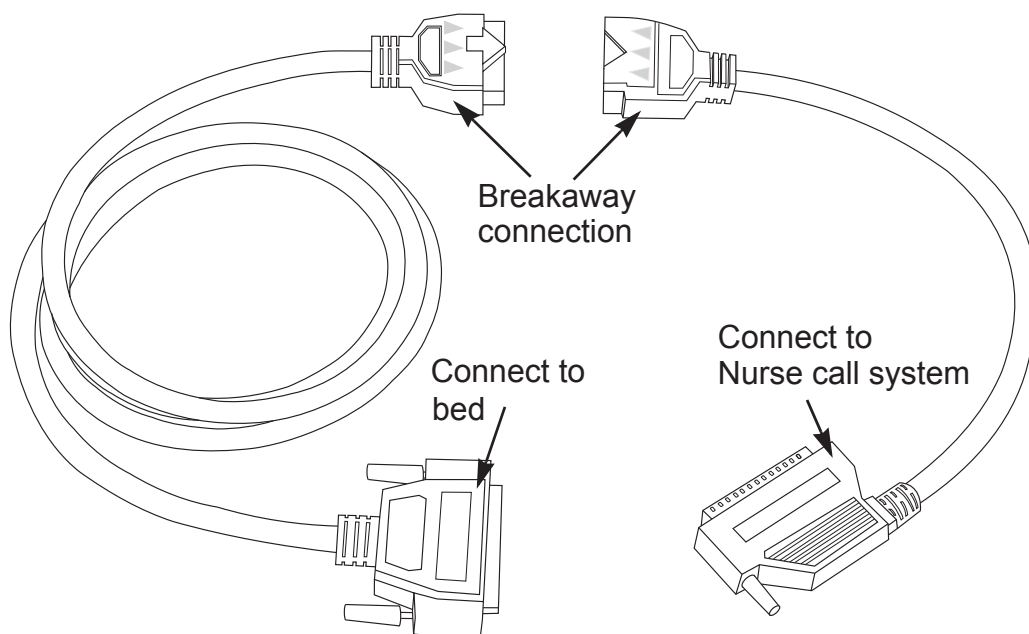


Fig. 6 - Example of an in-line breakaway connector

Mattresses



WARNING

Always use a mattress of the correct size and type. Incompatible mattresses can create hazards.

Entrapment hazards may exist when using a very soft mattress, even if it is the correct size.

The maximum recommended mattress thickness for use with split side rails is 18cm.

Read the instructions for use supplied with the mattress.

Where the maximum patient weight specified for the mattress is different to that specified for the bed, the lower value applies.

A label on the calf extension sheet indicates the correct mattress size:

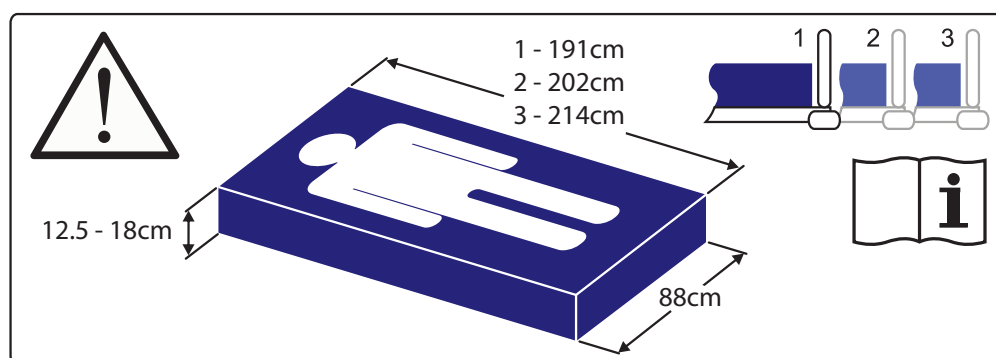


Fig. 7 - Mattress size label

NOTE

The numbers 1, 2 and 3 on the label indicate different mattress platform lengths; refer "Bed length adjustment" on page 27.

Mattresses and split side rails

When choosing bed and mattress combinations, it is important to consider the use of split side rails based on clinical assessment of each individual patient and in line with local policy.

When assessing the suitability of a mattress for use with split side rails, the following factors should be considered:

- The bed is designed to provide an acceptable split side rail height when used with a foam mattress up to 18cm (7 ins.) thick.
- Specialist powered air / foam replacement mattresses will typically envelop the patient when loaded and can generally be deeper than a foam mattress without

compromising safety. Other makes of specialist mattress replacement must be assessed individually prior to use to verify sufficient clearance is maintained.

- Mattress overlays are not recommended for use with this bed.
- To ensure compliance with IEC 60601-2-52, an approved Arjo mattress should be used. Compliance with this standard when using other mattresses must be validated by the user.
- For more information on suitable mattresses and mattress replacements, contact your local Arjo office or approved distributor. A list of Arjo offices can be found at the back of this manual.

4. Operation

The following chapter describes how to operate the bed.



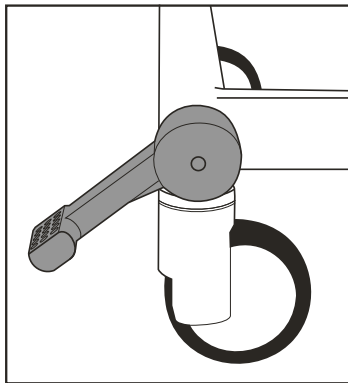
WARNING

Operate the brake pedals with your feet while wearing suitable shoes. Do not operate the pedals with your hands.

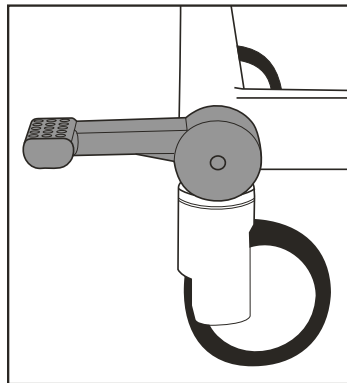
Brakes and steering

The pedals have three positions as shown below:

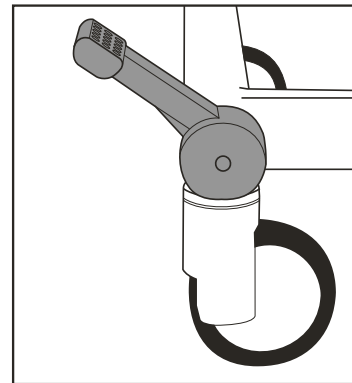
- **BRAKE:** brakes are applied on all four castors.
- **FREE:** all four castors are free to rotate and swivel.
- **STEER:** all four castors can rotate, but the steering castor (see below) is locked so that it cannot swivel. This helps to keep the bed on a straight line.



BRAKE



FREE



STEER

Using the steering castor

Position the bed so that all the castors line up in the direction of travel. Raise the pedals to lock the steering castor and move the bed by pushing it from the opposite end of the steering castor.

NOTE

The steering castor may be at either end of the bed, as specified by the customer.

NOTE

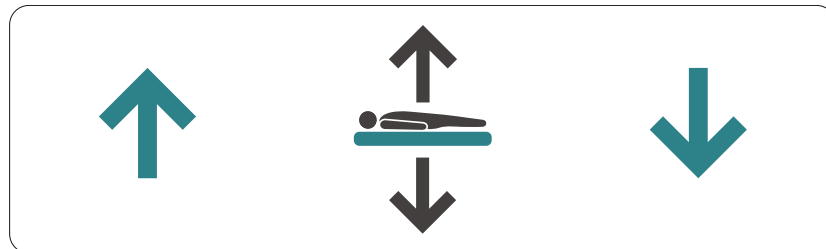
Brake pedal appearance may alter slightly on actual product, but functionality and user instructions remain unchanged.

Head end brake pedals

Brake pedals can be fitted at the head end of the bed. These operate in the same way as the foot end pedals.

Foot Pedal for Adjustment of Bed Height (Optional)

Bed height can be adjusted from bed control panels and from the foot pedal located near the foot end of the bed.



Lift cover of pedal with foot and press left side to raise the bed height. Press right side of pedal to lower the bed height.

How to use the 5th Wheel (Optional)

The 5th wheel provides improved mobility and steering.

Activate 5th Wheel:

1. Step down on the head end of the 5th wheel activation pedal (A).
(See Fig. 8)
The 5th wheel (B) will lower until it has contact with the floor.
2. Check that the brakes are unlocked and the brake pedal is in the "Free" position. (See Fig. 9)
3. The bed is ready for movement.

Deactivate 5th Wheel:

1. Step down on the foot end of the 5th wheel activation pedal (A).
(See Fig. 8)
2. Make sure the 5th wheel (B) is raised from the floor.

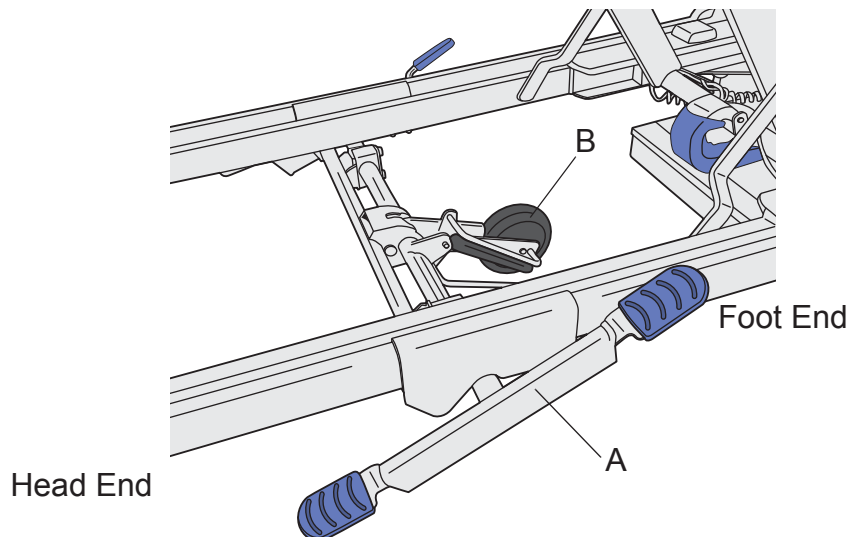


Fig. 8 - 5th wheel activation pedal

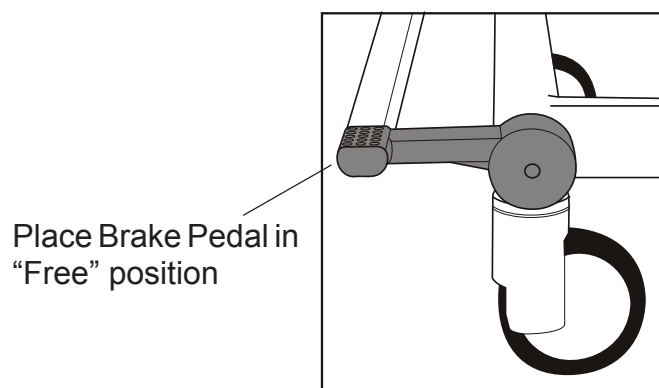


Fig. 9 - Free Position

Split side rails



WARNING

The clinically qualified person responsible should consider the age, size and condition of the patient before allowing the use of split side rails.

Split side rails are not intended to restrain patients who make a deliberate attempt to exit the bed.

Ensure that the mattress is suitable for use with split side rails - see “Mattresses and split side rails” on page 17.

To prevent possible entrapment, make sure the patient’s head and limbs are clear of the split side rails when adjusting the mattress platform.



**Split side rail contact points are identified by this symbol.
Keep hands and fingers away from these areas.**

To lower the split side rail:

Hold either split side rail handle (1). Pull the blue release lever (2) and lower the split side rail (3), holding the split side rail until it is completely lowered. The split side rail folds down below the mattress platform.

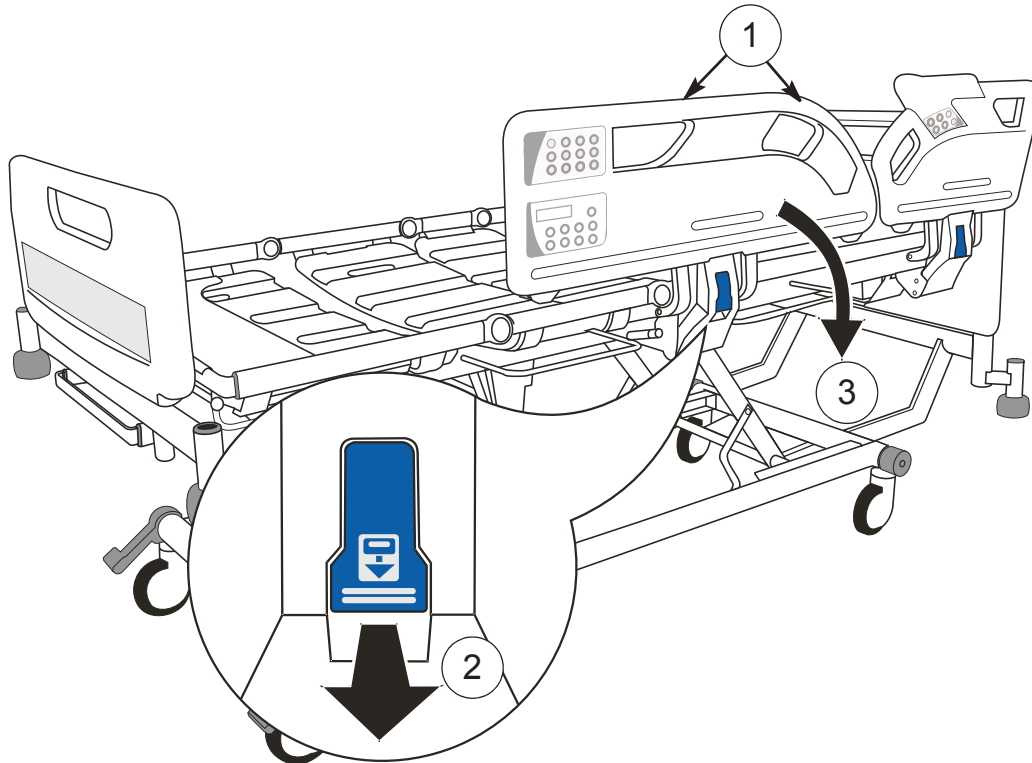


Fig. 10 - Split side rail operation

NOTE

The head end and foot end split side rails operate in the same way.

To raise the split side rail:

Hold either split side rail handle (1). Pull the split side rail up and away from the bed until it locks in the raised position.



WARNING

Make sure the locking mechanism is securely engaged when the split side rails are raised.

CPR backrest release

Manual CPR release handles are located below the calf section on either side of the bed.

If the patient suffers a cardiac arrest, pull the CPR release handle (1). This will lower the backrest (2) to enable cardio-pulmonary resuscitation to be carried out.

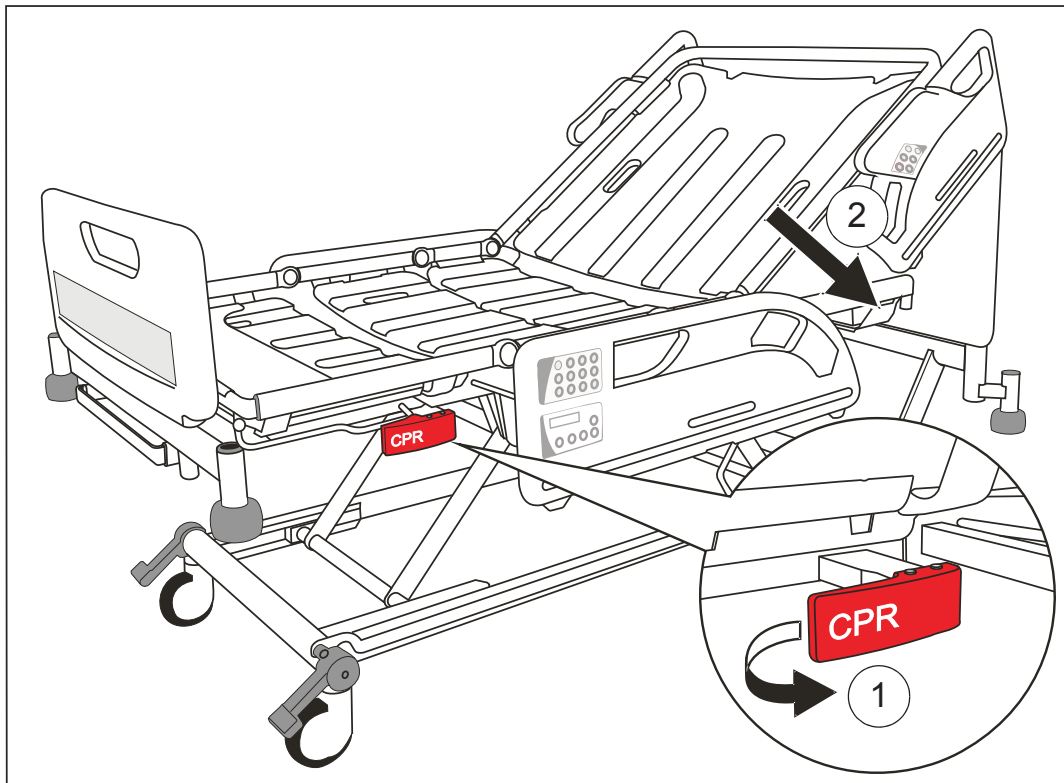


Fig. 11 - CPR backrest release



WARNING

The backrest can fall quickly; keep hands clear to avoid trapping.



Caution

The manual CPR release should only be used in an emergency; repeated everyday use can cause premature wear.

X-ray cassette tray

The X-ray cassette tray allows thoracic X-ray photography with the backrest at any angle and without the patient moving from the bed.



WARNING

Position the mattress platform at an ergonomic height to allow easy loading and removal of X-ray cassettes.

Return the X-ray cassette tray to its closed position below the backrest before raising or lowering the backrest.

Do not sit or place heavy objects on the X-ray cassette tray.

Ensure the X-ray cassette tray is held securely in place by the catch at all times.

Operation

Apply the brakes. Remove the head board from the bed.

Pull the knob (1) to release the catch and slide the tray out (2) as far as will go.

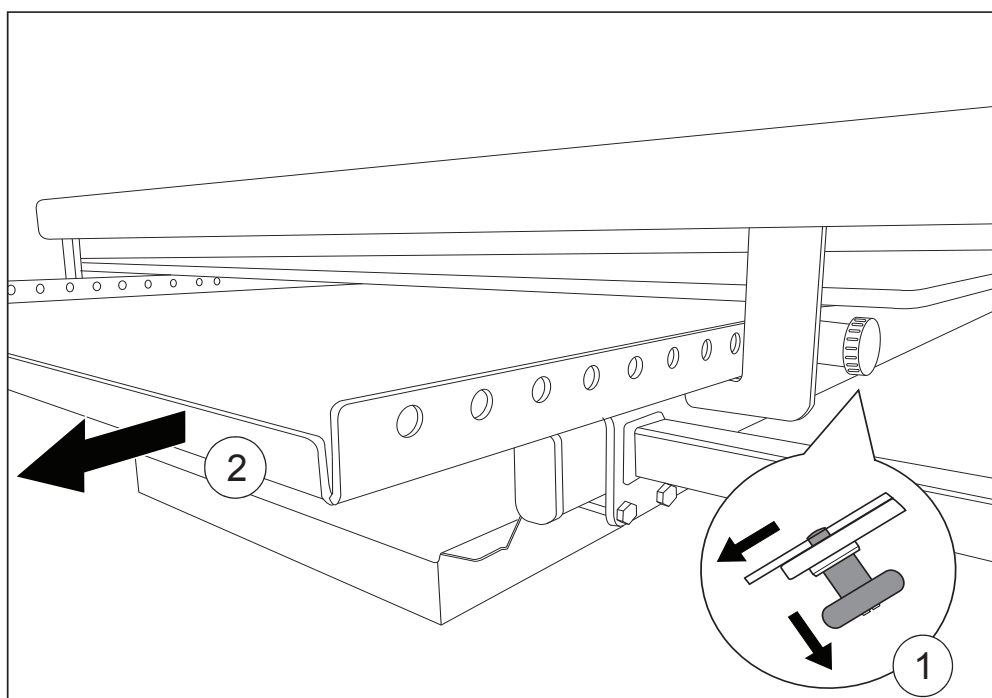
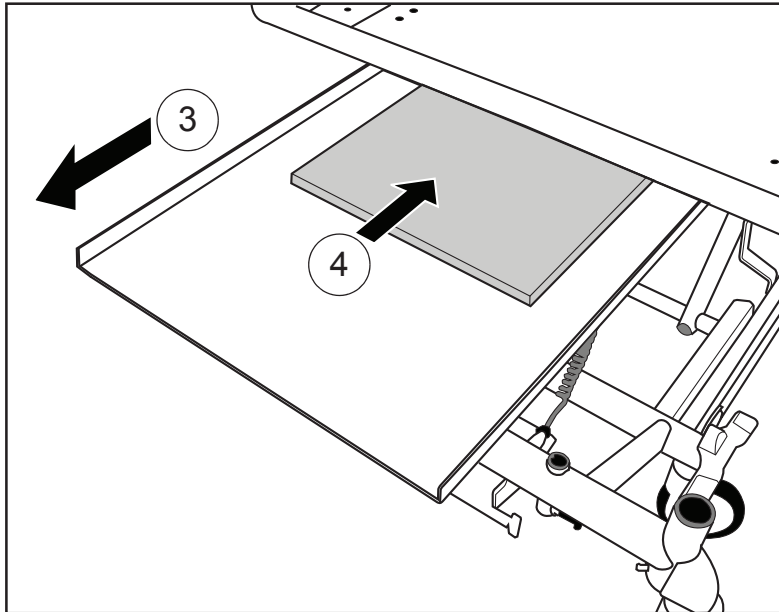


Fig. 12 - X-ray cassette tray operation

Release the knob to hold the tray in the fully open position (3). Position the X-ray cassette (4) on the tray with its bottom edge against the lip at the foot end of the tray.

Fig. 13 - Positioning the X-ray cassette



Pull the knob and slide the tray underneath the backrest. The red moulding on the top of the X-Ray sitting tool indicates the top right hand corner of the X-Ray cassette. Use this feature to assist in accurate positioning.

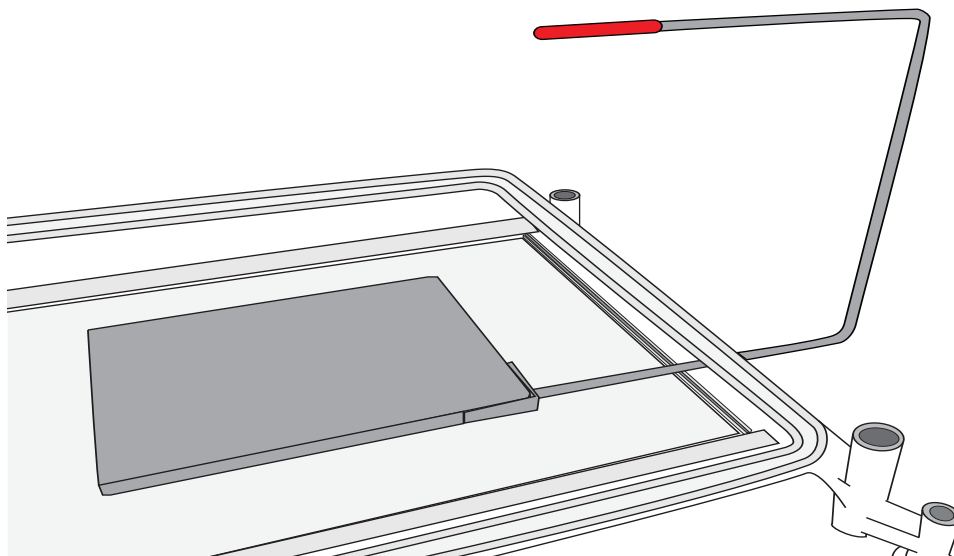


Fig. 14 - X-Ray Sitting Tool

Release the knob to hold the tray in one of the latching positions.

After use, pull the tray out to the fully open position and remove the X-ray cassette. Return the tray to the closed position below the backrest and replace the head board.

Bed length adjustment

The length of the bed is adjustable to three set positions. These are typically used as follows:

- 1 Short, for manoeuvring the bed in confined spaces
- 2 Standard length, for normal use
- 3 Extended, to accommodate very tall patients



WARNING

Install a suitable foam mattress extension (squab) at the head end when the bed is extended.

Always adjust the bed frame and mattress platform to the same length and make sure both are latched securely in position.

Level the mattress platform before adjusting the bed length.

To extend the bed frame:

Pull the blue extension locking handle (1). Pull out the bed frame (2) to the required position and release the handle.

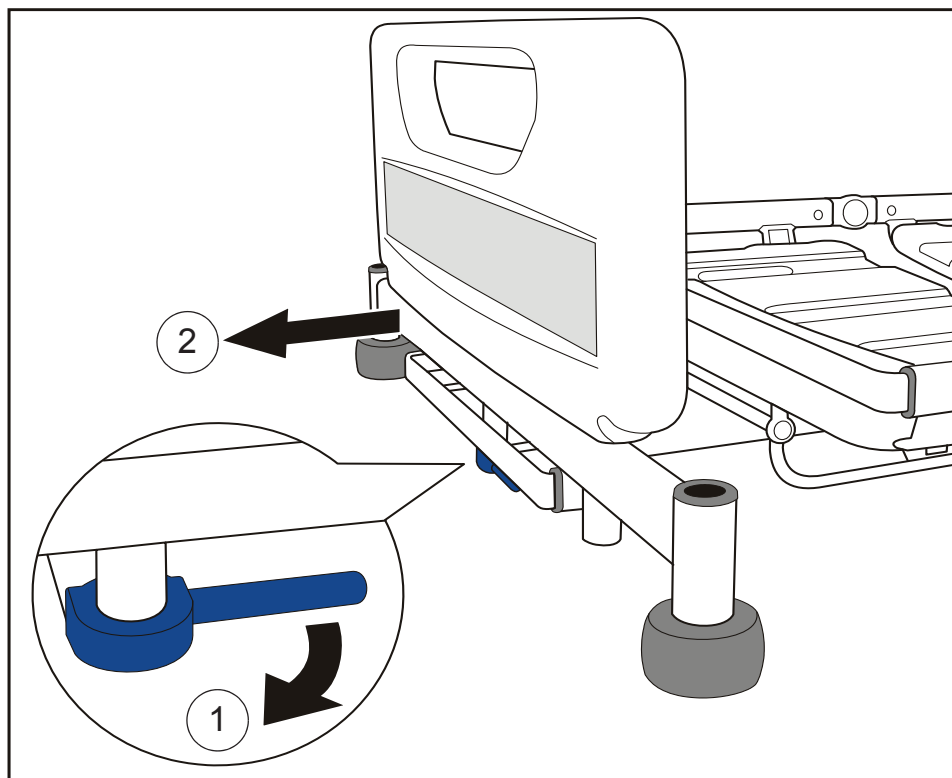
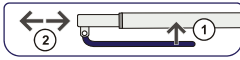


Fig. 15 - Extending the bed frame

To extend the mattress platform:



Lift the blue extension catch bar (1) and hold the middle of the end crossbar (2), then pull out the mattress platform to the required position. Release the catch bar.



WARNING

Take care not to pinch your fingers when lifting the catch bar.

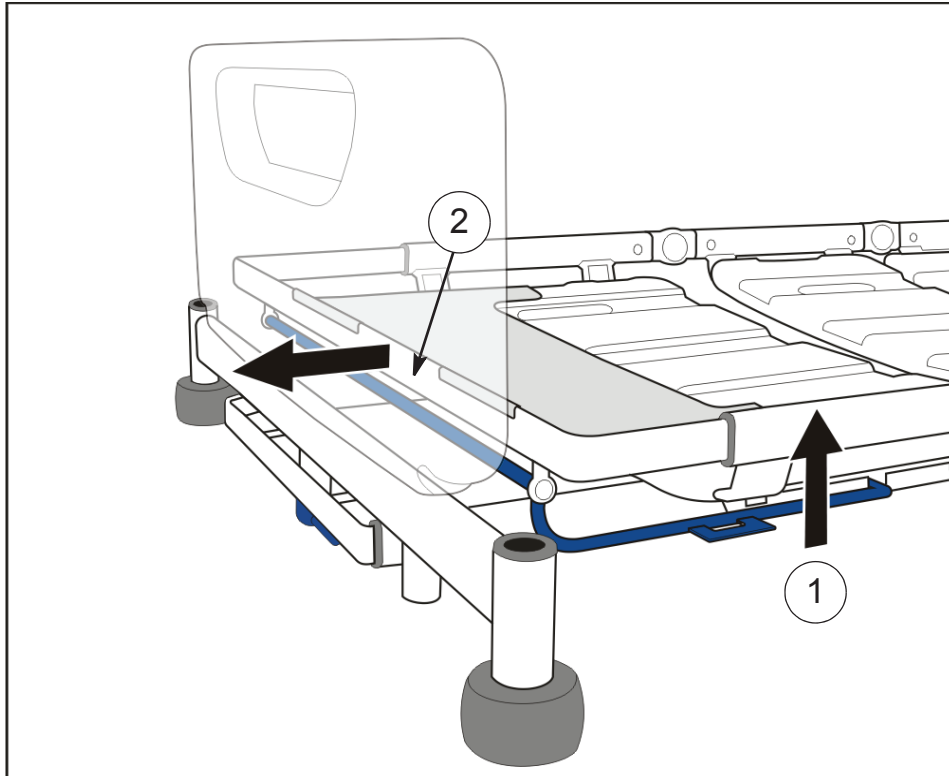


Fig. 16 - Extending the mattress platform



WARNING

After extending the mattress platform make sure the calf extension sheet is clipped over the end of the mattress platform frame.

To shorten the bed:

Reverse the above procedure.

Bedstripper (linen shelf)

The bedstripper is used for supporting clean linen when the bed sheets are being changed.

Pull out the bedstripper from its closed position below the foot board.

After use, push the bedstripper back to its closed position.

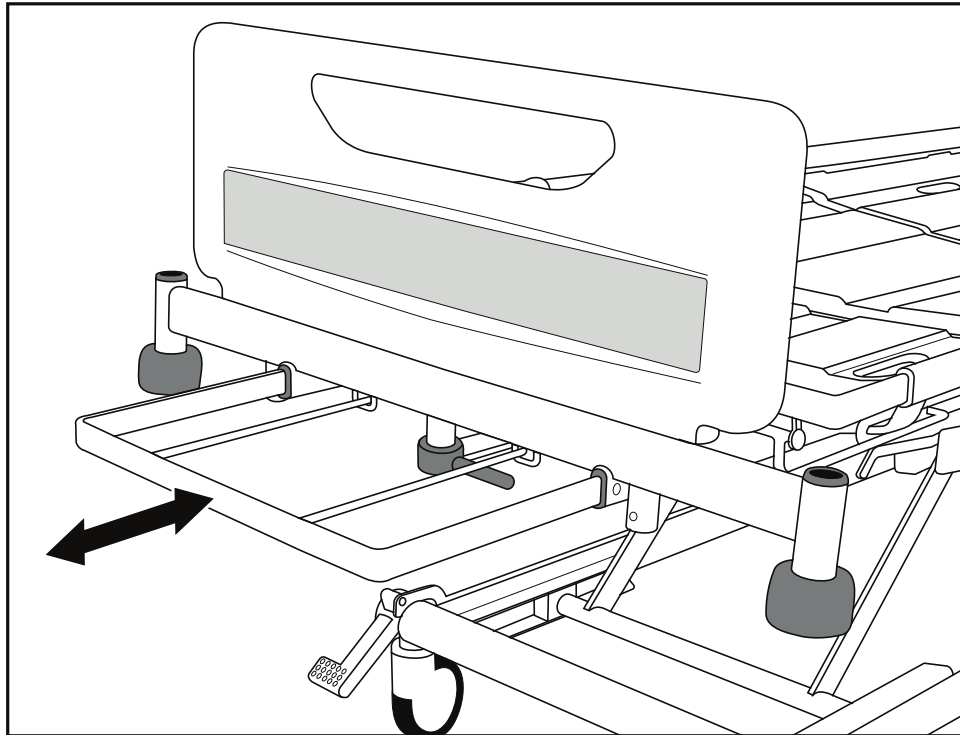


Fig. 17 - Bedstripper (linen shelf)



Caution

The safe working load of the bedstripper is 44 lb. (20kg).

Level the mattress platform before using the bedstripper.

Lifting pole and accessory sockets

Lifting pole sockets (1) are located at the head end of the mattress platform.

Sockets to support compatible accessories are located at the head end (2) and foot end (3) of the bed.

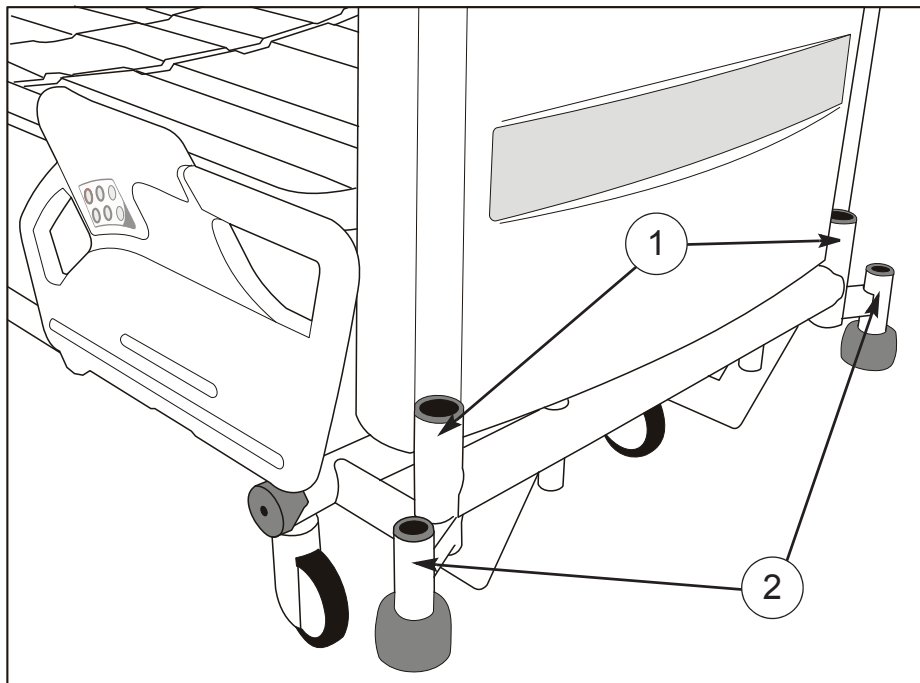


Fig. 18 - Lifting pole and accessory sockets (head end)

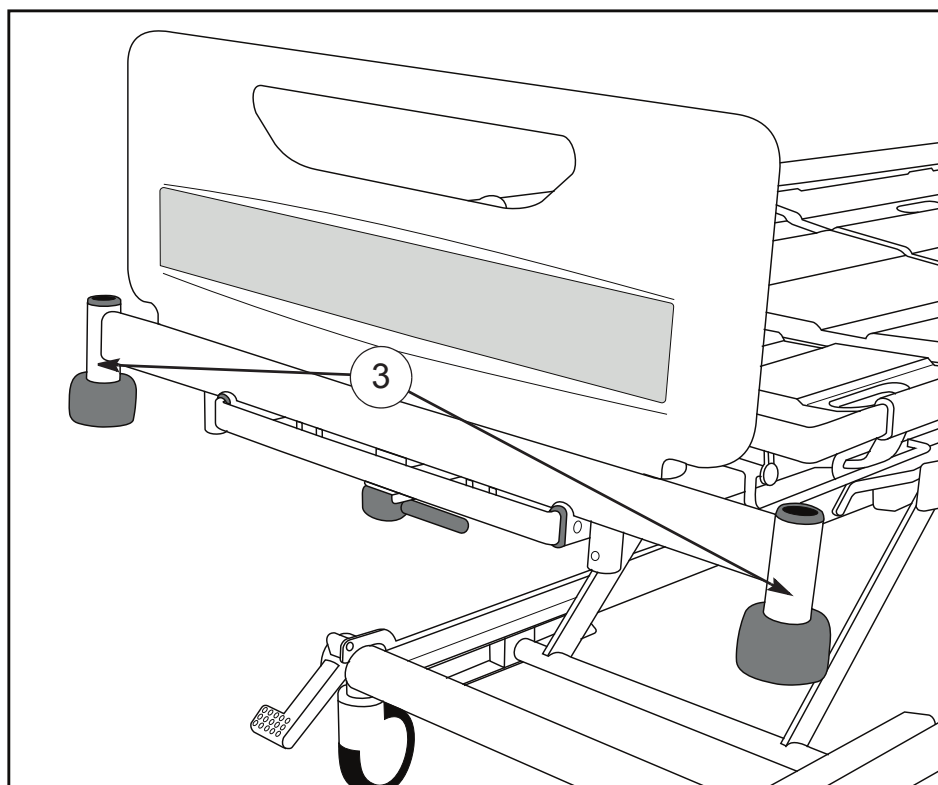


Fig. 19 - Accessory sockets (foot end)

Drainage bag rails

Rails (1) to support drainage bags, etc. are located below the thigh and backrest sections on either side of the bed.

(Optional) The bed may also be fitted with DIN accessory rails (2).

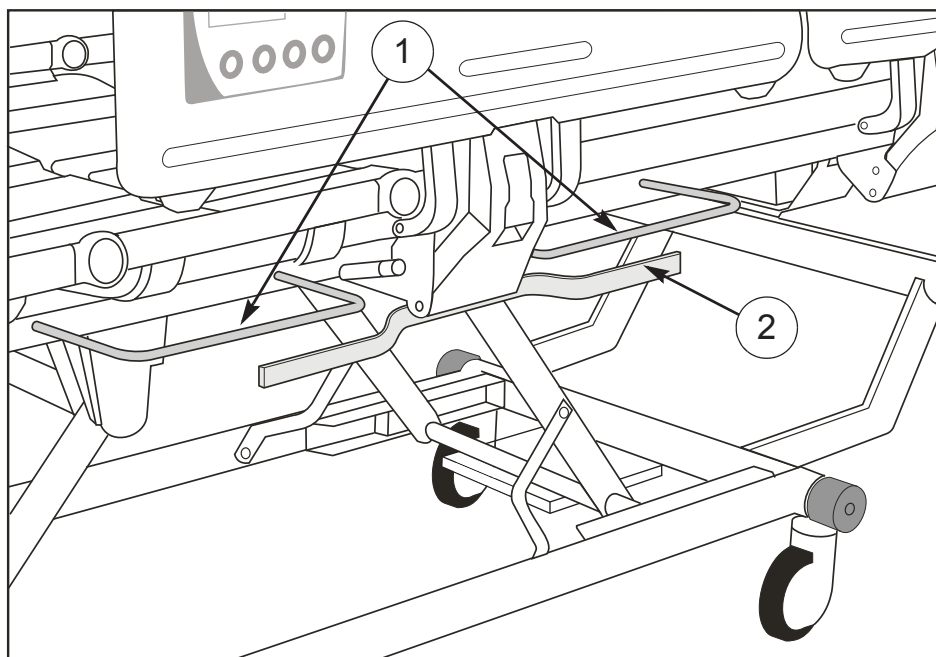


Fig. 20 - Drainage bag rails and DIN rail



Caution

The maximum weight that can be safely supported by each drainage bag rail and DIN rail is 5kg (11 lb.).



Caution

Items placed on the drainage bag rails (such as patient drains and urine bags) are included in the weighing calculation, and can influence measurement of patient weight - see “Advanced Features” on page 43.

Head and foot boards

The head and foot boards can be easily lifted off the bed for access to the patient.

(Optional) The head or foot board may be fitted with two locking catches (1) to prevent accidental removal. **To unlock the head or foot board:** pull out the catches (2) and rotate them a quarter-turn (3); the foot board can now be lifted off the bed.

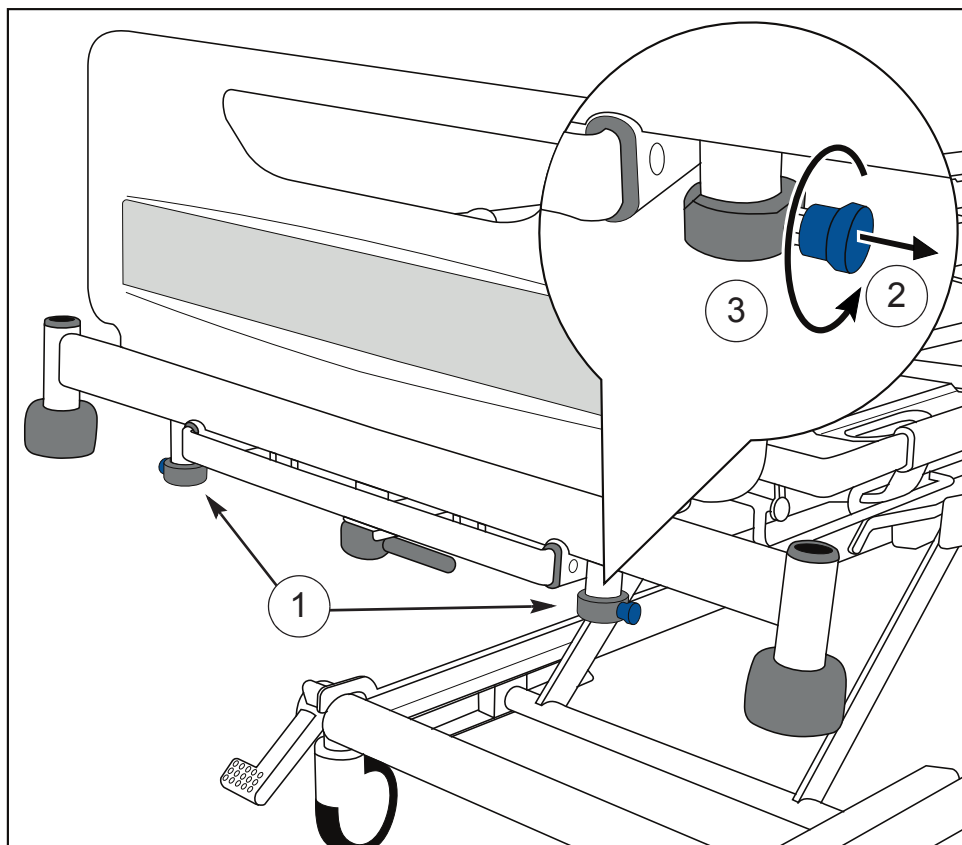


Fig. 21 - Locking foot board (foot end shown in this example)

After replacing the foot board on the bed, rotate the catches until they spring back into the locked position.

Adjusting the mattress platform



WARNING

The controls require only a single press to activate. To prevent unwanted movement of the mattress platform, avoid leaning against the split side rails and keep equipment on and around the bed clear of the controls.

To avoid potential damage or injury, do not leave oxygen bottle or any other obstacles under the bed frame while operated.

Controls for use by the patient and caregiver are built into the head end split side rails. These operate the bed's basic functions. For patients who find it difficult to use the split side rail controls, a separate handset is available as an optional extra.

An Attendant Control Panel (ACP) for use only by the caregiver is built into the foot end split side rails. This provides full control of all the bed's functions.

The functions of the patient and caregiver controls, and the ACP, are described over the next few pages.

To adjust the mattress platform: press and hold the appropriate button until the required position is achieved. Movement will continue until the button is released or the limit of travel is reached.



Caution

Do not place anything on the electrical box (1) as it may be damaged or obstruct the movement of the mattress platform.

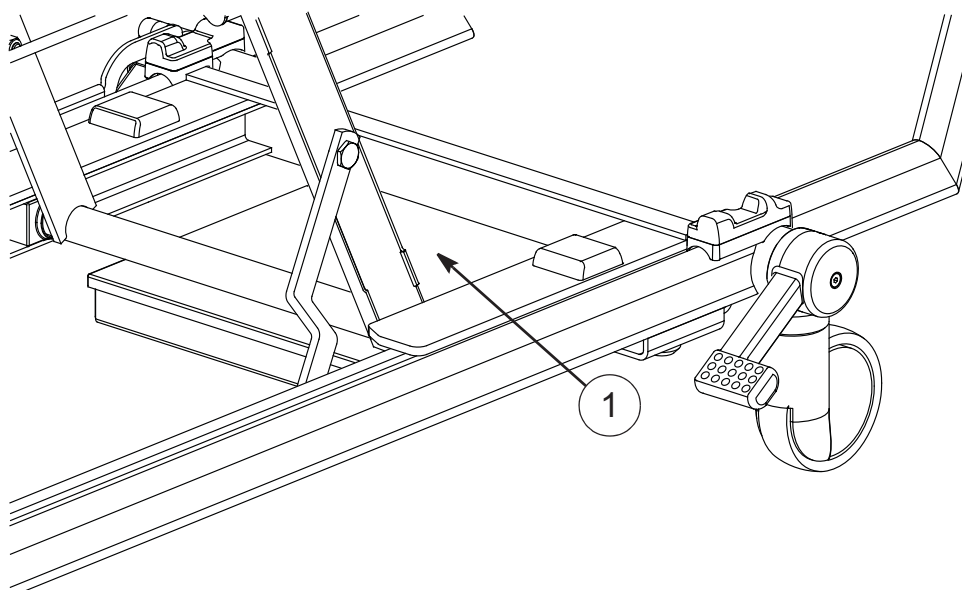


Fig. 22 - Electrical box

NOTE

If a warning tone (beep) sounds when pressing a button, this indicates that the bed is operating on the backup battery - refer to the section “Backup battery” on page 41.

NOTE

If a button is held down for more than 90 seconds, the function will be automatically inhibited until the button is released. The function must then be unlocked as described in the section “Function lockout” on page 40.

Patient controls

The patient controls are located on the inside panel of both head end split side rails.

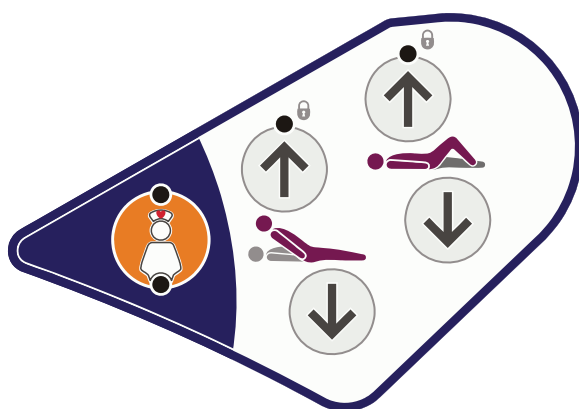


Fig. 23 - Patient controls (patient's left hand side)



WARNING

The patient should be shown how to use these controls by the caregiver.

Caregiver controls

The caregiver controls are located on the outside panel of both head end split side rails.

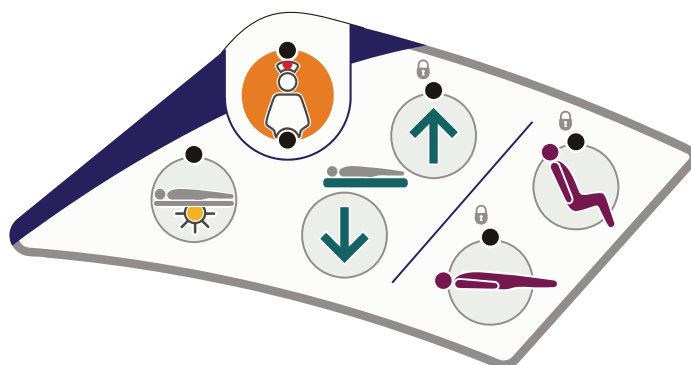


Fig. 24 - Caregiver controls (patient's right hand side)

Thigh section



These buttons raise and lower the thigh section.

When the thigh section is first raised from the flat position, the calf section will be in the Fowler position (angled downwards).

To change the calf section to the vascular (horizontal) position, refer to the section “Attendant Control Panel (ACP)” on page 38.

Backrest angle



These buttons raise and lower the backrest.

Auto-Chair/Bio-Contour



The *Auto-Chair up* button simultaneously raises the backrest and thigh sections, pausing when the backrest reaches 45° (the Bio-Contour position). Continue to hold the button down to lower the foot end of the mattress platform into a chair position.

If the backrest angle is greater than 45°, it will return to 45° to prevent the patient from tipping forwards.



The *Auto-Chair down* button returns the mattress platform to a flat and level position.

Mattress platform height



These buttons raise and lower the mattress platform.

All sections will lower at maximum speed until the bed reaches low height (40cm*) where it will continue to lower at half speed until it has reached extra low height (32cm*).

(*Low height and extra low height dimensions are for reference only.)

NOTE

The mattress platform will not lower to extra low height if the bed platform is tilted (in Trendelenburg or reversed Trendelenburg position).

When the mattress platform is at minimum height, the Auto-Chair function is not available.



WARNING

At minimum height, clearance underneath the bed is reduced. Keep your feet away from the areas below the split side rails and take extra care when using patient hoists or similar equipment.

To avoid potential damage or injury, do not leave oxygen bottle or any other obstacles under the bed frame while operated.

Underbed light

The underbed light illuminates the floor on either side of the bed.



Press this button to turn the underbed lights on or off. The indicator above the button will light when the underbed lights are on.

Nurse call



Press the **Nurse Call** button to request assistance. The indicator above the button will light to confirm operation.

At the nurse's station, the call location will be displayed and/or an audible alert will sound, depending on the type of nurse call system.

Procedures to reset nurse call vary from one system to another. Refer to the manufacturer's instructions for use.

After the call is acknowledged, the indicator below the **Nurse Call** button will light to reassure the patient that their request has been received.

Models 9700X and 9800X only

Microphones and loudspeakers in the head end side rails allow personnel at the nurse's station to speak with the patient



WARNING

The nurse call function should be checked periodically for correct operation; as a minimum, Arjo recommends that this should be done before each new patient uses the bed and whenever the nurse call cable has been disconnected. Failure to carry out this check may result in alarms not being indicated at the nurse's station.

**Patient
handset**

The controls on this handset operate in the same way as those on the side rails (see page 35 and page 36).



WARNING

Store the handset on the side rail using the clip on the back; this will help to prevent accidental operation of the controls.

The patient should be shown how to use the handset by the caregiver.

Take care not to squeeze or trap the handset cable between moving parts of the bed.

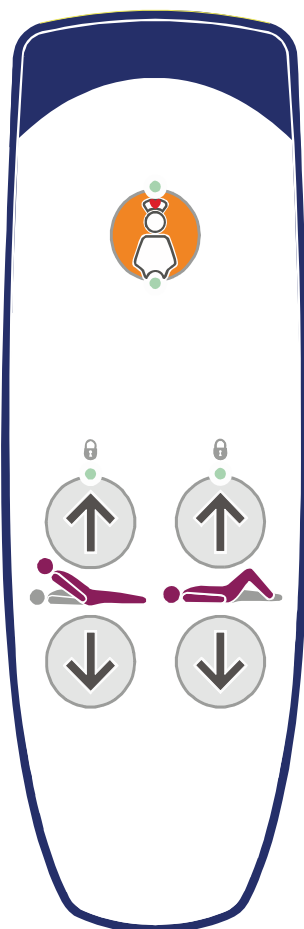


Fig. 25 - Patient handset

Attendant Control Panel (ACP)

Attendant Control Panels are located on the outside panels of both foot end split side rails. The ACP on the left side and right side of the bed have different button layouts.

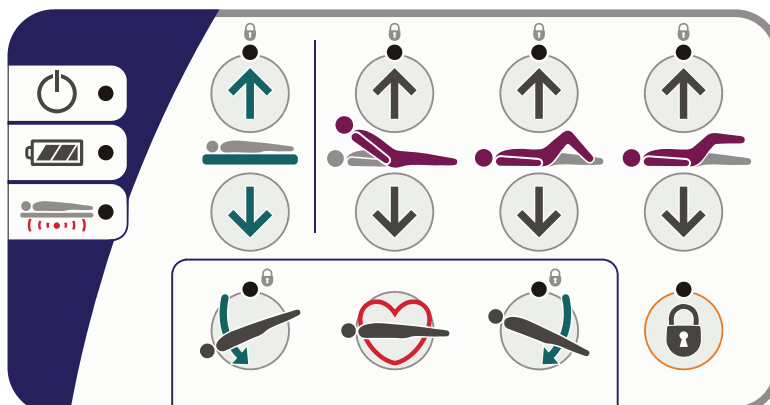


Fig. 26 - Attendant Control Panel (patient's right hand side)



Power on indicator - lights when the bed is connected to the electricity supply.



Battery indicator - refer to the section “Backup battery” on page 41.



Anti-Entrapment System (AES) indicator - refer to the section “Anti-entrapment system” on page 50.

Mattress platform height



These buttons raise and lower the mattress platform.

All sections will lower at maximum speed until the bed reaches low height (40cm*) where it will continue to lower at half speed until it has reached extra low height (32cm*).

(*Low height and extra low height dimensions are for reference only.)

NOTE

The mattress platform will not lower to extra low height if the bed platform is tilted (in Trendelenburg or reversed Trendelenburg position).



WARNING

Before lowering the bed, make sure that the space between the mattress frame and chassis is free of persons, limbs, bedding or other objects.

To avoid potential damage or injury, do not leave oxygen bottle or any other obstacles under the bed frame while operated.



WARNING

At minimum height, clearance underneath the bed is reduced. Keep your feet away from the areas below the split side rails and take extra care when using patient hoists or similar equipment.



WARNING

If the head end panel has been removed there is an increased risk of entrapment between the backrest and chassis when the backrest is being lowered. Make sure that the space between the chassis and backrest is free of persons, limbs, bedding or other objects.



Backrest

These buttons raise and lower the backrest.

The backrest will pause when it reaches an angle approximately 30° above the horizontal.

Thigh section

These buttons raise and lower the thigh section.



When the thigh section is first raised from the flat position, the calf section will be in the Fowler position (angled downwards).

To change the calf section to the vascular (horizontal) position, refer to Calf section below.

Calf section

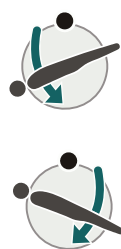
These buttons raise and lower the calf section, i.e. adjust the kneebreak angle.



NOTE

The thigh section must be raised before the calf section can be raised.

Tilt angle



This button lowers the head end of the mattress platform (Trendelenburg position).

This button lowers the foot end of the mattress platform (reverse Trendelenburg position).

NOTE

When returning from a tilted position, the mattress platform will pause at the level (no tilt) position.

CPR position



If the patient suffers a cardiac arrest, press and hold the CPR button. This will flatten the mattress platform (and lower it if necessary) to enable cardio-pulmonary resuscitation to be carried out.

The CPR button overrides the function lockout settings.

Function lockout

Function lockout can be used to prevent operation of the controls, e.g. when inadvertent movement of the mattress platform could injure the patient.



To lock (prevent) or unlock (allow) functions:

Press the Function Lock button. The indicator above the button will light.

Press the ACP button(s) corresponding to the function(s) to be locked or unlocked. The “lock” indicator LED above each function button shows its current status:

LED on = function locked

LED off = function unlocked.



When all functions are locked or unlocked as required, press the Function Lock button again or wait for five seconds. The indicator above the Function Lock button will go out and the lockout settings are stored.

NOTE

The Bio-Contour/Auto-Chair functions use a combination of Backrest, Thigh and Calf movements.

To stop the patient from using the Bio-Contour/Auto-Chair functions the user must lock either the Backrest, Thigh or Calf function from the ACP.

NOTE

Function lockout settings are retained if the bed is disconnected from the electricity supply.

Backup battery



Caution

To ensure the battery is kept fully charged and prevent damage to the battery, the bed should be connected to the electricity supply at all times during normal use.

The battery is intended for short term use only. Its life will be reduced if it is used to power the bed for long periods.

The backup battery allows operation of the bed for short periods when it is disconnected from the electricity supply or in emergency situations when the electricity supply is not available.

The battery's charge level is indicated as follows:



If an intermittent warning tone (beep-beep-beep) sounds when operating the bed, the battery is between 75% and 100% charged.

In this condition all bed functions remain operational.



If a continuous warning tone sounds when operating the bed, the battery is between 10% and 75% charged.

In this condition, all bed functions remain operational.



If the ACP battery indicator lights red, the battery is less than 10% charged.

In this condition, all functions are locked.

Recharging the backup battery

To recharge the battery, connect the bed to the electricity supply. Allow at least eight hours to recharge the battery when it is completely discharged.



While the battery is recharging, the ACP battery indicator lights yellow. The indicator will go out when the battery is fully charged.



WARNING

If the battery is left discharged for long periods, its operational life will be reduced.

The battery must only be recharged using the built-in charger. Do not use a separate charger or power supply.

The backup battery must be ventilated while recharging. Do not cover the battery vent hole or obstruct the area around it.

Low power mode

When the bed is disconnected from mains power, it enters a low power mode to conserve battery power. In this state, the underbed lights, the indicators on the control panels and the weighing system display are turned off.

Pressing any of the control buttons brings the bed out of low power mode. The bed will return to low power mode two minutes after the last control button was pressed.

Duty cycle lockout

Continuous operation of the controls may exceed the duty cycle of the bed's electrical system, causing the indicators above the buttons to flash. After 30 seconds, the indicators will light and all functions are locked.

If this happens, wait for at least 18 minutes then follow the unlocking procedure described in the section "Function lockout" on page 40.

5. Advanced Features

Patient weighing system

The controls for the weighing system are located on the foot end split side rails.



Fig. 27 - Patient weighing system controls



Display: indicates the patient's weight in kilograms. It can also be used to show other information, e.g. bed section angles.



Weigh: this button is used to calculate and display the current patient weight.



Auto Compensation (tare): this button allows items to be added to or removed from the bed without affecting the indicated patient weight.



Zero: this button is used to reset the weighing system when the bed is first set up and before a new patient uses the bed.



Select Units: this button will change the weight readings to either pounds or kilograms. An indicator next to the display will light to show the selected units (lb or kg).



WARNING

The weighing system should only be used by staff trained in the correct use of the weighing function.

The weighing system should only be used in closely supervised environments, where factors influencing patient weight (such as additions to the bed) can be controlled as described in the following instructions for use.

Accuracy

The weighing system is very sensitive and can be affected by a number of external factors. For best performance, observe the following precautions:

- Ensure the bed is on a flat, level surface.
- Ensure the transport locking bolts and washers have been removed before use – refer to page 12.
- Position the bed so that it is clear of obstructions, e.g. walls, furniture, cables and curtains.
- Ensure the patient is fully on the mattress during weighing.
- While weighing is taking place, the patient should keep as still as possible and other persons should keep clear of the bed.
- Ensure that the patient, pillows and bed linen do not touch the head board during weighing.



Caution

Any item attached to or placed on any part of the bed other than the head board (Fig 28, Item 1) and head end lifting pole accessory sockets (Fig 28, Item 2) will influence the patient weighing system.

Make sure the mains cable is free of the head board and any fixed part of the bed. If the cable becomes trapped it can affect the accuracy of the weighing system.

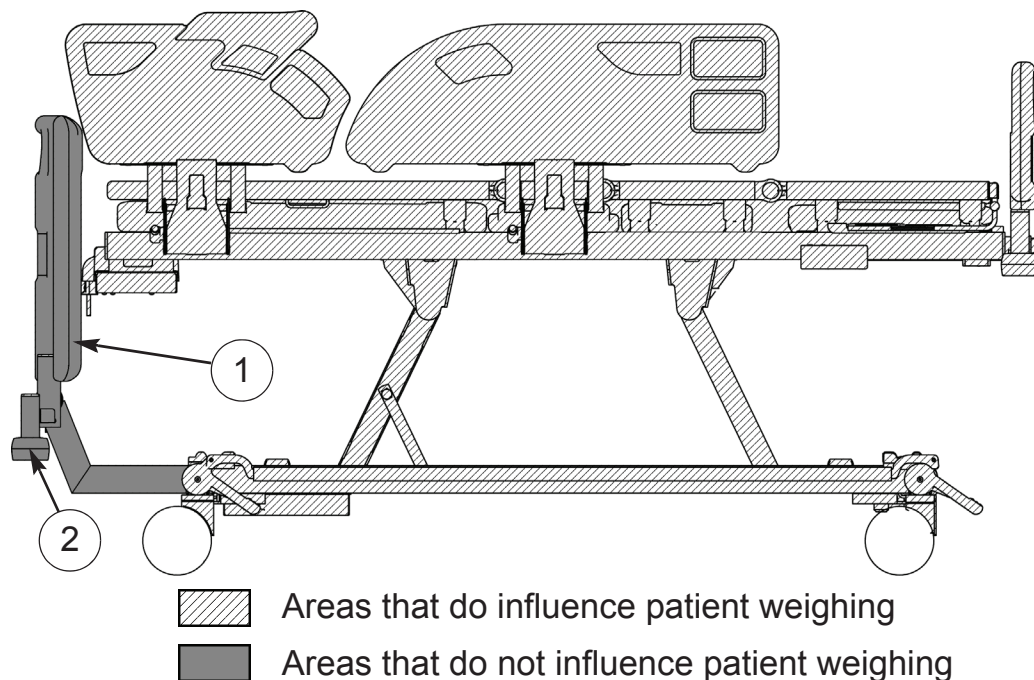


Fig. 28 - Areas of patient weighing influence

NOTE

Use the AUTO COMPENSATION feature before adding or removing any items (eg: urine bags, iv poles, mattress pumps, bed-clothes etc.).

Initialisation

After connecting the bed to the electricity supply, the weighing system must be initialised as follows:

1. Place the mattress, bed linen and all necessary accessories on the bed. The patient must not be on the bed at this point.



2. Press the **Zero** button once.



3. After a few seconds the display will read 0.0.

4. The patient can now get onto the bed.

5. The bed cannot be re-zeroed once a patient is on the bed. Use the Auto Compensation feature if adding or removing items from the bed such as linen or accessories



WARNING

The weighing system is intended to provide reference data only. The weighing system is not intended to provide readings upon which medication dosage decisions are made.



Caution

The weighing system **MUST** be zeroed every time a new patient is to be placed on the bed.



Caution

The weighing system **MUST** be zeroed every time a mattress is changed.



Caution

The weighing system cannot be zeroed if a mattress or accessories weighing more than 35kg (77 lb) are fitted. To ensure the bed can be zeroed correctly, only use Arjo approved mattresses.

Weighing



To calculate and display the patient's weight:

1. With the patient lying centrally on the bed, press the **Weigh** button once.
2. The display will show a moving circular pattern until a stable weight reading is obtained.
3. The patient's weight will be displayed for ten seconds then the display will go blank.

Weighing Units



Weight readings can be viewed in pounds or kilograms by pressing the **Select Units** button. An indicator next to the display will light to show the selected units (lb or kg).

To lock the Select Units button so that the display always shows readings in either pounds or kilograms:

Hold down the Function Lockout button. Then press and hold the Select Units button. Keep both buttons pressed until you hear a "beep". Check that the required indicator is lit (lb or kg).

Normal operation of the Select Units button can be restored by repeating this procedure.

NOTE

In kg mode, weights are shown correct to the nearest 500g.

In lb mode, weights are shown correct to the nearest 0.5lb.

Auto Compensation



The Auto Compensation facility allows weight (up to a maximum of 100kg, 220 lb.) to be added to or removed from the bed, without affecting the indicated patient weight.

1. With the patient lying on the bed, press the **Auto Compensation** button once.
2. The display will show a moving circular pattern until a stable weight reading is obtained.
3. The display will show **AUTO** to indicate that the system is in Auto Compensation mode.
4. Add or remove accessories, bed linen, pillows, etc. as required.
5. Press the **Auto Compensation** button again.
6. The display will show a moving circular pattern for a few seconds then revert to showing the patient's weight.



Caution

The weighing system requires periodic calibration to ensure accuracy. See "Preventive maintenance" on page 58.

Error Codes

Error codes are shown on the display. They are used to indicate a problem with the weighing system; this may be due to an operator error or a possible fault condition.

The table below shows common error codes with their meanings and possible causes.

Display	Cause	Solution
E001	Zero on battery power	Connect bed to mains supply and re-initialise the weighing system - see page 45
E002	Auto Compensation weight decrease more than 100kg (220 lb.)	Replace weight removed from bed
E003	Auto Compensation weight increase more than 100kg (220 lb.)	Remove added weight from bed
E102	A stable weight reading was not obtained within 10 seconds	Refer to the points listed in the section "Accuracy" on page 44

NOTE

If the display shows an error code other than those given above, refer to the product service manual or contact an approved Arjo service agent.

Angle indication

When operating the controls for backrest or tilt, the weighing system display shows the approximate angle in degrees of the selected function.



Angles are shown relative to the floor, so the displayed values of backrest angle and thigh angle change when the mattress platform is tilted.



The tilt angle is shown as a negative value for head down tilt and a positive value for foot down tilt.

VariZone™ patient movement detection

The patient movement detection system can be set to alarm when undesired movement of the patient occurs. The sensitivity of the patient movement detection, relative to the centre of the mattress platform, can be varied incrementally.

The controls for the patient movement detection system are located on the foot end split side rails.

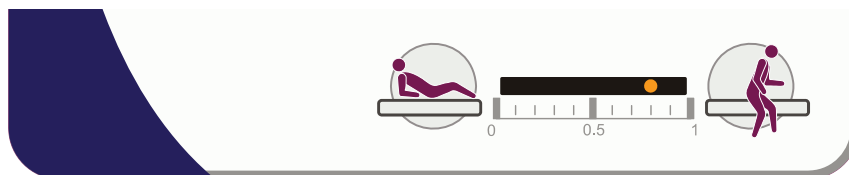
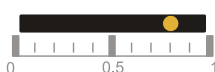


Fig. 29 - Patient movement detection controls



In Bed: this button activates/deactivates patient movement detection and increases the sensitivity of the system.



Patient movement detection threshold display: an indicator shows the current system status and the selected sensitivity of patient movement detection.



Egress: this button activates/deactivates patient movement detection and decreases the sensitivity of the system.



WARNING

The patient movement detection function should be checked periodically for correct operation and before each new patient uses the bed.

Mattresses that are not approved by Arjo should be validated by the user to ensure correct operation with the *VariZone* system.

NOTE

Adjusting the mattress platform profile while patient movement detection is active can trigger an alarm if patient movement detection is set to a high sensitivity.

Operation

Before activating patient movement detection, make sure that:

- The patient's weight has been measured and recorded.
- All additional items (e.g. accessories) have been accounted for using the Auto Compensation function.
- The weighing system display is blank.



WARNING

Before using patient movement detection, verify that the alarm can be easily heard by caregivers, e.g. at the nurse's station.



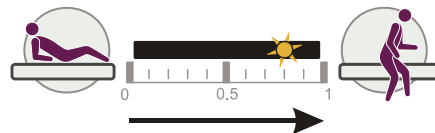
To activate patient movement detection, press either the **In Bed** button or **Egress** button for two seconds.

The threshold display indicator will flash to show the alarm threshold level.

The further to the left the flashing indicator is, the lower the alarm threshold, and small movements of the patient in bed will be detected.

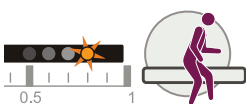
The further to the right the flashing indicator is, the higher the alarm threshold, and only large movements, such as the patient exiting the bed, will be detected.

Lower threshold



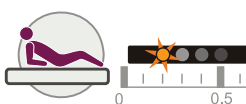
Higher threshold

To increase the patient movement detection threshold:

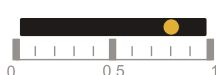


Press and hold the **Egress** button; the flashing indicator will move towards the right. When the required threshold is reached, release the button.

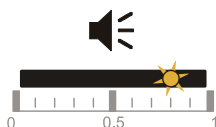
To reduce the patient movement detection threshold:



Press and hold the **In Bed** button; the flashing indicator will move towards the left. When the required threshold is reached, release the button.

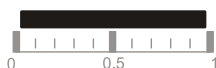


After a few seconds the indicator will stop flashing and remain lit to show that patient movement detection is active.



If movement of the patient above the set threshold is detected, an audible alarm will sound and the threshold indicator will flash.

To cancel the alarm or deactivate patient movement detection:



Press the **In Bed** button or **Egress** button once.

The alarm will be silenced and the threshold display indicator will go out to show that movement detection is deactivated.

Anti-entrapment system

The anti-entrapment system is designed to detect patient entrapment between the base and mattress platform when the mattress platform is lowered, or is placed into tilt or Auto-Chair. The system is permanently active and cannot be switched off.

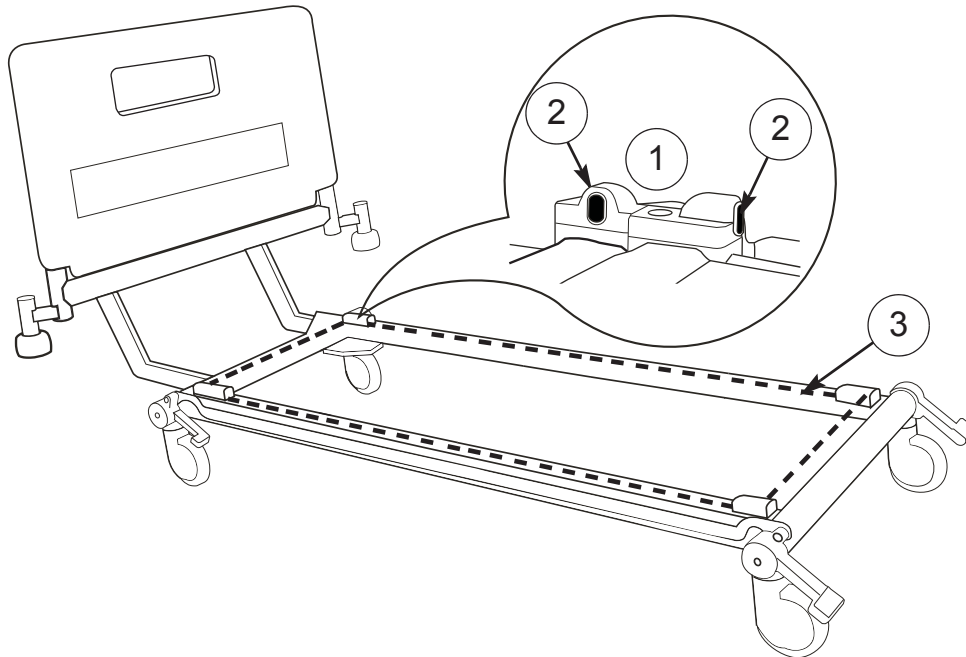


Fig. 30 - Anti-entrapment sensors and beam

There are four infra-red sensors (1), one above each castor, which generate an invisible beam around the base of the bed (3).



If the beam is interrupted (e.g. by a patient's limb) while the mattress platform is lowering, the mattress platform stops moving and the weighing system display shows *AES*.



In addition, the AES indicator on the ACP lights.

Upward movement of the mattress platform is not affected.

NOTE

The anti-entrapment system may also be triggered if the beam is interrupted by bed linen, etc.



WARNING

Clean the lenses (2) of the infra-red sensors regularly using a soft dry cloth.



WARNING

SafeSet visual status indicators are only for use with patients at risk of falls and should not be used with patients that are at risk of climbing over the side rails.

SafeSet visual status indicators provide a quick visual indication of optimum bed settings for patients identified as being at risk of falls.

SafeSet visual status indicators show four safety-critical bed parameters:

- Brake setting
- Side rail position
- Mattress platform height
- Movement detection status.

Two identical SafeSet indicator panels are located just below the foot board.

Indicator lights (1) above each symbol light red to show a potentially unsafe condition, or green to indicate a safe condition.

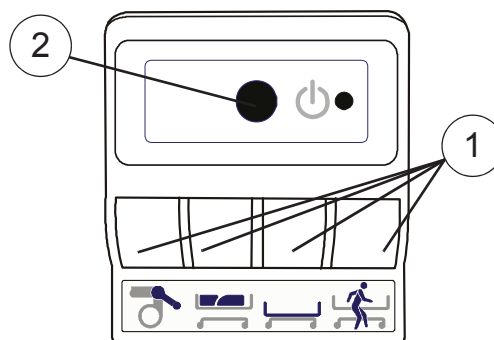


Fig. 31 - SafeSet indicator panel

Symbol	Indicator light green ("safe" condition)	Indicator light red ("unsafe" condition)
	Brakes on	Brakes off
	All side rails raised*	If either of the head end panels are lowered. If both foot end panels are lowered.
	Mattress platform at minimum height (or within 25mm of minimum height)	Mattress platform not at minimum height
	VariZone patient movement detection set	VariZone patient movement detection not set

* To comply with FDA guidelines, the system will still show a "safe" condition if one (but not both) of the foot end side rails are down.

The indicator lights are positioned so they can be easily seen at a distance. A sensor (2) will automatically reduce the brightness of the indicator lights in low light conditions, except when an indicator light is showing an unsafe (red) condition.

When *SafeSet* visual status indicators are not being used, the indicator lights can be turned off using the supplied magnetic key fob (3). Swipe the key fob horizontally across the bottom of the *SafeSet* indicator panel as shown to turn the indicator lights off.

Once disabled the lights cannot be re-enabled within 4 seconds

Swipe the key fob again to turn the indicator lights back on.

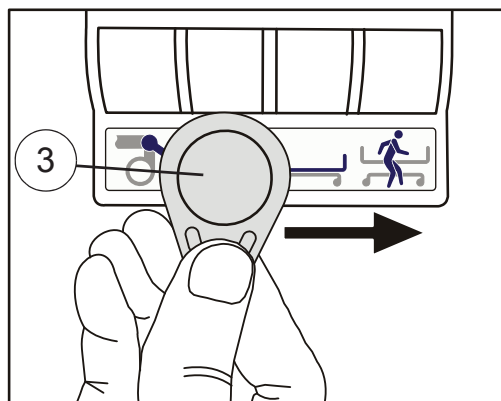


Fig. 32 - Turning the *SafeSet* indicator lights on/off

NOTE

If the bed is disconnected from the electricity supply and operated on battery power the indicator lights will not illuminate.

When reconnected to the electricity supply the indicator lights do not automatically illuminate. Swipe the fob to re-enable.

This is by design and is intended to conserve battery longevity.

Monitor bed status through the RS232 connection

The bed continuously transmits data about its status through an RS232 connection at the head end of the bed (see page 15).

The transmitted data can be recorded by a compatible device for monitoring purposes.

NOTE

An RS232 serial cable is not supplied by Arjo.

Data is transmitted every ten seconds and includes the following information:

- Patient weight
- Bed exit alarm (on or off)
- Backrest Angle in degrees relative to horizontal
- Bed height at low position (yes/no)
- Side rail position (up/down)
- Brake position (on/off)

This information can be stored in a database.



WARNING

Data retrieved from the RS232 connection is not intended to be used to make clinical decisions. All patient diagnosis, treatment and care should be performed under the supervision of an appropriate healthcare professional.

Controls for television and lighting

Pushbutton controls for television and lighting are located on the head end side rails. The side rails also contain loudspeakers for television sound.

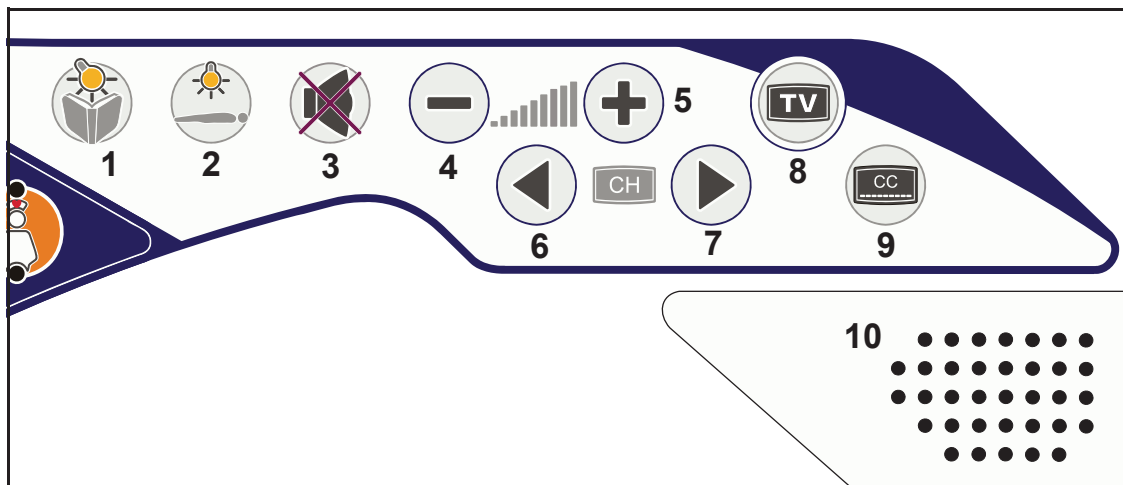


Fig. 33 - TV and lighting controls (patient's right hand side)

1. Reading lamp on/off
2. Main room lights on/off
3. Sound on/off (mute)
4. Decrease volume
5. Increase volume
6. Channel down
7. Channel up
8. Television on/off
9. Closed Captioning on/off
10. Loudspeaker

The bed must be connected to a compatible nurse call system for the television (TV) and lighting controls to operate. The bed's electronics will recognize the type of television in use and configure the controls automatically.

To obtain a list of compatible TVs, or if you encounter any problems with the TV and lighting controls, please contact the Arjo Service Department.

6. Product Care



WARNING

Disconnect the bed from the electricity supply before starting any cleaning or maintenance activity. The bed will still operate on battery power if the function has not been locked on the ACP.

Mattress platform sections

The four mattress platform sections (backrest, seat, thigh and calf) can be removed by pulling them upwards off the mattress platform frame.

Lift off the calf extension sheet (1) before removing the calf section (2).

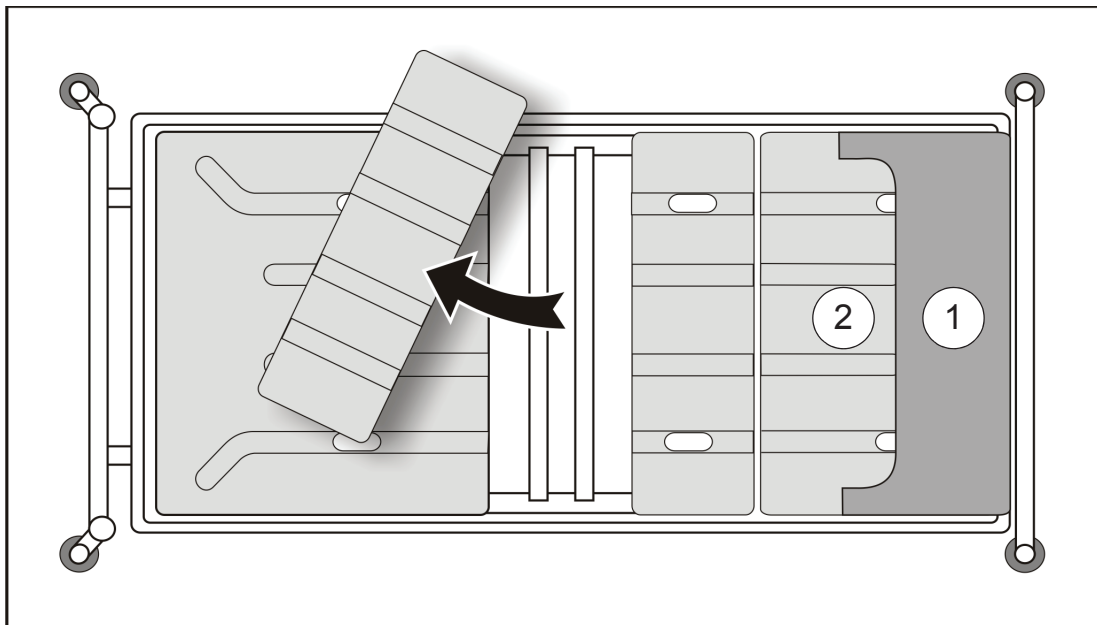


Fig. 34 - Mattress platform sections (top view)

To replace each section, make sure it is correctly positioned on the mattress platform frame then press down firmly until it snaps into place.

Replace the calf extension sheet (1) by clipping it over the end of the mattress platform frame.

Decontamination



WARNING

Do not allow the mains plug or power supply cord to get wet.



Caution

Do not use abrasive compounds or pads, or phenol-based disinfectants.

Do not use jet stream cleaning or wash tunnels.

Do not remove grease from the actuator pistons.

NOTE

These instructions also apply to accessories but not to mattresses. For lifting straps and handles, refer to the manufacturer's instructions supplied with the product.

Cleaning

The bed should be cleaned and disinfected weekly, and before a new patient uses the bed.

Remove the mattress and all accessories from the bed.

The head/foot boards and mattress platform sheets should be removed from the bed for cleaning.

Wearing suitable protective clothing, clean all surfaces with a disposable cloth moistened in hand hot water and a neutral detergent.

Start by cleaning the upper sections of the bed and work along all horizontal surfaces. Work methodically towards the lower sections of the bed and clean the wheels last. Take extra care to clean areas that may trap dust or dirt.

Wipe over with a new disposable cloth moistened with clean water, and dry with disposable paper towels.

Allow the cleaned parts to dry before replacing the mattress.

Disinfecting

After cleaning the bed as described above, wipe all surfaces with sodium dichloroisocyanurate (NaDCC) at a concentration of 1,000 parts per million (0.1%) of available chlorine.

In the case of pooling body fluids, e.g. blood, the concentration of NaDCC should be increased to 10,000 parts per million (1%) of available chlorine.

***Use of other
disinfectants***

Arjo recommends sodium dichloroisocyanurate (NaDCC) as a disinfectant because it is effective, stable and has a fairly neutral pH. Many other disinfectants are used in healthcare facilities, and it is not possible for Arjo to test each one to determine whether it may affect the appearance or performance of the bed.

If facility protocols require the use of a disinfectant other than NaDCC (e.g. diluted bleach or hydrogen peroxide), it should be used with care and in accordance with the manufacturer's instructions.

Preventive maintenance

This product is subject to wear and tear during use. To ensure that it continues to perform within its original specification, preventive maintenance procedures should be carried out at the intervals shown.



WARNING

This list indicates the minimum recommended level of preventive maintenance. More frequent inspections should be carried out when the product is subjected to heavy use or aggressive environments, or where required by local regulations.

Failure to carry out these checks, or continuing to use the product if a fault is found, may compromise the safety of both the patient and caregiver. Preventive maintenance can help to prevent accidents.

NOTE

Product cannot be maintained and serviced while in use with the patient.

Actions to be done by caregiver	Daily	Weekly
Check operation of split side rails	✓	
Check patient handset and cable		✓
Check operation of <i>SafeSet</i> indicators and make sure cables are not damaged or stretched		✓
Visually check castors		✓
Check operation of the manual CPR release handles on both sides of the bed		✓
Visually check power supply cord and mains plug		✓
Carry out a full test of all electrical bed positioning functions (backrest, height, tilt, etc.)		✓
Check that the patient controls, caregiver controls and Attendant Control Panels operate correctly		✓
Check that the weighing system controls operate correctly		✓
Check operation of the anti-entrapment system and clean the sensor lenses (see page 50)		✓
Check the mattress for damage and fluid ingress		✓
Examine the lifting pole, strap and handle (Optional)	✓	

If the result of any of these tests is unsatisfactory, contact Arjo or an approved service agent.



WARNING

The procedures below must be carried out by suitably trained and qualified personnel. Failure to do so may result in injury or an unsafe product.

Actions to be done by qualified personnel	Yearly
Check that the bedstripper (linen shelf) remains in its closed position when maximum foot down tilt is applied	✓
Check that the bed operates correctly using the backup battery as described in the section “Battery test” on page 61.	✓
Check operation the of castors, paying special attention to braking and steering functions	✓
Check that the bed extension locks securely in all three positions	✓
Examine the power supply cord and mains plug; if damaged, replace the complete assembly; do not use a rewirable plug	✓
Examine all accessible flexible cables for damage and deterioration	✓
Check all accessible nuts, bolts and other fasteners are present and correctly tightened	✓
Check any accessories fitted to the bed, paying particular attention to fasteners and moving parts	✓

Weighing system

Be sure to follow all local guidelines or regulations regarding weigh scale verification and calibration.

The weigh system should be re-verified before the date of expiry shown on the bed. Make sure the bed is re-verified every 12 months. If verification does not pass, the weigh system should be re-calibrated.

Refer to the product service manual for verification and calibration procedures or contact an approved Arjo service agent.

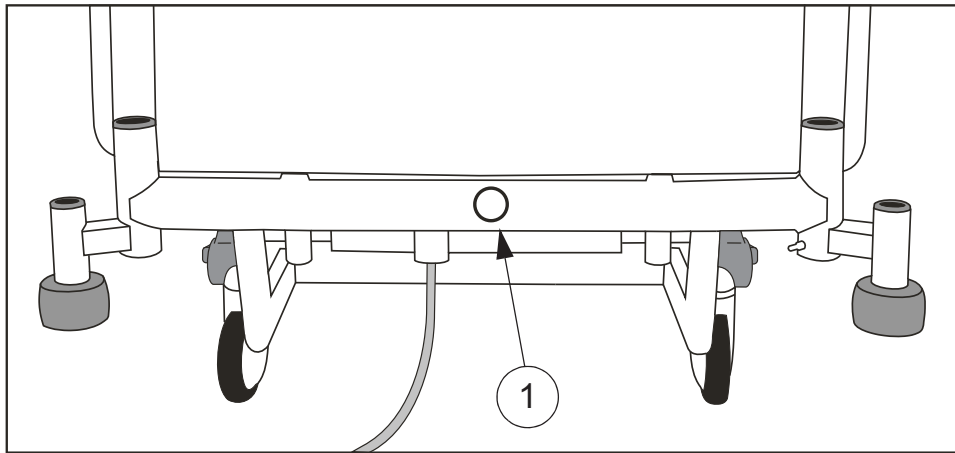


Fig. 35 - Weighing Calibration Expiry Label

Battery test

Check the condition of the backup battery by carrying out the following test.

1. Disconnect the bed from the electricity supply.



2. Raise the mattress platform to maximum height - ignore the battery warning tone.



3. Raise the backrest and thigh sections as far as they will go.



4. Press and hold the CPR button. The mattress platform will flatten and lower to a mid-height position.



5. Lower the mattress platform to minimum height.



6. Apply maximum head down tilt (Trendelenburg).



7. Return the mattress platform to the level position; then apply maximum foot down tilt (reverse Trendelenburg).

If this test is not completed successfully, connect the bed to the electricity supply for at least eight hours to recharge the battery then perform the test again. If the bed fails a second time, contact Arjo or an approved service agent.

To maintain best performance, the backup battery should be replaced every four years by an approved service agent.

Troubleshooting

If the equipment fails to operate correctly, the table below suggests some simple checks and corrective actions. If these steps fail to resolve the problem, contact Arjo or an approved service agent.

Symptom	Possible Cause	Action
"Beeping" sound when using the bed	Bed is operating from the backup battery	Check the power supply cord is plugged in and the electricity supply is OK Check fuse in mains plug (where fitted)
One or more bed functions inoperative	Function(s) locked on ACP	Unlock function(s) on ACP
Bed is difficult to manoeuvre	Brake pedals in "steer" position	Place brake pedals in the "free" position
All indicators on ACP lit or flashing	Duty cycle of electrical system exceeded	Refer to the section "Duty cycle lockout" on page 42
Mattress platform cannot be lowered	Height control software error	Raise the mattress platform to maximum height to reset software
Error code E300 is displayed	Control button pressed for more than 90 seconds	Remove pressure from control buttons. If error code does not clear call an Arjo approved service engineer
Mattress platform cannot be lowered and error code AES is displayed	Anti-Entrapment system activated	Remove obstruction(s) from below the mattress platform. If bed still cannot be lowered, call an Arjo approved service engineer
Error code E410	Service Error	Call an Arjo approved service engineer

Symptom	Possible Cause	Action
Error code E410 and flashing control panel lights	Flat battery	<p>If the bed has just been delivered or has been left in storage for a long period of time without charge, plug the bed into mains power and leave to charge as per instructions.</p> <p>If the problem persists call an Arjo approved service engineer</p>
Alarm sounds when patient moves on the bed	Movement detection threshold set too low	Increase VariZone patient movement detection threshold setting
Errors in indicated patient weight	Mattress platform obstructed	<p>Check the mattress platform is not touching furniture, curtains, cables, etc.</p> <p>Check that weight has not been added to the bed without using the auto-compensation function.</p>
Nurse call function not working	Nurse call cable not connected or wrong type	Check cable is of correct type and properly connected
Backrest does not lower using the manual CPR release handle	Insufficient patient weight applied to the backrest	Push the backrest down to initiate lowering
Error code E001	Zero on battery power	Connect bed to mains supply and re-initialise the weighing system - see page 45
Error code E002	Auto Compensation weight decrease more than 100kg (220 lb.)	Replace weight removed from bed
Error code E003	Auto Compensation weight increase more than 100kg (220 lb.)	Remove added weight from bed
Error code E102	A stable weight reading was not obtained within 10 seconds	Refer to the points listed in the section "Accuracy" on page 44

Symptom	Possible Cause	Action
TV/lighting controls not working	Nurse call cable not connected or wrong type	Check cable is of correct type and properly connected
Red brake light on <i>SafeSet</i> indicator panel but the brakes are in the on position	Brake sensor failure	Replace brake sensor
Red side rail light on <i>SafeSet</i> indicator panel but the side rails are in the raised position	Side rail sensor failure	Replace side rail sensor
No lights on <i>SafeSet</i> indicator panel	Bed disconnected from electricity supply	Bed running in power conservation mode. Reconnect electricity supply and swipe fob to reactivate <i>SafeSet</i> indicator panel.
<i>SafeSet</i> indicator panel lights always bright	Light sensor obscured or failed.	Remove any items obscuring the <i>SafeSet</i> indicator panel light sensor. If no improvement call an Arjo approved service engineer

Product lifetime

The lifetime of this equipment is typically ten (10) years. “Lifetime” is defined as the period during which the product will maintain the specified performance and safety, provided it has been maintained and operated in conditions of normal use in accordance with the requirements in these instructions.

7. Accessories


Recommended accessories for the bed are shown in the table below. Note that some items may not be available in all countries.

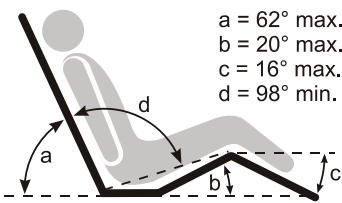
Accessory	Product code
Lifting pole with strap and handle	ENT-ACC01
IV pole	ENT-ACC02
IV pole steel hooks	ENT-ACC02 SH
Three-position lifting pole with strap and handle	ENT-ACC03
Angled IV pole	ENT-ACC04
Fracture frame	ENT-ACC05
Syringe pump holder	ENT-ACC07
Oxygen bottle holder (for CD, D, E & PD cylinder)	ENT-ACC08
Small traction assembly	ENT-ACC10
ACP holder	ENT-ACC11
Additional hooks for IV pole	ENT-ACC14
Power supply cord storage hook (supplied with bed)	ENT-ACC15
Oxygen bottle holder (for B5 cylinder)	ENT-ACC18
Urine bottle holder	ENT-ACC19
Heavy duty IV pole	ENT-ACC24
Transducer mounting pole	ENT-ACC26
Head end traction assembly	ENT-ACC32
Fracture frame adaptor kit for Zimmer equipment	ENT-ACC33/1
Fracture frame adaptor kit for Mizuho-OSI equipment	ENT-ACC33/2
ITU head end panel (head board)	ENT-ACC34
Oxylog [®] equipment bracket	ENT-ACC40
Bed pan holder	ENT-ACC56
Oxygen bottle holder	ENT-ACC58
Monitor shelf	ENT-ACC64
Lifting pole mounted IV fluid bag holder	ENT-ACC65
Foot end infill panels	ENT-ACC66
Urine bottle holder	ENT-ACC69
IV Pole	ENT-ACC71
Monitor shelf	ENT-ACC74


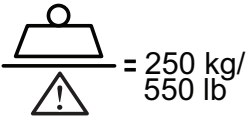
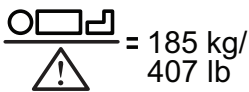




Accessory	Product code
Integrated IV Pole	ENT-ACC89







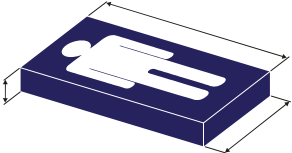
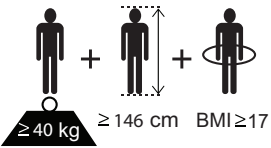
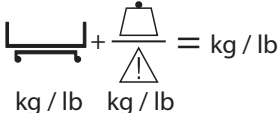




Oxylog is a registered trademark of Dräger Medical.






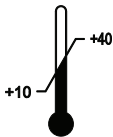

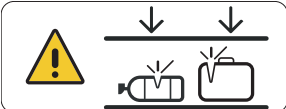
8. Technical Data

General	
Safe working load	250kg (550 lb)
Maximum patient weight	185kg (407 lb)
Product weight (approx.)	180kg (396 lb)
Audible noise	50dB approx.
Operating conditions	
Temperature	10°C to 40°C (50° F to 104 °F)
Relative humidity	20% to 90% at 30°C (86 °F), non-condensing
Atmospheric pressure	700hPa to 1060hPa
Electrical data	
Power input	3A max. at 230V a.c. 50/60Hz 3A max. at 230V a.c. 60Hz (KSA) 5.8A max. at 120V a.c. 60Hz
Duty cycle	10% (2 min. on, 18 min. off)
Safety standards USA/Canada 	EN/IEC 60601-1:2005 AMD1:2012 ANSI/AAMI ES60601-1 (2005) AMD 1 (2012) CAN/CSA-C22.2 No. 60601-1:14 IEC60601-2-52:2015
Electric shock protection	Class I Type B
EMC	Complies with IEC 60601-1-2:2014
Potential equalisation terminal	Complies with EN/IEC 60601-1:2005 AMD1:2012
Liquid ingress protection	IPX4
Backup battery	2 x 12V series connected, sealed, rechargeable lead/acid gel, 1.3Ah
Patient weighing system	
Minimum verification interval (scale division) e	500g (1 lb)
Minimum capacity	10kg (20 lb)
Maximum capacity	250kg (550 lb)

Scales rating	Class III
Dimensions (subject to normal manufacturing tolerances)	
Overall length	
Position 1 (Short)	210 cm (86.2 ins.)
Position 2 (Standard)	230cm (90.6 ins.)
Position 3 (Extended)	242 cm (95.3 ins.)
In-bed length	
Position 1 (Short)	192cm (75.6 ins.)
Position 2 (Standard)	203cm (79.9 ins.)
Position 3 (Extended)	215cm (84.6 ins.)
Overall width	103cm (40.6 ins.)
Height of mattress platform (centre of seat section to floor)	
With 125mm castors	32cm to 76cm (12.6 to 29.9 ins.) Curved Deck Sheets 34cm to 78cm (13.3 to 30.7 ins) Flat Deck Sheets
With 150mm castors	34cm to 78cm (13.3 to 30.7 ins.) Curved Deck Sheets 36cm to 80cm (14.1 to 31.5 ins.) Flat Deck Sheets
Head down tilt angle	12° min.
Foot down tilt angle	12° min.
Mattress size (refer to the section “Mattresses” on page 17)	
Position 2 (Standard)	202cm x 88cm, 12.5 to 18cm thick (79.5 ins. x 34.6 ins, 5 to 7 ins. thick)
Mattress platform angles	 <p> a = 62° max. b = 20° max. c = 16° max. d = 98° min. </p>

End of life disposal	
<ul style="list-style-type: none"> Equipment that has electrical and electronic components should be disassembled and recycled per Waste of Electrical and Electronic Equipment (WEEE) or in accordance with local or national regulation. All batteries in the product must be recycled separately. Batteries are to be disposed in accordance with national or local regulations. Components that are primarily made up of different kinds of metal (containing more than 90% metal by weight) for example bed frame, should be recycled as metals. 	
Transport and storage	
<p>Handle with care. Do not drop. Avoid shock or violent impact.</p> <p>This equipment should be stored in a clean, dry and well-ventilated area which meets the following conditions:</p>	
Temperature	-10°C to 50°C (14°F to 122°F)
Relative humidity	20% to 90% at 30°C (86 °F), non-condensing
Atmospheric pressure	700hPa to 1060hPa
 Caution If the bed is stored for a long time, it should be connected to the electricity supply for 24 hours every three months to recharge the backup battery, otherwise it may become unserviceable.	
Symbols	
 = 250 kg/ 550 lb	Safe working load
 = 185 kg/ 407 lb	Maximum patient weight
	Alternating current (a.c.)
	Caution
	Refer to instructions for use
	Type B applied part Applied parts are considered to be: Upper frame section, Bed controls, Split side rails, Head and Foot Boards

Symbols (continued)	
	Manufacturer / date of manufacture
	Serial number
	Model number
	Waste Electrical and Electronic Equipment (WEEE) - do not dispose of this product in general household or commercial waste
	Potential equalisation terminal
	Protective earth (ground)
	Recommended mattress size
	Recommended patient size
	Total weight of the equipment including its safe working load
	Mattress platform extension
	Calibration expiry Label
	CE marking indicating conformity with European Community harmonised legislation Figures indicate Notified Body supervision.
	Indicates the product is a Medical Device according to EU Medical Device Regulation 2017/745

Symbols (continued)	
	Mandatory to read instructions for use
	Brake operation Label LH
	Brake operation Label RH
	RS232 data connection
	Nurse call data connection
	Indicates min / max temp for use of weigh scales
	Metrology Notified Body number, complies with NAWI directive 2014/31/EU Fictitious example above included “15” representing 2015 for year of affixing and “1234” representing metrology Notified Body.
	Do not leave Oxygen bottle or any other obstacles under the bed frame while operated.

9. Warranty and Service

Arjo standard terms and conditions apply to all sales; a copy is available on request. These contain full details of warranty terms and do not limit the statutory rights of the consumer.

For service, maintenance and any questions regarding this product, please contact your local Arjo office or approved distributor. A list of Arjo offices can be found at the back of this manual.

Have the model number and serial number of the equipment to hand when contacting Arjo regarding service, spare parts or accessories.

10. Electromagnetic Compatibility

Product has been tested for compliance with current regulatory standards regarding its capacity to block EMI (electromagnetic interference) from external sources.

Some procedures can help reduce electromagnetic interferences:

- Use only Arjo cables and spare parts to avoid increased emissions or decreased immunity which can compromise the correct functioning of the equipment.
- Ensure that other devices in patient-monitoring and/or life-support areas comply to accepted emissions standards.

WARNING

Wireless communications equipment such as wireless computer network devices, mobile phones, cordless telephones and their base stations, walkie-talkies, etc. can affect this equipment and should be kept at least 1.5 m away from the equipment.


Intended Environment: Professional Healthcare Facility Environment

Exceptions: HF Surgical Equipment and the RF Shielded room of an ME SYSTEM for magnetic resonance imaging.

WARNING

Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

Guidance and manufacturer's declaration – electromagnetic emission		
Emission test	Compliance	Guidance
RF emissions CISPR 11	Group 1	This equipment uses RF energy only for its internal functions. Therefore its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment. This equipment is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
RF emissions CISPR 11	Class A	
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer's declaration – electromagnetic immunity			
Immunity test	IEC 60601-1-2 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) EN 61000-4-2	±2kV, ±4kV, ±8kV, ±15kV air ±8kV contact	±2kV, ±4kV, ±8kV, ±15kV air ±8kV contact	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material the relative humidity level should be at least 30%
Conducted disturbances induced by RF fields EN 61000-4-6	3V in 0,15 MHz to 80 MHz 6V in ISM and amateur radio bands between 0,15 MHz and 80 MHz 80% AM at 1 kHz	3V in 0,15 MHz to 80 MHz 6V in ISM and amateur radio bands between 0,15 MHz and 80 MHz 80% AM at 1 kHz	Portable and mobile RF communications equipment should be used no closer to any part of the product, including cables, than 1.0m, if the transmitter's output power rating exceeds 1W ^a . Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range ^b . Interference may occur in the vicinity of equipment marked with this symbol: 
Radiated RF electromagnetic field EN 61000-4-3	Professional Healthcare environment 3 V/m 80 MHz to 2,7 GHz 80% AM at 1 kHz	Professional Healthcare environment 3 V/m 80 MHz to 2,7 GHz 80% AM at 1 kHz	
Proximity fields from RF wireless communications equipment EN 61000-4-3	Intentionally left blank 385 MHz - 27 V/m 450 MHz - 28 V/m 710, 745, 780 MHz - 9V/m 810, 870, 930 MHz - 28 V/m 1720, 1845, 1970, 2450 MHz – 28 V/m 5240,5500, 5785 MHz - 9V/m	Intentionally left blank 385 MHz - 27 V/m 450 MHz - 28 V/m 710, 745, 780 MHz - 9V/m 810, 870, 930 MHz - 28 V/m 1720, 1845, 1970, 2450 MHz - 28 V/m 5240,5500, 5785 MHz - 9V/m	
Electrical fast transient/burst EN 61000-4-4	±1kV SIP/SOP ports ±2kV AC port 100kHz repetition frequency	±1kV SIP/SOP ports ±2kV AC port 100kHz repetition frequency	Mains power supply should be that of a typical commercial or hospital environment.
Power frequency Magnetic field EN 61000-4-8	30A/m 50 Hz or 60 Hz	30A/m 50 Hz	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Surge IEC 61000-4-5	±0,5kV ±1kV; ±2 kV, AC Mains, Line to Ground ±0,5kV ±1kV, AC Mains, Line to Line	±0,5kV ±1kV; ±2 kV, AC Mains, Line to Ground ±0,5kV ±1kV, AC Mains, Line to Line	
74 Voltage dips, short interruptions and	0% UT; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°	0% UT; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°	

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