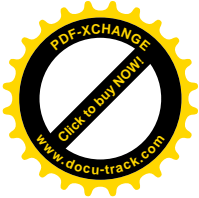
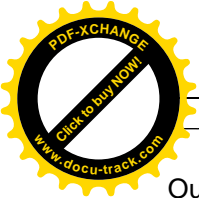


Health Care Bed “Medial” Operating instructions



Caresystem nr.: 19 40 01 3 142 + 50 45 01 158 (without “Trendelenburg” positioning)



Our company sets high standards on quality and customer satisfaction
In this context we always want you to receive the best possible advice and
if you have further questions or need for information concerning our special equipment please contact
us:

On the following pages you'll find the mode of operation and material handling of our health care beds:

Model „Medial“

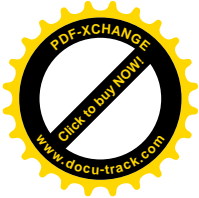
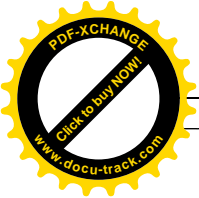
The health care beds are produced according to DIN EN 1970 – 2000 (standard for health care beds)
as well as
DIN EN 60601-2-38 (standard for nursing beds / in dependence on)

In the following operating instructions you'll receive detailed illustration and specification on:

- Assembling of the health care bed
- Operation of the moveable devices
- Service and maintenance
- Service book in the appendix

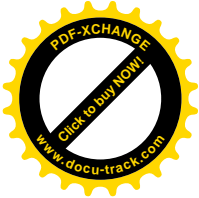
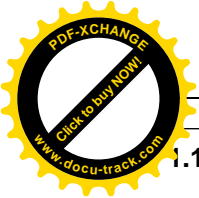
Subject to technical modifications without prior notice

**Please read this operating instructions carefully before placing
the health care bed into operation**



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1.0 General instructions



1.1 General

Please read these operating instructions carefully in order to prevent damage during assembling and before placing the health care bed with slatted frame into operation
Only accessories from Fa. Müller Kranken- und Pflegeeinrichtungen Werner Mühle GmbH which were delivered with the bed (accessory kit) or were ordered as special equipment are to be used. The list for special equipment is in 5.0

The user has to assure oneself of the good order and condition of the health care bed. On long-term application (every 12 months) or reuse after storage it is necessary to check its functions and look for visible damages.

The health care beds are produced following DIN EN 1970 – 2000 (standard for health care beds) as well as
DIN EN 60601-2-38 (= standard for nursing beds / in dependence on)

The drive units comply with the EN 60601-1 specification.
Certain constellations, like positioning the bed next to other electrical equipment – like radio or television - may lead to electro-magnetic interferences. In this case remove the devices or change the position of the bed.

Storage condition:

The health care bed should always be used under the following conditions:

Storage temperature: + 10° to max. + 40 ° C
Relative air humidity : 30 to 75%
Air pressure : 700 – 1000 Hektopascal

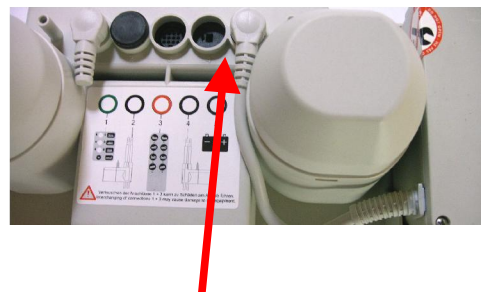
**When your bed has the special feature „Trendelenburg-position“ it is possible to move the bed with the charged accumulator battery only (without any further external power supply)
This shall secure the prone positioning in case of power blackout while Trendelenburg position.**

If the bed is to be stored for a longer period, a patient is transported in the bed or the power supply is cut for security reasons it is absolutely necessary to unplug the connection from the accumulator battery to the laying surface motor in order to prevent any unwanted displacing of the health care bed. (see photo)

1. Remove the cap with a standard Phillips head screw driver



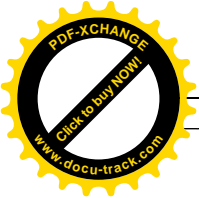
2. Here the accumulator battery is connected!



3. Unplug the plug and disconnect the accumulator power supply!

Finally you have to screw the cap back on the multiway connector!

1.2 Symbols in use - Illustration



This symbol indicates: Take notice of operating instructions!



This symbol indicates: application part - type B

IP 44

This symbol indicates: protection class – protected against access to dangerous parts with a wire, protected against contaminants $D = \geq 1$ mm. protected against splash water.

IP X4

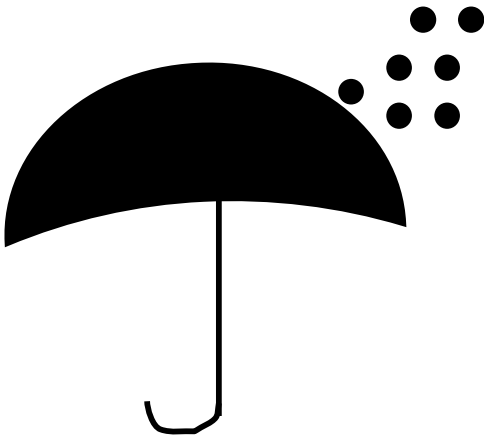
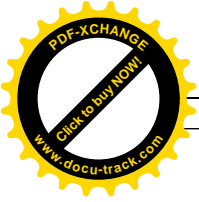
This symbol indicates: Protected against splash water.



This symbol indicates: double protective insulation

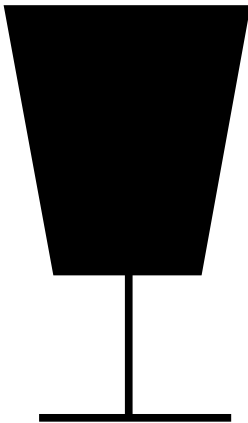


This symbol indicates: Evidence of conformity of medical products and devices – reference 93/42/EWG

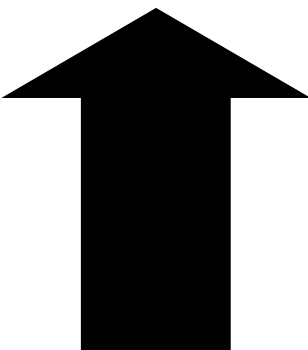


This symbol indicates:

Keep of wetness!!



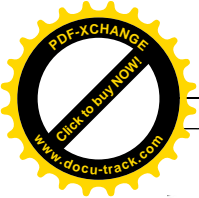
Don't throw! Keep careful – fragile!



This sign you'll find on the packing and indicates:

Direction of arrow must be up during storage, transport and unpacking.

This way up!!!!



This sign you'll find on the upper front motor shaft and indicates:

Danger of being crushed!

1.3 Packages

(7 pieces)

1. Frontlifter including castors
2. Lying surface part (headpiece)
3. Lying surface part (footpiece)
4. Side-rails
5. Retractor including grab handle
6. Engine box including accessory kit

Contents of accessory kit :

- Main drive unit
- Manual control
- 6 self-adhesive cableclips
- 2 slugs (allen) M 8 x 16
- Allen wrench
- Side-rail guide pusher (4 pieces)

Please check the completeness of the contents before assembling

1.4 Special characteristics

- Electrical level adjustment of the lying surface from 40 - 80 cm
- Electrical adjustment of the backrest 0 to 70°
- Electrical adjustment of the knee angle 0 to – 20°
- **Only with special equipment Trendelenburg position:**
Trendelenburg bedding (inclined position of head and foot section) (**switch off possibility via manual control**)

1.5 Purpose / Range of use

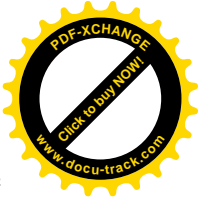
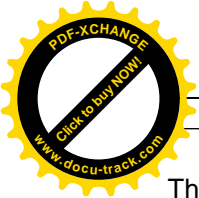
The health care bed „Medial“ is especially designed for the home care area. The health care bed shall facilitate the care of indigent or older people at home. It is not designed to be connected with other medical electric devices. The health care bed is not fitted to be employed in hospitals or other fields of medical care.

The safe workload is 1700 N (~ 170 kg) which include mattress (20 kg) as well as accessories (15 kg). This leads to a maximum permitted weight of the patient of 135 kg.

The health care bed is not suitable for patients who measure less than 150 cm or more than 190 cm (based on a lying surface length of 200 cm).

It is furthermore necessary to indicate the possible risk of crushing for emaciated patients since in this case the standard security distance won't be sufficient. For security reasons we advise you to put a side-rail protection or protective cushions/ hose in use. This can be ordered via our service hotline or at the specialised rehabilitation supply dealers.

Before operating make sure that the side-rails are in perfect condition and fully functioning (**see also 2.4**).



The use of the side-rails is limited to securing members not to fall off laterally. To access and get out of the bed it is absolutely necessary to put the wooden side-rails in its lowest position

There are no electro medical appliances in our beds permitted!

1.6 Basic materials in use

Several components of the health care bed are partly made of permanently powder-coated steel. The derived timber products all have a high-quality surface-coating. All side rails are made of sheathed solid plywood (spruce fir).

The solid wood is coated with an environment- and skin-friendly varnish. The sprung slats are made of special surface-sealed plywood

1.7 Maintenance and recommended cleaning products

In order to ensure the economic life-time of your health care bed we strongly recommend as follows:

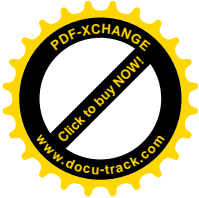
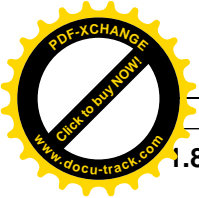
- Clean all metallic and wooden parts with a damp cloth only
- The same applies for the electrical engine; this one **must not** be cleaned with a high-pressure cleaner.
- Due to hygienic reasons we recommend not to use any lubricants for the moveable parts.
- Do not use any tools like palette-knives, knives or similar.
- Do not use coarse-grained scouring agent

Please only use by the Robert Koch institute certified and approved disinfecting agents (Sagrotan) for disinfecting the health care bed.

These are to be applied with a spray bottle and/or a cloth (made of cotton or microfiber) on the inlay frame in order to clean and disinfect it. Apply the disinfecting agent through wiping with the cloth. We strongly recommend removing the disinfecting agent after its residence time in order to avoid any possible skin irritation. **Always wear rubber gloves when disinfecting or cleaning the health care bed!**

Abstract of *Robert Koch Institut Berlin Germany list:

Active agent:	Name:	washing disinfection:		abrasive disinfection:		Desinfection von Ausscheidungen 1 part sputum or stool +2 parts dilution OR 1 part urine + 1 part dilution respectively						Producer or supplier
		functional attenuation %	development time h.	functional attenuation %	development time h.	Sputum:		Stool:		Urine:		
						functional attenuation %	development time h.	functional attenuation %	development time h.	functional attenuation %	development time h.	
1	2	3		4		5		6		7		8
Phenol or Phenol-derivate	Amocid	1	12	5	6	5	4	5	6	5	2	Lysoform Bode Chemie Schülke & Mayr Braun Melsungen
	Bacillotox	1	12	6	4	5	4	5	6	5	2	
	Gevisol	0,5	12	5	4	5	4	5	6	5	2	
	Helipur			6	4	6	4	6	6	6	2	
	m-Kresolseifenlösung	1	12	5	4							
	DAB 6											
	Mucocit-F 2000	1	12									Merz
	Phenol	1	12	3	2							
Velicin forte					5	4	5	6			Henkel	



1.8 Design and construction

It is possible to dismantle your health care bed into several portable parts which makes it easier to be transported.

The health care bed can be completely assembled with the included tools (Allen key).

The lying surface is equipped with an electronically adjustable slatted frame. The backrest and the knee-kink are individually adjustable and permit a comfortable position for the patient and the nursing person respectively

A level adjustment (height adjustment) is possible via the head and foot section (front) of the bed. It is possible to choose between a parallel adjustment and a tangential deviation on the handset.

These parts of the bed are produced with welded steel tubing which has a varnish-annealed surface.

1.9 Mattress

Please use a special health care mattress RG 35 in accordance with DIN EN 597 of low flammability with the following measurements:

Height: 120mm
Length: 2000 mm
Width: 900 mm

The measurements of length and width change accordingly to any changes of the lying surface, i.e. 90 x 210 cm
This means that the mattress has got a length of 2100 mm.

It is recommended to install the heightened side-rails from our accessories-catalogue if other kinds of back supports are used.

2.0 Assembly instructions

2.1 Assembling the health care bed

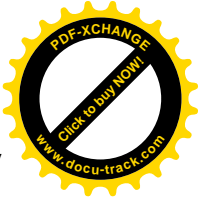
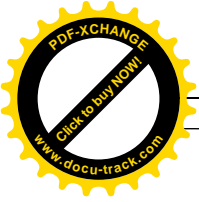
1. Operate the step-levers of the two front-modules as described in 4.4 and place them flat against the wall – the square iron bars showing to the room-centre.
2. Both parts of the lying surface have to be stuck together at the butt joints and then tightened manually with the enclosed winged screws (2 parts). The butt joints of the lying surfaces-halves are the ones without a cross-iron bar at the outer frame

Grub Screws
(Enclosed in the accessories kit)

Winged bolt



3. We recommend placing both halves of the lying surface side-by-side on the floor and fitting the parts in this position together. In addition to the winged



bolts one grub screw on both sides of the lying surface has to be screwed down with the allen key (accessories kit).

2.2 Installation of the central drive unit underneath the lying surface

1. Put the lying surface on edge (heading-section-sticker upwards). The top side of the lying surface should be put transversely to the wall. The pressure levers are showing to the centre of the room.

Stickers showing to the wall as follows:

- CE sign
- Heading-section indication
- max. Indication of weight
- Serial sticker
- Indication for power supply



2. The next step is to unfasten the winged screws – as long as the lying surface stands edgewise - at the heading- and foot section and to re-screw them loosely (app. 3 revolutions).

Assembling the lying surface with the front modules

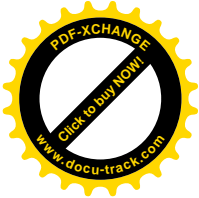
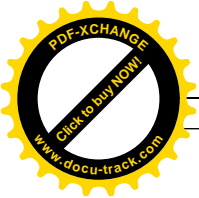
1. Put the lying surface down on the floor in front of either of the front modules.



2. Stand behind the front module and raise the lying surface regularly on the rectangular tubes.



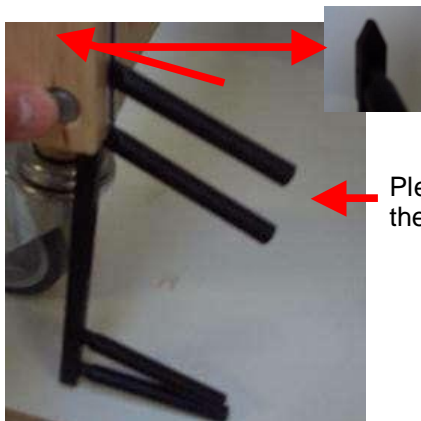
3. Insert the tube-ends of the lying surface above the rectangular tubes of the front module. Push the lying surface as far as it will go (direction of arrow) towards the metal adapter plates of the front modules.
4. After this tighten the loosely screwed winged bolts of the lying surface manually in order to get a securely attached connection between the front-module and the lying surface.



5. Repeat this procedure for the other front-module (Raise the lying surface and insert it on the rectangular tubes, etc.) and make sure to get a securely attached connection of the front module and lying surface.
6. Finally the 4 location points to the front modules behind the winged bolts have to be screwed tight with one grub screw each (Allen key of the accessories kit).

2.4 Installation of the side-rails

1. There are 2 side-rails on each bedside needed.
Caution: Rounding points upwards!
2. First of all it is necessary to attach the 2 guide pushers to the front section (push the lower snap fastener and insert the guide pusher head-up through the lower opening of the aluminium-rail; the guide pusher has to slide easily back and forth the two snap fasteners).



Head of guide-pusher

Please insert guide pusher like this in the aluminium-rail.



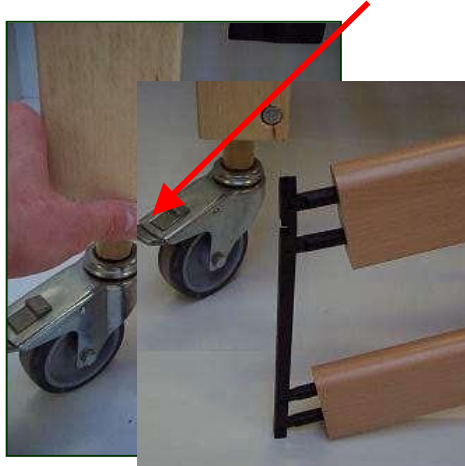
3. Place the guide pusher at the front and slip two wooden side-rails on the fingers of the

guide pusher



4. Without holding on you can now attach the other end of the side rails to the guide pusher.

5. Insert the freehand-attached guide pusher into the aluminium-rail at the other front module. (same procedure – please pay attention to the snap fasteners!)



4. Please repeat this procedure at the other bed side, too.

Information:

When adjusting the lying surface by inappropriate handling: Danger of being crushed between side rails and lying surface!

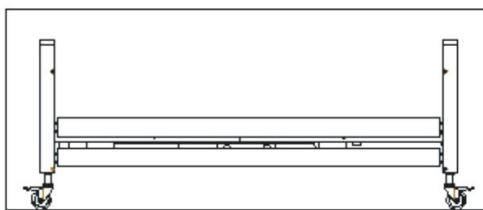
Furthermore it is necessary to keep the side rails fully functional as they have been at the time of delivery. i.e.: occasional cleaning of the aluminium- rails. Do not use any broken or defective side rails.

For security reasons it is not permitted to use the side rails propped up diagonally.

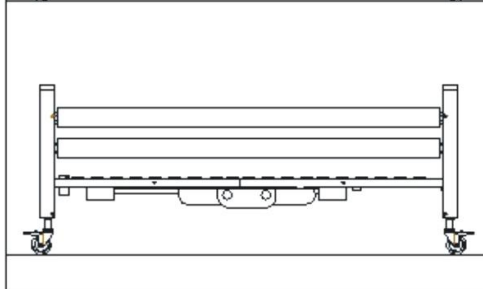
(please refer to chapter 3.4!)

The ready-mounted side-rails are easily adjustable to the higher and lower position as shown on the following figure.

Lowest position

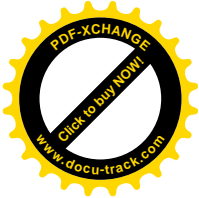
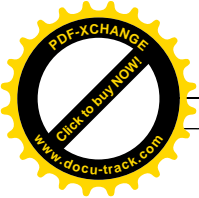


Highest position



3.0 Connecting and laying of all plugs and cables

3.1 Connecting the power supply

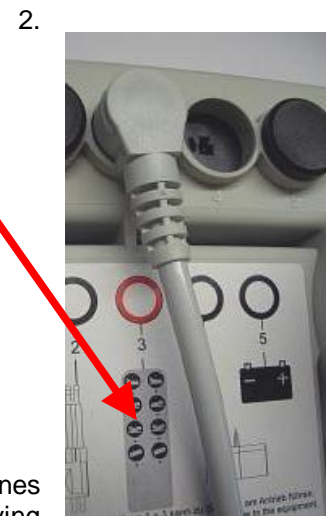


The health care bed has to be placed near a power supply (socket)!

Voltage supply 230 Volt / 50 Hz

FOTO#####

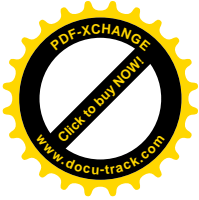
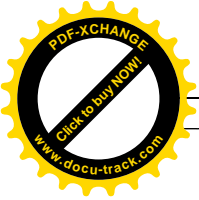
1. Remove the cap with a standard Phillips head screw driver.
2. Plug the multipolar plug of the manual control switch in the receptacle of the drive unit. Please refer to the symbols and figures on the drive unit!



3. The connecting cables (helix cable) at the front module placed engines also have to be connected with the drive unit underneath the lying surface at the preset receptacles!

Small round multipole connector





Attention:

If the small round connector is not plugged, the motor will not run.

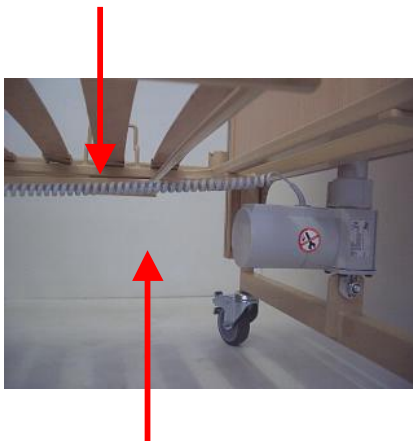
The cables of the two hoist motors have to be plugged in the designated receptacles on the drive unit underneath the lying surface

- 4. Spare cable, coming from the drive unit can be fixed under the lying surface frame using the self-adhesive cable routing clips (accessories kit).



3.2 line cord (Main connection cable)

In order to prevent any sagging the front hoist-motor cables also have to be secured by cable routing clips as shown in the illustration below!



like this!

The strain relief (Anti-kink included) which is pushed on the line cord disposes of two mounting nuts. One mounting nut fixes the strain relief to the line cord and the other mounting nut fixes the strain relief to the lying surface.

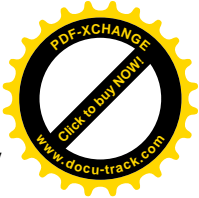
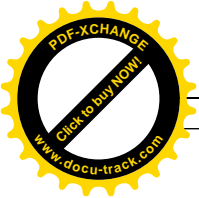
Please make sure that the line cord from the motor to the strain relief is neither too tight nor sagging!

Finally it is necessary to check the correct and tight position of the strain relief, otherwise screw it with the big rear plastic nut until it is locked.

Refer to illustration above



Caution: When running the cables please make sure that they cannot be damaged by any moveable parts. Furthermore it is necessary to



prevent sagging cables which could constrain the sub-driveability and mobility of the health care bed!

Please use enclosed self-adhesive cable routing clips



Information: To avoid any confusion every plug is different and fits in only one socket.

Please do not force the plugs when plugging in!

3.3 Function control + security dimensions

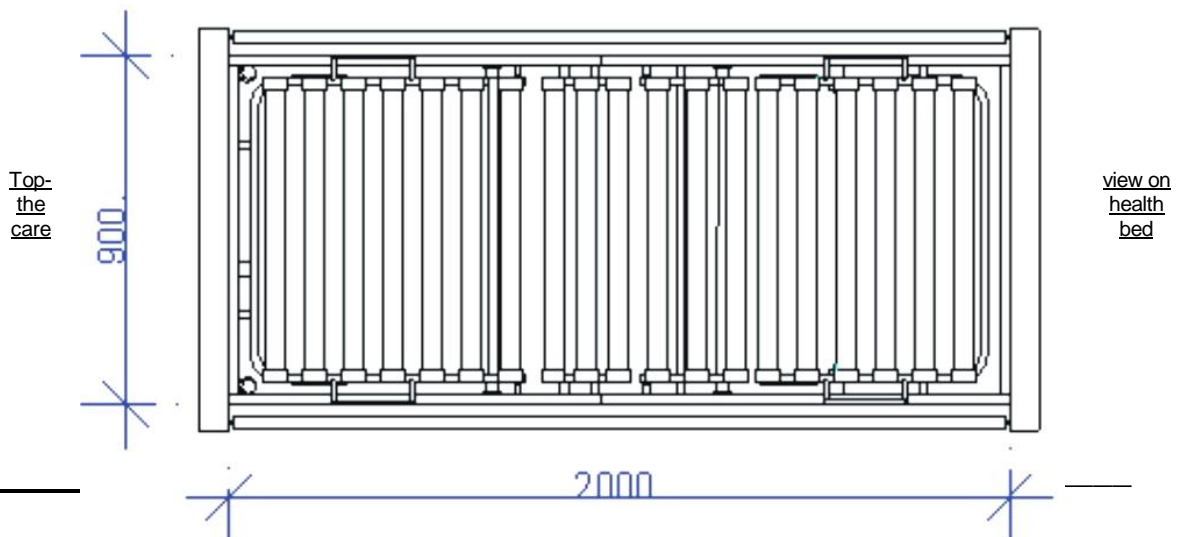
Before starting the function control please re-screw the cap above the plugs back on the main drive unit.

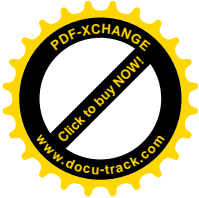
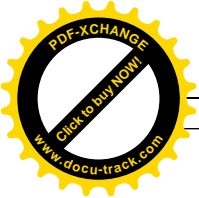


- Plug the main connection cable in a standard 220 V socket and establish the electricity supply.
- Please perform now a function control of the electrical drive units by using the manual control (please refer to 6.3 activating the manual control)
- For this move all drive units in their respective end-position
- While proceeding, make sure that there are no parts colliding.

Due to security reasons the following internal dimensions are to be kept and may under no circumstances exceed the limits!

900 x 2000 mm internal space!

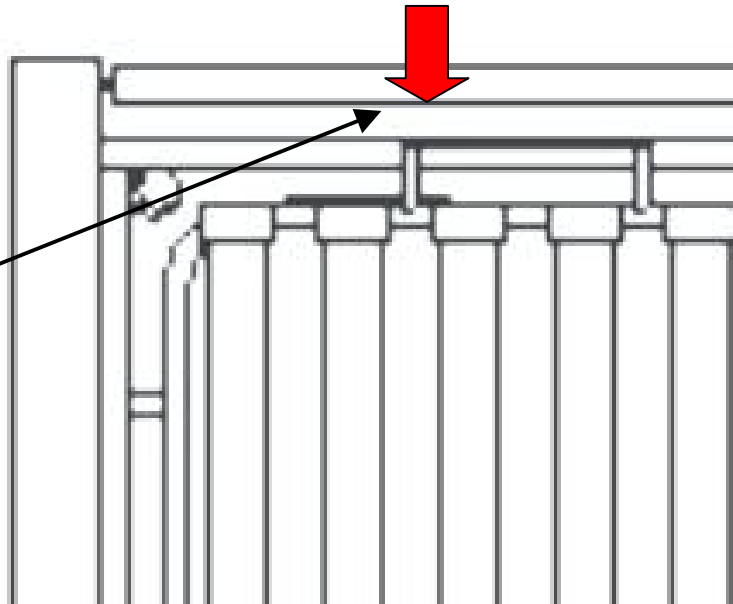




- Avoid putting extremities in the danger zone during the moving process of the drive units/ adjustable range of the health care bed. (Refer also to 4.0!)
- **There are no electro-medical appliances permitted in our health care beds!**

The minimum separation distance between the side rails and the moveable parts of the bed must not be less than: **min. 25 mm!**

(Only use recommended mattress-sizes as described in 5.4!)

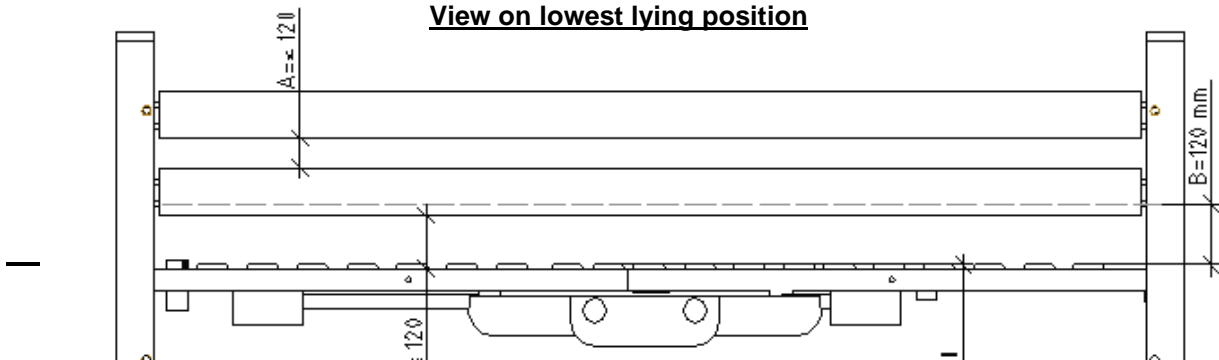


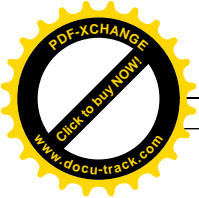
3.4 Security dimensions

Pay attention for always keeping the following security dimensions:

A = ≤ 120 mm H = Lowest position = 400mm from floor to upper edge Lying surface.

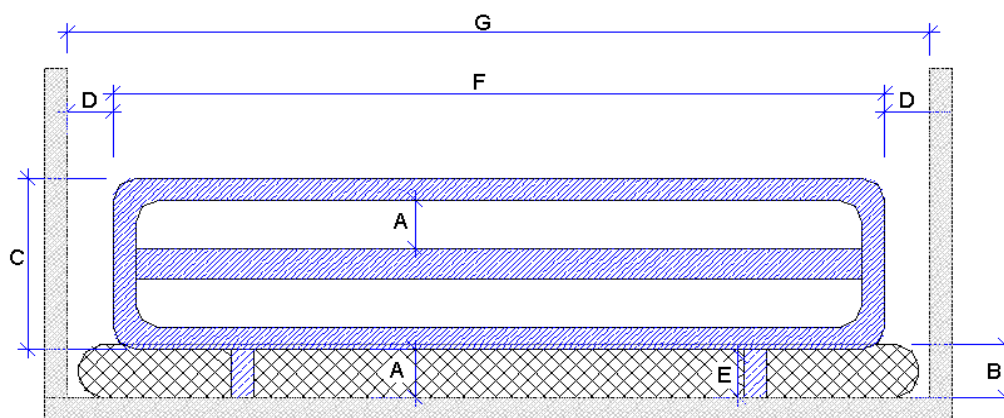
Measurements in mm!
View on lowest lying position

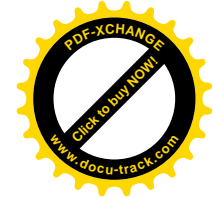
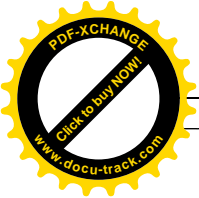




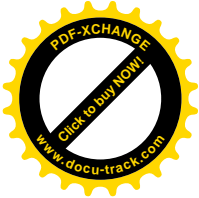
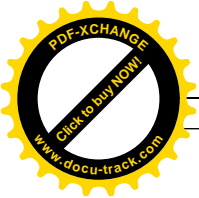
Highest position = 800 mm

Security dimensions for one-piece side rails
Also refer to the table on the following page:
Illustration and table according to DIN EN 1970:2000





Description from scratch	Dimension - explanation	Dimension-requirements in mm
A	Highest dimension between side rail components at all normally used positions.	A less than 120mm
B	Thickness of the normally used mattresses without compression and bed-bottom in levelled position.	Manufacturer's Indication (refer to accessories 5.4!)
C	Height of side rails' upper edge above the mattress without compression and bed-bottom in levelled position.	C bigger than 220mm
D	Distance between front- and bottom end/ accessories and side rails/ grab handles to the bed-bottom in levelled position	D less than 60 mm or D more than 250 mm
E	Biggest dimension in at least one direction of each accessible opening below the side rails Either:	D bigger than 250mm then E less than 60mm or D less than 60mm then E less than 120mm



F	Length of side rail (s)	F bigger than 2/3 of lying surface length
G	Distance between front- and bottom end without extending these components	no requirements

3.5 Dismantling

Warning:

When shutting down the bed (without mattress) it is possible that the hoisted leg rest won't be lowered down – even when the motor is moving to its back position since the unlade leg rest is too light. The leg rest can fall down at any indefinite point in time.

Note:

The health care bed should only be shut down when the lying surface is at a levelled position.

For dismantling the health care bed please follow the instructions in reverse order – that means from 3.3 to 2.1!

3.6 Emergency lowering device

The health care bed disposes of mechanical equipment for a so-called emergency handling.

With this device it is secured that in case of a power blackout the front end of the health care bed can be lowered down manually.

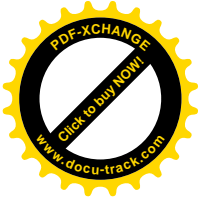
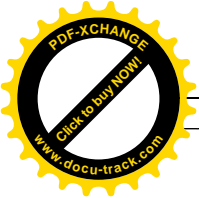
For executing the emergency lowering device it is necessary to operate the **red emergency lowering device-lever** at the lying surface engine (see illustration below).

Should the bed dispose of the special feature „Trendelenburg positioning” it is possible to lower the headrest via the emergency lowering device lever, and additionally, the emergency lowering of the bed height and inclined position through an integrated rechargeable battery pack in the engine.

For this it is highly recommended to take notice of the following points:

If the health care bed is stored away for a longer period, an in-patient is transported or the electric power supply is cut off for other reasons it is imperative to unplug the plug and socket connection from the rechargeable battery pack to the lying surface engine (refer to pages 4+5!) so that no unintentional kinetic moving of the health care bed is possible.

- **Before the initial operation the rechargeable battery pack has to be charged for at least 10 hours (through Power plug – socket connection) so that the full operability of the emergency lowering device is guaranteed.**
- **The state of charge of the rechargeable batty pack can be seen at the pilot-light on the manual control switch (refer to illustration below)**



In the following the function of the rechargeable battery pilot-light is described:

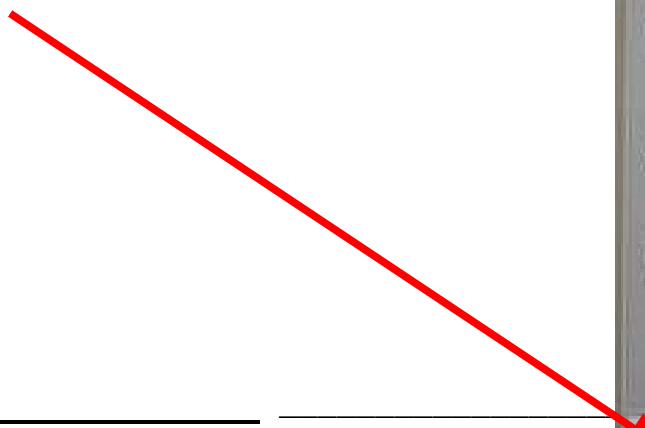
- While the main drive is connected via the line cord the pilot-light is permanently illuminated!
- When the pilot-light is flashing yellow the rechargeable battery pack is being charged
- When the pilot-light is permanently illuminated the rechargeable battery pack is either operational and charged

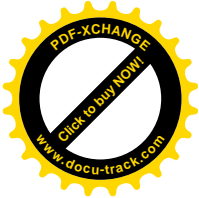
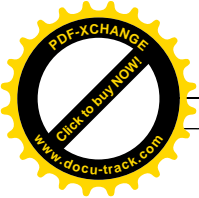
OR

the rechargeable battery pack is not connected and the electric current is provided by the normal power supply system. For this reason it is always necessary to check as explained in 1.1 whether the rechargeable battery pack is connected!

- In these cases the rechargeable battery pack has to be re-charged immediately:
 - A warning signal resounds from the main drive when the capacity limit is reached; short after the rechargeable battery pack is switched off automatically in order to prevent damaging due to total discharging.
 - After having operated the emergency lowering device it is recommended to recharge the rechargeable battery pack until the pilot-light is again permanently illuminated.
 - The pilot-light is not illuminated!
Recharge it immediately until the display is again permanently illuminated.

Rechargeable battery pilot-light







4.0 Functional characteristics

First of all it is standard practise to mention that no extremities have to be positioned in the zone of moveable parts of the health care bed. Even though during construction and design of the health care bed all relevant safety margins were adhered it is necessary to keep in mind that especially with in-patients who are deranged or suffering from dementia nobody gets unintentionally into the danger zone while adjusting the health care bed!

Take notice of illustration no. 3.3 concerning the internal space measurements which must not be exceeded.

4.1 Backrest

The backrest is adjustable to an angle of 70° based on the level of the lying surface. This adjustment takes places through an electric engine which is operated by pushing the control-button labelled with the backrest-symbol on the manual control switch. The upwards pointed triangle signifies upwards, the downwards pointed triangle signifies downwards.

Backrest upwards =  downwards = 





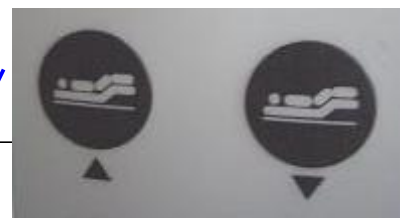
- The backrest is only supported by the engine against the weight of the cumbering body.
- The engine has no tight connection to the backrest and it is therefore impossible to crush extremities which enter in the action zone of the backrest while moving downwards.

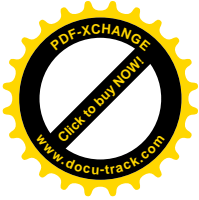
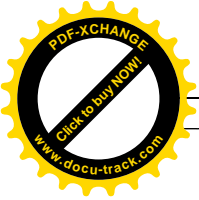
If the electronic adjustment device is operated for a much longer period, i.e. while inappropriate handling of the device by the patient, the temperature protection system in the main drive transformer switches the device off. In this case the device can be re-used after a cooling-down time of approximately 1 hour.

4.2 Leg rest with knee-kink

- The leg rest is subdivided into thigh-rest and lower leg rest. Both parts are controlled by a special arrangement of rods and levers and it is therefore given that when adjusting the thigh-rest's attack angle the lower leg-rest is hoisted by 20° to the mattress frame, too.
- At the "Medial" health car bed the adjusting device is operable through an electric motor which activates the thigh rest when pressing the foot-section key on the manual control device. The upwards pointed triangle signifies an upwards adjustment, the downwards pointed triangle signifies a downwards adjustment.

Knee-kink upwards =  downwards = 





- The thigh rest is only supported by the engine against the weight of the cumbering body.
- The engine has no tight connection to the thigh rest and it is therefore impossible to crush extremities which enter in the action zone of the backrest while moving downwards.

Attention: **The powered adjustment is not suitable for sustained continuous operation. It is field-tested that a maximum operating time of 2 minutes continuous operation and 18 minutes resting time is more than sufficiently determined.**

Warning: **When shutting down the bed (without mattress) it is possible that the hoisted leg rest won't be lowered down – even when the motor is moving to its back position since the unlade leg rest is too light. The leg rest can fall down at any indefinite point in time.**

Notice: **The health care bed should only be shut down when the lying surface is at a levelled position.**

4.3 Side-rail features (see also 3.4)

1. The already installed wooden side rails on the health care bed are specially designed to allow an easy step in and off at their lowest position.
2. To bring the side rails into their safe (upwards shifted) position, it is necessary to pull the side-rail bar upwards (until you hear the snap in).
3. For unlocking the safety position it is recommended to put one hand underneath the upper side-rail bar, lifting it a little bit while the other hand presses the push-button for unlocking the system.
4. Now it is possible to lower the side-rails slowly and safely.
5. Proceed at the other side as explained.

4.4 Castor locking device

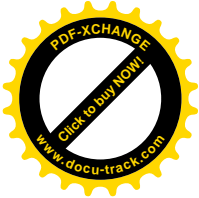
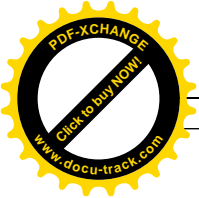
The health care beds dispose of a locking device to interlock the castors. It is operated by a step-lever and arrests the operability of the castor at the rotational direction. To render the castor moveable an anew operation of the step-lever at its upper tab-ear is necessary to unlock the locking device easily.

Loose locking device



interlock locking device push here to unlock the locking device





4.5 Lying surface level adjustment

The health care bed is equipped with a level adjustment device. Therefore it is possible to adjust the height of the lying surface by pressing the height of stroke keys on the manual control switch.

Additionally it is possible to select an inclined positioning on the manual control switch (**Trendelenburg position – only operate on special medical advise!**), which is practised for some clinical patterns or nursing applications.

Warning: Please always level the lying surface at its lowest position after having finished a nursing activity.

4.6 Moving the health care bed with a patient

- Patients are only to be transported at a lying position.
- With mounted sit-up device please check its height with regard to suspended furniture and fixtures on transport.

Before transport please make sure the following:

- The lying surface and the bed height have to be brought back to their lowest position.
- **If the health care bed is equipped with the special feature “Trendelenburg Positioning” it is necessary to unplug the rechargeable battery power supply as described in 1.1 – otherwise it is possible to move the health care bed without any further power supply.**
- The side-rails have to be lifted to their highest position – until there is an audible click of the snap fastener.
- The line cord has to be unplugged and to be fixed with the line cord-fixing clip on the upper side-rail (refer to illustration below).
- Proceed similarly with the manual control switch, which has to be fixed at the manual control clip (refer to illustration below).
- **The castor-brakes have not to be loosened until visual inspection has made sure that all cables were fastened tightly and could neither touch the floor nor the castors.** For unlocking the castors please refer to 4.4.

The cables have to be secured against damage through riding over as described in the following:

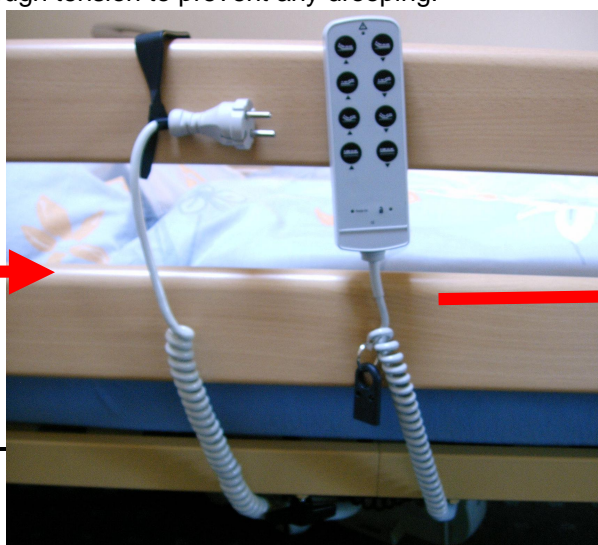
Damaged cables risk short-circuits and fire hazard!

The special spiral line cord is equipped with a so called line cord-fixing clip (Illustration!)

The spiral line- cord always generates enough tension to prevent any drooping!

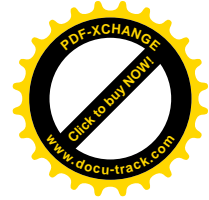
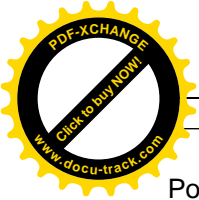
The power-plug has to be fixed with the bracket at the lifted upper side-rail (refer illustration)

It has to be checked that the cables are stretched after being tightened at the side-rail and by no means touch either the floor or the castors.



shown to the





Power-plug bracket

5.0 Accessories/ Special equipment

The below listed accessories/ special equipment are only to be used with Deeken Reha & Objekt Health care beds

- Type „Medial“
- Type „ San-Lift / San-Flex / San Lux / Ergoform!

5.1 Lift-up device with grab handle (included in the standard insurance package) – workload assured for up to 75 kg.
(Compatible with all Deeken Reha & Objekt health care beds)

5.2 Attachable wooden side-rail heightening (special equipment)
Mounting at your specialised dealer only!
Compatible with all Deeken Reha & Objekt health care beds **(not for San Lift mattress frame).**

5.3 Backrest retraction according to DBFK study – a special feature which is only available in combination with a lying surface (please contact your specialised dealer for further information).

5.4 Health care bed mattresses RG 35 in compliance with DIN EN 597 of low flammability thickness: 120 mm.
Only employ health care bed mattresses with the following dimensions:
Height = 120mm
Length = 2000mm
Width = 900mm

5.5 Attaching the lifter

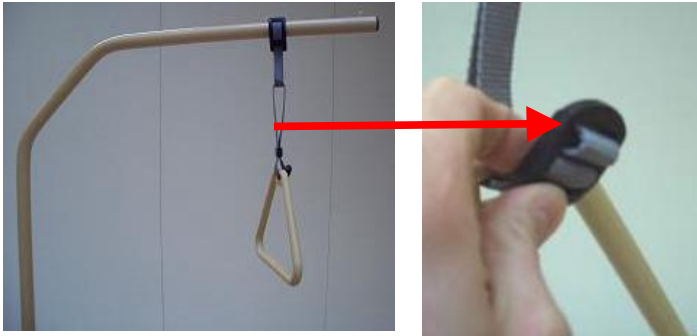
- The lift-up device which is available as special **equipment** has to be inserted into one of the two sleeve pipes at the front end of the lying surface and fixed with the interlocking bolt. (safe workload of the lift-up device with grab handle: 75 kg)
- With the grab handle the patient is able to sit up and/or can put oneself into another position.
- The lift-up device should be mounted at the same side which is used for getting in/out of the bed.
- Due to the interlocking bolt an accidental deviation of the lift-up device can be anticipated.



Lifter sleeve pipe

Lifter with interlocking bolt

- With the help of the attached belt the grab handle can be adjusted.



6.0 Electrical components

6.1 Drive unit

The engines for the adjustment of the backrest and the leg rest are collocated in the drive unit as well as the control unit. The control unit includes a transformer and a transformer rectifier, where the power supply voltage of 230 V; 50 Hz is transformed into an extra-low voltage of 24 V DC (direct current).

Do not operate all engines simultaneously!

All engines and the manual control switch are driven by this extra-low voltage in order to prevent accidents.

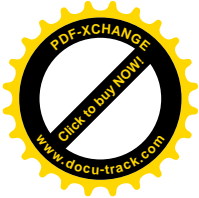
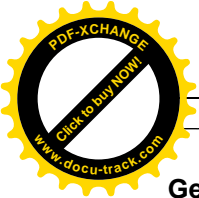
An adjusting time of 2 minutes maximum with a subsequent resting period of 18 minutes must not be exceeded

On non-observance of the indicated adjusting time the power supply is switched off by a thermo security device (thermo switch) – in case of overheating of the servo motors due to continuous operation (i.e. playing). After a cooling-down period of approximately 1 hour the power supply is switched on again automatically.

6.2 Height adjustment motors

Trendelenburg positioning (special equipment – not included in delivery of standard version!)

This adjustment of the health care bed should only be executed on medical advice. Before adjusting the health care bed in this shock position it is absolutely necessary to lift the side-rails to their highest position.



General:

In the front-modules of the health care bed are extra-low voltage direct-current motors integrated. The range of adjustment is determined by integrated limit switches. The motors are connected with the main drive through pluggable cables. The servo motors continue operating as long as the according key is pressed. The spiral cable provides large freedom of movement.

General operating:
Through the manual control switch the height of the health care bed is adjustable.
Please refer to **6.3** for details!



6.3 Manual control unit and locking device

All functions are executable through the manual control unit. The specific operation buttons (keys) are labelled with the corresponding symbols.

! Keep the manual control device away from magnetic equipment (i.e. TV set) since this may lead to deactivation of the locking device at the worst!
Do not operate all engines simultaneously!

Trendelenburg adjustment

This adjustment of the health care bed should only be executed on medical advice. Before adjusting the health care bed in this shock position it is absolutely necessary to lift the side-rails to their highest position.

The standard manual control unit is equipped with 8 keys (refer to illustration 1) and the manual control unit for the Trendelenburg positioning is equipped with 10 keys + display state of charge of rechargeable batteries (refer to illustration 2).

ill.: 1



Standard manual control unit
control unit
rechargeable batteries!

**also refer to
pages 23 ff**

ill.:2



Ab.:2

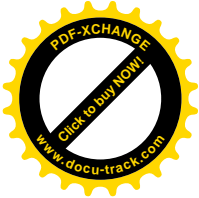
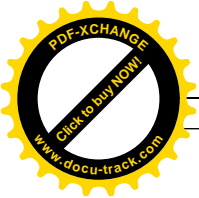
manual

With SOC of

Please

**-
point 3,6**





Head section	up =	down =	
Foot section	“	“	
Head section & foot section	“	“	
Height adjustment of the bed	“	“	

On option only: Adjustment of Trendelenburg positioning and anti –Trendelenburg positioning

Manual control unit functions

When putting the health care bed into operation it is necessary to pay attention to the following points. First make sure that the power supply is guaranteed as described in 3.3!

By using the magnetic key which is attached at the manual control unit-cable at time of delivery of the health care bed all functions can be locked and unlocked by passing the key over the lower part of the manual control device! **In case of deranged or certifiable insane patients this magnetic key is to be kept safe, for their security, by the nursing staff**

To lock or unlock the device it is necessary to pass the magnetic key over the lower part of the manual control unit, over the company adhesive label.

Magnetic key



lower manual control unit part

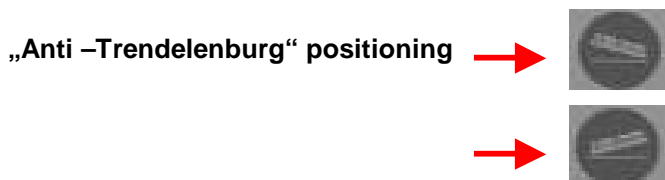


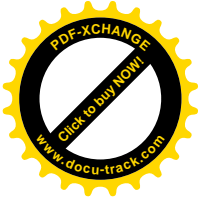
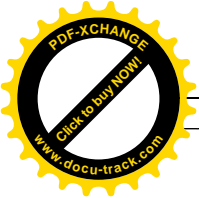
Explanation of locking and unlocking function:

If the power supply is connected the pilot-lamp “POWER ON” is permanently illuminated.

1. By passing the magnetic key over the lower part of the manual control once the following functions are enabled:
 - Adjustment of head and foot section, height adjustment of the bed.

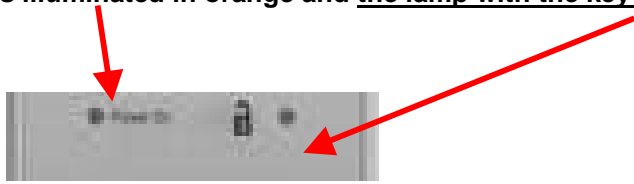
If the bed is equipped with „Trendelenburg positioning“ this feature will be still locked. “Anti-Trendelenburg” positioning is unlocked.



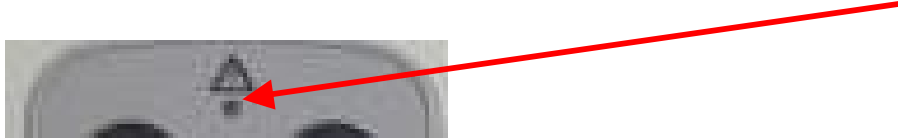


„Trendelenburg“ positioning

The lamp „ **POWER ON**“ is illuminated in orange and the lamp with the key symbol is illuminated in green.



On activating the manual control switch key the upper function LED is illuminated additionally in green.



**2. Only if Trendelenburg - positioning is included in delivery!
Please also pay regard to pages 23 and the following point 3.5!**

Through unlocking the height adjustment on the manual control unit and by pressing the keys which are mapped below this function can be accessed.

Only execute under medical supervision or instruction!



Danger to life for the patient through changing of laying position!

Trendelenburg positioning

Only execute this positioning of the health care bed under medical instruction. Before proceeding the health care bed into this shock position it is absolutely necessary to bring the side rails into their highest position. Pay attention to the manual control switch unlocking / sealing while using the Trendelenburg positioning.

By passing over the lower part of the manual control unit (1x passing over = normal functions including anti Trendelenburg – positioning are unlocked).

When passing twice over the lower part of the manual control unit (please refer to p. 29 + 30) the operability of the Trendelenburg positioning is activated on the manual control. On non-operating the Trendelenburg positioning or other functions, the Trendelenburg positioning is reset automatically to its locked modus after 40 seconds.

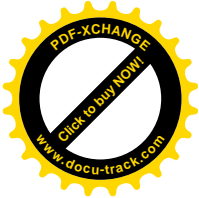
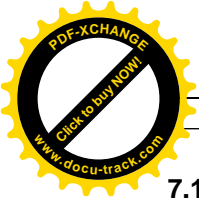
Button for Anti –Trendelenburg positioning →



Button for Trendelenburg positioning →



7.0 Maintenance



7.1 Maintenance rate:

All parts of your health care bed are as far as possible manufactured of wearless material.

Nevertheless a safety check should be carried out **once a year (below-mentioned in chapter 10)** by an authorized technician.

It is however possible that due to dismantling, transport and installing damages of any kind occur.

For this reason the specialist dealer is obliged to control regularly all parts of the appliance and their functions as well as at every re-application.

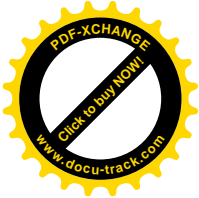
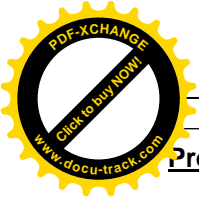
Warning: **All power unit components are maintenance-free and must therefore not be opened.**

7.2 What can you do in case of a malfunction?

Your health care bed disposes of several security features which shall be explained herewith. Should all functions not react to the manual control signals', please refer to the following proceeding:

Attention: **Only apply this proceeding if no other adjustment is possible**
(Exception: Checking of plug connection)

1. Check whether power plug is put tightly in the power socket.
2. -----Repeated function control -----
3. Check again all power plugs, also at the drive units, about their correct and tight sit.
4. ----- Repeated function control -----
5. Check whether the manual control unit is in released position.
6. ----- Repeated function control -----
7. Please check at the household's junction box whether the corresponding protective switch is switched off and put it into operation again.
8. ----- Repeated function control -----
9. Before informing your specialized dealer please take standard extension cable and try another power socket in another room.
- 10.----- Repeated function control -----



Problem + causation = solution :

Problem: What can be done if there neither the manual control unit nor the drive unit is out of function?

Causation: -Manual control unit defective or drive unit defective.

- No power supply voltage

Solution: Please contact your specialized dealer or our Service Hotline.

Problem: What can be done if the drive units are not any longer operable or moveable?

Causation: - The thermo switch at the transformer or in the control system has been activated.

- Thermal fuse in the transformer is defective.
- Supply line (power system and / or manual control unit / additional drive unit disconnected.

Solution: Leave the drive system in rest position for approximately 20 – 30 min.

Check the supply line and reconnect the contact if necessary.

If this doesn't settle the problem please contact your specialized dealer or our Service Hotline.

Problem: What can be done if there is a permanent or as the case may be lasting alarm sound?

Causation: - Control system is defective and has therefore to be changed immediately!

Solution: Please contact your specialized dealer or our Service Hotline.

Problem: The control- LED on the manual control unit is not illuminated when operating the keys or is permanently illuminated!

Causation: - End position of the drive unit is reached.

- Malfunction in control system.
- Manual control unit is still in locked modus.
- Permissible maximum powered load is exceeded
- Rechargeable battery is completely discharged (only if Trendelburg positioning is included in delivery)!

Solution: Set drive units back from end position.

Unlock the manual control unit (refer to 6.3)

Discharge drive unit!

Only if Trendelenburg positioning is included in delivery!

Connect the drive unit to the power supply (if this is still not the case) and charge the rechargeable battery as described in 3.5.

If this doesn't settle the problem please contact your specialized dealer or our Service Hotline.

Problem: After an electrical power outage or disconnecting of the power supply voltage no adjusting movements can be operated any more.

Causation: - Manual control unit is locked – After an electric power supply breakdown the manual control unit is set back automatically into its locked modus.

Solution: Unlock the manual control unit (refer to 6.3).

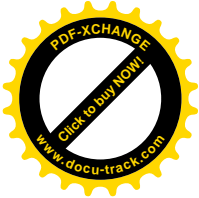
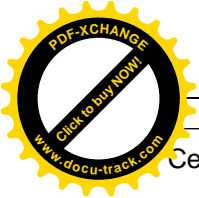
8.0 Technical datas

8.1 Admeasurements (standard)

Lying surface	:	90 x 200 cm
		Electrical back rest adjustment from 0 to app. 70°
		Electrical knee kink adjustment from 0 to app. 20°
Outer admeasurements	:	103 x 211 cm
Height of lying surface adjustable	:	from 40 to 80 cm

8.2 Weight (standard)

Frontmodul 2x	:	17 kg each
Lying surface halves 2x:		17, 5 kg each



Central drive unit	:	7 kg (9, 5 kg with rechargeable battery for Trendelenburg positioning)
Side rails	:	4 kg each
Sit up device	:	7,8 Kg (safe workload 75 Kg)

8.3 Castor types: TENTE

Machine castor	:	Diameter 100 mm
Safe work load of the health care bed amounts to	:	170 kg
Maximum patient weight	:	135 kg

9.0 Electrical data:

9.1 Central drive unit

Type	:	Quadromat 7 Care light + shorting-plug (Nr. 4056) from Firma Dewert
Input voltage	:	230 V AC; 50 Hz
Power consumption	:	max. 0, 8 A
Output voltage	:	24 V
Power-on time	:	AB: 2 min. On / 18 min Off
Protection class	:	IP X4 fulfilled and IP 44 fulfilled
Classification	:	Protection class II (protective insulation), Not for operation in atmospheres which bear a danger of explosion
Line cord	:	Spiral wound special wires EPR (Ethylene Propylene Rubber) in accordance to EN 60601-2-38
Power	:	2x 3500 N

9.2 Integrated front module engines:

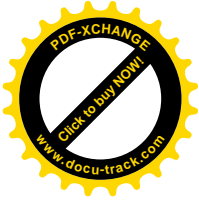
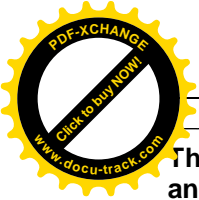
Type	:	Megamat MBZ – additional drive units 2 pieces (No 37713) from Firma Dewert
Input voltage	:	24 V
Power-on time	:	AB: 2 min. On / 18 min Off
Protection class	:	IP X4 fulfilled and IP 44 fulfilled
Power	:	1500 N

9.3 Noise level: ≤ 65 dB (A)

Diagram of connections, spare part lists as well as further technical details can be obtained through our service hotline (refer to page 3).

10.0 Maintenance- checklist:

This inspection consists of a visual control for damages and a function control



This maintenance check up has to be carried out every 12 months and at every re – application and must furthermore be counter-signed by a specialised dealer (rehabilitation supply store).

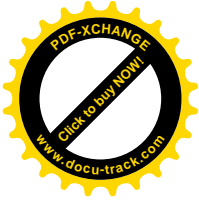
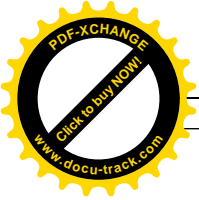
1. General checkpoints:

- All plugged and screwed fastenings have to be checked on their resistance.
- Power plug and line cord show no visible damages and are correctly connected with the drive unit (This applies to all cables and cord situated at the health care bed)
- The main line connection/ cord as well as their intake at the plug and at the drive unit have to be checked on damages or cracks!
- The intake of the main line connection (main power cable) at the drive unit shows no damages and the plug is in perfect condition, too. It also disposes of the power plug hanger as described in chapter 4.6.
- The strain relief with its integrated kink protection underneath the lying surface is safely fastened and undamaged.
- All spiral and flat cables are run safely and the plugs sit tight and undamaged at the drive unit.
- The cable routing is faultless and no cable is in reach of moveable parts, which could lead to damages.
- The splash-water proof drive units (IPX 4) and the engine casing show no visible damages. The series adhesive label and the engine manufacturer's seal on the drive unit's caps and locks are not ripped and give no hint that the drive unit had been opened.

If this visual inspection applies and the caps and locks are in perfect condition the impermeability of the motor casing is given.

If this visual inspection does not apply the drive unit has to be changed immediately!! Please refer to your specialised dealer or to our service hotline. (refer to page 2)

- Functioning of the 4 fixing brakes has to be inspected as described in 4.4 and its faultless operation checked.
- All components and welding seams show **no** cracks.
- The front modules are tightly screwed with the lying surface.
- The aluminium guide bars are clean.
- The guide rails of the side bars are in perfect condition and show no signs of damages.
- There is an audible click when the mounted side rails snap into the upper fasteners and are easily unlock able when lifting the side bars and pressing the fasteners.
- The aluminium guide bars at the head/food section are clean and tolerate a faultless slide of the guide pushers.
- The lower fasteners used for removing the side rails are in perfect condition and tolerate a smooth running dismantling of the side rails.
- The side rails themselves are in perfect and serviceable condition.
- The side rails adhere to the safety distances explained in 3.4!
- The machine elements are not twisted and the attaching of the lift up device is possible without any problems.



- All powered functions can be operated through the manual control unit and work without interception nor extraordinary noise development.
- The bed height can be lifted and lowered from 400 to 800 mm without interception.
- The hoist motors disconnect automatically at reaching the max switch position 400 mm (lowest position) as well as at reaching the max. switch position 800 mm (highest position) with an easily audible click. The main drive disconnects automatically when reaching the adjustable angles with an easily audible click.
- The headrest and the knee kink can be easily adjusted to its angles and get back into their original position when the lying surface is lowered down and the motor switches off with an easily audible click. (for operating please refer to 6.3 ff)

If your health care bed disposes of the special equipment Trendelenburg positioning, it has to be inspected, too.

Check whether the manual control unit operates all functions as described in 6.3.

Put the Trendelenburg positioning and the anti-Trendelenburg positioning respectively into operation via the manual control unit (refer to 6.3 and 6.4 for operating instructions).

(Pay attention to the locking modus of the manual control unit)

The locking feature and the powered functions run without interception.

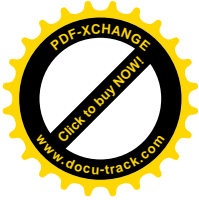
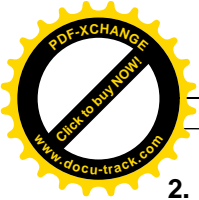
- The operating unit (manual control unit) is technically in perfect condition and disposes of a hanger and the magnetic key is available.
- The emergency lowering device as described in 3.6 is operable without interception.

The emergency lowering device of the Trendelenburg positioning and anti Trendelenburg positioning is working faultless via the manual control unit and the rechargeable battery respectively.

That means that with charged rechargeable battery the bed is operable without any further power source and putt he bed back from the Trendelenburg position into the normal flat position. When checking this function please unplug the main plug from the socket.

- The rechargeable battery shows a sufficient energy level on the rechargeable battery control display. (or operating instructions refer to 6.3)
- All necessary screws for mounting are friction-locked.
- Series adhesive label (inside lying surface) is attached and well readable.
- CE- adhesive label available at the lying surface and well readable.
- Head section adhesive label at the lying surface is available and well readable.
- Workload adhesive label is available at the lying surface and well readable.
- Adhesive labels for the power supply is available at the lying surface and well readable.

After having carried out this visual and function control this has to be counter-signed in the maintenance booklet (chapter 12) by a specialized dealer (i.e. rehabilitation supply store).



2. Electrical measurement – Replacement leakage current measurement (in accordance with VDE 0751 part 1)

- Put the line cord of the health care bed into the checking socket of the measuring instrument.
- Connect the probe head of the measuring instrument to a not isolated, conductive part of the lying surface frame.
- During the measuring period the manual control unit has to be operated (refer to 6.3).
- Start measuring procedure at the measuring instrument.
- insulating resistance measurement: Initiate insulation test voltage and measure resistance
(Result must be $\geq 10 \text{ M Ohm}$)
- upper limiting value of appliance's conduction current (appliance above 200 VA, min. protection class II, Type B

(according to VDE 0751-1) : **0,500 m A**

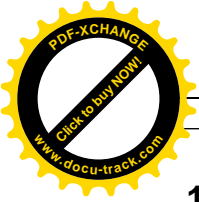
11.0 Waste disposal

The transferring of the health care bed to the waste disposal has to take into consideration the respective directives and disposal guidelines.

All metal parts, by that means bed frame, sir up device and the front lifte rare to be transferred to a metal recycling disposal.

All drive units, electric motors and manual control unit (as well as optional rechargeable battery and the locking device) contain electronic packaging and have to be disposed in regard to the national directives.

The wooden back fitting, side rails, faceplates and solid wood parts can be transferred to the wood or residual waste recycling.



12.0 Maintenance book for serialnumber

Maintenance has to be carried out every 12 months or befor every reapplication

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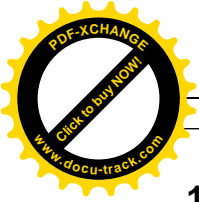
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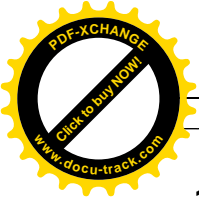
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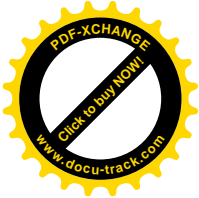
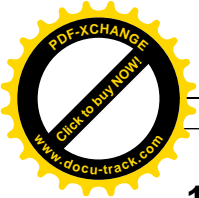
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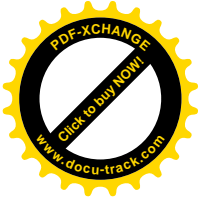
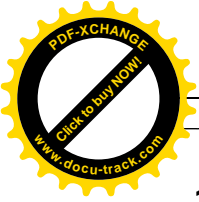
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