

**HyBase V6**

**Operating Table**

**Operator's Manual**



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Revision: 4.0

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## **WARNING**

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- **Federal Law (USA) restricts this device to sale by or on the order of a physician or other practitioner licensed by U.S. state law to use or order the use of this device.**
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- all installation operations, expansions, changes, modifications and repairs of this product are conducted by Mindray authorized personnel;
- the electrical installation of the relevant room complies with the applicable national and local requirements;
- the product is used in accordance with the instructions for use.

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## WARNING

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- **This equipment must be operated by skilled/trained clinical professionals.**
  - **It is important for the hospital or organization that employs this equipment to carry out a reasonable service/maintenance plan. Neglect of this may result in machine breakdown or personal injury.**
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## Service

Mindray maintains a network of service representatives and factory-trained distributors. Prior to requesting service, perform a complete operational check of the instrument to verify proper control settings. If operational problems continue to exist, contact Mindray service.

In North America contact the Service Department at (800) 288-2121, ext: 8116 for Technical Support or (201) 995-8000 for assistance in determining the nearest field service location.

Please include the instrument model number, the serial number, and a description of the problem with all requests for service.

Any questions regarding the warranty should be directed to the local sales or service representative.

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# Preface

## Manual Purpose

This manual contains the instructions necessary to operate the product safely and in accordance with its function and intended use. Observance of this manual is a prerequisite for proper product performance and correct operation and ensures patient and operator safety.

This manual is based on the maximum configuration and therefore some contents may not apply to your product. If you have any question, please contact us.

This manual is an integral part of the product. It should always be kept close to the equipment so that it can be obtained conveniently when needed.

## Intended Audience

This manual is geared for clinical professionals who are expected to perform daily operations of the product, maintain and troubleshoot the product and learn how to use the product.

## Illustrations

All illustrations in this manual serve as examples only. They may not necessarily reflect the setup or data displayed on your equipment.

## Conventions

- ***Italic text*** is used in this manual to quote the referenced chapters or sections.
- **Bold text** is used to indicate the screen texts.
- → is used to indicate operational procedures.

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# 1 Safety

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## 1.1 Safety Information

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### WARNING

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- Indicates a potential hazard or unsafe practice that, if not avoided, could result in death or serious injury.
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### CAUTION

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- Indicates a potential hazard or unsafe practice that, if not avoided, could result in minor personal injury or product/property damage.
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### NOTE

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- Provides application tips or other useful information to ensure that you get the most from your product.
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### 1.1.1 Warning

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#### WARNING

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- The equipment is to be used for its intended purposes only. Do not use it for other purposes.
  - The equipment is to be installed by personnel authorized by Mindray only.
  - The equipment is to be operated by trained personnel only.
  - Before using the equipment, be sure to read and fully understand this manual.
  - Keep this manual in the vicinity of the equipment so that it can be obtained conveniently when needed.
  - Ensure the ground is flat and level before installing or using the operating table.
  - Route, wrap and secure the cables to avoid inadvertent disconnection, stumbling and entanglement.
  - Loosely laid cables may cause stumbling. Fix the cables reliably when laying them.
-

- The overall load of this operating table is 460kg (1015lbs.) in normal patient orientation. Be sure to take those conditions into consideration when using the operating table. Otherwise, personal injury or device damage may occur.
- The overall load of this operating table is 250kg (550lbs.) in reverse patient orientation. Be sure to take those conditions into consideration when using the operating table. Otherwise, personal injury or device damage may occur.
- If accessories are used, ensure the weights of the accessories installed on the operating table and of the patient add up no more than 460kg (1015lbs.) in normal patient orientation or 250kg (550lbs.) in reverse patient orientation.
- The overall load of this operating table is 460kg (1015lbs.) (250kg (550lbs.) in reverse patient orientation). However, in case of certain special conditions, the load capacity is further limited. Be sure to take those conditions into consideration when using the operating table. Otherwise, personal injury or device damage may occur. If you have any questions, contact the customer service department authorized by Mindray or your local distributor.
- Transferring the patient inappropriately may tip over the operating table. Be sure to transfer the patient from either side of the operating table. Do not transfer the patient from either the head or the foot end.
- Be sure to transfer or position the patient under medical staff's direction.
- Before positioning the patient, ensure the patient's body width is no greater than the width of the table top. Neglect of this may cause personal injury. Positioning the patient improperly may tip over the operating table. Be sure to place the patient in the right direction. Do not place the patient's trunk on the one-section leg plate.
- When placing the patient, ensure the patient's center of gravity is as close to the column as possible. Otherwise, the operating table may tip over.
- Improper positioning may damage the patient, especially in case of excessive tilted or sloped position. Ensure the patient is properly positioned and check if the position deviates at any moment when using the operating table.
- Ensure the patient is properly positioned and keep a close eye on the patient during the whole surgery to avoid damaging the patient's respiratory system, nervous system or circulating system.
- Before positioning the patient, ensure the castors are properly locked.
- Do not use such devices as cell phones, radio equipment and MR equipment around the operating table.
- The operating table cannot be used in the presence of a flammable anesthetic mixture with air or with oxygen or with nitrous oxide.
- To avoid explosion hazard, do not use the equipment in the presence of oxygen-rich atmospheres, flammable anesthetics, or other flammable agents.

- **Use and store the equipment within the specified temperature, humidity, and altitude ranges.**
- **Before putting the equipment into operation, the user must verify that the equipment, connecting cables and accessories are in correct working order and operating condition.**
- **If the integrity of the external protective conductor in the installation or its arrangement is in doubt, run the operating table from its internal batteries.**
- **Do not touch the patient and live parts simultaneously. Otherwise, patient injury may occur.**
- **To avoid infection, be sure to cover the table-top pad with a sterile surgical drape before using the operating table.**
- **Do not use wet surgical drapes on the operating table.**
- **Each time before using the operating table, be sure to select the proper function keys according to the patient orientation. Otherwise, personal injury may occur.**
- **Be sure to secure the patient before moving or adjusting the operating table when a patient lying on the operating table.**
- **When lowering the table top, ensure that there are neither the operator's feet nor any objects on the base (underneath the column). Otherwise, the operator may be pinched or the equipment may be damaged.**
- **Before lowering the table top, ensure that there are neither the operator's feet nor any objects underneath the column.**
- **Before locking the operating table, ensure that there are neither the operator's feet nor any objects underneath the base. Otherwise, personal injury may occur.**
- **Before unlocking the castors, grasp the operating table to avoid unexpected movement.**
- **Before moving the mobile operating table, ensure that the operating table is not bent and the longitudinal shift is cancelled.**
- **The speed of table-top movement can change depending on the patient's weight. Closely watch the table top during adjustment.**
- **If the patient weight exceeds 250kg (550lbs.), do not slope the table top by more than 15° and do not tilt the table top to the left or right by more than 5°. Do not adjust the back plate up by more than 70° and down more than 10°. Otherwise, the patient may slip off the table and cause injury.**
- **Ensure the patient is properly secured especially in case of excessive tilted or sloped position when adjusting the operating table or patient position. Otherwise, personal injury or device damage may occur.**
- **If the longitudinal shift is operated when using an x-ray, be sure to restore the operating table to 0 position before the surgery.**

- Be sure to observe the joints when adjusting the head plate, back plate and one-section leg plate. Otherwise, the patient or medical staff may be pinched.
- Be sure to observe the positions of the operating table, accessories, patient and other objects when adjusting or moving the operating table to avoid personal injury or device damage resulting from collision.
- When using such medical devices as electrosurgical units, defibrillators or defibrillator monitors, be sure to keep the patient from touching the metallic parts of the operating table or of the accessories. Moreover, ensure the patient is not lying on a wet surgical drape or a conductive pad. Otherwise, the patient may be burned.
- Devices connected to the equipment must meet the requirements of the applicable IEC standards (e.g. IEC 62368-1 safety standards for audio/video, information and communication technology equipment and IEC 60601-1 safety standards for medical electrical equipment). The system configuration must meet the requirements of the IEC 60601-1 medical electrical systems standard. Any personnel who connect devices to the equipment's signal input/output port are responsible for providing evidence that the safety certification of the devices has been performed in accordance to the IEC 60601-1. If you have any questions, please contact Mindray.
- Make sure the electrical installation of building complies with the requirements of IEC 60364-7-710.
- Be sure to operate the equipment as instructed in this manual. Warranty does not cover damage caused by non-compliance.
- Device service or maintenance should be completed by the authorized personnel only. Warranty does not cover damage caused by unapproved service or maintenance.
- The operating table can function safely and effectively only if it is maintained properly and regularly. Be sure to maintain the operating table as instructed in this manual.
- Be sure to only use accessories made by Mindray on the operating table. Accessories produced by other manufacturers must not be used as they may cause personal injury. If accessories of other manufacturers must be used, their use should be expressly permitted by Mindray.
- Before using accessories, be sure to read the operator's manual thoroughly.
- Be sure to use the pad provided by Mindray only. Otherwise, personal injury or device damage may occur.
- Disconnect the operating table from the mains power before opening the housing.
- No modification of this device is allowed.
- Do not use agents containing alcohol where high-frequency equipment is being used. Neglect of this may cause fire hazard.

- **There may be a risk of infection if the operating table is under the complicated and changeable medical conditions. Follow the hospital requirements and refer to “Cleaning and Disinfection” chapter to clean/disinfect the operating table.**
- **The software was developed in compliance with IEC 62304. The possibility of hazards arising from software errors is minimized.**
- **The equipment software copyright is solely owned by Mindray. No organization or individual shall resort to modifying, copying, or exchanging it or to any other infringement on it in any form or by any means without due permission.**
- **At the end of its service life, the equipment, as well as its accessories, must be disposed of in compliance with the local regulations. If you have any questions concerning disposal of the equipment, please contact Mindray.**
- **For disposal of parts and accessories, unless otherwise specified, follow local regulations regarding disposal of hospital waste.**
- **Inspect and replace the battery at regular service intervals. If you have any questions, please contact Mindray.**
- **Dispose of the package material as per the applicable waste control regulations. Keep it out of children’s reach.**
- **Make sure that the power cord and the cables of accessories are not clamped, pressed or damaged.**
- **Ensure the operating table is in 0 position and properly locked before transferring patients to or from table.**
- **Ensure the operating table is in 0 position before chest compressions.**
- **Patients during surgery should be monitored by qualified medical staff to avoid all possible patient positioning hazards.**
- **Ensure the patient is properly secured with the patient safety straps at all times.**
- **When installing any table accessory, check for correct attachment and tighten securely (if appropriate). Ensure all accessories are properly reliably installed before using. Do not use a worn or damaged accessory.**
- **After moving the operating table, ensure the castors are properly locked.**
- **Do not put any object on the operating table base. Neglect of this may cause equipment damage (such as column damage).**
- **Ensure the patient is properly secured before moving or adjusting the operating table.**
- **The operating table cannot be used to transport patients.**
- **Inspect the corded hand control for signs of damage or abuse (such as frayed cable, cracked housing) before each use.**

- When using the foot pump to operate back plate down, be sure to observe the positions of the one-section leg plate and the table top to avoid personal injury or device damage resulting from collision.
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## 1.1.2 Caution

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### CAUTION

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- Exercise caution when transporting or moving the equipment. Do not damage it during transportation or movement.
- Always install or carry the equipment or accessories properly to avoid damage caused by drop, impact, strong vibration or other mechanical force.
- Before moving the operating table, ensure the path is clear. Do not damage the castors or other parts.
- When moving the operating table, ensure there is not any object on the table top.
- When moving the operating table, be sure to use both hands to adjust/control the movement. Keep the operating table from colliding with other things.
- If the table top has descended to a low position, exercise caution when adjusting the table top. Keep the table top from colliding with the base or the ground.
- If the head/one-section leg plate has been positioned downward, exercise caution when adjusting the table top. Keep the head/one-section leg plate from colliding with the base or the ground.
- When sloping the table top or adjusting the one-section leg plate, ensure they do not collide with the column or the base.
- Do not put any object on the operating table base. Neglect of this may cause equipment damage.
- When adjusting the table top, ensure the cord of the corded hand control is not jammed by the joints.
- Be sure to lock the operating table and adjust the table top to 0 position when it is not in use.
- When adjusting the operating table, ensure the suspended parts (such as the one-section leg plate, arm boards) do not collide with other things inside the operating room.
- When adjusting the operating table, ensure the accessories or the surgical drapes are not jammed by the joints. Otherwise, equipment damage may occur.
- Check the screws for components and parts regularly to prevent them falling off.



- Be sure to use spare parts supplied by Mindray only.
  - Connector pins with an ESD warning symbol should not be touched and no connections should be made between these connectors without implementing ESD protective measures. Such precautionary procedures may include antistatic clothing and shoes, the touch of a ground stud before and during connecting the pins or the use of electrically isolating and anti-static gloves. All staff involved in the above shall receive instruction in these ESD precautionary procedures.
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### 1.1.3

#### Note

















#### NOTE




















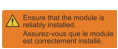

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- Contents of this manual are based on the full configuration of the operating table. Some of them may not apply to your operating table. Use your operating table according to the actual configuration. If you have any questions, contact the customer service department authorized by Mindray or your local distributor.
-

# 1.2 Equipment Symbols

Some symbols may not appear on your equipment.

Symbol	Description	Symbol	Description
 (Blue)	Refer to instruction manual/booklet		Caution
	Unique Device Identification		Class II equipment
	Protective earth (ground)		Equipotentiality
<b>IPX5</b>	Protection against water jets	<b>IPX8</b>	Protection against the effects of continuous immersion in water
	Body elevator		Body elevator
	On/Off	 (Yellow)	General warning sign
 (Red)	No sitting		Serial number
	Catalogue number		Alternating current
	Direct current		Anti-static

Symbol	Description	Symbol	Description
	Date of manufacture		Manufacturer
	This way up		Keep dry
	Fragile, handle with care		Stacking limit by number
	Stacking limit by mass		Temperature limit
	Humidity limitation		Atmospheric pressure limitation
	Recovery/recyclable		Non-ionizing electromagnetic radiation
	Type B applied part		Separate collection for electrical and electronic equipment
 (Red)	MR Unsafe (magnetic resonance)	<b>Rx Only</b>	Federal Law (USA) restricts this device to sale by or on the order of a physician or other practitioner licensed by U.S. state law to use or order the use of this device.
	NRTL certification mark		Label for weight limit
	Label for pinch point		Warning label for replacement
	Warning label for module installation		Warning label

Symbol	Description	Symbol	Description
	Warning label		

## 1.3 Pinching Hazard

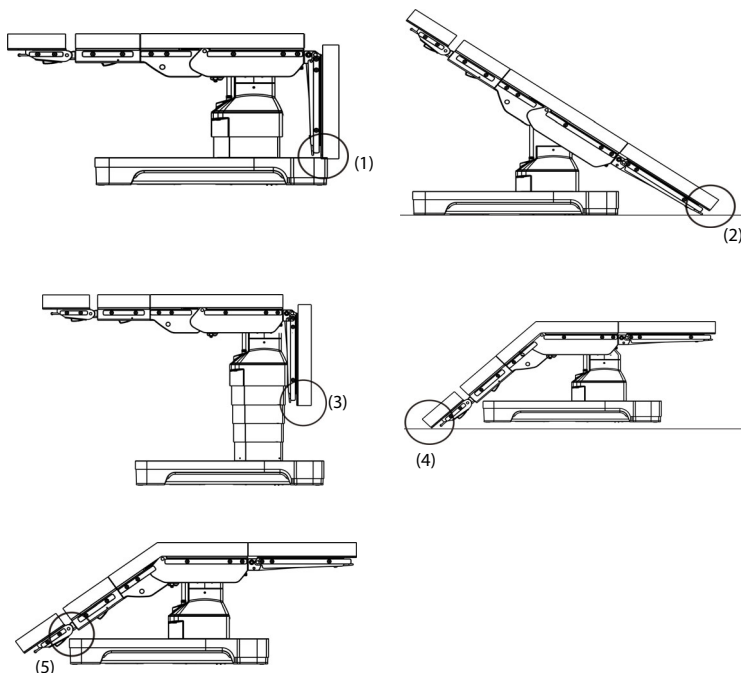
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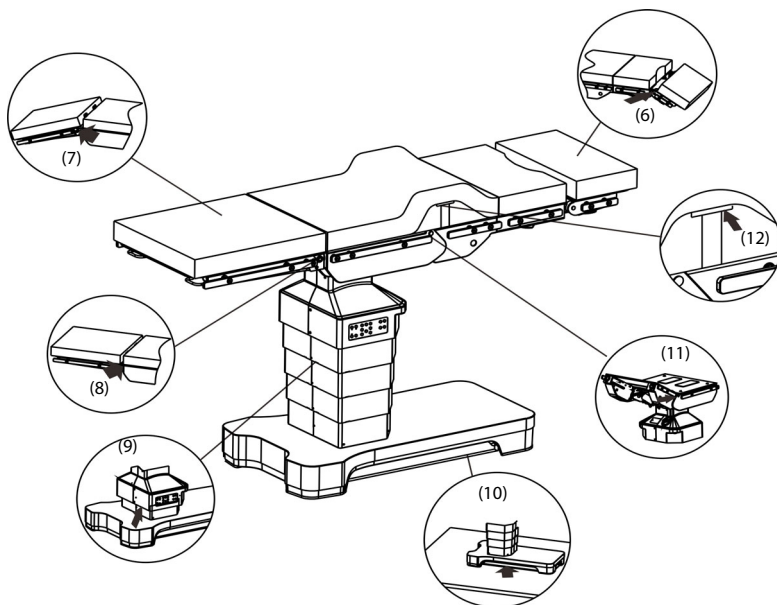
### WARNING

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- Pinch points are created during extreme tabletop articulation. To avoid serious injury, keep limbs, fingers and other body areas clear of all the pinch points shown below.
  - Keep all personnel and equipment clear of the operating table before adjusting or moving the table. Otherwise, personal injury or device damage may occur.
  - Be sure to observe the joints when installing or adjusting accessories. Otherwise, the patient or medical staff may be pinched.
  - Do not reach into or handle moving parts during use.
- 

#### 1.3.1 Pinching Points





- (1) Between one-section leg plate and base
- (2) Between one-section leg plate and ground
- (3) Between one-section leg plate and column
- (4) Between head plate and ground
- (5) Between head plate and base
- (6) Between head plate and extension plate/lower back plate
- (7) One-section leg plate
- (8) Between seat plate and one-section leg plate
- (9) Column
- (10) Between base and ground
- (11) Between seat plate and lower back plate
- (12) Between kidney and lower back plate

# 2 Equipment Introduction

---

## 2.1 Intended Use

### 2.1.1 Intended Purpose

The operating table is intended to support and position patients immediately before, during and after surgical procedures, as well as for examination and treatment.

### 2.1.2 Intended Users

The operating table may only be operated by medically trained staff.

### 2.1.3 Intended Patient Population

The operating table is intended for patients who are in surgical, examination and treatment procedures.

### 2.1.4 Intended Medical Conditions

The operating table is used in healthcare facility environment.

### 2.1.5 Contraindications

None.

### 2.1.6 Side-effects

According to the conclusion of clinical evaluation and residual risk evaluation, for the intended patients, there are no known side effects that can occur during or after the use of the medical device. And there is no need for the operator to make extra preparations. Thus, no residual risk associated with using the medical device should be disclosed.

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## WARNING

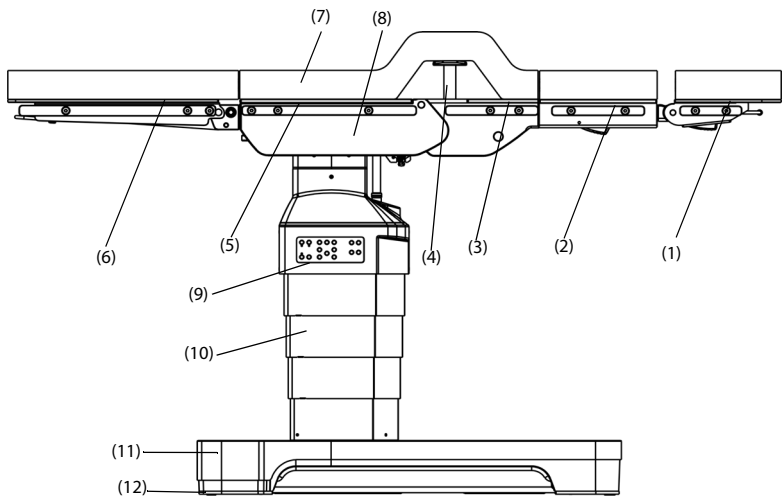
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- **Contents of this manual are based on the full configuration of the operating table. Some of them can not apply to your operating table. Use your operating table according to the actual configuration. If you have any questions, contact the customer service department authorized by Mindray or your local distributor.**
  - **The operating table is to be operated by trained personnel only. Non-authorized or untrained personnel cannot operate the operating table.**
-

# 2.2 Main Components

The operating table consists of the main unit (including the table top, column, base, hydraulic system, electric system), pad and control unit, and has optional head plate, one-section leg plate and extension plate.

## 2.2.1 Main Unit



- |                             |                    |                          |
|-----------------------------|--------------------|--------------------------|
| (1)Head plate               | (2)Extension plate | (3)Lower back plate      |
| (4)Body elevator (optional) | (5)Seat plate      | (6)One-section leg plate |
| (7)Pad                      | (8)Beam            | (9)Override panel        |
| (10)Column                  | (11)Base           | (12)Base support         |

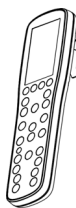


**2.2.2 Control Unit**

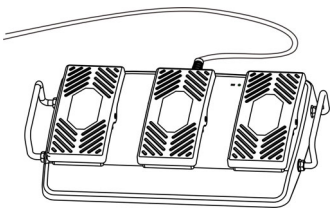
(1)Corded hand control



(2)Wireless hand control

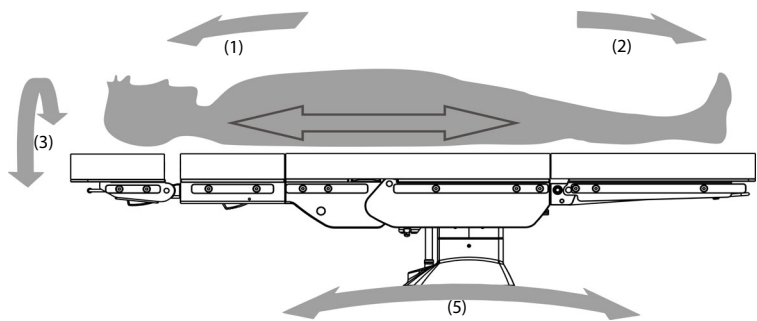


(3)Foot switch



**2.3 Definition**

**2.3.1 Slope/Tilt/Longitudinal Shift**



(1)Trendelenburg

(2)Reverse Trendelenburg

(3)Tilt

(4)Longitudinal shift

(5)Slope

### 2.3.2 0 Position

0 position: the table top is horizontal and does not have any longitudinal shift.

### 2.3.3 Zero Longitudinal Shift

The longitudinal shift distance of the table top is zero.

### 2.3.4 Adjustable Part

Adjustable parts of the product, including release lever, release handle, grip of the release bracket and so on, are indicated in blue which are easy for users to recognize.

### 2.3.5 Overall Load

The "overall load" results from putting together patient weight and accessory weight. The "overall load" is the load which can be placed on the table top. Restrictions might result from the components or accessories for which other overall loads may be applicable, or from special patient positions.

### 2.3.6 Normal/Reverse Patient Orientation

The patient orientation (normal or reverse) depends on the position of the patient on the table top with regard to the operating table base (1).

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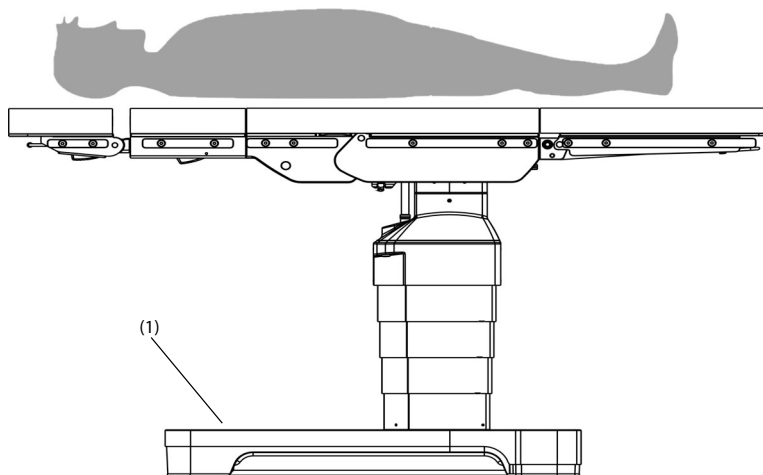
## WARNING

---

- **Incorrect patient orientation may cause adjustment of the operating table in a direction that is not intended. Check if the patient orientation is correct prior to making any adjustments.**
  - **The patient orientation is indicated in the status bar on the screen of the hand control. See 3.3.5.13 Status Indicator.**
- 
-

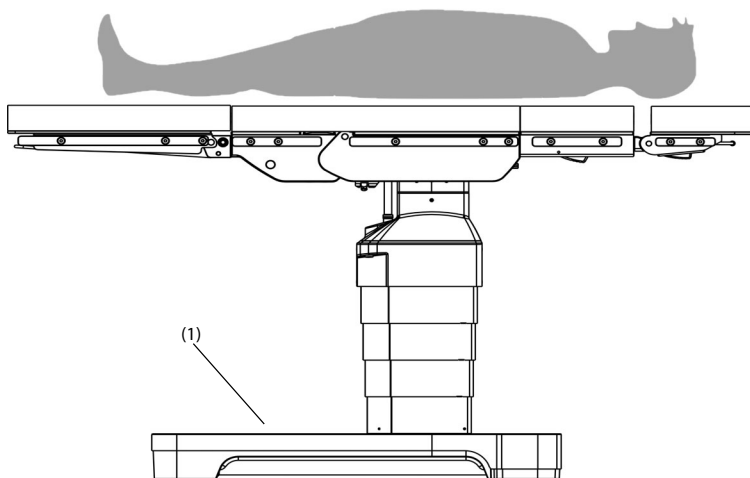
### 2.3.6.1 Normal Patient Orientation

The upper part of the patient's body is located above the operating table base (1).



### 2.3.6.2 Reverse Patient Orientation

The patient's legs are located above the operating table base (1).



## 2.4 Prompt Tone

Acoustic signal of the operating table is for prompt, detailed types and cases are listed below:

Prompt Tone	Acoustic Signal Type	Case
Normal prompt tone	Beep once	e.g. desired movement completed, normal operation
Arrival confirmation tone	Beep twice	e.g. final position reached, wireless hand control successfully connected
Risk prompt tone	Beep intermittently and slowly	e.g. workable button pressed under unlocking
Collision prompt tone	Beep intermittently and quickly	e.g. impending collision
Use-prohibited tone	Beep continuously	e.g. movement prohibited or limited
Timing tone	Beep five times	e.g. The wireless hand control is being connected after Trendelenburg button on the override panel has been pressed.

## 2.5 Abbreviations

Abbreviations	In full
AC	Alternating current
DC	Direct current
EMC	Electromagnetic compatibility
EU	European Union
Info.	Information
RF	Radio frequency
UPS	Uninterrupted power supply

# 3 Daily Operations

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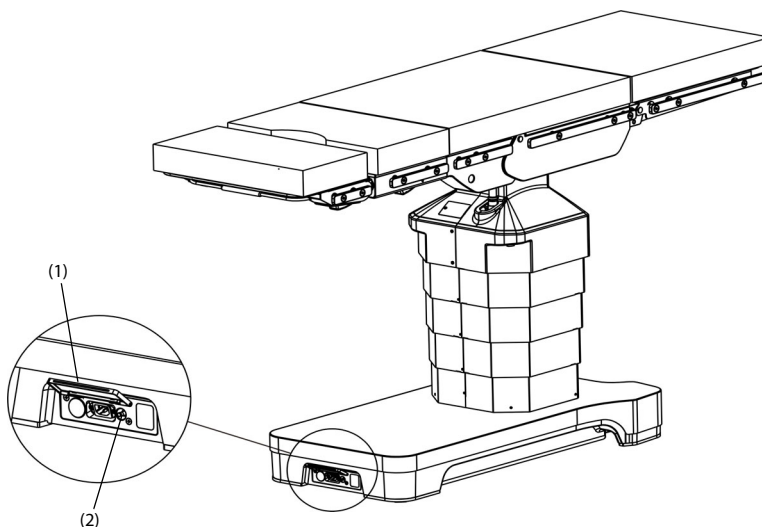
## 3.1 Connecting Potential Equalization Pin

---

### WARNING

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- When using the operating table together with other devices, connect their potential equalization pins together to eliminate the potential difference between them. Otherwise, personal injury or device damage may occur.
- 



To connect the potential equalization pin:

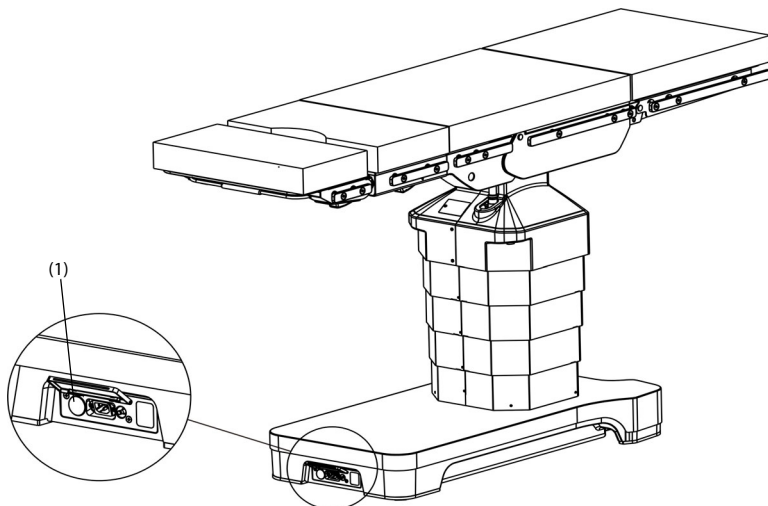
1. Open the waterproof cover (1) on the base.
2. Connect one end of the equipotential cable to the potential equalization pin (2) of the operating table.
3. Connect the other end of the equipotential cable to the potential equalization pin of another device.

## NOTE

- Disconnect the equipotential cable before moving the operating table.

## 3.2 Connecting to Mains Power

### 3.2.1 Power Button



Press the power button (1) to control the power-on or power-off of the operating table.

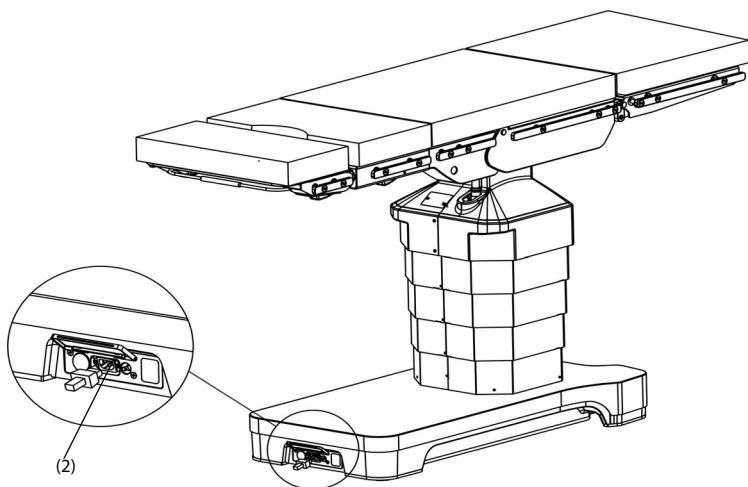
## WARNING

- Press the power button to power off the operating table in case of an emergency.

## CAUTION

- Power off the operating table by pressing the power button if the operating table is not to be used for a long time (e.g. for weekend or holidays). Otherwise, battery damage may occur.

### 3.2.2 Charging Batteries



To keep good performance, fully or nearly fully discharged batteries should be charged as soon as possible. The operating table is charged automatically once connected to AC power.

For new batteries, it takes about 10 hours to fully charge them. Fully charged rechargeable batteries are sufficient for about one week of operating table operation.

---

## WARNING

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- **Check if the power cord has any sign of wear or damage before use. Damaged cord must be replaced immediately.**
- **Always use the accompanying power cord delivered with the operating table.**
- **Before connecting the equipment to AC power, check whether the voltage and frequency ratings are the same as those indicated on the AC adapter and manual.**
- **Do not touch the power connector with the wet hand. Eliminate the liquid residue inside of or at the surroundings of the AC power connector of the equipment and power cord connectors. Otherwise, personal injury or equipment damage may occur.**
- **If the integrity of the external protective conductor in the installation or its arrangement is in doubt, run the operating table from its internal batteries.**

- **To avoid the risk of electric shock, the operating table must only be connected to mains power with protective earth.**
- 

## **NOTE**

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- **The operating table is disconnected from the mains power by means of detaching the plug. Do not locate the operating table in a place where it is difficult to operate the mains plug.**
  - **It is recommended that the operating table be run from its internal batteries.**
  - **In order to prevent the charging of batteries during surgeries, it is recommended the rechargeable batteries be charged after surgeries and on a daily basis. On principle, deep discharge of the rechargeable batteries should be avoided.**
  - **Ensure the battery capacity is sufficient if the operating table is powered by internal batteries. Charge the batteries if necessary.**
  - **If the batteries cannot work normally, contact the customer service department authorized by Mindray or your local distributor.**
  - **If the run time of the fully charged batteries is noticeably shortened, contact the customer service department authorized by Mindray or your local distributor.**
  - **The battery must only be installed and replaced by service personnel trained and authorized by Mindray. Installation or replacement by untrained personnel may cause personal injury (e.g. batteries overheated, ignited or exploded). Batteries are recommended to be replaced every three years under normal use.**
  - **Disconnect the power cord before moving the operating table.**
- 

Follow the steps below to connect the power cord:

1. Open the waterproof cover.
2. Connect the power cord to the power connector (2) of the operating table.
3. Connect the power cord to the mains power outlet.

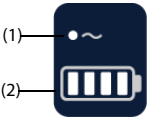
Follow the steps below to detach the power cord:

1. Detach the power cord from the mains power outlet.
2. Detach the power cord from the power connector of the operating table.



### 3.2.3 Indicator on the Base

AC indicator (1) and battery indicator (2) are located on the base. Indicator status is shown below:



Indicator	Status	Description
AC indicator	Green	The operating table is connected to mains power.
Battery indicator (not connected to AC)	Four battery bars are green.	The battery capacity of the operating table is no less than 90%.
	Three battery bars are green.	The battery capacity of the operating table is no less than 70% and less than 90%.
	Two battery bars are green.	The battery capacity of the operating table is no less than 35% and less than 70%.
	One battery bar is orange.	The battery capacity of the operating table is less than 35%.

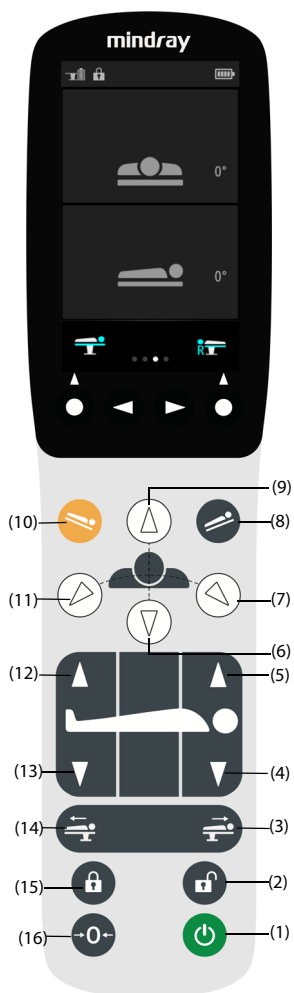
Indicator	Status	Description
Battery indicator (connected to AC)	All battery bars cyclically change.	The batteries of the operating table are being charged and the charging capacity is less than 35%.
	The first battery bar is green and other three bars cyclically change.	The batteries of the operating table are being charged and the charging capacity is no less than 35% and less than 70%.
	The first two battery bars are green and other two bars cyclically change.	The batteries of the operating table are being charged and the charging capacity is no less than 70% and less than 90%.
	The first three battery bars are green and the fourth bar flashes.	The batteries of the operating table are being charged and the charging capacity is no less than 90% and less than 100%.
	Four battery bars are green.	The batteries of the operating table are fully charged.
Battery indicator	The second battery bar is orange and flashes.	The operating table has an error, contact the customer service department authorized by Mindray.
	The third battery bar is orange and flashes.	
	The fourth battery bar is orange and flashes.	

## NOTE

- Once the operating table is powered on by pressing the power button and not connected to mains power, the battery indicator will show current capacity and go out after 20 seconds.

### 3.3 Hand Control

Operate the corded hand control and wireless hand control in the same way.



(1) Standby

(2) Unlock

(3) Longitudinal shift toward  
head end

(4) Back plate down

(5) Back plate up

(6) Table top down

(7) Tilt to right

(8) Reverse Trendelenburg

(9) Table top up

(10)Trendelenburg	(11)Tilt to left	(12)Leg plate up (Reverse patient orientation)
(13)Leg plate down (Reverse patient orientation)	(14)Longitudinal shift toward foot end	(15)Lock
(16)0 position		

---

## WARNING

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- **Ensure the operating table is in view of users when the wireless hand control is used. Otherwise, personal injury may occur.**
- 

## NOTE

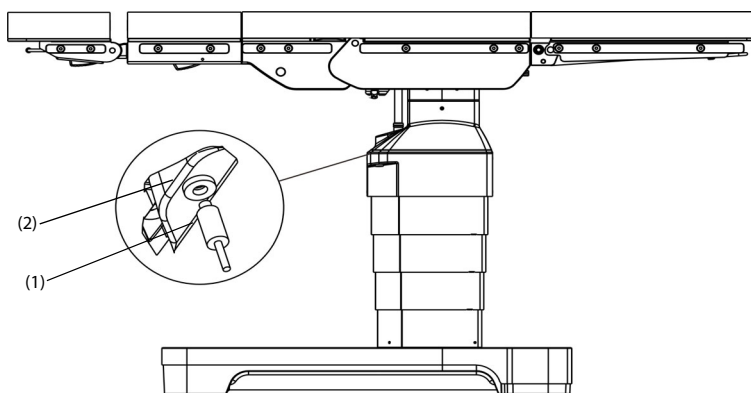
---

- **When adjusting the operating table, ensure the cord of the corded hand control is not jammed by joints.**
  - **Switch off the control unit after all the adjustments are completed to avoid misoperation.**
  - **Ensure all functions are normal before each use.**
  - **If different functions are triggered on the same control unit, the motion of the operating table except the switch-off will be stopped immediately.**
  - **Do not perform adjustments with two control units at the same time. If functions are triggered by multiple control units, then all motions except the switch-off of the operating table will be stopped immediately and will resume only after none of the control units has been activated. If the override panel is triggered, it takes priority over other control units.**
- 

### 3.3.1 Connecting /Disconnecting Corded Hand Control

The sockets for connecting the corded hand control are located on both sides of the column.

- To connect the corded hand control: insert the plug into the socket with the red mark (1) on the corded hand control cable aligned with that (2) on the operating table socket. Ensure the plug is properly seated.
- To disconnect the corded hand control: grasp the front end of the corded hand control cable and pull it out straight down.



### 3.3.2 Attaching Hand Control

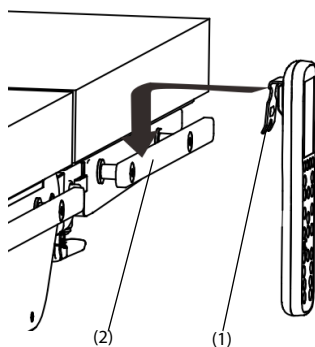
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#### CAUTION

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- The hand control which is attached to the side rail may slip off the side rail or catch the cable during table top adjustment. Take the hand control out of the side rail during the adjustment.
- 

















Attach the bracket (1) to the side rail (2).



### 3.3.3 Button Operations

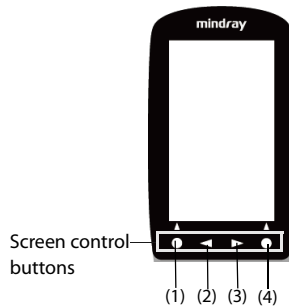
After the operating table is switched on, press and hold the button until the desired position is reached and then release the button.

#### 3.3.3.1 Button Symbol

Symbol	Description	Symbol	Description
	Standby		One-button to 0 position
	Unlock		Lock
	Longitudinal shift toward head end		Longitudinal shift toward foot end
	The circled means back plate up.		The circled means back plate down.
	The circled means leg plate up.		The circled means leg plate down.
	Tilt to right		Tilt to left
	Table top up		Table top down
	Reverse Trendelenburg		Trendelenburg

#### 3.3.4 Screen Control

The screen will show movement part, direction and value when the control unit is used to adjust the table top movements. Screen interface can be operated by control buttons below.

















(1)Select/Confirm

















(2)Select

(3)Select

(4)Select/Confirm

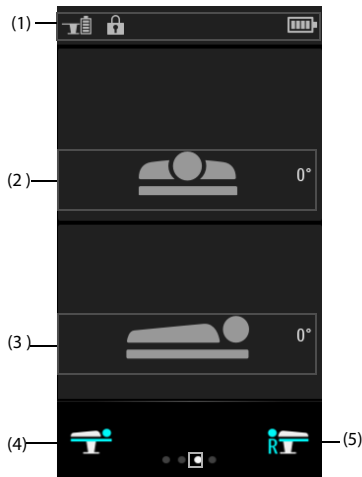
### 3.3.4.1 Interface Symbol

Symbol	Description	Symbol	Description
	Operating table locked		Operating table unlocked
	Battery of wireless hand control		Operating table batteries
	0° tilt		Tilt to left
	Tilt to right		0° slope
	Trendelenburg position		Reverse Trendelenburg position
	Zero longitudinal shift		Longitudinal shift toward head end
	Longitudinal shift toward foot end		0° back plate angle

Symbol	Description	Symbol	Description
	Back plate up		Back plate down
	Select		Select
	Back		Flex position
	Reflex position		Normal patient orientation
	Reverse patient orientation		Save
	Select/Confirm		Delete
	User Settings		General warning sign
	Disconnected with operating table		Connected with operating table



### 3.3.4.2 Main Interface-Normal/Reverse Patient Orientation



(1)Status bar


(2)Tilt

(3)Slope

(4)Normal patient  
orientation

(5)Reverse patient  
orientation

Once the hand control is switched on, it enters the main interface and displays the following from the top down:

- Status bar: displaying the locked status of the operating table, battery status of both the operating table and wireless hand control, operating table name. See **3.3.5.13 Status Indicator**.
- Parameter area: displaying real-time status including tilt angle, slope angle.
- Function selection area: main interface displays normal patient orientation and reverse patient orientation which can be accomplished by pressing and holding the button  below.

### 3.3.4.3 Flex Position/Reflex Position

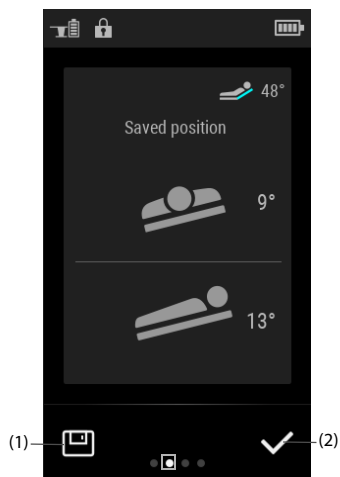


(1)Flex position

(2)Reflex position


- Enter the selection interface of flex position or reflex position by pressing the selective button (**<** or **>**) → press and hold the button **○** below the screen for two seconds to reach the flex position or reflex position.

### 3.3.4.4 Quick Save/Call Memory Position



(1)Save

(2)Select/Confirm

- Enter the selection interface of quick saving current operating table position or calling last memory position by pressing the selective button (◀ or ▶) → press the button  below the screen to save the current position or call the last memory position.

## NOTE

- **Before calling a memory position, store the patient position with the hand control.**

### 3.3.4.5 User Settings



(1)User settings

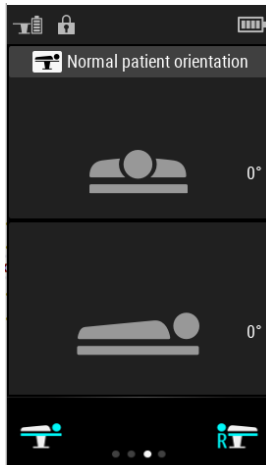
- Enter the user settings interface (1) by pressing the selective button ( < or > ).  
→ press the button ● to enter detailed user settings.
- You can call/save memory position, check parameters of operating table, set the screen brightness, select the language of the hand control, name the operating table, operate the bluetooth connection, enable the smart backlit keypad, set switch-on mode and foot switch function, check the operating table battery and software information and restore factory settings. Please see **3.3.7 User Settings** for details.

### 3.3.4.6 Prompt Message

The operating table has not only prompt tone, but prompt message on the screen. See details below:

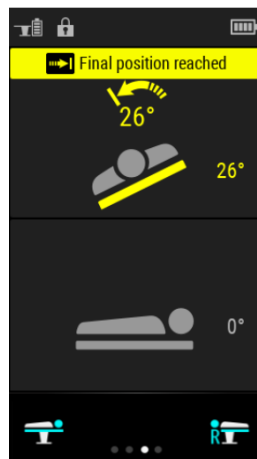
- Common prompt message: indicated in white

Prompt message of normal use, e.g. position reached, normal or reverse patient orientation set, operating table locked or unlocked, operating table connected, position saved, battery status of operating table and wireless hand control.



- Low-risk prompt message: indicated in yellow

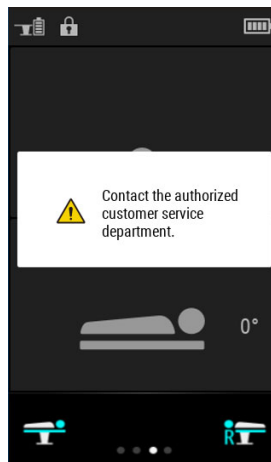
Noticeable prompt message, e.g. final position reached, operating table disconnected, low battery, locking error, collision risk.




- High-risk prompt message: indicated in red  
Especially noticeable prompt message, e.g. excessive sloped angle.




- Error indication
  - ◆ If the following prompt message appears, contact the customer service department authorized by Mindray or your local distributor.





- ◆ If the symbol  appears on the status bar, some error has occurred. Contact the customer service department authorized by Mindray or your local distributor.

## 3.3.5 Functions

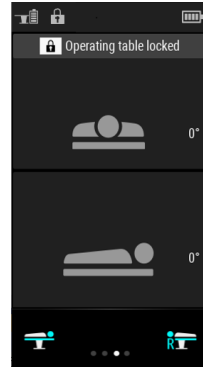
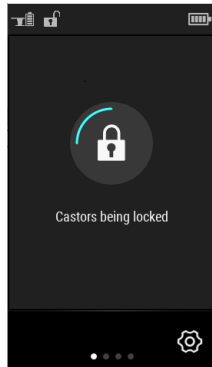
### 3.3.5.1 Switch-on

- Press the standby button  to enter the switch-on status.
- Press any button to switch on the operating table if it is configured with such a function.

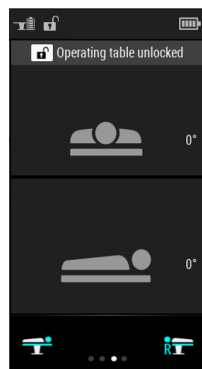
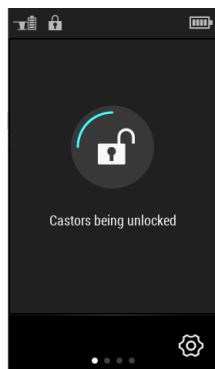
### 3.3.5.2 Unlock /Lock

1. Lock: press and hold the lock button  for two seconds. It takes about six seconds to lock the operating table.
2. Unlock: press and hold the unlock button  for two seconds. It takes about six seconds to unlock the operating table.
3. A progress bar will appear on the screen during the process of unlocking or locking. A prompt message will also appear once unlocking or lock is accomplished.

Lock the castors:



Unlock the castors:



---

## WARNING

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- Before locking the operating table, ensure that there are neither the operator's feet nor any objects underneath the base. Otherwise, personal injury or equipment damage may occur.
  - The adjustment of table top up, tilt or longitudinal shift is restricted after the operating table castors are unlocked.
- 

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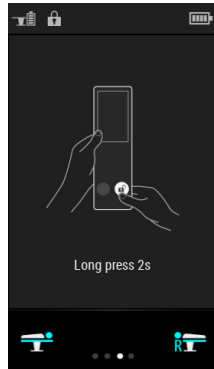
## NOTE

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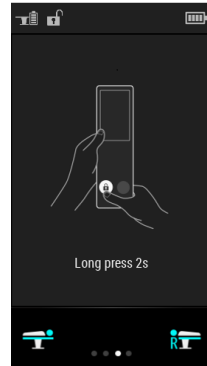
- A prompt message as [Long press 2s] will appear on the screen if you do not unlock or lock the operating table within specified time.
-



Unlock:




Lock:



## NOTE

- Interruption of locking or unlocking procedure or sudden power-off may cause both locking and unlocking indicators flashing after the operating table is switched on again. Press the lock or unlock button to continue the operation.



### 3.3.5.3 One-button to 0 position

Press and hold 0 position button  to adjust the operating table to 0 position.

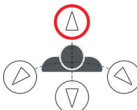
## NOTE

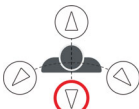
- When the table top is horizontal but the longitudinal shift does not reach 0 position, a prompt message as [Horizontal position reached] will appear on the screen. Press and hold 0 position button again to continue the longitudinal shift.

### 3.3.5.4 Longitudinal Shift


1. Longitudinal shift toward foot end: press and hold the button .
2. Longitudinal shift toward head end: press and hold the button .


### 3.3.5.5 Table Top Up/Down

1. Table top up: press and hold the button .



2. Table top down: press and hold the button .

### 3.3.5.6 Tilt

1. Tilt to left: press and hold the button .

2. Tilt to right: press and hold the button .

### 3.3.5.7 Slope

1. Trendelenburg position: press and hold the button .
2. Reverse Trendelenburg position: press and hold the button .

---


## WARNING

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- **Ensure the patient is properly secured in case of sloped position when adjusting the operating table. Otherwise, personal injury or device damage may occur.**
- 

### 3.3.5.8 Leg Plate Up/Down

In the reverse patient orientation, the one-section leg plate can be adjusted up or down.

1. Leg plate up: press and hold the button .



2. Leg plate down: press and hold the button

### 3.3.5.9 Back Plate Up/Down



1. Back plate up: press and hold the button



2. Back plate down: press and hold the button

### 3.3.5.10 Smart Backlit Keypad

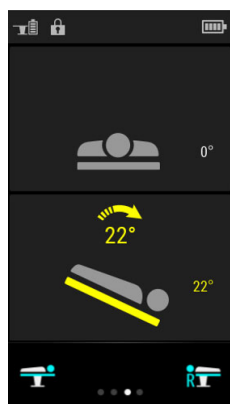
If the smart backlit keypad is enabled, buttons on the hand control are divided by backlit keypad. Identify the available functions by backlit buttons. See the details below:

- If a certain movement reaches its final position, its button backlight will go off.
- Under the unlocked status, function of the backlit button is enabled while function of the button without backlight is disabled.

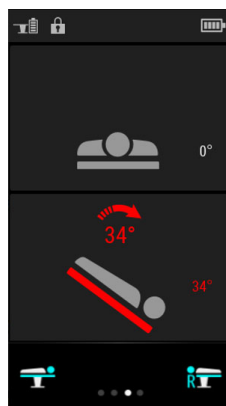
### 3.3.5.11 Color-coded Indication

During the tilt or slope adjustment, a color-coded indication will respectively appear on the screen if the angle of the single movement is no less than 15° or 30°.

≥ 15°, <30°:




≥ 30°:



## NOTE

- The default yellow-coded and red-coded values are 15° and 30° respectively. If you need to change the setting, see 3.3.7.8 *More Settings*.

### 3.3.5.12 Switch-off











Press the standby button  to enter the standby status or it will enter the standby status automatically when the hand control is idle for more than 20 seconds.










## NOTE

- The default automatic switch-off time for the hand control is 20 seconds. If you need to change the time setting, contact the customer service department authorized by Mindray or your local distributor.

### 3.3.5.13 Status Indicator

Observe the battery status of the wireless hand control or operating table, locking/unlocking status, normal/reverse patient orientation in the status bar.

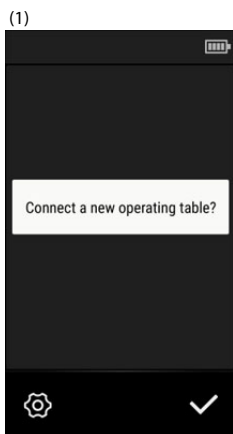
Indicator	Status	Description
Battery indicator of the wireless hand control		Red. The battery capacity of the wireless hand control is no more than 10%, which indicates the wireless hand control needs to be charged immediately.
		Red. The battery capacity of the wireless hand control is in the range of approximately 10%-25%. The screen will prompt low battery message.
		Grey. The battery capacity of the wireless hand control is in the range of approximately 25%-50%.
		Grey. The battery capacity of the wireless hand control is in the range of approximately 50%-75%.
		Grey. The battery capacity of the wireless hand control is in the range of approximately 75%-100%.
		Battery bars cyclically change in green during charging, which will stop if the battery is fully charged.
Operating table battery indicator		Red. The battery capacity of the operating table is less than 35%. The screen will prompt low battery message.
		Grey. The battery capacity of the operating table is no less than 35% and less than 70%.
		Grey. The battery capacity of the operating table is no less than 70% and less than 90%.
		Grey. The battery capacity of the operating table is no less than 90%.

Indicator	Status	Description
Operating table battery indicator		All battery bars are green and cyclically change. The batteries of the operating table are being charged and the charging capacity is less than 35%.
		The first battery bar is green and other three bars cyclically change. The batteries of the operating table are being charged and the charging capacity is no less than 35% and less than 70%.
		The first two battery bars are green and other two bars cyclically change. The batteries of the operating table are being charged and the charging capacity is no less than 70% and less than 90%.
		The first three battery bars are green and the fourth bar flashes. The batteries of the operating table are being charged and the charging capacity is no less than 90% and less than 100%.
		Green. The batteries of the operating table are fully charged.
Operating table locking indicator		The operating table is locked.
Operating table unlocking indicator		The operating table is unlocked.
Normal patient orientation indicator		The operating table is set to normal patient orientation.
Reverse patient orientation indicator		The operating table is set to reverse patient orientation.

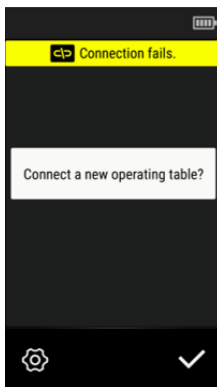
## 3.3.6 Wireless Hand Control

### 3.3.6.1 Bluetooth Connection of Wireless Hand Control

- If the wireless hand control switched on is not connected to the operating table, follow the steps on the screen to continue the connection. Once the wireless hand control is connected, the screen shows the message **[Connected]**.



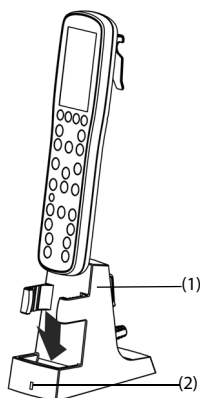
- The connection may fail and a prompt message below will appear. Repeat the connection procedure until it succeeds.



- The connection may disconnect after a successful connection. Repeat the connection procedure until it succeeds.

### 3.3.6.2 Charging Wireless Hand Control

Observe the current battery capacity of the wireless hand control by the battery indicator in the status bar. See details in **3.3.5.13 Status Indicator**. Follow the steps below to charge the battery if it is low. It takes about 10 hours to fully charge an automatically switched-off wireless hand control.



(1) Mobile charging station

(2) Indicator of mobile charging station



1. Connect the mobile charging station to the mains power.
2. Switch off the wireless hand control and insert it into the mobile charging station (1) and the wireless hand control is automatically charged. Observe the charging status by the indicator (2):

Indicator	Status	Description
Indicator of mobile charging station	Red	As soon as the mobile charging station is connected to AC power, it is dangerous to let the metal get close.
	Green	The wireless hand control is being charged.

The run-time of the battery depends on the equipment operation. The fully charged wireless hand control is sufficient for four hours of continuous operation under normal use.




## NOTE

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- **In order to avoid empty battery of the wireless hand control during the surgery, we recommend you store the wireless hand control in the mobile charging station when it is not in use.**
  - **Be sure to use the mobile charging station to charge the wireless hand control.**
  - **Ensure the wireless hand control is reliably placed into the mobile charging station, which means the indicator of mobile charging station is green.**
  - **Do not place the objects such as metal to the charging area.**
  - **Do not use the wireless hand control during charging to adjust the operating table.**
  - **Ensure the battery power is sufficient if the wireless hand control is to be used. Charge the battery if necessary.**
  - **Use the battery in the wireless hand control at least once every month to extend battery life. Charge the battery before its capacity is depleted.**
  - **Inspect the battery at regular service intervals. Life expectancy of a battery depends on how frequent and how long it is used. More aggressive usage will shorten the life expectancy.**
  - **In case of a battery failure, please contact Mindray.**
-

## 3.3.7 User Settings

### 3.3.7.1 Calling Memory Position



Select [**Call Memory Position**] via the selective button (◀ or ▶)→press the button  below the symbol  to enter the interface→select the desired position→press and hold the button →the operating table is to be adjusted until the desired memory position is reached.






### NOTE

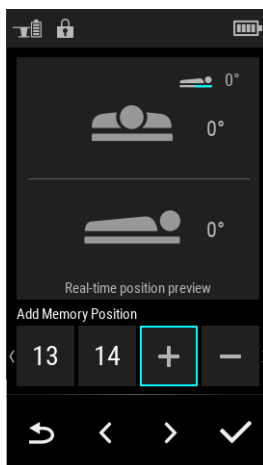
- If the patient orientation of the selected memory position does not match that of the current operating table, adjust it to the right patient orientation before calling memory position.






### 3.3.7.2 Saving Memory Position

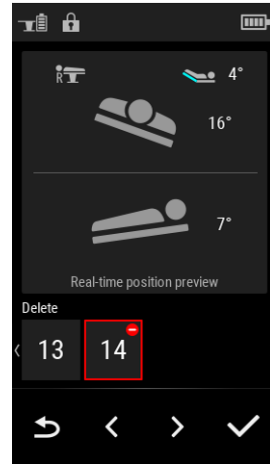
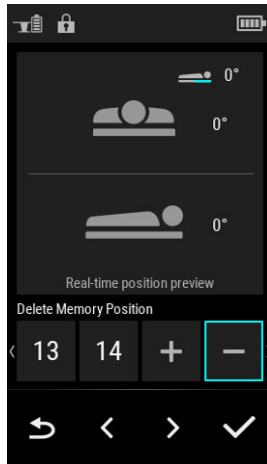
Select [**Save Memory Position**] via the selective button (◀ or ▶) → press the button  below the symbol  to enter the desired interface.







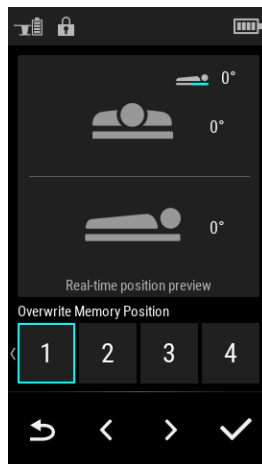
- ◆ Add a memory position: select the button  via the selective button (◀ or ▶) → press the button  below the symbol  to save the position. 30 memory positions can be saved at most.



- ◆ Delete a memory position: select the button  via the selective button ( or ) → press the button  below the symbol  to delete the position.



- ◆ Overwrite a memory position: select the position to be overwritten via the selective button ( or ) → press the button  below the symbol  to overwrite it.





## NOTE

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- The status bar will display the corresponding icon if the memory position is saved under the reverse patient orientation.
-



### 3.3.7.3 Checking Parameters of Operating Table

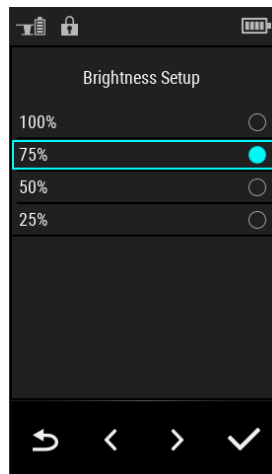
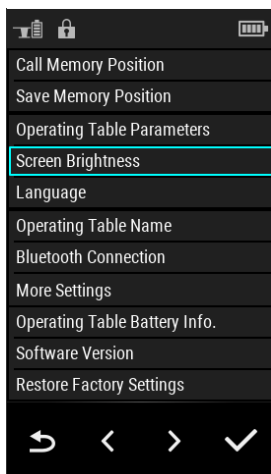
Select [**Operating Table Parameters**] via the selective button (◀ or ▶) → press the button  below the symbol  → check the parameters.







### 3.3.7.4 Selecting Screen Brightness

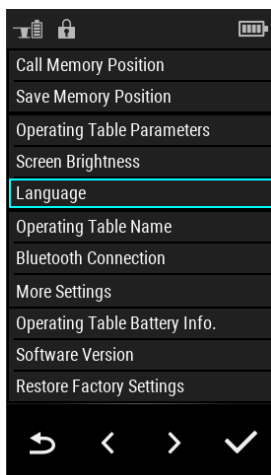
Select [**Screen Brightness**] via the selective button (  or  )→press the button

 below the symbol  →select one of the four levels: 25%, 50%, 75%,100%.





### 3.3.7.5 Selecting Language

Select **[Language]** via the selective button (  or  )→press the button  below the symbol  to enter the language selection interface→select the desired language.

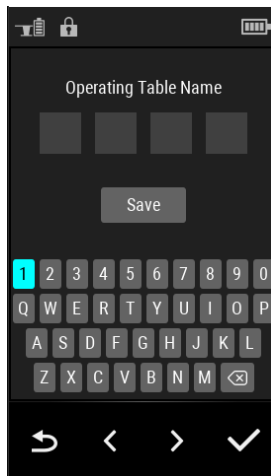
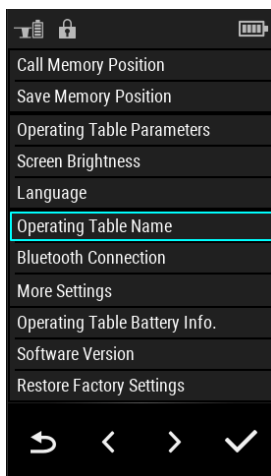






### 3.3.7.6 Naming Operating Name



Select **[Operating Table Name]** via the selective button (**<** or **>**)→ press the button  below the symbol  to enter the name interface.

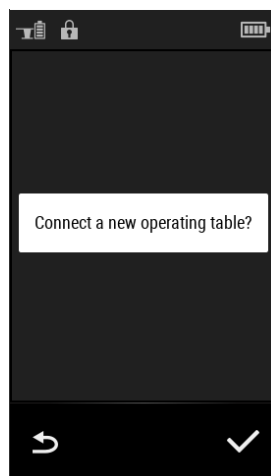
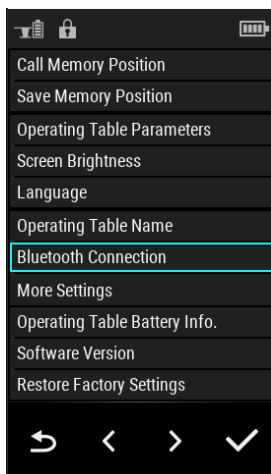
The name of the operating table can have four characters at most. Save the name by pressing **[Save]** and it will show on the status bar.







### 3.3.7.7 Bluetooth Connection

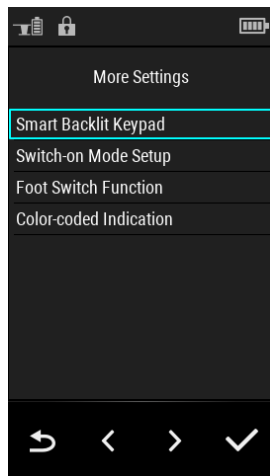
Select **[Bluetooth Connection]** via the selective button (  or  )→press

the button  below the symbol  to enter the bluetooth connection interface  
→confirm whether to be connected to a new operating table→ connect it by following the steps in **3.3.6.1 Bluetooth Connection of Wireless Hand Control** after confirmation.







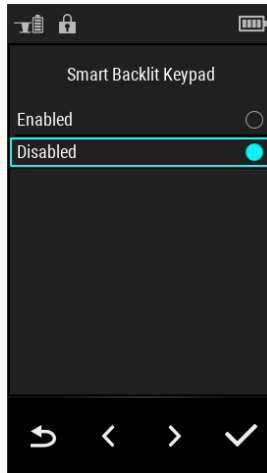
### 3.3.7.8 More Settings

Select [**More Settings**] via the selective button (  or  )→press the button  below the symbol  to enter the interface to enable or disable the smart backlit keypad, set switch-on mode and foot switch function.





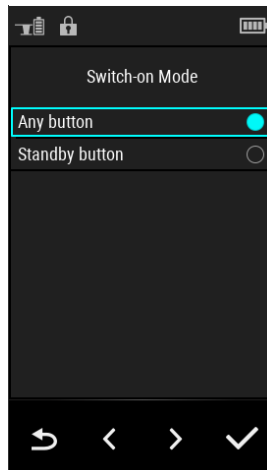
#### ■ Smart Backlit Keypad

Enter [**Smart Backlit Keypad**] via the selective button (  or  )→press [**Enabled**] or [**Disabled**]→press the button  below the symbol .



#### ■ Switch-on Mode

Enter [**Switch-on Mode**] via the selective button (< or >)→select [**Any button**] or [**Standby button**]→press the button  below the symbol .



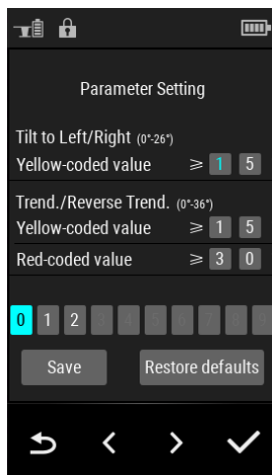
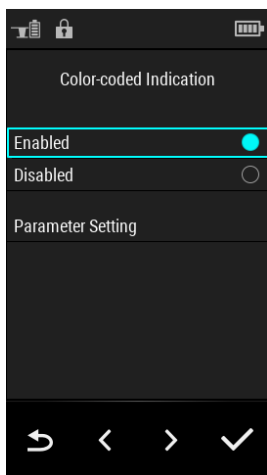
#### ■ Foot Switch Function

See the operator's manual of foot switch for details.



## ■ Color-coded Indication

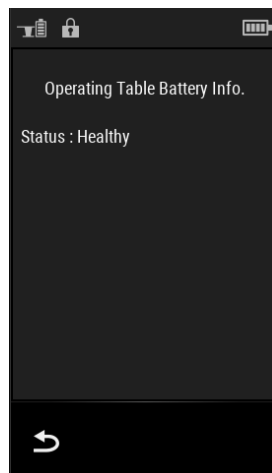
Enter [**Color-coded Indication**] via the selective button (◀ or ▶).

1. Select [**Enabled**] or [**Disabled**] to enable or disable the function.
2. Once enabled, press [**Parameter Setting**] to access the indication value setting.



### 3.3.7.9 Operating Table Battery Information



Select **[Operating Table Battery Info.]** via the selective button (**<** or **>**)→press the button  below the symbol  to check the battery status: **[Healthy]** or **[Replacement recommended]**.





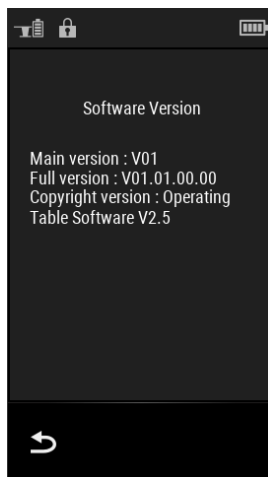
## NOTE

- When the screen shows the message **[Replacement recommended]**, contact the customer service department authorized by Mindray or your local distributor.



### 3.3.7.10 Software Version

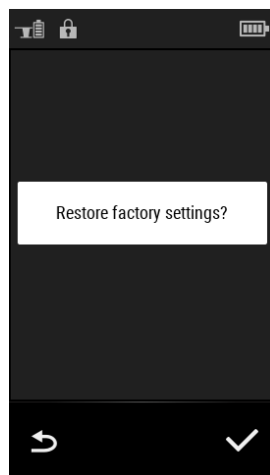
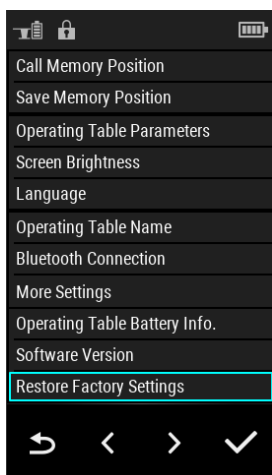
Select **[Software Version]** via the selective button (  or  )→press the button

 below the symbol  to check the software information.




### 3.3.7.11 Restore Factory Settings


Select **[Restore Factory Settings]** via the selective button (**<** or **>**)→press the button  below the symbol  →the screen prompts the message **[Restore factory settings?]**. Restore factory setting after the confirmation.

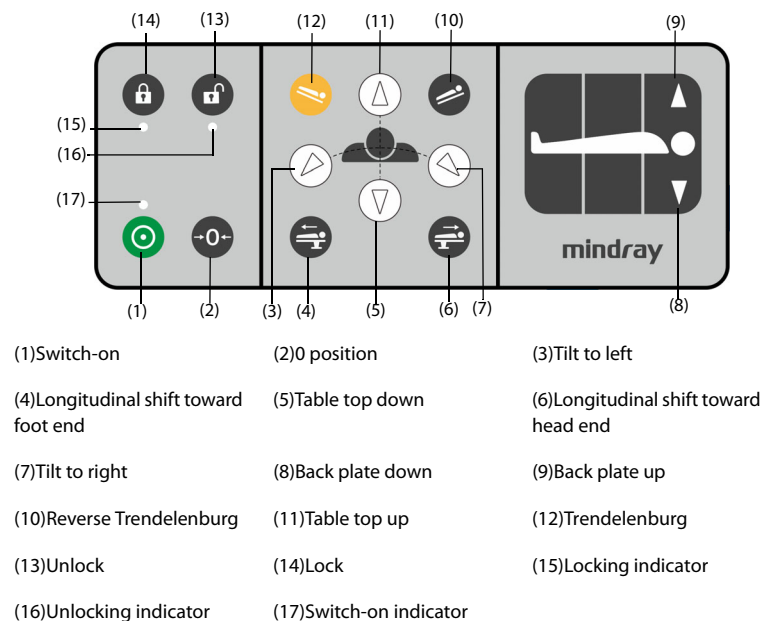




# 3.4 Override Panel

The override panel is located on the column, of which the buttons are the same as those of the hand control except the switch-on button .

After the operating table is switched on, press and hold the switch-on button  and the desired adjustment button at the same time and do not release them until the desired position is reached. Detailed buttons are shown below:



## NOTE


- **The override panel is for emergency operation.**
- **The normal/reverse patient orientation is not effective when the override panel is used. If the table top is set to reverse patient orientation, the button operation is the same as that of normal patient orientation. Watch every button adjustment.**
- **Do not perform adjustments with two control units at the same time. If functions are triggered by multiple control units, then all motions except the**

switch-off of the operating table will be stopped immediately and will resume only after none of the control units has been activated. If the override panel is triggered, it takes priority over other control units.





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### 3.4.1 Functions

#### 3.4.1.1 Switch-on

Press the button  to switch on the operating table.

#### 3.4.1.2 Lock/Unlock

1. Lock: press and hold the  and  buttons for two seconds. It takes about six seconds to lock the operating table.
2. Unlock: press and hold the  and  buttons for two seconds. It takes about six seconds to unlock the operating table.


---

### WARNING





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- Before locking the operating table, ensure that there are neither the operator's feet nor any objects underneath the base. Otherwise, personal injury or equipment damage may occur.
  - The adjustment of table top up, tilt or longitudinal shift is restricted after the operating table is unlocked.
- 

#### 3.4.1.3 One-button to 0 position

Press and hold both  and  buttons to restore the operating table to 0 position.

#### 3.4.1.4 Longitudinal Shift

1. Longitudinal shift toward head end: press and hold  and  buttons.
2. Longitudinal shift toward foot end: press and hold  and  buttons.

#### 3.4.1.5 Table Top Up/Down

1. Table top up: press and hold  and  buttons.
2. Table top down: press and hold  and  buttons.





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## WARNING





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- **During the table top down process, there is a risk of crushing and shearing to the feet or objects placed on the base. Before lowering the table top, ensure that there are neither the operator's feet nor any objects underneath the column.**
- 

### 3.4.1.6 Tilt

1. Tilt to left: press and hold  and  buttons.
2. Tilt to right: press and hold  and  buttons.

### 3.4.1.7 Slope

1. Trendelenburg: press and hold  and  buttons.
2. Reverse Trendelenburg: press and hold  and  buttons.

---

## WARNING

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- **Ensure the patient is properly secured in case of sloped position when adjusting the operating table. Otherwise, personal injury or device damage may occur.**
-

### 3.4.1.8 Back Plate Up/Down

1. Back plate up: press and hold  and  buttons (9).

2. Back plate down: press and hold  and  buttons (8).

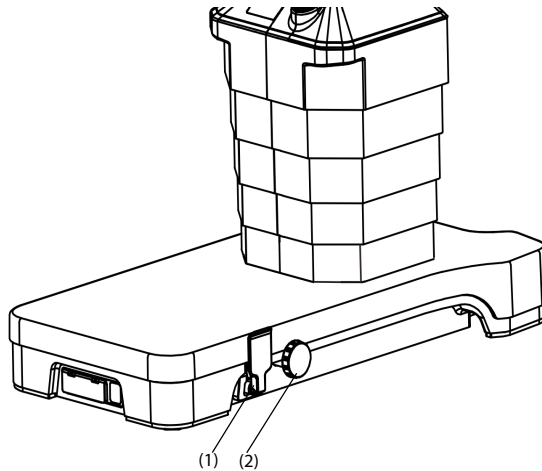
### 3.4.1.9 Indicator on Override Panel

Indicators on the override panel are described below:

Indicator	Status	Description
Switch-on indicator	Green	The operating table is switched on.
Locking indicator	Green and flashing	Locking in progress
	Green	Locked
Unlocking indicator	Green and flashing	Unlocking in progress
	Green	Unlocked
Locking indicator and unlocking indicator	Locking indicator (green) and unlocking indicator (green) flash at the same time.	The operating table is under the intermediate status of locking and unlocking.

## 3.5 Foot Pump (optional)

Foot pump can be used to adjust the table-top movements. The function can be realized by the pedal (1) and knob (2) at the base. 12 movements at most can be accomplished by the foot pump.



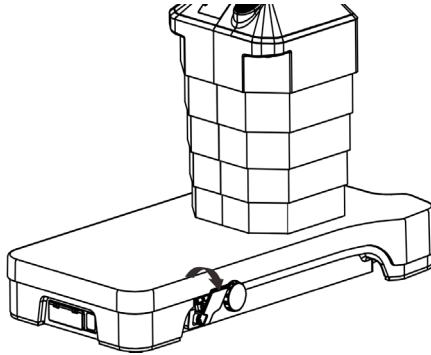
To use the foot pump,

1. Turn the knob until the arrow above is aligned with the desired movement label.
2. Step the pedal repeatedly until the desired function has been reached.

## NOTE

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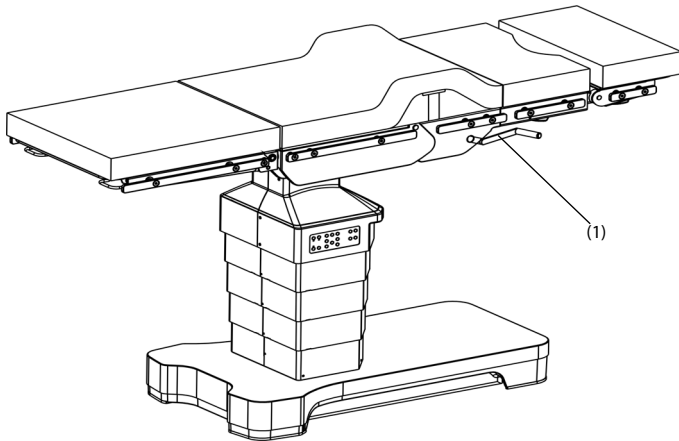
- **When using the foot pump to lock the castors, step the pedal and do not release your foot until the locking is finished. It takes about six seconds to fully lock the operating table.**
  - **When using the foot pump to operate back plate down, be sure to observe the positions of the one-section leg plate and the table top to avoid personal injury or device damage resulting from collision.**
  - **After using the foot pump to lock/unlock the operating table, be sure to unlock and then lock the operating table before operating the table by other controls.**
  - **Do not operate table top up, tilt or longitudinal shift after using the foot pump to unlock the operating table. Otherwise, the operating table may tip over.**
-



### 3.6 Body Elevator with Hand Crank (optional)

To use the body elevator with the hand crank:

1. Install the hand crank (1) onto either side of the hole on the operating table.
2. Raise or lower the body elevator by rotating the hand crank.



### 3.7 Remote Control Interface (optional)

The operating table can provide a remote control interface to realize the remote control function. See the communication protocol for details.

## 3.8 Foot Switch

Connect or disconnect the foot switch in the same way as the corded hand control. See **3.3.1 Connecting /Disconnecting Corded Hand Control**. For more details, see the operator's manual of foot switch for details.

## 3.9 Table-top Modules

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### WARNING

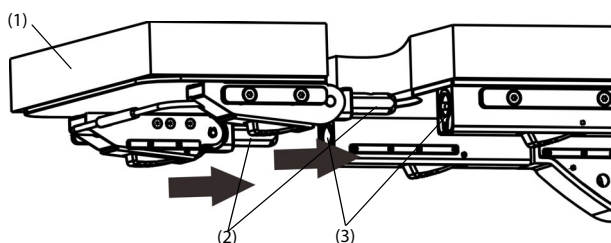
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- When removing/installing the head plate, extension plate or one-section leg plate, be sure to grasp it with both hands. Otherwise, it may fall and cause personal injury and/or property damage.
  - When using the head plate, extension plate or one-section leg plate, be sure to cover it with a sterile surgical drape to avoid infection.
  - Be sure to use the pad delivered with head plate, extension plate or one-section leg plate. Otherwise, patient injury may occur during the table top movement.
- 

### 3.9.1 Head Plate

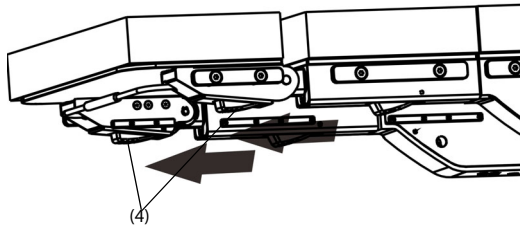
#### 3.9.1.1 Installation

1. Hold the head plate (1) with both hands. Insert both joints (2) fully into the mounting points (3) until a click is heard.
2. Slightly pull the head plate and check if it is reliably installed.



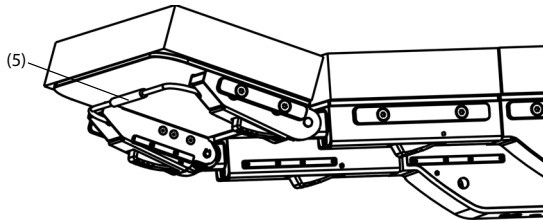
#### 3.9.1.2 Removal

1. Hold the head plate with both hands and press the release levers (4) on both front ends.
2. Pull the head plate out slowly without tilting.



### 3.9.1.3 Angle Adjustment

1. Hold the head plate with one hand and pull the grip (5) in the middle of the release bracket with the other hand. Raise or lower the head plate to the desired position.
2. Release the bracket.
3. Pull the head plate to check whether it has been adjusted properly.




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## WARNING

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- When lowering the head plate, be sure to adjust it slowly and carefully. Ensure the head plate keeps stable during the adjustment to avoid patient injury.
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## NOTE

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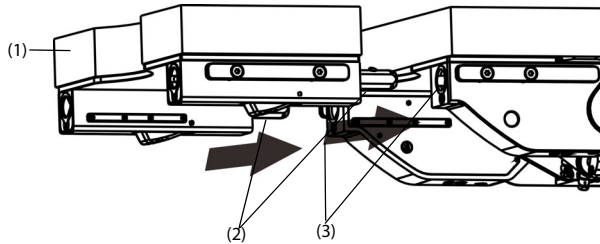
- Do not install such devices as arm boards, anesthesia frames, infusion holders, adaptors for head position ACCE, and foot plates on the head plate. Otherwise, the head plate may move unexpectedly and cause personal injury or equipment damage.
-



## 3.9.2 Extension Plate

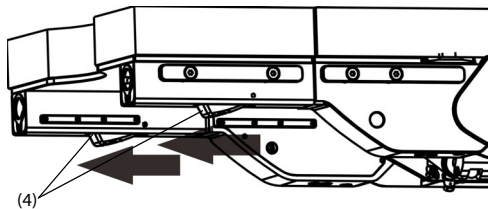
### 3.9.2.1 Installation

1. Hold the extension plate (1) with both hands. Insert both joints (2) fully into the mounting points (3) until a click is heard.
2. Slightly pull the extension plate and check if it is reliably installed.



### 3.9.2.2 Removal

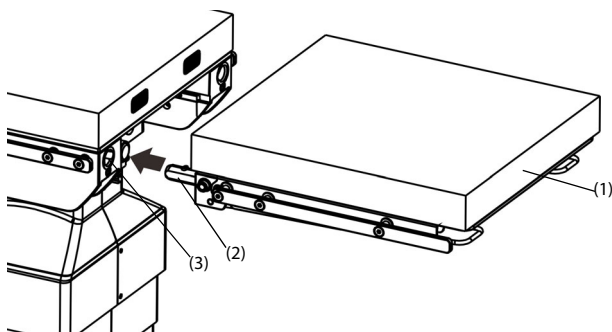
1. Hold the extension plate with both hands and press the release levers (4) on both front ends.
2. Pull the extension plate out slowly without tilting.



## 3.9.3 One-section leg plate

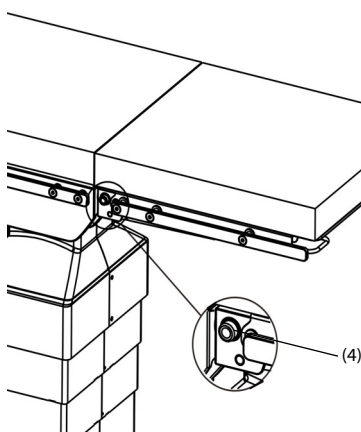
### 3.9.3.1 Installation

1. Hold the one-section leg plate (1) with both hands. Insert the joint (2) fully into the mounting point (3) until a click is heard.
2. Slightly pull the one-section leg plate and check if it is reliably installed.



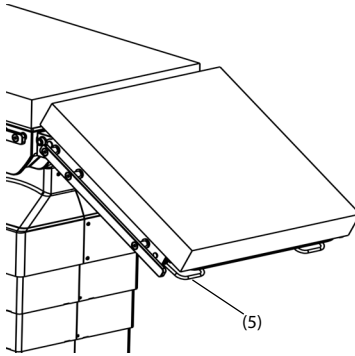
### 3.9.3.2 Removal

1. Hold the one-section leg plate with both hands and press the release button (4).
2. Pull the one-section leg plate out slowly without tilting.



### 3.9.3.3 Adjustment

1. Hold the one-section leg plate and press the release bracket (5) upward.
2. Raise or lower the one-section leg plate to the desired position.
3. Release the one-section leg plate and the release bracket (5).



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## CAUTION

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- It is recommended that the one-section leg plate should be removed and installed by two persons.
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### 3.9.4 Pad

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#### WARNING

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- Each time before using the pad, check it carefully. Damaged pad must be replaced immediately.
  - Do not use the worn or damaged pad. Liquid can penetrate damaged pad and cause hygienic problems.
  - The patient may slip off the operating table if the pad is not secured properly to the surface.
- 

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#### CAUTION

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- Ensure the Velcro strap is not damaged or wet before installing the pad. Otherwise, the pad cannot be reliably installed.
  - Ensure the pad is affixed flat and reliably. Otherwise, personal damage may occur.
  - Do not place sharp objects on the pad. Otherwise, the pad may be damaged.
- 

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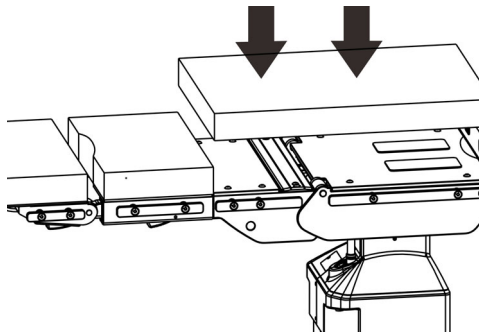
#### NOTE

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- Pad should be stored lying flat and horizontal.
  - When removing the pad, be sure to grasp it with both hands.
- 

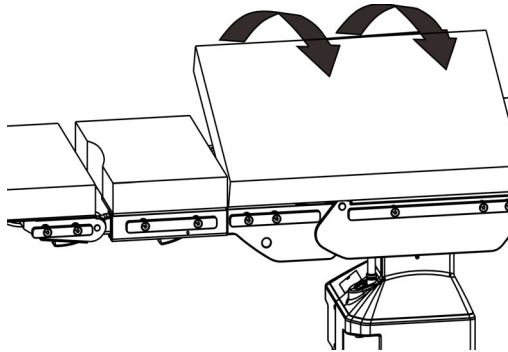
#### 3.9.4.1 Installation

1. Ensure the pad is fully aligned with the table top.
2. Check if the pad is affixed flat and reliably.



### 3.9.4.2 Removal

When removing the pad, be sure to grasp it with both hands.



## 3.10 Equipment preparation

Check the following items before use:

- The operating table is placed on a smooth ground.
- When running on mains power, ensure the equipment is connected to AC power outlet with protective earth.
- When running on battery power, ensure the battery capacity is sufficient.
- The operating table is locked.

---

### WARNING

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- **Before using the equipment, the user must verify that the equipment, connecting cables and accessories are in correct working order and operating condition.**
  - **Do not use the operating table if it is damaged or cannot work properly. Contact service personnel or Mindray.**
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# 4 Table Top Configuration

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## 4.1 General

The operating table can be used together with different modular table tops and accessories, which makes different positioned patients suitable for different surgeries.

The table top is radiolucent and enables the intraoperative use of x-ray equipment.

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### WARNING

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- **Be sure to select the proper patient orientation and accessories according to patient weight and overall load.**
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### NOTE

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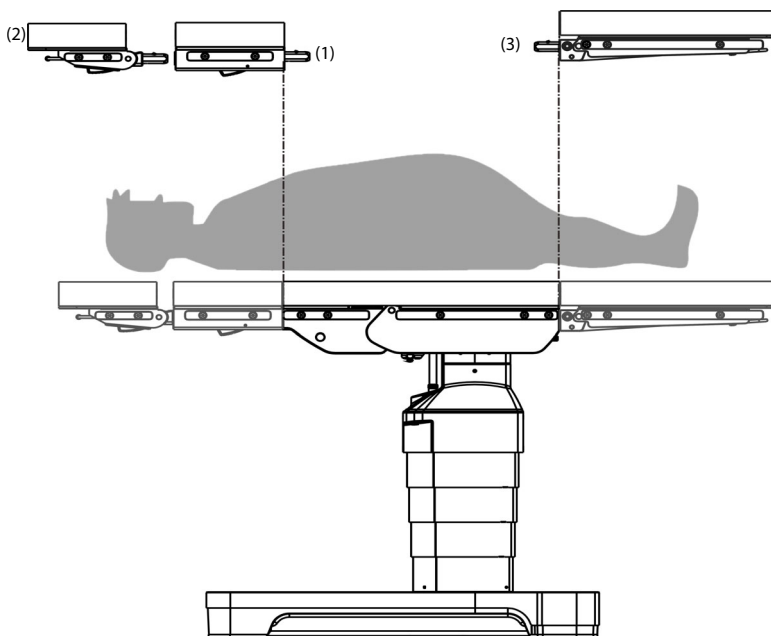
- **Position patients preferably in normal patient orientation on the table top.**
- 

## 4.2 With an Overall Load between 250kg (550lbs.) and 460kg (1015lbs.)

With an overall load of more than 250kg (550lbs.), the operating table should be used with the following restrictions:

1. Lock the castors.
2. Position the patient to the normal patient orientation.
3. Do not operate the longitudinal shift.
4. Trendelenburg/reverse Trendelenburg:  $\leq 15^\circ$
5. Tilt to left/right:  $\leq 5^\circ$
6. Back plate up:  $\leq 70^\circ$
7. Back plate down:  $\leq 10^\circ$

Accessories used together with the table top are shown below:



(1)Extension plate

(2)Head plate

(3)One-section leg plate



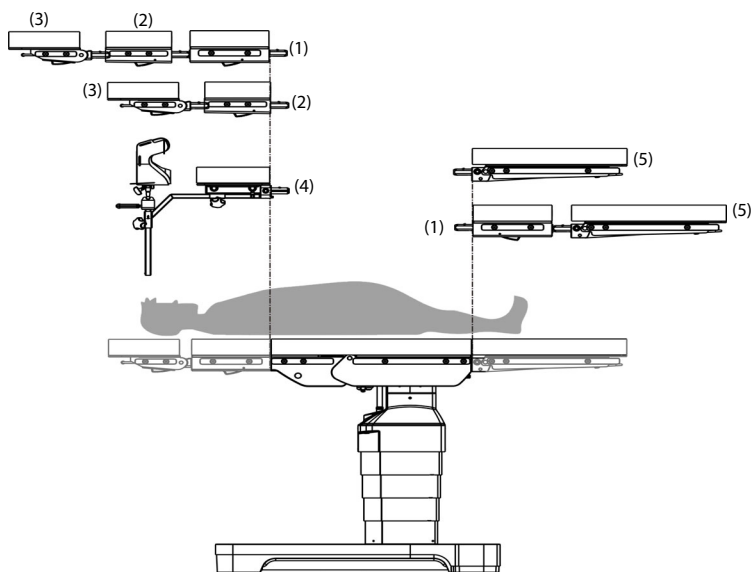
### 4.3 With an Overall Load between 155kg (342lbs.) and 250kg (550lbs.)

With an overall load of more than 155kg (342lbs.) and no more than 250kg (550lbs.), the operating table should be used with the following restrictions:

1. Lock the castors.

Accessories used together with the table top are shown below:

■ Normal patient orientation



(1)Extension plate

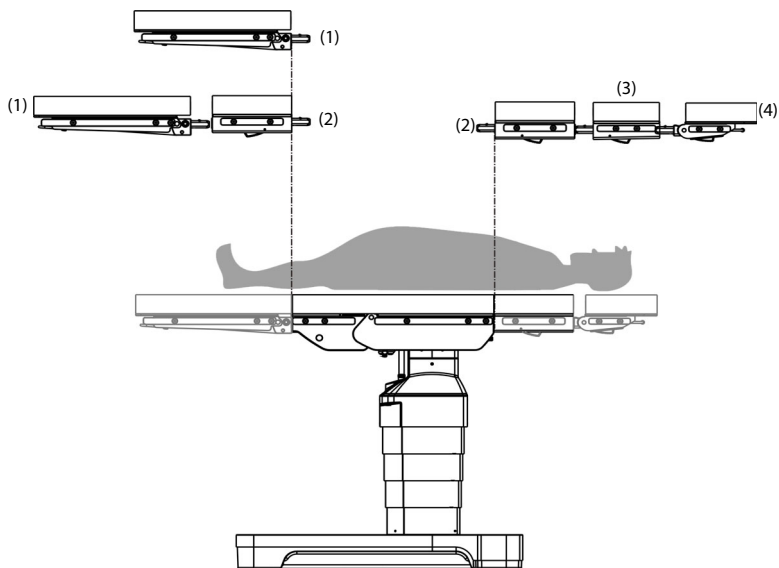
(2)Upper back plate

(3)Head plate

(4)Back plate for shoulder  
operation

(5)One-section leg plate

■ Reverse patient orientation



(1)One-section leg plate

(2)Extension plate

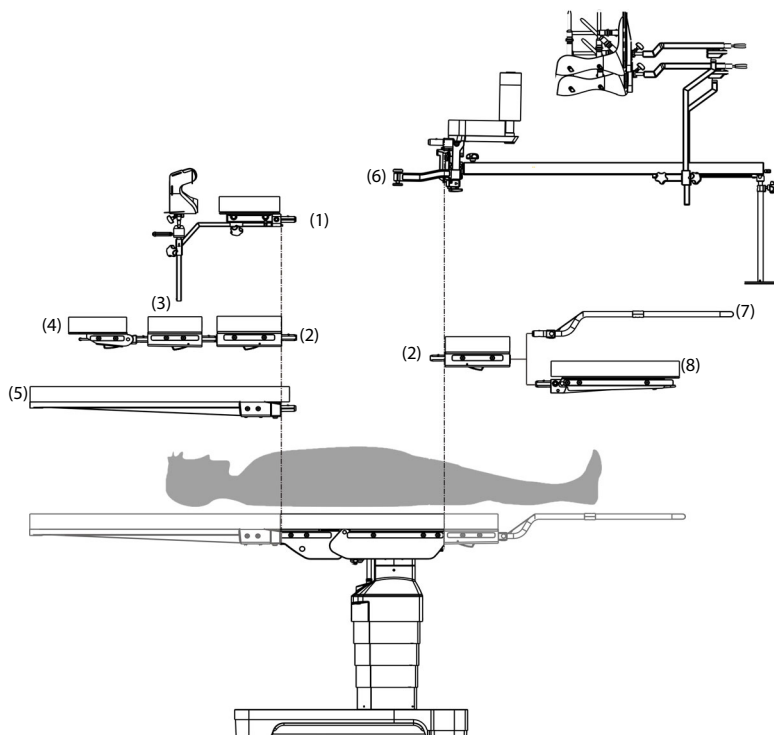
(3)Upper back plate

(4)Head plate

## 4.4 With an Overall Load Less Than 155kg (342lbs.)

With an overall load of less than 155kg (342lbs.), the table top should be used with the following accessories when castors are locked:

- Normal patient orientation



(1)Back plate for shoulder operation

(2)Extension plate

(3)Upper back plate

(4)Head plate

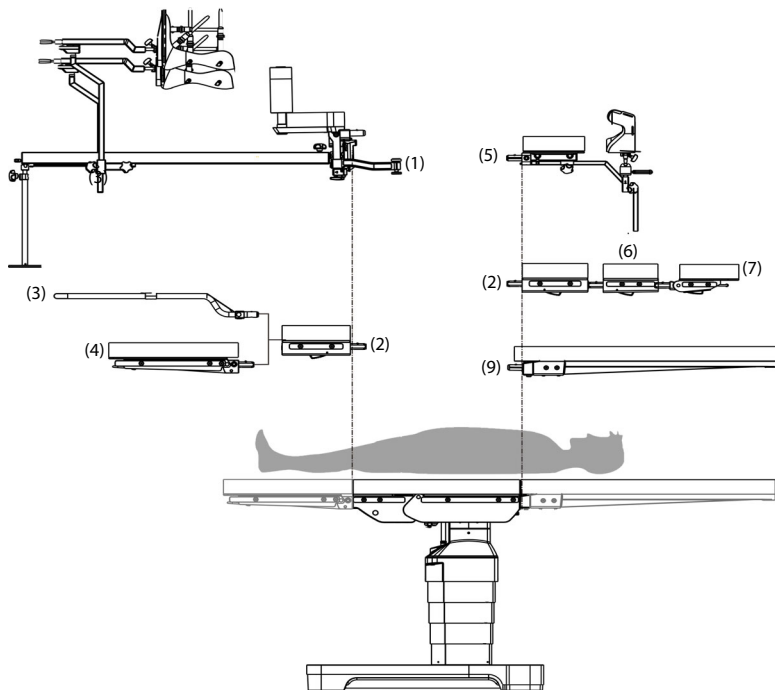
(5)Carbon fiber cardiac operating plate

(6)Orthopedic extension device

(7)Transfer board

(8)One-section leg plate

■ Reverse patient orientation



(1)Orthopedic extension  
device

(2)Extension plate

(3)Transfer board

(4)One-section leg plate

(5)Back plate for shoulder  
operation

(6)Upper back plate

(7)Head plate

(8)Carbon fiber cardiac  
operating plate

# 5 Cleaning and Disinfection

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## 5.1 Safety Information

The product must be cleaned and disinfected after every use.

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### WARNING

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- Use only Mindray approved cleaners and disinfectants and methods listed in this chapter to clean or disinfect your equipment. Warranty does not cover damage caused by unapproved substances or methods.
- Do not mix disinfecting solutions as hazardous gases may be generated.
- We make no claims regarding the efficacy of the listed chemicals or methods as a means for controlling infection. For the method to control infection, consult your hospital's infection control officer or epidemiologist.
- Agents containing alcohol can form explosive vapor mixtures and ignite where high-frequency equipment is being used. Do not use the cleaners or disinfectants containing alcohol where high-frequency surgical equipment may be used.
- Always wear gloves, masks and eye protection for cleaning and disinfection. Neglect of this may cause infection.
- Be sure to disconnect the power supply before cleaning and disinfection.
- Do not put hands into the gaps when cleaning /or disinfecting the table top. Otherwise, you may be pinched.
- The responsible hospital or institution shall carry out all cleaning and disinfection procedures specified in this chapter.
- Refer to the respective instructions for use of the cleaning agents and disinfectants.
- For the cleaning and disinfection of other reusable accessories, refer to their instructions for use of the corresponding accessories.

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### CAUTION

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- Do not clean/disinfect the operating table mechanically.
- Never immerse any part of the equipment or accessories in liquids.

- **Particles of grime may become encapsulated and lead to the product not reaching the desired germ-reduction after disinfection. Before disinfection, the product must be cleaned thoroughly of contamination and encapsulated particles of grime and then be dried.**
  - **Any contact of cleaners or disinfectants with connectors may cause corrosion.**
  - **Do not pour or spray any liquid directly on the equipment or accessories or permit fluid to seep into live parts inside the equipment.**
  - **If you spill liquid on the equipment or accessories, disconnect the power supply, dry the equipment and contact your service personnel.**
  - **Improper cleaning/disinfection can damage the operating table. Do not spray the cleaning agent/disinfectant directly into the joints or gaps. Do not use high pressure to clean/disinfect components.**
  - **Never use abrasive materials (such as steel wool or silver polish), or strong solvent (such as acetone or acetone-based cleaners) for cleaning.**
  - **Do not use polish or steel cleaner to clean or disinfect stainless steel surfaces.**
  - **Dilute and use the cleaners or disinfectants according to the manufacturer's instructions.**
- 

## **NOTE**

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- **Be sure to follow the related national hygiene and disinfection regulations to carry out cleaning and disinfection procedures.**
  - **Check the equipment or accessories after cleaning and disinfection. Stop the use if there is any sign of wear or damage.**
- 

## **5.2 Cleaning**

### **5.2.1 Preparation before Cleaning**

1. Adjust the operating table to 0 position.
2. Lift the table top to the highest position.
3. Switch off the operating table and disconnect the power cord.

### **5.2.2 Cleaning Procedure**

1. Use a piece of lint-free clean cloth to wipe off the dust gently and thoroughly.
2. Use a piece of lint-free cloth moistened with cleaner (clean water or soap solution) to wipe the surface.
3. Use a piece of disposable lint-free cloth moistened with water to clean the surface.
4. Use a piece of dry lint-free cloth to wipe the surface dry.

## NOTE

- **Use proper amount of the cleaner to clean the operating table, and remove any excessive agent by the dry cloth.**
- **Be sure to disinfect the equipment after cleaning.**

## 5.3 Disinfection

### 5.3.1 Recommended Disinfectants

Disinfect the equipment as required in your hospital's service schedule. Cleaning the equipment before disinfection is recommended. Always dilute and use disinfectants according to the manufacturer's instructions. The following table lists approved disinfectants:

Product name	Product type	Manufacturer
Alpet® D2 Surface Sanitizing Wipes	Wipes	BEST SANITIZERS INC™.
CIDEX® OPA	Liquid	Gilag GmbH International Advanced Sterilization products
Clorox Dispatch® Hospital Cleaner Disinfectant Towels with Bleach	Wipes	Clorox professional products company
Clorox Healthcare® Bleach Germicidal Wipes	Wipes	Clorox professional products company
Metrex CaviWipes™	Wipes	METERX® RESEARCH
PDI Sani-Cloth® AF3 Germicidal Disposable Wipe	Wipes	PDI Inc.
PDI Sani-Cloth® HB Germicidal Disposable Wipe	Wipes	PDI Inc.
PDI Sani-Cloth® Plus Germicidal Disposable Cloth	Wipes	PDI Inc.
PDI Super Sani-Cloth® Germicidal Disposable Wipe	Wipes	PDI Inc.
Virex® II 256 (1:256)	Liquid	Diversey Inc

Product name	Product type	Manufacturer
Rely+On™ Virkon® High Level surface Disinfectant, 1%	Powder	Antec International Ltd
Glutaraldehyde, 2%	Liquid	/
Isopropanol, 70%	Liquid	/

### 5.3.2 Disinfection Procedure

1. Use a piece of lint-free cloth moistened with disinfectant to wipe the surface.
2. Use a piece of disposable lint-free cloth moistened with water to clean the surface.
3. Use a piece of dry lint-free cloth to wipe the surface dry.

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#### CAUTION

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- Do not disinfect the equipment by fumigation methods. Otherwise, the equipment may be damaged.
  - Do not use the disinfectants containing chlorine or compounds which can release chlorine to disinfect the metal parts. Long-term use of these disinfectants may corrode the metal parts, hence compromising safety and effectiveness of the device. It is recommended that metal parts be disinfected by 2% alkaline glutaraldehyde.
- 

## 5.4 Pad Cleaning and Disinfection

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#### WARNING

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- Do not use the worn or damaged pad. Liquid can penetrate damaged pad and cause hygienic problems.
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#### CAUTION

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- Be sure to replace damaged pad immediately.
- Moisture may cause damage to pad.
- Do not use the disinfectant containing chlorine or compounds which can release chlorine.



- **The adhesive force of the Velcro strap may be compromised due to contamination. It is recommended a plastic soft brush or a plastic comb be used to remove the contamination.**
- 

### **5.4.1 Cleaning Procedure**

1. Remove the pad.
2. Use a piece of lint-free cloth moistened with cleaner (clean water or soap solution) to wipe the pad and then dry the surface.

### **5.4.2 Disinfection Procedure**

1. Use a piece of lint-free cloth moistened with disinfectant (as described in **5.3.1 Recommended Disinfectants**) to wipe the surface.
2. Use a piece of disposable lint-free cloth moistened with water to clean the surface.
3. Use a piece of dry lint-free cloth to wipe the surface dry.

### **NOTE**

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- **When removing the pad, be sure to grasp it with both hands.**
  - **Pad should be stored lying flat and horizontal.**
  - **Before installing the pad, ensure that the table top, pad and Velcro Strap are dry.**
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# 6 Maintenance

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Regular maintenance is essential to ensure that the equipment functions properly. This chapter contains information on equipment maintenance method and frequency.

## 6.1 Maintenance Safety Information

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### WARNING

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- To avoid electric shock, stop using the equipment if you find the housing has signs of damage. Contact the service personnel for help in that case.
  - Failure on the part of the responsible individual hospital or institution using this equipment to implement a recommended maintenance schedule may cause undue equipment failure and possible health hazards.
  - If you have any questions during the inspection, contact the customer service department authorized by Mindray.
  - The device maintenance that requires disassembling shall be performed by the professional service personnel authorized by Mindray. Otherwise, device failure or personal safety accidents may occur.
  - The service personnel must be properly qualified and thoroughly familiar with the operation of the equipment.
- 

### CAUTION

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- The equipment and accessories shall not be tested or maintained while in use with a patient.
  - If you discover a problem with any of the equipment, contact your service personnel or Mindray.
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### NOTE

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- This equipment contains no user serviceable parts. Refer servicing to qualified service personnel.
  - If needed, contact Mindray for circuit diagrams, component part lists, descriptions, calibration instructions, or other information concerning the repair of the equipment.
-

## 6.2 Maintenance Schedule

Follow the maintenance schedule or local regulations to perform maintenance. Be sure to clean and disinfect the equipment before test or maintenance. The following table lists the maintenance and testing schedule:

Test/Maintenance Item		Recommended Frequency
Visual inspection		Every day, before first use.
Switch-on test		Each time the operating table is switched on.
Battery maintenance	Functional test	1. When first installed. 2. When the battery is replaced.
	Performance test	Every three months or when the battery runtime reduced significantly

## 6.3 Testing Methods and Procedures

Except the following maintenance tasks, all other test and maintenance tasks should be performed by Mindray's qualified service personnel only.

- Regular check, including visual inspection and switch-on test
- Battery maintenance

If the operating table needs other test and maintenance, contact the service personnel.

### 6.3.1 Visual Inspection

Visually inspect the equipment before its first use every day. If you find any signs of equipment or accessory damage, stop using it and contact the service personnel.

Visual inspection items are as follows:

- Environment and power supply specifications are met.
- The equipment surface has not any stain. The override panel and hand control are free from cracks or damages.
- Mechanical parts are not damaged.
- Connectors, plugs and cables are not damaged and kinked.
- Cables are securely connected with the equipment.
- Pads are not damaged and firmly fixed on the table top.
- The operating table has no oil leakage.
- The operating table has no obvious vibration.

### 6.3.2 Switch-on Test

Check the following items after the operating table is switched on:

- The equipment can be switched on properly.
- The operating table works properly: table up/down, tilt, slope, longitudinal shift, back plate up/down, lock/unlock
- The hand control displays properly.

### 6.3.3 Battery Maintenance

#### 6.3.3.1 Battery Safety Information

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#### **WARNING**

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- **Use specified batteries only. Use of different batteries may present a risk of fire or explosion.**
  - **Do not crush, drop or puncture the battery. Mechanical abuse may lead to internal damage and internal short circuits. If a battery has been dropped or banged against a hard surface, whether damage is externally visible or not, remove the battery from use and dispose of it properly.**
  - **If the battery shows signs of damage or leakage, contact your service personnel immediately.**
  - **The battery must only be installed and replaced by service personnel trained and authorized by Mindray. Installation or replacement by untrained personnel may cause personal injury (e.g. batteries overheated, ignited or exploded).**
  - **Extremely high ambient temperature may cause battery overheat protection, resulting in interruption of power supply.**
  - **Do not open the battery, heat the battery above 60 °C, incinerate battery, or short battery terminals. They may ignite, explode, leak or heat up, causing personal injury.**
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#### **CAUTION**

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- **Remove the battery if it will not be used for an extended period of time. Contact the customer service personnel authorized by Mindray or local distributor.**
  - **Storing the battery at high temperature for a long period of time will significantly shorten its life expectancy.**
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## NOTE

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- **Battery runtime depends on equipment configuration and operation. For example, high brightness of the screen or repeated operation will shorten the battery runtime.**
- 

### 6.3.3.2 Functional Test

The built-in rechargeable lead-acid battery ensures normal use of the operating table without external power supply. Once the external power supply is connected, the battery will be charged automatically. See **3.2.2 Charging Batteries** for details.

The built-in rechargeable lithium-ion battery ensures normal use of the wireless hand control without external power supply. Use the mobile charging station to charge the wireless hand control. See **3.3.6.2 Charging Wireless Hand Control** for details.

### 6.3.3.3 Optimizing Batteries

Life expectancy of a battery depends on how frequent and how long it is used. The performance of a rechargeable battery deteriorates over time.

It is recommended the battery be optimized every three months. Use the battery with its remaining capacity indicated the last bar before optimization. Optimize the battery as shown below:

#### ■ Operating table battery

1. Switch off the operating table and connect it to AC power.
2. Charge the battery uninterruptedly until it is fully charged. It takes about 10 hours to fully charge the battery.
3. Then disconnect it from AC power.

## NOTE

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- **If the battery is not maintained for a prolonged time, its capacity indication may not be accurate and you may wrongly evaluate the remaining battery runtime. In addition, the battery is subject to regular maintenance. Otherwise, aging may be accelerated and unexpected failure may occur.**
  - **Do not use the operating table during battery optimization.**
  - **Do not interrupt the battery optimization.**
- 

#### ■ Battery of wireless hand control

It is recommended the battery be optimized every three months if the wireless hand control has not been used for a long period. Optimize the battery as shown below:

1. Connect the mobile charging station to AC power.

2. Switch off the wireless hand control and insert it into the mobile charging station and charge the wireless hand control uninterruptedly until it is fully charged.
3. Disconnect the wireless hand control from the external AC power and switch it on. Use the wireless hand control to adjust the operating table until the battery of the wireless hand control is completely discharged and the wireless hand control automatically shuts down.
4. Recharge the wireless hand control fully if it is to be used. If the wireless hand control is to be stored, place the battery with 40% to 60% charging capacity.

#### **6.3.3.4 Checking Battery Performance**

See steps in **6.3.3.3 Optimizing Batteries** to check the battery performance. The runtime of the battery reflects their performance directly. If the runtime of a battery is noticeably shorter than that stated in the specifications, the battery may reach its service life or malfunction. Contact your service personnel.

## **6.4 Disposal**

Dispose of the equipment when its service life is reached.

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### **WARNING**

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- **At the end of its service life, the equipment, as well as its accessories, must be disposed of in compliance with the local regulations. If you have any questions concerning disposal of the equipment, please contact Mindray.**
  - **For disposal of parts and accessories, unless otherwise specified, follow local regulations regarding disposal of hospital waste.**
  - **Dispose of the package material as per the applicable waste control regulations. Keep it out of children's reach.**
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# 7 Troubleshooting

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## 7.1 Common Error


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### **WARNING**

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- The chapter is meant to help you solve common errors only. In case you encounter problems not included in this chapter or following the introduced methods cannot solve the problem, contact the customer service department authorized by Mindray or your local distributor for help. Unauthorized device servicing is not allowed.
  - Device servicing is to be performed by personnel authorized by Mindray only. Unauthorized device servicing may cause personal injury and/or property damage.
  - Be sure to disconnect the equipment from AC power when device servicing.
  - Device servicing should be strictly based on technical data supplied by Mindray. If you are in need of more technical data, contact the customer service department authorized by Mindray or your local distributor.
-

Error	Cause	Solution
Bluetooth connection of the wireless hand control fails.	1. Fail to start the connection within 20 seconds.	1. Press and hold the Trendelenburg button on the override panel and start the bluetooth connection within 20 seconds.
	2. The operating table is powered off.	2. Press the power button on the base to power on the operating table.
	3. The wireless hand control stays far away from the operating table or there are obstacles between the wireless hand control and operating table.	3. The distance between the wireless hand control and the operating table is no more than 3.5 meters, and there are not any obstacles between the wireless hand control and operating table.
	4. The operating table has been connected with another wireless hand control.	4. Reconnect by following steps of the bluetooth connection.
	5. Bluetooth module fails.	5. Contact the customer service department authorized by Mindray or your local distributor.
Unlock fails.	The unlock button has not been pressed for 2 seconds.	Press and hold the unlock button for two seconds. See <b>3.3.5.2 Unlock /Lock</b> .
Locking indicator (green) and unlocking indicator (green) on the override panel flashes at the same time.	The operating table is in the intermediate state of locking and unlocking.	Perform locking or unlocking again.
Battery indicator on the base is orange and flashes.	The second battery bar is orange and flashes.	Contact the customer service department authorized by Mindray or your local distributor.
	The third battery bar is orange and flashes.	
	The fourth battery bar is orange and flashes.	

Error	Cause	Solution
The icon  appears on the screen.	The operating table may have any hardware, sensor or motor errors.	Contact the customer service department authorized by Mindray or your local distributor.

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# A Product Specifications

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## A.1 Safety Specifications

### A.1.1 Product Classification

<b>According to the protection against electrical shock</b>	Class I, internal electrical power source. Type B applied part.
<b>According to the protection against harmful ingress of water or particulate matter</b>	Operating table: IPX5 Mobile charging station (except the adapter): IPX5 Foot switch: IPX8
<b>According to the method(s) of sterilization</b>	Non-sterilization.
<b>According to the suitability for use in an oxygen rich environment</b>	The operating table cannot be used in an oxygen rich environment.
<b>According to the mode of operation</b>	Non-continuous operation: 10 minutes on /20 minutes off

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### WARNING

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- **To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth. Before installing it, check and ensure that the protective earth system in the operating room is reliable and safe.**
-

## A.1.2 Environmental Specifications

Item	Temperature	Humidity (non-condensing)	Atmospheric pressure (kPa)
Operating condition	5 °C to 40 °C (41°F to 104°F)	15%-95%	70-106
Storage condition	-40 °C to 60 °C (-41°F to 140°F)	10%-95%	50-106

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### CAUTION

- During transportation, ensure that the operating table is well protected from rain, snow or mechanical collision.
  - The operating table should be stored in a room that is dry, draughty and without caustic gas.
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## A.2 Power Supply Specifications

### A.2.1 AC Power

AC power	100-240V~ 50/60Hz 4.0-1.6A
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### A.2.2 Fuse

Fuse	250V T8AH
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### A.2.3 Operating Table Batteries

Type	Internal batteries
Voltage	24V
Runtime	About one week
Charge time	About 10h
Power-off delay	About 10 minutes of continuous operation after the low battery prompt first occurs

## NOTE

- The output voltage of the battery is 24 V, which is composed of a single 24 V battery or two 12 V batteries depending on the sales region.

## A.3 Wireless Specifications

### WARNING

- Do not connect non-medical devices to the operating table network.
- If wireless network signal is poor, there may be a risk of data loss.
- RF interference may result in wireless network disconnection.

### A.3.1 Bluetooth

Work frequency	2402-2480MHz
Modulation mode	GFSK
Transmission power	<30dBm

### A.3.2 Mobile Charging Station

Work frequency (certified sample)	110.6-114.4KHz, 176.6-206.9KHz
Work frequency (declared range)	110.1-227.6KHz
Modulation mode	AM

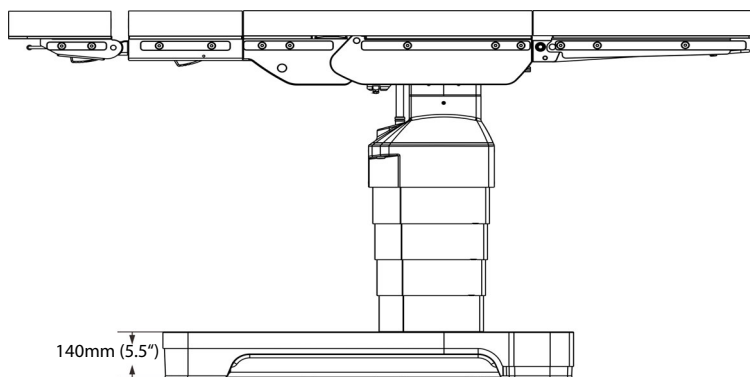
## **A.4 Load**

1. Maximum overall load: 460kg (1015lbs.)
2. With an overall load of more than 250kg (550lbs.), the operating table should be used with the following restrictions:
  - a Lock the castors.
  - b Position the patient to the normal patient orientation.
  - c Do not operate the longitudinal shift.
  - d Trendelenburg/reverse Trendelenburg:  $\leq 15^\circ$
  - e Tilt to left/right:  $\leq 5^\circ$
  - f Back plate up:  $\leq 70^\circ$
  - g Back plate down:  $\leq 10^\circ$
3. With an overall load of more than 155kg (342lbs.) and no more than 250kg (550lbs.), the operating table should be used with the following restrictions:
  - a Lock the castors.



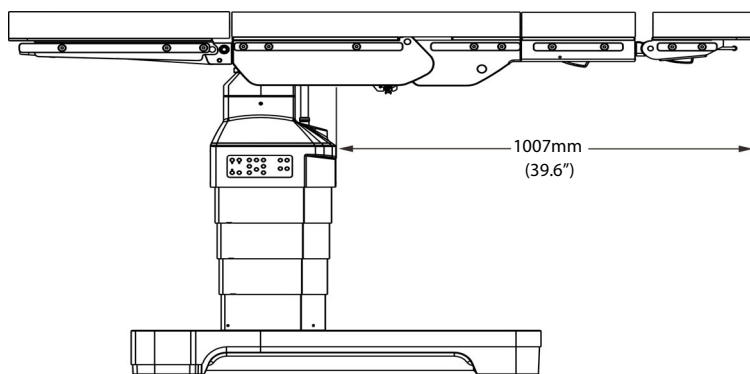
## A.5 Performance Specifications

1. Base thickness:  $140\text{mm} \pm 10\text{mm}$  ( $5.5'' \pm 0.4''$ )

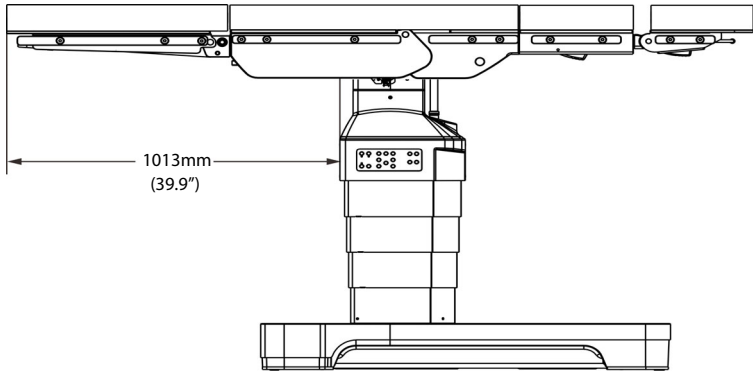


2. Radiolucent distance

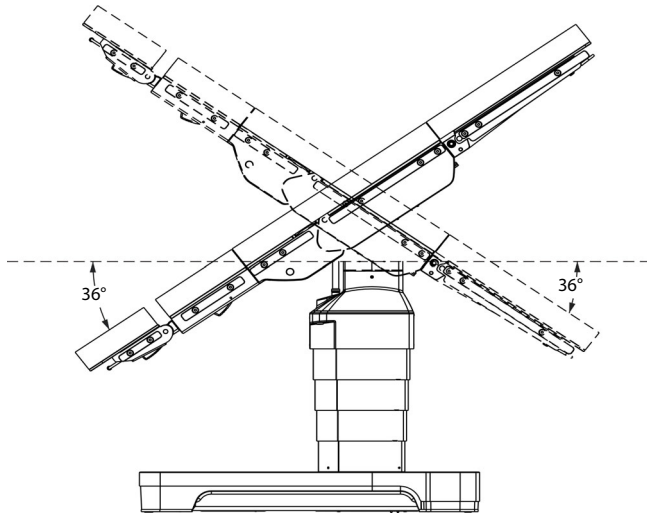
- ◆ Maximum radiolucent distance with longitudinal shift toward head end:  
 $1007\text{mm} \pm 10\text{mm}$  ( $39.6'' \pm 0.4''$ )



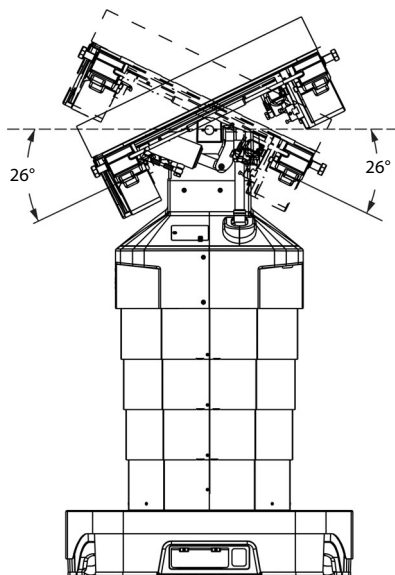
- ◆ Maximum radiolucent distance with longitudinal shift toward foot end:  
 $1013\text{mm} \pm 10\text{mm}$  ( $39.9'' \pm 0.4''$ )



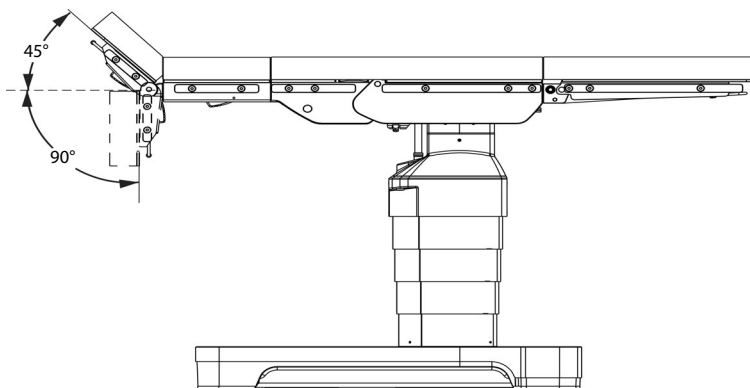
3. Maximum Trendelenburg/reverse Trendelenburg:  $36^\circ \pm 3^\circ$



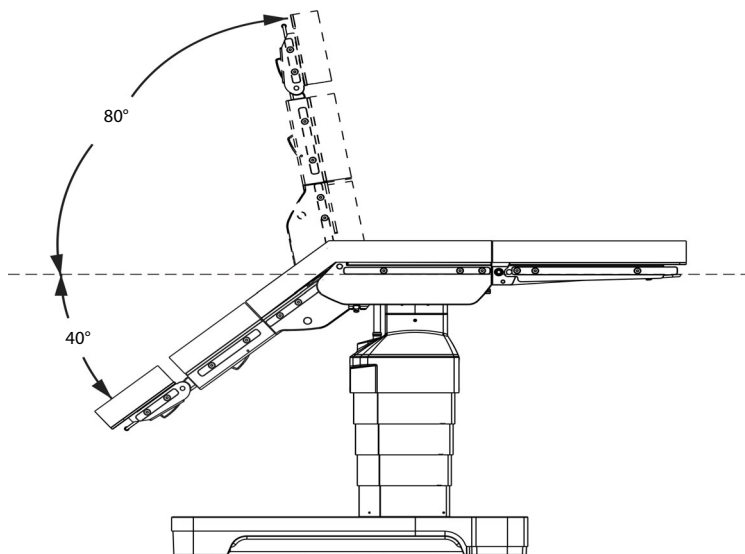
4. Maximum tilt angle:  $26^{\circ} \pm 2^{\circ}$



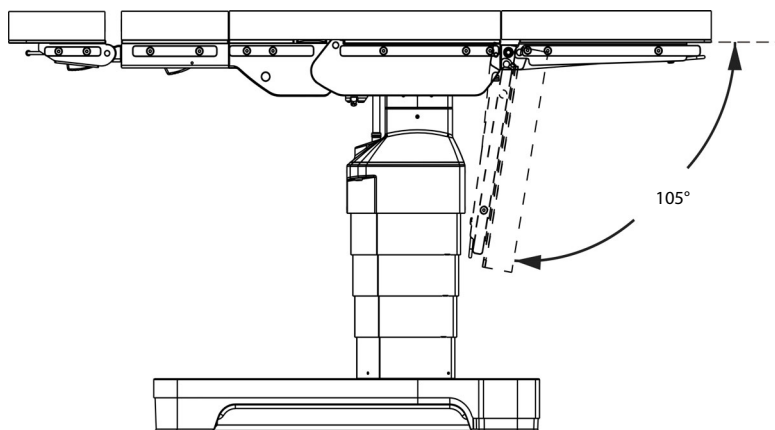
5. Head plate: head plate up:  $45^{\circ} \pm 5^{\circ}$ , head plate down:  $90^{\circ} \pm 5^{\circ}$ , detachable



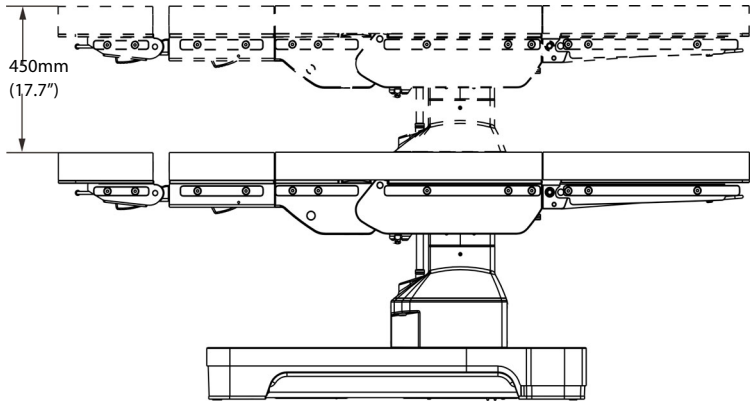
6. Back plate: back plate up:  $80^{\circ} \pm 5^{\circ}$ , back plate down:  $40^{\circ} \pm 5^{\circ}$



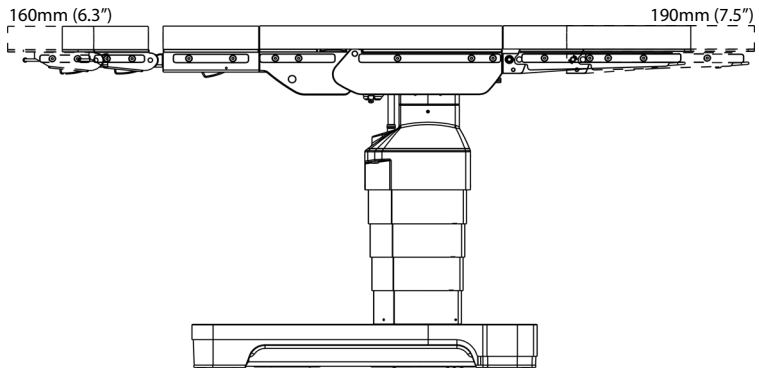
7. Leg plate: leg plate down:  $105^{\circ} \pm 5^{\circ}$ , detachable



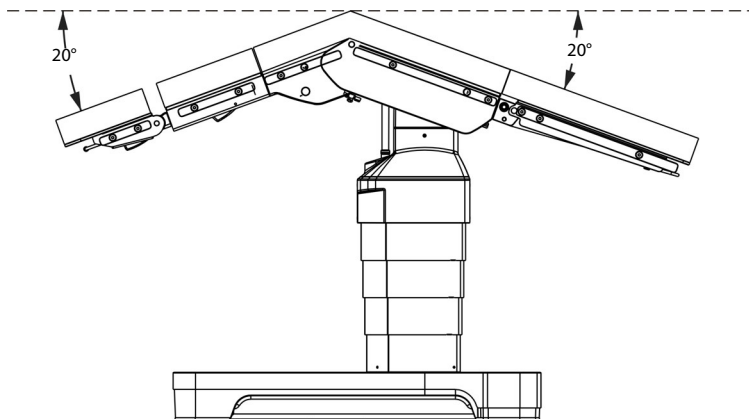
8. Maximum table top lifting height:  $450\text{mm} \pm 20\text{mm}$  ( $17.7'' \pm 0.8''$ )
- ◆ Maximum table top height:  $1050\text{mm} \pm 20\text{mm}$  ( $41.3'' \pm 0.8''$ )
  - ◆ Minimum table top height:  $600\text{mm} \pm 50\text{mm}$  ( $23.6'' \pm 2''$ )



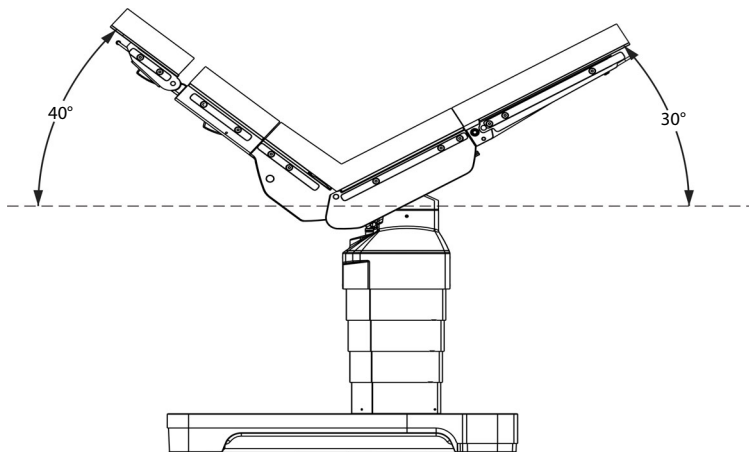
9. Maximum longitudinal shift:  $350\text{mm} \pm 10\text{mm}$  ( $13.8'' \pm 0.4''$ )
- ◆ Longitudinal shift toward head end:  $160\text{mm} \pm 10\text{mm}$  ( $6.3'' \pm 0.4''$ )
  - ◆ Longitudinal shift toward foot end:  $190\text{mm} \pm 10\text{mm}$  ( $7.5'' \pm 0.4''$ )



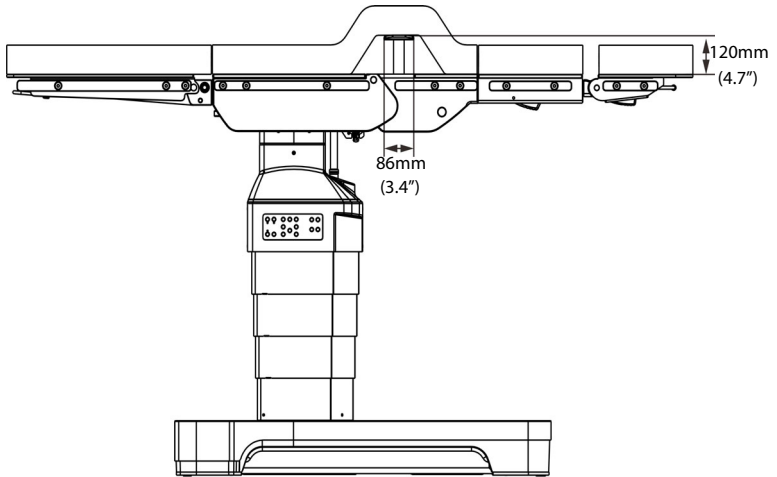
10. Flex position: Reverse Trendelenburg:  $20\pm3^\circ$ , back plate down:  $40\pm3^\circ$



11. Reflex position: Trendelenburg:  $30\pm3^\circ$ , back plate up:  $70\pm3^\circ$



12. Body elevator lifting distance:  $120\text{mm} \pm 10\text{mm}$  ( $4.7'' \pm 0.4''$ )  
Body elevator width:  $86\text{mm} \pm 10\text{mm}$  ( $3.4'' \pm 0.4''$ )



## A.6 Mattress Thickness

Memory foam mattress: 80 mm  $\pm$ 10 mm

## A.7 Accessories and Parts List

Item	Name
1.	A35XXU Multi-function clamp
2.	A33XXU Simple clamp
3.	A95XXU Advanced body strap
4.	A15XXU Advanced shoulder support, a pair
5.	A16XXU Multi-joint body support
6.	A45XXU Mayo instrument tray
7.	A44XXU Instrument tray
8.	A53XXU Cassette fixer
9.	A31XXU Side rail extension (L-shape)
10.	A01XXU Accessory cart
11.	AB3XXU Univ. adaptor for head position
12.	Reison head rest
13.	A19XXU Wristlet
14.	A93XXU Multi-position arm board
15.	A39XXU Upper arm support
16.	AB2XXU Arm operating table
17.	A94XXU Arm protector, a pair
18.	A03XXU Transfer board
19.	A24XXU Foot plate
20.	A02XXU Rectal positioning device
21.	A29XXU Advanced leg support, a pair
22.	A26XXU Arthroscopic leg holder
23.	A27XXU Meniscus positioning device
24.	A22XXU Thigh holder, a pair
25.	A23XXU Shank holder, a pair



Item	Name
26.	V03CXU Upper back plate
27.	V03XXU Upper back plate
28.	A54XXU Table width extender
29.	A66XXU Back plate for shoulder operation
30.	V04XXU Foot switch
31.	V07XXU Wireless hand control
32.	P34LXU Head ring
33.	P34MXU Head ring
34.	P34SXU Head ring
35.	P09LXU Paediatric head ring
36.	P09MXU Paediatric head ring
37.	P09SXU Paediatric head ring
38.	P32XXU Infant head ring
39.	P16LXU Horseshoe head ring
40.	P16MXU Horseshoe head ring
41.	P16SXU Horseshoe head ring
42.	P07LXU Paediatric horseshoe head ring
43.	P07SXU Paediatric horseshoe head ring
44.	P31XXU Infant head ring
45.	P29LXU Ophthalmic head pad
46.	P29MXU Ophthalmic head pad
47.	P29SXU Ophthalmic pad, paediatric
48.	P30XXU Pillow for supine position
49.	P06XXU Prone position pillow
50.	P11XXU Prone position pillow
51.	P19XXU Prone pillow, full support
52.	P08XXU Paediatric prone pillow
53.	P26LXU Universal Head Pad
54.	P26SXU Universal Head Pad

Item	Name
55.	P25XXU Universal supine pad
56.	P03LXU Arm/leg pad
57.	P03SXU Arm/leg pad
58.	P05XXU Lateral positioner
59.	P38XXU Prone positioner
60.	P15XXU Struma pad
61.	P12XXU Heel pad
62.	P39XXU Advanced lateral positioner
63.	P35LXU Short gel body roll
64.	P35MXU Short gel body roll
65.	P35SXU Short gel body roll
66.	P04XXU Gel body roll, paediatric
67.	P17LXU Long gel body roll
68.	P36LXU High gel body roll
69.	P17SXU Long gel body roll
70.	P13XXU Ankle protection strap
71.	P23XXU Body strap
72.	P27XXU Wrist protector
73.	P18XXU Elbow protection strap
74.	P24LXU Universal square pad
75.	P24MXU Universal square pad
76.	P24SXU Universal square pad
77.	P20LXU Universal arm board pad
78.	P20SXU Universal arm board pad
79.	P28XXU Chest-hipbone pad
80.	P14XXU Pad for countertraction post
81.	P01XXU Universal hip pad
82.	P21XXU Table pads, 3 pieces
83.	Orthopaedic extension device kit-CF

Item	Name
84.	Orthopaedic extension device kit
85.	A86XXU Tibia & fibula ASSY kit
86.	A87XXU Lateral femur ASSY kit
87.	V01CXU Cardiac operating plate kit
88.	A12XXU Anesthesia frame
89.	A42XXU Easy-clip arm board, a pair
90.	A51XXU Ophthalmic operating plate
91.	AB1XXU Multi-joint head rest
92.	AB4XXU Head rest
93.	AB5XXU Guiding roller for cervix traction
94.	AB6XXU Wrist support
95.	AA9XXU Multi-joint arm support
96.	A55XXU Forearm extension device
97.	A56XXU Upper arm extension device

# A.8      Electronic Interface

You may see the following electronic interfaces on the operating table. The technical descriptions of the electronic interfaces are as follows:

Electronic Interface	Specification
Corded hand control interface	Used for transmitting control commands and operating table status
	Connected with the corded hand control
	Mindray internal protocol
	Push-pull self-locking connector
Foot switch interface	Used for transmitting control commands and operating table status
	Connected with the foot switch
	Mindray internal protocol
	Push-pull self-locking connector

# 5 EMC and Radio Regulatory Compliance

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## 5.1 EMC

The equipment complies with the EMC standard IEC 60601-1-2.

Intended environments: this equipment is intended for use in professional healthcare facility EMC environment only.

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### WARNING

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- The use of unapproved accessories may diminish equipment performance.
  - The equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided below.
  - Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.
  - Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation
  - Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the equipment, including cables specified by the manufacturer. Otherwise, degradation of the performance of this device could result.
  - Other devices may interfere with this equipment even though they meet the requirements of CISPR.
  - To make sure the operating table works well, the EUT can coexist with 2.4G unintended signal at a short distance.
  - Use of portable or mobile communications devices can degrade the performance of the equipment.
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Guidance and Declaration-Electromagnetic Emissions		
The equipment is intended for use in the electromagnetic environment specified below. The customer or the user of the equipment should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment-guidance
Conducted and radiated RF EMISSIONS CISPR 11	Group 1	The equipment uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
Conducted and radiated RF EMISSIONS CISPR 11	Class A	
Harmonic current EMISSIONS IEC 61000-3-2	Not applicable	
Voltage fluctuations and flicker EMISSIONS IEC 61000-3-3	Not applicable	The equipment is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.

If the equipment is operated within the electromagnetic environment listed in Table Guidance and Declaration —Electromagnetic Immunity, the equipment will remain safe and provide the following essential performance: the normal operating table movement realized by electric control of the control unit; supporting a patient without unwanted movement in a single fault condition.

Guidance and Declaration-Electromagnetic Immunity			
The equipment is intended for use in the electromagnetic environment specified below. The customer or the user of the equipment should assure that it is used in such an environment.			
Immunity test	IEC60601 test level	Compliance level	Electromagnetic environment-guidance

Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines (length greater than 3 m)	±2 kV for power supply lines ±1 kV for input/output lines (length greater than 3 m)	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±0,5 kV, ±1 kV line(s) to line(s) ±0,5 kV, ±1 kV, ±2 kV line(s) to earth	±0,5 kV, ±1 kV line(s) to line(s) ±0,5 kV, ±1 kV, ±2 kV line(s) to earth	
Voltage dips, short interruptions and voltage variation on power supply input voltage IEC 61000-4-11	0 % $U_T$ for 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°  0 % $U_T$ for 1 cycle and 70 % $U_T$ for 25/30 cycles Cycle at 0°  0 % $U_T$ for 250/300 cycle	0 % $U_T$ for 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°  0 % $U_T$ for 1 cycle and 70 % $U_T$ for 25/30 cycles Cycle at 0°  0 % $U_T$ for 250/300 cycle	Mains power quality should be that of a typical commercial or hospital environment. If the user of our product requires continued operation during power mains interruptions, it is recommended that our product be powered from an uninterruptible power supply or a battery.
RATED power frequency magnetic fields IEC 61000-4-8	30 A/m 50 Hz / 60 Hz	30 A/m 50 Hz / 60 Hz	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Note: $U_T$ is the A.C. mains voltage prior to application of the test level.			

Guidance and Declaration-Electromagnetic Immunity			
The equipment is intended for use in the specified electromagnetic environment. The customer or the user of the device should assure that it is used in such an environment as described below.			
Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment - guidance
Conducted disturbances induced by RF fields IEC61000-4-6	3 Vrms 150 kHz to 80 MHz  6 Vrms in ISM bands a between 0,15 MHz and 80 MHz	3 Vrms 150 kHz to 80 MHz  6 Vrms in ISM bands a between 0,15 MHz and 80 MHz	<p>Portable and mobile RF communications equipment should be used no closer to any part of the device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance:</p> $d = 1.2\sqrt{P}$ $d = 2\sqrt{P}$
Radiated RF EM fields IEC61000-4-3	3 V/m 80 MHz to 2.7 GHz	3 V/m 80 MHz to 2.7 GHz	$d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2.7 GHz <p>Where <math>P</math> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <math>d</math> is the recommended separation distance in meters (m).  Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey <sup>b</sup>, should be less than the compliance level in each frequency range <sup>c</sup>. Interference may occur in the vicinity of equipment marked with the following</p> <div style="text-align: center;">  </div> <p>symbol:  .</p>



Note 1: At 80 MHz to 800 MHz, the higher frequency range applies.  
Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

<sup>a</sup>: The ISM (industrial, scientific, and medical) bands between 150 kHz and 80 MHz are 6,765 MHz to 6,795 MHz; 13,553 MHz to 13,567 MHz; 26,957 MHz to 27,283 MHz; and 40,66 MHz to 40,70 MHz. The amateur radio bands between 0,15 MHz and 80 MHz are 1,8 MHz to 2,0 MHz, 3,5 MHz to 4,0 MHz, 5,3 MHz to 5,4 MHz, 7 MHz to 7,3 MHz, 10,1 MHz to 10,15 MHz, 14 MHz to 14,2 MHz, 18,07 MHz to 18,17 MHz, 21,0 MHz to 21,4 MHz, 24,89 MHz to 24,99 MHz, 28,0 MHz to 29,7 MHz and 50,0 MHz to 54,0 MHz.

<sup>b</sup>: Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the device is used exceeds the applicable RF compliance level above, the device should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the device.

<sup>c</sup>: Over the frequency ranges 150 kHz to 80 MHz, field strengths should be less than 3V/m.

**Guidance and mindray declaration—Electromagnetic immunity**

The equipment is intended for use in the electromagnetic environment specified below. The customer or the user of the equipment should assure that it is used in such an environment.

Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment - guidance
Proximity magnetic fields IEC 61000-4-39	65 A/m 134,2 kHz Pulse modulation 2,1 kHz	65 A/m 134,2 kHz Pulse modulation 2,1 kHz	/
	7,5 A/m 13,56 MHz Pulse modulation 50 kHz	7,5 A/m 13,56 MHz Pulse modulation 50 kHz	

## Test specifications and minimum distances

### Recommended separation distances between portable and mobile RF communications equipment and this equipment

The equipment is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the equipment can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the equipment as recommended below, according to the maximum output power of the communications equipment. Portable and mobile radio communications equipment (e.g. two-way radio, cellular/ cordless telephones and similar equipment) should be used no closer to any part of this equipment, including cables, than determined according to the following method:

Test frequency (MHz)	Band (MHz)	Service	Modulation	Maximum power (W)	Distance (m)	Immunity test level (V/m)
385	380 - 390	TETRA 400	Pulse modulation 18Hz	1.8	0.3	27
450	430 - 470	GMRS 460 FRS 460	FM $\pm 5$ kHz deviation 1 kHz sine	2	0.3	28
710	704 - 787	LTE Band 13,17	Pulse modulation 217 Hz	0.2	0.3	9
745						
780						
810	800 - 960	GSM 800/900, tetra 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation 18 Hz	2	0.3	28
870						
930						

1720	1700 - 1990	GSM 1800, CDMA 1900, GSM 1900, DECT, LTE Band 1, 3, 4, 25; UMTS	Pulse modulation 217 Hz	2	0.3	28
1845						
1970						
2450	2400 - 2570	Bluetooth , WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation 217 Hz	2	0.3	28
5240	5100 - 5800	WLAN, 802.11 a/n	Pulse modulation 217 Hz	0.2	0.3	9
5500						
5785						

**Recommended separation distances between portable and mobile rf communication device and the system**

The equipment is intended for use in an electromagnetic environment in which radiated RF disturbance are controlled. The customer or the user of the device can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the equipment as recommended below, according to the maximum output power of the communication equipment.

Rated Maximum Output power of Transmitter Watts (W)	Separation distance according to frequency of transmitter (m)			
	150kHz-80MHz Out ISM bands $d = 1.2\sqrt{P}$	150kHz-80MHz In ISM bands $d = 2\sqrt{P}$	80MHz-800MHz $d = 1.2\sqrt{P}$	800MHz-2.7GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.20	0.12	0.23
0.1	0.38	0.64	0.38	0.73
1	1.20	2.00	1.20	2.30
10	3.8	6.40	3.80	7.30
100	12.00	20.00	12.00	23.00

For transmitters at a maximum output power not listed above, the recommended separation distance  $d$  in meters (m) can be determined using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1: At 80 MHz to 800 MHz, the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Cable:

No.	Description	Length (m)	Shielded or not
1	AC power cord	≤ 5	Not shielded

## 5.2 Radio Regulatory Compliance

This device complies with part 15 of the FCC rules and RSS standard of Industry Canada. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This radio transmitter has been approved by Industry Canada to operate with the antenna types listed with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

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### WARNING

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- **Changes or modifications not expressly approved by the party responsible compliance could void the user's authority to operate the equipment.**
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