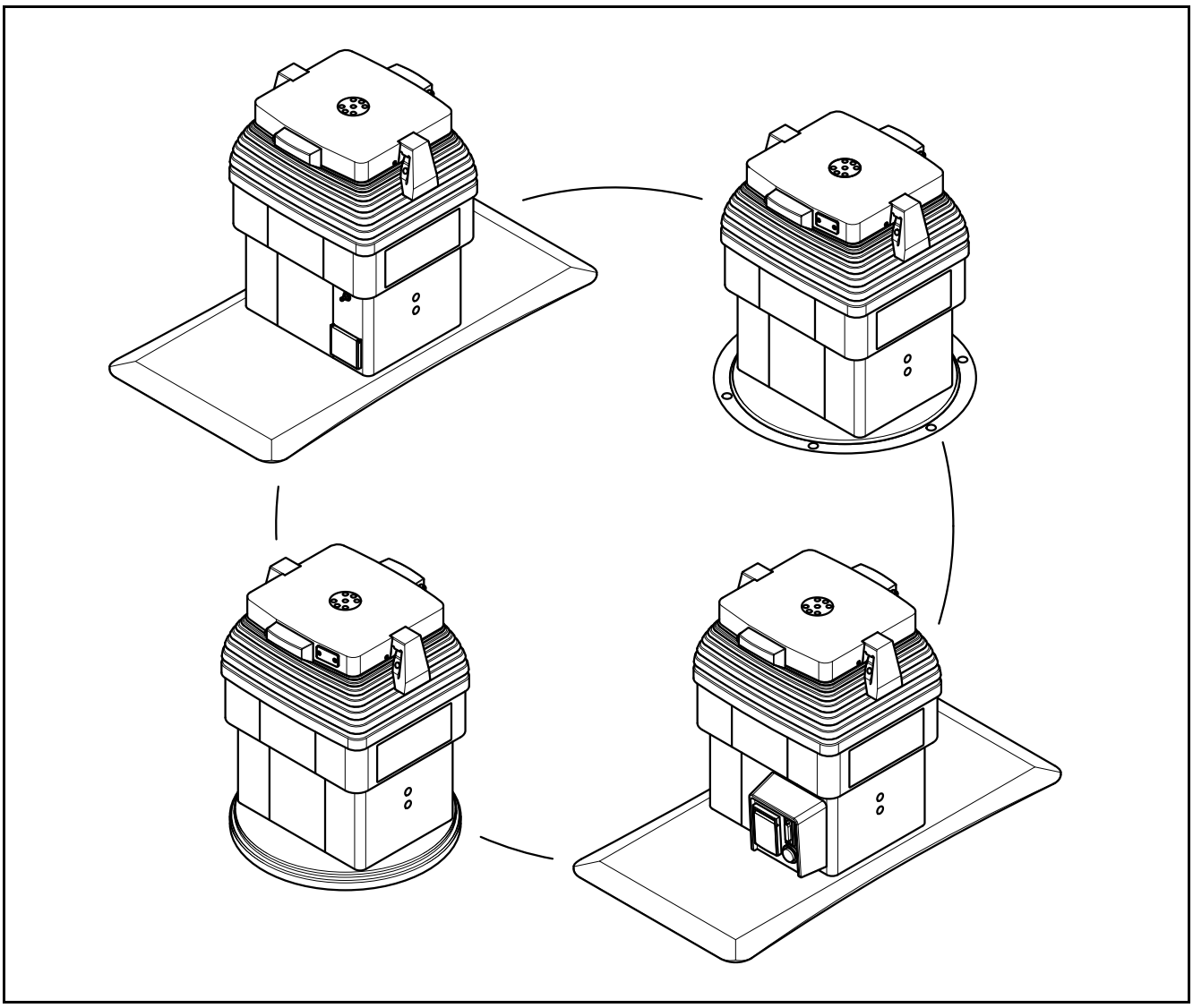
TruSystem 7500 Operating Table Column

Instruction manual



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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.

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.

Valid for CE marked products (see model plate):

- **CE mark:** 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 including its changes.
- **Conformity:** The manufacturer declares the conformity of this product with the essential requirements of the Council Directive 93/42/EEC concerning medical devices according to Annex I, as well as the implementation of an assessment procedure required for Class I product conformity under Annex VII and documents this with the CE mark.

CE

Translation of the original German instruction manual
Revision level: 02/11/2017
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This instruction manual applies to the following sales units:

Designation	Material number
Mobile operating table column	
Mobile column TruSystem 7500	1717023
Mobile column TruSystem 7500 U	1730720
TruSystem 7500 Hybrid (MC)	1773204
Operating table column, floor mounted (fixed installation)	
Stationary column TruSystem 7500	1717020
Stationary column TruSystem 7500 U	1730731
TruSystem 7500 Hybrid (SC)	1854086
TruSystem 7500 Hybrid Plus (SC)	1854088
TruSystem 7500 Hybrid MR (SC)	2064886
TruSystem 7500 Hybrid MR IMRIS	2067886
Operating table column, floor structure (fixed installation)	
Floor mounting column TruSystem 7500	1717021
Floor mounting column TS 7500 U	1730732
TruSystem 7500 Hybrid (FC)	1854085
TruSystem 7500 Hybrid Plus (FC)	1854087
TruSystem 7500 Hybrid MR (FC)	2064837
External power supply unit	
Power supply pack	2065993

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1 Important information

CAUTION **Risk of injury for patients and personnel.**
The operating table column is only intended for use in medical facilities and may only be used/operated by trained medical staff.

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 integral part of the product and must be handed over when changing location or personnel. Furthermore, the instruction manual must be accessible to all product users at all times.

The operating table column is safe to use. Residual risks are addressed in the respective sections of this manual. Pay close attention to the information contained in this manual to reduce risk.

Information on the installation of a fixed installation operating table column can be found in the installation instructions for the operating table column.

The illustrations in these operating instructions are intended for general understanding and may differ from the actual design of the product. No claims can be derived from the illustrations in the operating instructions.

Glossary

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

Term	Explanation
ITALIC text	Descriptions of keys, functions, displays, and device parts
Numbers in brackets [50]	Number code in graphics (allocation of graphic - text)
[a10]	Labeling of displays on a control unit
[i10]	Labeling of functions (keys) on a control unit
[10]	Labeling of parts
#	Material number
Button	Button on the remote control touch screen

Term	Explanation
CT	Computed tomography system
DGHM	Deutsche Gesellschaft für Hygiene und Mikrobiologie (German Society for Hygiene and Microbiology)
Trumpf Medical	TRUMPF Medizin Systeme GmbH + Co. KG
interventional radiology	Therapeutic operations are performed under image control (such as CT, MRI).
Medical device	Device classified as a medical device as per Directive 93/42/EEC
MRI	Magnetic resonance imaging
Operating table	Operating tabletop on an operating table column (operating table system) The section segments attached to the operating tabletop are also part of the operating table.
Mobile operating table	The operating table can be transported by a shuttle.
Fixed installation operating table	The operating table column is permanently installed in the operating room.
Section segment	Add-on component for further furnishing of the operating table The section segment is fastened to coupling points on the operating table and extends the space for positioning the patient.
PEMS	programmable electrical medical systems
Column keypad	Operating keypad on the operating table column
Shuttle	Transporter for the operating table or the operating tabletop
Transfer (shuttle operation)	Transfer a mobile operating table or an operating tabletop on a shuttle.
	Set down a mobile operating table or transfer an operating tabletop to an operating table column.

Term	Explanation
VAH	Verbund für Angewandte Hygiene e. V. (German Registered Association for Applied Hygiene)
Accessories, accessory components	Object designed by the manufacturer to enable or support the intended use of the operating table.
Product name description	
Hybrid (Plus)	Operating table column with integration interface to be used with an imaging system, for example, computed tomography
Hybrid MR	Operating table column has a separate power supply unit Operating table column with integration interface for use with an imaging system, for example magnetic resonance tomography
SB, FC	The operating table column is firmly mounted on a floor mounting plate in the operating room.
SF, SC	The operating table column is firmly mounted on a floor installation plate in the operating room.
SM, MC	Mobile operating table column
U	Supply voltage and network frequency of the operating table column comply with the US American state of the art.

1.1 Proper use of the equipment

The devices described in this manual are for human medical use only. The operating table column may only be used/operated by trained 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 operating table column may only be used with other products from chapter 1.3 on page 13. The operating table is intended for the following use: Patient positioning during surgery, from the induction of anesthesia through the actual surgery to recovery from anesthesia. Information on the proper use of products used in combination with the operating table column is provided in the instruction manuals of the specific products.

The operating table column TruSystem 7500 Hybrid can be used with an imaging system. This is subject to compatibility having been confirmed in advance by Trumpf Medical and the manufacturer of the imaging system.

The positioning of the patient on the operating table is in accordance with general practice and doctrine e.g. described in specialist literature.

Comply with the operating instructions for the proper use of the operating table column. Any other use of the operating table column is regarded as improper use. The supplier/manufacturer is not liable for damage to property or injury to persons resulting from improper use.

1.2 Contraindications

- Do not transport objects, devices, or materials on the operating table.
- The operating table column is not approved for use with shuttles types "1, 2, 3".

WARNING
Hazard to the patient!

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

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

Do not exceed the permitted load capacity for the operating table. If the permissible load is exceeded, the mobile operating table may tip over and cause serious injuries to the patient or staff. In general, overloading the operating table can lead to a failure of electrical functions and cause material damage to mechanical parts!

CAUTION
Hazard to the patient!

The patient may be positioned on the operating tabletop only lying down. Extremities must not extend beyond the end of the operating table in a longitudinal direction.

Improper loading may damage the operating tabletop or cause the mobile operating table to tip over! When the tabletop has been moved in a longitudinal or transverse direction, the patient may not climb onto or off the operating tabletop over the extended tabletop side. Patients may only get on or off in the area of the support column. Do not sit, perch or kneel on the end of the tabletop.

1.3 Product combination

Use of the operating table column is permissible in combination with the following Trumpf Medical products. The instruction manuals for the products used must be observed and followed for their use.

Remote controls

The following remote controls can be used on the operating table column:

Designation	Material number
TS 7500 wired remote control	2003862
TS 7500 wireless remote control	2003863
TS 7500 SL wireless remote control included in the packs: – TruSystem 7500 SensorLine Premium – TruSystem 7500 SensorLine	 1997423 1947993
TS 5500 IR remote control	1637573
TS 5500 wired remote control	1637572

Shuttles

The following shuttles are authorized for the operating table columns:

Designation	Material number
Shuttle 1.6	1249145
Shuttle 1.6 360	1418348
Shuttle 2.6	1249146
Shuttle 2.6 360	1418349
Shuttle 3.6	1249147

Designation	Material number
Shuttle 3.6 360	1489491
Shuttle 2.7	1254362
Shuttle 2.7 360	1459862
Shuttle 3.7	1254363
Shuttle 3.7 360	1459863
Power Shuttle (H)	1774603

Operating tabletops

The following operating tabletops and variants can be used on the operating table columns:

Designation (see label on the operating tabletop)
Operating tabletop U14
Operating tabletop U24
Operating tabletop U26
Operating tabletop ST14
Operating tabletop ST26
Operating tabletop SQ14
Operating tabletop Carbon X-TRA 7500
Operating tabletop Carbon X-TRA 7500 short
Operating tabletop Carbon FloatLine
Operating tabletop MR Neuro
Operating tabletop Carbon Spine
Operating tabletop PTS Combi Suite
Operating tabletop L
Operating tabletop LK
Operating tabletop OT
Operating tabletop pediatrics
Operating tabletop GM

Before using an operating tabletop on the operating table column, check the instruction manual to determine which shuttles are authorized for the operating tabletop.

Please observe the specific instruction manual for compatibility with the operating tabletop. Please contact Trumpf Medical if you have any questions concerning compatibility.

1.4 Safety instructions

Safety instructions is defined as measures to protect the user and patient from dangers that might occur through the use of the operating table.

The medical device is subject to special precautions regarding electromagnetic compatibility (EMC). Installation and commissioning must be done in accordance with the EMC notes specified in chapter 21 on page 85.

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

WARNING
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. When using the operating table column in an imaging system, free access to the patient must be ensured by first driving away or swiveling away the imaging system.

1.4.1 Safety during operation

- These operating instructions must be read and understood in full by the operating personnel, especially the chapter "Safety instructions", prior to start-up or, if appropriate, communicated by means of an in-house training session taking the level of professional training into account. The instruction manual must be strictly observed and made available at the location of use.
- Only use the operating table with the defined products (chapter 1.2) for the purpose set out in the "Proper use of the equipment" (chapter 1.1).
- The values defined under "Technical data" (chapter 16) must be observed for the operating table.
- All work with or on the operating table (set-up, operation, maintenance, decommissioning, transport, and disposal) may only be performed by trained staff.
- Risk of material damage to the electronics due to condensation. When transitioning from a cold to a warm environment or vice versa, moisture can form inside the operating table and cause a

short circuit. If this occurs, place the operating table in a room for some time (at least 12 hours) with the ambient temperature and humidity prescribed (see chapter 16.2 on page 75) and allow it to warm/cool prior to use.

The batteries must be completely recharged after a significant change in temperature or humidity.

- Check that all electrical and mechanical functions/parts of the operating table, including accessories, are undamaged and in good working order before using them.
  Defective or damaged products must not be used!
- 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.
- Risk of crushing by moving parts! Familiarize yourself with its operating functions before using the product!
- Note the labels on the product (see chapter 3.4 on page 28)! All labels on the device must be complete and legible! Replace damaged or loose labels! Labels may not be changed, removed or covered with other objects.
- For the proper and safe use of the operating tabletop and additional equipment, follow the instructions for the relevant products.

Transport/ Repositioning

- 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!
- Secure the patient on the operating table (e.g. by using belts) and provide active support to the patient when making adjustments to the operating table.
- 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. This is to rule out any hazard to the patient and material damage to the operating table, equipment or furnishings. Potential collisions must be prevented by aborting the function!
  Make sure that no surgical draping, hoses or other objects come in contact with movable parts and get caught by them.

Pay particular attention to the operating table when lowering, since the operating tabletop may collide with objects lying below it, or it may even make contact with the floor if set to an extreme position. In some circumstances, there is a possible crushing hazard for persons.

- When moving to the level position on the operating table, larger patient incline positions can occur compared to the initial position. Only select the function Level position (transfer position) if collisions cannot occur. Monitor the movement to the level position up to the final position.

Only in case of mobile operating table column:

- Danger of collisions when transporting the operating table. Be careful to avoid collisions with nearby persons or furniture and to prevent damage to the table!

1.4.2 Electrical safety

- Position the operating table such that the detachable plug or device couplers are easily accessible.
- The operating table may only be connected to a power supply with a protection conductor. This prevents the risk of electric shock.
- Get a qualified electrician to check the electrical safety of the operating table and the power supply every year.
  We recommend an annual general safety inspection by Trumpf Medical Technical Customer Services.
- Always keep the wireless remote control in an operational (charged) state so that it is ready for use immediately!

mobile operating table column

- 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 (DIN EN 60601-1/VDE 0750-1).
- An extension cable cannot be used with the mains 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 protection conductor is interrupted by a damaged mains power cable. The operating table must only be connected to the power supply using the original mains power cable from Trumpf Medical.

  In addition, the supply voltage must be observed. The operating table must only be connected to the supply voltage indicated on the device label.

- Ensure that the power cable and equipotential bonding cable are not crushed or driven over. Stop using cables if damaged. If you have any concern about the safety of the power cables and equipotential bonding conductors, work only with the internal (rechargeable) power supply until you have replaced the cable in question.

  Remove cables prior to relocating the table.
- Always keep the operating table column in an operational (charged) state so that it is ready for use immediately! Fully charge the operating table column prior to first use.

Fixed installation operating table column

- In an emergency, disconnect the operating table column from the power supply using the separate on/off switch (e.g. on the operating panel).

1.4.3 High-frequency (HF) surgical equipment and defibrillators

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 instructions for the equipment.

Trumpf Medical operating tables are electrically conductive in accordance with the current version of the 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.

- Risk of burns to patient! Position the patient on the operating table so that he or she is insulated from metal parts (operating table, accessories) and conductive pads or hoses.
- 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.

1.4.4 MRI safety information

Tests have confirmed that the operating table column Hybrid MR is MR conditional to the MR environment with the approved operating tabletops and the cable remote control TS 7500 (#2003862) and can be used safely for MRI up to a maximum of 3 Tesla.

CAUTION
Failure to observe the specific procedures for handling MR conditional products can result in injury to persons involved.

Please observe the following points to ensure safety in an MRI environment:

- Please observe the MRI safety information for the operating table top, the shuttle and the remote control.
- Only use pads specifically designed for the operating table top (MR safe).
- Do not use the operating tabletop with the MRI until the shuttle has been transferred to the operating table column (MR conditional).
- Hang the remote control on the side rail of the operating tabletop by the "PLACE PENDANT HERE" sticker (MR conditional).
- Remove the shuttle from the room immediately after the operating tabletop has been transferred (MR Unsafe).
- Only use authorized accessories.
- It is essential to follow the safety guidelines of the MR device manufacturer.

1.4.5 Maintenance/Repair

- It is prohibited to position a patient on the operating table if the table is undergoing maintenance or repair.
- Keep a log book for this medical equipment! All repairs and maintenance are documented here.
- Every repair must comply with the safety regulations according to IEC 60601-1 (DIN EN 60601-1/VDE 0750-1) and DIN EN 62353 (VDE 0751-1).
- Within the limits of the legal requirements, the manufacturer is only responsible 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 maintenance, or of modifications to the product.

1.4.6 Protection against infection

- Follow all rules and regulations concerning cleaning / disinfection (see chapter 15 on page 73). Use only the cleaning materials and disinfectants described in these operating instructions!
- Only devices and kits that have been cleaned and disinfected may be handed over to service technicians for maintenance and repair work.

1.4.7 Environmental protection

- Dispose of any remaining cleaning and disinfection materials and any associated residues in a safe and environmentally-friendly manner.
- Use the recycling options for batteries that have become unserviceable.
- Consult this document regarding environmentally-friendly product disposal (see chapter 20 on page 84).

1.5 Explanation of Symbols

Important information in this instruction manual is marked with symbols and keywords. Keywords such as **DANGER**, **WARNING** or **CAUTION** indicate the level of danger involved. The symbols emphasize the message visually. Additional symbols can indicate injury hazards or danger to life and limb. The measures to prevent dangers arising must be implemented without fail.

DANGER
Risk of death (for example, electric shock)!

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

WARNING
Risk of death!

Indicates an imminent danger that may result in death or serious injuries if the appropriate precautionary measures are not taken.

CAUTION
Risk of injury (for example, crushing)!

Refers to a possible danger that can lead to slight to moderate injury or damage to the equipment if the appropriate precautionary measures are not taken.

CAUTION **Risk of material damage!**
Indicates a potential danger that may lead to material damage if the appropriate precautionary measures are not taken.

1.6 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.

1.7 Service life

Provided that all applicable safety and maintenance instructions are strictly adhered to, Trumpf Medical products will have a service life of 10 years. The service life includes a warranty for product functionality in accordance with the specifications in the operating instructions, the provision of service and also spare parts supply.

2 Unpacking and setting up the operating table column

The operating table is a modular system that consists of the following products:

- Operating table column
- Operating tabletop
- Section segments and accessories
- Shuttle

Fixed installation operating table column

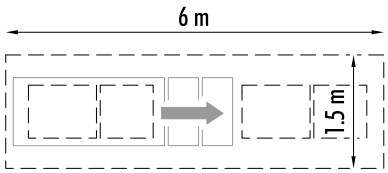
Repairs to the fixed installation operating table column may only be performed on-site by the Technical Customer Service at TRUMPF Medizin Systeme GmbH + Co. KG or by personnel authorized, trained, and certified by Trumpf Medical. The mounting of the operating table column is described in the installation manual. The operating tabletop is delivered separately on a shuttle.

Clean the operating table column before using it for the first time (see chapter 15 on page 73).

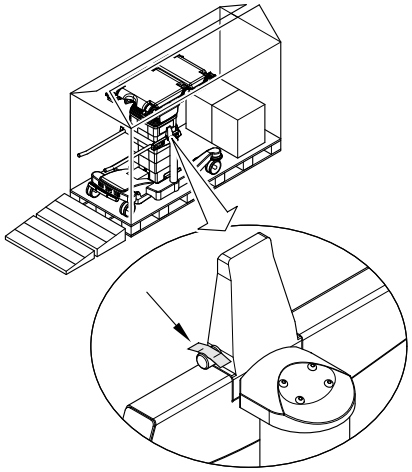
mobile operating table column

The delivery of the mobile operating table includes the operating table column, a shuttle, an operating tabletop and the additional equipment. It is delivered on a pallet, packed in a box. Ordered section segments and accessories are individually packaged on the pallet. Warning: the packaging is not weatherproof. Set the ambient conditions for storage and transportation (shipping) in chapter 16.1 on page 75.

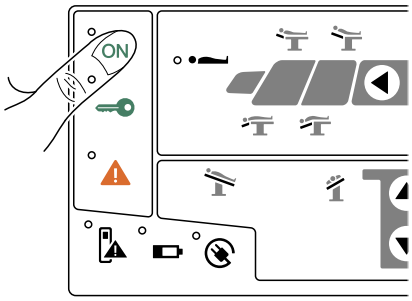
Unpack the operating table in a room with a level floor and sufficient open space to roll away the pallet. The ambient conditions in the room must correspond to the operating conditions of the operating table. See chapter 16.2 on page 75.



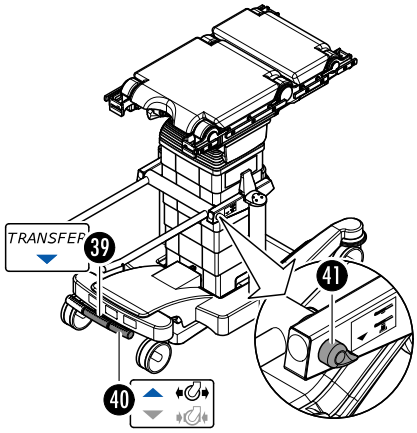
1. Set down the palette in such a manner that a surface of approximately 1.5 m in width and 6 m in length is available.
2. Open the top of the box.



3. Lift and remove the two-part ramp and position it at the front edge of the pallet as shown.
4. Remove the box fasteners below at the pallet.
5. Lift and remove the box.
6. Remove the delivered parts.
7. Take off the straps.
8. Remove the wooden chocks.
9. On the shuttle, remove the protective film on the bolts of the two receiving wedges.
10. Do not begin using the operating table immediately. When transitioning from a cold to a warm environment or vice versa, moisture can form inside the operating table and cause a short circuit. Consequently, the operating table must be allowed to warm/cool prior to use (at least 12 hours).



11. Switch on the operating table column at the column keypad. Press the ON key.



12. Press and hold the center pedal [41] at the shuttle. Move the operating table column to the most elevated position.
13. Press and hold the selection key [43] down to the position *OPERATING TABLE*.
14. Press and hold the center pedal [41] at the shuttle until the transfer is complete.
    The operating table column moves downwards until the operating tabletop rests on the shuttle and the column foot lifts off a little from the floor. A double beep indicates the end of the transfer.
15. Release selection key [43] and pedal [41].
16. Move the right pedal [42] upwards. The shuttle is ready to be moved.
17. **CAUTION**
    Risk of injury for personnel:
    The shuttle can tip over and cause injury if it is moved over the lateral edge of the pallet.

    Carefully move the shuttle from the pallet using the ramp. This requires at least 2 people.

18. On the shuttle, press the right pedal [42] down. The shuttle is braked.
19. Dispose of the pallet, ramp, and packing material in an environmentally responsible manner.

Set up the operating table at the location of use:

The floor at the location of use must be level, so that the operating table column is secure and does not wobble. The required flatness tolerance is 3mm to 1m measuring point distance (floor must have a flatness according to DIN 18202, table 3, line 4).

20. Release the brake and set the required driving mode on the shuttle. Note the operating instructions of the shuttle.
21. Drive the shuttle with the operating table to the intended location of use.
22. Ensure that the operating table is not placed on cables or objects.

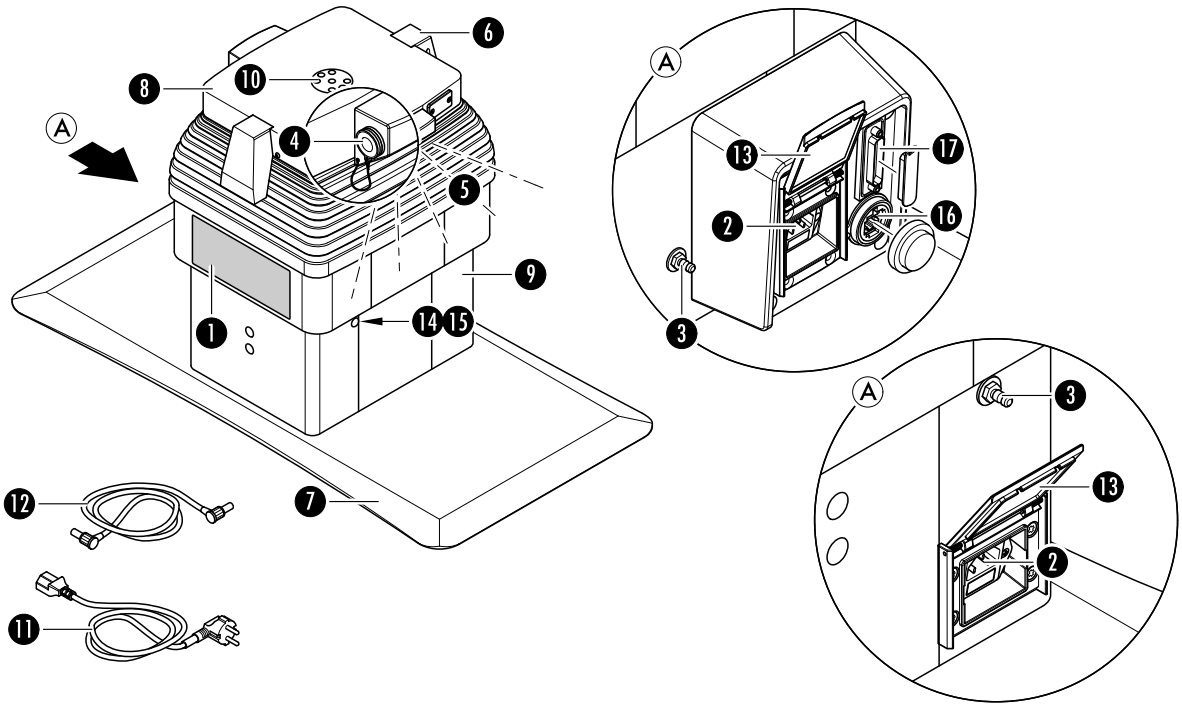
    Set down operating table: Press and hold the center pedal at the shuttle until the transfer is complete.

    The operating table is placed on the floor and the operating table column moves into the upper transfer position until the operating tabletop is no longer on the shuttle. A double beep indicates the end of the transfer.
23. Drive the shuttle away.
24. Charge the mobile operating table column. See chapter 5.4 on page 45.
25. Cleaning the operating table column (see chapter 15 on page 73).

3 Overview of operating table column

3.1 Mobile operating table column

The mobile operating table column can be transported on a shuttle with an operating tabletop lying on top and can thus be placed on any level surface. The batteries in the operating table column allow use of the operating table without an external power supply.



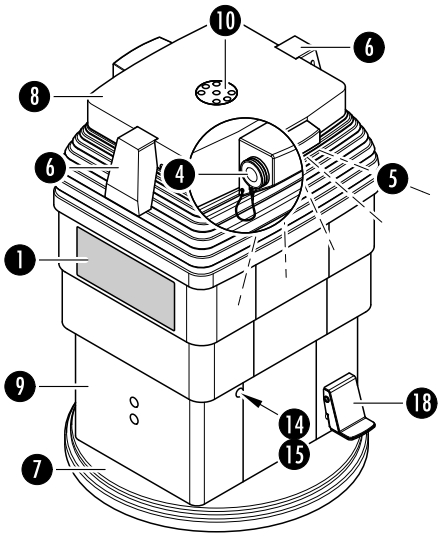
Key:

[1] Column keypad
[2] Connector socket for mains power cable
[3] Connector pin for equipotential bonding cable
[4] Connection socket control unit (on both sides of the column head)
[5] Endolight
[6] Mount wedge for operating tabletop
[7] Floor plate
[8] Column head
[9] Lowest column cover (column foot)
[10] Electrical contact plate for the operating tabletop
[11] Mains power cable
[12] Equipotential bonding cable
[13] Lid
[14] Reset button

Key:
[15] Cover cap
[16] Ethernet connection socket
[17] Connection socket hardware signals

3.2 Fixed installation operating table column with internal power supply

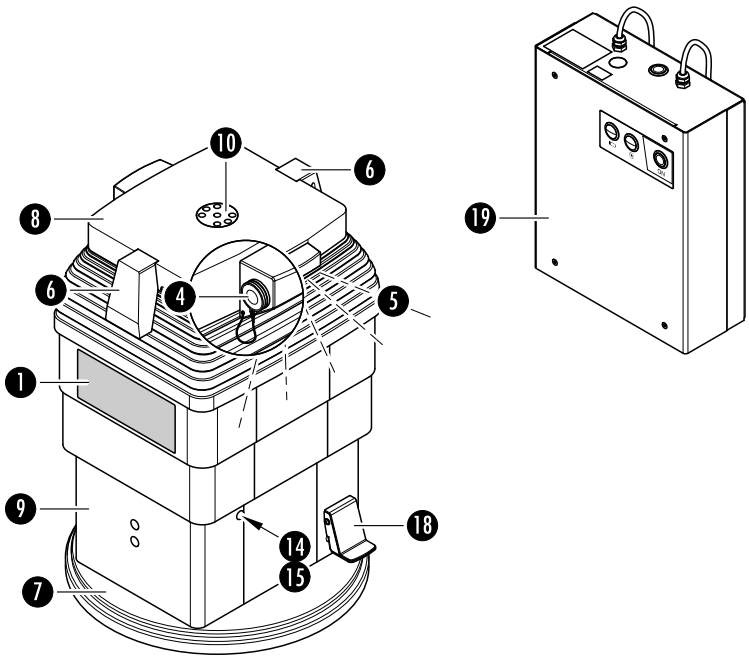
Operating table column is permanently installed in the operating room and permanently connected to the power supply of the room. The operating table column can be rotated continuously. The battery in the operating table column serves as an emergency power supply in the event of a power failure.



Key:
[1] Column keypad
[4] Connection socket control unit (on both sides of the column head)
[5] Endolight
[6] Mount wedge for operating tabletop
[7] Floor plate
[8] Column head
[9] Lowest column cover (column foot)
[10] Electrical contact plate for the operating tabletop
[14] Reset button
[15] Cover cap
[18] Foot pedal brake

3.3 Fixed installation operating table column without internal power supply

The operating table column is permanently mounted and can be rotated continuously. The operating table column does not have an internal power supply but is permanently connected to the power supply of the room via the separate power supply unit. The power supply unit with integrated batteries is located outside the operating room (e.g. installed in the control cabinet). The batteries in the power supply unit serve as an emergency power supply in case of power failure.

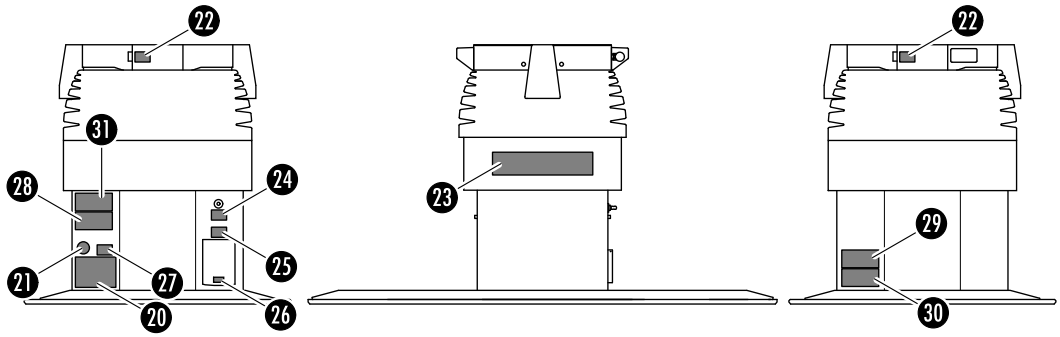
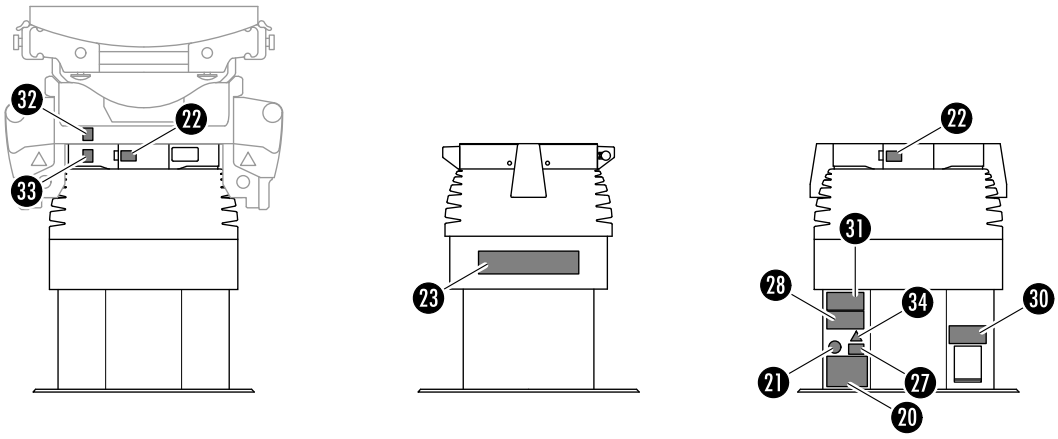
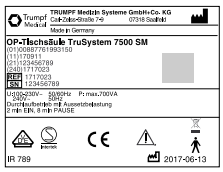
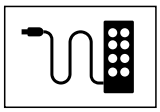


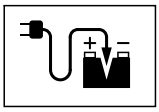
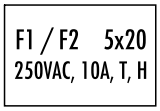
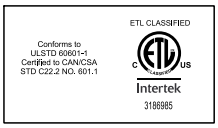
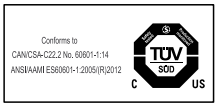
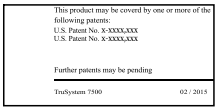
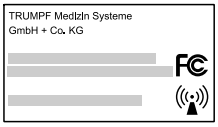
Key:

[1] Column keypad
[4] Connection socket control unit (on both sides of the column head)
[5] Endolight
[6] Mount wedge for operating tabletop
[7] Floor plate
[8] Column head
[9] Lowest column cover (column foot)
[10] Electrical contact plate for the operating tabletop
[14] Reset button
[15] Cover cap
[18] Foot pedal brake
[19] External power supply unit (outside the operating room e.g. installed in the control cabinet)

3.4 Labels on the product

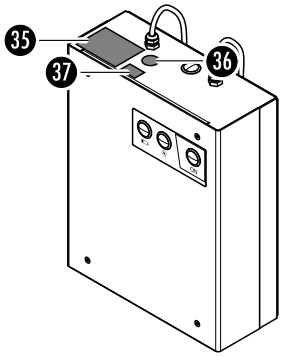
The following labels are placed on the operating table column:

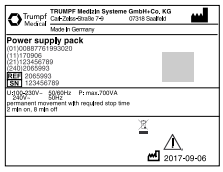
Item	Label	Meaning	Position
mobile operating table column			
			
Fixed installation operating table column			
			
[20]		Device label	on the lowest column cover
[21]		Follow the instruction manual	over the device label on the lowest column cover
[22]		Connector socket for cable remote control	on both sides of the column head
[23]		Operating table name	on the uppermost column cover

Item	Label	Meaning	Position
[24]		Connector pin for equipotential bonding cable	over the network connection on the lowest column cover
[25]		Connector socket for the mains power cable	over the network connection on the lowest column cover
[26]		Fuses	Cover the inside of the power supply
[27]		Software label with the current operating table software version	over the device label on the lowest column cover
[28]		ETL mark	on the lowest column cover (only variants U, Hybrid and Hybrid Plus)
		TÜV-SÜD label	on the lowest column cover (only variants Hybrid MR and Hybrid MR IMRIS)
[29]		Transport of the operating table column is only permitted with the associated shuttle	on the lowest column cover (only U types of the operating table column)
[30]		Reference to US patents	on the lowest column cover (only U types of the operating table and operating table column TruSystem 7500 Hybrid MR)
[31]		Radio license FCC and IC	on the lowest column cover
[32]		The arrows indicate the preferred direction of the tabletop on the column (only for the operating tabletop Carbon FloatLine).	On the front cover of the tabletop (head end)
[33]		The arrows are included in the package supplied with the operating tabletop and can be stuck on as required.	On the column head of the assigned operating table column

Item	Label	Meaning	Position
[34]		MR Conditional The operating table column is safe for use with an MR device if it has been installed correctly. Follow chapter 1.4.4 on page 16.	over the device label on the lowest column cover (only for operating table column TruSystem 7500 Hybrid MR)

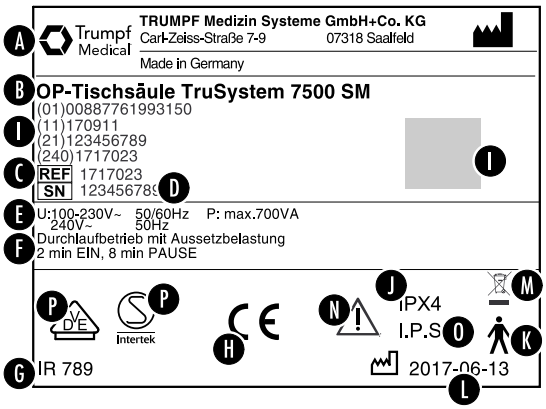
external power supply unit



[35]		Device label	on the housing
[36]		Follow the operating instructions for the power supply unit	on the housing
[37]		Software label with the current operating table software version of the power supply unit	on the housing

Device label declaration

Device label of the mobile operating table column and the fixed installation operating table column with internal power supply:



Key:

[A] Manufacturer

[B] Product name

[C] Trumpf Medical material number

[D] Serial number

[E] Voltage and frequency depending on the operating voltage:
100V–230V~, 50Hz/60Hz
240 V~, 50 Hz
Max. power 700 VA

[F] Operating mode: Continuous operation with intermittent load 2 min ON, 8 min PAUSE

[G] Infrared code for the IR remote control (corresponds to the last three digits of the serial number)

[H] The device is declared compliant in accordance with the Council Directive 93/42/EEC concerning medical devices

[I] Unique Device Identification (UDI), comprising:
Data Matrix Code
(01) Global Trade Item Number (GTIN)
(11) Date of manufacture (year month day)
(21) Serial number
(240) Material number

[J] Degree of protection from water penetration

[K] Degree of protection against electric shock: Type B applied part

[L] Date of manufacture (year-month-day)

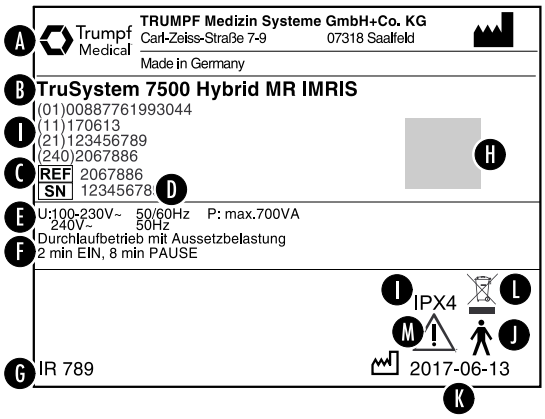
[M] Product must not be thrown into the household waste.

[N] Caution! Note the warnings in the instruction manual!

[O] Device has an internal power supply

[P] Certification mark of the test center

Device label of the fixed installation operating table column without internal power supply:



Key:

[A] Manufacturer

[B] Product name

[C] Trumpf Medical material number

[D] Serial number

[E] Voltage and frequency depending on the operating voltage:
100V–230V~, 50Hz/60Hz
240 V~, 50 Hz
Max. power 700 VA

[F] Operating mode: permanent movement with required stop time 2 min on, 8 min off

[G] Infrared code for the IR remote control (corresponds to the last three digits of the serial number)

[H] Unique Device Identification (UDI), comprising: Data Matrix Code
(01) Global Trade Item Number (GTIN)
(11) Date of manufacture (Year Month Day)
(21) Serial number
(240) Material number

[I] Degree of protection from water penetration

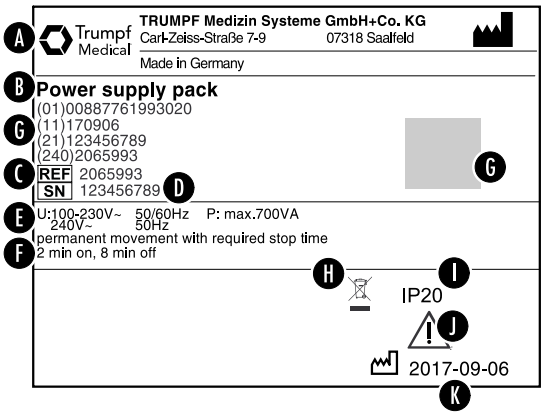
[J] Degree of protection against electric shock: Type B applied part

[K] Date of manufacture (year-month-day)

[L] Product must not be thrown into the household waste.

[M] Caution! Note the warnings in the instruction manual!

Device label of the external power supply unit:



Key:

[A] Manufacturer

[B] Product name

[C] Trumpf Medical material number

[D] Serial number

[E] Voltage and frequency depending on the operating voltage:
100V–230V~, 50Hz/60Hz
240 V~, 50 Hz
Max. power 700 VA

[F] Operating mode: Continuous operation with intermittent load
2 min ON, 8 min PAUSE

[G] Unique Device Identification (UDI), comprising:
Data Matrix Code
(01) Global Trade Item Number (GTIN)
(11) Date of manufacture (year month day)
(21) Serial number
(240) Material number

[H] Product must not be thrown into the household waste.

[I] Degree of protection from water penetration

[J] Caution! Note the warnings in the instruction manual!

[K] Date of manufacture (year-month-day)

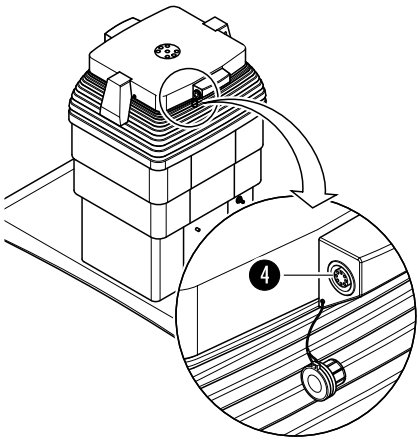
3.5 Audible signals (factory setting)

Various audible signals sound in conjunction with specific operational procedures or statuses of the operating table.

Action	Description of audible signal
Switch on the operating table	Ascending tone sequence
Switch off the operating table	Descending tone sequence
End position or level position of selected adjustment range reached	Single tone
Confirmation of an operational procedure, e.g.: – Level position of the operating table reached – Transfer finished	 Double tone Double tone
Charging of the operating table column is required	2 pulsing tone sequences intermittently repeating (at an interval of several minutes - battery tone)
Error	Shrill triple tone (error tone)
Warning, e.g.: – Leg sections moving toward one another during single hinge adjustment – Emergency transfer – Emergency mode	Repeating shrill single tone (warning tone) During movement, the warning tone sounds repeatedly at intervals of a few seconds.

In addition to the acoustic signals, a corresponding indicator is shown in the display when using the TruSystem 7500 remote control device. While the operating table is switched on, no display appears on the remote control.

4 Control units



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

- Column keypad
- Remote control
- Joystick

The control unit [4] female connector on the operating table column is used exclusively to connect the wired remote control or the joystick.

Entries via keys on the individual control units are accepted in the following priority sequence:

1. Column keypad
2. Wired remote control
3. Wireless remote control
4. Joystick

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

4.1 Malfunction caused by other devices

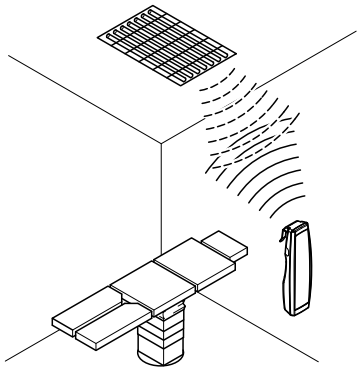
Portable and mobile RF communication devices may interfere with the medical device.

WARNING
Hazard to patients caused by malfunctions of the operating table!

Other devices may affect the medical device, even if they comply with the valid CISPR emission requirements.

WARNING
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. These devices can therefore cause malfunctions of the operating table. Note the operating frequencies of the various devices.



Examples of potential sources of interference:

- Electronic control gear (ECG) for fluorescent lamps
- HF surgical devices
- Wireless remote control for other devices (e.g., monitors)
- Very bright indoor lighting

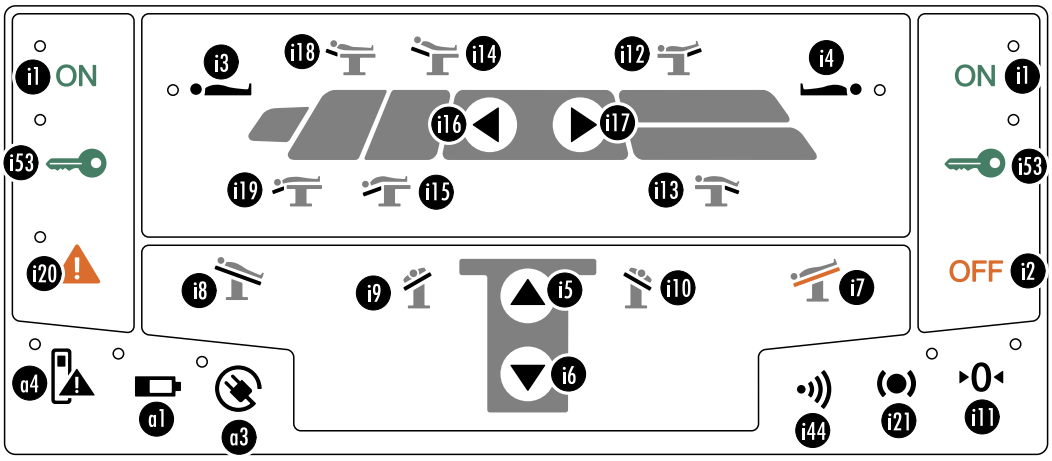
4.2 Column keypad

4.2.1 Overview of functions

The operating table is shown in simplified form on the column keypad: in the upper section, the operating tabletop (longitudinal side) and underneath, the operating table column as viewed from the head end. The keys for the adjustment functions are identified by arrows and located on the corresponding table segments. The direction of movement for the individual functions corresponds to the image displayed.

The individual functions on the column keyboard can only be selected once the keypad is unlocked. To adjust an operating table, 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 key 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:

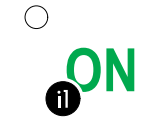
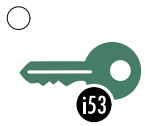
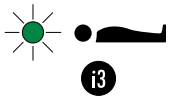
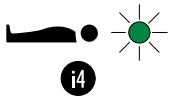
[i1] Switch on the operating table, display: Ready
[i2] Switch off the operating table
[i3] Head position left, display: Head position left
[i4] Head position right, display: Head position right
[i5] Lift
[i6] Lower
[i7] Trendelenburg
[i8] Reverse Trendelenburg
[i9] Tilt left
[i10] Tilt right

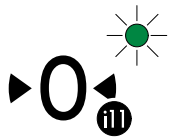
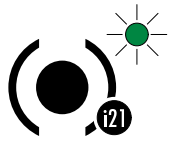
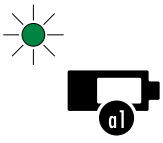
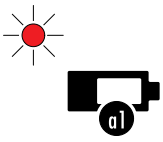
Key:

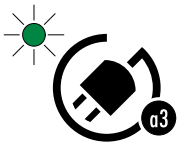
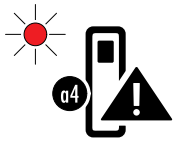
[i11] Level position, display: Level position
[i12] Raise leg section hinges
[i13] Lower leg section hinges
[i14] Lower back section hinges up
[i15] Lower back section hinges down
[i16] Longitudinal travel toward head end
[i17] Longitudinal travel toward foot end
[i18] Upper back section hinges up
[i19] Upper back section hinges down
[i20] Activate emergency mode, display: Emergency mode
[i21] Brake (only for fixed installation operating table column)
Display: Brake
[i44] Localize remote control
[i53] Key release, display: Key release

[a1] Operating table battery status
The display is only available for the operating table column with internal power supply.
[a3] External power supply
The display is only available for the operating table column with internal power supply.
[a4] Malfunction

4.2.2 Visual indicators

Indicator	Status	Color	Meaning	Action
Ready [i1]				
	Illuminated	green	Operating table is switched on and ready.	–
	Not illuminated		Operating table is switched off	Switch on the operating table if necessary. Establish external power supply connection to the operating table if the operating table cannot be switched on (battery empty).
Key release [i53]				
	Not illuminated		Column keypad 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 key on the column keypad.	Press button [i53]: The keypad is released for operation for 10 seconds. Select functions on the column keypad using the two-key control.
	Illuminated	green	Keypad on column keyboard is released. The keyboard automatically locks 10 seconds after the last key is pressed.	–
Head position left [i3]				
	Illuminated	green	Display corresponds to the head position of the patient on the operating table.	–
Head position right [i4]				
	Illuminated	green	Display corresponds to the head position of the patient on the operating table.	–

Indicator	Status	Color	Meaning	Action
Level position [i11]				
	Illuminated	green	The operating table is in level position.	–
	Flashing	green	Leveling of the operating table is incomplete.	Perform an emergency transfer (see page 71) if leveling is incorrect.
Emergency mode [i20]				
	Illuminated	red	In addition to the *EMERGENCY MODE* display, the *READY TO OPERATE* [i1] display flashes, while the *MALFUNCTION* [a4] display lights up. The operating table emergency mode was activated manually.	Block the defective operating table from use for subsequent operations. Contact Technical Service.
Brake [i21] (only active for fixed installation operating table column)				
	Illuminated	green	Brake on the fixed installation operating table column is activated (locked). It is not possible to turn the column.	–
	Flashing	green	Brake on the fixed installation operating table column is deactivated (released). It is possible to turn the column.	–
Battery status [a1] The display is only available for the operating table column with internal power supply (battery in the column).				
	Illuminated	green	Operating table column is fully charged.	–
	Flashing	green	Operating table column is charging.	–
	Illuminated	red	Charging of the operating table column is required.	Establish external power supply connection for operating table.
	Flashing	red	**Operating table column battery is depleted! Electrical functions are severely limited. Operating table shutdown is imminent.**	**Establish external power supply connection for operating table.**

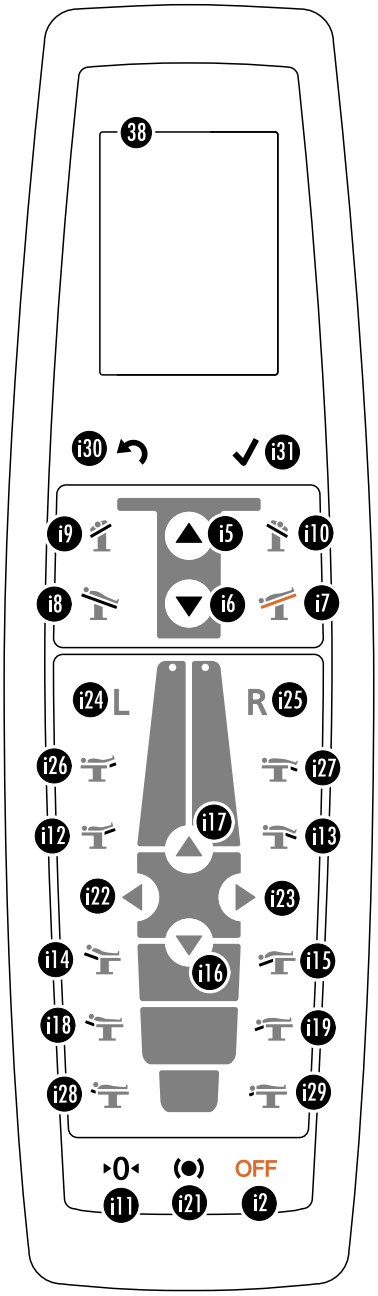
Indicator	Status	Color	Meaning	Action
External power supply [a3] The display is only available for the operating table column with internal power supply (battery in the column).				
	Illuminated	green	External power supply available (power supply connection) Mains power supply is connected to the mobile operating table column.	–
	Not illuminated		No external supply voltage available. The operating table is running on battery.	Charge mobile operating table column if required. Restore the external power supply (e.g. on/off switch on the operating panel) for the fixed installation operating table column as soon as possible.
Malfunction [a4]				
	Illuminated	red	An error has occurred with the operating table. Operating table can be used in a limited manner.	Note the display in the TruSystem 7500 remote control display. Contact Technical Service.

4.3 Remote control

The following remote controls can be used with the TruSystem 7500 operating table column:

- TruSystem 5500 remote control
- TruSystem 7500 remote control
- TruSystem 7500 SensorLine remote control

The functions on the cable remote control and the wireless remote control are the same. The user manual of the remote control used must be followed.



Key:

[i2] Switch off the operating table
[i5] Lift
[i6] Lower
[i7] Trendelenburg
[i8] Reverse Trendelenburg
[i9] Tilt left
[i10] Tilt right
[i11] Level position
[i12] Raise leg section hinges
[i13] Lower leg section hinges
[i14] Lower back section hinges up
[i15] Lower back section hinges down
[i16] Longitudinal travel toward head end
[i17] Longitudinal travel toward foot end
[i18] Upper back section hinges up
[i19] Upper back section hinges down
[i21] Brake of the fixed installation operating table column
[i22] Transverse slide left
[i23] Transverse slide right
[i24] Select left hinge (L) - display lights up
[i25] Select right hinge (R) - display lights up
[i26] Lower leg section hinges up
[i27] Lower leg section hinges down
[i28] Hinge of the motor head positioning up
[i29] Hinge of the motor head positioning down
[i30] Cancel or go back to next level up in the menu
[i31] Accept a selected menu function and go back to main menu.

[38] Touch screen

5 Power supply

5.1 Internal power supply (not available for TruSystem 7500 Hybrid MR)

5.1.1 mobile operating table column

Two lithium ion batteries provide the internal power supply for the mobile operating table column. With the set of batteries fully charged, the use of the electric operating table functions is guaranteed for approx. 1 hour (total duration of movement for electrical functions). The electrical functions on the operating table are blocked when the rechargeable battery set is depleted or almost completely depleted. In this case, the external power supply must be connected.

○ 

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

5.1.2 Fixed installation operating table column

Two lithium ion batteries provide the internal power supply for the fixed installation operating table column. With the set of batteries fully charged, the use of the electric operating table functions is guaranteed for approx. 30 minutes (total duration of movement for electrical functions). The battery is only used as an emergency power supply in the event of a power failure. During battery operation, the electrical functions on the operating table are moved at a lower speed. The electrical functions on the operating table are blocked when the rechargeable battery set is depleted or almost completely depleted. Due to the short operating time of the battery, the external power supply must be restored as quickly as possible.

○ 

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

5.2 External power supply (line connection)

5.2.1 Mobile operating table column

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

CAUTION
Hazard to the patient!

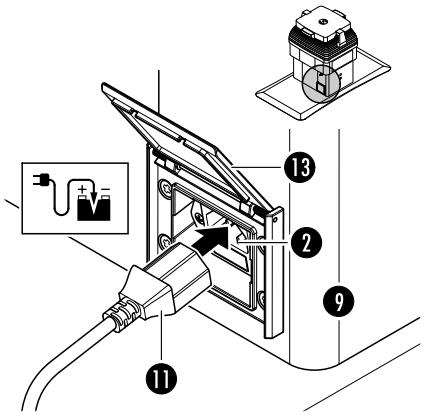
An extension cable cannot be used with the mains power cable at the operating table, otherwise, in case of a fault, the permitted patient leakage current threshold for cardiac surgery (applied part CF according to IEC 60601-1) will be exceeded. The fault occurs when the protection conductor is interrupted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

In addition, the supply voltage must be observed. The operating table must only be connected to the supply voltage indicated on the device label.

Connecting the operating table to the power supply

1. **DANGER**
Risk of death from damaged mains power cables!

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



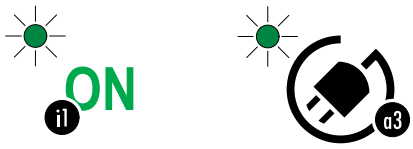
2. **WARNING**
Risk of explosion due to flammable gas mixtures!

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

Flip up the connector socket [13] lid in the column foot [9] and insert the mains power cable plug [11] into the bushing as shown [2]. The connection location is identified by the symbol for the power supply connection.

3. Route the cable such that no one can trip or fall over it.
Plug the connector of the mains 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 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.

Disconnecting the operating table from the power supply

1. **WARNING**
Risk of explosion due to flammable gas mixtures!

There is a risk of explosion in conjunction with flammable mixtures of anesthetics and air if the mains power cable is first disconnected from the operating table and then from the socket. The sequence for disconnecting the mains power cable must be strictly followed.

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

2. Pull the mains power cable plug from the connector socket on the column foot.

5.2.2 Fixed installation operating table

The fixed installation operating table column is permanently connected to the external power supply of the room and is only disconnected by means of the separate on/off switch (e.g. on the operating panel) in the event of an emergency or for service purposes. When connected to the power supply, there are no limitations on the use of electrically powered table functions.

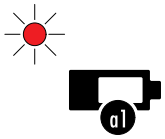
5.3 External power supply (available for TruSystem 7500 Hybrid MR)

The operating table column TruSystem 7500 Hybrid MR has an external power supply. The power supply is outside the operating theater. No operator action on the external power supply unit is necessary to operate the operating table.

5.4 Charging the operating table

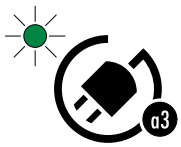
5.4.1 mobile operating table column

The mobile operating table column should be charged daily after use to ensure it is always ready for use.

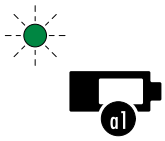


The battery charge status can be seen on the display [a1] on the column keypad. Observe the display while using the operating table. The operating table column must be charged if the display lights up red. In addition, an audible signal sounds that repeats at intervals of a few minutes.

1. Set the external power supply connection for the operating table (see page 43).



Indicator [a3] on the column keypad lights up.



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

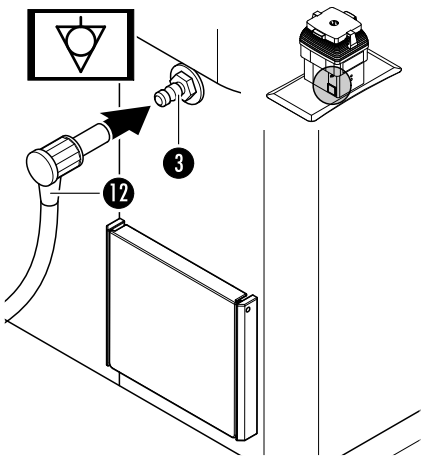
2. Operating table column is charging. Charging starts 1 minute after the last movement of the operating table.
If the batteries are completely discharged, recharging will take approximately 3 hours. Indicator [a1] on the column keypad lights green when the batteries are fully charged.

3. Disconnect the operating table from the external power supply (see page 43). Indicator [a3] on the column keypad goes out.
4. Turn off the operating table. This keeps the batteries fully charged until the next use.

5.4.2 Fixed installation operating table column

The batteries for the emergency power supply are automatically charged, as the operating table is firmly connected to the external power supply.

6 Equipotential bonding of the mobile operating table column



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 [12] to the equipotential connection (pin) [3] of the operating table column. Plug the other end of the cable into the equipotential bonding in the room. The connection location on the column is identified by the symbol for the equipotential bonding cable connection.

7 Switch on the operating table

Press the power key [i1] 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. The indicator [i1] lights up continuously when the operating table column is switched on.

8 Switch off the operating table

8.1 mobile operating table column

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.

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

In the case of an operating table column (as of software version 6.x.x.x) with the operating tabletop placed on the table, the operating table column in battery mode automatically switches off for 8 hours after the last key press on a control unit to protect the batteries. In the case of an operating table column without an operating tabletop, the automatic switch-off takes place after 1 hour.

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.

8.2 Fixed installation operating table column with internal power supply

The operating table column is permanently connected to the power supply of the room and always remains switched on. After switching off, the operating table column automatically switches back on.

8.3 Fixed installation operating table column without internal power supply

Press key [i2] on the column keypad or remote control for more than 2 seconds. An audible signal sounds shortly before shutdown.

In the case of an operating table column (as of software version 6.x.x.x) with the operating tabletop placed on the table, the operating table column in battery mode automatically switches off for 8 hours after the last key press on a control unit to protect the batteries. In the case of an operating table column without an operating tabletop, the automatic switch-off takes place after 1 hour.

The external power supply unit is permanently connected to the power supply of the room and always remains switched on.

9 Special features of the operating table column

The hybrid type operating table column can be combined with another medical device (e.g. imaging system or central control panel). Note information from the manufacturer of the medical device.

9.1 Networks

The network into which the operating table column is to be integrated has to meet the following requirements:

- The network for the operating table and the medical device has to be isolated. It may not be connected to any other network.
- All network resources have to be available exclusively for the operating table and the medical device.
- The network must be nearly 100 % available. Interruptions to the network may only take a few minutes per year.
- Only one system agent or PEMS manufacturer may be responsible for the network.
- The operating table and medical device have to meet the requirements of the system contractor/PEMS manufacturer.

Connecting the PEMS to an IT network, which connects to other devices, can represent previously unknown risks for patients, operators or third parties.

The system contractor has to determine, analyze, assess, and eliminate these risks.

Subsequent changes on the IT network can lead to new risks and therefore require additional analyses. Changes to the IT network include the following:

- Changes to the IT network configuration;
- Connecting additional elements to the IT network;
- Removing elements from the IT network;
- Updating devices connected to the IT network;
- Upgrading devices connected to the IT network;

9.2 External control

CAUTION
Hazard to the patient due to improper operation!

Mobile operating table: Do not connect or disconnect the data lines from the operating table during use.

CAUTION
Hazard to the patient due to improper operation!

Move the operating table with special care in emergency situations. Instructions for use and the current operating condition of the connected device.

In the hybrid operating room, the operating table is connected to another medical device (e.g. imaging system) via a network. The medical device can block the operation of the operating table in certain operating conditions by blocking functions. The pictogram of the blocked function is no longer visible on the remote control of the operating table and the function cannot be selected. In emergency situations, the column keypad and the center pedal (transfer) can still be used at the shuttle in all operating conditions of the operating table.

The operating condition of the operating table can be switched over as required by the connected medical device. The operating table is thus determined by means of its own or third-party control depending on the operating condition. The current operating condition of the operating table is indicated in the display of the TruSystem 7500 remote control. The displays are not available with the TruSystem 5500 remote control.

Displays on the remote control

Standard display

red display

The external control of the operating table can lead to unsafe operating conditions for the operator and patient.

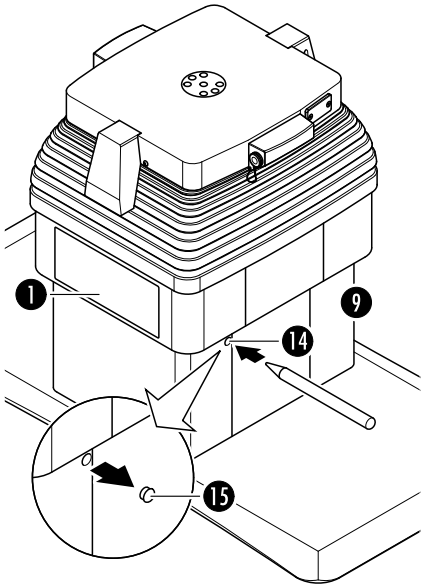
The unsafe operating conditions are displayed with a red display background. The color of the background changes back to the default as soon as the unsafe operating condition has ended.

Display	Meaning
Enter the following code on the connected system: 1234	The connected medical device would like to exchange data with the operating table. The displayed code must be entered on the connected medical device for safety reasons. Note the instructions for use of the connected device.
Color: Standard	

Display	Meaning
The connected system intends to move the table Press and hold the OK button to allow movement. OK Color: red	The connected medical device wants to change the position of the patient and requires the confirmation of the operator. The automated movement of the operating table is only carried out as long as the operator presses the OK key [i31] on the remote control. To cancel the movement, release the OK key [i31]. Note the instructions for use of the connected device.
Quick stop active, no movement allowed. Use the column keypad or Override on the radiography system (if present) to operate the table. Color: Standard	The connected medical device has blocked the operating table and all current movements are interrupted. Blocking occurs e.g. when a safety device has been activated. Note the instructions for use of the connected device. The operation of the operating table with column keypad and transfer pedal at the shuttle is possible in emergency situations.
Handsets blocked by connected ext. device. Use column keypad to operate table. Color: Standard	The connected medical device has blocked the remote control of the operating table. Reasons for blocking: – prevents the operating table from being adjusted – forces operation of the operating table with a control unit of the connected device The operation of the operating table with column keypad and transfer pedal at the shuttle is possible in emergency situations.
The System SYSTEMNAME requests to open a connection to the OR-Table. Cancel OK Color: Standard	The connected medical device would like to exchange data with the operating table. The connection request must be confirmed on the remote control of the operating table for safety reasons. Note the instructions for use of the connected device.

Display	Meaning
The table might be moved by an external device. Observe any table motion! Color: red	In this operating condition of the operating table, the connected medical device can adjust the operating table. Take appropriate precautions for the safety of personnel! Note the instructions for use of the connected device. The operation of the operating table with column keypad and transfer pedal at the shuttle is possible in emergency situations.
Progress display	The connected medical device has restricted the speed of movement at the operating table. The progress of the current movement is displayed in the remote control display.

10 Reset



If the operating table reacts unexpectedly to a control, switch off the table and switch it back on. If you cannot even switch it off, press the reset button. The reset key [14] is located on the lowest column cover [9] on the operating table side to the right of the column keypad [1]. Remove the cover cap [15] (made of plastic) and press the button [14] 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.

11 Load capacity

Use of the operating table system is permitted for a maximum patient weight of 400 kg. Patient weight can be extremely restricted by the operating tabletop. Note operating instructions for the operating tabletop. The terms and conditions for equipping the operating tabletop must be observed.

12 Operate fixed installation operating table column

The operating table is operated with the remote control or via the column keypad. For this, the operating instructions for the operating tabletop and the remote control must also be observed. Keys with the same function are also designated in the same way in the operating instruction of the various operating units (e.g. [i9] for left tilt key).

Adjusting the operating table

- Establish a potential connection with the mobile operating table column.
- Switch on the operating table. The operating table is switched on automatically when the mains is connected.
- Cover the surgical table with absorbent tissues.
- Transfer the patient onto the operating table.
- Compare the position of the head with the display on the column keypad and adjust if necessary.
- Secure the patient on the operating table.
- Set the functions on the operating table.

Setting the function

CAUTION
Hazard to the patient due to risk of collision!
Risk of getting trapped for the operator!

The operating table does not detect any objects in the vicinity. Collisions with the furniture, the floor or devices that are located beneath the operating tabletop must be prevented by the operator. Moreover, in case of an operating table with a full set of table equipment, not all equipment parts are detected by the operating table electronics. Thus, collisions cannot be completely ruled out. Monitor all motorized movements on the operating table up to the end position and stop the function before a dangerous situation arises. Clear the area beneath the operating tabletop.

The individual functions on the column keypad can only be selected once the keys are unlocked. The locked keypad functions can also be selected using two-key control.

Press the function key on a control unit until the table is in the required position. The function stops in the following situations:

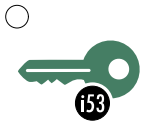
- The key is released.
- The level position has been reached.
- The intermediate stop is reached.
- The end position has been reached.

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 speed at which the function is executed depends on the patient's weight. The speed may be lower for a heavier patient.

The possible functions that can be used on the operating table depend on the operating tabletop used and are described in the operating tabletop instruction manual. Only the level position and lift functions can be selected via the column keypad on an operating table column without the operating tabletop.

12.1 Key release



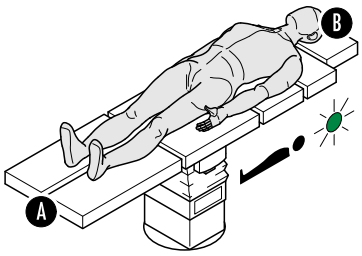
The column keypad is locked by default so that the functions on the operating table cannot be accidentally activated. It is not possible to control the operating table via the column keypad in this condition. Indicator [i53] does not light up. The operating table can be switched off at any time using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

Releasing the key lock

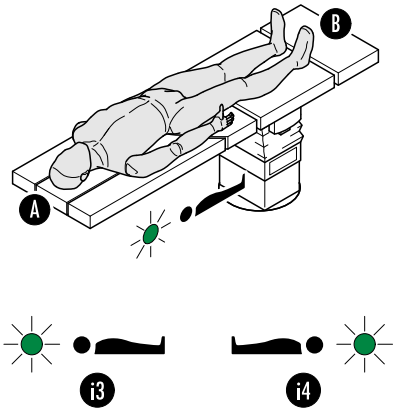
Press key [i53]. Indicator [i53] lights up. The keypad is released for operation. The keypad automatically locks again 10 seconds after the last button operation.

12.2 Selecting the head position

The head position of the patient must always match the display on the column keypad. Certain functions on the operating table are executed according to the head position display. The side specifications (left/right, head/foot) of the functions refer to the operator i.e. when he is at the head of the patient and looks at the patient.



The direction (head/foot side) of the operating tabletop is automatically recognized by the shuttle after the transfer from a shuttle to the operating table column. The head position of the patient corresponds to the relevant display when the patient lies with the head on the head side of the operating tabletop [B].



For certain positions, it is possible to construct the operating tabletop "inversely", i.e. the patient lies on the operating tabletop (with the head on the foot end [A]) and the display [i3] or [i4] on the column keypad does not correspond to the operating table head position of the patient. Some operating table functions (e.g. Trendelenburg, tilting) are then laterally inversed. In such cases, you must manually switch the head position using key [i3] or [i4] according to the position of the patient's head. The appropriate indicator will then be illuminated. After you have changed the head position, table movements will be executed correctly.

12.3 Level position

Travel into the level position (transfer position) means that electrically adjustable movements of the operating table automatically move into the defined starting position.

Movements after selecting the function

- The reverse Trendelenburg or Trendelenburg position is set horizontally.
- The tilt of the operating table column is set horizontally.
- The operating table column without the operating tabletop is moved into the lower lift position (transfer position).
- The operating table column with mounted operating tabletop is moved to the upper lift position (transfer position).
- Motorized hinges of the operating tabletop are set horizontally (depending on the equipment of the operating table).

– The longitudinal slide and transverse slide of the operating tabletop are brought to the starting position (depending on the equipment of the operating table). If the extension adapter is attached to the operating tabletop, the longitudinal travel is not zeroed.

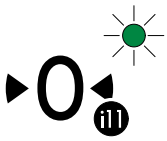
The functions are partially addressed simultaneously or successively.

For a completely level position on the operating table, the mechanical hinges on the operating tabletop must be brought manually to level position.

Setting the function

CAUTION
Risk to the patient due to the tilted position!

When approaching the level position, patient positions may become more skewed than they were in the initial position. Monitor the patient's position and stop the function before a dangerous situation arises.

1. Adjust the spreadable leg sections so that they are not on top of 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 [i11]. You will hear an audible signal when the final level position has been reached. Indicator [i11] on the column keypad lights up.
A warning tone sounds (high-pitched single tone) during the movement, as soon as the leg section hinges are approaching one another on the operating tabletop.
4. The section segments on mechanically adjustable hinges (depending on the equipment of the operating table) must be brought into the level position manually (horizontal position). The line marking on the gearing corresponds to the level position.
5. Move the longitudinal displacement manually into the level position with a mechanical operating tabletop. See operating instructions for the operating tabletop.

12.4 Tilt

In the case of the tilt movement, the operating tabletop tilts to the right or left about its longitudinal axis.

Setting the function

[i9] Tilt left
[i10] Tilt right

Press key [i9] or [i10]. For safety reasons, the tilt function stops automatically at maximum 15°. For any further adjustment, briefly release the function key and then press it again.

Restriction

The tilt adjustment range is also limited for a severe reverse Trendelenburg/Trendelenburg position. If a larger adjustment range is required for the tilt, the reverse Trendelenburg/ Trendelenburg position of the operating tabletop must be reduced.

For safety reasons, the combination of tilt and transverse slide on the operating table is only possible to a limited degree when using certain tabletops. Note operating instructions for the operating tabletop.

12.5 Anti-Trendelenburg/Trendelenburg

The Trendelenburg position tilts the operating tabletop about the transverse axis toward the head end; Reverse Trendelenburg tilts toward the foot end.

Setting the function

CAUTION
Hazard to the patient due to risk of collision!
Risk of entrapment for personnel!

Lowering the operating tabletop can result in collisions with the floor, furniture, or devices located beneath the operating tabletop. Monitor all movements on the operating table up to the end position and stop the function before a dangerous situation arises. Clear the area beneath the operating tabletop, move the tabletop to a higher lift position or raise the corresponding section segments (leg/back section hinges). Then move to the desired reverse/ Trendelenburg position again.

[i7] Trendelenburg
[i8] Reverse Trendelenburg

Press key [i7] or [i8].

Restriction

The reverse Trendelenburg/Trendelenburg position range is also limited for a severe tilt position. If a larger adjustment range is required for the reverse Trendelenburg/Trendelenburg position, the tilt of the operating tabletop must be reduced.

For safety reasons, the combination of reverse/Trendelenburg and transversal shift on the operating table is only possible to a limited degree when using certain tabletops. Note operating instructions for the operating tabletop.

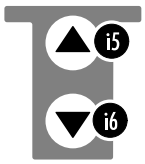
12.6 Lift

The lift function raises or lowers the entire operating tabletop.

Setting the function

CAUTION
Hazard to the patient due to risk of collision!
Risk of entrapment for personnel!

Lowering the operating tabletop can result in collisions with the floor, furniture, or devices located beneath the operating tabletop. Pay particular attention to leg sections that are lowered. Monitor all movements on the operating table up to the end position and stop the function before a dangerous situation arises. Clear the area beneath the tabletop or raise the corresponding section segments (leg/back section hinges). Next, continue moving the operating tabletop downward.



[i5] Lift
[i6] Lower

Press key [i5] or [i6].

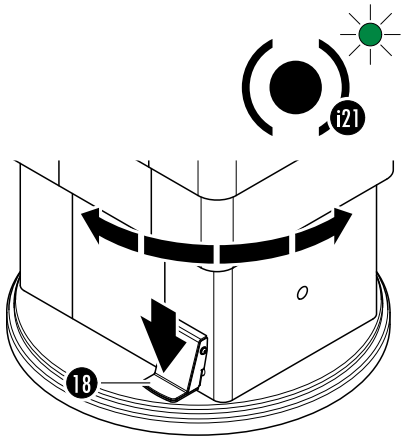
12.7 Rotate fixed installation operating table column

The fixed installation operating table column can be rotated about its own axis as soon as the brake is released. The operating table column without a network connection is 360° freely rotatable and cannot be overrotated. The angle of rotation of an operating table column with a network connection or integration interface is limited by a position stop at 345°. The brake on the operating table column can be released and activated via the foot pedal or the *BRAKE* key.

Rotate operating table column

WARNING
Danger to patient due to uncontrolled movement of the operating table column!

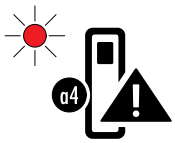
Only release the brake to turn the operating table column. Then immediately lock the brake again.



1. Press key [i21] or use the foot pedal [18]. The brake of the operating table column is released (unlocked). The display [i21] on the column keypad and the status bar on the TruSystem 7500 remote control unit is flashing.
2. Manually rotate the operating table column into the desired position.
3. Press key [i21] or use the foot pedal [18]. The brake of the operating table column is activated (locked) and the position of the operating table column is secured. The display *BRAKE* on the column keypad and the status bar on the TruSystem 7500 remote control unit light up continuously.

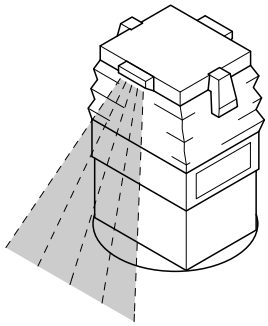
For safety reasons, the brake is automatically activated after a few seconds without pushing the key or using the pedal.

Malfunction



In the event of a malfunction, the display [a4] lights up on the column keypad and an error message appears in the display of the TruSystem 7500 remote control.

12.8 Endolight



There are LED lamps on both sides of the column head, which slightly light up the foot area on the operating table when the operating room is darkened. The lighting is switched on and off via the TruSystem 7500 remote control touch screen.

12.9 Localize wireless TruSystem 7500 remote control

The function helps to locate the wireless remote control when e.g. it is concealed under cloths. Press the key [i44] on the column keypad and the remote control will be visually and acoustically noticeable after 30 seconds at the latest.

12.10 Emergency mode

If there is a defect in the central operating table control system, emergency operation makes it possible to complete the ongoing surgery and remove the patient.

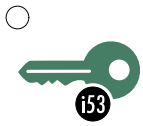
Restriction

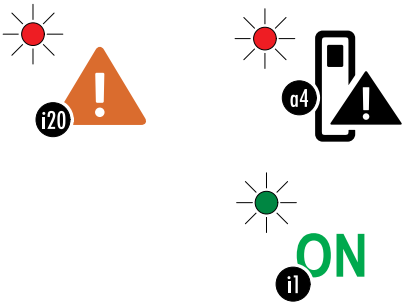
In the emergency mode, the operating table can only be used with limited functions:

- The operating table can only be controlled via the column keypad.
- Transfer must be carried out manually.
- Functions move at a lower speed and a continuous warning tone sounds.
- Leveling is restricted. With the *LEVEL POSITION* function, only the column functions are leveled. The operating tabletop must be set to the level position manually.
- Operating tabletops from the JUPITER system are not supported.

The emergency mode may only be activated in case of error. Finish the surgery in progress and then contact the Technical Customer Service. The defective operating table must be barred from further operations!

Activating the emergency mode





The emergency mode has to 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 sounds and constantly repeats.

   The emergency mode is confirmed by a double tone and is then activated. The displays [i20] and [a4] light up continuously and the display [i1] flashes.

The operating table can be restored to its normal mode of operation by switching it off and then on again.

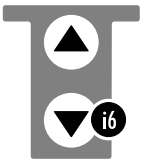
Transfer in emergency mode

In emergency mode, the patient is transferred as follows:

1. Return operating table to level position. If necessary, adjust the functions individually.
2. For shuttle types with tilt and height adjustment, set the level position on the shuttle.
   Transfer is only possible if the mount wedges on the shuttle are horizontal and the shuttle column is in the uppermost position.
3. Carefully move the shuttle up to the position stop of the operating table column. Caution: there is no monitoring in the emergency mode as to whether the shuttle is correctly positioned on the operating table column.
4. **CAUTION**
   Risk of crushing injury to hands!

   Do not get your hands caught between the operating table and the shuttle during the transfer.

   Press the key [i6] (lift down) on the column keypad. The operating tabletop is transferred to the shuttle.



12.11 Further functionalities

The possible functions that can be used on the operating table depend on the operating tabletop used and are described in the operating tabletop instruction manual.

13 Configuration options

The following settings can be configured via the service interface of the operating table:

1. Stop on passing through the level position (activated for all functions by default):
   All electrical adjustment functions of the operating table stop automatically when the level position is reached. For any further adjustment, briefly release the function key and then press it again.
2. Restricted leveling (not active by default):
   With the level position function, the operating tabletop motorized hinges set upward remain in position and are no longer leveled.
3. Interim stop for table tilt, Trendelenburg and longitudinal travel (not activated by default):
   An intermediate stop can be established for the tilting, Trendelenburg, and longitudinal slide functions. The function stops automatically upon reaching the position set individually, and not at the level position. A message appears on the TruSystem 7500 remote control display. For additional adjustment beyond the threshold value, briefly release the function key and press it again. For safety reasons, the tilting intermediate stop cannot be deactivated (intermediate stop at a tilt angle of <15° is possible).
4. Sensor-supported transfer (activated by default):
   Extreme centers of gravity outside the center can prevent the complete insertion of the mount wedges (column) into the wedge receptacles of the operating tabletop. With the help of the sensor-supported transfer, the center of gravity of the operating tabletop is automatically optimized during the transfer, so that the mount wedges are easier to engage.
5. Signal tone volume:
   Signal tone volume can be set individually at the operating table.

The configuration is carried out via the service interface of the operating table (Ethernet connection from the operating table to the PC). The desired option has to be set on-site by the Trumpf Medical Technical Customer Service or the responsible hospital technician.

14 Transfer (shuttle operation)

In order to transport the patient in and out, the operating tabletop can be transported on a shuttle, transferred to the operating table column or removed from the operating table column. Furthermore, the mobile operating table column can be transported on a shuttle with an operating tabletop lying on top (without patient!). Read the user manual of the shuttle used before using a shuttle. Do not transport objects, devices, or materials on the operating tabletop or the shuttle itself.

WARNING
Risk of injury during the transport of the shuttle with the patient lying on it!

The shuttle can cause tipping and serious injuries during transport if the arms or legs are severely spread from the operating tabletop in patients with a severe weight. Accessories and section segments must be folded before transporting the shuttle to the operating tabletop. Reposition the spreadable leg sections parallel to the longitudinal direction of the operating tabletop.

WARNING
Injury to persons due to the magnetic field on movable magnetic parts!

The shuttle is not approved for use in the same room during MR imaging (MR unsafe) Please observe the following points when using the shuttle in an MRI environment:

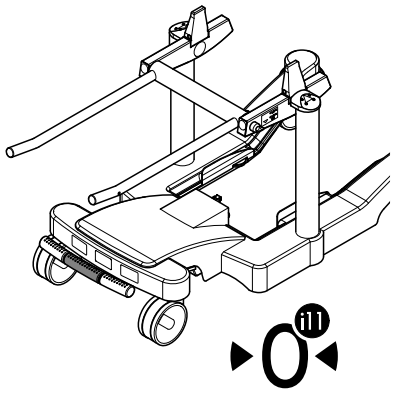
- The shuttle should only be moved into the room to transfer the operating tabletop, then removed from the room immediately.
- When imaging is being prepared, check that the shuttle is outside the room.
- It is essential to follow the safety guidelines of the MR device manufacturer.

Follow chapter 1.4.4 on page 16.

Procedure

The action sequence for change of location is easy and fast. Follow the prescribed procedures, check and carry out responsibly. The shuttle and operating table are coordinated and guarantee a high degree of active safety.

Transfer the shuttle to the operating table column only for transfer. In the case of the mobile hybrid operating table column, the shuttle can only be approached from the side without the terminal box. As soon as the shuttle is at the operating table column, all functions on the operating table are blocked and only the transfer can be carried out.

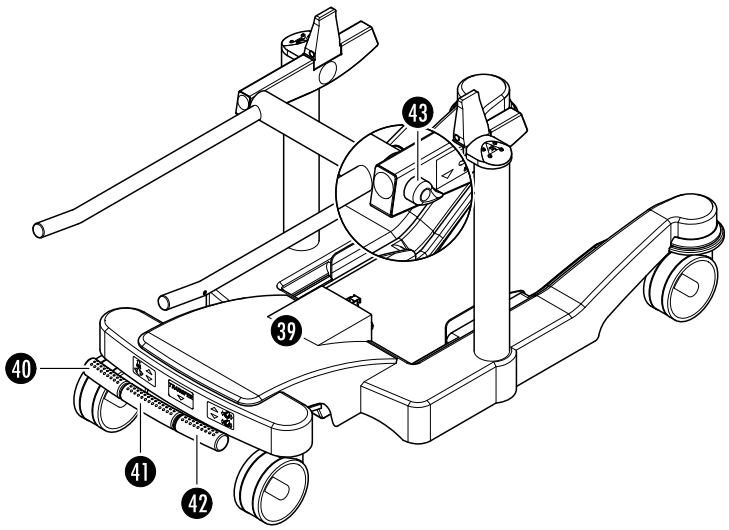


The transfer is made with the center pedal at the shuttle or with the key [i11] (level position) on the remote control. When the transfer is activated via the TruSystem 7500 remote control, a progress display appears in the display. Do not operate the pedal and remote control at the same time. A transfer with the height adjustment from the shuttle is prohibited.

Carry out the transfer to the end position and stop the function before a dangerous situation arises. In an emergency, release the pedal or the key. The process stops. Pressing the middle pedal or the key [i11] (level position) again will continue the process.

The shuttle is easier to drive with a patient lying on it when the wheels are aligned in the direction of travel. In the case of heavy patients and cross-linked wheels, large operating forces are required. Always transfer and transport heavy patients with at least 2 people.

Shuttle overview



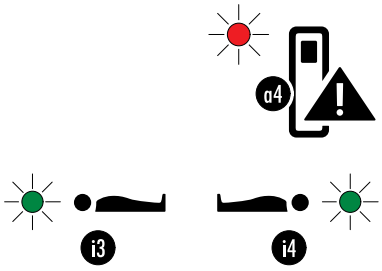
Key:

[39] Shuttle (illustration shows Shuttle 1.6)
[40] Pedal *5. WHEEL*
[41] *TRANSFER* pedal
[42] *BRAKE* pedal
[43] Selection key

14.1 Operating tabletop (without operation table column)

The operating tabletop can be transported with or without a patient on the shuttle.

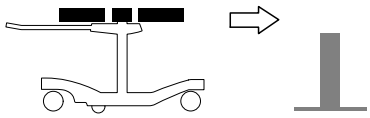
Restriction



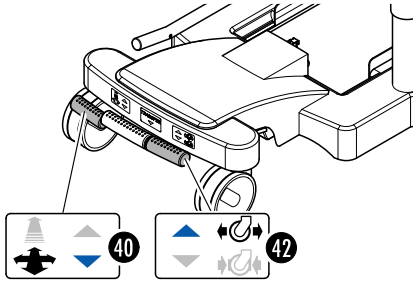
Extreme centers of gravity outside the center can prevent the complete insertion of the mount wedges into the wedge receptacles of the operating tabletop. Therefore, keep the center of gravity of the patient above the mount wedges during transfer. If the mount wedges of the operating table column still do not fully engage, the electromotive functions on the operating table are blocked. The message ►Table Top locked critical. Please lift lower end.◄ appears on the TruSystem 7500 remote control display. There is an error signal tone (shrill triple sound). The display [a4] and both head position displays [i3]/[i4] on the column keypad light up simultaneously. Raise the operating tabletop on the "hanging" side until the wedge sockets engage audibly.

Particularly in the case of heavy patients, pay attention to the central position of the patient (center of gravity above the mount wedges). Otherwise, no transfer can take place!

14.1.1 Transfer from the shuttle to the operating table column

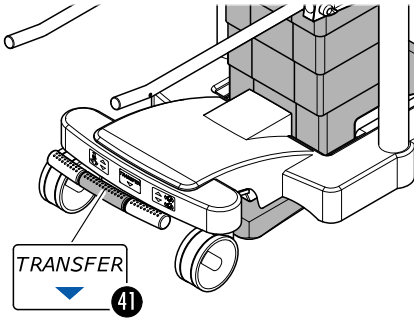


1. For shuttle types with tilt and height adjustment, set the level position on the shuttle.
   Transfer is only possible if the mount wedges on the shuttle are horizontal and the shuttle column is in the uppermost position.
2. Caution: downward sloping section segments can bump into the operating table column when the shuttle is approached. If necessary, place the section segments on the operating tabletop horizontally and move the operating table column downwards.

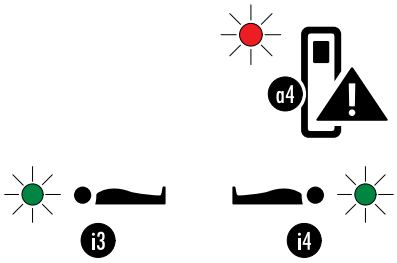


3. On the shuttle, move the left pedal [40] down (freewheel) and the right pedal [42] up (without brake).
4. There can be cables on the floor in the column area. Do not squeeze or crush the cables when the shuttle is approached.
   Move the shuttle up to the position stop of the operating table column. A side wheel on the shuttle running gear ensures the correct position of the shuttle to the column. The wheel must engage behind the column. The transfer sensors are only activated when the shuttle is correctly positioned on the

operating table column. The message ▶Table top shuttle present, transfer mode active◀ appears on the TruSystem 7500 remote control display.



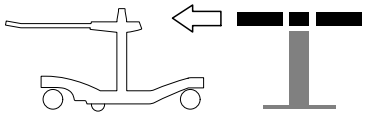
5. Carry out the transfer: Press and hold the center pedal [41] down at the shuttle until the transfer is complete. The transfer can also be made with the key [i11] (level position) on the remote control.
   The operating table column moves into the upper lift position and the operating tabletop is taken over by the column. Ensure that the operating tabletop is correctly taken over from the mount wedges of the operating table column. An acoustic signal indicates the end of the transfer and the message ▶OR Table Top (type) recognized.◀ appears on the TruSystem 7500 remote control display.



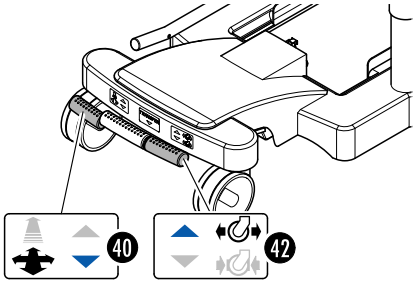
The direction of the operating tabletop (head position) is detected automatically. In exceptional cases, the sensors of the operating table column cannot recognize the tabletop position. The message ▶Table Top Orientation undefined, please select manually◀ appears on the TruSystem 7500 remote control display. The display [a4] and both head position displays [i3]/[i4] on the column keypad light up alternatingly. In this case, you must manually switch the head position according to the position of the patient's head. Press key [i3] or [i4].

6. Drive the shuttle away.

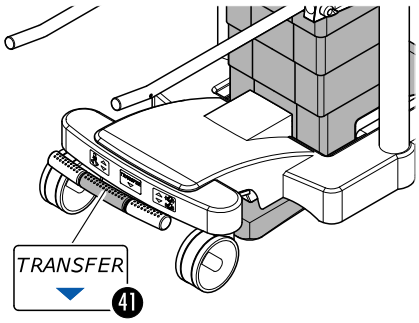
14.1.2 Transfer of the operating table column to the shuttle



1. For shuttle types with tilt and height adjustment, set the level position on the shuttle.
   Transfer is only possible if the mount wedges on the shuttle are horizontal and the shuttle column is in the uppermost position.
2. Caution: the shuttle can bump into the operating tabletop and cannot be fully moved to the operating table column when the section segments are inclined downwards. If necessary, place the section segments on the operating tabletop horizontally and move the operating table column upwards.



3. On the shuttle, move the left pedal [40] down (freewheel) and the right pedal up [42] (without brake).
4. There can be cables on the floor in the column area. Do not squeeze or crush the cables when the shuttle is approached.
   Move the shuttle up to the position stop of the operating table column. A side wheel on the shuttle running gear ensures the correct position of the shuttle to the column. The wheel must engage behind the column. The transfer sensors are only activated when the shuttle is correctly positioned on the operating table column. The message ▸Table top shuttle present, transfer mode active◂ appears on the TruSystem 7500 remote control display.

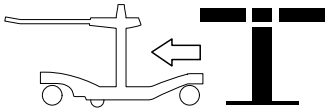


5. Carry out the transfer: Press and hold the center pedal [41] down at the shuttle until the transfer is complete. The transfer can also be made with the key [i11] (level position) on the remote control.
   The operating table column moves to the level position and then to the lower transfer position. The operating tabletop is thus placed on the shuttle. An acoustic signal indicates the end of the transfer and the message ▸OR Table Top removed◂ appears on the TruSystem 7500 remote control display. Ensure that the operating tabletop is correctly taken over from the mount wedges of the shuttle.
   The level position is only achieved if no manual leveling has already been performed.
6. Caution: when using the cable remote control, the plug of the connecting cable must be pulled out of the bushing of the operating table column.
7. Fold or remove the accessories on the operating tabletop. Make the section segments parallel to the longitudinal direction of the operating tabletop (e.g. spreading leg sections).
8. Move shuttle with operating tabletop.

14.2 Mobile operating table

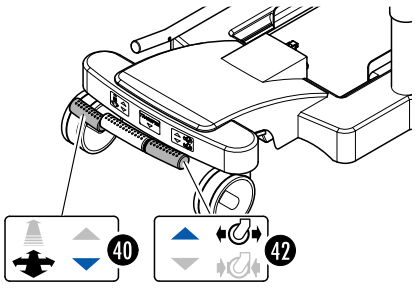
The mobile operating table can be transported with or without a patient on the shuttle. The operating table column without operating tabletop cannot be moved with the shuttle.

14.2.1 Transfer to the shuttle

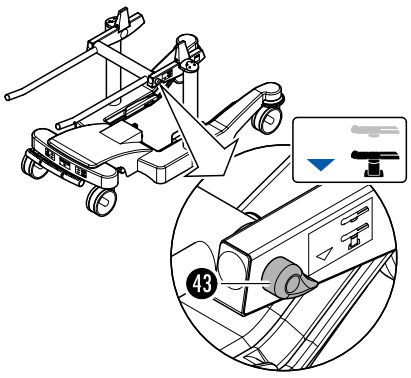


Transfer to the shuttle is only allowed if there is no patient on the operating table.

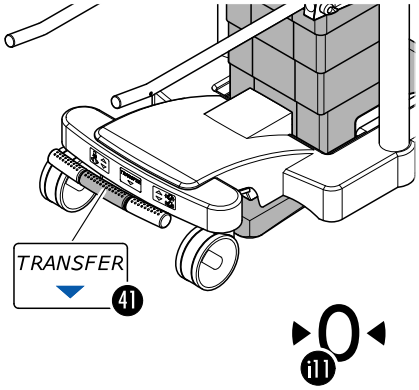
1. For shuttle types with tilt and height adjustment, set the level position on the shuttle.
   Transfer is only possible if the mount wedges on the shuttle are horizontal and the shuttle column is in the uppermost position.
2. Caution: the shuttle can bump into the operating tabletop and cannot be fully moved to the operating table column when the section segments are inclined downwards. If necessary, place the section segments on the operating tabletop horizontally and move the operating table column upwards.



3. On the shuttle, move the left pedal [40] down (freewheel) and the right pedal [42] up (without brake).
4. Disconnect the connecting cables from the operating table column and remove them from the transfer area.



5. Move the shuttle up to the position stop of the operating table column. A side wheel on the shuttle running gear ensures the correct position of the shuttle to the column. The wheel must engage behind the column. The transfer sensors are only activated when the shuttle is correctly positioned on the operating table column. The message ▶Table top shuttle present, transfer mode active◀ appears on the TruSystem 7500 remote control display.
6. Press and hold the selection key [43] down to the position *OPERATING TABLE*.



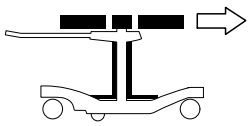
7. Carry out the transfer: Press and hold the center pedal [41] down at the shuttle until the transfer is complete. The transfer can also be made with the key [i11] (level position) on the remote control.

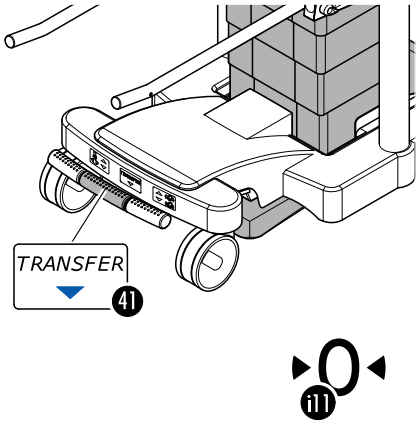
   The operating table column moves to the level position and then downwards until the operating tabletop rests on the shuttle and the column foot lifts off a little from the floor. An acoustic signal indicates the end of the transfer.

   The level position is only achieved if no manual leveling has already been performed.

8. Release the [43] selection key.
9. Drive the shuttle away with the operating table.

14.2.2 Set down operating table





1. Clear the area for the operating table. The operating table may not be placed on cables or objects.
2. **CAUTION**
   Risk of crushing for the feet of personnel!

   The operator can crush his toes under the floor plate of the operating table and seriously injure them. The operator must not be standing under the floor plate while the operating table is being lowered.

   Set down operating table: Press and hold the center pedal [41] down at the shuttle until the transfer is complete. The transfer can also be made with the key [i11] (level position) on the remote control.

   The operating table is placed on the floor and the operating table column moves into the upper transfer position until the operating tabletop is no longer on the shuttle. An acoustic signal indicates the end of the transfer.
3. Drive the shuttle away.

14.3 Changing direction

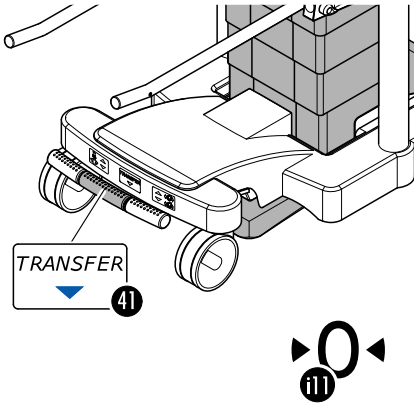
1. Stop the transfer. Release the pedal or the key for this.
2. Briefly press any key on the column keypad or the remote control.
   The change in movement direction is confirmed by an audible signal.
3. Press the center pedal at the shuttle or with the key [i11] (level position) on the remote control again. The movement takes place in the opposite direction.

14.4 Emergency transfer

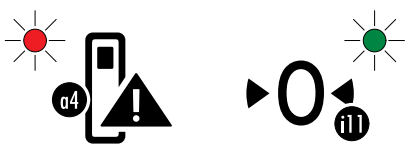
When the operating tabletop is transferred from the operating table column to a shuttle, the operating table is first moved to the level position. In the case of a defective operating table drive, leveling cannot be carried out completely and the transfer stops. For such a case, an emergency transfer function has been integrated into the operating table control. After the transfer has been activated, the leveling stops in case of a defective operating table drive. Release the center pedal at the shuttle or with the key on the remote control. The message ▶Leveling incomplete because of [defect drive] Press LEVEL button to continue.◀ appears on the TruSystem 7500 remote control display.

To resume the transfer, proceed as follows:

Caution: the transfer/emergency transfer is not possible in the case of a defective lift drive.



1. Press and hold the center pedal [41] at the shuttle or the key [i11] on the remote control. The remaining drives are in the level position.



2. You will hear an audible signal to indicate the incorrect end position of the level position. The message ▶Leveling incomplete.◀ appears on the TruSystem 7500 remote control display and the indicator *LEVEL POSITION* lights up orange in the status bar. Release pedal or key. Display [i11] on the column keypad and the display [a4] light up.

3. The message ▶Request emergency transfer, with LEVEL button or pedal.◀ appears on the TruSystem 7500 remote control display.

   Activate the emergency transfer using the center pedal [41] at the shuttle or with the key [i11] (level position) on the remote control, **press for 5 seconds** and then release again.

4. 

   CAUTION
   Risk of material damage due to collisions!

   Section segments on defective hinges can be down and collide with the shuttle during transfer. Monitor the transfer and prevent collisions by terminating the function. If necessary, transfer from the other side of the column. To do this, move the shuttle from the other side to the operating table column and restart the process.

   Press and hold the center pedal [41] at the shuttle or the key [i11] on the remote control (level position) again. The message ▶Emergency transfer active. Check for collision.◀ appears on the TruSystem 7500 remote control display. The emergency transfer is carried out (half speed) and a continuous shrill warning sound can be heard.

   The emergency transfer is terminated when the operating table column is in the lowest transfer position and the signal no longer sounds.

5. Drive the shuttle away.

15 Care, cleaning and disinfection

15.1 Operating table column

CAUTION
Risk of physical injury!

Disconnect the operating table from the external power supply before performing any maintenance work or cleaning. Ensure that no motorized movements are possible!

CAUTION
Risk of material damage due to incorrect product maintenance!

- 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!
  For product care in general, do not use any cleaners or disinfectants that are abrasive or that contain halogens or peracetic acid. Furthermore, do not use any (flammable) cleaners or disinfectants that contain alcohol or solvents on plastic parts and pads.

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

Clean soiled products immediately! Cleaning/disinfecting is limited to regularly wiping down (not submersing) equipment with suitable substances.

CAUTION
Risk of injury to persons from products with standard and FoamLine pads!

Use of the incorrect care products may remove the anti-static properties of the pads in accordance with IEC 60601-1 (DIN EN 60601-1). Use the specified cleaning agents and disinfectants only.

To clean stainless steel and plastic components, use a pH-neutral or mildly alkaline all-purpose cleaner that contains surfactants as the active cleaning ingredients. If heavily soiled, use a concentrated cleaner and then rinse with clean water.

To clean the operating table column, transfer the operating tabletop from the column to a shuttle. Then, move the column with the *LIFT UP* key on the column keypad and wipe it with a damp cloth. In this

position, the sheet metal casing and the bellows of the column can be pulled apart and are easy to clean. After cleaning, the column should be lowered again (key *LEVEL POSITION)* so that the shuttle can be approached without collision.

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 manufacturer's instructions when using a disinfectant!

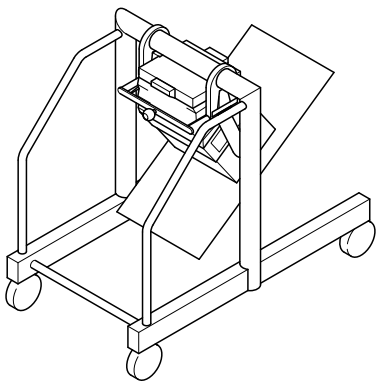
After cleaning and disinfecting, remove any excess moisture, such as drops at the bottom edge, using a dry cloth.

Remove the pad to clean the pad plate and the underside of the pad. Attach the cleaned and disinfected pad to the product using dry Velcro straps only.

15.2 External power supply unit

The power supply unit is located outside the operating room (e.g. installed in the control cabinet). The power supply unit does not have to be cleaned or disinfected. Do not allow the power supply unit to come into contact with liquids.

15.3 Cleaning shuttle

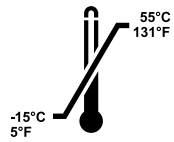
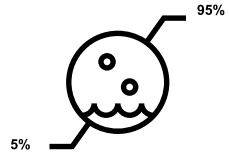
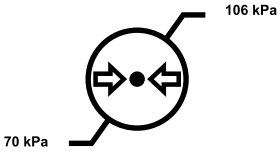
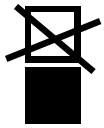


With the cleaning shuttle, the floor plate of the mobile operating table column is raised so that the underside of the floor plate can be cleaned. Note the instructions for use of the cleaning shuttle. The cleaning shuttle 2.01 with the material number 1536993 is approved.

16 Technical data

16.1 Conditions for 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	-15 °C to +55 °C 5 °F to 131 °F
	Air humidity for storage and transport	5 % to 95 %
	Air pressure for storage and transport	700 mbar to 1060 mbar 70 kPa to 106 kPa
	Keep dry	
	Do not stack	
	Fragile contents	
	Top	

16.2 Conditions for operation

Temperature	+10 °C to +40 °C
Air humidity	20 % to 80 %
Air pressure	min. 700 mbar to 1060 mbar

16.3 Operating table column

Mobile operating table column		
Date of manufacture		See device label on the product
Column diameter (length x width)		372 mm x 311 mm
Floor plate (length x width x height)		916 mm x 527 mm x 25 mm
Height		510 mm to 1,060 mm
Weight		170 kg
Internal power supply (I.P.S)		I. P. S, 2 rechargeable batteries, 40.7 V each 4.7 Ah
External power supply		100 V–230 V ~, 50 Hz/60 Hz 240 V ~, 50 Hz
Length of mains power cable		3 m
Power consumption		max. 700 VA
Maximum operating table load		400 kg (depending on the operating table equipment and patient weight)
Fixed installation operating table column		
Date of manufacture		See device label on the product
Column diameter (length x width)		372 mm x 311 mm
Diameter of PSS base	Floor mounting	500 mm
	Floor structure	430 mm
PSS base height	Floor structure	35 mm
Height	Floor mounting	490mm to 1,040mm
	Floor structure	520mm to 1,070mm
Weight	Floor mounting	150 kg
	Floor structure	140 kg
Internal power supply (I.P.S) Hybrid MR (see chapter16.4 on page 78).		I. P. S, 1 rechargeable batteries, 40.7 V 4.7 Ah
External power supply Hybrid MR (see chapter16.4 on page 78).		100 V–230 V ~, 50 Hz/60 Hz 240 V ~, 50 Hz
Power consumption		max. 700 VA
Maximum operating table load		400 kg (depending on the operating table equipment and patient weight)

Radio transmission, operating table column	Transmission frequency band	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

Setting ranges		
Lift	550 mm	
Reverse Trendelenburg/Trendelenburg (inclination about the transverse axis)	45°/45°	
Tile (inclination about the longitudinal axis)	30° to the left / 30° to the right	
Rotation of the fixed installation operating table column	SF, SF U	Freely rotatable 360°
	All variants, SB and Hybrid	350°

Classification	
Operating table protection classification	I Device with internal power supply I.P.S (not for operating table column TruSystem 7500 Hybrid MR)
Level of protection against electrical shock for the entire operating table	Applied part type B Patient leakage current in accordance with CF in compliance with IEC 60601-1
Degree of protection from water penetration	IP X4
Operating mode	Continuous operation with intermittent load 2 min ON, 8 min OFF

16.4 External power supply unit

Measurements (width x height x depth)	315 mm x 395 mm x 130 mm
Weight	12 kg
Primary connection values	100 V–230 V ~, 50 Hz/60 Hz 240 V ~, 50 Hz
Secondary connection values	41 V DC maximum 15 A in network operation 35...45 V DC maximum 7.5 A in battery operation
Battery	2 rechargeable batteries, 40.7 V 4.7 Ah
Degree of protection from water penetration	IP 20

16.5 Cables

Only connect the following cables to the medical device:

- Power cable, length 3 m
- Cable for the remote control, coiled, block length 0.77 yd (0.55 m) and extended length 3.3 yd (2 m)
  The cable is permanently connected to the remote control 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, 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.

17 Troubleshooting

Error	Possible cause	Correction
No function when pressing a key	Operating table not switched on	Press the *ON* key on the column keypad.
Operating table cannot be switched on	Operating table discharged	Operate and charge operating table with mains power cable
No function on column keypad	Key lock is active	Release the keyboard or use a two-key control (Press the *ON* key and simultaneously press the desired function on the column keypad)
No movement when key is pressed, instead an audible error signal sounds	Function is either not possible or not permitted at that time	–
No function when pressing a key, *BATTERY STATUS* indicator on the column keypad flashes	Operating table discharged	Operate and charge operating table with mains power cable
Operating table cannot be charged, *BATTERY STATUS* indicator does not flash	Either the control electronics, mains power cable or input fuse (2 x 10 AT) is defective	Contact Technical Customer Service
Operating table cannot be run on line power, *EXTERNAL POWER SUPPLY* indicator does not illuminate	The mains power supply cable is defective	Contact Technical Customer Service
Operating table cannot be charged, *EXTERNAL POWER SUPPLY* indicator does not illuminate	Mains input on the operating table is defective	Contact Technical Customer Service
Operating table cannot be charged, *BATTERY STATUS* indicator on the column keypad flashes	The operating table column or the battery is defective	Contact Technical Customer Service
The battery in the power supply unit cannot be charged, *BATTERY STATUS* display on the power supply unit is flashing	Power supply unit or the battery is defective	Contact Technical Customer Service
(Reverse) Trendelenburg position cannot be fully attained	The tilt angle setting is too high	Reduce the tilt
Tilt position cannot be fully attained	The (reverse) Trendelenburg angle setting is too high	Reduce the (reverse) Trendelenburg setting
Leg sections cannot be adjusted far enough down	Longitudinal travel too far toward the head end	Adjust longitudinal travel toward the foot end

Error	Possible cause	Correction
Back section cannot be adjusted far enough down	Longitudinal travel too far toward the foot end	Adjust longitudinal travel toward the head end
Acoustic signal during leveling, when leg sections move together	Possible risk of collision (signal is warning)	OK (not an error)
Transfer of the operating tabletop from the operating table column to a shuttle is not possible	Drive defective	Prepare the emergency transfer (see chapter14.4 on page71).
Failure of all operating table functions	Central operating table control is defective	Activate emergency mode (see chapter12.7 on page59).

18 Maintenance and repair

Repairs 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.
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 maintenance, or of modifications to the product.

Please contact the Technical Customer Service at Trumpf Medical if you require service.

Phone	+49 3671 586-41911
Fax	+49 3671 586-41175
E-mail	service.wwo@trumpfmedical.com

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. Service work performed by the Technical Customer Service at Trumpf Medical ensures that the operating table will provide you with many years of reliable service.

19 Decommissioning

19.1 Mobile operating table

If the appliance is not used for more than 3 months, switch off the operating table and charge it regularly:

1. Disconnect the operating table from the mains (see page 44).
2. Press key [i2] on the column keypad or remote control for more than 2 seconds. An audible signal sounds shortly before shutdown.
3. Charge the operating table every 3 months (see page 45), to preserve battery life.

19.2 Fixed installation operating table

19.2.1 Operating table column with internal power supply

If the appliance is not used for more than 3 months, switch off the operating table and charge it regularly:

1. Disconnect the operating table from the power supply (on/off switch, e.g. on the operating panel).
2. Press key [i2] on the column keypad or remote control for more than 2 seconds. An audible signal sounds shortly before shutdown.
3. Charge the operating table every 3 months. Establish an external power supply connection for the operating table (on/off switch, e.g. on the operating panel).
   Follow the charging cycle! If a charging cycle is longer than 3 months, the battery may totally discharge and then no longer be able to charge.

19.2.2 Operating table column without an internal power supply

If the appliance is not used for more than 3 months, switch off the operating table, disconnect the external power supply unit from the power supply and charge it regularly:

1. Press key [i2] on the column keypad or remote control for more than 2 seconds. An audible signal sounds shortly before shutdown.
2. Disconnect the external power supply unit from the power supply (on/off switch, e.g. on the operating panel). The power supply unit is still in the battery drive until the batteries are depleted.

3. Charge the external power supply unit every 3 months (see page 45). Establish an external power supply connection for the power supply unit (on/off switch, e.g. on the operating panel).
   Follow the charging cycle! If a charging cycle is longer than 3 months, the battery may totally discharge and then no longer be able to charge.

20 Disposal

The operating table, accessories and packaging must be recycled in an environmentally responsible manner. Disposal, including that of individual parts, must be environmentally responsible, i.e., in accordance with the legal regulations currently in force!
For information on proper disposal of old equipment, please contact either the Technical 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 Service in Saalfeld for more information.

When the operating table is decommissioned, the Li-ion rechargeable batteries must be removed from the operating table column 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: the returns must be declared as hazardous materials of class 9/UN3480! Trumpf Medical shall arrange for the environmentally responsible disposal of the batteries.

21 EMC notes

Table 1 according to IEC 60601-1-2:2007		
Guidelines and manufacturer's declaration - electromagnetic interference		
The TruSystem 7500 operating table is intended for use in electromagnetic 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**
HF emissions in accordance with CISPR 11	Group 1	The TruSystem 7500 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 affected by interference.
HF emissions in accordance with CISPR 11	Class A	The TruSystem 7500 operating table is suitable for use in non-domestic establishments 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	Not applicable	
Voltage fluctuation/flicker emissions in accordance with IEC 61000-3-3	Not applicable	

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.

The operating table may only be operated with the cables supplied with the product. The use of cables other than those specified may result in an increased transmission or reduced interference immunity of the TruSystem 7500 operating table.

Table 2 according to IEC 60601-1-2:2007			
Guidelines and manufacturer's declaration - electromagnetic immunity			
The TruSystem 7500 operating table is intended for use in the electromagnetic 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 contact discharge ±8 kV air discharge	±6 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 %.
Fast transient electrical disturbance variables/ burst in accordance with IEC 61000-4-4	± 2 kV for mains power cables ±1 kV for input and output cables	± 2 kV for mains power 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 voltage outer-conductor/outer-conductor ±2 kV voltage outer-conductor/earth	±1 kV voltage outer-conductor/outer-conductor ±2 kV voltage outer-conductor/earth	The power supply quality should correspond to that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines pursuant to IEC 61000-4-11	<5 % U_T (>95 % decline of U_T) for ½ period	<5 % U_T (>95 % decline of U_T) for ½ period	The supply voltage quality should correspond to that in a typical business or hospital environment. If the user of the TruSystem 7500 operating table requires continued operation during interruptions in power supply, then it is recommended that the TruSystem 7500 operating table be connected to an uninterruptible power supply or a battery.
	40 % U_T (60 % decline of U_T) for 5 periods	40 % U_T (60 % decline of U_T) for 5 periods	
	70 % U_T (30 % decline of U_T) for 25 periods	70 % U_T (30 % decline of U_T) for 25 periods	
	<5 % U_T (>95 % decline of U_T) for 5 s	<5 % U_T (>95 % decline of U_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	Magnetic fields for the network frequency should comply with values commonly found in commercial and hospital environments.
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 7500 operating table is intended for use in the electromagnetic 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**
			Portable and mobile RF communications equipment should not be used in the vicinity of the TruSystem 7500 operating table, including cables, nor closer than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended safe distance:**
Conducted HF disturbance variables as per IEC 61000-4-6	3 V_{eff} 150 kHz to 80 MHz	3 V_{eff}	$d=1.17\sqrt{P}$
Radiated HF disturbance variables 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 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). 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] Interference may occur in the vicinity of equipment marked with the following symbol: 
Note 1	For 80 MHz and 800 MHz, the higher value applies.		
Note 2	These guidelines might not be applicable in all cases. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.		
a	Field strengths from fixed transmitters, such as base stations of radio telephones and mobile radios, amateur radio stations, AM and FM radio and television transmitters cannot theoretically be precisely determined in advance. 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 7500 operating table should be observed to verify normal operation. Additional measures may be required such as e.g. reorienting or relocating the TruSystem 7500 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 telecommunication devices and the TruSystem 7500 operating table			
The TruSystem 7500 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**	**Safe distance 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.		

22 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.

23 Radio license

Information on radio license is included in the instruction manual for the radio module (document 4990136).

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