VOLKER

Instructions for use
Model S 962-2 Vis-a-Vis

Version, Imprint

Instructions for use G100

HB-RD-000064 Rev.1
for Völker bed model S 962-2 Vis-a-Vis built after June 2009

These instructions for use are valid from 05/2021

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We reserve the right to make changes to reflect technical advances.

The contents of this document are subject to change without prior notification.

Customers are advised to contact the responsible area sales manager before placing an order.

Technical documentation can be made available on request.

You will find the electronic version of these instructions for use in PDF format online at www.voelker.de.

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Notes | General information

General notes

You have purchased a bed from Völker GmbH. This bed has been built in accordance with the applicable national and international standards and the regulations reflecting the current state of technology.

Völker beds satisfy requirements in terms of safety and functionality. They are tested in accordance with international standards and bear the CE mark, which documents the beds' compliance with essential requirements for medical products.

Please read the general safety notes (p. 11). Please also note (particularly with regard to to any warranty claims) the further notes on the following pages.

Standard design

The standard design of the bed can be supplied with various options.
A description of these options can be found in the section entitled Versions and Options. p. 21.

Copyright protection

Warranty and liability

Völker GmbH is liable for any faults or failures, not including further claims, arising in the context of the warranty obligations detailed in the main agreement. Claims for compensation, for whatever legal reason such claims may be raised, will not be entertained.

We reserve the right to make technical modifications without notice as part of the further development of the beds which form the subject of these instructions for use. All specifications are non binding. Printing errors excepted.

We accept no liability for damage and operational faults caused as a result of misuse and/or non-observance of these instructions for use.

The portrayal of the accessories does not necessarily match the actual product.

Notes | Designated purpose 1/2

Intended use

Völker bed model S 962-2 Vis-a-Vis is a bed for medical use and is intended for the laying down of patients in wards of hospitals, clinics and care institutions.

The bed is intended to be used for patients with a physical height of 146 cm or above, a body weight of 40 kg or above, and a body mass index (BMI) of 17 or above.
The bed may only be operated under the conditions described in these instructions for use. Any other use is considered improper.

In all care environments, the operator shall consider the patient's mental and physical condition and the resulting risks to the operation of this medical device before using the bed.

The bed's safe working load is 250 kg. To calculate the maximum patient weight, 20 kg for the weight of the mattress and 45 kg for accessories as well as the weight carried by the accessories must be deducted from the safe working load when using the bed in the application environments 1 and 2 (intensive and acute care) according to DIN EN 60601-2-52.

When using the bed in the application environments 3 and 5 (long-term, home and outpatient care), the values to be accounted for are 20 kg for the mattress and 15 kg for accessories as well as the weight carried by the accessories.

The bed is intended for adult patients in the weight range of 40 – 215 kg.

The maximum patient weight can therefore be taken from the following table:

Model	Safe working load	Max. patient weight	
		in application environment 1, 2*	in application environment 3, 5
S 962-2 Vis-a-Vis	250 kg	185 kg	215 kg

* Except in the vicinity of high-frequency surgical equipment and in rooms containing magnetic resonance imaging (MRI) equipment.

Notes | Designated purpose 2/2

Contraindications

This bed is only suitable for patients who do not fall below the following body dimensions/weights:

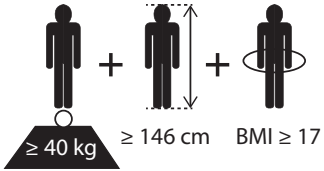
Height: 146 cm

Boddy weight: 40 kg

Body Mass Index (BMI): 17

BMI is calculated using this formula:

$$BMI = \frac{\text{body weight}}{\text{Height}^2} \left[\frac{kg}{m^2}\right]$$



Side effects:

If the patient lies down for a longer period of time, pressure ulcers can occur without appropriate countermeasures.

None intended use

None intended use can be dangerous. This includes, for instance:

- Incorrect actuation of electrical functions and uncontrolled positioning
- Operation of the care bed by the patient without having received prior instruction in how to do so
- Use of other electrical equipment on the bed
- Pulling on cables to move the bed
- Removing electrical plug connections by pulling on the cable
- Use of the bed on a slope of more than ten degrees of inclination (the bed's brakes are designed for an angle of inclination of no more than ten degrees)
- Any attempt to move the bed while it is in braked position
- Use of the bed for transport with a vehicle
- Overloading of the bed beyond the specified safe working load.

⚠ **CAUTION** If, in an emergency situation, it is impossible to avoid putting people who are less than 146 cm tall in the bed, protective covers must be placed on the side rails. This also applies to the use of the bed by weak or confused patients

Notes | General regulations, user training / instruction, further requirements

General regulations

The bed must only be operated and used in accordance with its designated purpose, in line with the conditions of the Medical Products Directive (MPG) and approved legislation pursuant to this, the generally-acknowledged rules of technology and the stipulations of occupational safety and accident protection guidelines.

User training

The bed may only be operated by individuals whose training or understanding and experience offer surety for correct handling.

User instruction

The thorough induction of care personnel in the operation of the bed can be provided by Völker or its representatives at the customer's request.

Attendance of such training can be certified and confirmed by Völker using the form provided for this purpose, specifying the name, date and signature.

Patients must be instructed in the use of the bed before care personnel hand over the hand control to them.

Other requirements

Whoever is in charge of the activation, operation or preparation of the bed must have been given a copy of these instructions for use (in printed or electronic form) and have read them.

To avoid operating errors and to safeguard the smooth operation of the bed, care personnel must always have access to the safety notes below.

Flooring requirements

Increasingly overweight patients and occupants have caused a consistent increase in demands on hospital and care beds in recent years. Völker has addressed this topic by increasing the "safe working load" for the beds. However, not only the beds are exposed to higher levels of strain, but also static and also flooring. For this reason, we recommend that flooring designed for these loads is used in areas where the beds are situated. This means flooring that is classified in accordance with DIN EN ISO 10874 and that has been laid by professionals (flooring for public or commercial areas that are subject to medium or heavy traffic).

Warning symbols
Information marked with this symbol must be read and its content strictly observed.

DANGER represents an immediate threat of danger that can cause serious physical injury or death.

WARNING represents potentially dangerous situations that can lead to serious physical injury or death.

CAUTION represents potentially dangerous situations that can cause slight physical injuries.

NOTE warns of potential damage to objects or property.

Before first activation

Before the bed is put into action for the first time, care personnel must read these instructions for use in full and with care.

Before the bed is activated for the first time, care personnel must be instructed in the handling of the bed using the instructions for use. The potential dangers that can arise despite correct operation of the bed must also be pointed out in full.

Before and during use

Before each use of the bed, the user must be sure that the bed is in a good, safe condition and that safe use is ensured (Functional check p. 31).

WARNING No adjustments or modifications may be made to Völker products without the permission of the manufacturer. This automatically voids all warranty claims and CE conformity.

WARNING If other devices with cables, air hoses, or similar, are to be operated on the bed, make sure that these lines are routed so that they cannot become jammed when moving parts of the bed, and thus be damaged.

Position of the bed

CAUTION To avoid injury from falls, we recommend always moving the bed to its lowest position with the castors fixed when the patient is sleeping in the bed (except when undertaking care measures).

Transporting the bed

CAUTION When transporting the bed, the mains cable must be secured in such a way that it cannot be rolled over, damaged in any other way or cause a tripping hazard.
The bed should only be moved on a solid floor. Never attempt to push it over obstacles of over 2 cm in height. The maximum angle of inclination of the floor must not exceed 10°.

Four castor central braking

CAUTION "Risk of accident"
If the bed is not being transported, the castors must always be in the braked position, since the bed may be required as a support for when the patient stands up or lies down. If the bed rolls away while unbraked, this can lead to a serious fall. After activating the central holding brake, p. 34, it must be checked that the bed is actually fixed, i.e. the castors are adequately braked.

The bed can be in a non-fully-braked status even after first activation or reactivation, and consequently it must be checked that the castors are correctly braked.

One-sided load on the bed

When using the bed as a normal clinic/care bed, the following applies:

NOTE In order to prevent one-sided loads on the bed, it must not be used as a seat for persons other than the patient (i.e. visitors must not sit on the edge of the bed).

CAUTION A maximum load of 80 kg on the lower leg section is permissible when the bed is in the fully extended Vis-a-Vis position!

Side rails

WARNING
"Risk of entrapment“
In the case of patients whose physical or mental condition makes it necessary to use side rails to protect them from falling out of bed, the following safety measures must be observed:

- The legal permissibility of using side rails must be ascertained.
- The side rails may only be operated by trained care personnel.
- Ensure that the side rails (or parts thereof) are either fully raised and locked in position or completely lowered.
- It must be ensured that the patient does not come into contact with the side rail elements when the electrical lying surface adjustment mechanism is actuated. It is also important to ensure that no part of the body is sticking out through the side rails.
- If the side rails are used with a person whose psychological condition makes their use necessary, then it must be ensured that the hand control is kept out of his/her reach or its functions are locked. It is also strongly recommended that side rail covers are used.
- **DANGER** If these safety measures are not observed by care personnel, injuries can be caused to hands, knees, fingers, feet, legs and hips, along with haematomas and other injuries as a result of entrapment. In children or people who are less than 146 cm tall, non-observance of these guidelines can lead to death!

WARNING "Danger of injury"
If the side rails are damaged, the bed must not be used and must be repaired.

Height adjustment

DANGER "Risk of entrapment between the lower frame and/ or floor and the bed frame when the bed is lowered"
It must be ensured that no people, limbs, pets, bed linen or other objects are caught between the bed frame and the lower frame and/or floor.

DANGER
"Danger of movement"
If any movement of the bed could represent a danger to the patient, all functions must be locked.

Accessories

WARNING "Risk of injury"
Only original Völker accessories should be used! Third-party accessories must be subjected to testing before use.

Use of lifting devices

WARNING "Risk of injury"
No lifting device must be fastened directly to the bed (patient transport, repair).

The lifting devices specified are appliances that can be attached to the bed for transport purposes. Patient lifters can be used.

Use of oxygen equipment

DANGER "Risk of fire"
Never use the bed in an oxygen tent or in potentially explosive atmospheres (possible presence of flammable gases or vapours).

Provided it has been excluded (e.g. based on information in the instructions for use of the equipment being used) that the use of the equipment may cause the O_2 concentration to rise to such a degree that there is an explosion risk, then the equipment can be used.

Rail spacer

When using the rail spacer, please read the separate instructions for use for this accessory. During technical checks, the rail spacers should also be checked to ensure they are suitable for the size of side rail used.

Cleaning and disinfection

In order to maintain consistent functioning, the bed should be cleaned, disinfected and tested as soon as possible following each use, so that it can be reused immediately without risk.

Incorrect cleaning/disinfection, p. 47 of the bed can cause danger.

Maintenance and repair

Anyone responsible for carrying out maintenance and servicing must have at least read the safety notes for the respective bed model and be qualified in accordance with MPBetreibV § 4. The staff requirements defined by the regulations governing the installation, operation, use and maintenance of medical devices must be ensured by the operator of the beds.

To guarantee a trouble-free operation of the beds, the instructions for use of the bed must always be accessible to the servicing staff.

After maintenance work or repairs have been carried out, a Technical check, p. 54 must be carried out on the affected parts and/or functions. During this check, it must be determined that the bed can be used in accordance with the specifications without risk to patients, users or third parties.

The Technical check must be carried out at least once a year and after every lengthy period of non-use.

Any discernible damage, such as signs of wear and tear, loose screws or breaks/fractures must be eliminated immediately

Electromagnetic and electrostatic interference

The beds in model series S 962-2 Vis-a-Vis satisfy the EMC requirements in accordance with the international requirements. The basis for testing is standard EN 60601-1-2.

* The German Electromagnetic Compatibility of Equipment Act

Only original Völker replacement parts, cables and accessories may be used on the bed. Otherwise the EMC behaviour may be impaired, which may result in the bedand other devices in the area around the bed malfunctioning.

Serious incidents

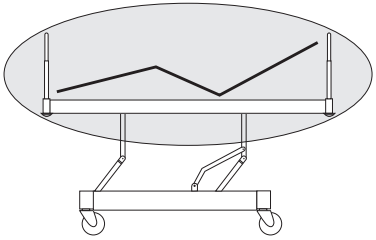
Any serious incidents that occur in conjunction with operation of the bed must be reported immediately to the appropriate authorities in the relevant country and to the manufacturer of the bed.

Application parts

An application part is a part of a medical electrical device (ME device) which of necessity comes into physical contact with the patient under normal conditions of use, so that the ME device or an ME system can fulfil its function (DIN EN 60601-1).

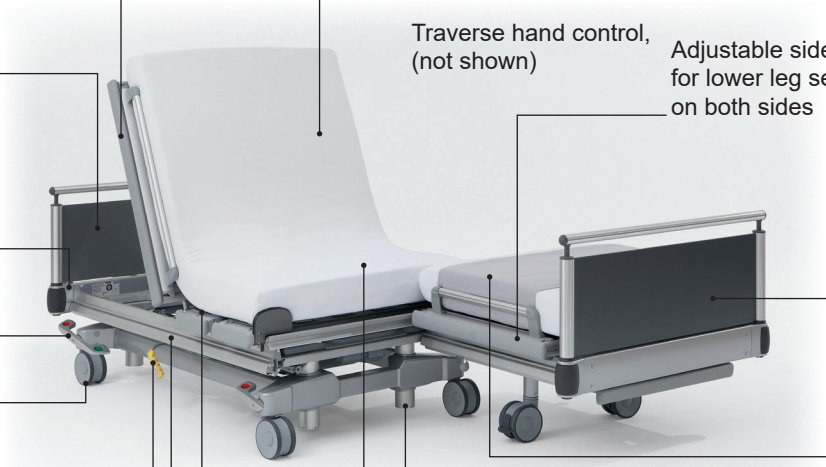
For the S 962-2 Vis-a-Vis hospital bed, these are:

- hand control
- side rails
- head/foot ends
- lying surfaces
- frame



A schematic representation of the application area.

Functional description | Overview S962-2 Vis-a-Vis



Holder for trapeze bars
at the head end (not shown)

Adjustable side rails for
back section, both sides

Adjustable
back section

Head section
(Quick release,
see fig. on right)

Traverse hand control,
(not shown)

Adjustable side rails
for lower leg section,
on both sides

Holders for drip
stands at the head
end and the foot end,
both ends

Foot section
(Quick release,
see fig. on right)

Four-caster
central braking

Casters

Adjustable and movable
lower leg section

Rapid lowering
of the back section (CPR)

4-column
height adjustment

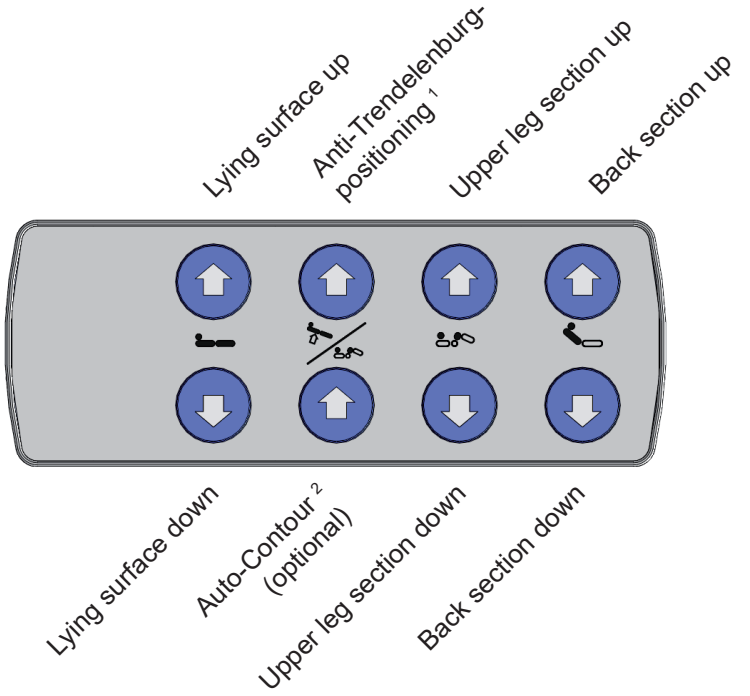
Accessory rail for holding
accessories (urine bottle
basket, universal hook, etc.),
on both sides

Seat section,
fixed

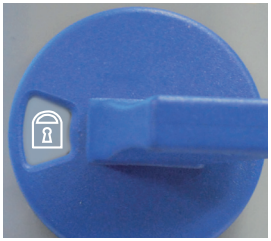
Adjustable
upper leg section

Nurse hand control
(not shown)

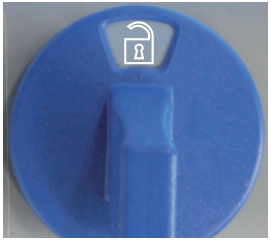
Functional description | Transverse hand control



Reverse:



Hand control locked



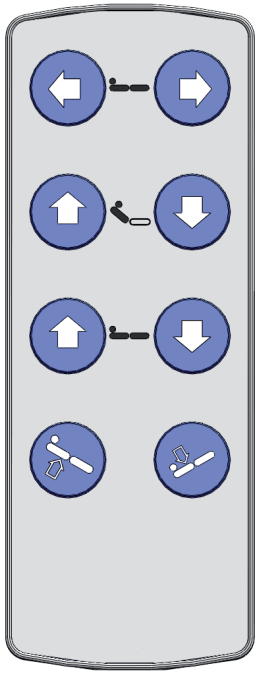
Hand control unlocked

[1] Head end raised

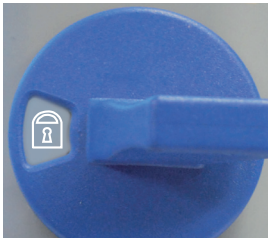
[2] Back and upper leg section raised simultaneously

WARNING When actuating motorised adjustments with the side rails raised, it must be ensured that the occupant does not have any contact with the side rails, and that no parts of his or her body or those of other people are sticking through the side rails or are trapped between the lying surface and the lower frame and/or floor!

Functional description | Nurse hand control



Reverse:



Nurse hand control locked

Nurse hand control unlocked

⚠ **WARNING** The nurse hand control must be locked when not in use, and the key must be kept inaccessible to the patient.

[1] Head end raised

[2] Head end lowered

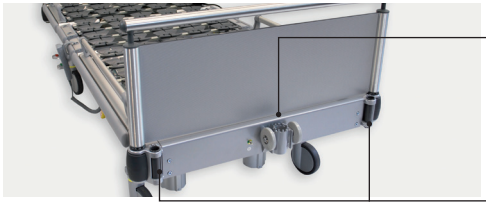
⚠ **WARNING** When actuating motorised adjustments with the side rails raised, it must be ensured that the occupant does not have any contact with the side rails, and that no parts of his or her body or those of other people are sticking through the side rails or are trapped between the lying surface and the lower frame and/or floor!

Functional description | Trapeze bar and accessory holders, accessory rail

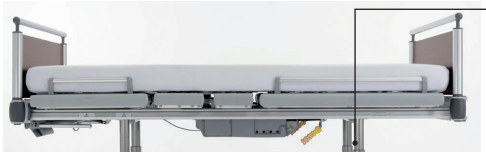
Depending on the variant, a single trapeze bar holder (external) or a double trapeze bar holder (internal) is located on the head panel. Holders for drip stands/ accessories are also located on both sides next to the protective wheels at the head panel (external) as well as at the foot panel (internal).

The trapeze bar and other accessories must be slotted into the holders until they engage to be anti-twist.Völker provides a wide selection of accessories for the greatest possible flexibility. The beds are fitted with accessory holders as standard, e.g. for drip stands and trapeze bars.

For more information regarding accessories, please refer to our current brochures or our website at www.voelker.de. Our staff will be happy to inform you of the accessories available for your model of bed.



There is an accessory rail on either side of the bed to accommodate accessories.



WARNING „Risk of injury“
Ensure that the trapeze bar is completely slotted to be anti-twist into the holder and securely seated.

Note: the safe working load of the trapeze bar is max. 75 kg.

WARNING Should the bed be moved or adjusted, the infusion tubing or cables must be closely monitored by the care personnel.

WARNING The trapeze bars must not protrude beyond the outer bed boundary.

WARNING Only the trapeze bars specified in the list of accessories may be used.

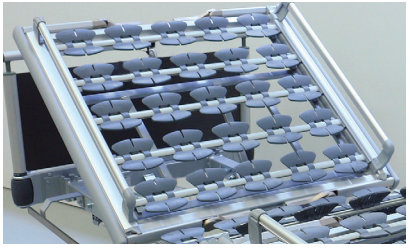
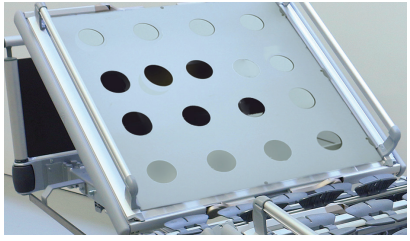
WARNING No potential equalisation is provided at the trapeze bar.

WARNING The trapeze bar and drip stand must never be used by the patient as an entry or egress aid (e.g. when getting out of a wheelchair).

Functional description | Versions and Options 1/2

The standard design of the bed can be supplied with various versions and options.

Versions	Description
Hand control	Transverse on the side rail with clip:  There are different variants of hand controls with different function keys.
Nurse hand control	With hook: 

Versions	Description
MiS® lying surfaces	Völker MiS® is a positioning system featuring different elements that maintain and promote the patient‘s spontaneous movement. 
HPL lying surfaces	The 4-part HPL (high pressure laminate) lying surface is composed of moisture-resistant high-pressure laminate.  The lying surfaces are easy to remove and can thus be cleaned quickly and thoroughly.

Functional description | Versions and Options 2/2

The standard design of the bed can be supplied with various versions and options.

Version/option	Description
Side rails	The bed (except for design version MA) can be equipped with various side rail versions: Back/lower leg section*: 1. Can be pulled out up to 34* cm (standard) 2. Can be pulled out up to 37* cm (option) 3. Can be pulled out up to 43,5* cm (option) * Measured from the top edge of the side rail to the lying surface (without the mattress).

NOTE The load of the bedding tray may not exceed 20 kg.

These instructions for use cover all of the versions and options listed.

Precise details of the supplied bed designs can be found in the order specifications for your beds. If the original bed specification is no longer available, please contact Völker Customer Services.
Please make a note of the Völker serial number (ID No.) on the type label before you call.

Functional description | Accessories 1/3

To minimise the risk of injury, use only Völker mattresses whose dimensions are matched to Völker lying surfaces.

⚠ **DANGER** The use of mattresses not corresponding to the specifications may lead to the risk of suffocation!

⚠ **DANGER** Make sure that the dimension between the upper edge of the inserted mattress and the upper edge of the side rails is always greater than or equal to 220mm, see also topic 1. mattresses. The lengths and arrangements of the side rails comply with the requirements of the European standard 60601-2-52 in the current version and thus ensure that patients cannot become trapped.

Therefore, the use of side rails from other manufacturers with Völker beds is not permitted, nor is the independent modification of the attached side rails.

Völker beds of the S 962 series are equipped with permanently attached, non-removable side rails which can be folded down in the standard version and pushed into the lying surface, see also page 32. These side rails can be extended in heights between 34 cm and 45 cm (dimension of upper edge of side rail to lying surface without mattress) depending on the equipment and design variant you have chosen..

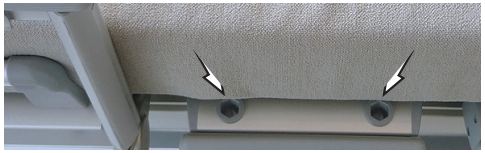
The Völker bed series S 962 offers lying surfaces of different sizes, depending on the equipment and design variant you have chosen, to which the mattress size must be matched. You will find an overview of possible lying surface sizes on page 55. The correct mattress size is usually 2 cm smaller in width, whereas it is the same in length as the lying surface size. If your lying surface size is not listed, or if you are unsure about the correct mattress size, please contact Völker. The volumetric weight of the mattress material must also correspond to the specifications on page 55

To minimise the risk of injury, use only Völker mattresses mattresses whose dimensions are adapted to the Völker lying surfaces.

⚠ **DANGER** The use of mattresses not corresponding to the specifications may lead to the risk of suffocation!

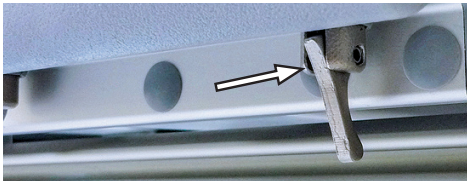
Side rail spacers

The sidet rail spacers close the central gap between the moving split side rails on Völker beds to create acontinuous side rail solution.



The side rail spacers are inserted into the support sleeves on the upper leg section. Check whether the pendulum lock is fully engaged by attempting to pull the side rail spacers out upwards.

If this succeeds, push the side rail spacer completely down again and adjust the pendulum until the side rail spacer can no longer be pulled out.



To remove the side rail spacer from the holder, move the pendulum into a vertical position and at the same time pull the side rail spacer upwards and out.

NOTE Please follow the detailed instructions for use of the side rail spacers.

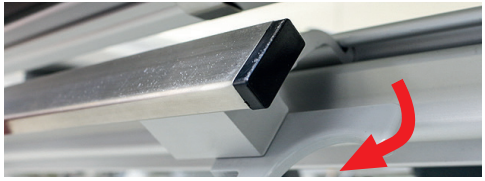
WARNING Make sure that the side rails are fully raised and engaged. When operating the electric lying surface adjustment function or the side rails, ensure that the patient is not in contact with the side rails and that no body parts are protruding through the side rails. Locking the hand control unit functions is strongly recommended.

Accessory rails on both sides

Accessory rails are available for the bed in two different lengths.

- Length 40 cm
- Lenght 60 cm

Both rails can be individually attached to the longitudinal profiles on either side of the bed.



Hook the accessory rail into the side panel. Turn the two clamping levers inwards by 180° to lock the accessory rail in place.

You should also note that drainage devices could touch the floor when the bed is lowered. This also applies to the Trendelenburg and reverse Trendelenburg position.

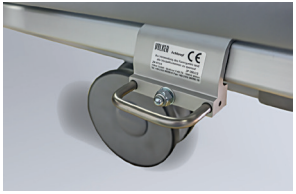
The safe working load of each accessory rail is 20 kg.

WARNING If the bed needs to be moved or adjusted, the infusion lines and cables must beclosely monitored by care staff.

NOTE If the lying surface height is lowered to below 40 cm, any objects attached to the accessory rail must be removed.

Restraint holders

The bed can be equipped with restraint holders. These can be attached to the side panels. The restraint holders are mounted on the side panels and have the same type of fasteners as the accessory rails, which also allows them to be attached in variable positions.



Restraint holder for side panel

Use of securing systems

Securing systems such as belts or straps should only be used exactly as specified by the manufacturer.

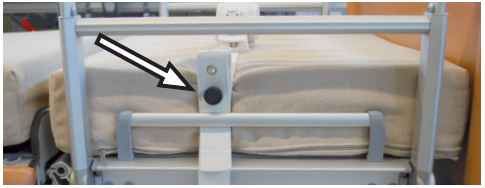
If securing systems in the form of abdominal belts are used, then it must be ensured that the side rails are completely raised. In this case, the gap in the middle of the rails must be closed using a rail spacer.

DANGER When using securing systems and rail spacers, please note the separate instructions for use pertaining to these accessories.If the patient is restrained with the help of restraint holders, the lying surfaces must **never** be adjusted while the patient is restrained **and** must always be in the lowest position!

DANGER The lying surface adjustment functions must be locked when a patient is secured, and the hand control must be kept out of the patient's reach.

Restraints may be fastened directly onto beds built after 08/2009.

To do this, fasten the restraints on the corresponding longitudinal section of the lying surface frame. Make sure that the restraint is passed between the mattress holder and the mattress.



On-time

The maximum on-time for the electromotive bed functions is specified on the bed (type label p. 70) or in the technical data sheet.

4 min/10 min means that each electromotive adjustment may be operated for a maximum of 4 minutes and then there must be a pause of 10 min (protection against overheating).

NOTE Should the maximum on-time of 4 minutes be exceeded repeatedly or for longer periods, safety cut-out devices on the bed may cause the electromechanical motor system to shut down. The bed must not be manoeuvred using the motors until it has cooled down sufficiently!

Battery pack

The battery pack integrated into the double drive has a charge capacity that is equivalent in theory to a constant operation of at least 15 lifting and lying surface adjustments with a working load of 250 kg.

NOTE If the bed is parked at its location and the mains plug is not connected, this will cause the battery pack to discharge due to the buffering of the electronic components!

Deep-discharged battery packs can be damaged to the extent that premature replacement is needed!

To increase the stand-by time, it is recommended to activate the reset button on the housing when storing the bed and to disconnect the bed from the mains. The bed should not be stored for a period longer than 6 months with a fully charged battery pack without recharging it.

Appropriate and correct use of the battery pack is essential for it to have a long service life!

In order to guarantee electrical functionality at all times, the bed should be connected to the mains as much as possible.

Safety cut-out device

The bed is equipped with an electrical, self-resetting safety cut-out device that prevents overloading of the motor systems. In the event of very severe overloading, the bed is automatically switched off.

NOTE When installing the bed, position it with the headboard facing the wall.

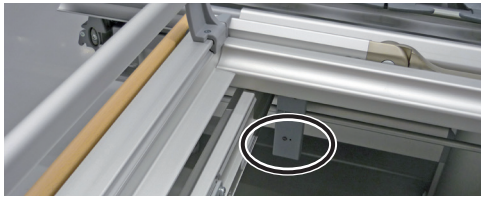
.

Conditions for set-up

The bed is only approved for use in dry rooms (technical data sheet). A mains power supply and possibly an equipotential bonding conductor connection are required for operation of the bed in any suitable room. When this is available and the building installation permits it, the bed should always be connected to the potential equalisation. Please note that the mains socket for the bed must be freely accessible and not impeded by a piece of furniture, for example.

Mechanical activation

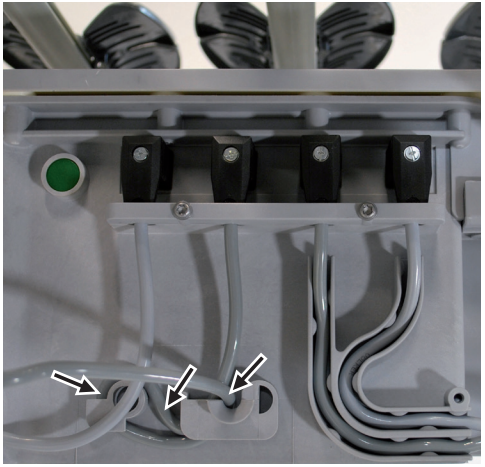
The supplied head and foot sections must be slotted into the corner connectors on the bed frame.Check that the cross end stop can be moved freely and has not become jammed during transport.



Cross end stop between upper and lower leg section.

Hand control connection

The hand control should be connected to the socket provided, where appropriate. The spiral cable must be routed so that it is not under tension.



Routing the hand control cable

Bed transport

The bed can be moved without auxiliary transportation devices. If necessary, release the brakes, p. 34.

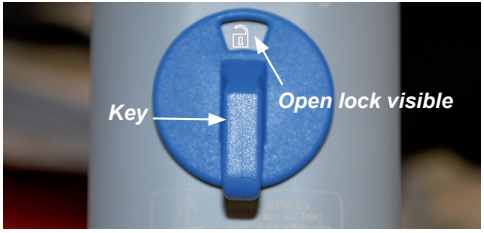
⚠ **CAUTION** The bed should only be moved on a solid floor. Never attempt to push it over obstacles of over 2 cm in height. The maximum angle of inclination of the floor must not exceed 10°. The bed can be transported by one person on even surfaces. If the bed has to be moved over sloping or rising surfaces, the bed must only be transported by at least two people holding the bed at the head and foot ends due to the free running casters and for the safety of the patient and nursing staff.

WARNING Check the mains cable for damage. If the cable is damaged, the bed must not be used and must be taken out of service immediately!

NOTE Please be aware that incorrect handling of the mains isolation switch can lead to the battery pack no longer charging. Incorrect handling can include dropping the mains isolation switch, pulling the mains plug cable to release it from the socket, clamping the mains cable between the lying surface and the lying surface frame and driving over the cable when transporting the bed.

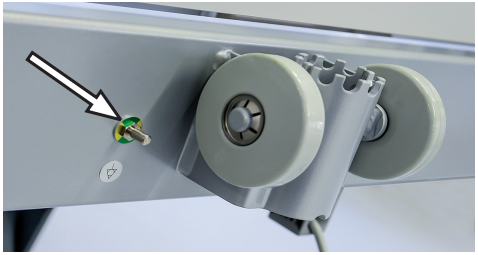
1. Connect the mains plug to the mains power socket.
2. Press the green button on the mains isolation switch for one second to isolate the mains connection.

3. Unlock the locking switch on the reverse of the hand control using the key (open lock visible) in order to activate the bed's electrical functions.



NOTE The mains isolation switch ensures that the bed is only supplied with mains voltage when an electrical function is actuated or the battery is being charged.

The equipotential bonding connection is located in the middle of the head bar outside for beds with an external trapeze bar bracket. For beds with 2 internal trapeze bar brackets (one bracket in each inside corner of the head bar), the connection for equipotential bonding is located on the underside of the head bar. The connection is marked by a sticker



Activation| Using the battery pack 1/2

The battery pack allows the bed to be operated independently of the mains supply for at least 15 adjustment cycles under full load.

It is possible to assess the battery status by connecting an additional nurse hand control with LEDs.

The LEDs of the battery display on the additional nurse hand control displays three colours:

Green	The battery pack is more than 80% charged.
Yellow	The battery pack is 30-80% charged.
Red	DANGER ZONE. Battery pack is discharged.
Flashing	The battery pack is being charged.

If the LED is red or yellow, the battery pack needs to be recharged. The battery pack is switched off shortly before deep discharging. After the bed is connected to the mains supply, press any button on the hand control to render it fully functional again. The battery pack is charged when it is connected to the mains after every use or if the charge has fallen too low.

NOTE If the bed is stored for a long period without being connected to the mains supply, the battery pack can discharge. The degree of discharge depends on environmental conditions.

To increase the stand-by time, it is recommended to activate the reset button on the housing when storing the bed and to disconnect the bed from the mains.
The bed should not be stored for a period longer than 6 months with a fully charged battery pack without recharging it.

The LED displays the battery pack's  charging status during the charging cycle.
The current cut-off is deactivated and current flows to the bed when the LED of the mains voltage display  is green and the LED of the battery display  flashes.

NOTE If the red LED lights up but the bed cannot be electrically adjusted, press the mains isolation switch.

WARNING If electromagnetic interference occurs with other equipment in the area around the bed, please refrain from using these devices.
The bed should always be handled carefully during transport and protected from damp.

NOTE The bed is designed for use in an ambient temperature range from 10 °C to 40 °C, with a relative humidity of 30% to 75% and an air pressure of 700 to 1060 hPa.

WARNING The battery pack must only be replaced by personnel trained by Völker GmbH.

WARNING If the battery pack is faulty, degassing can occur. In rare cases, this can cause deformation of the battery pack housing. If this occurs, the bed must be immediately taken out of service and taken to an adequately ventilated room without sparks (from electricity or fire). Immediately inform customer services should this occur!

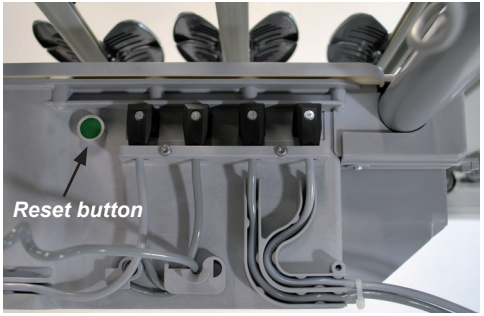
WARNING The battery pack must be disposed of in an environmentally responsible manner using the appropriate services. Alternatively, you can return it to Völker GmbH for disposal.

To activate the hand control and the nurse hand control once the bed has been switched on, the hand control and nurse hand control (p. 33) must be unlocked.

Taking out of service

If the bed is to be out of service for a period longer than two weeks, then the reset button on the engine housing must be pressed to disconnect the bed from the mains.

The mains plug must also be pulled out and the reset button pressed before repair work.



Visual inspection

Before each new occupancy of the bed, the following checks must be carried out:

1. Ensure the bed exhibits no visible signs of damage.
2. Ensure that the insulation of the electrical cables is intact.
3. Ensure that the next testing date has not been missed (see testing label).
4. Check the mains cable for damage at regular intervals

⚠ **WARNING** Only undamaged beds that are still within their testing interval periods may be used!

Functional check

A functional check must be carried out before each new occupancy:

1. All electrical functions must be actuated to their terminal positions once.
2. The braking function of the bed must be checked.

Once a fault-free functional check has been carried out, the bed is ready for use.

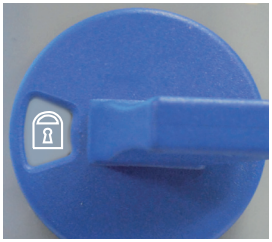
Operation | Key lock

Activating the key lock disables all functions of the relevant hand control.

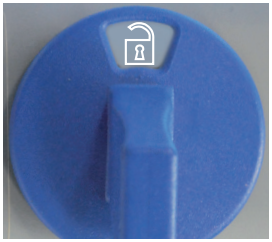
The locking switches are located on the reverse of the hand control and the nurse hand control. They are unlocked (open lock visible) and locked with the key.

If the bed functions cannot be actuated, check whether the key lock is activated.

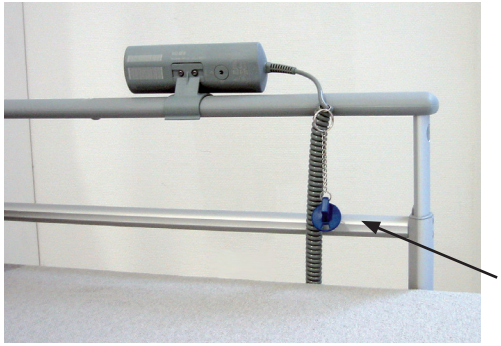
The key should be removed from the bed when it is not required.



Hand control and/or nurse hand control locked



Hand control and/or nurse hand control unlocked



To brake the bed, step on the **red spot** on the double foot pedal or single foot pedal. As soon as the pedal is engaged in a 30° position, the bed is braked.

To move the bed into the desired position, move the double foot pedal into a horizontal position.

To angle the steering castor in the direction of travel, step on the **green spot** on the double foot pedal. As soon as the double foot pedal is engaged in a 30° position, the steering castor is fixed and the bed can be controlled safely.

In the Vis-a-Vis position, at least one of the casters under the lower leg section must also be clamped separately by stepping on the respective foot pedal to secure the lower leg section from accidentally rolling away sideways. These casters can be loosened by pushing the foot pedal up with your foot.

⚠ **CAUTION "Risk of accident"**
If the bed is not being transported, the castors must always be in the braked position, since the bed may be required as a support for when the patient stands up or lies down. If the bed rolls away while unbraked, this can lead to a serious fall. After activating the central holding brake, it must be checked that the bed is actually fixed, i.e. the castors are adequately braked.

The bed can be in a non-fully-braked status even after first activation or reactivation, and consequently it must be checked that the castors are correctly braked.

⚠ **CAUTION** In the Vis-a-Vis position, at least one of the casters under the lower leg section must also be clamped separately

Bed braked

Everything free

Moving position
(steering castor engaged)

Caster under lower leg section

⚠ **WARNING** All people whose duties involve manoeuvring of the side rails must have read and understood the following information:

- During actuation of the back, upper leg or lower leg section adjustment, of the lift or of the side rails, it must always be ensured that the patient is not touching the side rails, and that no part of his/her body is sticking out through the side rails.
- If the side rails are used for an individual whose psychological condition necessitates their use, it must be ensured that the hand control is stored completely out of his/her reach or its functions are completely locked. In all cases, care must be taken to ensure that entrapment risks are minimized.
- Protective covers (cot side pads) are available as an accessory for the side rails. These provide additional protection against injury from contact with the side rails. The use of these protective covers is recommended for all persons for whom the risk of injury from unavoidable contact with the side rails is very high. Even with the covers, the care staff or patient must still take the necessary care when operating the bed.
- If the side rails are used, they must always be either completely raised and securely engaged, or completely lowered to the end stop. Because of the risk of entrapment, they must **never** be left in a position where they are not completely engaged.
- If the side rails are damaged, there is a risk that the patient will fall out of bed.
- The legal admissibility of using the side rails must be ensured.
- The side rails must only be operated by trained care staff.
- Ensure that no body parts are protruding through the side rails when the electrical lying surface adjustment function is activated.
- Ensure that the side rails (or parts thereof) are either fully raised and locked or fully lowered.

All types of Völker side rails can only be replaced with tools.Only Völker GmbH approved side rails may be used for the bed

⚠ **DANGER** Failure on the part of care staff to observe the above safety measures may result in injury.

Raising the side rails

1. Pull the side rail element out horizontally until the end stop, and fold it upwards.
2. To adjust the height of the side rail, pull the telescopic section upwards until it reaches its end stop.

Lowering the side rails

1. Press both buttons on the outside of the frame, right under the cross-member, to bring the height-adjustable side rail element to its lowest position.

2. Press the trigger labelled "Drücken / Press" at the lower edge of the side rail element and tilt it sideways into the horizontal plane, so that it lies parallel to the floor.

3. Push the rail element completely underneath the lying surface.

The side rail elements can be used individually or together as required to protect the patient.

Raising all four rail elements offers the patient maximum protection.

NOTE The side rails should always be gripped with two hands at the ends of the element in question and guided upwards or downwards.

CAUTION Any weight on side rail elements that are pulled out horizontally must not exceed 15 kg!

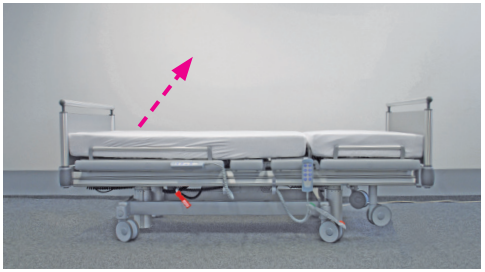
NOTE Due to their exceptional stability, the side rail elements can also be used as a surface for storing bed linen (max. 15 kg) or as an additional supporting surface for care-related positions, such as Bobath treatments, or for the delivery of physiotherapy-related treatments.

The back lying surface can be adjusted using the hand control or the nurse hand control.

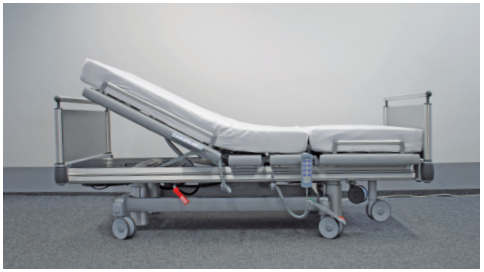
If necessary, disable the hand control lock.

The back section of the lying surface can be raised up to an angle of max. 70°.

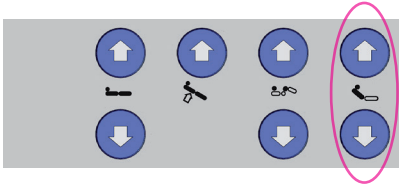
⚠ **WARNING** When the back section is being raised with the side rails up, it must be ensured that none of the patient's or any other person's body parts are sticking out through the side rails or are on top of them!



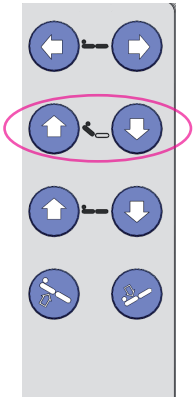
Back section up/down



Back section up/down



Hand control



Nurse hand control

The bed is fitted with a mechanical rapid lowering function of the back section for resuscitation.

⚠ **WARNING** The CPR function (cardiopulmonary resuscitation function) must only be used in emergencies and by trained, qualified staff!

⚠ **WARNING** The CPR function must not be used instead of the hand control unit to lower the back section!

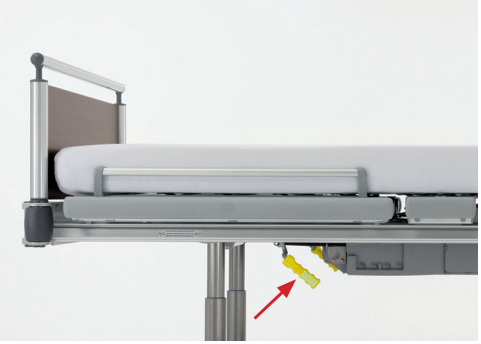
⚠ **WARNING** It is essential to hold the back section firmly by the mattress holder to avoid sudden lowering with the patient!

Hold the back section on the mattress holder and pull the yellow lever located at the left or right underneath the back section of the lying surface upwards to lower the back section rapidly.

The back section can now be moved quickly downwards. The lowering process can be interrupted by letting go of the yellow lever!

Yellow lever for mechanical rapid lowering of the back section for resuscitation:

⚠ **WARNING** The back section must always be held on the mattress holder so that the back section is not lowered suddenly with the patient.



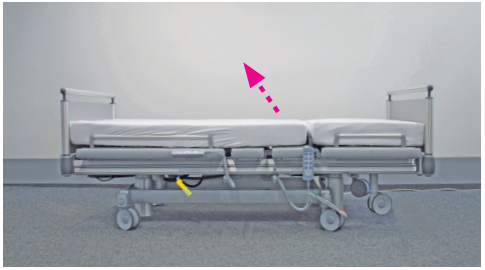
The position of the upper leg lying surface can be adjusted using the hand control or the nurse hand control.

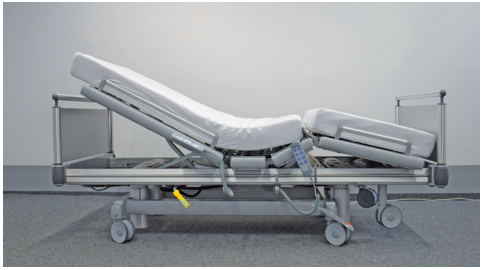
If necessary, disable the hand control lock.

The upper leg section of the lying surface can be raised up to an angle of max. 45°.

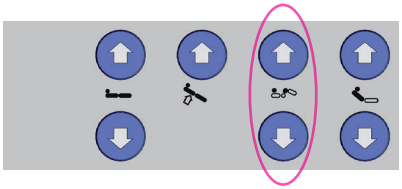
The lower leg section can be moved manually to any position of maximum 16° by pulling on the mattress holder.

To lower the lower leg section, the mattress holder is pulled and the section lifted to the end stop and then lowered. The locking mechanism is disengaged automatically.





Upper leg section up/down



Hand control

WARNING When the upper or lower leg section is being raised with the side rails up, it must be ensured that none of the patient's or any other person's body parts are sticking out through the side rails or are on top of them!

WARNING "Risk of entrapment" When the position of the upper leg section is being adjusted, there is a risk of entrapment between the raised side rail and the foot section.

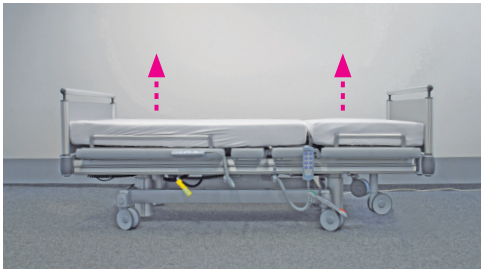
The position of the entire lying surface can be adjusted using the or the nurse hand control.

If necessary, disable the hand control lock.

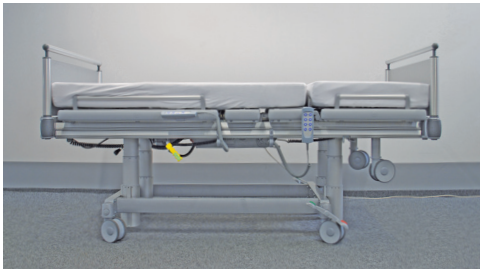
The lying surface height can be adjusted from approx. 40 cm to 71 cm.

⚠ **WARNING** To avoid danger to the patient from falling, we recommend that the bed be lowered all the way except when delivering care!

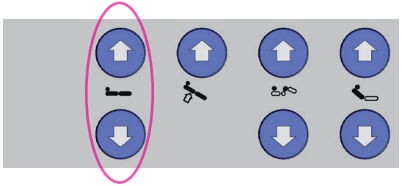
⚠ **DANGER** Before lowering the bed, it must be ensured that no people, limbs, pets, bed linen or other objects are trapped between the lying surface and the lower frame or floor. The bed's position must be stable (castors braked) when the patient is getting in and out of the bed!



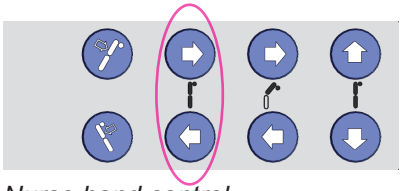
Lying surface up/down



Lying surface up/down



Hand control



Nurse hand control

⚠ **WARNING** When the height adjustment mechanism is actuated with the side rails up, it must be ensured that the patient does not have any contact with the side rails and that no parts of either the patient's body or those of other persons are sticking through the side rails!

Operation | Anti-Trendelenburg [1] and Trendelenburg positioning [2]

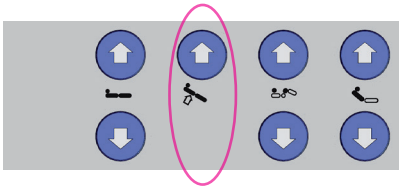
Trendelenburg positioning can only be set using the nurse hand control.If necessary, disable the hand control lock.The Trendelenburg position can be adjusted up to an angle of 12°.

⚠ **CAUTION** If a fault occurs with the lifting function, or the mains power supply fails and the battery pack is completely discharged, the Trendelenburg function cannot be engaged. The patient may have to be placed in a different bed!

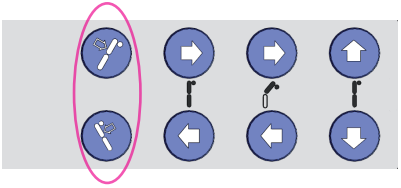
⚠ **WARNING** Since the Trendelenburg positioning depends on clinical indications, it must only be used with appropriate clinical approval. The Trendelenburg position is a shock position and should only be used in an emergency.

The lying surface is automatically returned to its horizontal position if it is moved to its highest or lowest position.

Anti-Trendelenburg positioning [1]



Hand control

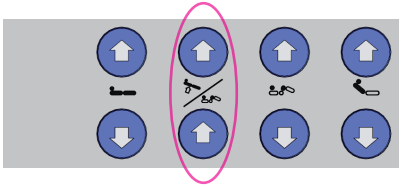


Nurse hand control

[1] Head end raised
[2] Head end lowered

Patients who are unable to leave the bed either because their circulatory system is too unstable or because they first have to be "taught" how to sit can gain a lot of benefit from the comfort seating position as it provides an active sitting position in the bed.

Anti-Trendelenburg positioning



Auto-Contour

Hand control with Anti-Trendelenburg positioning and Auto-Contour (option)

Adjusting the comfort seating position

1. Move the back and the upper leg section upwards a little to a comfortable position.
   Alternatively, you can reach this position in a single step by pressing the Auto-Contour button (option).
2. Swivel the bed to the comfort seating-position by pressing the Anti-Trendelenburg button .

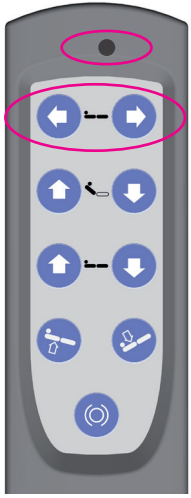
Restoring the straight lying surface

To return to a horizontal lying position, move the lying surface and the back and upper leg section in any preferred order to their lowest position.

Operation | Vis-a-Vis position 1/3

The Vis-a-Vis position can only be set using the nurse hand control plus a few hand movements.

If necessary, disable the hand control lock, p. 33.



LED

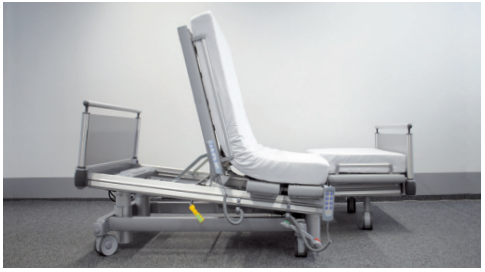
Length extension back

Length extension out

Nurse hand control

Vis-a-Vis position as a sitting position

The back section is raised up to 70° and the upper leg section up to 7°.



Vis-a-Vis position for getting up

The back section is raised up to 70° and the lifting mechanism at the head end tilted up to 7°.

NOTE There is no potential equalization for the lower leg section in the Vis-a-Vis position.

NOTE The height adjustment of the bed is approx. 40-71 cm owing to the special function of the bed in the vis-a-vis position, since otherwise, small people would not be able to use the Vis-a-Vis bed to support their mobilization.

CAUTION Generally, the foot section may not be removed. It may only be removed to carry out care-related activities such as changing dressings or the like.

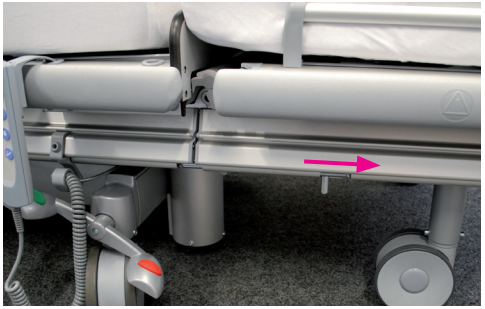
CAUTION A maximum load of 80 kg on the lower leg section is permissible when the bed is in the fully extended Vis-a-Vis position!

Setting the Vis-a-Vis position

1. Put up the side rails of the back section.
2. Press the button "Length extension out" on the nurse hand control. The lying surface now moves to its lowest position (the back section maintains its position). Then the entire lying surface moves in the direction of the foot section.
3. Unlock the Vis-a-Vis locking mechanism on one side of the bed manually and then push it away to the other side.

NOTE In the Vis-a-Vis position, the following positions of the lying surfaces can also be executed in combination:

Back section:	0-70°
Lifting mechanism, head end:	0- 7°
Upper leg section:	0- 7°
Height adjustment:	locked
Trendelenburg positioning:	locked



NOTE It is only possible to extend the length with the locking mechanism closed!

Cancelling the Vis-a-Vis position

1. If the bed is in the Anti-Trendelenburg position, first bring it to a horizontal position by pressing the "Lying surface down" button .
2. Push the lower leg section manually back to the end stop and lock it.
3. Move the lying surface to its end point with the button "Length extension back" .

DANGER Be aware that when the "Length extension out" button is actuated, the entire bed moves 25 cm to the foot end, and when the "Length extension back" button is actuated, it moves 25 cm to the head end. These areas must always be kept free.

Operation | Vis-a-Vis position 3/3

The nurse hand control has an integrated LED that can assist you when extending the bed lengthwise.

Furthermore, the light emitting diode distinguishes between three different simulations:

When you press a length extension button  , the **LED flashes green** whilst the bed performs the extension.

The **LED lights up green** when you press a length extension button  if the bed has finished extending and the bed is now in the normal or Vis-a-Vis initial position

If the LED lights up red, this signals a fault. Please refer to the fault table.

NOTE If the lying surface of the bed is in a raised position and you press the „Length extension out“ button  , the lying surface firstly moves down.

Before the length extension begins, however, the lying surface rises again by about 5 cm and lowers again afterwards.
The measuring movement is required technically and serves for precisely calibrating the height of the length extension.

Cleaning and disinfection 1/2

To maintain the bed's functionality, it should be cleaned, disinfected and tested

- at regular intervals
- as required
- after every change of patient
- in accordance with the guidelines of the respective hygiene schedule

so that it can be used again immediately and without risk. Hazards may arise due to improper cleaning/disinfection of the bed. The degree of disinfection must be determined by the user!

As a general rule, only state-of-the-art disinfectants should be used.

The current healthcare standard can be found, for example, in the VAH List [from the German Association of Applied Hygiene], RKI [Robert Koch Institute] guidelines or also in the IHO List [from the German Industrial Association for Hygiene and Surface Protection]. Unless any specific ingredients which may NOT be used are given in the respective instructions for use, the disinfectants listed there may be used.

The disinfectants themselves should be used in accordance with the disinfectant manufacturer's instructions. Therefore it is worth checking in-house hygiene protocols.

Due to the large number of available products, Völker GmbH cannot approve specific products and list them in the instructions for use.

Please observe the information provided by the cleaning product manufacturer.

Not following these instructions may lead to personal injury and material damage.

WARNING
"Danger of electric shock/fire and loss of function" The bed must always be disconnected from the power supply before being cleaned and disinfected.

Cleaning

Depending on the degree of soiling, we recommend cleaning the bed with a damp cloth or similar. For stubborn dirt or stains, a soft brush may also be used. Do not moisten the bed too much when cleaning.

Disinfection by wiping

The dilution ratio recommended in the relevant instructions for use by the cleaning product manufacturers must be used.

NOTE Solvents are not permitted.

- Abrasives, scouring pads or other scouring agents must **not** be used.
- Chlorine, formaldehyde, phenol-based products and other solvents (toluene, xylene or acetone) are **not** allowed.

The following information regarding cleaning products and disinfectants must be observed:

- the solutions for use must as a rule be freshly prepared.

Cleaning and disinfection 2/2

- the concentrations quoted should be neither exceeded nor undershot. the so-called “shot” method must not be used under any circumstances. Under no circumstances may users add cleaning products such as soap or surfactants at their own discretion (protein-related faults).
- with spray disinfectants containing alcohol, there is the danger of explosion and fire when used over a large surface.
- cleaning products must not contain corrosive or caustic ingredients.
- they must not contain any substances that will change the surface structure or the gripping properties of materials.
- lubricants must not be affected.
- the pH of the water must not be higher or lower than 5-8.
- the water must not exceed a total water hardness of 0.9 mmol/l (corresponding to 5 °dH).

The information provided by us does not exempt users from conducting their own investigations and tests, since the conditions (e.g. water hardness) can be different locally. No legally binding assurance of certain properties can be deduced from this information.

Cable plugs and the sockets of the control box, distributor box and battery are protected against splashes only when connected and when protected by the covers and blind plugs provided.

- Avoid the ingress of water and cleaning agents into unused connections.
- Labels and markings must not be cleaned with a brush or with high pressure.
- Dry the bed with special care and test it before re-use.
- Stubborn dirt or stains should be soaked before cleaning (please test first).

Spray lances and washing systems*

⚠ WARNING
Cleaning and disinfection with the spray lances of high-pressure cleaning equipment is **not** permitted.

Völker GmbH does not accept liability for damage sustained to the surface coating through the use of unsuitable detergents and disinfectants, incorrect mixing ratios or insufficient care of the beds.

Cleaning the hand control units/ keypads

To avoid cross-contamination between the patient and care staff, the hand control units and keypads must be cleaned daily.

*Please refer to the information on the type label to ascertain whether your bed is suitable for the washing system.

Staff training

Every person involved with maintenance or servicing must at least have read the safety notes for the respective bed model and be trained in accordance with MPBetreibV § 4. The staff requirements defined by the regulations governing the installation, operation, use and maintenance of medical devices must be ensured by the operator of the beds.

To guarantee a trouble-free operation of the beds, the instructions for use of the bed must always be accessible to the servicing staff.

Safety notes

NOTE During maintenance and technical checks, the following specifications must be strictly observed:

- The room's electrical installations must satisfy current technical requirements and the bed must be used correctly.
- The castors must be placed in the "brake position".
- The beds are not protected against explosion and must therefore only be maintained in an environment free from flammable substances and materials.

WARNING Before carrying out any repair work, always disconnect the mains plug **and** disconnect the battery pack from the mains by pressing the green reset button on the engine housing.

WARNING Maintenance and repair work should only be carried out after the bed has been disinfected.

WARNING Maintenance and repair work should only be carried out on an unoccupied bed. The patient may also have to be transferred to another bed before the work.

WARNING After maintenance (repair) work is complete, always check that the bed is functioning correctly. It must be checked that the bed can be used correctly without risk to the patient or care personnel.

WARNING When working on the open motor, it must be ensured that there is no contact with the power supply board for at least 20 minutes after disconnecting it from the power supply **and** the battery. The reason for this is to allow self-discharge of the smoothing capacitor, which would represent a risk to persons.

WARNING When connecting a motor to the extension board, it must be noted that only one motor may be connected here.

The bed requires little maintenance. All movable parts for the height adjustment mechanism, the lying surface motor systems and the side rails are provided with long-lasting lubricant at the factory. It is recommended that **the bed is subjected to a regular, or at least once a year, Technical check (incl. visual inspection and functional check) as described in the checklist** and any damage uncovered as a result, such as signs of wear and tear, loose screws or breaks/fractures, be eliminated immediately.

After every lengthy period of non-use, a Technical check must be carried out.

The section entitled Technical check contains all the information needed to carry out the technical check in accordance with MPBetreibV, BGVA3, UVV on hospital and care beds and measurement as per DIN EN 62353. Other (e.g. countryspecific) spe ci fications have not been included here. This does not absolve the operator from the obligation to observe any such specifications.

Period	Work to be carried out
Annually and after lengthy periods of non-use	Technical check, p. 46 f. Visual and functional check, p.28
As required	Lubricate mechanical parts Replace battery pack if faulty Replace parts subject to wear if faulty • Wings (if fitted) • Spring elements (if fitted)
Every 3-5 years	Replace the battery pack

Technical check 1/2

1. Visual inspection

Check the frame parts for plastic deformations and/or wear and tear.
This includes the lower frame, the lifting mechanism, all parts of the lying surface (back, seat, upper leg and lower leg sections, wing and spring elements (if present)), trapeze bar, trapeze bar holder and castors.

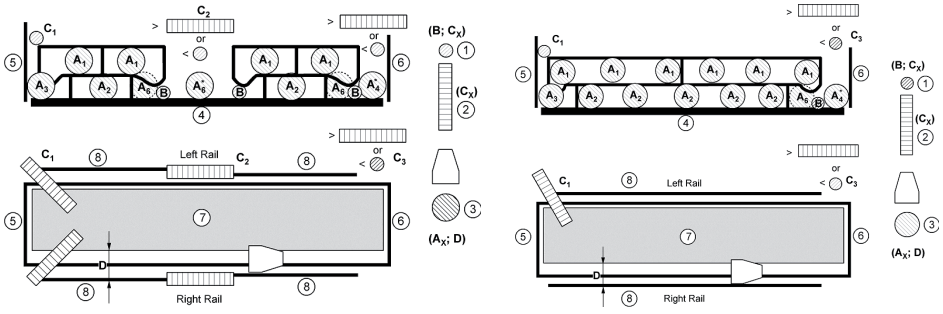
2. Functional check of the side rails

The side rails must be inspected for trapping and pinching points in accordance with DIN EN 60601-2-52.

Inspection in accordance with DIN EN 60601-2-52

Check that the locking mechanism for the side rails is working correctly and that there are no visible deformations or signs of wear and tear on the side rails.

Check that the prescribed distances are maintained, even when the side rails areplaced under load. favourable conditions.



Letter	Description	Dimension
A_x	The distance between elements within the scope of the SIDE RAIL in its raised/engaged position or of the area formed by the SIDE RAILS and the fixed parts of the BED or ACCESSORIES.	< 120 mm
B	Not applicable	-
C_1	Distance between HEAD SECTION and SIDE RAIL	< 60 mm
$C_{2,3}$	Distance between divided SIDE RAIL and distance between SIDE RAIL and FOOT SECTION	< 60 mm or > 318 mm
D	Area between SIDE RAIL and MATTRESS	120 mm cone may sink max. 60 mm under the mattress surface without pressure
G	Height of the upper edge of the SIDE RAILS over the mattress over at least 1/2 of the length of the LYING SURFACE	≥ 220 mm

Technical check 2/2

3. Functional check of the brakes

Check that the brake is functioning correctly (braked, steer, free running).

4. Functional check of the motors

Travel through the full adjustment range of each motor. Look out for any unusual noises, watch the speed, ease of running etc., and check that the selected function travels in the correct direction. Particularly ensure that the motor switches off automatically when it reaches its terminal position*.

5. Mains connection cable

Check

- the mains connection cable, incl. cable guides,
- the strain relief, including kink protection sleeve,
- the mains connection plug,
- the cable hooks

for damage.

* Please note that the terminal position can vary from bed model to bed model. Please consult the technical specifications for this, or if in doubt, contact our service department.

6. Cabling

Check the cable guides and that the plug connectors are correctly seated and do not exhibit any damage.

Check the cables for damage.

7. Housing

Check all housings for damage.
All screws must be firmly tightened and seals must not exhibit any visible damage.

8. Mechanical check

Check the function of the supporting disc by manually moving the lower leg section to the individual positions.

9. Measuring in accordance with DIN EN 62353

The bed must be checked electrically in accordance with DIN EN 62353.
The leakage current should be measured by means of alternative measurement. The max. measured value must be less than or equal to 500 µA.
Note that the green button on the mains isolation (p. 28) must be pressed throughout the whole measurement.

On beds with a potential cable connection (see sketch below), the impedance of the potential equalisation within the bed must also be measured.
The impedance must be less than 0.2 Ω (I=5…25 A, R=U/I < 0.2 Ω).

10. Trapeze bar grab handle

Check whether the plastic and holding frame of the grab handle exhibit any damage and that the fixing rods on the trapeze bar are intact.

The handle of the trapeze bar and the fastening strap must be replaced in the following cycle:

- Every 5 years: handles and handles with roll function in nursing homes
- Every 3 years: handles with roll function in hospitals

11. Further accessories

Further accessories must always be checked in accordance with the manufacturer's instructions.

Troubleshooting | Table of faults 1/5

The following table contains information on possible functional problems that the users can resolve themselves.

Anyone responsible for carrying out maintenance and servicing must at least have read the safety notes for the respective bed model and be qualified in accordance with MPBetreibV § 4. The staff requirements defined by the regulations governing the installation, operation, use and maintenance of medical devices must be ensured by the operator of the beds.

To guarantee a trouble-free operation of the beds, the instructions for use of the bed must always be accessible to the servicing staff.

NOTE Before carrying out any troubleshooting, check that the bed is connected to the power supply (the mains plug is in a live socket).

WARNING Before carrying out any repair work, ensure that the bed has been disconnected from the power supply and from the battery pack by pressing the reset button.

If the same fault occurs repeatedly, use the Völker Diagnostic System (VDS) to read out the error memory before resetting the system again.

NOTE Ensure the correct configuration of the extension board's plug contacts at the twin drive:

Troubleshooting | Table of faults 2/5

Fault	Possible cause	Troubleshooting
Adjustment of the lying surface (back, upper leg and lower leg section) not functioning.	(1) Hand control locked	(1) Unlock hand control
	(2) Nurse hand control locked.	(2) Unlock nurse hand control
	(3) The mains plug is not plugged in or there is no power to the socket and battery pack is discharged.	(3) Connect the plug or check the socket. Then press the green button on the mains isolation, and then press any hand control function.
	(4) Bed taken out of service.	(4) Press the green button on the mains isolation, and then press any hand control function.
	(5) Communication error in the electronics.	(5) Press the green reset button on the double drive. After approx. 10 seconds, press the green button on the mains isolation and then press any hand control function. Never press both green buttons at the same time!
	(6) The hand control is faulty.	(6) Replace hand control.
	(7) The nurse hand control is faulty.	(7) Replace nurse hand control.

☞ *Continued on next page.*

Troubleshooting | Table of faults 3/5

Fault	Possible cause	Troubleshooting
The bed cannot be adjusted in height.	(1) Hand control locked.	(1) Unlock hand control
	(2) Nurse hand control locked.	(2) Unlock nurse hand control
	(3) The mains plug is not plugged in or there is no power to the socket and battery pack is discharged.	(3) Connect the plug or check the socket. Then press the green button on the mains isolation, and then press any hand control function.
	(4) Bed taken out of service.	(4) Press the green button on the mains isolation, and then press any hand control function.
	(5) Communication error in the electronics.	(5) Press the green reset button on the double drive. After approx. 10 seconds, press the green button on the mains isolation, and then press any hand control function. Never press both green buttons at the same time!
	(6) Lying surface is not retracted to the end point on the head side.	(6) Press the button „Length extension out“ on the nurse hand control until the lying surface has retracted to its end point and the LED on the nurse hand control lights up green.

☞ *Continued on next page.*

Fault	Possible cause	Troubleshooting
The bed cannot be adjusted in height.	(7) The hand control is faulty. (8) The nurse hand control is faulty.	(7) Replace hand control. (8) Replace nurse hand control.

Possible faults during Vis-a-Vis operation:

It is difficult to lock or unlock the bar between the upper and lower leg sections.	(1) The lower leg section and the rest of the bed are not exactly aligned and the sides of the bed are therefore out of line.	(1) Make sure that the sides of the bed are aligned and that the side plates between the lower leg section and the rest of the bed are exactly in line.
Despite unlocking, the lower leg section cannot be moved.	(1) Lying surface is not extended to the end point on the foot side.	(1) Close Vis-a-Vis locking mechanism again and press the button „Length extension out“ on the nurse hand control until the lying surface is extended to its end point in the direction of the foot section and the LED on the nurse hand control lights up green.
Lower leg section cannot be moved smoothly.	(1) Uneven surface in the direction of movement.	(1) Position the bed so that the area of movement of the lower leg section has a flat surface (free of hollows or bumps).

☞ *Continued on next page.*

Troubleshooting | Table of faults 5/5

Fault	Possible cause	Troubleshooting
The bed cannot be extended lengthwise to the head section.	(1) Vis-a-Vis locking mechanism is not closed or only closed on one side. (2) Comfort position (Anti-Trendelenburg) is not completely put down.	(1) Push Vis-a-Vis locking mechanism in the direction of the head section on both sides of the bed to lock. (2) Press the „Lying surface down“ button on the hand control until the lying surface is completely horizontal in its lowest position.
The bed cannot be extended lengthwise to the foot section.	(1) Vis-a-Vis locking mechanism is not closed or only closed on one side.	(1) Close Vis-a-Vis locking mechanism on both sides of the bed.
Error message that is displayed by LED lighting up red on the nurse hand control.	(1) Vis-a-Vis locking mechanism is not closed or only closed on one side. (2) The required function requires the bed to be fully moved into the Vis-a-Vis initial position or the normal position.	(1) Close Vis-a-Vis locking mechanism on both sides of the bed. (2) Press the button „Length extension out“ or „Length extension in“ on the nurse hand control until the lying surface has moved to the corresponding end point and the LED on the nurse hand control lights up green.

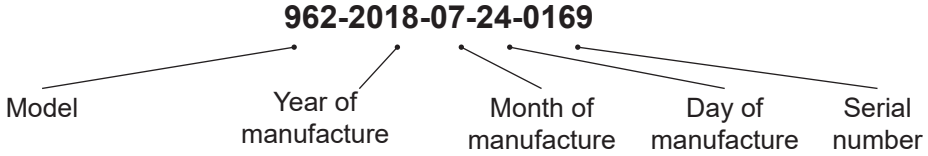
Type labels

The type plates are located on the inside of the head panel.

Raise the back section to read the type plates. See below for the symbols used.

Each bed can be clearly identified from the unique ID number on its type plate.

The structure of this ID number is as follows:



Symbols used

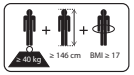
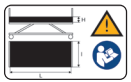
Symbols used on the type labels

	Manufacturer
REF	Model name
SN	Serial number
MD	Medical Device
	Max. permissible weight of the patient 185 kg (in application environments 1 and 2)
	Safe working load 250 kg
CE	The product meets the essential requirements of Annex 1 of EU-Regulation 2017/745.
	Type B-application part as per DIN EN 60601-1
	Protection class II device, protection-insulated
	Note the information in the instructions for use!
	The product must be disposed of in accordance with EU Directive 2002/96 EC pertaining to old electrical and electronic equipment
	TÜV SÜD certified (Technical Inspection Authority SOUTH)

Warning and information signs in the text

	**Warning symbols** - Information marked with this symbol must always be read and strictly observed!
	**NOTE** warns of possible damage to property
	Warning of electrical sources of interference

Stickers

	Mass of the mobile medical device inc. safe working load
	Description of an adult: Weight: min. 40 kg Height: min. 146 cm BMI: min. 17
	Bitte die Hinweise und Gebrauchsanweisungen für die Matratzen beachten
	Warning of crushing and clamping hazard!
	Do not sit here! (Bed extension)

Technical data (standard design) 1/2

The details marked below with * are dependent on the length, width or model of the bed. The values specified relate to model S 962-2 S Vis-a-Vis in design S.

External dimensions (W x L) for lying surface 90 x 200 cm * for lying surface 90 x 210 cm * for lying surface 90 x 220 cm * for lying surface 100 x 200 cm * for lying surface 100 x 210 cm * for lying surface 100 x 220 cm *	 approx. 99 x 220,5 cm approx. 99 x 230,5 cm approx. 99 x 240,5 cm approx. 109 x 220,5 cm approx. 109 x 230,5 cm approx. 109 x 240,5 cm
Clearance height	approx. 13 cm
Height of the lower edge of lying surface frame (min./max.)	approx. 24 cm / 55 cm
Height of the upper edge of the lying surface (min./max.) *	approx. 40 cm / 71 cm
Height of upper edge of head and foot section (min./max.) *	approx. 75 cm / 106 cm
Height centre of wall spacing roll	approx. 33 cm / 64 cm
Lying surface (4-part) *	approx. 90 x 200/210/220 cm approx. 100 x 200/210/220 cm
Volumetric weight of the mattress material	40 - 50 kg/m^3
Unladen weight *	approx. 169 kg

Safe working load for the bed	250 kg	
Max. patient weight	in application environment 1, 2 185 kg	in application environment 3, 5 215 kg
Safe working load for the trapeze bar holder	75 kg	
Safe working load for drip stands	2 kg / hook	
Castors	6 pcs, Ø 125 mm	
Max. castor load	150 kg (dynamic)	

Audible acoustic energy

Messwert	57,8 dB (A)

Technical data (standard design) 2/2

Mains voltage Rated power Rated frequency	AC 230 V (EU version) AC 240 V (UK version) AC 115 V (US version) 450 W 50 Hz / 60 Hz
Primary fuse	3.15 A (EU version) 5.0 A (UK version) 6.3 A (US version)
Battery pack	Type: 2 x 12 V block battery (lead gel) 7.2 Ah
Operating temperature range	+ 10 °C to + 40 °C
Transport / storage temperature range	- 20 °C to + 60 °C
Air humidity	30 % to 75 % rel.
Atmosphere range	700 hPa to 1060 hPa
Opertain volume S 962-2 (DA01)	52 dB(A)
Operating height (max.)	3000m

Hubmotorsicherung S 962-2 (DA01) :	Current monitoring, overcurrent deactivation at 20 A (hardware) or 15 A (software)

Classification

Protection against electric shock	Protection class II or device with internal electrical current source 
Protection type by housing as per EN 60529	IPX4 not suitable for cleaning in automatic washing systems
Degree of protection of the applied part against electric shock as per DIN EN 60601-1	Type B 
Degree of protection against explosive substances and mixtures	The bed is not protected against explosion and should not be used in an environment in which flammable anaesthetics or flammable cleaning agents are present (see brochure from accident prevention organisation ZH 1/200)
Grouping/Classification as per Regulation (EU) 2017/745 Appendix VIII Rule 13	Class I
Mode of operation	Int. 4 min/10 min on time max. 4 min. off time 10 min.
Technical check	1x yearly

Service life / disposal

Service life

The bed's expected service life is approx. 10 years.

Disposal information

- For all components to be disposed of, the operator must ensure that these are not infectious/contaminated.
- If the bed is scrapped, the wood, plastic and metal parts used must be separated and disposed of properly.
- If you have any questions, contact your local authorities, waste disposal companies or our service department.

Disposal of electrical parts

- This bed is electrically adjustable and classified as a commercial (b2b) electrical device in accordance with WEEE Directive 2012/19/EU (implemented in Germany in the Electrical and Electronic Equipment Act).
- The electrical components used are free of prohibited harmful constituents pursuant to the Restriction of Hazardous Substances II Directive 2011/65/EU.
- Replaced electrical components (drives, control units, hand control units, etc.) from these beds are to be treated and disposed of as electrical scrap in accordance with the WEEE Directive.
- The bed operator is legally obliged not to dispose of its electrical components in municipal collection points, but to send them directly to the manufacturer. Völker GmbH and its service partners will accept the return of these parts. Please contact our sales team in this regard.
- Our general terms and conditions apply to these returns.

Disposal of batteries

- Any individual batteries which have been removed but are no longer usable must be professionally disposed of in accordance with Directive 2006/66/EC (implemented in Germany in the Batteries Act); they do not belong in household waste.
- Contact your local waste disposal companies or our service department.

In other countries outside Germany/ the EU, observe the national regulations in force there.

Manufacturer‘s declarations 1/4

Guidelines and manufacturer's declarations — electromagnetic interference		
The bed is intended for use in an environment as specified below. The customer or the user of the bed must ensure that it is used in an environment of this type.		
Emitted interference measurements	**Compliance**	**Electromagnetic environment — guidelines**
HF emissions in accordance with CISPR 11	Group 1	The bed uses HF energy exclusively for its internal functions. Its HF emissions are therefore very low and it is unlikely that neighbouring electronic devices will be affected by interference.
HF emissions in accordance with CISPR 11	Class B	The bed is suitable for use in all facilities, including households and facilities directly connected to a public power grid that also supplies residential buildings.
Emissions of harmonics in accordance with IEC 61000-3-2	Class A	
Emissions of voltage fluctuations/flicker in accordance with IEC 61000-3-3	Compliant	

Manufacturer‘s declarations 2/4

Guidelines and manufacturer's declaration — electromagnetic immunity			
The bed is intended for use in the electromagnetic environment specified below. The customer or the bed user must ensure that it is used in an environment of this kind.			
Immunity tests	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment — guidelines**
Discharge of static electricity (ESD) in accordance with IEC 61000-4-2	± 8 kV contact discharge ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air discharge	± 8 kV contact discharge ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air discharge	Floors must be made of wood or concrete, or should be covered with ceramic tiles. If the floor is covered with synthetic material, relative humidity must be at least 30%.
Electrical fast transients/ bursts in accordance with IEC 61000-4-4	± 2 kV 100 kHz repetition frequency	± 2 kV 100 kHz repetition frequency	The quality of the supply voltage must be that of a typical commercial, clinical or residential environment.
Surges in accordance with IEC 61000-4-5	± 0.5 kV, ± 1 kV differential mode ± 0.5 kV, ± 1 kV, ± 2 kV common mode	± 0.5 kV, ± 1 kV differential mode ± 0.5 kV, ± 1 kV, ± 2 kV common mode	The quality of the supply voltage must be that of a typical commercial, clinical or residential environment.
Voltage dips, short interruptions and fluctuations in the supply voltage in accordance with IEC 61000-4-11	0% UT for ½ cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0% UT for 1 cycle at 0° 70% UT for 25 cycles at 50 Hz at 0° 0% UT for 250 cycles at 50 Hz	1% UT for ½ cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0% UT for 1 cycle at 0° 70% UT for 25 cycles at 50 Hz at 0° 0% UT for 250 cycles at 50 Hz	The quality of the supply voltage must be that of a typical commercial, clinical or residential environment. If the bed user requires continued function even in the event of interruptions to the energy supply, it is recommended that the bed be powered by an uninterruptible power supply or a battery.
Magnetic field at the supply frequency (50/60 Hz) in accordance with IEC 61000-4-8	30 A/m 50 Hz	30 A/m 50 Hz	Magnetic fields at mains frequency should correspond to the typical values found in the commercial, clinical or residential environment. Devices that generate magnetic fields should be used at a distance of at least 15 cm from the bed.
COMMENT: UT is the AC mains voltage before application of the test level.			

Manufacturer‘s declarations 3/4

Guidelines and manufacturer's declaration — electromagnetic immunity			
The bed is intended for use in the electromagnetic environment specified below. The customer or the bed user must ensure that it is used in an environment of this kind.			
Immunity tests	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment — guidelines**
Conducted HF interference on the power cable in accordance with IEC 61000-4-6 (no patient connections, DC connections or signal connections are present near the bed)	3 Vrms 150 kHz to 80 MHz 6 Vrms in ISM and amateur radio frequency bands between 150 kHz and 80 MHz 80% AM at 1 kHz	3 Vrms 150 kHz to 80 MHz 6 Vrms in ISM and amateur radio frequency bands between 150 kHz and 80 MHz 80% AM at 1 kHz	The bed is suitable for use in industrial, clinical and residential environments, but not in rooms containing magnetic resonance imaging (MRI) equipment or high-frequency surgical equipment. Electronic devices must be used at a distance of at least 30 cm from the bed. The field strength of fixed radio transmitters must be lower than the compliance level for all frequencies in accordance with an on-site evaluation. Interference may occur near devices bearing this symbol. 
Radiated HF interference in accordance with IEC 61000-4-3	10 V/m 80 MHz to 2.7 GHz 80% AM at 1 kHz	10 V/m 80 MHz to 2.7 GHz 80% AM at 1 kHz	

Manufacturer‘s declarations 4/4

High-frequency electromagnetic fields in the immediate vicinity of wireless communication devices in accordance with IEC 61000-4-3	TETRA 400 (380 to 390 MHz, 27 V/m) GMRS 460; FRS 460 (430 to 470 MHz, 28 V/m) LTE Band 13, 17 (704 to 787 MHz, 9 V/m) GSM800/900; TETRA 800; iDEN 820; CDMA 850; LTE Band 5 (800 to 960 MHz, 28 V/m) GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1,3,4,25; UMTS (1700 to 1990 MHz, 28 V/m) Bluetooth; WLAN 802.11 b/g/n; RFID 2450; LTE Band 7 (2400 to 2570 MHz, 28 V/m) WLAN 802.11 a/n (5100 to 5800 MHz, 9 V/m)	TETRA 400 (380 to 390 MHz, 27 V/m) GMRS 460; FRS 460 (430 to 470 MHz, 28 V/m) LTE Band 13, 17 (704 to 787 MHz, 9 V/m) GSM800/900; TETRA 800; iDEN 820; CDMA 850; LTE Band 5 (800 to 960 MHz, 28 V/m) GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1,3,4,25; UMTS (1700 to 1990 MHz, 28 V/m) Bluetooth; WLAN 802.11 b/g/n; RFID 2450; LTE Band 7 (2400 to 2570 MHz, 28 V/m) WLAN 802.11 a/n (5100 to 5800 MHz, 9 V/m)	Devices that use the listed radio services must be operated at a distance of at least 30 cm from the bed.

COMMENT 1: The higher frequency range applies at 80 MHz and 800 MHz.

COMMENT 2: These guidelines may not be applicable in all cases. The propagation of electromagnetic variables is affected by the absorbent and reflective properties of buildings, objects and people.

a The field strength of fixed transmitters, e.g. base stations for cordless phones and mobile radios, amateur radio stations, AM and FM radio and TV broadcasters, cannot in theory be predicted with any accuracy. A study of the site should be considered to determine the electromagnetic environment with regard to the location of the fixed transmitter. If the field strength measured in the location in which the bed is used exceeds the aforementioned compliance level, the bed must be monitored in order to verify that it is working as intended. If abnormal performance characteristics are observed, additional measures, such as reorientation or relocation of the bed, may be required.

Information on electromagnetic compatibility (EMC)

Electromagnetic compatibility (EMC) refers to the ability of a technical device to refrain from affecting other devices with unwanted electrical or electromagnetic effects and to resist interference from other devices.

Appropriate construction and design are key to ensuring the electromagnetic compatibility of electrical equipment. The documentation and confirmation of resistance to interference and sufficiently low levels of emitted interference are regulated by EMC guidelines and EMC standards.

To ensure fault-free operation of the bed, please note the following:

- In isolated cases, strong interference can cause failure of adjustment functions, unwanted bed movements, continued adjustment even after release of a button, unwanted changes to the lock status or loss of height information. If effects of this nature are observed, try to increase the distance between the bed and the source of the interference, and to power the device causing the interference and the bed from different circuits. Unwanted movements can be stopped by pressing any button on a control unit (provided it is unlocked). Incorrect locking statuses can be corrected by pressing the appropriate buttons. A loss of height Information indicates a failure of the height adjustment function. In this case, press the "Frame up" and "Frame down" buttons simultaneously and hold for more than 10 seconds until movement ceases. This reference run updates the height information.

⚠ **WARNING** The bed must not be placed directly adjacent to or stacked with other devices. If operation near to or stacked with other devices is necessary, bed operation must be monitored. Intended function in the employed arrangement must also be verified.

- Only Völker original electrical spare parts must be used for repair and service work. Otherwise the aforementioned requirements may not be met. A list of electrical components can be found in the service handbook.
- Devices that emit radiation, such as mobile phones, must only be used at a minimum distance of 30 cm from the bed.
- Please also note the guidelines in the manufacturer's instructions .

Technical check of Völker hospital and healthcare beds in accordance to German standards and safety regulations incl. measurements required

Project, address, customer no.:					
Type of bed, product, location of the bed:					
Bed Identification (e.g. facilities own identification or Völker ID-no.):					
Date of check:		Name of technician:			

Kind of check	Component to be checked	Anually	Accepted	Not accepted	Not applicable
Visual inspection	Inscription on device readable				
	Instructions for use available				
	Base frame	B*			
	Lying surface, wing and spring elements (if existing)	B*			
	Trapeze bar adapter, infusion bar adapter	B*			
	Power supply cable, plug or charger, charging connection	B*			
	Strian relieve, bend protection, cable hook	B*/S*			
	Connecting cable, plug-in contacts, blind plugs	B*/S*			
	Positioning (spacing 1 mm) and sensor cabling (only Vis-a-Vis-bed)	B*/S*			
	Housing (motor, control electronics)	B*			
	Hand control (housing, cable)	B*			
	Nurse keypad, nurse hand control (housing, cable)	B*			
	Trapeze bar, assist rail infill panel (side rail centre), additional accessories	B*/F*			
	Transverse motors and cover, head and foot ends	B*			
	Castors	B*			
	Wall buffer wheel (if existing)	B*			
	Side rails including telescopic section, if applicable	B*			
	HiLow-elevation: check screw locking (only for 5380)	S*			
Functional inspection of side rails including telescopic section, if applicable	Locking devices	X*			
	Deformation	X*			
	Abrasions	X*			
Functional inspection of drives with hand control and nurse keypad/nurse hand control	Back section, upper leg section, lower leg section, height adjustment, Trendelenburg position, reverse Trendelenburg position, length adjustment (only for Vis-a-Vis-bed) - approach all end positions	X*/M*			
	Angle limitation (back section to upper leg section >90°)	X*			
	Adjustment lower leg section (rastomat/hydrolift/support plate)	X*			
	CPR function (if existing)	X*			
	Brake (electrical or mechanical) - brake applied - free running (only for hospital beds and S 280/S 310/S 380/S 282/S 382 (Vis-a-Vis)) - steering position	X*			
	Mechanical release (only for electrical brakes of hospital beds)	X*			
Functional inspection replacement	9 V battery (only for beds with Oki-/Ilcomat except S 960-1W/S 961) Replaced (yes/no)	A2*			
	Trapeze bar handle and belt (if existing) Replaced (yes/no)	A*			
Functional inspection miscellaneous	Bed extension (if existing)	B*			
	Bedding storage/bedding drawer (if existing)	B*			
	Inspection of the adhesive joints on headboard and footboard (if existing)	B*			
Comment					

Legally relevant for Germany only (in accordance to DIN EN 62353)	Leakage current by means of alternative measurement ≤ 500 µA		µA			
	Potential equalization impedance < 0.2 Ohm (if existing)		Ω			
	Measuring instrument S/N					
Total result of the inspection:						
Signature of technician:		Next regular inspection:				

***A**: To be replaced every 5 years for handles (H) and for H with roll function (RF) in nursing home mode, every 3 years for H with RF in hospital mode, every 2 years for H with RF for cleaning in automatic bed washing systems · **A2**: To be replaced every two years · **B**: Check for damage · **F**: Check for deformation · **M**: Check function of motors and end switches, does the motor switch off when reaching the end position? · **S**: Check for correct fit · **X**: General function control*

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Info You can find a printable version of this document on the Internet at www.voelker.de.

Spare part order

Völker GmbH
Service
Wullener Feld 79
58454 Witten/Germany

Tel.: +49 2302 96096-62
Fax: +49 2302 96096-66
E-Mail: service@voelker.de

Address: _____

_____

Name of the ordering party: _____

Street address: _____

Zip code/city/country: _____

Telephone number: _____

Customer number: _____

Customer order number: _____

Purchase order date: _____

Signature:
(Please, to fill in the form use block letters) _____

Stamp

Shipping address, if different from the billing address

Address: _____

_____

Attention of: _____

Street address: _____

Zip code/city/country: _____

Please fill out all the information carefully and complete the form in its entirety, otherwise we may have problems in delivering and processing this order.

MODEL (Bed-type)	SERIAL NO./ YEAR OF MANUFACTURE (Identifaction label inside of the bed-head)	SPARE PART DESCRIPTION	ITEM NUMBER	QUANTITY

Info You can find a printable version of this document on the Internet at www.voelker.de.

Available accessories

Available accessories If you have any questions about accessories for this bed or if you wish to order accessories, please contact Völker GmbH

VÖLKER

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