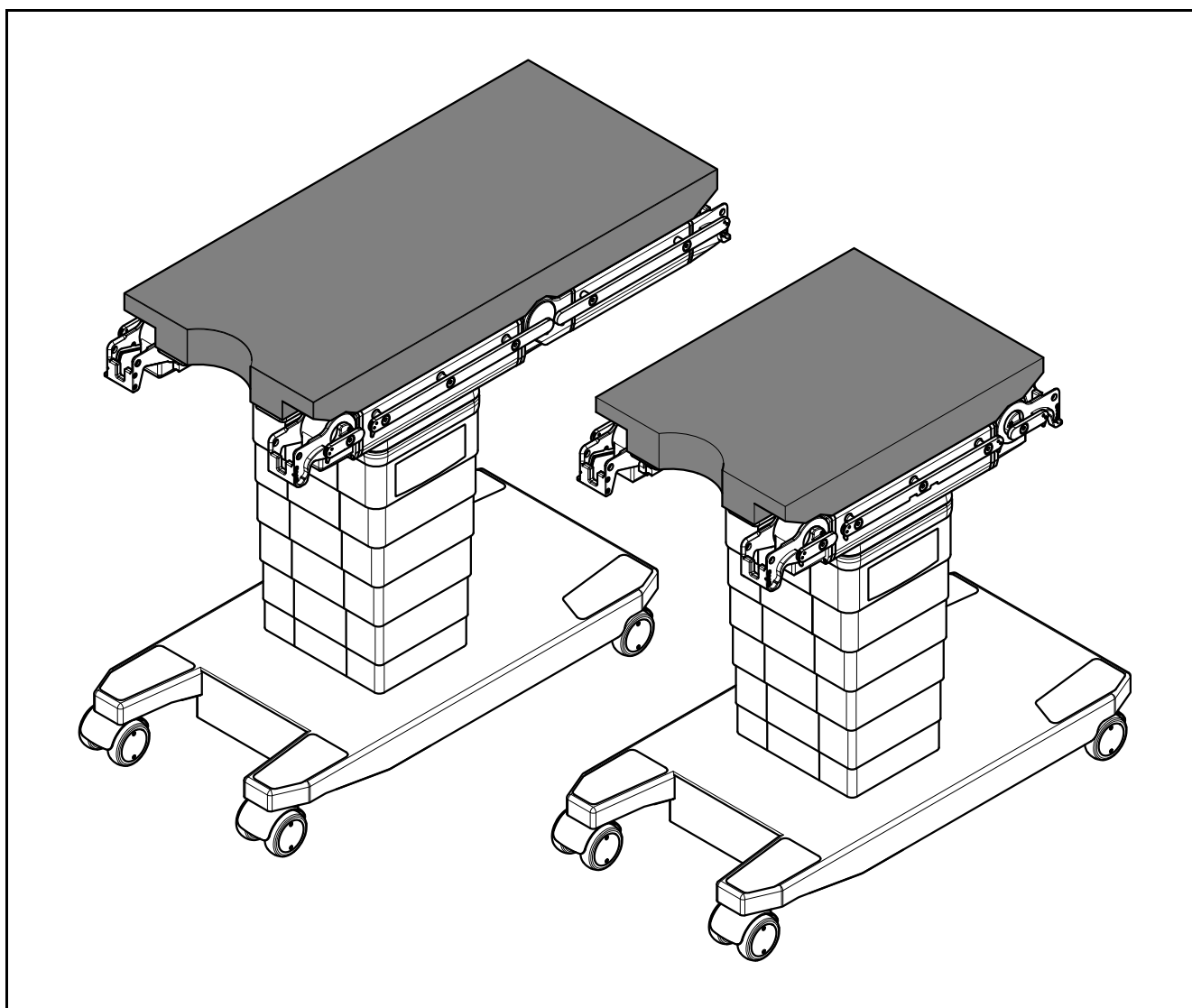


TruSystem 7000 Operating Table

Instruction manual



Translation of the original German instruction manual

CE mark/Conformity: This is a Class I medical device according to the Council Directive 93/42/EEC concerning medical devices and is compliant with the Directive version currently in force at the time of product sale. The manufacturer declares the conformity of this product with the essential requirements of the Council Directive 93/42/EEC concerning medical devices according to Appendix I, as well as the implementation of an assessment procedure required for Class I product conformity under Appendix VII and documents this with the CE mark.



ETL mark: Intertek tested the product for the USA and Canada. ETL classification regarding risk of electric shock and fire, as well as mechanical hazard in accordance with ULSTD 60601-1; CAN/CSA STD C22.2 NO.601.1.

ETL CLASSIFIED



Intertek

3186985

Manufacturer and distributor

TRUMPF Medizin Systeme GmbH + Co. KG
Carl-Zeiss-Straße 7-9
07318 Saalfeld
Germany

www.trumpfmedical.com

Telephone +49 3671 586-41911
Fax +49 3671 586-41175
Email Service.ww@trumpfmedical.com

Sales and Technical Customer Service

TRUMPF Medical Systems, Inc.
1046 LeGrand Blvd.
Charleston, SC 29492
United States

Telephone +1 888 474 9360

We at Trumpf Medical are constantly developing our products.

Therefore, we reserve the right to make changes to the format, equipment, and technology at any time.

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Within the bounds of the legal requirements, the manufacturer is responsible for the technical safety characteristics of this apparatus only if the maintenance, repairs, and modifications to this apparatus are performed by him or by someone appointed by him and in accordance with his instructions.

This instruction manual applies to the following sales units:

Name	Mat. no.
TruSystem 7000	1841046
TruSystem 7000 V	1841050
Operating table TruSystem 7000 U	1604788
TruSystem 7000 (MBW)	1841048
TruSystem 7000 (MBW) V	1841082
Operating table TruSystem 7000 U (MB)	1604786
TruSystem 7000 U14 (MBW)	2065385
TruSystem 7000 U14 (MBW) V	2065386

Pad table top TS7000 B	1753616
Pad table top TS7000 URO B	1960742
Pad TS7000 U14 B	2065417
Pad TS7000 U14 URO B	2065670

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1 Safety

1.1 Definitions

The following keywords and symbols are used in this instruction manual to indicate hazards and important information:


Warning symbol

	<p>In the safety information, the warning symbol is located in the title field with the colored background, to the left of the signal word (DANGER, WARNING, CAUTION).</p> <p>Safety information with a warning symbol indicates a risk of personal injury.</p> <p>Follow the safety information to reduce risk of injuries or death.</p> <p>Safety instructions without a warning symbol indicate risk of material damage.</p>
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Keyword

<p>DANGER</p> <p>WARNING</p> <p>CAUTION</p> <p>NOTICE</p> <p>NOTE</p>	<p>In the safety information the keywords are located in the title field with the color background.</p> <p>They follow a specific hierarchy and, in conjunction with the warning symbol, indicate the severity of the hazard or the type of information.</p> <p>See the explanations on page 8 and page 9.</p>
----------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Additional symbol

	<p>The additional symbols in the safety information are located to the left, under the title field with the colored background.</p> <p>They should indicate the potential hazard. Example: Crushing hazard</p>
-------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<div data-bbox="858 1664 1070 1711">  DANGER! </div> <p>Risk of personal injury.</p> <p>Refers to an imminent danger that will result in death or serious injuries if the appropriate precautionary measures are not taken.</p>	
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DANGER!



Risk of personal injury.

Refers to an imminent danger that **will result** in **death or serious injuries** if the appropriate precautionary measures are not taken.

WARNING!

Risk of personal injury.

Refers to an imminent danger that **can result** in **death or serious injuries** if the appropriate precautionary measures are not taken.

WARNING!



Risk of personal injury.

Refers to an imminent danger that **can result** in **death or serious injuries** if the appropriate precautionary measures are not taken.

CAUTION!

Risk of personal injury.

Refers to a potential danger that can result in **minor or moderate injury** if the appropriate precautionary measures are not taken.

CAUTION!



Risk of personal injury.

Refers to a potential danger that can result in **minor or moderate injury** if the appropriate precautionary measures are not taken.

NOTICE

Risk of material damage.

Refers to a potential danger that can lead to **material damage** if the appropriate precautionary measures are not taken.

NOTICE



Risk of material damage.

Refers to a potential danger that can lead to **material damage** if the appropriate precautionary measures are not taken.

NOTE

Refers to a potential **detriment**, i.e. undesired states or consequences could occur if the corresponding information is not followed.

1.2 Safety instructions

Safety information is defined as measures to protect the user and patient from dangers than might occur when using the operating table.

WARNING!

Risk of personal injury. Patient hazard due to changes to the product!

Changes to the medical device are prohibited! The manufacturer will not be held liable if changes are made to the operating table.

The medical device is subject to special precautions regarding the electromagnetic compatibility (EMC). Installation and commissioning must be done in accordance with the EMC notes specified in this user manual. See section 24.3 on page 99 and section 28 on page 104.

In critical situations during surgery, changing the patient's position by means of operating table movements (level position, Trendelenburg) may be necessary to facilitate lifesaving measures.

WARNING!

Risk of personal injury. Patient hazard due to malfunction!

Given the present state of the art on the market, the possibility of an operating table malfunction cannot be fully excluded. While very unlikely, there does exist a possibility that the motorized table functions may fail during surgery.

In the rare event that an operating table fails during surgery, alternate measures may need to be taken to reposition the patient. These measures include supporting the patient with additional pads or transferring the patient from the operating table.

1.2.1 General

WARNING!

Risk of personal injury due to improper handling.

This instruction manual must be

- read and understood in full by the operating personnel, especially the section "Important Information", prior to start-up or, if appropriate, communicated by means of an in-house training session taking the level of professional training into account,
- strictly adhered to,
- and readily accessible at the place of use of the product.

WARNING!

Risk of personal injury due to improper handling.

The TruSystem 7000 operating table is to be used only

- for the intended purposes specified under "Proper use of the equipment"!
- with the materials specified under "Proper use of the equipment"!
- at the values specified under "Technical Data"!

WARNING!

Risk of personal injury due to improper handling.

- All work with or on the operating table (set up, commissioning, operation, maintenance, decommissioning, transport, and disposal) may be performed only by trained staff.
- Follow the relevant instruction manuals for the proper and safe use of additional equipment.
- Use of the operating table tops is permissible in combination with other Trumpf Medical products. The instruction manuals for the products used must be observed and followed for their use.

CAUTION!

Risk of personal injury. Hazard to the patient due to improper attachment!

Check that the section segments and accessories are securely fastened to the operating table before each use. Spontaneous movement may occur and loose elements may slip out! Loosen control units for adjustment purposes only. Clamp them down immediately thereafter! Always check that fastening elements are secured properly.

CAUTION!

Risk of personal injury.

- Risk of crushing by moving parts! Familiarize yourself with its operating functions before using the product!
- Risk of injury due to overhanging parts. Maintain proper distance.

CAUTION!

Risk of personal injury. Hazard to the patient due to damaged product.



Check that all electrical and mechanical functions/parts of the operating table, including accessories, are undamaged and in good working order before start-up. Defective or damaged products may not be used!



NOTE


The manufacturer will not be held liable if



- additional components or other accessories that do not meet the manufacturer's specifications are installed or used with this product,
- installed safety equipment is removed.

1.2.2 Electricity

 WARNING!	
	<p>Risk of personal injury.</p> <p>Position the operating table such that the detachable plug or device couplers are easily accessible.</p> <p>The operating table may only be connected to a power supply with protective conductor. This reduces the risk of electric shock.</p>

 WARNING!	
	<p>Risk of personal injury.</p> <p>Have the operating table and power supply electrical safety checked once a year by an electrician. We recommend an annual general safety inspection by TRUMPF Medical Systems, Inc., Technical Customer Service.</p>

 WARNING!	
<p>Risk of personal injury. Hazard to the patient!</p> <ul style="list-style-type: none"> • Always keep the operating table in an operational (charged) state so that it is ready immediately in case of power supply failure! • Fully charge the operating table prior to first use. 	

 WARNING!	
	<p>Risk of personal injury.</p> <p>An extension cord cannot be used with the power cable at the operating table, otherwise, in case of a fault, the permitted patient leakage current threshold for cardiac surgery (applied part CF according to IEC 60601 - 1) will be exceeded. The fault occurs when the protective conductor is interrupted by a damaged power cable. The operating table must only be connected to the power grid using the original power cord from Trumpf Medical. In addition, the supply voltage must be respected. The operating table must only be connected to the supply voltage indicated on the nameplate.</p>

⚠ WARNING!



Risk of personal injury.

When used on an electrically conductive floor, the operating table may be used only if connected to an equipotential bonding cable. The equipotential bonding cable connection location on the operating table is in accordance with IEC 60601 - 1.

⚠ CAUTION!

Risk of personal injury and material damage.

Ensure that the power cable and equipotential bonding cable are not crushed or driven over. Stop using cables if damaged. If there are concerns regarding the safety of the power or equipotential bonding cable, use the internal power supply (battery) only until the corresponding cable can be replaced. Remove cables prior to relocating the table.

⚠ CAUTION!

Risk of personal injury.



The anti-static properties of the operating table top comply with the legal requirements. Meeting this requirement requires the use of the pads supplied with the product, which must be properly secured.

NOTICE


Risk of material damage to the electronics due to condensation.

There is a risk of condensation forming during transport, which could potentially damage electronic components. After delivery of the operating table, it is important to wait a certain period of time before it is switched on or connected to an external power source (at least 12 hours is recommended). Place the operating table in an environment with the same ambient temperature and relative humidity as the room where the table will be used (see page 96). The batteries must be completely recharged after a significant change in temperature or humidity.

1.2.3 High-frequency (HF) surgery devices and defibrillators

 WARNING!	
	<p>Risk of personal injury.</p> <p>The operating table is suitable for the use of HF surgical equipment, defibrillators, and defibrillator monitors. Please follow the manufacturer's instruction manual and safety information for the equipment.</p> <p>Trumpf Medical operating tables are electrically conductive in accordance with currently applicable IEC 60601-1 regulations. When high-frequency surgery devices, defibrillators, and defibrillator monitors are used, the patient runs the risk of burns if safety precautions are not followed.</p> <ul style="list-style-type: none"> • Risk of burns to patient! Position the patient on the operating table isolated from metal parts (operating table, accessories) and conductive pads or tubes. • Make sure the patient does not come into contact with damp towels or pads! Only use dry materials! • The electrically motorized operating table functions can be interrupted when high-frequency surgical devices are used simultaneously.

1.2.4 Pad

 CAUTION!	
<p>Risk of personal injury.</p> <ul style="list-style-type: none"> • The pads and cover retain the patient's body heat, thereby preventing body temperature from falling due to heat diffusion. • The pads can be removed. Use the appropriate Trumpf Medical pads only! Do not position the patient on the operating table without a pad. • Lift the patient into the desired position on the operating table; do not drag the patient over the pads. After each change of position, lift the patient's appropriate body parts. Any wrinkles or shearing forces that have developed will be eliminated. • Do not stick any sharp-edged objects into the pad. Avoid placing sharp objects on the pad. Do not attach any adhesive foil! • For accessories with removable pads, do not carry the accessories by the pad. They may come detached from the pad and fall downward. 	

1.2.5 Transport/Repositioning

CAUTION!

Risk of personal injury.

Occupational safety for personnel: Given their heavy weight, when lifting or carrying the section segments and accessories, or when manually moving the operating table with or without a patient, take extra care not to strain your back! Work with an additional person if necessary. Never couple or uncouple multiple section segments or heavy, unwieldy accessories at the same time! Hold the component securely and do not drop it!

CAUTION!

Risk of personal injury.

Incorrect loading can break the section segments off the operating table or cause the operating table to tip over. Do not climb onto or down from the operating table over the back sections or attached section segments. Patients may only get on or off in the area of the support column, using the seat section. Do not sit on the back section or other attached table section segments.

CAUTION!

Risk of personal injury. Hazard to the patient!

- Always move the operating table to the level position before placing a patient on the table top.
- Secure the patient on the operating table (e.g., by using straps), and provide active support to the patient when making adjustments to the operating table!

⚠ CAUTION!

Risk of personal injury and material damage. Risk of collision when adjusting the operating table!

Perform all patient repositioning in a controlled and responsible manner! Pay close attention to all electrically supported operating table functions and movements, up to the final position, to rule out any hazard to the patient and material damage to the operating table, equipment or furnishings. Care must be taken to avoid collisions. The operator must take care to interrupt any function that poses this risk.

Pay close attention that no surgical draping, tubing or other objects can be touched and pinched by movable parts.

Pay particular attention to the operating table when lowering, since the table top may collide with objects lying below it, or it may even make contact the floor if it is set in an extreme position. Users should be aware of the fact that there exists a risk of crushing injuries to both the patient and the staff. Extreme care should be taken to avoid these risks.

⚠ CAUTION!
Risk of personal injury and material damage. Hazard to the patient!

- Continually monitor the patient's position.
When moving to level position on the operating table, larger patient incline positions can occur compared to the initial position.
Select the Level position function only if there is no possibility of collisions! Monitor the movement to level position up to the final position.
- Risk of physical injury due to the operating table tipping over!
Moving the operating table with a patient positioned on it is only permitted if specific conditions are met (see page 87).
- **Danger of collision!** Be especially careful when transporting the operating table! Be careful to avoid collisions with nearby persons or furniture to prevent damage to the table!

1.2.6 Maintenance/Repair

NOTE

- Always retain and fill out a log book for this medical equipment! All servicing, inspections, and repairs are to be documented in this log book.
- All repairs have to comply with the safety regulations in IEC 60601 - 1.
- The manufacturer is only responsible, within the bounds of the legal requirements, for the technical safety characteristics of this device, if the maintenance, repairs and modifications to this apparatus are performed by Trumpf Medical service technicians or by personnel authorized and trained by Trumpf Medical.
- Trumpf Medical will not be held liable for damage of any kind arising from the failure to perform inspections or as a result of inadequate repairs or maintenance, or modifications to the product.
- To ensure safe use of the operating table, Technical Customer Service must be ordered immediately if there are leaks in the running gear hydraulics system (loss of hydraulic fluid).


1.2.7 Protection against infection

CAUTION!

Risk of infection.

- Comply with all the stipulations concerning cleaning and disinfection (see page 94). Follow all cleaning and disinfection procedures and use only the disinfectants described in this instruction manual!
- Devices and equipment must be cleaned and disinfected before being handed over to service technicians for maintenance and repair work.
- Replace pads that no longer meet infection prevention and hygiene requirements.

1.2.8 Environmental protection

NOTE	
	<ul style="list-style-type: none"> • Dispose of any remaining cleaning and disinfection materials and any associated residues in a safe and environmentally compatible manner. • Note recycling possibilities for batteries that have become unserviceable. • Follow this document for environmentally friendly disposal (see page 103).

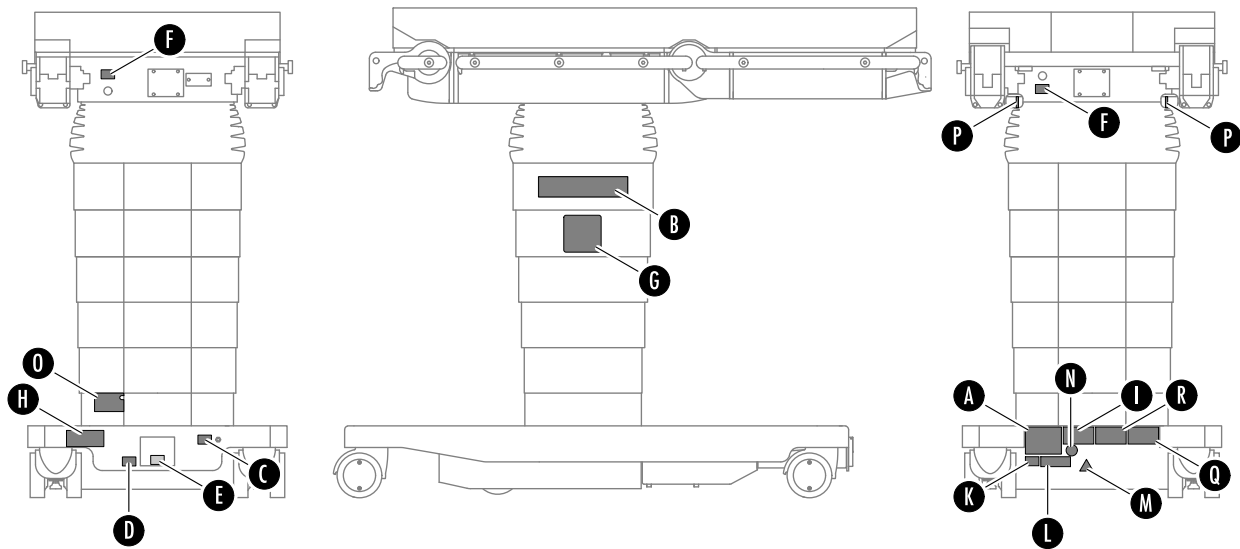
1.3 Pictograms on the product

The TruSystem 7000 operating table is equipped with pictograms. The pictograms contain information regarding the operating table or indicate specific dangers at the marked positions. Follow the other pictograms on the section segments and accessories.

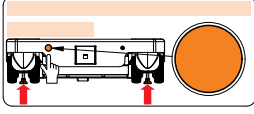
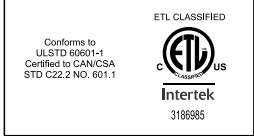
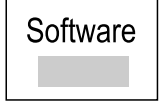




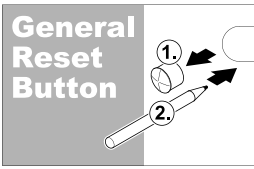

⚠ WARNING!	
Risk of personal injury. Note the hazard locations and risks indicated by the pictograms on the operating table.	

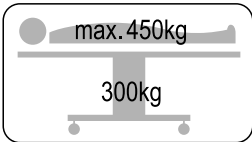
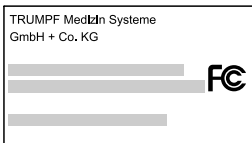
NOTE	
All pictograms (adhesive labels) on the device must be complete and legible! They may not be <ul style="list-style-type: none"> - moved - changed - removed or - covered by other objects. Damaged or missing pictograms are to be replaced according to the specifications.	

The following pictograms are located on the operating table:



Item	Pictogram	Meaning	Position
[A]		Model plate	Foot end on the running gear in the running gear recess
[B]		Operating table name	On the right side on the topmost cover panel
[C]		Connector pin for equipotential bonding cable	Head end on the running gear.
[D]		Connector socket for power cable	On the cover of the connector socket, at the head end on the running gear
[E]		2x 10 AT fuses	On the cover of the connector socket, at the head end on the running gear
[F]		Connector socket for wired remote control	Under the seat section on the column head (both sides)
[G]		Before retracting the floor jacks, lower the patient table lift until the pictogram is covered.	On the right and left side of the column

Item	Pictogram	Meaning	Position
[H]		Button for emergency release	Head end on the running gear
[I]		ETL mark	Foot end on the running gear in the running gear recess, next to the model plate
[K]		Software label with the current operating table software version	Foot end on the running gear in the running gear recess, under the model plate
[L]		only for operating table version MB Identifier of operating table with motorized drive mode	Foot end on the running gear in the running gear recess, next to the software label
		only for operating table version MBW Identifier of operating table with motorized drive mode and radio module	Foot end on the running gear in the running gear recess, next to the software label
[M]		Jamming and crushing hazard	Foot end on the running gear in the running gear recess, at the center
[N]		Follow the instruction manual	Foot end on the running gear in the running gear recess, next to the model plate
[O]		Reset Button	Head end at the column base
[P]		Positioning aid for the extension adapter yellow strip with black arrow (positioning aid)	At both extension adapter supports

Item	Pictogram	Meaning	Position
[Q]		<p>The maximum possible patient weight on the operating table is 1000 lbs (450 kg).</p> <p>The maximum operating table weight of 660 lbs (300 kg) consists of the operating table weight itself plus the weight of the connected section segments.</p>	Foot end on the running gear in the running gear recess, next to the radio license
[R]		<p>only for operating table version MBW</p> <p>Radio license FCC and IC</p>	Foot end on the running gear in the running gear recess, next to the ETL mark

2 Important Information

The quality management system at TRUMPF Medizin Systeme GmbH + Co. KG has been certified in accordance with the currently applicable EN ISO 13485 standard.

Prior to using the products, read this instruction manual carefully from the beginning to the end in order to familiarize yourself with the product and its functions in a step-by-step manner. Keep the operating instructions near the product so that information can be found at a later point in time. The instruction manual is an inherent part of the product and must be handed over when changing location or personnel. Furthermore, the instruction manual must be easily accessible for all product users at all times.

This operating table is safe to use. Residual risks are addressed in the respective sections of this manual. Pay attention to this information.

Glossary

The following terms and abbreviations are used in this instruction manual:

Term	Explanation
Text written in <i>ITALICS</i>	Descriptions of keys, functions, displays, and system components
►...◄	Text on remote control display
Numbers in brackets [50] [a10] [i10] [10]	Numbering used in illustrations (Allocation graphics - text) Indicates displays on a control unit Indicates functions (keys) on a control unit Indicates parts
#	Material number
Button	Button on the remote control touchscreen
DGHM	Deutsche Gesellschaft für Hygiene und Mikrobiologie (German Society for Hygiene and Microbiology)
Trumpf Medical	TRUMPF Medizin Systeme GmbH + Co. KG
Medical device	Device as defined as medical product in the German Medical Device Act (MPG, Medizinproduktegesetz)

Term	Explanation
Section segment	Add-on component for additional equipment for the operating table. The section segment is fastened to coupling points on the operating table and extends the space for positioning the patient.
Enclosed section segment	One-part section segment with two hooks; matches the width of the operating table top
Side rail	Rails for attaching accessories
Operating table	Operating table with running gear The section segments attached to the operating table top are also part of the operating table.
Column keypad	Control keypad on head end of the column
Two-part table top	The table top is made up of a seat section and a lower back section. The seat section is permanently attached to the lower back section. This applies to the following products: #1841046/#1841050/#1604788/ #1841048/#1841082/#1604786
One-part table top	The table top is made up of only a seat section. This applies to the following products: #2065385/#2065386
VAH	Verbund für Angewandte Hygiene e. V. (German Registered Association for Applied Hygiene)
Accessories, accessory components	Attachments for further equipping the operating table. Accessories are attached to the operating table top or section segments.

Term	Explanation
Abbreviations used in the names of the products	
MB	Motorized running gear
MBW	Motorized running gear and interface for the remote control device
V	Attachment of the pad using Velcro
U	USA version

2.1 Proper use of the equipment

The devices described in this manual are for human medical use only. The operating table may only be used/operated by trained physicians and nursing personnel in a controlled and responsible manner. Training of operating and nursing personnel may only be done by the manufacturer or other persons authorized by the manufacturer.

The TruSystem 7000 operating table, in conjunction with the section segments and accessories offered and sold by Trumpf Medical, is intended for the following uses:

- Patient positioning during surgery, ranging from anesthesia induction to actual surgery and recovery from the anesthesia.
- Patient transport on the operating table top, from a patient transfer unit to the operating room or from the operating room to the patient transfer unit.

The rails located below the back section at the interior sides of the bars are intended only for the support of X-ray cassettes (size: 14 inch (35.56 cm)).

Positioning of the patient on the operating table is in accordance with general practice and doctrine, as for example described in specialist literature.

Do not transport objects, devices, or materials on the operating table.

Follow this instruction manual to comply with the intended use of this operating table. Any other use of the operating table is regarded as improper use. The supplier/manufacturer is not liable for damage to property or injury to persons resulting from improper use.

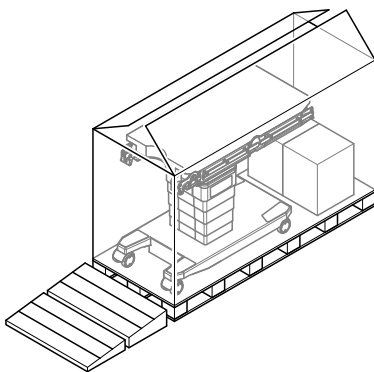
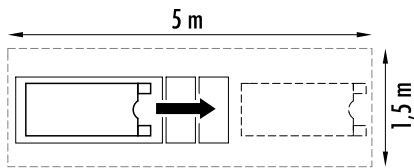
2.2 Key performance feature

The medical device remains in the position set by the operator. A change of the position will only occur through a proactive action by the operator.

3 Unpacking and Setting up the Operating Table

The operating table is delivered on a pallet, in a packing case. Ordered table components/accessories are packed individually on the pallet, or are connected to the operating table. Warning, the packaging is not weatherproof. Follow the ambient conditions for storage and transportation (shipping) in the section 24 on page 96.

Unpack the operating table in a room with a level floor and sufficient open space to roll away the pallet.



1. Position the pallet so that an area of approx. 5' x 16' 6" (1.5m x 5 m) is available.

2. Open the top of the box.
3. Lift the two-piece ramp up and out and position it at the front edge of the pallet as shown.
4. Remove the box fasteners below at the pallet.
5. Lift the box upward and remove it.
6. Remove the scope of delivery notice.
7. Take off the straps.
8. Remove the securing beams.

9.

NOTICE

Risk of material damage to the electronics due to condensation.

There is a risk of condensation forming during transport, which could potentially damage electronic components. After delivery of the operating table, it is important to wait a certain period of time before it is switched on or connected to an external power source (at least 12 hours is recommended). Place the operating table in an environment with the same ambient temperature and relative humidity as the room where the table will be used (see section 24.1 on page 96).



10. Switch on the operating table using the column keypad (press the ON key).

11. Remove key lock. To do this, press the KEY RELEASE key. The release of the keypad is indicated by an acoustic signal and the associated indicator lights up. The keypad is released for operation for 10 seconds.





12. On the column keypad, press the *FREEWHEEL* key until an intermittent audible signal is heard. Operating table brake released. When this is complete, the acoustic signal will cease

13.

CAUTION!



Risk of physical injury due to the operating table tipping over!

The operating table can tip over and cause injuries if it is moved over the side edge of the pallet.

Carefully remove the operating table from the pallet using the ramp. This requires at least 2 people.



14. Remove key lock. To do this, press the *KEY RELEASE* key. The release of the keypad is indicated by an acoustic signal and the associated indicator lights up. The keypad is released for operation for 10 seconds.

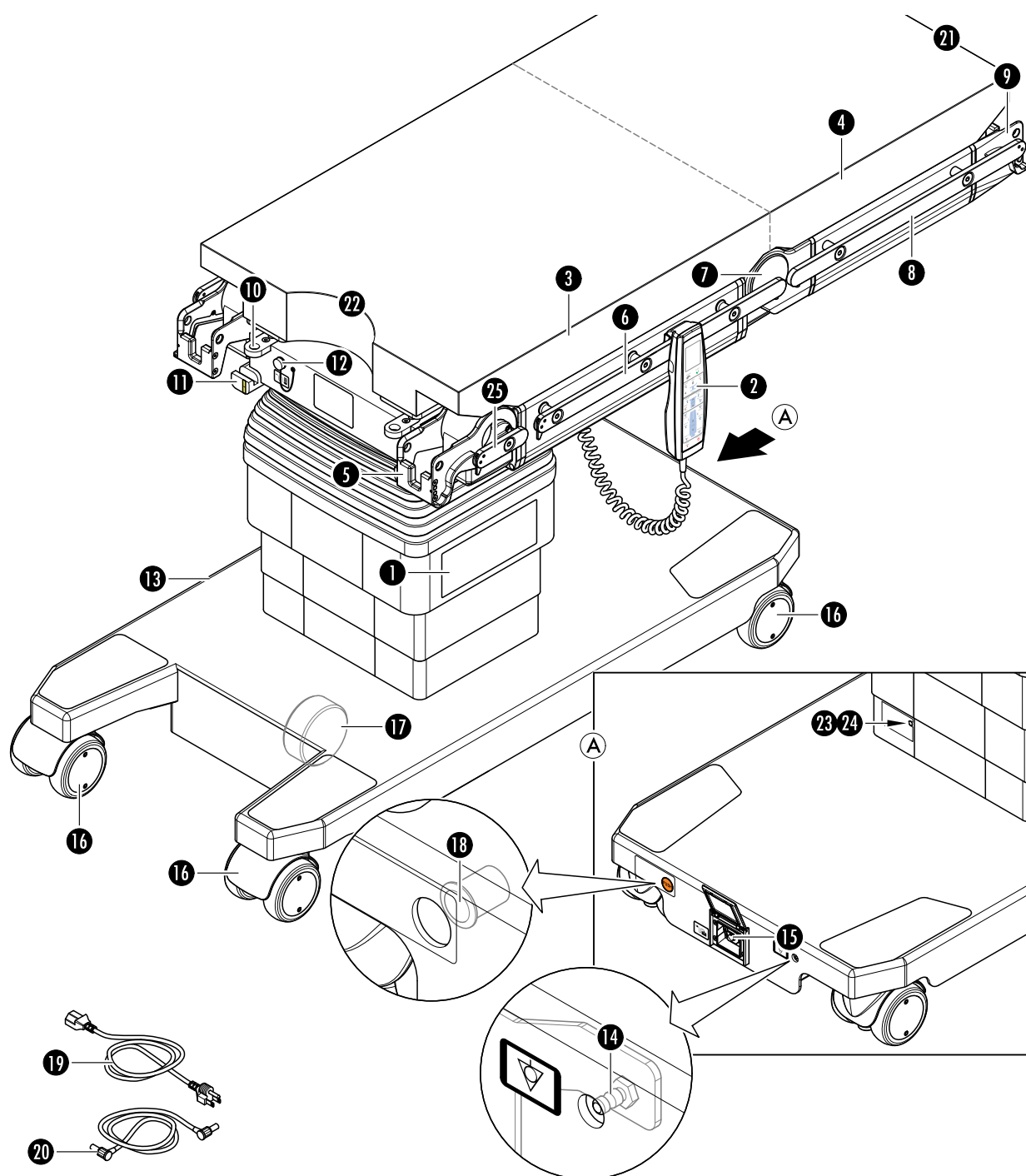


15. On the column keypad, press the *LOCK* key until an intermittent audible signal is heard. The operating table will be jacked up. When this is complete, the acoustic signal will cease.
16. Dispose of the pallet, ramp, and packing material in an environmentally responsible manner.
17. Charge the operating table. See section 8.3 on page 47.)

4 Operating Table Overview

4.1 Two-part table top

The TruSystem 7000 operating table has a two-part table top with two motor driven joint pairs (leg and back section joints) and a rigid coupling point. Operating table movement behavior can be adjusted electrically. The operating table models MB and MBW have an additional electric drive unit.

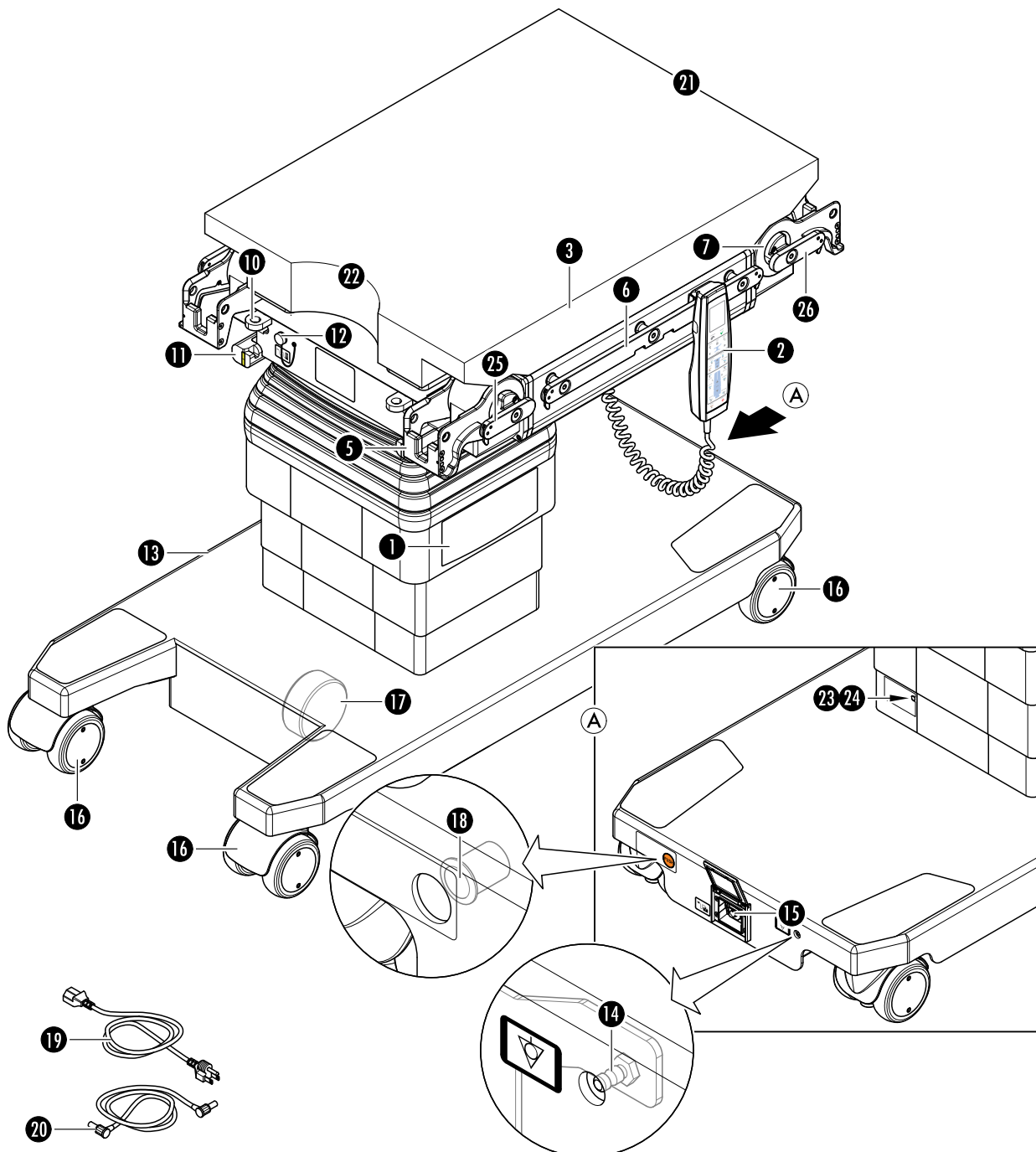


Key:

- [1] Column keypad
- [2] Remote control
- [3] Seat section
- [4] Back section
- [5] Motorized leg section joint with fixture L
- [6] Side rails for seat section
- [7] Motorized back section joint
- [8] Side rail for back section
- [9] Attachment S
- [10] Insertion opening for extension adapter
- [11] Support for the extension adapter
- [12] Control unit connector socket (head and foot ends)
- [13] Running gear
- [14] Connector pin for equipotential bonding cable
- [15] Connector socket for power cable
- [16] Wheel
- [17] Fifth wheel for running gear assistance (directional travel/
drive mode)
- [18] Button for emergency release of running gear (under the
label)
- [19] Power cable
- [20] Equipotential bonding cable
- [21] Head end of the operating table top
- [22] Foot end of the operating table top
- [23] Reset Button
- [24] Cover cap
- [25] Side rails for leg section joint
(not for operating table version U)

4.2 One-part table top

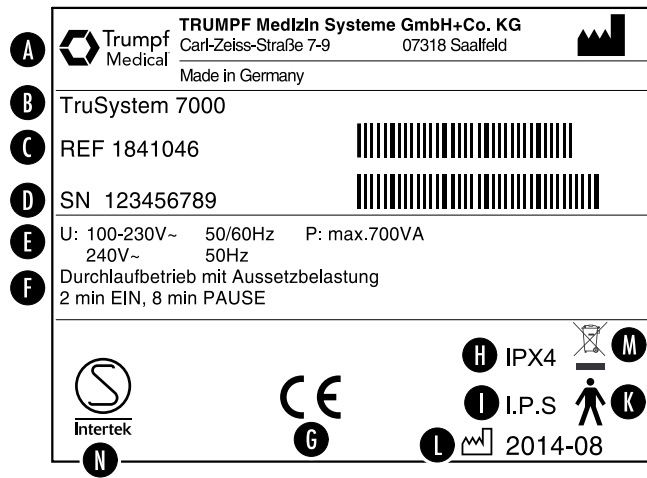
The TruSystem7000 U14 operating table has a one-part table top with two motor-driven joint pairs (leg and back section joints). The traveling movements of the operating table are adjusted electrically. The operating table has an electrical drive unit.



Key:

- [1] Column keypad
- [2] Remote control
- [3] Seat section
- [5] Motorized leg section joint with fixture L
- [6] Side rails for seat section
- [7] Motorized leg section joint with fixture M
- [10] Insertion opening for extension adapter
- [11] Support for the extension adapter
- [12] Control unit connector socket (head and foot ends)
- [13] Running gear
- [14] Connector pin for equipotential bonding cable
- [15] Connector socket for power cable
- [16] Wheel
- [17] Fifth wheel for running gear assistance (directional travel/
drive mode)
- [18] Button for emergency release of running gear (under the
label)
- [19] Power cable
- [20] Equipotential bonding cable
- [21] Head end of the operating table top
- [22] Foot end of the operating table top
- [23] Reset Button
- [24] Cover cap
- [25] Side rails for leg section joint
- [26] Side rails for back section joint

4.3 Model plate



Key:

- [A] Manufacturer
- [B] Product name
- [C] Material number (with bar code)
- [D] Serial number (with bar code)
- [E] Voltage and frequency depending on the operating voltage:
100 V-230 V~ 50 Hz/60 Hz,
240 V~, 50 Hz
Max. power 700 VA
- [F] Operating mode: Continuous operation with intermittent load
2 min ON, 8 min PAUSE
- [G] The device is declared compliant in accordance with the
Council Directive 93/42/EEC concerning medical devices
- [H] Degree of protection from water penetration
- [I] Device has an internal power supply
- [K] Degree of protection against electric shock:
Type B applied part
- [L] Date of manufacture (year - month)
- [M] Product must not be thrown into the household waste.
- [N] Certification mark of the test center

4.4 Acoustic signals (factory state)

Various acoustic signals sound at operating table in conjunction with specific operating procedures or states.

Action	Description of acoustic signal
Switch on the operating table	Ascending tone sequence
Switch off the operating table	Descending tone sequence
Maximum overload limit, end position or level position of selected adjustment range reached	Single tone
Confirmation of operating procedure, e.g.: <ul style="list-style-type: none"> - Key lock canceled - Level position reached - Processes at the running gear (movement, locking/unlocking) 	Double tone Double tone Periodic single tone During movement the single tone repeats at intervals of a few seconds.
Operating table requires charging.	2 pulsing tone sequences intermittently repeating (at an interval of several minutes - battery tone)
Error	Shrill triple tone (error tone)
Warning, e.g.: <ul style="list-style-type: none"> - Leg sections move together during single joint adjustment - Emergency mode 	Recurring high-pitched single tone (warning tone) During movement the warning tone sounds continuously at intervals of a few seconds.

In addition to the acoustic signals, a corresponding indicator is shown in the display when using the TruSystem 7000 remote control device.

5 Pad

The following pad versions are permissible for the operating table tops:

Name	Material number
Pad table top TS7000 B	1753616
Pad table top TS7000 URO B	1960742
Pad TS7000 U14 B	2065417
Pad TS7000 U14 URO B	2065670

Using the operating table with unapproved pads is prohibited, and will result in the loss of conformity clearance for CE.

The pads #1753616 and #1960742 are designed for operating tables with a two-part table top. The pads #2065417 and #2065670 are designed for operating tables with a one-part table top. The pad material number is located on the under side of the pad.

The pad is a 3.6" (90 mm) thick, viscoelastic foam in a double sandwich design, with a non-removable electrically conductive cover material. CAUTION, use of the pad is prohibited if its surface has been damaged. They are attached to the operating table top with Velcro. The pad can be disinfected and wiped down (see section 23 page 94), and is radiolucent. Furthermore, the pad is latex-free and breathable.

The pad allows pressure-necrosis-inhibiting positioning of the patient. Medically trained personnel must eliminate residual risk by providing active decubitus prophylaxis when positioning the patient. The pad is anti-static and complies with the normative requirements when properly attached.

Removing pads

Grip beneath the underside of the pad and lift the pad upward.

Installing pads

CAUTION!

Risk of personal injury. Hazard to the patient due to improper attachment!

Check that the pad is securely fastened to the operating table. The pad must be attached precisely to the pad plate!

The pad is attached to the pad plate with Velcro. When you attach the pad, be sure the pad's loop portion of the fastener is dry and lined up properly with the hook portion of the fastener strap on the

pad plate. Place the pad on the pad plate, press down across the length of the hook and loop fastener and check that it is securely attached.

6 Control Units

The operating table can be controlled by using the following control units:

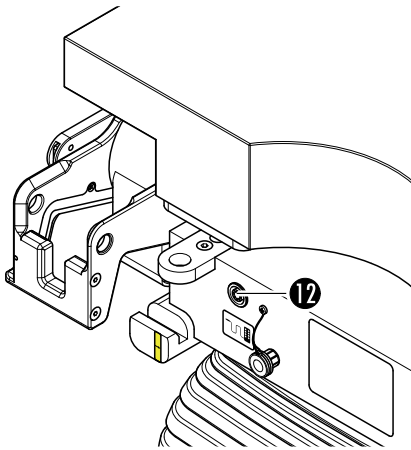
- Column keypad
- Remote control
- Foot control

The control unit [12] female connector on the operating table is used exclusively to connect the wired remote control or the foot control.

Entries via keys at the individual control units are accepted in the following sequence (priority):

1. Column keypad
2. Wired remote control
3. Foot control
4. Cordless remote control

Simultaneous activation of multiple keys will result in the sounding of alarms or in the execution of table functions in order of priority.



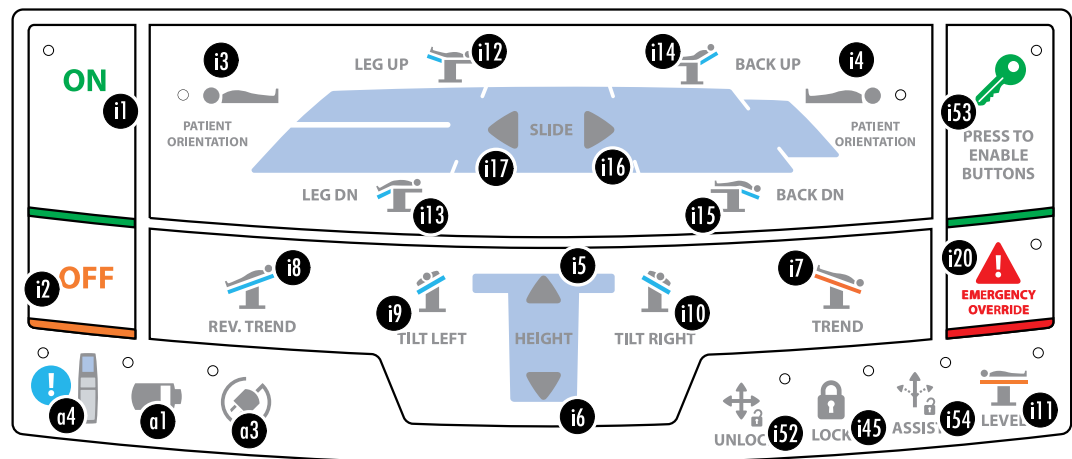
6.1 Column keypad

6.1.1 Overview of functions

The operating table is displayed on the column keypad in a simplified graphical form. The top section of the graphic representation shows the functions of the operating table, with the functions of the operating table column below (viewed from the head end). The keys for the adjustment functions are identified by arrows and arranged according to table segment. The direction of movement for the individual functions corresponds to the image displayed.

The individual functions on the column keypad can only be selected once the keys are unlocked. To activate an operating table function, press and hold the function key on the keypad until the desired position is reached. The function stops when the key is released. The keypad is locked again automatically ten seconds after the last key press. The *OFF* button is an exception. The operating table can be turned off at any time using the *OFF* button on the column keypad.

The column keypad functions can also be selected using two-key control. Press the *ON* key and simultaneously press the desired function key. The keypad does not need to be unlocked prior to two-key control.





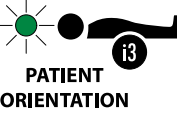






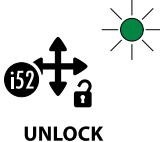
Key:

- [i1] Switch on the operating table, display: Ready
- [i2] Switch off the operating table
- [i3] Head position left, display: Head position left
- [i4] Head position right, display: Head position right
- [i5] Lift
- [i6] Lower
- [i7] Trendelenburg
- [i8] Anti (Reverse)-Trendelenburg
- [i9] Tilt left
- [i10] Tilt right
- [i11] Level position, indicator: Level position
- [i12] Leg section joint up
- [i13] Leg section joint down
- [i14] Back section joint up
- [i15] Back section joint down
- [i16] Longitudinal travel toward head end
- [i17] Longitudinal travel toward foot end
- [i20] Activate emergency mode, display: Emergency mode
- [i45] Lock the operating table, indicator: Operating table locked
- [i52] Free movement unlocked, indicator: Freewheel
- [i53] Key release, display: Key release
- [i54] Running gear assistance, display: Running gear assistance


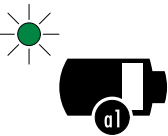
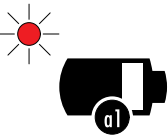
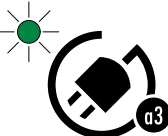
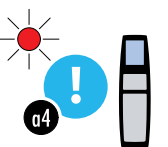
- [a1] Operating table, battery status
- [a3] External power supply
- [a4] Malfunction

6.1.2 Optical indicators

Indicator	State	Color	Meaning	Action
Ready [i1]				
	illuminated	green	Operating table is switched on and ready.	-
	flashes	green	In addition to indicator [i1], the emergency mode indicator is illuminated.	See indicator [i20]
	not illuminated		Operating table is switched off	Switch on the operating table if necessary.
Key release [i53]				
	illuminated	green	Column keypad keys released. The keypad locks 10 seconds after the last key is pressed.	-
	flashes	green	In addition, a shrill single tone (warning tone) sounds. The column keypad is locked. A locked key was pressed on the keypad. Direct operation of the operating table using the column keypad is not possible.	Press button [i53]. The keypad is released for operation for 10 seconds. Select functions on the column keypad using the two-key control.
	not illuminated		The column keypad is locked. Direct operation of the operating table using the column keypad is not possible. Except for OFF key The operating table can be turned off at any time using the OFF button on the column keypad.	Press button [i53]. The keypad is released for operation for 10 seconds and the indicator is constantly illuminated. Select functions on the column keypad using the two-key control.
Head position left [i3]				
	illuminated	green	Indicator corresponds to the head position of the patient on the operating table.	-

Indicator	State	Color	Meaning	Action
Head position right [i4]				
	illuminated	green	Indicator corresponds to the head position of the patient on the operating table.	-
Level position [i11]				
	illuminated	green	The operating table is in level position.	-
	flashes	green	Leveling of the operating table incomplete.	Contact Technical Customer Service.
Emergency mode [i20]				
	illuminated	red	In addition to indicator [i20], the operational readiness indicator [i11] flashes. The operating table emergency mode was activated manually.	Block the defective operating table from use for subsequent surgeries. Contact Technical Customer Service.
Locking (jacking up) [i45]				
	illuminated	green	The operating table is jacked up.	-
	flashes	green	In addition, a shrill single tone (warning tone) sounds. The operating table is free to move or running gear assistance is active. The selected function is locked for this status (operating table released).	Press button [i45]. The operating table is being jacked up; the indicator light goes out.
				The indicator is constantly illuminated if a locked key is pressed when 10 seconds have passed since the last key was pressed.
Freewheel [i52]				
	illuminated	green	The operating table is activated for free movement.	-

Control Units

Indicator	State	Color	Meaning	Action
Running gear assistance [i54]				
	illuminated	green	Operating table movement is assisted by an additional wheel in the center under the running gear. The operating table can be rotated about its center, shifted into direction travel, or moved with the drive mode ^{*1} .	-
Battery status [a1]				
	illuminated	green	Operating table is fully charged.	-
	flashes	green	Operating table is charging.	-
	illuminated	red	Operating table requires charging.	Establish external power supply connection for operating table.
	flashes	red	Operating table battery is discharged! Electrical functions are severely limited. Operating table shutdown pending.	Establish external power supply connection for operating table.
External power supply [a3]				
	illuminated	green	Power cable is connected to the operating table. External power supply active (line power connection)	-
Malfunction [a4]				
	illuminated	red	An error has occurred with the operating table. Operating table can be used in a limited manner.	Note the indicator in the remote control display. Contact Technical Customer Service.

^{*1} Only for operating table version MB/MBW

6.2 Remote control

The following remote controls can be used with the TruSystem 7000 operating table:

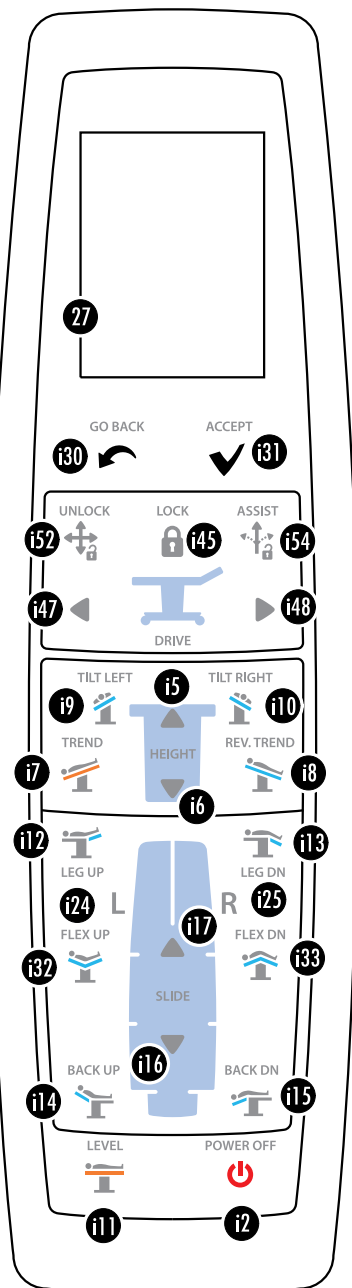
- TruSystem 7000 wired remote control
- TruSystem 7500 wireless remote control (only for operating table version MBW)

The user manual of the remote control used must be followed.

TruSystem 7000 wired remote control:

Key:

- [i2] Switch off the operating table
- [i5] Lift
- [i6] Lower
- [i7] Trendelenburg
- [i8] Anti (Reverse)-Trendelenburg
- [i9] Tilt left
- [i10] Tilt right
- [i11] Level position
- [i12] Leg section joint up
- [i13] Leg section joint down
- [i14] Back section joint up
- [i15] Back section joint down
- [i16] Longitudinal travel toward head end
- [i17] Longitudinal travel toward foot end
- [i24] Select left joint
- [i25] Select right joint
- [i30] Cancel or go back to next higher level in menu
- [i31] OK - Confirm a selected menu function and return to the main menu
- [i32] Reflex
- [i33] Flex
- [i45] Lock operating table
- [i47] Traction drive at the foot end (only for operating table version MB/MBW)
- [i48] Traction drive at the head end (only for operating table version MB/MBW)
- [i52] Freewheel
- [i54] Running gear assistance
- [27] Touchscreen

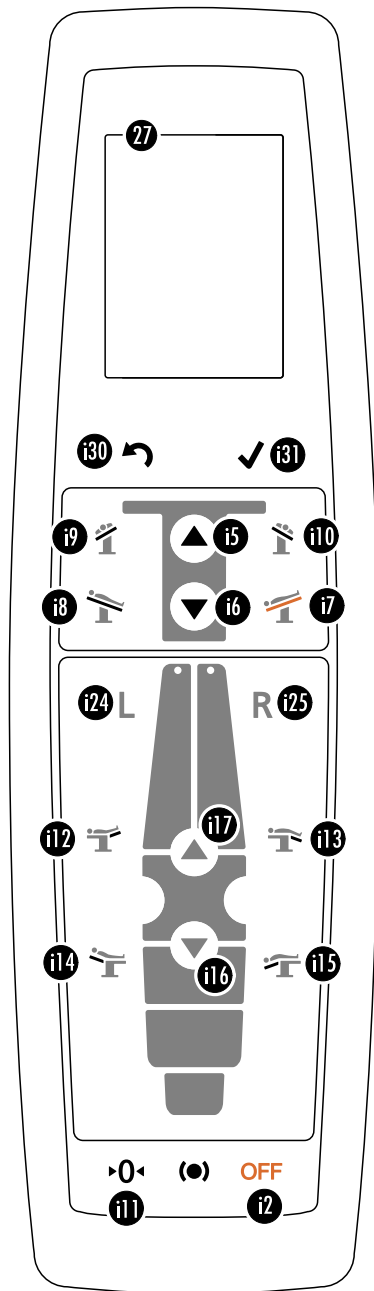


TruSystem 7500 wireless remote control (only for operating table version MBW):

Key:

- [i2] Switch off the operating table
 - [i5] Lift
 - [i6] Lower
 - [i7] Trendelenburg
 - [i8] Anti (Reverse)-Trendelenburg
 - [i9] Tilt left
 - [i10] Tilt right
 - [i11] Level position
 - [i12] Leg section joint up
 - [i13] Leg section joint down
 - [i14] Back section joint up
 - [i15] Back section joint down
 - [i16] Longitudinal travel toward head end
 - [i17] Longitudinal travel toward foot end
 - [i24] Select left joint
 - [i25] Select right joint
 - [i30] Cancel or go back to next higher level in menu
 - [i31] OK - Confirm a selected menu function and return to the main menu
- [27] Touchscreen

The handling behavior cannot be controlled with the TruSystem 7500 remote control.



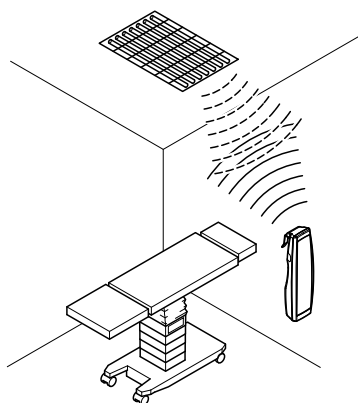
7 Malfunction Caused by other Devices

Portable and mobile RF communications equipment may interfere with the medical device.

WARNING!

Risk of personal injury. Hazard to patients caused by malfunctions of the operating table!

It is possible that other medical or non-medical devices in the room may use the same frequency range as the operating table or the wireless remote control. Thus, the devices can cause the malfunction of the operating table. Note the operating frequencies of various pieces of equipment.



Examples of potential sources of interference:

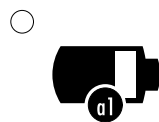
- Electronic control gear (ECG) for fluorescent lamps
- RF surgical devices
- wireless remote controls for other devices (for example, monitor)
- very bright interior lights

8 Power Supply

The operating table electronics monitors the external and internal power supplies. If the operating table is not in use for an extended period, the batteries should be recharged periodically to preserve the battery service life. A charging interval of 1 month is recommended.

8.1 Internal power supply

Two lithium ion batteries provide the internal power supply. With the set of batteries charged, use of the electric operating table functions is guaranteed for 16 hours (total duration of movement for electrical functions). The electrical functions on the operating table are blocked when the rechargeable battery set is discharged or almost completely discharged. In this case, the external power supply must be connected.



The battery charge status can be seen on the indicator [a1] on the column keypad. Observe the indicator while using the operating table.

8.2 External power supply (line connection)

The operating table external power supply is provided by the line power in the room. When connected to line power, there are no limitations on the use of electrically powered table functions.

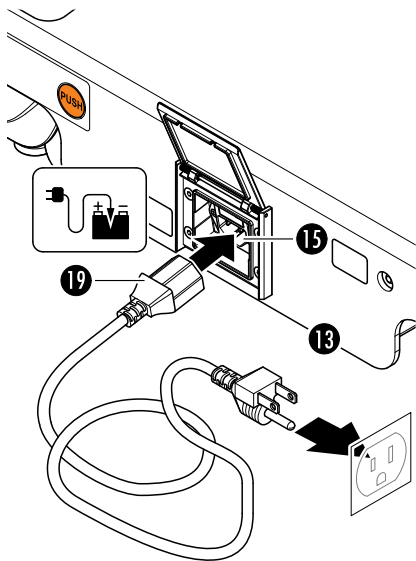
CAUTION!

Risk of personal injury. Hazard to the patient!

An extension cord cannot be used with the power cable at the operating table, otherwise, in case of a fault, the permitted patient leakage current threshold for cardiac surgery (applied part CF according to IEC 60601 – 1) will be exceeded. The fault occurs when the protective conductor is interrupted by a damaged power cable. The operating table must only be connected to the power grid using the original power cord from Trumpf Medical.

In addition, the supply voltage must be respected. The operating table must only be connected to the supply voltage indicated on the nameplate.

Connecting the operating table to the power supply



1.

DANGER!



Risk of death from damaged power cables!

There is a risk of death by electric shock if the power cable is damaged. Check the power cable and remove from use if it has been crushed or if the insulation is damaged.

2.

WARNING!



Risk of explosion due to flammable gas mixtures!

There is risk of explosion in conjunction with flammable mixtures of anesthetics and air if the power cable is first plugged into the socket and then into the operating table. The sequence for connecting the power cable must be strictly followed.

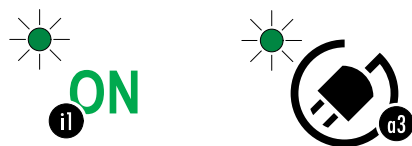
Flip up the connector socket cover [15] in the running gear [13] and insert the power cable plug [19] into the socket as shown [15]. The connection location is identified by the symbol for the line power connection.

3.

Route the cable such that no one can trip or fall over it. Plug the connector of the power cable into a grounded power socket in the room. The grounded power socket must be outside of an area where there is a risk of explosion. There is a risk of explosion in conjunction with flammable mixtures of anesthetics and air.



4.

Indicators [i1] and [a3] on the column keypad light up. After a few seconds, an audible signal sounds. The operating table is only ready for use once the signal tone has sounded. If the operating table was switched off, it will switch on automatically when plugged into the wall outlet.



Disconnect the operating table from the line power

1.

 WARNING!	
	<p>Risk of explosion due to flammable gas mixtures!</p> <p>There is a risk of explosion in conjunction with flammable mixtures of anesthetics and air if the power cable is first disconnected from the operating table and then from the power socket. The sequence for disconnecting the power cable must be strictly followed.</p>



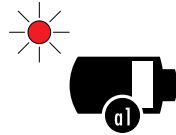
2.

Pull the power cable plug from the grounded wall socket. Indicator [a3] on the column keypad goes out and an audible signal sounds.

Pull the power cable plug from the connector socket on the running gear.

8.3 Charging the operating table

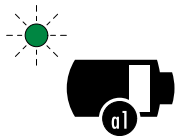
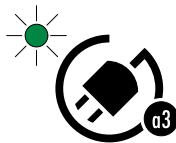
The operating table should be charged daily after use in the OR to ensure it is always ready for use.



The battery charge status can be seen on indicator [a1] on the column keypad. Observe the indicator while using the operating table. The operating table has to be charged if the indicator lights red. In addition, an audible signal sounds that repeats at intervals of a few minutes.

1. Connect an external power supply to the operating table (see section 8.2 on page 44).

Indicator [a3] on the column keypad lights up.



Indicator [a1] on the column keypad flashes green within 1 minute after plugging in the power cable.

2. The operating table is charging.
If the batteries are completely discharged, recharging will take approximately 3 hours. Indicator [a1] on the column keypad lights green when the batteries are fully charged.
Once charging is complete, the charging current is reduced to a maintenance charging current. The maintenance charging current will not damage the batteries.

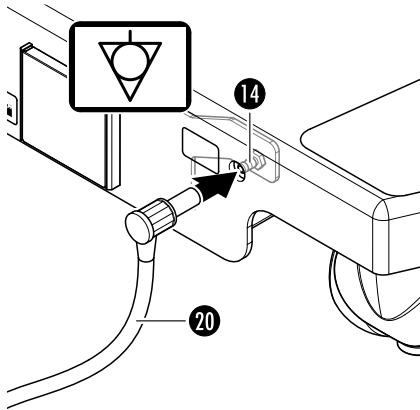


3. Disconnect operating table from the external power supply (see section 8.2 on page 44). Indicator [a3] on the column keypad goes out.

9 Equipotential Bonding

Equipotential bonding eliminates the potential differences between the touchable conducting parts near the patient if the operating table is connected to the equipotential bonding in the room.

Connect the equipotential bonding cable plug [20] to the equipotential connection pin [14] of the operating table column. Plug the other end of the line into the equipotential bonding in the room. The connection location on the running gear is identified by the symbol for the equipotential bonding cable connection.



10 Switching the Operating Table On and Off

**Switch on the
operating table**



Press the ON [i1] key on the column keypad. Indicator [i1] on the column keypad lights up and an audible signal sounds after a few seconds. The operating table is only ready for use once the signal tone has sounded. Indicator [i1] lights up continuously when the operating table is switched on.

The operating table is always switched on when connected to an external power supply.

**Switch off the
operating table**

The operating table can be switched off only if it is running on battery power. If connected to the external power supply, the operating table remains on permanently, since it will turn itself back on automatically after being turned off.

The operating table by default shuts down 4 hours after the last button push on a control unit to protect the rechargeable batteries according to the following shutdown process. An audible signal is heard 30 minutes before the automatic shutdown of the operating table, and the remote control display shows the following message ►Renewed PowerDown. Extend the standby mode of the table? ◀. If the user presses the OK key [i31] or the ►OK◀ button, the operating table shutdown time is extended an additional 4 hours.

If the user presses the **CANCEL** key [i30] or the ►Cancel◄ button, the operating table shuts down in half an hour (after the 4 hours elapse).

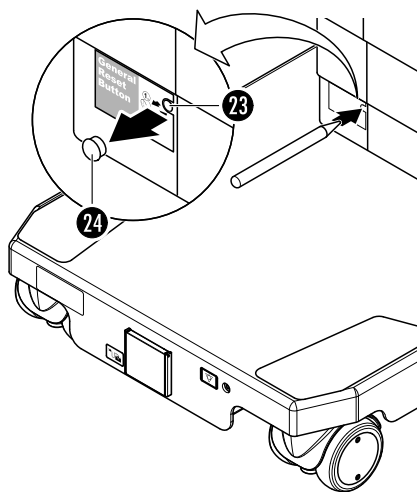
If the user does not react, the audible signal goes off a total of 12 times. The message remains on the remote control display. The operating table shutdown time is not extended. The operating table also shuts down after the 4 hours elapse.

It may be necessary for an operating table in battery mode to be switched on again in the interim for longer surgeries without the operating table controls being used.

1. Disconnect the operating table from the power supply (see section 8.2 on page 44).
2. Press key [i2] on the column keypad or remote control for more than 2 seconds. An acoustic signal sounds shortly before shutdown.

OFF
i2

11 Reset



If the operating table reacts unexpectedly to a control, switch off the table and switch it back on. If it is not possible to switch off the table, press the Reset button. The reset button [23] is located at the head end on the column base, directly below the cladding. Remove the cover cap [24] (made of plastic) and press the button [23] briefly using a pointed object (e.g., a ballpoint pen). Then switch the operating table on again. With an external power supply, the operating table switches on again automatically.

12 Coupling Points

12.1 Definition

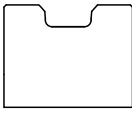
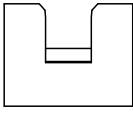
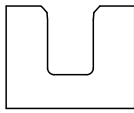
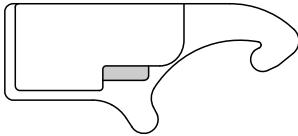
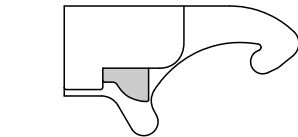
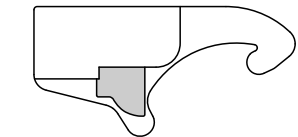
All Trumpf Medical operating table tops, section segments and accessory parts have coupling points from the fastening system developed by Trumpf Medical. The coupling point is a separable connection site between the operating table top and additional equipment. The different combinations allow the operating table to be assembled in an individual and mechanically safe fashion.

12.2 Overview

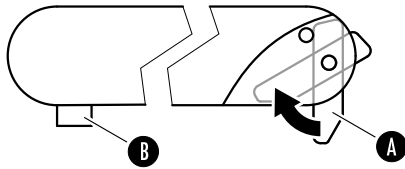
The type of coupling point is specified in the user manual for each product.

Coupling point for hook and fixtures

There are 3 different basic types of hooks and attachments. The following combinations are possible:

Coupling point	Fixture		
	S	M	L
			
Hook with S encoding 	x	x	x
Hook with M encoding 		x	x
Hook with L encoding 			x

Coupling point for side rail



Accessories can be fastened to the side rails with clamps.

At the ends of the side rails, there is a locking mechanism that prevents accessories from sliding off the side rail.

[A] movable locking mechanism (lever)

[B] fixed locking mechanism (not on all side rails)

Accessory parts with a rigid clamp (without a movable claw) can be slid onto the side rail only on the side with a movable locking mechanism [A]. The clamp will then push back the lever [A]. Slide the accessory part on the side rail until the clamp is fully seated on the side rail, and the side rail lever is vertical again.

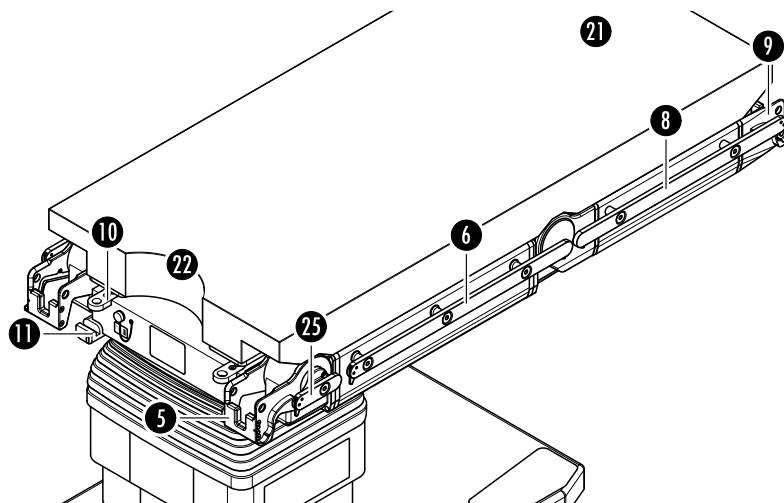
Before removing the accessory part, manually swivel the lever [A] into the side rail so that the clamp can be slid over it.

Additional coupling points

Insertion opening for the extension adapter

12.3 Coupling points on the operating table top

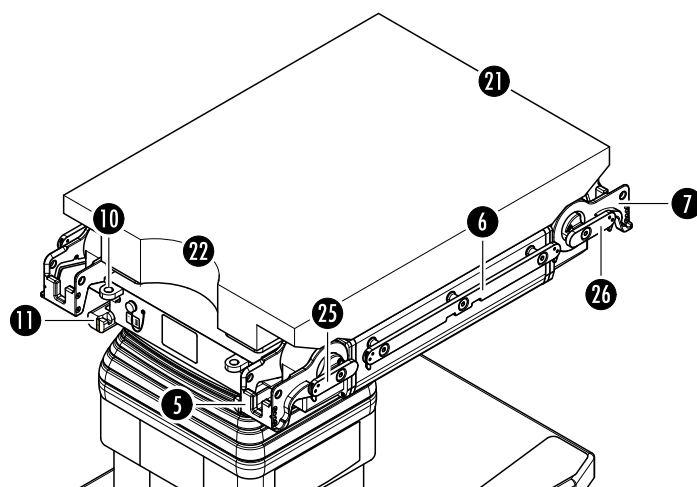
12.3.1 Two-part table top



Position on the operating table top	Coupling point
Head end [21]	Attachment S [9] By default, the head section is attached to the lower back section.
Foot end [22]	Motor operated joint with fixing point L [5] By default, the leg sections are attached to the seat section.
	Fixing point for the extension adapter [10]/[11]
lateral	Side rails [6], [8], [25] ^{*1}

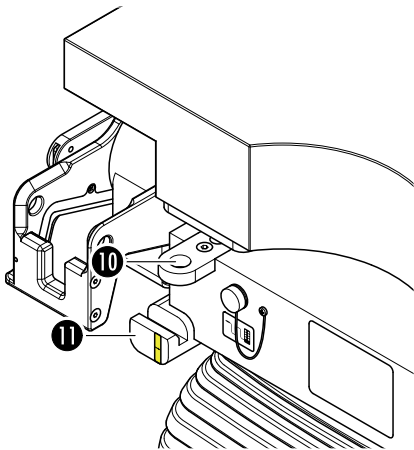
^{*1} not for operating table version U

12.3.2 One-part table top



Position on the operating table top	Coupling point
Head end [21]	<p>Motor operated joint with fixing point M [7]</p> <p>By default, the upper back section or the top section is attached to the seat section.</p>
Foot end [22]	<p>Motor operated joint with fixing point L [5]</p> <p>By default, the leg sections or a seat section extension are attached to the seat section.</p> <p>Fixing point for the extension adapter [10]/[11]</p>
lateral	Side rails [6]/[25]/[26]

13 Using the Operating Table as an Extension Table



Restrictions regarding the extension table

The operating table can be adapted with the help of the extension unit for the extension table. The extension adapter is hooked into the insertion apertures [10]/supports [11] (at the foot end beneath the seat section) and firmly clamped to the operating table top. When using the extension unit, the user manual of the extensions adapter must be followed.

The extensions adapter is automatically recognized by the operating table and for security reasons, the following restrictions apply:

1. The function for longitudinal travel and the functions of the leg sections are locked. The buttons for the functions are no longer active on the remote control.
2. The inclination of the operating table top is limited to 20° about the transverse axis and to 10° about the longitudinal axis.
3. In the level position function, the functions for the leg sections and longitudinal travel are excluded.

14 Attaching the Section Segment to the Operating Table Top

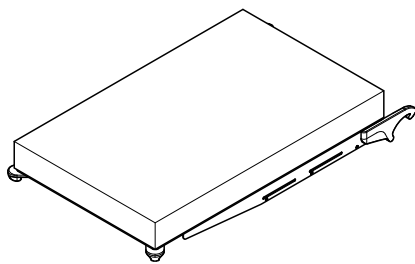
⚠ CAUTION!

Risk of personal injury. Risk of injury due to improper attachment!

Unlocked section segments can fall away from the operating table top and cause injury to staff or patients.

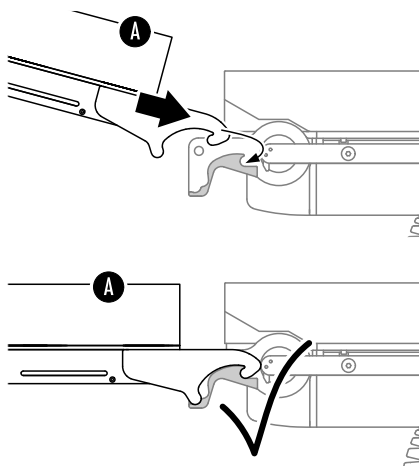
- Follow the user manual of the section segment.
- Check that the section segment is securely attached to the operating table top before use.
- Never attach or detach several section segments simultaneously.

14.1 Section segment without additional locking



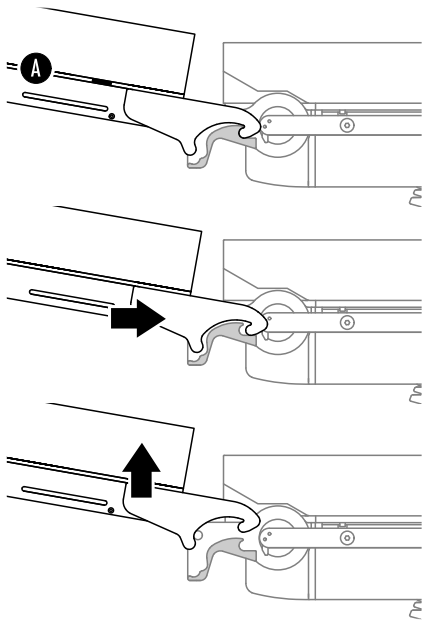
A typical section segment without additional locking is the light one-part leg section (closed section segment).

Attaching the section segment



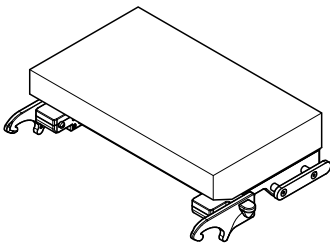
1. For a closed section segment, bring the joints on the operating table top to the same angular position.
2. Insert the section segment with the hooks [A] obliquely from above, from the front or obliquely from below into the fixing points of the operating table top.
3. Pull the section segment [A] away from of the operating table top. The hooks must be guided precisely into the recesses of the fixtures.
4. Check that the section segment is securely attached to the operating table top. The section segment can fall from the operating table top if the hooks are not locked securely in place. The section segment is not secured to the operating table top by other means.

Removing the section segment



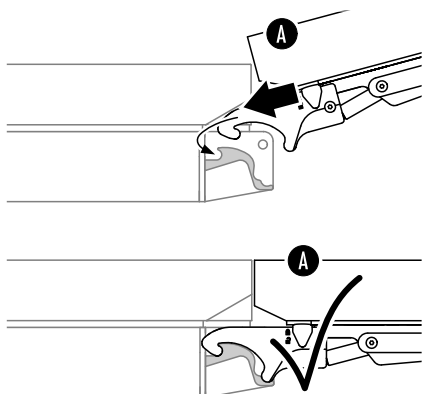
Lift the section segment [A] obliquely upwards and push it towards the operating table top until it can be lifted out of the fixing points on the operating table top.

14.2 Section segment with release button



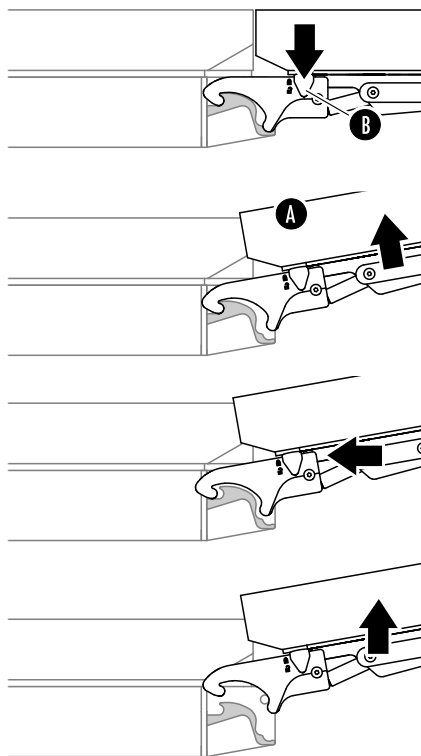
A typical section segment with release button is the single-joint head section (closed section segment).

Attaching the section segment



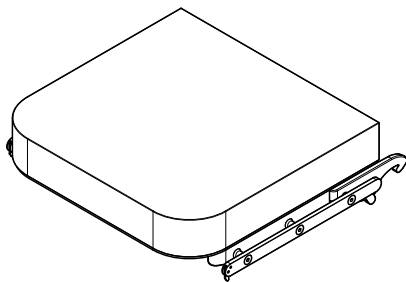
1. For a closed section segment, bring the joints on the operating table top to the same angular position.
2. Insert the section segment with the hooks [A] obliquely from above, from the front or obliquely from below into the fixing points of the operating table top.
3. Pull the section segment [A] away from the operating table top until the locking bolts engage securely on the hooks. The hooks must be guided precisely into the recesses of the fixtures.

Removing the section segment



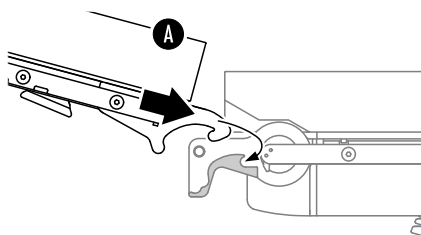
1. Press down and hold the right and left release knobs [B] on the hooks.
2. Lift the section segment [A] obliquely upwards and push it towards the operating table top until it can be lifted out of the fixing points on the operating table top.

14.3 Section segment with release handle



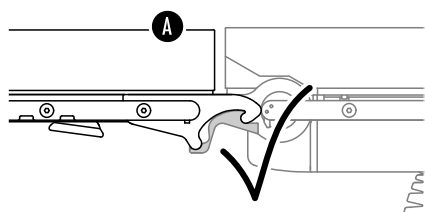
A typical section segment with a handle is the one-part leg section (closed section segment).

Attaching the section segment

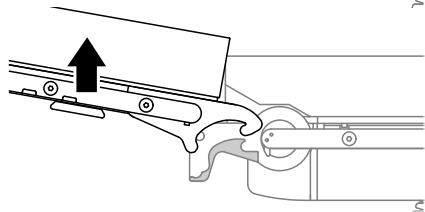
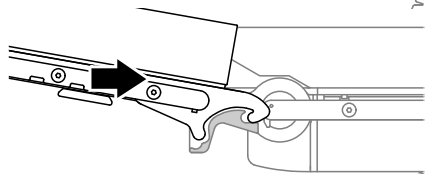
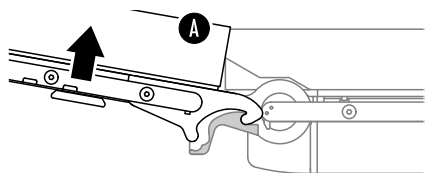
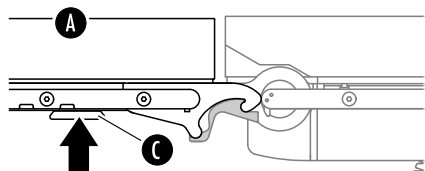


1. For a closed section segment, bring the joints on the operating table top to the same angular position.
2. Insert the section segment with the hooks [A] obliquely from above, from the front or obliquely from below into the fixing points of the operating table top.

Attaching the Section Segment to the Operating Table Top



Removing the section segment



3. Pull the section segment [A] away from the operating table top until the locking bolts engage securely on the hooks. The hooks must be guided precisely into the recesses of the fixtures.

1. Pull the right and left handles [C] on the section segment [A] upwards and hold.
2. Lift the section segment [A] obliquely upwards and push it towards the operating table top until it can be lifted out of the fixing points on the operating table top.

15 Attaching Accessories to the Operating Table Top

⚠ CAUTION!

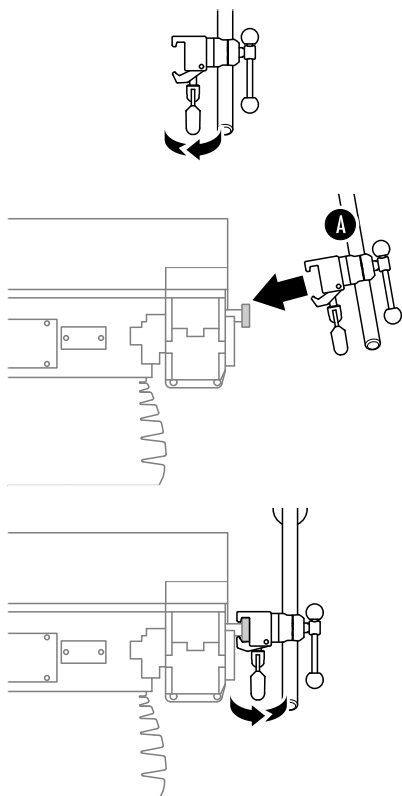
Risk of personal injury. Risk of injury due to improper attachment!

Unlocked accessories can fall away from the operating table top and cause injury to staff or patients. Observe the following points if other parts are attached to the operating table top:

- Follow the user manual of the accessories.
- Check that the accessory is securely attached to the operating table top before use.
- Never attach or detach several accessories simultaneously.

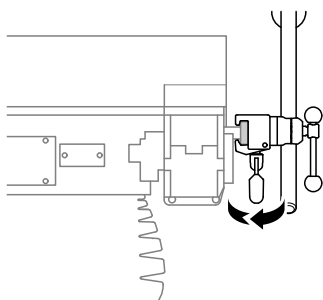
A typical accessory is the radial adjustment clamp with the Goepel-type leg support. The upper cleat of the single clamp is fixed.

Attaching the accessory

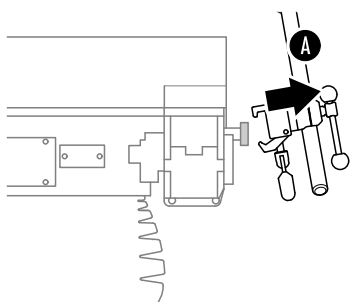


1. Release the locking handle from the clamp. The clamp opens.
2. Hook the accessory part [A] with the claw obliquely from above into the side rail.
3. Turn the locking handle on the clamp to tighten. The clamp closes.

Removing the accessory



1. Release the locking handle from the clamp. The clamp opens.

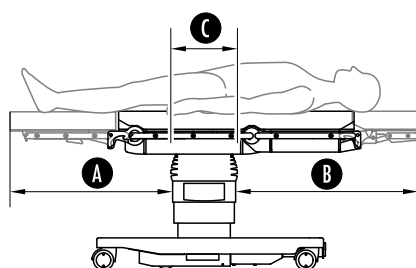


2. Tip the accessory [A] slightly upwards and lift the clamp from the side rail.

16 Radiolucence

The table top is completely radiolucent between its lateral spars. Avoid wrinkling the pad and other materials lying on it (towels, underlays) to keep image artefacts to a minimum.

X-ray area of the operating table top



- [A] X-ray area, foot end
- [B] X-ray area, head end
- [C] Column area (not radiolucent)

The X-ray region [A]/[B] on the operating table top is the region between the struts of the end of the section segment and the cladding of the operating table column. The X-ray area is dependent on the longitudinal travel of the operating table top. The column area [C] is not radiolucent.

Rails for X-ray cassette

There are rails on the inner sides of the back section struts to hold an X-ray cassette (size: 14 inch (35.56 cm)). The X-ray cassette can be slid under the seat/back section. Slide the X-ray cassette along the supports mounted on the spars. The cassette is not fixed and can slide if the operating table top is not horizontal or is moved. Please note this in order to avoid damage to the X-ray cassette.

17 Patient Positioning

⚠ CAUTION!

Risk of personal injury. Hazard to the patient due to improper positioning!

The patient must lie centered, completely and securely on the operating table top, so that the weight is evenly distributed over the operating table top. The patient's arms or legs must not extend beyond the end of the operating table top in the longitudinal direction.

⚠ CAUTION!

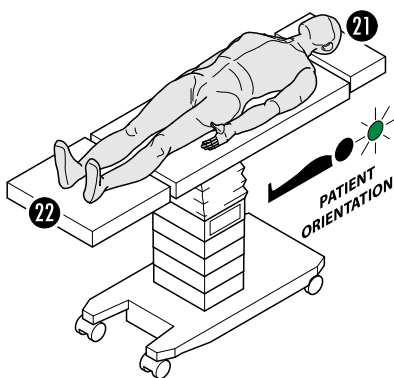
Risk of personal injury. Hazard to the patient due to incorrect loading!

Incorrect loading can break the section segments off the operating table top or cause the operating table to tip over!

- Do not climb onto or down from the operating table over the section segments.
- Patients may only get on or off in the area of the support column, using the seat section.
- Do not sit on the section segments.

Cover the operating table with absorbent towels prior to use.

Normal patient position

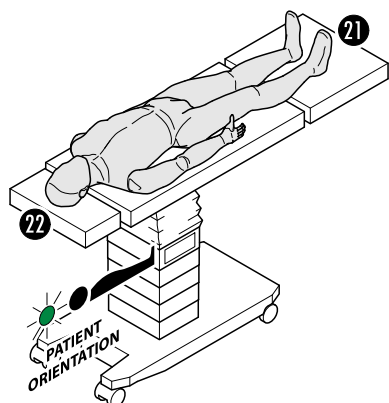


[21] Head end of the operating table top

[22] Foot end of the operating table top

The patient's head is at the head end of the operating table top. The indicator for the head position at the column keypad lights up according to the head position of the patient.

Inverse patient position



[21] Head end of the operating table top

[22] Foot end of the operating table top

The patient's head is at the foot end of the operating table top. The head position on the column keypad must be changed, so that all operating table functions are performed according to the patient position. The display on the operating table column keypad must match the patient's head position.

Attention, the adjustment areas for the inverse and normal patient position may be different, because the function is executed in accordance with the patient's position. For example, the leg section joints assume the function of the lower back section joints in inverse patient position. Commands are given using the keys for the back section. However, the setting range of the back section is further defined by the leg section joints.

18 Load Capacity

WARNING!

Risk of personal injury and material damage when permissible loads are exceeded!

Do not exceed the permitted load capacity for the operating table. When exceeding the permitted load capacity the mobile operating table could tip over, resulting in severe injuries to patients and personnel. Generally, overloading the operating table can result in the failure of electrical functions and cause material damage to mechanical parts.

The maximum load on the operating table may only occur, if the conditions in section 18 are met. Consult Trumpf Medical for the permissible load in any configuration of the operating table other than described in this instruction manual.

The load consists of the weight of the patient and the net weight of the accessories. Additional accessories on the operating table therefore reduce the permissible patient weight. The tare weight of the accessories must be deducted from the permissible patient weight.

Regardless of the load on the operating table, the load on the individual accessories and section segments must be complied with. The specifications are contained in the user manual of the products.

The specified values are valid for the uniform loading (distributed load) of the operating table top.

Special cases

WARNING!

Risk of personal injury and material damage when permissible loads are exceeded!

In an operating table configuration with the one-part light leg section, the patient's weight is limited to 298 lbs (135 kg). In case of a greater patient weight, another leg section must be used on the operating table.

Overload protection

The electronics of the operating table constantly check the loading situation and warn the user of an overload on the operating table.

For an operating table load very close to a load limit, all active movements stop, an audible signal sounds and a message is displayed on the remote control ►WARNING! OR Table close to load limit! Please do not move further to avoid overloading.◄. On the remote control, the function key that would enable an evasive movement to bring the operating table with its current load back into a safe range flashes. If the operating table load is exceeded, the following message appears in the remote control display: ►ERROR! OR Table significantly overloaded! Reduce Load or move back to a safe position.◄ Only the flashing evasive movement is permitted on the operating table.

Example: When checking the operating table load, the electronics detects a head-end overload of the operating table. The warning or error message appears on the remote control display. In order to get the operating table load back into balance, press the flashing *LONGITUDINAL TRAVEL FOOT END* key [i17]. When the warning is reported, only the function for longitudinal travel toward the head end is locked. If the operating table load is exceeded and there is an error message, all other operating table functions are blocked as well.

Follow the typical operating table configurations and the associated load limits. Complying with the specification will prevent overloads on the operating table.

WARNING!

Risk of personal injury. Hazard to the patient!

If the operating table reports a problem with the operating table load, you must comply with the following items.

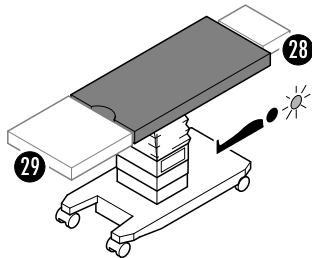
Explanation of symbols



Notifications on the column keypad for the head position of the patient.

18.1 Two-part table top

18.1.1 Operating table top with head section and leg sections



[28] Head section

[29] Leg sections

1. A head section [28] is attached at the head end of the operating table top.
2. Leg sections [29] are attached at the foot end of the operating table top. The permissible patient weight depends on the leg section used.
3. Patient orientation on the operating table top is as normal.

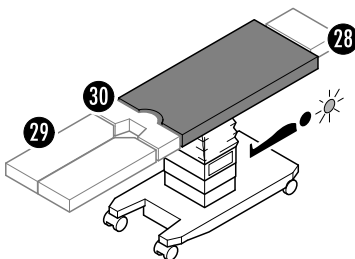
Permissible load:

**1000 lbs
(450 kg)** A patient weight of up to 1000 lbs (450 kg) is possible with restricted longitudinal travel if the one-part leg section is attached to the operating table top. The longitudinal travel of the operating table top is possible only toward the foot end of the patient (setting range from the level position up to the end position at the foot end). Longitudinal travel of the operating table top toward the head end of the patient is locked.

**496 lbs
(225 kg)** A patient weight of up to 496 lbs (225 kg) is possible with any leg section without limiting the operating table functions.

Attention, additional accessories reduce the permissible patient weight.

18.1.2 Operating table top with head section, seat section extension and leg sections



[28] Head section

[29] Leg sections

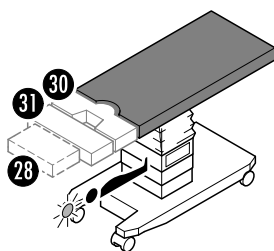
[30] Seat section extension

1. A head section [28] is attached at the head end of the operating table top.
2. A seat section extension [30] and leg sections [29] are attached at the foot end of the operating table top.
3. Patient orientation on the operating table top is as normal.

Permissible load:

**496 lbs
(225 kg)** A patient weight of up to 496 lbs (225 kg) is possible without limiting the operating table functions. Attention, additional accessories reduce the permissible patient weight.

18.1.3 Operating table top with seat section extension and upper back section



- [28] Head section
- [30] Seat section extension
- [31] Upper back section

1. No section segment is necessary at the head end of the operating table top.
2. A seat section extension [30], upper back section [31] and a head section [28] are attached at the foot end of the operating table top.
3. Patient orientation on the operating table top is inverse.

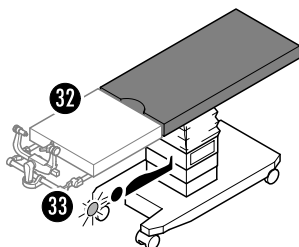
Permissible load:

496 lbs (225 kg) A patient weight of up to 496 lbs (225 kg) is possible with restricted longitudinal travel toward the head end of the patient.

353 lbs (160 kg) A patient weight of up to 353 lbs (160 kg) is possible without limiting the operating table functions.

Attention, additional accessories reduce the permissible patient weight.

18.1.4 Operating table top with Carbon 600 table top segment



- [32] Carbon 600 table top segment
- [33] X-RAY head positioning accessory

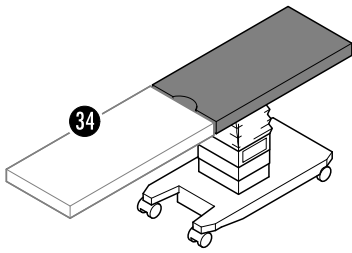
1. No section segment is necessary at the head end of the operating table top.
2. A Carbon 600 table top segment [32] with X-RAY head-positioning accessory [33] is fastened to the foot end of the operating table top.
3. Patient orientation on the operating table top is inverse.

Permissible load:

353 lbs (160 kg) A patient weight of up to 353 lbs (160 kg) is possible with restricted longitudinal travel toward the head end of the patient.

Attention, additional accessories reduce the permissible patient weight.

18.1.5 Operating table top with Carbon 1200 table top segment



[34] Carbon 1200 table top segment

1. No section segment may be attached to the head end of the operating table top.
2. A Carbon 1200 table top segment [34] is attached at the foot end of the operating table top.
3. Patient orientation on the operating table top is as normal or inverse. The permissible patient weight depends on the patient position.

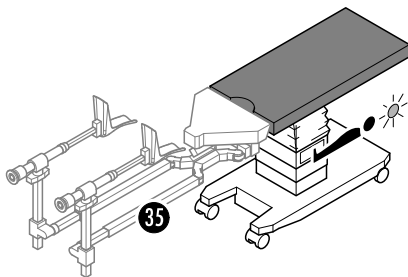
Permissible load:

353 lbs (160 kg) Patient weights of up to 353 lbs (160 kg) in the normal patient position are possible with restriction of the operating table functions.

298 lbs (135 kg) Patient weights of up to 298 lbs (135 kg) in the inverse patient position are possible with restriction of the operating table functions.

Attention, additional accessories reduce the permissible patient weight.

18.1.6 Operating table top with extension unit



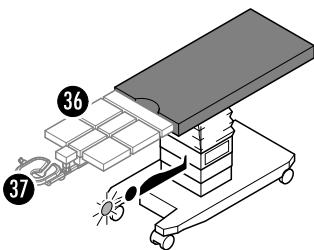
[35] Extension unit

1. The extension unit [35] is attached at the foot end of the operating table top.
2. Patient orientation on the operating table top is as normal.

Permissible load:

353 lbs (160 kg) A patient weight of up to 353 lbs (160 kg) is possible without limiting the operating table functions.

18.1.7 Operating table top with shoulder chair



[36] Shoulder chair

[37] Head positioning accessory

1. No section segment is necessary at the head end of the operating table top.
2. The shoulder chair [36] with the head-positioning accessory [37] is fastened to the foot end of the operating table top.
3. Patient orientation on the operating table top is as inverse.

Permissible load:

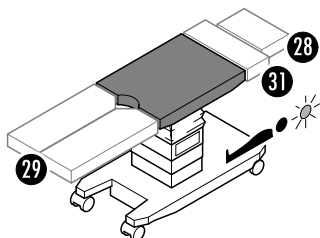
**496 lbs
(225 kg)** Patient weights of up to 496 lbs (225 kg) are possible with the head-positioning accessory retracted. The operating table functions can be used without limitation.

**353 lbs
(160 kg)** Patient weights of up to 353 lbs (160 kg) are possible with the head-positioning accessory extended. The operating table functions can be used without limitation.

Attention, additional accessories reduce the permissible patient weight.

18.2 One-part table top

18.2.1 Operating table top with head section, upper back section and leg sections



- [28] Head section
- [29] Leg sections
- [31] Upper back section

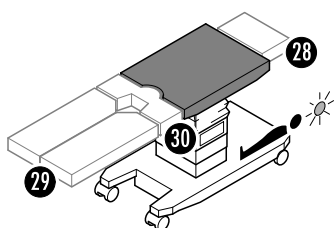
1. An upper back section [31] and a head section [28] are attached at the head end of the operating table top.
2. Leg sections [29] are attached at the foot end of the operating table top.
3. Patient orientation on the operating table top is as normal.

Permissible load:

- 1000 lbs (450 kg)** Patient weights of up to 1000 lbs (450 kg) are possible under the following conditions:
1. The longitudinal travel of the operating table top must be in level position.
 2. The operating table column can be inclined up to 15° about the transverse axis (tilt). Tilt automatically stops at 15° and is indicated acoustically by means of a signal tone. Do not continue to tilt the operating table column after the intermediate stop is reached.
- 551 lbs (250 kg)** A patient weight of up to 551 lbs (250 kg) is possible without limiting the operating table functions.

Attention, additional accessories reduce the permissible patient weight.

18.2.2 Operating table top with head section, seat section extension and leg sections



- [28] Head section
- [29] Leg sections
- [30] Seat section extension

1. A head section [28] is attached at the head end of the operating table top.
2. A seat section extension [30] and leg sections [29] are attached at the foot end of the operating table top. The permissible patient weight depends on the leg section used.
3. Patient orientation on the operating table top is as normal.

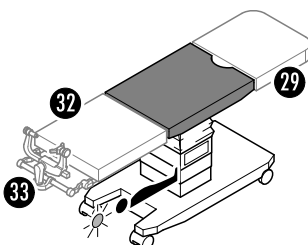
Permissible load:

496 lbs (225 kg) Patient weights of up to 496 lbs (225 kg) are possible, provided a four-part leg section is not attached to the operating table top. The operating table functions can be used without limitation.

441 lbs (200 kg) Patient weights of up to 441 lbs (200 kg) are possible with any leg section. The operating table functions can be used without limitation.

Attention, additional accessories reduce the permissible patient weight.

18.2.3 Operating table top with Carbon 600 table top segment and leg sections



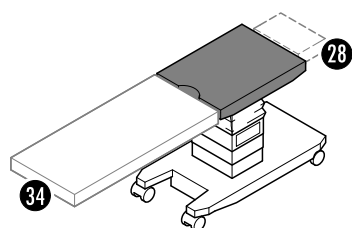
- [29] Leg sections
- [32] Carbon 600 table top segment
- [33] X-RAY head positioning accessory

1. Leg sections [29] are attached at the head end of the operating table top.
2. A Carbon 600 table top segment [32] with X-RAY head-positioning accessory [33] is fastened to the foot end of the operating table top.
3. Patient orientation on the operating table top is inverse.

Permissible load:

353 lbs (160 kg) A patient weight of up to 353 lbs (160 kg) is possible without limiting the operating table functions. Attention, additional accessories reduce the permissible patient weight.

18.2.4 Operating table top with Carbon 1200 table top segment



[28] Head section

[34] Carbon 1200 table top segment

1. A head section [28] can be attached at the head end of the operating table top, if necessary.
2. A Carbon 1200 table top segment [34] is attached at the foot end of the operating table top.
3. Patient orientation on the operating table top is as normal or inverse. The permissible patient weight depends on the patient position.

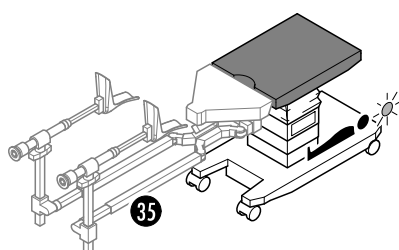
Permissible load:

353 lbs (160 kg) Patient weights of up to 353 lbs (160 kg) are possible in the normal patient position. The operating table functions can be used without limitation.

298 lbs (135 kg) Patient weights of up to 298 lbs (135 kg) are possible in the inverse patient position. The operating table functions can be used without limitation.

Attention, additional accessories reduce the permissible patient weight.

18.2.5 Operating table top with extension unit



[35] Extension unit

1. The extension unit [35] is attached at the foot end of the operating table top.
2. Patient orientation on the operating table top is as normal.

Permissible load:

353 lbs (160 kg) A patient weight of up to 353 lbs (160 kg) is possible without limiting the operating table functions.

18.3 Side rails

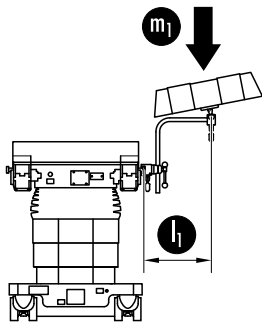
⚠ WARNING!

Risk of personal injury and material damage when permissible loads are exceeded!

Irrespective of the permissible loads of the individual side rails, the total torque on one side about the longitudinal axis of the operating table must not exceed 74 lbf·ft (100 Nm) during proper use.

The maximum permitted torque on an operating table side rail is 74 lbf·ft (100 Nm) about the longitudinal axis and 110 lbf·ft (150 Nm) about the transverse axis. There is torque as soon as an accessory is connected to the side rail.

Torque about the longitudinal axis



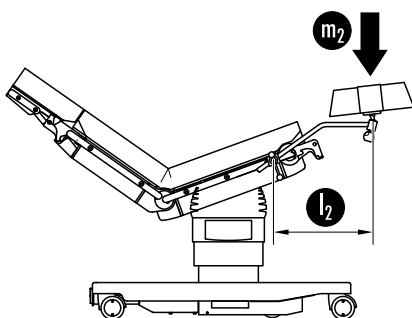
Key

[l_1] Distance from the coupling point to the point of action of the force (in feet (meters))

[m_1] Dead weight of the accessory ^{*1} + incumbent weight (in pound (kg))

^{*1} Specification is in the user manual of the accessory.

Torque about the transverse axis



Key

[l_2] Distance from the coupling point to the point of action of the force (in feet (meters))

[m_2] Dead weight of the accessory ^{*1} + incumbent weight (in pound (kg))

^{*1} Specification is in the user manual of the accessory.

Calculating torque

The torque acting on the side rails can be calculated approximately using the following rule of thumb:

$$M = m \times l \times 10$$

$$\begin{array}{ccccc} \text{Torque} & = & \text{Mass} & \times & \text{Distance} \times 10 \\ (\text{lb}\cdot\text{ft} \text{ (Nm)}) & & (\text{lb} \text{ (kg)}) & & (\text{ft} \text{ (m)}) \quad (\text{ft}\cdot\text{s}^{-2} \text{ (m}\cdot\text{s}^{-2})) \end{array}$$

In the following table, the torque is calculated for a few standard situations depending on weight and distance.

Weight [m]	Distance [l]				
	3.94" (10 cm)	7.87" (20 cm)	11.81" (30 cm)	15.75" (40 cm)	19.69" (50 cm)
22.0 lbs (10 kg)	7.4 lbf·ft (10 Nm)	14.8 lbf·ft (20 Nm)	22.1 lbf·ft (30 Nm)	29.5 lbf·ft (40 Nm)	36.9 lbf·ft (50 Nm)
44.1 lbs (20 kg)	14.8 lbf·ft (20 Nm)	29.5 lbf·ft (40 Nm)	44.3 lbf·ft (60 Nm)	59.0 lbf·ft (80 Nm)	73.6 lbf·ft (100 Nm)
66.1 lbs (30 kg)	22.1 lbf·ft (30 Nm)	44.3 lbf·ft (60 Nm)	66.4 lbf·ft (90 Nm)	88.5 lbf·ft (120 Nm)	110.6 lbf·ft (150 Nm)
88.2 lbs (40 kg)	29.5 lbf·ft (40 Nm)	59.0 lbf·ft (80 Nm)	88.5 lbf·ft (120 Nm)	118.0 lbf·ft (160 Nm)	147.5 lbf·ft (200 Nm)
110.2 lbs (50 kg)	36.9 lbf·ft (50 Nm)	73.6 lbf·ft (100 Nm)	110.6 lbf·ft (150 Nm)	147.5 lbf·ft (200 Nm)	184.4 lbf·ft (250 Nm)

19 Controlling the Operating Table

The operating table is operated with the remote control or via the column keypad. For this reason, the instruction manual of the remote control must also be followed. In the following sections, the remote control keys of the TruSystem 7000 are shown. The symbols on the keys may deviate in other operating units produced by Trumpf Medical. Keys with the same function are also designated in the same way in the user manual of the various operating units (for example, [i9] for left tilt key).

Adjusting the operating table

- Establish a potential connection to the running gear.
- Switch on and brake (jack up) the operating table.
- Cover operating table with absorbent towels.
- Transfer the patient onto the operating table.
- Compare the position of the head with the indication on the column keypad and alter if necessary.
- Secure the patient on the operating table.
- Adjust the functions on the operating table.

Adjusting the function

CAUTION!

Risk of personal injury. Hazard to the patient due to risk of collision! Risk of entrapment on the part of the operator!

The operating table does not recognize objects within the surrounding environment. Collisions with the furnishings or the devices that are located below the operating table top must be prevented by the operator. In addition, with complete operating table equipment, not all equipment parts are recognized by the operating table electronic system. Collisions therefore cannot be completely excluded. Observe all motorized movements of the operating table until the end position and stop the function before a hazardous situation occurs. Clear the area beneath the operating table top.

Hold down the function key on an operating unit until the desired position is reached. Function stops in the following situations:

- The key is released.
- the level position has been reached.
- an intermediate stop has been reached (see section 20 on page 86).
- The end position is reached.

The automatic stop and the end position are indicated by an audible signal. For any further adjustment, briefly release the function key and then press it again.

The individual functions on the column keypad can be selected only once it is unlocked, or optionally via the two-key control.

The end position of a function depends on the patient's weight, the composition of the operating table and which functions have already been performed on the operating table (current operating table position). The adjustment ranges of the functions may be restricted. The speed at which the function is executed is dependent on the patient's weight. The speed may be lower for a heavier patient.

Avoiding collisions

The function also provides increased safety in the operating theater. The operating table monitors the movement range of the operating table top and prevents collisions with the floor, the running gear and the operating table column.

Movement ranges are only monitored with the following operating table equipment:

- single-jointed head section or double-jointed head section on the two-part table top head end
- upper back section and head section single joint or head section double joint head end on the one-part table top
- one-part leg section or Carbon 600 table top segment on the table top foot end
- The mechanical joints on the section segments must be in the level position.

Different operating table equipment and accessories on the side rails are not monitored with regard to collisions. In this case, incorrect warning messages may be produced, or no warning message when one is required.

A warning tone during the function indicates that the maximum adjustment range will soon be reached. The function stops automatically prior to a possible collision with the floor, the running gear or the operating table column.

Objects (for example, devices or furnishings) within the range of movement of the operating table top are not detected by the operating table. In this case the function must be stopped by the operator before a collision occurs.

The monitoring of collisions takes place regardless of the load on the operating table.

19.1 Key release



Releasing the key
lock



The column keypad is locked by default so that the functions on the operating table cannot be accidentally activated. It is not possible to control the operating table via the column keypad in this condition. Indicator [i53] does not light up. The operating table can be switched off at any time using the **OFF** key on the column keypad, regardless of the key release.

Press key [i53]. Indicator [i53] lights up. The keypad automatically locks again 10 seconds after the last button operation.

19.2 Selecting the head position



The head position of the patient must always match the display on the column keypad.

The operating table top can be set up in the "inverse" direction for certain patient positions where the patient needs to be lying at the other end of the operating table top (with head at the foot end). The column keypad display then no longer match the patient's head position. Some operating table functions (such as Trendelenburg, tilting) are then laterally inversed. In such cases, you must manually switch the head position using key [i3] according to the position of the patient's head. The corresponding indicator illuminates. After changing the head position the table movements are performed properly. After switching the operating table off and back on again, the normal patient position is always active and indicator [i4] illuminated.

19.3 Level position

Moving to level position means that electrically adjustable operating table movements travel to a defined initial position in the following sequence.

1. Combined movement where the motorized joints of the operating table top, the (reverse) Trendelenburg position and the tilt are set to horizontal.
2. The longitudinal travel of the operating table top is brought to its middle position.

Adjusting the function

CAUTION!

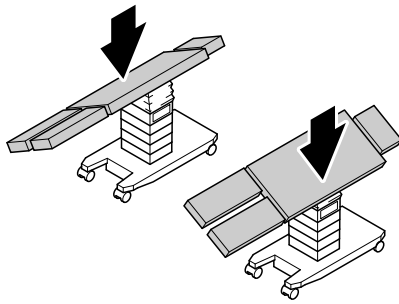
Risk of personal injury. Hazard to the patient caused due to sloping position!

When moving to level position, larger patient incline positions can occur compared to the initial position. Monitor patient position and stop the function before a hazardous situation arises.



1. Set the spreadable leg sections so that they do not overlap one another.
2. Arrange accessories on the operating table in such a manner that they do not collide with other accessories, section segments or the operating table during positioning.
3. Press key [i1 1]. The final level position is indicated when an acoustic signal sounds. Indicator [i1 1] on the column keypad lights up. The status symbol for the level position in the remote control display is visibly white.
You will hear a warning tone (shrill single tone) once the leg section joints move towards each other.
4. Manually place the mechanical joints of the section segment in the (horizontal) level position (aligning the gear markings).

19.4 Tilt



This function tilts the operating table top to the right or left about its longitudinal axis.

Limitations

The adjustment range of the tilt is automatically restricted in the following situations.

1. The adjustment area is limited to $+10^{\circ}/-10^{\circ}$ in drive mode.
2. The tilt may be restricted depending on the (reverse) Trendelenburg position. The adjustment range depends on the patient's weight. For heavy patients, the adjustment range is smaller. The (reverse) Trendelenburg position needs to be reduced if a larger setting range is required.

Adjusting the function

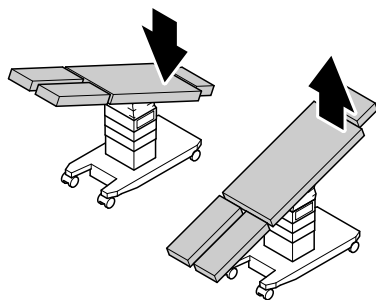


[i9] Tilt left

[i10] Tilt right

Press key [i9] or [i10]. For safety reasons, the tilt function stops automatically at maximum 15° (see section 20 page 86).

19.5 Anti (Reverse)-Trendelenburg/Trendelenburg



The Anti-Trendelenburg/Trendelenburg function is used to incline the operating table top around its transverse axis toward the foot end or head end.

Limitations

Depending on the tilt, the (reverse) Trendelenburg position may be automatically restricted. The adjustment range depends on the patient's weight. For heavy patients, the adjustment range is smaller. If a larger adjustment range is required, the tilt must be reduced.

Adjusting the function



TREND



REVERSE TREND

⚠ CAUTION!

Risk of personal injury. Hazard to the patient due to risk of collision! Risk of entrapment on the part of the operator!

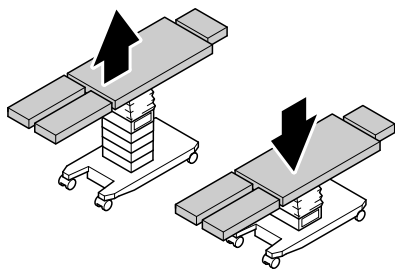
When tilting the table top (Trendelenburg/reverse Trendelenburg), collisions may occur with the column, the floor, the furnishings or the devices beneath the table top that may be covered by draping or underlays. Observe movements on the operating table until the end position is reached and stop the function before a hazardous situation arises. Clear the area beneath the operating table top, move the table top to a higher lift position or raise the corresponding section segments (leg/back section joints). Then continue to the Trendelenburg/reverse Trendelenburg position.

[i7] Trendelenburg

[i8] Anti (Reverse)-Trendelenburg

Press key [i7] or [i8].

19.6 Lift/lower



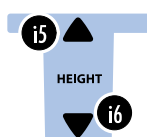
The lift function raises or lowers the entire table top.

Adjusting the function

⚠ CAUTION!

Risk of personal injury. Hazard to the patient due to risk of collision! Risk of entrapment on the part of the operator!

When lowering the operating table top, collisions may occur with the running gear, the floor, the furnishings or the devices located below the operating table top. Pay special attention to any leg section positioned downwardly. Clear the area under the table top and/or move the corresponding table components (leg/back section joints) up higher. Next, continue moving the operating table top downward.

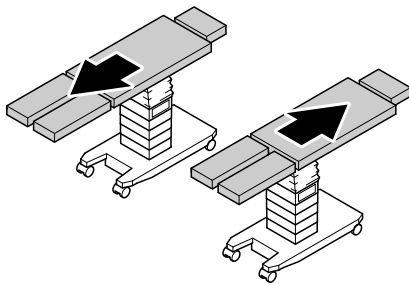


[i5] Lift

[i6] Lower

Press key [i5] or [i6].

19.7 Longitudinal travel



Slide moves the table top toward the foot or head end.

Limitations

The longitudinal travel is automatically restricted or locked in the following situations.

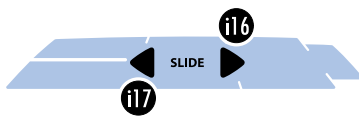
1. The longitudinal travel is locked once the extension adapter is hooked onto the operating table top. The presence sensor is active.
2. The longitudinal travel may be limited if the leg section joints or lower back section joints are inclined downward. The adjustment range for the longitudinal travel depends on the angle of inclination of the joints. If a larger adjustment range is required, the joints must be moved upwards.
3. The longitudinal travel may be restricted if the operating table top is heavily inclined. The adjustment range depends on the patient's weight. For heavy patients, the adjustment range is smaller. If a larger adjustment range is required, the inclination of the operating table top must be reduced.
4. Longitudinal travel is restricted once a long section segment is hooked onto the leg section joints (e.g., Carbon 1200 table top segment). You will hear an error message if the longitudinal travel is within the impermissible range. In this case, longitudinal travel at the head end is only possible until the permissible range is reached. Furthermore, the inclination of the operating table top (tilt, Trendelenburg) can only take place in the direction of the level position and the lift is locked.

Adjusting the function

CAUTION!

**Risk of personal injury. Hazard to the patient due to collision.
Risk of entrapment on the part of the operator!**

During longitudinal travel, accessories on the side rail may thrust against the operating table column. Observe all motorized movements of the operating table until the end position and stop the function before a hazardous situation occurs.



[i16] Longitudinal travel toward head end

[i17] Longitudinal travel toward foot end

Press key [i16] or [i17].

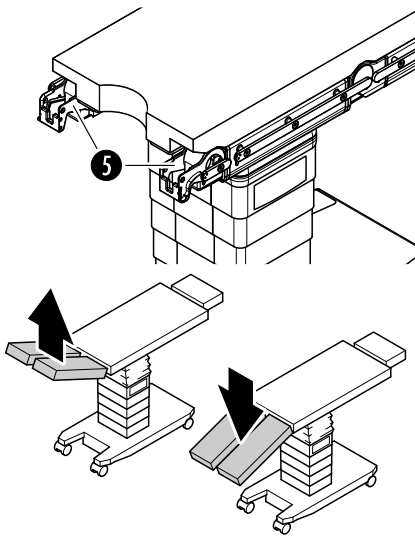
19.8 Leg section joints

not for operating table version U

There are side rails at the leg section joints of the operating table. When adjusting the leg section joints, the connected attachments to the side rail are consequently repositioned.

The leg section joints [5] are driven by a motor and can be inclined up and downward, individually or together.

In inverse patient position, the back section joints [5] are controlled using the keys for the functions of the lower back section.

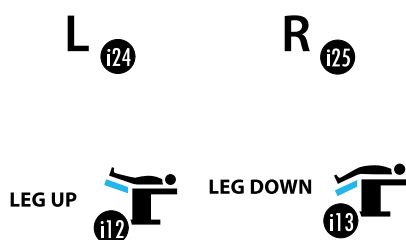


Limitations

The adjustment range of the joints is automatically restricted or locked in the following situations.

1. The joints can not be adjusted individually if a closed section segment is attached. The closed section segment is automatically recognized by the operating table and the functions of the individual joints are locked. The joints can only be adjusted together.
2. Depending on the longitudinal travel, the downward adjustment range of the joints may be restricted. If a larger adjustment range is required, the longitudinal travel must be changed.
3. The adjustment ranges for the normal and inverse patient positions are different (see section 24 on page 96).
4. The leg section joints are locked once the extension adapter is hooked onto the operating table top.

Adjusting the function



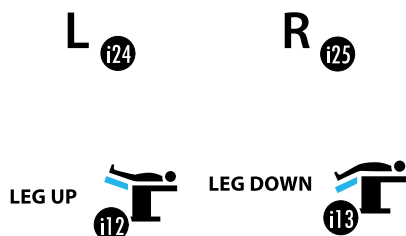
Adjusting joints collectively:

- [i12] Leg section joint up
- [i13] Leg section joint down
- [i24] Select left joint (only remote control)
- [i25] Select right joint (only remote control)

1. Arrange accessories on the operating table in such a manner that they do not collide with other accessories, section segments or the operating table during positioning.
2. When using the remote control: The displays of the L [i24] and R [i25] keys must light up (active by default). If only one key lights up, the other key must be pressed (for example, press the R key, when L is already selected).
3. Press key [i12] or [i13]. The joints are adjusted together (synchronously).
If the joints are in different positions, the function automatically stops once the first joint reaches the level position or end position.

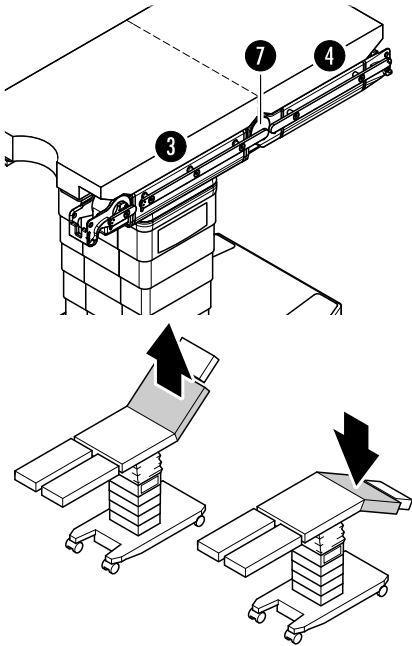
Adjusting joints individually:

The functions are only available on the remote control.



- [i12] Leg section joint up
 - [i13] Leg section joint down
 - [i24] Select left joint (only remote control)
 - [i25] Select right joint (only remote control)
1. Remove an accessory if it is attached to two joints simultaneously (e.g. colonoscopy roll).
 2. Arrange accessories on the operating table in such a manner that they do not collide with other accessories, section segments or the operating table during positioning. Adjust the spreadable leg sections in such a manner that they do not overlap one another.
 3. Press key L [i24] for the left joint or R [i25] for the right joint. The display of the selected key will light up.
 4. Press key [i12] or [i13]. Only the left or right joint moves. You will hear a warning tone (shrill single tone) once the joints move towards each other.
 5. After a few seconds without pressing any key, it will automatically switch back to the collective adjustment of the joints. The indicators for the L [i24] and R [i25] keys are illuminated.

19.9 Back section joints



On a two-part table top, the back section [4] is permanently attached to the seat section [3] using the back section joints [7]. The back section can be tilted up or down.

On a one-part table top, the back section joints [7] can only be tilted up or down together.

In the inverse patient position, the back section joints [7] are controlled by the keys for the functions of the leg sections.

Limitations

The adjustment range of the joints is automatically restricted or locked in the following situations.

1. Depending on the longitudinal travel, the downward adjustment range of the joints may be restricted. If a larger adjustment range is required, the longitudinal travel must be changed.
2. The adjustment ranges for the normal and inverse patient positions are different (see section 24 on page 96).

Adjusting the function



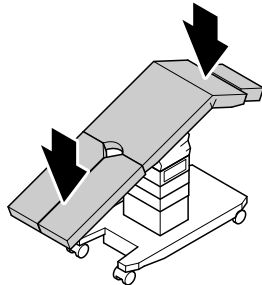
[i14] Back section joint up

[i15] Back section joint down

Press key [i14] or [i15].

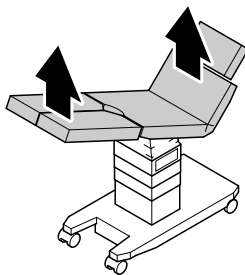
19.10 Flex/Reflex

When the Flex up and Flex down functions are executed at the same time, the table top bends between the seat section and the back section of the table top.



Flex:

Reverse Trendelenburg function and back section joints down



Reflex:

Trendelenburg function and back section joints up

Adjusting the function



[i32] Reflex

[i33] Flex

The Flex and Reflex positions can only be achieved with the remote control. This functionality is not available on the column keypad. Press key [i32] or [i33].

20 Configuration

The following settings can be configured on the operating table via an Ethernet connection from the PC to the operating table and using the Trumpf Medical Software Service Interface:

1. Stop at zero crossing (activated as default for all functions);
All electrical adjustment functions of the operating table stop automatically when the level position is reached. For additional adjustment beyond level position, briefly release the function key and press it again.
2. Restricted leveling (not activated by default):
This function allows the user to adjust the Level position function. In particular, the automatic leveling of the motorized table section joints can be prevented.
3. Intermediate stop during tilting, Trendelenburg, and longitudinal travel (not activated by default):
In addition to the general level position, interim stops can be set for the Tilting, Trendelenburg and Longitudinal travel functions. The respective function stops automatically upon reaching the newly set position. For any further adjustment, briefly release the function key and then press it again. For safety reasons, the intermediate stop of the tilt function cannot be deactivated (the intermediate stop can be at an inclination angle from 5° to 15°).
4. Signal tone volume:
This function allows the volume of the signal tones on the operating table to be individually adjusted.
5. Speed, drive unit:
This function enables individual adjustment of the speed of the drive unit for the operating table version MB/MBW.
6. Activation of all table top and column functions (by default, all movements are locked when freewheeling or with running gear assistance):
By releasing all table top and column movements on the operating table, all operating table functions are executed even when the operating table is free to move (operating table not jacked up – freewheel or running gear assistance active).

The required option must be set by Trumpf Medical Technical Customer Service or the responsible on-site hospital technician.

21 Travel Behavior

The operating table has a running gear. The driving behavior of the operating table is regulated via four freely swiveling wheels, four props and one additional 5th wheel in the middle under the running gear. The following running gear functions are selected or supported using the operating table control units (remote, column keypad):

- Unlock operating table (unlock floor locks)
- Freewheel
- Directional movement (steering assist mode with 5th wheel)
- Rotate operating table
- Directional travel with drive unit (only for operating table version MB/MBW)
- Lock operating table



CAUTION!

Risk of personal injury due to crushing.

Do not allow the feet to get caught in the running gear recess when locking / unlocking, turning, or moving the operating table. Note the crush hazard symbol on the running gear!

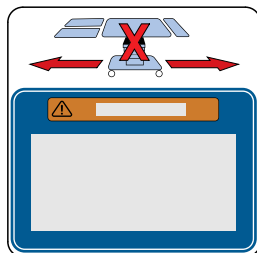
21.1 Requirements for unlocking, rotating, and moving the operating table

WARNING!

Risk of personal injury when transporting patients due to tipping of the operating table.

For heavy patients or configurations with multiple accessories it is recommended that more than one trained medical professional transport the patient.

For longer routes or in the case of an operating table with a heavier patient and accessory load, move or turn with two people.



1. Lower the operating table top until the pictogram on the column cladding is hidden (see page 80).
2. Set the operating table top tilt to horizontal (see page 79).
When the operating table top tilt is greater than $+10^\circ / -10^\circ$, the lowering of the operating table by the operating table software is blocked for safety reasons.
3. Move the longitudinal travel of the operating table top to the level position (see page 81).
4. Reposition the spreadable leg sections parallel to the longitudinal direction of the operating table.

5. Fold up or remove accessories from the operating table.

NOTICE



Risk of material damage. Risk of shearing off the connecting cables!

Disconnect the power and equipotential bonding cables before transporting the operating table.

When transporting the operating table, do not roll over or crush the connection or equipotential bounding cable.

21.2 Unlocking the operating table (releasing the brake)

CAUTION!

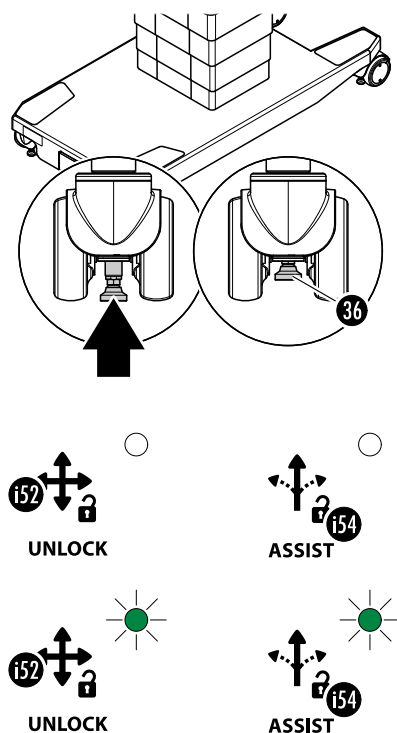
Risk of personal injury. Hazard to the patient!

Unlocking the operating table on an inclined plane could result in unexpected operating table movement. Hold the operating table securely before releasing the brake.

Once the Unlock function has been selected, the floor locks [36] are retracted from all four wheels of the operating table. The operating table is movable.

1. Prepare the operating table according to the conditions on page 87.

2. Press key [i52] or [i54] until an audible signal sounds.



The signal will sound intermittently until the operating table jacks are fully retracted and the additional wheel [17]¹⁾ in the middle under the running gear is extended. The indicator illuminates on the column keypad according to the function selected. The appropriate status pictograms are visible in the remote control display. On the remote control, the available buttons for Running gear functions are backlit.

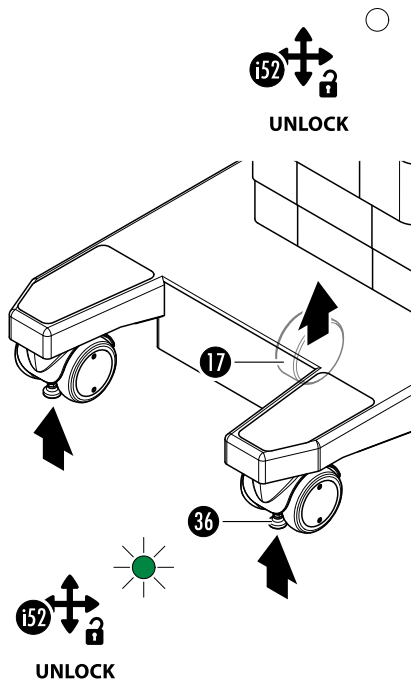
3. Set the travel behavior and slide the operating table manually.

¹⁾ not for free movement function selection

21.3 Freewheel

In Unlock (free movement), all operating table wheels can swivel fully and the operating table can be moved in any direction.

1. Prepare the operating table according to the requirements on page 87 if it is in the jacked-up position.
2. Press key [i52] until an audible signal sounds.



The signal will sound intermittently until the operating table jacks [36]²⁾ are fully retracted and the additional wheel [17]³⁾ in the middle under the running gear is extended. Indicator [i52] on the column keypad lights up. The appropriate status pictograms are visible in the remote control display.

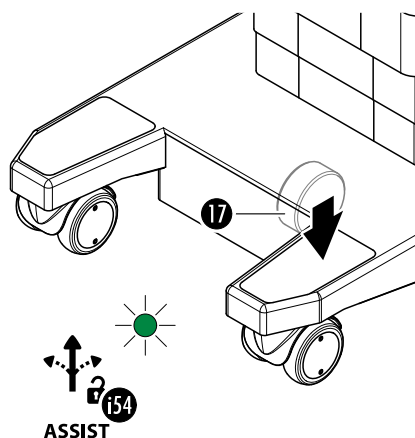
21.4 Running gear assistance (directional travel, turning the operating table)

Running gear assistance supports directional movement or the turning of the operating table on the spot. Transverse movement of the operating table is not possible.

1. Prepare the operating table according to the requirements on page 87 if it is in the jacked-up position.
2. Press key [i54] until an audible signal sounds.



²⁾ From the operating table locked position
³⁾ From the setting for directional travel



The signal will sound intermittently until the additional wheel [17] in the middle under the running gear is extended. Indicator [i54] on the column keypad lights up. The appropriate status pictograms are visible in the remote control display.

3. The operating table can be rotated in place or moved.

21.5 Traction drive (operating table version MB/MBW)

The operating table traction drive, variant MB/MBW, is located on the 5th wheel in the center under the running gear. It assists the operator when moving the operating table, particularly with heavy patients. For safety reasons, the traction drive can only be controlled using the wired remote control. The speed of the traction drive can be set individually (refer to section 20 on page 86).

⚠ CAUTION!

Risk of personal injury. Hazard to the patient!

Monitor and check operating table travel. A defect or malfunction in the running gear electronics can result in brake support failure. If necessary, apply the operating table brakes manually (by hand).

1. Set running gear assistance (refer to section 21.4 on page 89). The travel direction keys are visible on the remote control.
2. Press and hold the button [i47] or key [i48] on the remote control until the operating table reaches the target destination. The operating table may not be pushed actively while in the driving mode. The speed in driving mode will be automatically regulated by the motor brake. Actively pushing will increase the brake resistance and can damage the electronics on the operating table.

The operating table starts to move slowly in the direction required. It will achieve its maximum speed after approximately 2 seconds.



NOTICE

Risk of material damage. Risk of collisions!

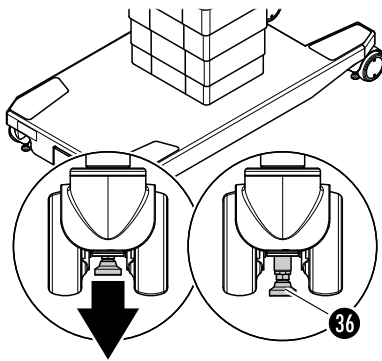
The drive unit only supports directional movement. The operator must manually ("by hand") steer the operating table to prevent collisions.

21.6 Operating table lock (braking jacks extended)

CAUTION!

Risk of personal injury. Hazard to the patient!

Locking the operating table while it is being transported is prohibited. First bring the operating table to a complete stop and then engage the floor locks.



The brake prevents the operating table from rolling away. The jack props [36], on which the operating table stands securely, are extended on all four wheels.

NOTICE



Risk of material damage. Crushing hazard for cables on the floor due to leveling plates on floor locks.

Do not position the operating table on or above cables.

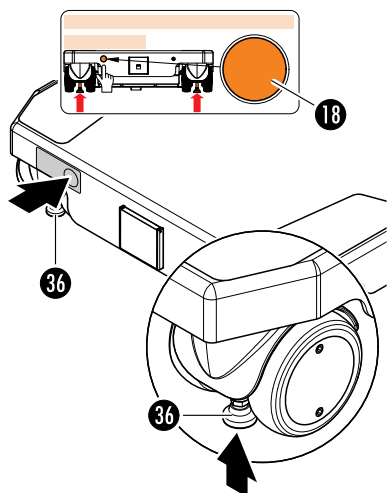
1. Press key [i45] until an audible signal sounds.



2. The signal will sound intermittently until the operating table is completely jacked up. The indicator next to button [i45] on the column keypad lights up. The appropriate status pictogram is visible in the remote control display.

21.7 Emergency release of the running gear of the operating table (unlock)

When the operating table cannot be unlocked with the operating units after lowering the table top, leveling the tilt and centering the longitudinal travel due to a defect, then there is a way to unlock it manually.



1. Press the button for the emergency release [18] at the head end of the running gear until the operating table is completely jacked down. All jack props [36] are immediately retracted. The appropriate status pictograms are visible in the remote control display. In this case, the message ►Floor Locks disengaged◄ appears on the TruSystem 7000 remote control display.
2. The operating table can be transported.
3. Inform TRUMPF Medical Systems, Inc. Technical Customer Service.

No functionality is lost if the operating table had no previous defect and the emergency prop release was inadvertently activated. However, it is strongly recommended to immediately reset the props.

22 Emergency Mode

If there is a defect in the central operating table control, the emergency mode enables ongoing functions to continue until complete and the patient to be transferred.

Restriction

During emergency mode the operating table can only be used with limited functions

- The operating table can only be controlled using the column keypad.
- Functions move at a lower speed and a continuous warning tone sounds.
- Leveling is limited. Only the column functions are leveled in conjunction with the level position function. The table top has to be moved to level position manually for the individual functions.
- The running gear functionality is disabled.

The emergency mode must only be activated in case of a serious malfunction of the operating table! Please contact TRUMPF Medical Systems, Inc., Technical Customer Services immediately for the necessary repair! The defective operating table must be barred from further operations!

Activating emergency mode

The emergency mode must be manually activated by the user:


1. Unlock the column keypad. Press key [i53] for this purpose.
2. Press key [i20] on the column keypad for at least 10 seconds. A warning tone that continually repeats is heard.



The emergency mode is acknowledged with a double tone and then activated. Indicator [i20] lights up red continuously and indicator [i1] flashes green.

The operating table can be set to normal mode by switching the system off and then back on again.

23 Care, Cleaning and Disinfection

⚠ CAUTION!	
	<p>Risk of personal injury. Risk of injury due to uncontrolled movements!</p> <p>Always disconnect and isolate the operating table from the external power supply before performing any maintenance work or cleaning. Ensure that no motorized movements are possible.</p>

NOTICE	
<p>Risk of material damage due to incorrect product maintenance!</p> <ul style="list-style-type: none"> - The operating table is not machine washable! - Do not use a high-pressure cleaner! With high-pressure water jets, fluids can penetrate the interior through gaps or openings and damage the product (for example, corrosion can occur). - Incorrect cleaning agents damage the surfaces! <p>In general do not use any cleaners or disinfectants that are abrasive or contain halogens or peracetic acid in caring for the product! In addition, do not use any cleaners or disinfectants containing alcohol or (flammable) solvents on plastic parts and pads.</p>	



Cleaning agents and disinfectants must meet all nationally applicable provisions for the medical field and/or be in the DGHM/VAH list. Observe the hospital's hygiene regulations!

Clean soiled products immediately! Cleaning/disinfection is limited to regular wiping (not immersing!) with suitable substances.

⚠ CAUTION!	
<p>Risk of personal injury.</p> <p>Use of inappropriate cleaning agents will destroy the antistatic properties of the pad under IEC 60601-1. Use the specified cleaning agents and disinfectants only.</p>	

To clean stainless steel and plastic components, use a pH neutral or mildly alkaline all-purpose cleaner containing tensides as the active cleaning ingredient. If heavily soiled, use a concentrated cleaner and then rinse with clear water. Raise the operating table to the highest position for cleaning purposes and wipe with a damp cloth. Pull apart the column cover and bellows in this position and clean them thoroughly. Remove the pad to clean the pad plate and the underside of the pad.

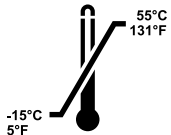
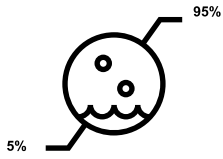
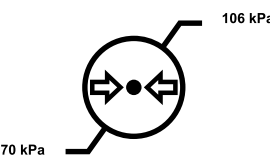




Alcohol- or aldehyde-based surface disinfectants may be used to disinfect stainless steel components. Use only aldehyde-based surface disinfectants for plastic parts and pads. Alcohol-based solutions can damage these surfaces. Follow the product manufacturer's instructions when using a disinfectant!

After cleaning and disinfecting, use a dry cloth to wipe up any excess liquid that has collected, such as drops that may have collected on the underside of the side rail of the operating table top. Attach the cleaned and disinfected pad to the product using dry loop fasteners (velcro) only.

24 Technical Data

24.1 Conditions for operation, storage and transport

The requirements for storage and transport are illustrated on the packaging of the operating table in the form of pictograms.

Pictogram	Meaning	
	Temperature range for storage and transport	5 °F to 131 °F, (-15 °C to +55 °C)
	Air humidity for storage and transport	5 % to 95 %
	Air pressure for storage and transport	10.2 psi to 15.4 psi 700 mbar to 1060 mbar 70 kPa to 106 kPa
	Keep dry	
	Do not stack	
	Fragile contents	
	Top	

The requirements for the operation of the operating table are as follows:

Temperature	(+50 °F to +104 °F) +10 °C to +40 °C,
Air humidity	20 % to 80 %
Air pressure	min. 10.2 psi to 15.4 psi min. 700 mbar to 1060 mbar

If the operating table is not in use for an extended period or taken out of service, the batteries should be recharged periodically to preserve the battery service life. A charging interval of 1 month is recommended.

24.2 Operating table

Date of manufacture	Refer to the nameplate on the product	
Table top length (from one coupling point to the next)	Two-part table top	49.1" (1248 mm)
	One-part table top	33.2" (843 mm)
Table top width (with side rails)	23.6" (600 mm)	
Operating table height (without pad)	23" to 45" (59 cm to 114 cm) (tolerance $\pm 0.4"$ (± 1 cm))	
	Speed	2 cm/s
Pad dimensions (length x width x height)	Two-part table top	45" x 21.5" x 3.6" ((1143 x 545 x 90) mm)
	One-part table top	29.5" x 21.5" x 3.6" ((748 x 545 x 90) mm)
Weight	Two-part table top	551 lbs (250 kg)
	One-part table top	507 lbs (230 kg)
Maximum table top load	1000 lbs (450 kg) (depending on the operating table equipment and the patient weight)	
Side rail load capacity	Longitudinal axis	Each 73.8 lbf-ft (100 Nm)
	Transverse axis	Each 110.6 lbf-ft (150 Nm)
Internal power supply	I. P. S, 2 batteries, 40.7 V/4.8 Ah	
External power supply	100 V-230V ~, 50Hz/60Hz 240 V~, 50 Hz	
Power consumption	max. 700 VA	
Power plug	Typical for the country, 3.3 yd (3 m) connection cable	
Radio transmission (only for operating table version MBW)	Frequency band for transmission	2.405 GHz to 2.480 GHz
	Modulation type	O-QPSK (Offset Quadrature Phase Shift Keying)
	HF-Bandwidth	2 MHz (IEEE 802.15.4)
	Output power (Watt EIRP)	0.000603
	Emission designation	1M67G1D

Adjustment ranges		
Lift/lower	21.7" (55 cm) (tolerance $\pm 0.4"$ (± 1 cm))	
Longitudinal travel	18" (46 cm) (tolerance $\pm 0.4"$ (± 1 cm))	
	Head end	7" (18 cm) (tolerance $\pm 0.4"$ (± 1 cm))
	Foot end	11" (28 cm) (tolerance $\pm 0.4"$ (± 1 cm))
	Speed	3 cm/s
Trendelenburg/reverse Trendelenburg (adjustment about the transverse axis)	45°/45°	
Tilt (adjustment about the longitudinal axis)	30° to the left/30° to the right	
Leg section joints Angle specifications in relation to the seat plate	90° upwards/105° downwards	
Back section joints Angle specifications in relation to the seat plate	Two-part table top	90° upwards/45° downwards
	One-part table top	90° upwards/90° downwards

Classification	
Operating table protection classification	I Device with internal power supply I. P. S
Level of protection against electrical shock for the entire operating table	Type B applied part Patient leakage current in accordance with CF in compliance with IEC60601-1
Degree of protection from water penetration	IP X4
Operating mode	Continuous operation with intermittent load (DBAB) 2 min ON, 8 min OFF

24.3 Cables

Only connect the following cables to the medical device:

- Power cable, length 3.3 yd (3 m)
- Cable for the remote control, block length 0.77 yd (0.7 m) and extended length 3.3 yd (3 m)

The cable is permanently connected to the remote control and cannot be removed.

- Cable for the foot switch, length 3.3 yd (3 m)

The cable is permanently connected to the foot switch and cannot be removed.

- Cables sold as spare parts by the manufacturer of the operating table

Other accessories and other cables may have greater electrical and electromagnetic interference levels or may lead to the reduced interference immunity of the operating table.

Repairs on remote controls and foot switches, especially on the cables, may only be performed by the Technical Customer Service at TRUMPF Medizin Systeme GmbH + Co. KG or by personnel authorized, trained, and certified by Trumpf Medical.

25 Troubleshooting

In case of an error during the operation of the operating table, the operator might be prompted to restart the operating table. The error status will be corrected through the restart. If the error is reported again after the restart, inform the Technical Customer Service.

Error	Possible cause	Correction
No function when pressing a key	Operating table not switched on	Press the power button on the column keypad
Operating table cannot be switched on	Discharge the operating table	Run operating table with line power and recharge column batteries
No response when using the column keypad	Key lock active	Release the keypad or use two-key operation (Simultaneously press the ON key and the required function key on the column keypad)
No movement when button is pressed, instead an audible error signal sounds	Function not possible at the moment or not permitted	-
No response when pushing button, the battery status display on the column keypad flashes	Discharge the operating table	Operate the operating table with line power and recharge the column batteries
Operating table cannot be charged, the battery status display does not flash	Either the controlling electronics, power line or input fuse (2x 10 AT) is defective	Contact Technical Customer Service
Operating table cannot be run on power supply, external power supply indicator does not illuminate	Power cable defective	Contact Technical Customer Service
Operating table cannot be charged, external power supply indicator does not illuminate	Line power input at operating table defective	Contact Technical Customer Service
Operating table cannot be charged, the battery status display flashes.	The operating table or the battery is defective	Contact Technical Customer Service
Full Anti (Reverse)-Trendelenburg/Trendelenburg travel not possible	Tilt setting too high	Reduce tilt
Full tilt not possible	Anti (Reverse)-Trendelenburg/Trendelenburg setting too high	Reduce Anti (Reverse)-Trendelenburg/Trendelenburg

Error	Possible cause	Correction
Tilt cannot be adjusted by more than 10° when the operating table is unlocked (no brakes applied).	OK, for safety reasons tilting is blocked in drive mode	Lock operating table
Operating table cannot be unlocked	Tilt not in horizontal position (< 5°) and/or Longitudinal travel not in level position and/or Lift not in center position	Set tilt to horizontal Move longitudinal travel to level position Move lift to center position
The operating table drive mode does not operate with wired remote control	Power cable connected to the operating table	Disconnect the operating table from the line power
Leg sections not adjusted down far enough	Longitudinal travel too far toward the head end	Adjust longitudinal travel toward the foot end
Back section not adjusted down far enough	Longitudinal travel too far toward the foot end	Adjust longitudinal travel toward the head end
Acoustic signal when moving the table top	Sensor error	Contact Technical Service
Audible signal while leveling if the leg sections are approaching one another	Possible risk of collision (signal is warning)	OK (no error)

26 Maintenance and Repair

Repairs may be performed only by the Technical Customer Service at TRUMPF Medical Systems, Inc. or by personnel authorized, trained, and certified by Trumpf Medical. Trumpf Medical will not be held liable for damage of any kind arising from the failure to perform inspections or as a result of inadequate repairs or maintenance, or modifications to the product.

To ensure safe use of the operating table, Technical Customer Service must be ordered immediately if there are leaks in the running gear hydraulics system (loss of hydraulic fluid).

Please contact the Technical Customer Service at TRUMPF Medical Systems, Inc. if you require technical support or service.

TRUMPF Medical Systems, Inc.
1046 LeGrand Blvd.
Charleston, SC 29492
United States

Telephone: +1 888 474 9360

The following maintenance intervals have been established for the operating table:

- First maintenance in the 2nd year
- Second maintenance in the 4th year
- Annual maintenance beginning in the 5th year

We recommend that you take out a maintenance contract with TRUMPF Medical Systems, Inc. Service work performed by the Technical Customer Service at TRUMPF Medical Systems, Inc ensures that the operating table will provide you with many years of reliable service.

27 Disposal

The operating table, accessories, and packaging must be recycled in an environmentally friendly fashion. Disposal, including that of individual parts, must be environmentally friendly, i.e., in accordance with the legal regulations currently in force! For information on proper disposal of old equipment, please contact either Technical Customer Service at Trumpf Medical, your local sales representative, or the appropriate national authority. Trumpf Medical will take back your old equipment or products that are defective or no longer used. Please contact Technical Customer Service in Saalfeld for more information.

When the operating table is decommissioned, the Li-ion rechargeable batteries must be removed from the operating table by a Trumpf Medical service technician or by a person trained and authorized by Trumpf Medical. Return removed and unusable batteries in suitable packaging to Trumpf Medical Technical Customer Service. **IMPORTANT:** when returning batteries, the package must be declared as hazardous materials class 9/ UN3480. Trumpf Medical shall arrange for the environmentally responsible disposal of the batteries.

28 EMC-Verification

Table 1 according to IEC 60601-1-2:2007
Guidelines and manufacturer's declaration - electromagnetic interference

The TruSystem 7000 operating table is intended for use in the environments as specified below. The customer or user of the aforementioned device should ensure that it is operated in one of the environments as described.

Emitted interference measurements	Compliance	Electromagnetic environment - guidelines
RF emissions in accordance with CISPR 11	Group 1	The TruSystem 7000 operating table exclusively uses HF energy for its internal FUNCTION. Therefore, its HF emissions levels are very low. It is improbable that neighboring devices would be adversely affected.
RF emissions in accordance with CISPR 11	Class A	The TruSystem 7000 operating table is suitable for use in establishments other than domestic and those connected directly to the PUBLIC LOW-VOLTAGE NETWORK that supplies buildings used for domestic purposes.
Harmonic Emissions as per IEC 61000-3-2	Class A	
Voltage fluctuation/flicker emissions in accordance with IEC 61000-3-3	Compliant	

The device must not be used directly next to other devices. If this is required, the device must be continually monitored to ensure its proper operation under these applied conditions.

Table 2 according to IEC 60601-1-2:2007
Guidelines and manufacturer's declaration - electromagnetic immunity

The TruSystem 7000 operating table is intended for use in the environments as specified below. The customer or user of the aforementioned device should ensure that it is operated in one of the environments as described.

Interference immunity test	IEC 60601 immunity	Compliance level	Electromagnetic environment - guidelines
Static electricity discharge (ESD) according to IEC 61000-4-2	±6 kV contact discharge ±8 kV air discharge	±6 kV contact discharge ±8 kV air discharge	Floors should be made from wood or concrete or covered with ceramic tiles. If a floor is covered with synthetic material, the relative humidity must be at least 30 %.
Rapid transient electrical disturbances/bursts pursuant to IEC 61000-4-4	± 2 kV for mains cables ± 1 kV for input and output cables	± 2 kV for mains cables ± 1 kV for input and output cables	The power supply quality should correspond to that of a typical commercial or hospital environment.
Voltages (surges) in accordance with IEC 61000-4-5	±1 kV outer-conductor/ outer-conductor voltage ±2 kV outer-conductor/ ground voltage	±1 kV outer-conductor/ outer-conductor voltage ±2 kV outer-conductor/ ground voltage	The power supply quality should correspond to that of a typical commercial or hospital environment.

Table 2 according to IEC 60601-1-2:2007
Guidelines and manufacturer's declaration - electromagnetic immunity


The TruSystem 7000 operating table is intended for use in the environments as specified below. The customer or user of the aforementioned device should ensure that it is operated in one of the environments as described.

Interference immunity test	IEC 60601 immunity	Compliance level	Electromagnetic environment - guidelines
Voltage dips, short interruptions and voltage variations on power supply input lines pursuant to IEC 61000-4-11	<5 % U_T (>95 % dip in V_T) for 1/2 period	<5 % U_T (>95 % dip in V_T) for 1/2 period	The supply voltage quality should correspond to that in a typical business or hospital environment. If the user of the TruSystem 7000 operating table requires continued operation during interruptions in power supply, then it is recommended that the TruSystem 7000 operating table should be connected to an uninterrupted power source or a battery.
	40 % U_T (60 % dip in V_T) for 5 periods	40 % U_T (60 % dip in V_T) for 5 periods	
	70 % U_T (30 % dip in V_T) for 25 periods	70 % U_T (30 % dip in V_T) for 25 periods	
	<5 % U_T (>95 % dip in V_T) for 5 s	<5 % U_T (>95 % dip in V_T) for 5 s	
Magnetic field with a supply frequency (50/60 Hz) as per IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should correspond to the typical values in a business or hospital environment.
Comment	V_T is the AC mains voltage prior to applying the test level.		

Table 4 according to IEC 60601-1-2:2007

Guidelines and manufacturer's declaration - electromagnetic immunity

The TruSystem 7000 operating table is intended for use in the environments as specified below. The customer or user of the aforementioned device should ensure that it is operated in one of the environments as described.

Interference immunity test	IEC 60601 immunity	Compliance level	Electromagnetic environment - guidelines
			<p>Portable and mobile RF communications equipment should not be used in the vicinity of the TruSystem 7000 operating table, including cables, nor not closer than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended protection ratio:</p>
Conducted HF noise as per IEC 61000-4-6	3 V _{eff} 150 kHz to 80 MHz	3 V _{eff}	$d = 1.17\sqrt{P}$
Radiated HF in accordance with IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	$d = 1.17\sqrt{P}$ 80 MHz to 800 MHz
			$d = 2.33\sqrt{P}$ 800 MHz to 2.5 GHz
			<p>P is the nominal rating of the transmitter in watts (W) as per transmitter manufacturer data and d is the recommended safe distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,^a should be less than the compliance level in each frequency range.^b</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 

Note 1 For 80 MHz and 800 MHz, the higher value applies.

Note 2 These guidelines might not be applicable in all cases. The propagation of electromagnetic quantities is influenced by the absorption and reflection of buildings, items and human beings.

a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. In order to determine the electromagnetic environment with regard to stationary transmitters, a study of the location should be considered. If the measured field strength in the location in which the aforementioned equipment is used exceeds the applicable aforementioned compliance level, then the TruSystem 7000 operating table should be observed to verify normal operation. Additional measures may be required such as e.g. reorienting or relocating the TruSystem 7000 operating table.

b The field strength in the 150 kHz to 80 MHz frequency range should be less than 3 V/m.

Table 6 according to IEC 60601-1-2:2007

Recommended separation distances between portable and mobile HF telecommunications equipment and the TruSystem 7000 operating table

The TruSystem 7000 operating table is intended for use in an electromagnetic environment where HF disturbance variables are controlled. The customer or user of the above mentioned device can contribute towards avoiding electromagnetic interference by observing the minimum distance between portable and mobile HF telecommunication devices (transmitters) and the above mentioned device depending on the output power of the communication device as stated below.

Rated power of transmitter W	Protection ratio depending on the transmitter frequency		
	150 kHz to 80 MHz $d=1.17\sqrt{P}$	80 MHz to 800 MHz $d=1.17\sqrt{P}$	800 MHz to 2.5 GHz $d=2.33\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.69	3.69	7.38
100	11.67	11.67	23.33

For transmitters with a maximum nominal power not found in the table above, the recommended safe distance d can be calculated in meters (m) using the equation for the respective column, where P is the maximum nominal power of the transmitter in watts (W) according to the transmitter manufacturer's data.

Note 1 For 80 MHz and 800 MHz, the higher frequency range applies.

Note 2 These guidelines might not be applicable in all cases. The propagation of electromagnetic quantities is influenced by the absorptions and reflections of buildings, items and human beings.

29 Information on Ordering Additional Equipment for the Operating Table

Trumpf Medical offers a wide variety of section segments and accessories for additional equipment of the operating table. For more information, contact a Trumpf Medical representative (see back of this document). Products used in conjunction with the operating table (e.g. leg plates, radial control pistons) must be used in compliance with their respective user manuals.

30 Radio License (only for Operating Table Version MBW)

Canada/USA

Contains Industry Canada ID IC	7438A-CYO5148M0 or 20829-0ANY2400SC1
Contains FCC ID	TYOJN5148M0 or 2AGCQANY2400SC1REVO To comply with FCC's RF radiation exposure requirements, the antenna(s) used for this transmitter must not be collocated or operating in conjunction with any other antenna or transmitter.

Morocco/United Arab Emirates

The radio license in Morocco and the UAE only applies to the radio modules with the FCC ID TYOJN5148M0 or the IC ID 7438A-CYO5148M0.

AGREE PAR L'ANRT MAROC	
Numéro d'agrément:	MR 7489 ANRT 2012
Date d'agrément:	19/09/2012

TRA REGISTERED No: ER42659/15 DEALER No: DA47053/15

TRUMPF Medizin Systeme GmbH + Co. KG

Registered Office

Carl-Zeiss-Straße 7-9

07318 Saalfeld

Germany

Phone: +49 3671 586-0

Fax: +49 3671 586-41105

Sales and Distribution

Benzstraße 26

82178 Puchheim

Germany

Phone: +49 89 80907-0

Fax: +49 89 80907-40020

Subsidiaries and Branch Offices

France

TRUMPF Systèmes Médicaux

United Kingdom

TRUMPF Medical Systems Ltd.

Italy

TRUMPF MED ITALIA s.r.l.

United States of America

TRUMPF Medical Systems, Inc.

Australia

TRUMPF Med Australia

Singapore

TRUMPF Pte Ltd (Medical Division)

China

Trumpf Medical Systems (Taicang) Co., Ltd.

United Arab Emirates

TRUMPF Medical Systems Dubai

Russia

TRUMPF Med ООО



e-mail: info@trumpfmedical.com

www.trumpfmedical.com