Völker Hospital Bed

User's Manual

Model S 960-2

Edition: 2002-12 - A

Bessere Betten.

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Foreword

We congratulate you on your choice of a Völker hospital bed and would like to thank you for your confidence in our company and its products.

Before purchase, we are sure that you received detailed information and advice that convinced you of the many benefits of our hospital beds – benefits that in this configuration are truly unique.
The fact that a Völker hospital bed – in spite of its many functional features and technical refinements – does not look like a piece of sterile institutional equipment undoubtedly made your decision to purchase all the easier.

This user's manual is intended to provide you with information on the technical features of Völker S 960-1 to help you to get the most out of its many functions.

Michael Hüppe

Vorstand
Völker AG

Foreword

1. General remarks

You have purchased a Völker hospital bed developed and manufactured in accordance with the current state of technical knowledge.

Völker hospital beds fully meet all safety and operational requirements. They are tested in accordance with international standards and carry the CE Seal. This confirms that they fulfil the safety requirements relating to medical products.

Please read the basic safety instructions in Chapter 2. Please also note the further instructions given on subsequent pages, particularly with a view to possible warranty claims.

This user's manual is intended to give you and your staff practical information and tips on the safe and correct use of the S 960-2 hospital bed.

Anybody concerned with putting the bed into service for the first time, or with its operation and maintenance, must read and strictly obey this user's manual, paying close attention to the safety requirements.

To avoid faulty handling and to ensure the trouble-free operation of the S 960-2 hospital bed, this documentation must be available to carers and/or patients at all times.

1.1. Copyright

1.2. Warranty and liability

We accept liability for possible errors and omissions within the terms of warranty laid down in the main contract. Claims for damages – from whatever legal ground they may be held to derive – are expressly excluded.

We reserve the right to make technical changes to the hospital beds described in this user's manual in accordance with technical developments.
We accept no liability whatsoever for damage and/or disruption caused by faulty handling and/or a failure to follow the instructions in this user's manual (see also 4).

2. Safety regulations

These regulations must be read and strictly obeyed!

2.1. German medical products law (MPG) §22, Section 1

The hospital bed may only be put into service, operated and used **a**) as intended by the manufacturer, **b**) in accordance with the provisions of the medical products law (MPG) and its enacted statutory instruments, **c**) with due regard to good technical practice and **d**) in accordance with safety and accident-prevention regulations. ***On no account*** may the bed be used in a faulty condition that could endanger patients, carers or others.

The hospital bed may only be operated by those able to guarantee its correct handling by virtue of their professional qualifications, knowledge and/or experience.

2.2. Intended use

Völker S 960-2 hospital beds are intended to be used solely for the care of patients in patients' rooms in hospitals, clinics and/or nursing institutions.

Any use of Völker hospital beds that deviates in any way whatsoever from this intended use is expressly excluded from possible liability claims.

2.3. Incorrect use

The incorrect use of the bed can be a source of danger. Examples of incorrect use are:

- incorrect operation of electrical functions and unsupervised positioning,
- use of hospital bed with children under 12,
- operation of hospital bed by patients without prior instruction,
- simultaneous operation of electrical functions by different people,
- constant operation of keyboard ('piano playing'),
- connecting electrical devices to bed which are not suitable for the purpose intended (subject to management's duty of care),
- moving bed by pulling on cable,
- disconnecting electric plugs by pulling on cable,
- using bed on sloping surfaces with gradients in excess of 10° (bed brakes designed for a maximum gradient of 10°),
- trying to move bed with brakes applied,
- transporting patients by towing or pushing bed with a vehicle,
- using bed with loads in excess of specified maximum safe working load.

2.4. General safety instructions

CAUTION!
Refer to user's manual!
Please read safety instructions!

WARNING! – Serious injury can be caused when moving powered parts of the bed. Make absolutely sure that there are no parts of the body poking through the safety frames during electrical operation. Ensure without fail that there are no people, pets or objects beneath the bed.

WARNING! – Increased safety measures are necessary when the bed is being used ...
1. ... by a child under 12 years of age,
2. ... by a person with reduced mental faculties,
3. ... for psychiatric purposes.

WARNING! – The optional double-click facility should not be operated when the bed is being used ...
1. ... by a child under 12 years of age,
2. ... by a person with reduced mental faculties,
3. ... for psychiatric purposes.

WARNING! – In order to avoid falls, always return the bed to lowest position after each use of the adjustment functions. Make absolutely sure that
a) the bed is in lowest position before getting into or out of it, and
b) the brakes are applied.

WARNING! – Safety frames only mark the limits of the bed. Other appropriate measures must be used to restrain patients.

WARNING! – Children under 12 and people with reduced mental faculties may only occupy Völker beds when the safety frames are covered by protective covers. Risk of injury. Refer to user's manual.

WARNING! – In order to minimise risk of injury, the following permitted mattress sizes must be strictly observed. If you are not using Völker mattresses, please contact your Völker authorised dealer.

Mattress-size	**Mattress-frame size**
88 x 210 x 12 cm	90 x 210 cm
88x 200 x 12 cm	90 x 200 cm
88 x 197x 15 cm	90x 200 cm
88 x 207 x 15 cm 90 x 210 cm	

WARNING!
Make sure that the cable does not get caught in moving parts.

WARNING!
> Only use original spare parts for repairs.
> Only repair bed when it is in lowest position.
> Pull out power plug before repair or cleaning.

2.5. Electromagnetic/-static interference

To ensure protection against electromagnetic and electrostatic interference (EMV), the S 960-2 hospital bed fulfils all the requirements of the relevant sections of the German medical products law (MPG).

As this bed is not fitted with a control unit with a frequency in excess of 9kHz and in use is mainly motor-driven over short periods, it conforms to EN 55014-1, as foreseen in EN 60601-1-2 36.201.1.4.

2.6. Before using the bed for the first time

Before the bed is put into service for the first time, this user's manual must be closely read by all those responsible for nursing care.

Before the bed is put into service for the first time, it is absolutely essential to carry out a functional test.

Before first use, carers must receive detailed instructions in the operation of the bed. In addition, carers must be made fully aware of potential dangers that can arise in spite of the correct operation of the bed.

2.7. Checking the operational safety and condition of the bed

Before putting the bed into service, it is essential to make absolutely sure that it is in good working condition and safe to use. This test must not only be carried out before first use, but continuously throughout the service life of the bed. If necessary, the bed must be tested daily or after each shift to ensure that its use does not endanger anybody. To reduce maintenance to a necessary minimum, the bed should be cleaned, disinfected and tested as soon as possible after each use so that it can be used again without delay or risk.
In cases of malfunctioning, it may be necessary to transfer the patient to another bed.

2.8. Position of the hospital bed – Danger if falling out of bed

In the case of unsupervised patients, we recommend that the bed is put into its lowest position to minimise the risk of injury due to falling out of bed. In other cases, should be put at a height proportionate to the size of the patient.

2.9. Four-castor central braking system – Caution! Risk of accident

Unless in transport, the brakes must always be applied so that patients can use the bed as a support when accessing or exiting it. Serious falls can result through an unbraked bed rolling away. After applying the brakes, check that the bed is really immobile, ie that the brakes are fully applied to all four castors.

2.10. Height adjustment – Risk of entrapment between bed-frame and chassis

When adjusting the bed, make absolutely sure that no limbs, bedding or other objects are situated between the

2.11. Safety frames - Danger of entrapment

In the case of patients whose physical or mental state may be felt to call for the use of safety frames to protect them from falling out of bed, the following safety measures **must be observed at all times:**

1. Safety frames may be operated **only** by carers instructed in their use.

2. Make sure safety frames – or elements of them – are either fully raised and locked or fully lowered.

3. During the electrical adjustment of the mattress-frame, make sure that the patient is not touching the safety frames. Also make absolutely sure that no limbs are poking through the frames.

4. If the safety frames are being used to protect a child or a person whose physical state may make their use appropriate, then make sure that the handset is out of reach. We also recommend the use of safety frame covers. Failure by carers to obey these safety rules may cause hæmatoma or other injury to hands, knees, fingers, feet, shins and hips through entrapment.

2.12. Cleaning and disinfection

Risks can arise through the incorrect cleaning and/or disinfection of the bed.

2.13. Service and maintenance

The S 960-2 bed requires very little maintenance. All moving parts of the lifting gear, mattress-frame drives and safety frames are permanently lubricated during manufacture. None of these parts need relubrication when the bed is correctly used and cleaned. The manufacturer assumes, however, that beds are regularly inspected and damage such as worn parts, loose screws or fractures are immediately put right.

1. General information

In the following text, "Völker" means "Völker AG".

In the following text, "Völker bed" or "Völker hospital bed" means the S 960-2 hospital bed.

In the following text, "patient" means a person who is in the bed, or accessing or exiting it.

"Due care" means that all activities involving the bed in any way must guarantee the safety and freedom from harm of patients, carers and others.

In the following pages, the bed and its operation are explained and described with the help of photos and drawings.

Exceptionally important information in the technical description is marked by this symbol:

= Warning

This information is to be read and obeyed without fail.

2. Explanatory notes for carers

This documentation contains all information necessary for the normal operation of Völker hospital beds.

Völker accepts no guarantee claims whatsoever for damage, injury or accidents caused by carelessness, inattentiveness or the incorrect use of the Völker hospital bed. In this connection, the question of culpability is irrelevant.

If required by the customer, Völker or its representative is willing to give carers basic training in the operation of the bed.

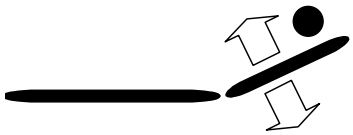
The participation in such training sessions for carers must be confirmed with name, date and signature on a form specifically intended for this purpose, which must be counter-signed by Völker or its representative.

The safety regulations contained in this documentation must be strictly obeyed and adhered to at all times.

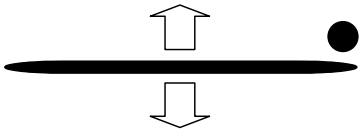
The conscientious observance of the safety regulations, modes of behaviour and instructions described in this manual guarantees the safety of carers and patients.

Please note that functional features marked as special equipment are only available in bed so equipped. These are also known as "options".

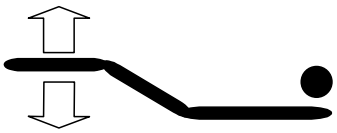
3. Review: Types of patient positioning



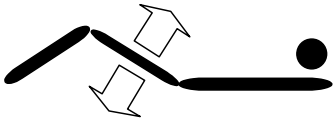
RAISED BACK SECTION



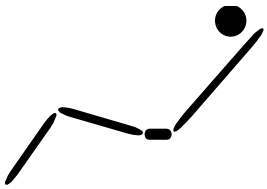
FLAT POSITION, **height adjustment**



RAISED LOWER LEG SECTION, manual



RAISED UPPER LEG SECTION



SITTING POSITION

REVERSE TRENDELENBURG POSITIONING
(FOOT RIGHT DOWN)

TRENDELENBURG POSITIONING
(HEAD RIGHT DOWN)

4. Operational units

General operating instructions

4.1.1. Safety class

The bed conforms to Safety Class II.

The bed is fitted with a connection for a voltage compensator.
The bed is supplied with electricity via the power cable. It is isolated from the mains circuit by a cut-out when it is not in use.

4.1.2. Operating interval

The maximum operating interval of the electrically-powered bed functions is given on the bed (name plate) and/or in the technical data sheet as "1 min / 10 min", ie each bed function may only be continuously operated for a maximum of 1 minute in any 10 minutes.

Automatic safety devices kick in if the maximum operating interval of 1 minute is repeatedly or markedly exceeded, leading to the power drives cutting out. The bed must then be inspected and tested!

An integrated time-lag device hinders the accidental or brief operation of the keyboard and consequent movement of the mattress-frame. This device requires that users consciously press and hold down the relevant key. Functions then kick in after a time-lag of ca. 0.5 seconds.

4.1.3. Built-in safety cut-out

The bed is fitted with a built-in electronic safety cut-out that hinders the overloading of the drives. In the event of overloading, the drives are automatically switched off.

4.2. Putting bed into service for the first time

Location

The bed is authorised for use solely in dry rooms, not in wet rooms such as bathrooms. A mains power supply socket and, if required, a voltage compensator connection must be available in the room in which the bed is to be used.

The bed is mobile without the need for auxiliary transport equipment.

The bed may only be moved on firm surfaces. Moving the bed over obstacles greater than 2 cm in height is prohibited. Gradiants may not exceed an angle of 10°.

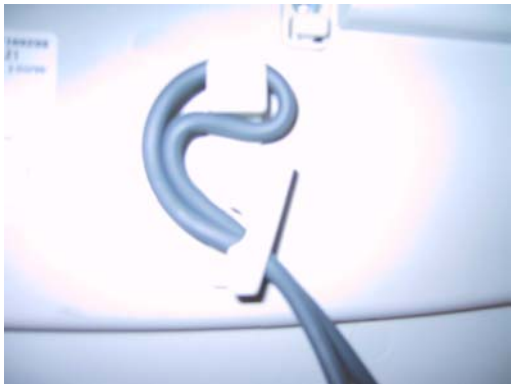
The bed is supplied complete and can be set up without first having to remove transport equipment.

4.2.1. Mechanical initiation

- Push the head- and footboards supplied into the corner connectors of the bed-frame.

- Handset connection

- Use a screwdriver to remove the cover over the connecting block
- Plug the handset into the socket marked O.
- Lead the handset cable through the strain relief device, see photo.
- Replace cover on the connecting block



- Apply brakes

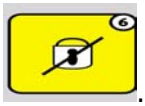
It can happen that the brakes are not applied when the bed is put into service for the first time or brought back into service after a period of non-use.
Press down the foot-operated brake bar to apply the brakes. When brake bar is at an angle of 45° to floor, brakes are completely applied.

- Fit accessories

4.2.2. Electrical initiation

- Push plug into mains socket.
- Operate handset while simultaneously pressing the green key on the mains plug.

- Cancel deactivation

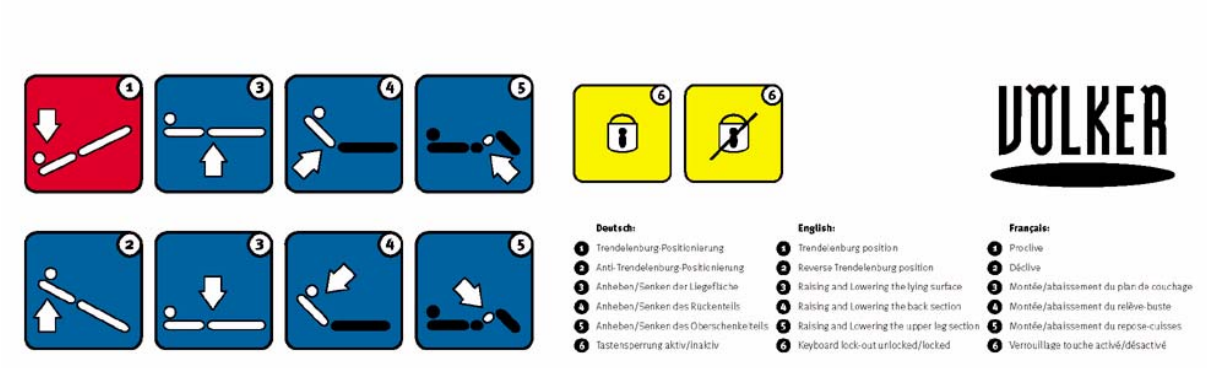
  After the bed has been switched on, the deactivation of the bed functions must be cancelled in order to operate the handset and the carers' keyboard/control box. In the case of the carers' keyboard (optional), cancel deactivation by pressing the yellow key  .

  In the case of the control box (optional) deactivation/activation is carried out via a rotary switch.

- Carry out functional test

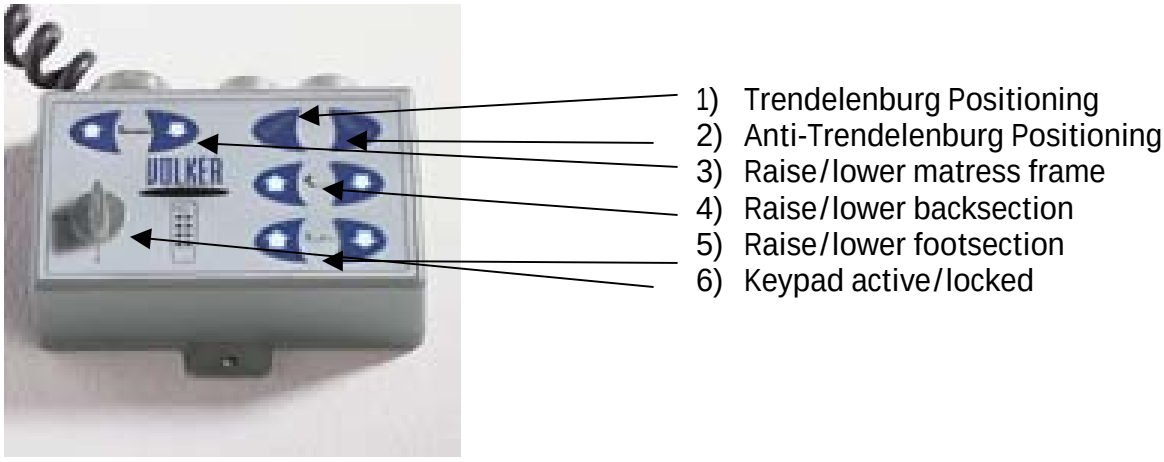
The bed is now ready for use.

Operation with S 960-2 carers' keyboard or S 960-2 control box



1) Trendelenburg Positioning
2) Anti-Trendelenburg Positioning
3) Raise/lower matress frame
4) Raise/lower backsection
5) Raise/lower footsection
6) Keypad active/locked

S 960-2 control box



On change of shift, carers responsible for operating the bed must always check whether it is deactivated.

Automatic mode: JACK
The automatic lifting function raises or lowers the bed after "double clicking" the key marked with a 3 on the carers' keyboard/control box. This function can be interrupted by "single clicking" any key on the carers' keyboard/control box or the handset.

4.2.3. Charge level display, battery pack

The S 960-2 is optionally equipped with a rechargeable battery for the operation of emergency functions during power cuts.
When undamaged and fully charged, the battery can carry out 4 complete height adjustment cycles (fully raised and fully lowered) and a further 5 mattress-frame adjustments. If height adjustment is not required, then 30 complete mattress-frame adjustment cycles are possible.

The battery charge level is shown by means of the diodes (LEDs), as follows:

- Green: The battery is connected to the mains supply, current is flowing through the mains cut-out and the bed is live.
- Orange: Charging is in progress.
- Rot: The battery must be charged or it could become completely exhausted. In this case, there is also an acoustic signal when the bed is not connected to the mains supply.

When the battery is fully charged, all diodes go out. The mains cut-out then kicks in and the bed is disconnected from the mains supply.
If the battery reacts, the charging cycle begins each time the bed is connected to the mains supply.
Furthermore, the battery charge level is checked hourly and if it is found to be below a certain value, current flows through the mains cut-out and the battery recharges.

It is essential to pull out the mains plug before transporting the bed!

If the bed is put into storage with disconnected charger, then self-discharge through leakage leads to the exhaustion of the batteries!
Totally discharged batteries can be so badly damaged as to necessitate their premature replacement!
In order to achieve a long service life, the correct treatment of both the batteries and the charger is absolutely essential!

4.3. Operation with handset

If necessary, cancel deactivation of handset via carers' keyboard/control box.
The following seven functions can be selected via the handset:

Back section UP

Back section

Upper leg section UP

Upper leg section

Comfort key
(reverse trendelenburg)

Height UP

Height DOWN

All UP/DOWN functions are controlled by simply pressing the appropriate key.

Summary of functions:

Back section UP	continuously raises back section to enable patient to sit up.
Back section DOWN	continuously lowers back section to enable patient to lie down.
Upper leg section UP	continuously raises upper leg section so that knee bends.
Upper leg section DOWN	continuously lowers upper leg section into horizontal plane.
Height UP	lifts whole mattress-frame to the required height.
Height DOWN	lowers whole mattress-frame to the required level.
Comfort key	tilts footend of whole mattress-frame downwards.

Note: All handset functions are clearly shown by pictographs and arrows.

Important: To prevent the unauthorised use of the bed, the carers' keyboard or control box is equipped with a deactivation device relating to certain functions. However, the deactivation of the handset may only take place after a thorough assessment of the patient's situation shows this to be necessary. Should the handset be within the patient's reach, then detailed care records must be correctly kept. It is in any event essential to ensure that nobody is placed at risk.

Operation of functions

4.3.1. Electrical adjustment of back section

Raise back section by pressing the  key on handset or the  key on carers' keyboard/control box until mattress-frame is in required possition.

Lower back section by pressing the  key on handset or the  key on carers' keyboard/control box until mattress-frame is in required position.

The mattress-frame back section can be raised to a maximum of 70°.

During raising, the back section shifts towards the headboard by a maximum of 150 mm (mattress displacement facility). This increases patients' comfort by stopping them from sliding down the bed.

Warning: When lifting the back section with raised safety frames, it is **absolutely essential** to make sure that the limbs of patients or others are not poking through or resting on the safety frames!

4.3.2. Electrical adjustment of upper leg section

Raising of upper leg section

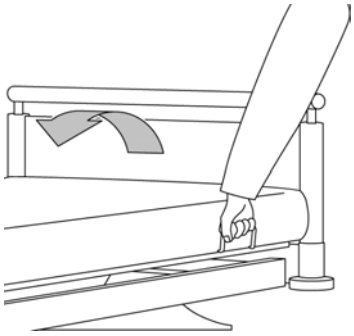
If necessary, cancel deactivation mode via carers' keyboard or control box.

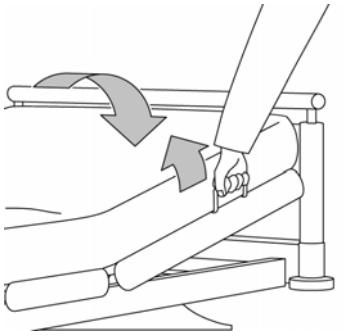
Raise upper leg section by pressing the key on handset or the key on carers' keyboard/control box until mattress-frame is in the required position.

Lower upper leg section by pressing the key on handset or the key on carers' keyboard/control box until mattress-frame is in the required position.

Warning: When lifting the leg sections with raised safety frames, it is **absolutely essential** to make sure that the limbs of patients or others are not poking through or resting on the safety frames!

4.3.3. Manual adjustment of lower leg section





The adjustment of the lower leg section is carried out manually. To raise the lower leg section, grasp the handle at the foot of the bed, lift the leg section and allow it to snap into position at the required height. To lower the lower leg section, lift it upwards to end-stop to release the locking device and then lower it into the horizontal.

Note: To avoid putting patients into a physiologically unfavourable position, never raise the lower leg section without having first raised the upper leg section.

Warning: When lifting the leg sections with raised safety frames, it is **absolutely essential** to make sure that the limbs of patients or others are not poking through or resting on the safety frames!

Height adjustment of bed

If necessary, cancel deactivation mode on carers' keyboard/central control.

Raise the whole mattress-frame by pressing th key on handset or the key on carers' keyboard/control box until mattress-frame is at the required height.

Lower the whole mattress-frame by pressing the key on handset or the key on carers' keyboard/control box until mattress-frame is at the required height.

Warning: To avoid the risk of injury to patients by falling, we recommend that the bed is fully lowered when in routine use!

Warning: Before lowering bed, make sure that the space between mattress-frame and chassis is free of persons, limbs, bedding or other objects. Ensure that brakes are fully applied before patients access or exit bed!

Warning: When lifting or lowering the mattress-frame with raised safety frames, it is **absolutely essential** to make sure that the limbs of patients or others are not poking through or resting on the safety frames!

4.3.4. Trendelenburg and reverse trendelenburg positioning

The S 960-2 mattress-frame can be put into the trendelenburg and reverse trendelenburg position (head downwards / foot downwards) required by carers, irrespective of the height of the bed.

For the trendelenburg position (head downwards, press the  key until the required angle of tilt has been reached. The pre-set maximum angle of tilt amounts to 14°.

For the reverse trendelenburg position (foot downwards) press the  key until the required angle of tilt has been reached.

To return to ground position, press key  or  until the required position has been reached.

The trendelenburg and reverse trendelenburg function is still operable when other adjustment functions have been deactivated.

4.3.5. Sitting position (cardiac)

with simultaneous operation of reverse trendelenburg adjustment

Only to be carried out by qualified professionals!

Ground position: the mattress-frame is horizontal and all sections are parallel to it.

For sitting position, press the reverse trendelenburg (foot downwards) key  until the required angle of tilt has been reached.

Then press the back section UP key  on handset or the  key on carers' keyboard/control box until the required position has been reached.

Finally, press the upper leg section key  on handset or the  key on carers' keyboard/control box until the required mattress-frame position has been reached.

To return to ground position, operate the appropriate keys in the opposite direction.

4.3.6. Voltage compensator cable connection

The bed is equipped with a voltage compensator cable connection according to DIN 42801. Only use tested cables that meet the requirements of DIN 42801 (see Accessories).

The connecting bolt for the voltage compensator cable is located on the left-hand side of the central bearer at the headend of the bed.

When using the bed with other electro-medical equipment, the voltage compensator cable **must** be connected to the voltage compensator socket in the hospital.
(See *Regulations for the Use of Electro-Medical Equipment in Intracardiological Operations*, DIN VDE 0753, Part 2 /02.83).

Operation of mechanical functions

Four-castor central braking with total and directional locking facility

Bed movable only straight ahead

Bed movable is any direction

Bed with brakes applied

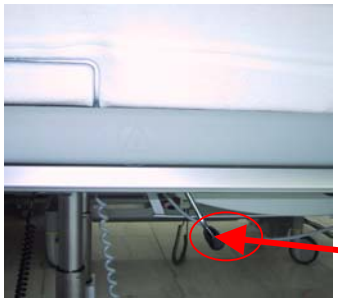
A brake-bar is fitted to the footend of the chassis for operating the central braking system. The brake-bar has three switch positions:

- horizontal position – bed can be moved in any direction
- pointing downwards towards floor – all brakes fully applied

  pointing upwards towards mattress-frame – bed can be moved only straight ahead. To set straight-ahead tracking, the bed must be moved forwards until the castors are pointing front to back and the locking device audibly engages.

Warning: The brakes must always be applied when patients are accessing or exiting the bed! In point of fact, the brakes must always be applied when the bed is in use, unless it bed is being moved to another location.

4.3.7. Mechanical fast release of back section, CPR function (CardioPulmunare Reanimation)



Lever for initiating emergency lowering procedure

Only to be carried out by qualified professionals!

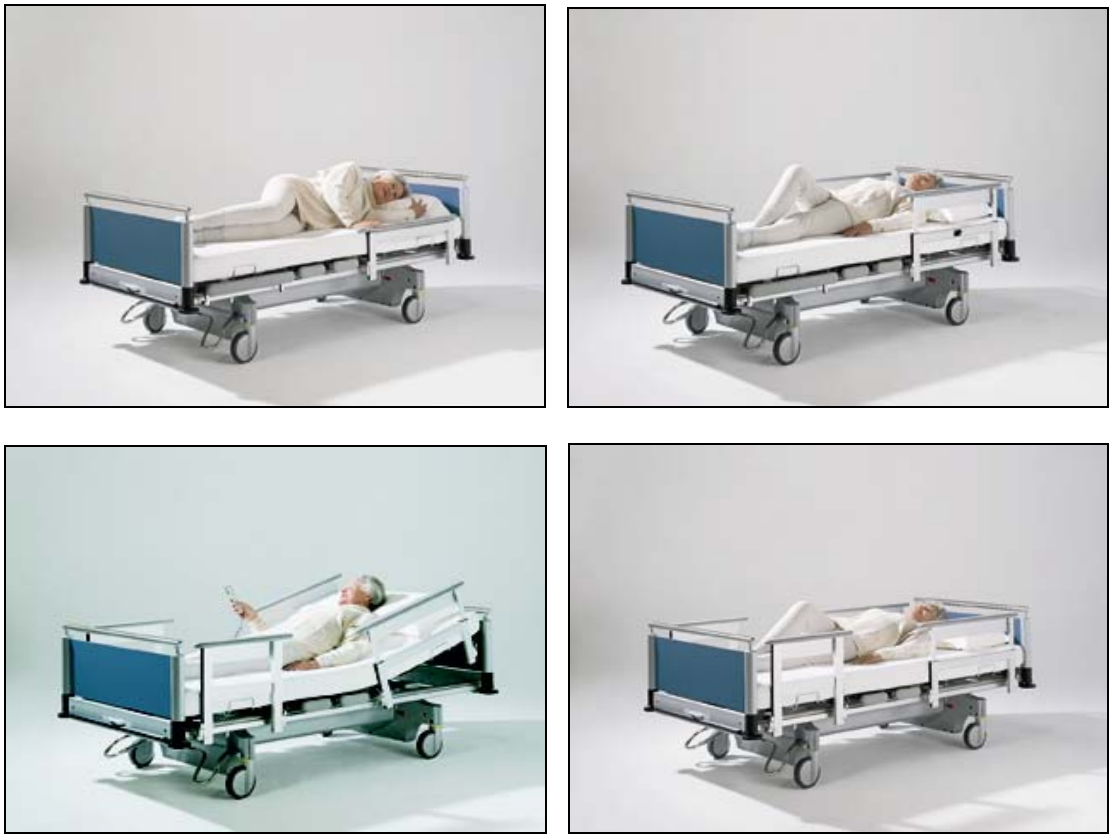
To let down the back section quickly, take hold of it and pull up the red lever on the right or left side of the mattress-frame beneath the seat section. The back section can then be pushed down quickly by applying pressure.
Lowering can be interrupted at any point by releasing the red lever.

Warning: It is essential to hold the back section firmly so that it does not pose a threat to patients by falling suddenly!

Caution: After having operated the CPR function, the back section must always be put into lowest position. Do this by pressing the back section DOWN ke on handset or th key on carers' keyboard/control box. Alternatively, the back second can be put into lowest position by operating the red lever beneath the seat section as described above (CPR function).

4.3.8. Use of safety frames

4.3.8.1 Operation of safety frames



The S 960-2 has split safety frames on both sides. They are fully integrated into the mattress-frame and reposition automatically during mattress-frame adjustment.
When not in use, the frames are pushed out of sight beneath the mattress-frame. This gives unobstructed access to the accessories bar and facilitates the use of bed jacks, even when the bed is in lowest position.

When raised, the safety frames:

- protect patients against falling out of bed
- support patients when accessing or exiting the bed

How to raise a safety frame:

- Pull safety frame horizontally out of its location as fas as the end-stop. Then fold it upwards until vertical and press it down about 1 cm. Once vertical, the frame locks into position automatically.

Raising to and lowering from mattress-height to 34 cm.

Release locking mechanism by pressing release button (according to version) and pull frame up to a height of 34 cm until both ends lock into position.
To lower frame, press release button again and push the frame downwards.

Danger of entrapment

How to lower a safety frame:

- Slide the retaining mechanism buttons at each end of the underside of the safety frame in opposite directions.
- Lift safety frame as far as end-stop and then fold down sideways until horizontal.
- Push safety frame fully into its location beneath the mattress-frame.

To protect patients, the safety frames can be raised individually or together, as appropriate. Raising all four frames provides patients with complete protection.

Due to their exceptional stability, the frames can be used as a depository for bedding or to provide additional support during medical procedures, eg physiotherapy.
The stability of the frames also stimulates the patient mobility by providing safe support when sitting up or getting out of bed.

The frames can be used in four possible configurations on each side:

1. Both frames fully lowered.
2. Headend frame raised to top edge of mattress and footend frame lowered (aid to exiting bed) allows carers to carry out procedures with raised safety frame.
3. Headend frame fully raised and footend frame fully lowered (aid to exiting bed).
4. Both safety frames fully raised.

These four configurations makes the Völker S 960-2 highly flexible in use:

1. With all frames down, carers have unhindered access to the mattress-frame. The bed looks like a normal bed, hence contributing to a pleasant and unthreatening atmosphere.
2. With headend frames raised to top edge of mattress and footend frames lowered, patients can use the safety frame as an aid to getting into and out of bed. In this position, the frames clearly mark the limits of the mattress-frame, while at the same time allowing patients to come and go at will. Furthermore, care procedures can be carried out without first having to lower the safety frames.
3. With headend frames raised and footend frames lowered, patients can use the frames as an aid to getting into and out of bed. In this position, the frames clearly mark the limits of the mattress-frame, while at the same time allowing patients to come and go at will.

   Caution: Danger of entrapment when footend frames are later raised!

4. When all four safety frames are fully raised, patients enjoy the greatest possible protection against falling or rolling out of bed.

Appropriate use of safety frames as an aid to getting out of bed.

General warning on the use of safety frames

Warning: Anybody whose duties include handling safety frames **must read and obey** the following instructions:

1. 
When operating the back section, upper leg section, lower leg section, telescopic jack or safety frames, it is essential to make sure that the patient does not come into contact with the frames, and that no part of the body is poking through them.

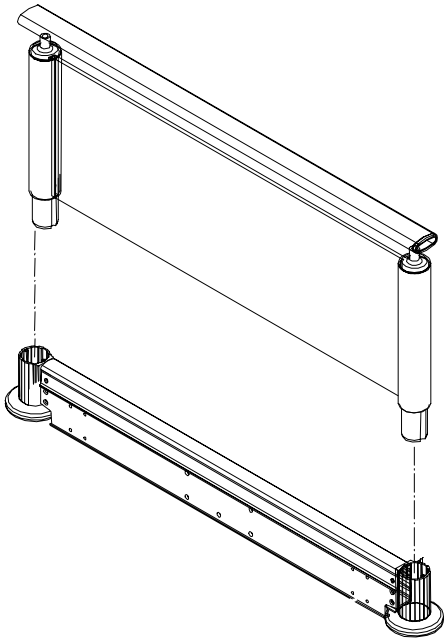
2. If the safety frames are used with a child or with a patient whose mental state appears to make their use appropriate, ensure the handset is kept out of reach. Should, however, the handset be within reach of such a patient, then detailed care records must be correctly kept (in all cases, it is vital to ensure that no dangers can arise through the use of safety frames).

3. Protective covers are available for the safety frames that offer additional protection against injury caused by contact with the frames. The use of covers is recommended in the case of patients whose physical or mental state makes them particularly susceptible to injury through unavoidable contact with the frames. The use of protective covers does not, however, free carers or patients from exercising due care when operating the bed.

4. When the safety frames are in use, they must **always** be either raised until they lock into position, or lowered to their end-stops.

5. The safety frames should **always** be grasped at the ends with **both** hands and gently guided upwards or downward.

4.3.9. Removal of headboard and footboard



The headboard and footboard can be pulled off or pushed onto their fixing on the headend or footend cross-members without the help of tools.

Wall buffers

The vertical wall buffers protect both the bed and walls during transport.

4.3.10. Fixing of accessories

The S 960-2 is equipped with depth-adjustable, end-to-end slide bars for accessories on both sides of the bed.

The fixings for the various accessories can be hung onto the side bearers and the accessories fitted to them.

In the bed version with external locations for the trapeze pole, there are further accessory adapters on the headend bearer for fitting (eg) drip-feed stands.

Fixing for drip-feed stands

5. Accessories

In order to achieve the greatest possible flexibility in the use of its beds, Völker offers a wide range of easy-to-fit accessories.

Völker S 960-2 hospital beds are equipped with depth-adjustable, end-to-end slide bars for accessories on both sides of the bed.

Please see hospital accessories brochure for details of individual accessories.

Warning: The trapeze is not designed to lift people into or out of bed because of an increased risk of injury through the bed tipping over.

Warning: Do not sit or stand on the bedding depository (optional accessory).

6. Functional test

A functional test **must** be carried out in the following circumstances:

1. When the bed is put into use for the first time.
2. When the bed is to be used by a new patient.
3. When the bed is put back into use after a period in storage.
4. When the bed is put back into use after cleaning and/or disinfection.
5. When it is necessary to identify incidents of malfunctioning or faults.
6. At least once a year.

The test comprises the following testing procedures that **must all** be carried out over the **full range** of adjustment:

1. Back section adjustment
2. Upper leg section adjustment
3. Height adjustment
4. Trendelenburg/reverse trendelenburg positioning
5. Brakes

Warning: Make sure all functions are working correctly. If a fault is found, the bed must be taken out of use at once and not put back into use until the fault has been corrected!

Carrying out a functional test

1. Check all visible components for damage, distortion, breakages and broken cables.

2. Using carers' keyboard/control box, move all mattress-frame sections into end-position and ensure that end-stop switches turn motors off (no sound of motors, acoustic test).

3. Using carers' keyboard/control box, raise and lower jack to upper and lower end-stops. Check for parallel movement of mattress-frame relative to bed frame.When end-stop is reached, ensure that motors switch off (no sound of motors, acoustic test).

The **selected** function must move in the **correct** direction.

4. Operate trendelenburg function until it reaches its maximum angle. Return to start position by operating reverse trendelenburg function.

5. Using handset, briefly move back section, upper leg section and jack in both directions.

6. Check brake functions "apply brakes", "release brakes" and "release brake with directional setting" by operating brake bar.

7. Check correct functioning of mechanical fast release of back section (CPR).

8. Check correct functioning of manual adjustment of lower leg section.

9. Check correct functioning of safety frame locking mechanism.

The bed is always ready for use, ie operational!
In case of malfunctioning or faults, inform the responsible service agency!

Technical inspection of VÖLKER S 960-2 hospital beds

Ident-No.			OK	Not OK
Testing procedure		annually		
Visual checks:				
	labels on equipment legible?			
	user's manual available?			
	chassis/telescopic columns	B		
	mattress-frame	F		
	trapeze pole fixing	F		
	mains power cable	B		
	strain-relief devices/kink protection	B		
	mains power plug	B		
	internal cabling	B		
	secure fit of plugged contacts	S		
	casing of motor/transformer	B		
	handset casing	B		
	handset cable	B		
Functional test:				
safety frames	locking mechanism	X		
	distortion	X		
	wear	X		
drives	mattress-frame	X; M		
	chassis	X; M		
	bed brakes fully applied, retract castors	X		
	lock setting, foot section	X		
battery	replace every 2 years	Done?		

B: check for damage
F: check for distortion
M: check correct functioning of motors/end-stop switches; Does motor switch off when end-position is reached?

S: check for secure fit
X: general functional test

Inspection of accessories (trapeze, safety frame with telescopic slides, ...):

device leakage current < 5mA			
measuring device used S/N			

General evaluation of bed			

7. Cleaning and disinfection

Wipe and spray disinfection

The wipe and spray disinfectant cleaning agents given in the DGHM (Deutsche Gesellschaft für Hygiene und Mikrobiologie = “German Association for Hygiene and Microbiology”) list of 1 July 1994 are suitable for cleaning and disinfecting the bed by wiping and spraying. All disinfectants and cleaning agents must be used in the concentrations recommended in the user’s manual.

The use of chemical solvents, abrasive cleaning agents of any kind and organic solvents such as helogenated or aromatic hydrocarbons and ketone is not permitted. The use of highly concentrated caustic soda is **not** permitted, either.

Follow these instructions when using cleaning agents and/or disinfectants:

- Decontaminants in the prescribed concentrations may not exceed or fall below a pH value of 6-8.
- They may not contain any corrosive or caustic substances.
- They may not contain any substances that alter surface finishes or the adhesive properties of plastics.
- They may not affect the properties of lubricants.
- Water hardness may not exceed 0.9 mmol/l (to 5 degrees d).
  Fully desalinated water may not be used.

Chloride	< 100 ppm
Silicate as Sio2	< 15 ppm
Iron	< 0,05 ppm
Manganese	< 0.01 ppm
Copper	< 0.05 ppm

This information reflects our current knowledge and experience. It does not exempt users from carrying out their own tests and trials as local conditions, eg water hardness, can vary. A legally binding guarantee of the nature of specific properties cannot be assumed.

In the case of the S 960-2, cleaning in bed washing plants, eg decontamination plants, is **not** permitted.

The following disinfectant cleaners and rinsing agents have bee positively tested by Völker:

Bed frame, Transport trolley, Bedside cabinets Operating theatre shoes Utensils	**Products**	**Function**	**Active ingredient**	**Concentrat-ion**	**Dose**
		VDV process			
mattresses	weigosept DF spray	alcoholic spray disinfectant	Glyoxal, alcohol	100% 15 min reaction time	dosage
beds, bedside cabinets	neoform D plus	disinfection by wiping	QAV, glyoxal	0,5% 4 hours reaction time	dosing aid
	weigosept DF		aldehyde, QAV	0,5% 4 hours reaction time	dosing aid
	neoquat 8		QAV	1% 4 hours reaction time	dosing aid

DR. WEIGERT
Chemische Fabrik Dr. Weigert (GmbH & Co.)
Mühlenhagen 85, D-20539 Hamburg,
phone ++49/(0)40/78960-0 . fax ++49/(0)40/78960-120

We accept no liability for damage to surface finishes caused by the use of unsuitable cleaning agents and/or disinfectants, by the use of incorrect concentrations of such cleaning agents and/or disinfectants or by the incompetent or inappropriate care of beds.

Danger of electric shock, fire and breakdown
Always disconnect the bed from mains power supply before cleaning and disinfecting.

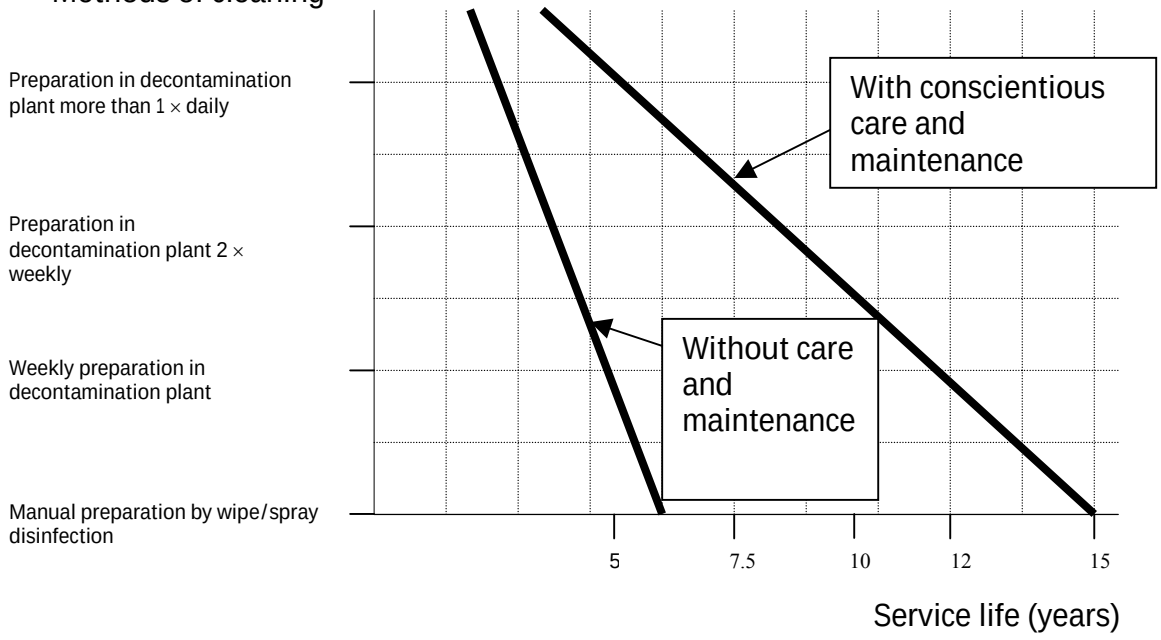
Before cleaning and disinfecting, make absolutely sure that the plugs are fully inserted into their sockets and that the cover over the plugged connections is correctly seated.

Spray wands
Cleaning and disinfecting with spray wands attached to high-pressure cleaning appliances is prohibited.

Service life of hospital beds:

With the exception of parts subject to wear and tear, eg castors and electronic components, the bed has a service life of about 12 years providing that it is used, cleaned, serviced and repaired as instructed.

Methods of cleaning



8. Maintenance instructions

In the case of repairs and maintenance work carried out on the bed, Völker only accepts liability for its safety and functional efficiency when

- delivery, maintenance and repair were carried out by a Völker Service technician or by a person authorised to carry out such work by Völker, and
- the bed is used in accordance with the instructions given in the user's manual.

As only maintenance-free motors, electrics and electronics are used in Völker hospital beds, they require very little maintenance. All moving parts of the lifting gear, the compact drives and the safety frames are permanently lubricated during manufacture. As these parts do not need to be relubricated in normal use, the bed has no lubrication points.

Please see part 8 for detailed instructions concerning technical tests foreseen by Völker AG.

9. Technical specifications

9.1. Technical data

Length	227 cm
Width	98 cm
Height, top edge head-/footboard	ca. 76,5 cm – ca. 116,5 cm
Castors	4, Ø 150 mm, 120 kg (static) Tente, Intergral single castor
Max. castor load	100 kg (dynamic)
Height adjustment range	ca. 40 cm to 80 cm (dependent on castors)
Mattress displacement	15 cm
Safe working load	170 kg
Handset	Völker
Linear drive for back + upper leg sections with fasr release facility	OKIMAT 480, OKIN
Lifting gear motor	Bosch
Mains voltage	AC 230 V~/110 V ~ (US-version)
Capacity	350VA
Nominal frequency	50 to 60 Hz
Safety fuse	primary 1.6A
Temperature range in operation	+ 10°C to + 40°C
Temperature range in storage / transport	- 20°C to + 60°C
Preparation	+ 20°C to + 85° C
Relative humidity	30% to 75%
Atmospheric pressure	700 hPa to 1060 hPa
Safety frames	load capacity max. 15kg, split safety frames according to DIN EN 60601-2-38 for 12 cm mattress height; integrated into mattress-frame; two height settings at headend, one at footend
Headboard/footboard	fast release fixings
Bed extension piece	20cm; integrated telescopic slides

9.2. Classification

Protection against electric shock	Safety Category II or appliance with internal power source
Type of protection by encasement according to EN 60259	IP X5 (standard) or IP X6 (optional)
Degree of protection of parts handled by users against electric shock according to DIN EN 60 601-1	Type B 
Degree of protection against explosive materials and compounds	The bed is not explosion-protected and may not be used in environments in which there are flammable anæsthetics or cleaning agents (see leaflet ZH 1/200 of professional association)
MPG category Service cycle	Class I Interval 2 min / 10 min Operational time max. 2 min. Shut-off time 10 min.
Technical safety check	1x per year
Warranty	2 years on construction and manufacture
Disposal	All packing materials is taken away after delivery. We guarantee to take back the bed after its service life for ecologically-appropriate utilisation/disposal.

9.3. Meaning of symbols

Degree of protection of parts handled by users according to DIN EN 60 601-1: Type B

Safety Category II (appliance with internal power source)

Caution! – Warning of source of danger, follow user's instructions

Tested for compliance with EMV safety regulations according to DIN EN 60601-1-2

Symbol for UL approval

Alternating current

Direct current

Only use in dry rooms, ie do not use in wet environments such as bathrooms

Konformitäts-erklärung

Anhang VII EU-Richtlinie 93/42/EWG

Der Unterzeichnende
Völker AG
Wullener Feld 79
58454 Witten

bestätigt, dass die nachfolgend bezeichneten Produkte in der von uns in Verkehr gebrachten Ausführung die grund-legenden Anforderungen des Anhang I der EU-Richtlinie 93/42/EWG erfüllen.

Damit sind die Anforderungen des Medizinproduktegesetzes zur Anbringung einer **CE Kennzeichnung** erfüllt.

Bei einer nicht mit dem Hersteller abgestimmten Änderung der Produktes verliert diese Konformitätserklärung ihre Gültigkeit.

Bezeichnung der Produktes:
Klinikbett S960-2

EG-Richtlinien:
Richtlinie 93/42/EWG vom 14.06.1993 über Medizinprodukte (Anhang I „Grundlegende Anforderungen")
Die Produkte sind Produkte der Klasse I gemäß Anhang VII des Medizinproduktegesetz MPG vom 02.08.1994.

Witten, 26.05.02

.....
Michael Hüppe
Vorstand/ Board member
Direction commerciale

Declaration of conformity

Appendix VII EU Directive 93/42/EEC

The signatory
Völker AG
Wullener Feld 79
58454 Witten
Germany

confirms that the products described below and in the form distributed by ourselves meet the basic requirements of Appendix I of EU Directive 93/42/EEC.

The requirements of the medical products law pertaining to the display of a **CE seal** of approval are thereby fulfilled.

This declaration of conformity becomes invalid if the products are altered without the agreement of the manufacturer.

Description of products
Type/Article No.Type/Artikel-Nr.:
Hospitalbed S960-2

EU Directives:

Directive 93/42/EEC of 14.06.1993 concerning medical products (Appendix I, Basic requirements)
The design and construction of this product conforms to Class I (Appendix VII)
Medical products law (MPG) of 02.08.1994.

Déclaration de conformité

Annexe VII Directive EU 93/42/CEE)

La soussignée,
Völker AG
Wullener Feld 79
58454 Witten
Allemangne

confirme que les produits spécifiés ci-dessous sont conformes, dans le modèle mis en circulation, aux exigences fondamentales de l'annexe I de la directive européenne 93/42/CEE.

Les exigences de la loi sur les produits médicaux concernant le port de la marque CE sont ainsi satisfaites.

Cette déclaration de conformité est invalidée en cas de modification des produits, non autorisée par le fabricant.

Désignation des produits :
Modèle/Référence :
Lits médicalisés S960-2

Directives européennes :
Directive 93/42/CEE du 14.06.1993 sur les produits médicaux (annexe I "Exigences fondamentales").
La conception du produit est conforme à la classe I (annexe VII)
Loi sur les produits médicaux (MPG) du 02.08.1994.

Notes: