Operator’s Manual

HyBase 8300/HyBase 8500

Operating Table

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1 System Overview

1.1 Main Components

The main components of the operating table are shown in the figure below.

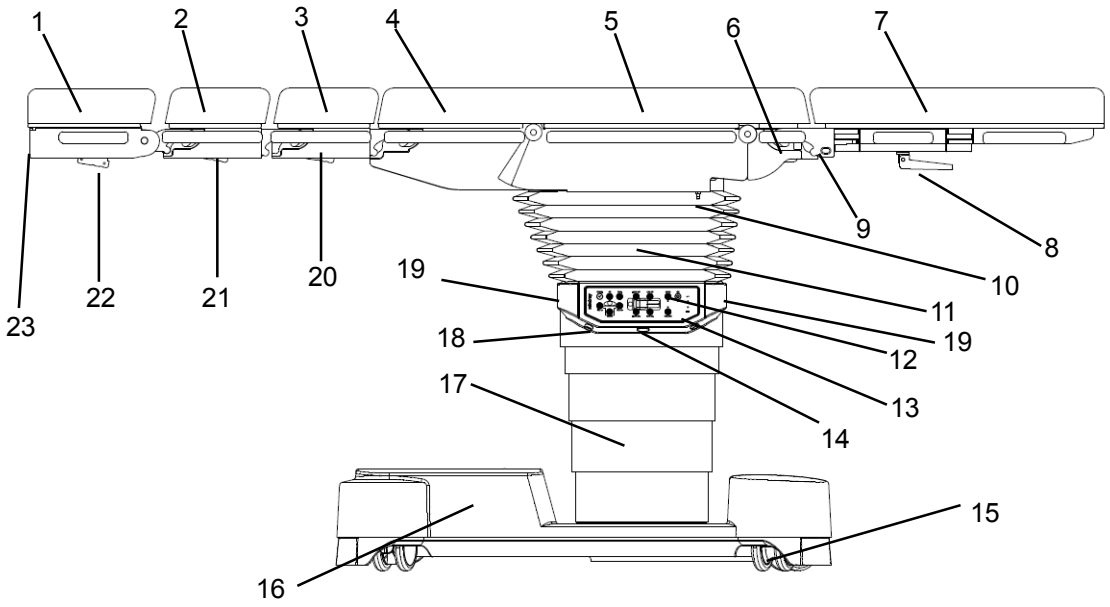


Figure 1-1 Main components

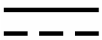
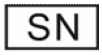
1 Dual-joint head plate (optional)
2 Upper back plate (optional)
3 Extension plate (optional)
4 Lower back plate
5 Seat plate
6 Short leg plate
7 Dual-joint leg plate (optional)
8 Locking handle (leg plate left/right)
9 Release button (leg plate)
10 Potential equalization pin
11 Bellows
12 Override panel
13 Connection for foot switch
14 Connection for USB
15 Castor
16 Base
17 Column
18 Connection for corded hand control
19 Infrared receiver
20 Locking button (extension plate)
21 Locking button (upper back plate)
22 Locking button (dual-joint head plate)
23 Release bracket for dual-joint head plate

1.2 Definitions

1.2.1 Graphical Symbols

You can see the following symbols on the operating table:

Table 1-1 Symbol Definition

Symbol	Meaning
	Caution, consult accompanying documents.
	Caution
IPX4/IPX8	Protection against of water or particulate matter
	Class II
	Type B applied part
	Protective earth (ground)
	Equipotentiality
	Alternating current
	Direct current
	Serial number

	Date of manufacture
	Manufacturer
	Authorized representative in the European Community”
	Power on/off
	Temperature limitation
	Humidity limitation
	Atmospheric pressure
	WEEE symbol The following definition of the WEEE label applies to EU member states only: the use of this symbol indicates that this product should not be treated as household waste. By ensuring that this product is disposed of correctly, you will help prevent bringing potential negative consequences to the environment and human health. For more detailed information with regard to returning and recycling this product, please consult the distributor from whom you purchased the product.
	ESD warning
	Labeling for Class I products. Developed and marketed in compliance with medical device directive 93/42/EEC.

1.2.2 Safety Notes

Table 1-2 Definition of safety notes

Note	Meaning
⚠ WARNING	Read the statement below the symbol. The statement alerts you to an operating hazard that can cause personal injury.
⚠ CAUTION	Read the statement below the symbol. The statement alerts you to possible property damage.
NOTE	Read the statement below the symbol. The statement alerts you to information that requires your attention.

1.2.3 Definition of Slope/Tilt/Slide

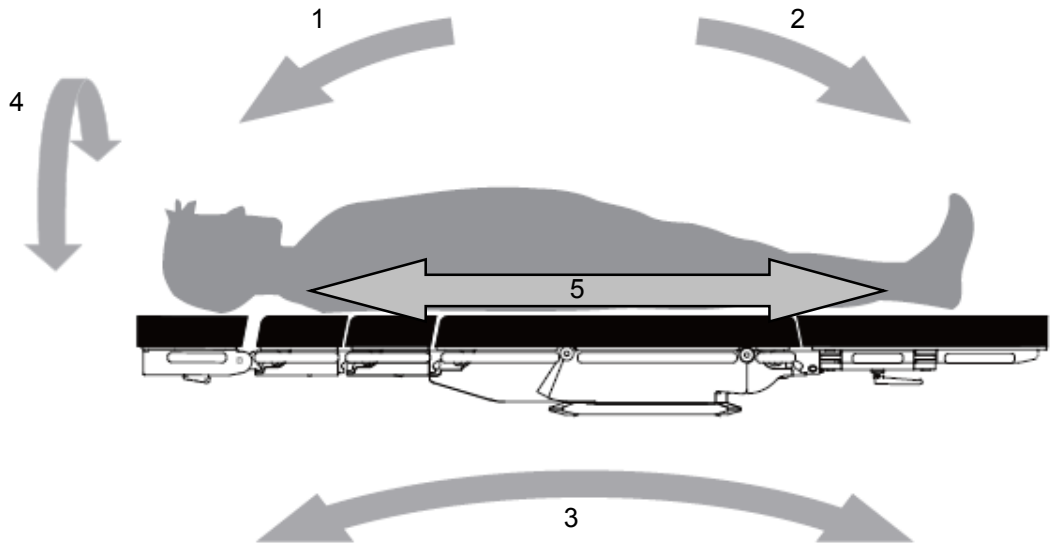


Figure 1-2 Definition of slope/tilt/slide

1 Trendelenburg (head down)

2 Reverse trendelenburg (foot down)

3 Slope

4 Tilt

5 Slide

1.2.4 Definition of Permissible Overall Load

The “permissible overall load” results from putting together patient weight and side rail accessory weight. The “permissible 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.

1.2.5 Definition of Central Position

A table top exceeding an overall load of 230kg may only be operated if the longitudinal slide of the operating table is in the central position. The operating table is in the central position, when the table top longitudinal slide stops and a sound signal (1 tone) is heard. Press

or

again to continue sliding the table top.

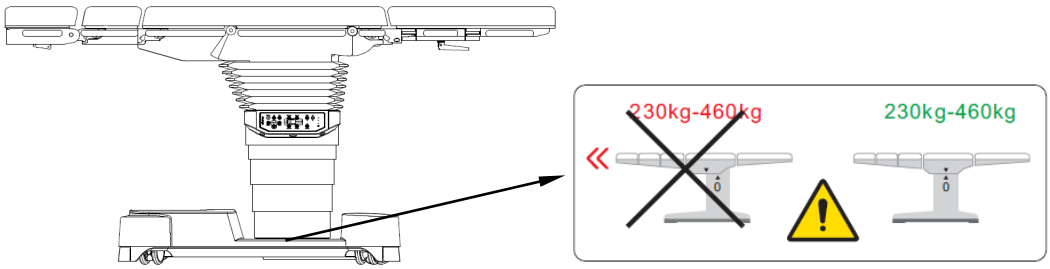


Figure 1-3 Central position label

1.2.6 Definition of 0 Position

1. The 0 position: Tilt is cancelled. Seat plate, back plate and short leg plates are horizontal. The table top is in the central position.
2. Press and hold

to obtain the 0-position. Once the table top reaches the 0 position, the table top stops and a sound signal (2 tones) is heard.

1.2.7 Definition of Standard Range and Extended Range of the Longitudinal Slide

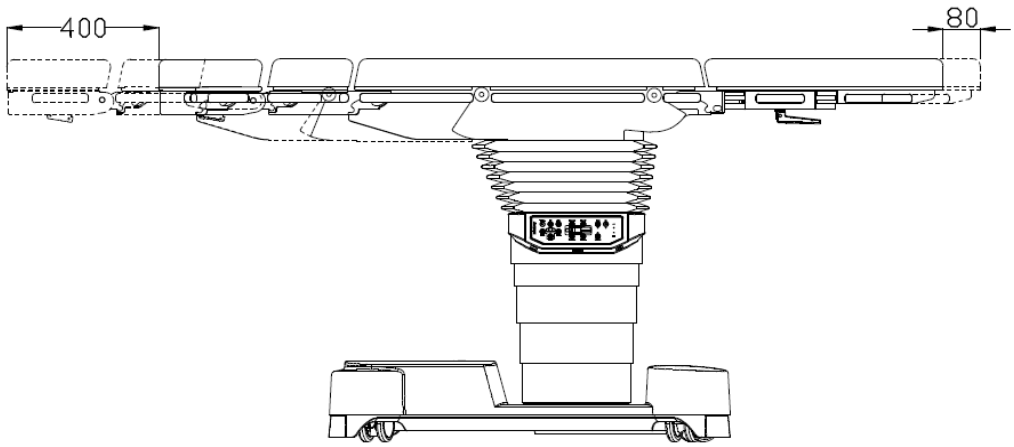


Figure 1-4 Longitudinal slide

The longitudinal slide (400mm) consists of a standard range of 230mm and an extended range of 170mm in the direction of the head.

1.2.7.1 Standard Range

The longitudinal slide can be adjusted by pressing the following key(s) on one of the control units:

Adjustments	Override Panel	Corded Hand Control	Corded Hand Control with LCD	IR Remote Control with LCD
Longitudinally slide the table top toward the head end	/	Press and hold SLIDE .	Press and hold SLIDE .	Press and hold SLIDE .
Longitudinally slide the table top toward the foot end	/	Press and hold SLIDE .	Press and hold SLIDE .	Press and hold SLIDE .

NOTE

- **Once the table top has reached the head end limit position of the standard range of longitudinal slide, the table top stops automatically and a sound signal (1 tone) is heard.**
- **If the operating table is set to the reverse position, all the function keys, except for the up/down key, will also change accordingly.**

1.2.7.2 Extended Range

Once the table top has reached the head end limit position of the standard range of longitudinal slide, the table top stops and a sound signal (1 tone) is heard. The table top can be moved further 170mm toward the head end by pressing the following keys on the control units:

Table 1-3 Extended Range

Adjustments	Override Panel	Corded Hand Control	Corded Hand Control with LCD	IR Remote Control with LCD
Longitudinally slide the table top toward the head end	/	Press and hold .	Press and hold .	Press and hold .
Longitudinally slide the table top toward the foot end	/	Press and hold .	Press and hold .	Press and hold .

⚠ WARNING

- **Do not slope the table top (the trendelenburg or reverse trendelenburg position) more than 15° when sliding the table top more than 230mm (head end).**

NOTE

- **If the operating table is set to the reverse position, all the function keys, except for the up/down key, will also change accordingly.**

As the figure below shows, the slide protection icon will be displayed on the corded hand control with LCD and/or the IR remote control with LCD, when the

key is pressed in the extended range.

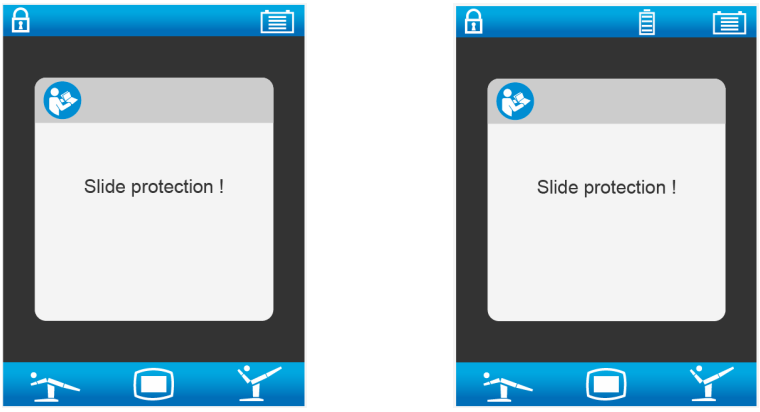


Figure 1-5 Slide protection icon

1.2.8 Definition of Sound Signals

Table 1-4 Indicator definitions of sound signal

Sound signal	State	Samples
	Indication tone (1 tone: approx. 1×1s)	1. If the limit position has been reached during the table top movement. 2. If the or key is pressed and the operating has been locked or unlocked. 3. If the table top has reached the head end limit position of the standard range of longitudinal slide (230mm). 4. If the table top has reached the central position.
	Confirmation tone (2 tones: approx. 2×0.5s)	1. If the key is pressed and the 0-position has been reached. 2. If the or key is pressed and the normal or reverse position has been reached. 3. If the flex position/re-flex position/beach chair position/memorized position has been reached during the table top movement.
	Warning tone (3 short tones: approx. 3×0.3s)	1. The operating table may malfunction.

1.3 Warning Label

1.3.1 Central Position

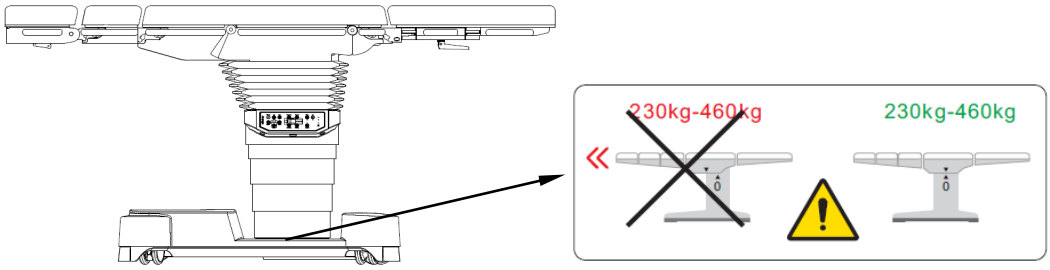


Figure 1-6 Central position label

1. The central position label is located at the base cover.
2. The label means: a table top exceeding an overall load of 230kg may only be operated if the longitudinal slide of the operating table is in the central position.
3. The operating table is in the central position, when the table top longitudinal slide stops and a sound signal (1 tone) is heard.
4. Press the SLIDE or SLIDE again to continue sliding the table top.

NOTE

- **If the central position is reached with the longitudinal slide of the table top, adjustment is stopped and an alarm sounds. To continue sliding the table top, press the slide key again.**

1.3.2 Height for Operating Table Locking Mechanism with an Overall Load of up to 135 kg

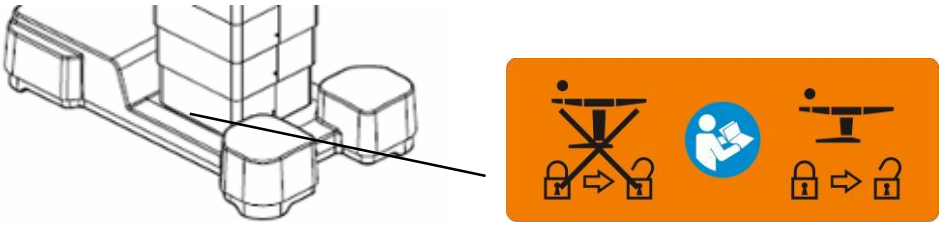


Figure 1-7 Height operating table locking (135kg)

The label means: with an overall load of up to 135 kg, the operating table locking mechanism may only be released if the operating table is set to a maximum height of 940mm (lower edge of pad). If the label is covered by the column cover, the operating table height is lower than 940mm. If the label is visible, reduce the height.

1.3.3 Protection Label

Figure 1-8 Protection label

1. The protection label is located at the base cover.
2. The label means: Do not put any objects on the operating table base. Any objects left on the operating table base will damage the cover as it moves.

1.3.4 No-sitting Label

Figure 1-9 No-sitting label

1. The no-sitting label is located at the leg plate.
2. The label means: Do not sit on the leg plate.

1.3.5 Consulting Accompanying Documents Label

Figure 1-10 Consulting accompanying documents label.

1. The label is located at the hooks of the dual-joint head plate and dual-joint leg plate.
2. The label means: Consult accompanying documents. Be sure to install and remove the dual-joint head plate and/or dual-joint leg plate strictly as instructed in the manual. See chapter 2.5.1.1, 2.5.1.2, 2.5.3.1 and 2.5.3.2 for details.

1.4 Intended Use

The operating table is intended to support and position patients for surgeries, including radiological diagnostics immediately before, during and after the procedures.

⚠ WARNING

- **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 Nanjing Mindray or your local distributor.**
- **The operating table is to be operated by trained personnel only. Be sure to archive the training records.**

1.5 Fundamental Safety Instructions

1.5.1 Instructions against Personal Injury

⚠ WARNING

- **The operating table is to be used for its intended purposes only. Do not use it for other purposes.**
- **The operating table is to be installed by personnel authorized by Nanjing Mindray only.**
- **The operating table is to be operated by trained personnel only. Be sure to archive the training records.**
- **Before using the operating table, be sure to read and fully understand this manual.**
- **Be sure to keep the manual at a place nearby the operating table.**
- **Do not put any objects on the operating table base. Any objects left on the operating table base will damage the cladding as it moves.**
- **Before unlocking the castors, grasp the operating table. Otherwise, it can move unexpectedly.**
- **Before locking the operating table, be sure to observe that there are neither the operator's feet nor any objects underneath the base. Otherwise, it can cause personal injury or property damage.**
- **Before lowering the table top, be sure to observe that there are neither the operator's feet nor any objects on the base cover (underneath the column). Otherwise, it may get pinched or crushed.**
- **The operating table can only be adjusted when it is locked. If not, only the trendelenburg position / reverse trendelenburg position can be used in emergencies.**
- **When moving the operating table, do not press the override panel keys, since this will cause several functions to be activated simultaneously and result in the risk of personal injury or property damage.**
- **Before positioning the patient, make sure the patient's body width is no greater than the width of the table top. Otherwise, the table width extender is recommended.**
- **Be sure to secure the patient before moving/adjusting the operating table, when a patient lying on the operating table.**
- **Be sure to slide the table top to the central position before moving the**

operating table, when a patient lying on the operating table.

- **The maximum load of this operating table is 460kg. However, in case of certain special conditions, the load capacity is further limited and see chapter A.3 for details. Be sure to take those conditions into consideration when using the operating table. If you have any questions, contact the customer service department authorized by Nanjing Mindray or your local distributor.**
- **If accessories are used, make sure the weights of the accessories installed on the operating table and of the patient add up no more than the permissible overall load.**
- **To avoid infection, be sure to cover the table-top pad with a sterile surgical drape before transferring the patient.**
- **Do not use wet surgical drapes on the operating table.**
- **Transferring the patient inappropriately can 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.**
- **Before transferring the patient, make sure the operating table is placed on a level ground, the castors are properly locked and the table top is in the best balanced state (0 position: table top horizontal and slid to the central position). Do not transfer the patient otherwise.**
- **Placing the patient improperly can tip over the operating table. Be sure to place the patient in the right direction. Do not place the patient's trunk on the leg plates.**
- **When placing the patient, make sure the patient's center of gravity is as close to the column as possible. Otherwise, the operating table can tip over.**
- **Improper body positions can damage the patient, especially in case of excessive tilted or sloped position. When using this operating table, ensure proper body positions and regularly check the position during the whole surgery.**
- **To avoid damaging the patient's respiratory system, nervous system or circulating system, make sure the patient is properly positioned and keep a close eye on the patient during the whole surgery.**
- **When using the operating table, be sure to press the exact function key matching the patient's body position. Otherwise, the patient can be damaged.**
- **Before positioning the patient, make sure the castors are properly locked.**
- **The speed of table-top movement can change depending on the patient's weight. Closely watch the table top during adjustment.**
- **Do not slide the table top when sloping the table top (the trendelenburg or reverse trendelenburg position) more than 15º .**

- **Do not slope the table top (the trendelenburg or reverse trendelenburg position) more than 15° when sliding the table top more than 230mm (head end).**
- **If the table top is already sloped toward the foot end (Reverse Trendelenburg position), exercise caution when raising the back plate. The head plate can collide with the patient's head.**
- **If the table top is already slid toward the head end, be sure to keep the table top horizontal. Do not slope or tilt the table top under this condition.**
- **In case of excessive tilted or sloped body positions, make sure the patient is well secured.**
- **Before sliding the table top toward the head end, make sure the table top is horizontal.**
- **Exercise caution when adjusting the table top or the accessories. Do not pinch anybody.**
- **When adjusting the table top or the accessories, carefully watch the positions of the patient, table top, accessories and other things inside the operating room. Be sure to keep those things from colliding with each other.**
- **Make sure the indoor environment complies with the installation requirements listed in this manual.**
- **Make sure the ground is level before installing the operating table.**
- **If the integrity of the external protective conductor in the installation or its arrangement is in doubt, run the operating table from its internal battery.**
- **When the operating table is not in use, make sure it is placed on a level ground, the castors are properly locked, the table top is in the 0 position and its height is lower than 940mm.**
- **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.**
- **Do not maintain and service the operating table when the patient is lying on it.**
- **Before maintaining or servicing the operating table, make sure it is disconnected from the mains supply.**
- **Complete electrical / safety inspections should be conducted every year by personnel authorized by Nanjing Mindray.**
- **This operating is not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or with nitrous oxide.**
- **Do not use the cleaning agents or disinfectants containing alcohol where such medical devices as electrosurgical units, defibrillators and defibrillator monitors may be used. Otherwise, it can cause fire and/or explosion**

hazards.

- **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, make sure the patient is not lying on a wet surgical drape or a conductive pad. Otherwise, the patient can be burned.**
- **Do not use such devices as cell phones, radio equipments and MR equipment around the operating table.**
- **If an antistatic pathway is required, be sure to use the operating table on an antistatic floor.**
- **Be sure to only use accessories made by Nanjing Mindray on the operating table. Accessories produced by other manufacturers must not be used if they affect or modify the longitudinal geometry of the table top, unless their use is expressly permitted by Nanjing Mindray. Use only spare parts approved by Nanjing Mindray.**
- **Before using accessories, be sure to read the operator's manual thoroughly.**
- **Used operating tables, including their batteries and accessories, should be disposed of in compliance with local governmental or hospital regulations.**

1.5.2 Instructions against Property Damage

⚠ CAUTION

- **Do not modify the operating table or accessories without authorization of Nanjing Mindray.**
- **Make sure the operating table is serviced or maintained by the authorized personnel only. Otherwise, it may void the warranty.**
- **Before moving the operating table, make sure the path is clear. Do not damage the castors or other parts during the movement.**
- **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 operating table. Keep the table top from colliding with the base or the ground.**
- **If the head/leg plate has been positioned downward, exercise caution when adjusting the operating table. Keep the head/leg plate from colliding with the base or the ground.**
- **When sloping the table top or adjusting the leg plates, make sure they do**

not collide with the column or the base.

- **When adjusting the operating table, make sure the suspended parts (such as arm boards, leg plates) do not collide with other things inside the operating room.**
- **When adjusting the operating table, make sure the cord of the corded hand control is not jammed by the joints.**
- **When adjusting the operating table, make sure the accessories or the surgical drapes are not jammed by the joints.**
- **If your operating table has the longitudinal slide function, its leg plates and head plate are not interchangeable.**
- **When the operating table is not in use, make sure its castors are locked and table top is in the best rest state (table top slid to the limit of the foot end and descended to the lowest position).**
- **Do not touch pins of the connectors identified with the ESD warning symbol. Connections should not be made to them unless ESD precautionary procedures are used.**

2 Daily Operations

2.1 Power Supply Systems

The operating table is configured with two independent power supply systems: AC power and internal battery.

NOTE

- **A battery assembly is provided so that the operating table can function normally in case the AC power supply is disconnected or not available. It is recommended that the operating table be run from its internal battery assembly.**

2.1.1 AC Power

⚠ WARNING

- **Damaged cables must be replaced immediately.**
- **To avoid risk of electric shock, the operating table must only be connected to the supply mains with protective earth.**
- **Before locking the operating table, be sure to observe that there are neither the power cord nor any objects underneath the base. Otherwise, it can cause personal injury or property damage.**

⚠ CAUTION

- **Unplug the operating table before moving.**

NOTE

- **The operating table is disconnected from the mains by means of the plug.**
- **Do not position the operating table so that it is difficult to operate the disconnection device (e.g. plug).**

2.1.1.1 Connecting the Power Cord

1. Locate the power cord delivered with the operating table.
2. Lift the cover (1).
3. Plug the non-pronged end of the power cord into the power connector (2).
4. Plug the pronged end of the power cord into a power outlet.
5. The AC indicator at the corded hand control is on and green when the operating table is connected to the mains supply. See chapter 2.3.3.2 for details.

⚠ CAUTION

- **When connecting and removing the mains cable, observe the correct order of the procedure.**

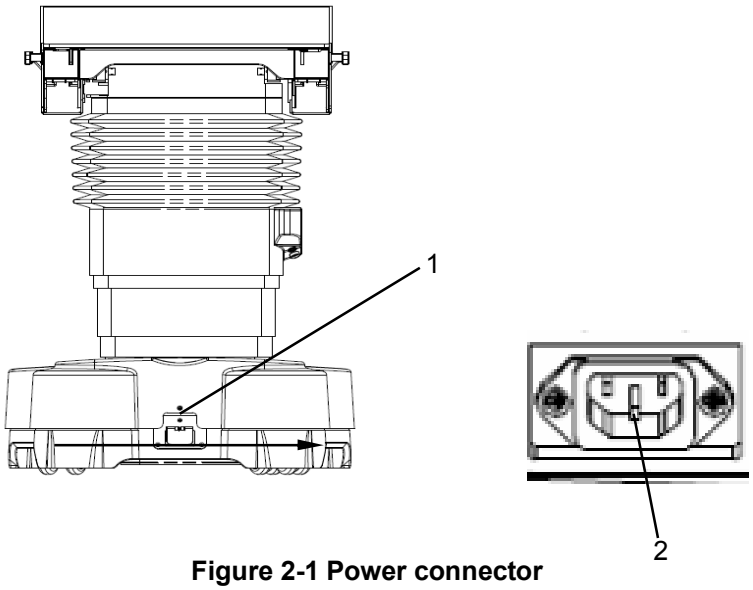


Figure 2-1 Power connector

1 Cover

2 Power connector

2.1.1.2 Detaching the Power Cord

1. Detach the plug from the socket at the power point.
2. Detach the plug at the operating table.

2.1.2 Battery

NOTE

- **A battery assembly is provided so that the operating table can function normally in case the AC power supply is disconnected or not available. It is recommended that the operating table be run from its internal battery assembly.**

2.1.2.1 Charging the Battery

1. Locate the power cord delivered with the operating table.
2. Lift the cover (1).
3. Plug the non-pronged end of the power cord into the power connector (2).
4. Plug the pronged end of the power cord into a power outlet.
5. The battery indicator at the corded hand control is blinking and green when the battery is being charged. See chapter 2.3.3.2 for details.

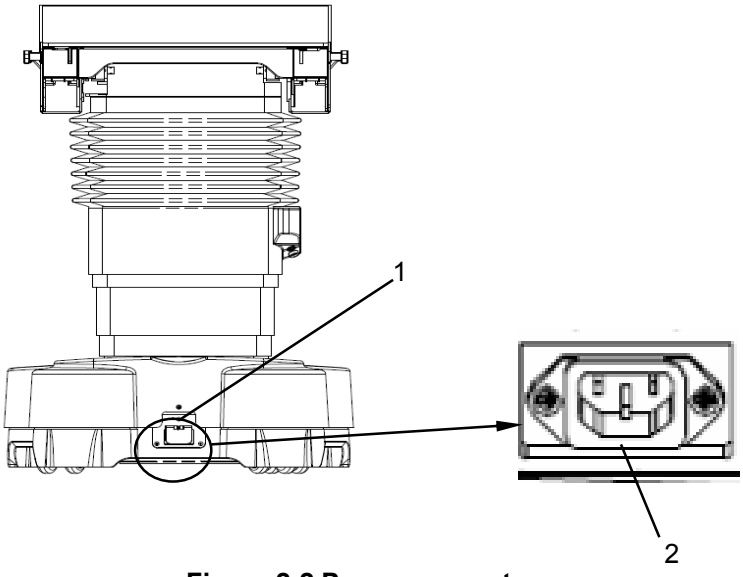


Figure 2-2 Power connector

1 Cover

2 Power connector

2.2 Potential Equalization

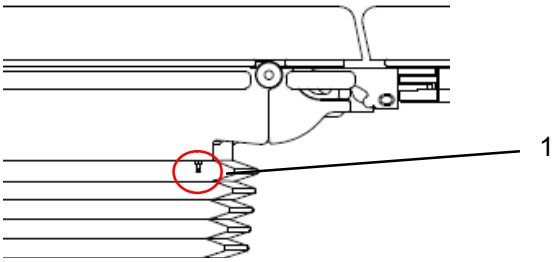


Figure 2-3 Potential equalization pin

⚠ WARNING

- **The purpose of the potential equalization pin is to eliminate the potential difference between electrical devices. Make sure it is connected to a potential equalization point within the operating room before using the operating table.**

2.2.1 Setting up Potential Equalization

1. Connect the equalization cable to the equalization pin (1) on the operating table.
2. Connect the other end of the potential equalization cable to the operating room's potential equalization point.

2.3 Control Units

2.3.1 General

You can use the following control units to adjust the operating table:

- Override panel (emergency use)
- Corded hand control (optional)
- Corded hand control with LCD (optional)
- IR remote control with LCD (optional)
- Foot switch (optional)

NOTE

- **If functions are triggered by multiple control devices, then all motions at the operating table will be stopped immediately and will resume only after none of the control units has been activate for at least 2 seconds.**

2.3.2 Override Panel

2.3.2.1 Keys

You can use the override panel to:

- turn on the override panel
- lock / unlock the castors
- raise / lower the table top
- obtain the trendelenburg / reverse trendelenburg positions
- tilt the table top to left / right
- raise / lower the back plate
- longitudinally slide the table top toward the head/ foot end (optional)

NOTE

- **The override panel is intended for emergency use only.**

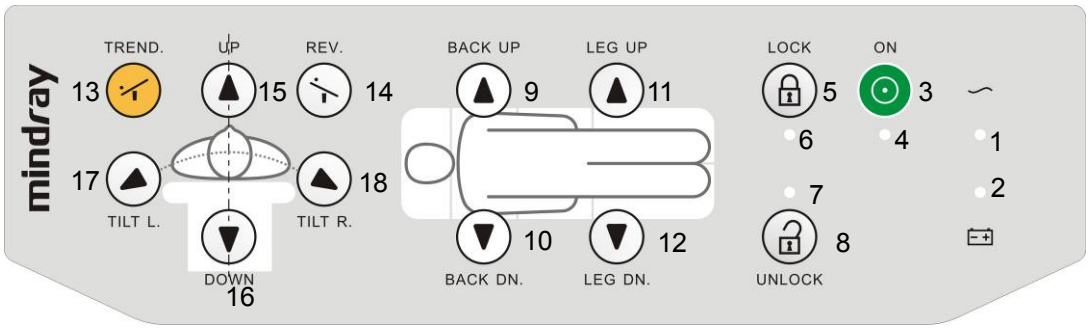


Figure 2-4 Override panel

1 AC indicator	2 Battery indicator
3 Power on	4 Power indicator
5 Locking castors	6 Locking indicator
7 Unlocking indicator	8 Unlocking castors
9 Back plate up	10 Back plate down
11 Leg plates up	12 Leg plates down
13 Trendelenburg (head down)	14 Reverse trendelenburg(foot down)
15 Table-top up	16 Table-top down
17 Tilt to right	18 Tilt to left

You can:

1. Press and hold + for 10 seconds to lock the castors.
2. Press and hold + for 10 seconds to unlock the castors.
3. Press and hold + (9, 11 or 15) to raise the table top/back plate/both leg plates.
4. Press and hold + (10, 12 or 16) to lower the table top/back plate/both leg plates.
5. Press and hold + to tilt the table top left.
6. Press and hold + to tilt the table top right.
7. Press and hold + to obtain the trendelenburg position (head down).
8. Press and hold + to obtain the reverse trendelenburg position (foot down).

⚠ CAUTION

- **Collision protection is not active if the override panel is used. Avoid the combination of extreme tilt and slope adjustments. Otherwise, it can cause property damage.**
- **If the batteries in the mobile operating table are exhausted, then the override panel will only operate when the table is connected to the mains.**

NOTE

- **The override panel is intended for emergency use only.**
- **The override panel employs the two-key-control mode. To use the panel, press both the "Power On" key and the desired functional key simultaneously.**

2.3.2.2 Indicators

There are five indicators on the override panel: AC indicator, battery indicator, power indicator, locking indicator and unlocking indicator, which have the same functions as those on the corded hand control. See chapter 2.3.3.2 for details.

2.3.2.3 Connections for Corded Hand Control/Foot Switch/Service Interface

⚠ CAUTION

- **When adjusting the operating table, make sure the cord of the hand control is not jammed.**

The connections for corded hand control (1) and the foot switch (3) are located next to the override panel, on the left and right. The service interface (2) is underneath the override panel.

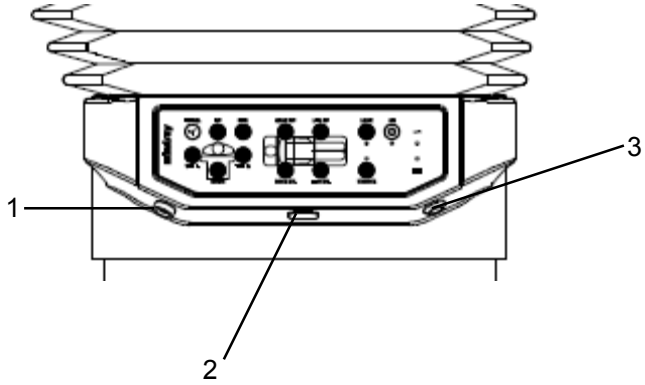


Figure 2-5 Connections

1 Corded hand control connection
2 Service interface
3 Foot switch connection

Connection procedure:

1. Open protective cover.
2. Insert the plug firmly.

2.3.3 Corded Hand Control (optional)

2.3.3.1 Keys

You can use the corded hand control to:

- turn on /off the corded hand control
- lock / unlock the castors
- normal / reverse position
- raise / lower the table top
- obtain the trendelenburg / reverse trendelenburg position
- tilt the table top to left / right
- raise / lower the back plate
- raise / lower the leg plate (left / right leg plate)
- obtain the flex /re-flex position
- obtain the beach chair position
- longitudinally slide the table top toward the head/ foot end (optional)
- obtain the 0-position (levels the table top and slides it to the central position)

⚠ CAUTION

- **Do not use the individual adjustment function for the leg plates in conjunction with single-part accessory.**
- **Be sure to remove any potential hindrances before adjusting the operating table. Otherwise, it can cause property damage.**

NOTE

- **If the operating table is set to the reverse position, all the function keys, except for the up/down key, will also change accordingly.**

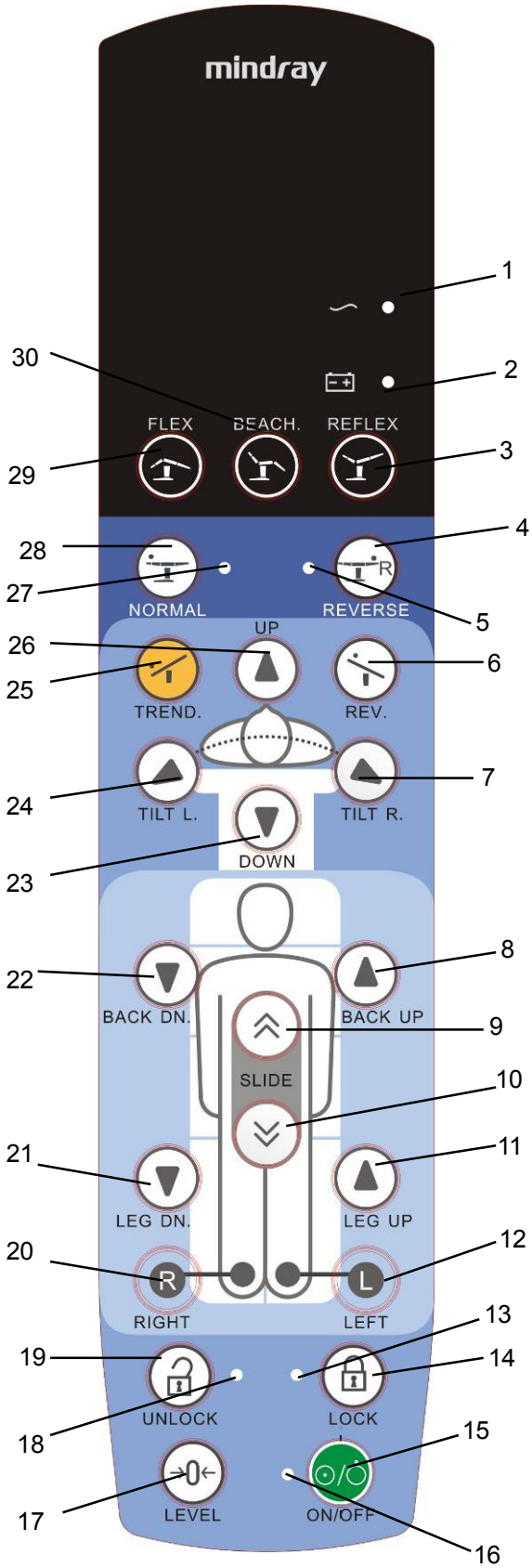


Figure 2-6 Corded hand control

1 AC indicator	2 Battery indicator
3 Re-flex position	4 Reverse position
5 Reverse position indicator	6 Reverse trendelenburg position (foot down)
7 Tilt to right	8 Back plate up
9 Longitudinal slide toward head end	10 Longitudinal slide toward foot end
11 Leg plates up	12 Left leg plate
13 Locking indicator	14 Locking castors
15 Power switch	16 Power indicator
17 0-position	18 Unlocking indicator
19 Unlocking castors	20 Right leg plate
21 Leg plates down	22 Back plate down
23 Table top down	24 Tilt to left
25 Trendelenburg position (head down)	26 Table top up
27 Normal position indicator	28 Normal position
29 Flex position	30 Beach chair position

You can:

1. Press any key to turn on the corded hand control and recall the operating.
2. Press

to turn on/off the operating table.
3. Press and hold

to obtain the 0-position.
4. Press

to lock the castors.
5. Press

to unlock the castors.
6. Press and hold

+

or

+

to raise/lower the right leg plate.
7. Press and hold

+

or

+

to raise/lower the left leg plate.
8. Press and hold
(8, 11 or 26) to raise the table top/back plate/both leg plates.
9. Press and hold
(21, 22 or 23) to lower the table top/back plate/both leg plates.
10. Press and hold

to tilt the table top left.
11. Press and hold

to tilt the table top right.

12. Press and hold

to obtain the trendelenburg position (head down).

13. Press and hold

to obtain the reverse trendelenburg position (foot down).

14. Press and hold

to longitudinally slide the table top toward the foot end.

15. Press and hold

to longitudinally slide the table top toward the head end.

16. Press

or

to obtain the normal position or reverse position.

17. Press

to obtain the flex position.

18. Press

to obtain the re-flex position.

19. Press

to obtain the beach chair position.

⚠ WARNING

- **After adjusting the operating table, be sure to switch off the hand control.**
- **Each time before using the operating table, check all functions by pressing every functional key for 2 to 3 seconds. Make sure all the keys can work normally. Do not use the damaged operating table.**

⚠ CAUTION

- **When adjusting the operating table, make sure the cord of the hand control is not jammed by the joints.**

NOTE

- **When the corded hand control has been idle for about 4 minutes, it will be switched off automatically.**
- **If the table top is sloped (trendelenburg position) by more than 10º , it cannot slide toward the head end.**

2.3.3.2 Indicators

There are seven indicators on the corded hand control: power indicator, AC indicator, battery indicator, normal position indicator, reverse position indicator, locking indicator, unlocking indicator and trouble indicator, See the table below for details.

Table 2-1 Indicator definitions of corded hand control

Indicator	State	Definition
Power indicator	Green	The operating table is switch on.
	Off	The operating table is switch off.
	Orange and flashing or green and flashing	The operating table may malfunction.
AC indicator	Green	The operating table is AC powered.
	Off	The operating table is disconnected from mains supply.
Battery indicator	Green	The batteries function normally.
	Green and flashing	The batteries are charging.
	Red and flashing	The batteries are low.
Normal position indicator	Green	The operating table is in normal position.
Reverse position indicator	Green	The operating table is in reverse position.
Locking indicator	Orange	The castors are locked.
Unlocking indicator	Red	The castors are unlocked.

NOTE

- **It takes about 10 hours to fully charge the battery.**

2.3.3.3 Limit Indication

This operating table features a limit indication function. When the table top moves to a limit position, the power indicator blinks (green) and the override panel beeps (one tone). This function applies to the following movements:

- Trendelenburg/ reverse trendelenburg position
- Tilt to left/right
- Back plate up/down
- Flex/re-flex position.

⚠ CAUTION

- **If the 0-position function is activated, the table top automatically levels and slides to the central position. Closely watch the table top movement, and release the key when the table top no longer moves.**

2.3.3.4 Error Indication

When the operating table or the corded hand control is broken, all the indicators are blinking (orange). Please contact the customer service department authorized by Nanjing Mindray for help. Unauthorized device servicing is not allowed.

2.3.3.5 Attaching the Hand Control to the Side Rail

⚠ CAUTION

- **The hand control which is attached to the side rail may slip off the side rail or catch the cable (only corded hand control and corded hand control with LCD) during table top adjustment.**

As Figure 2-7 shows, attach the bracket (1) to the side rail (2).

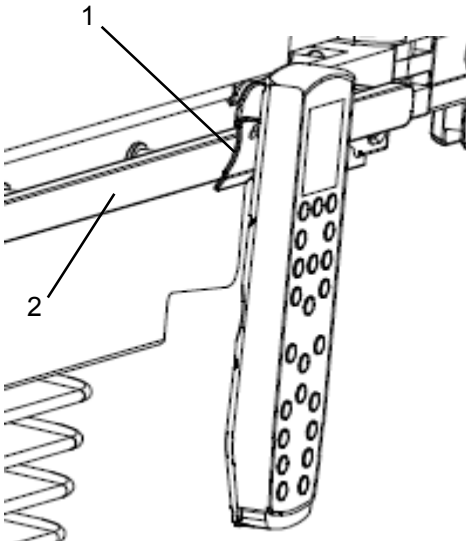


Figure 2-7 Attaching the hand control to the side rail

2.3.4 Corded Hand Control with LCD (optional)

2.3.4.1 Keys

You can use the corded hand control to:

- turn on /off the corded hand control
- lock / unlock the castors
- normal / reverse position
- raise / lower the table top
- obtain the trendelenburg / reverse trendelenburg position
- tilt the table top to left / right
- raise / lower the back plate
- raise / lower the leg plate (left / right leg plate)
- obtain the flex /re-flex position
- longitudinally slide the table top toward the head/ foot end (optional)
- obtain the 0-position (levels the table top and slides it to the central position)

⚠ CAUTION

- **Do not use the individual adjustment function for the leg plates in conjunction with single-part accessory.**
- **Be sure to remove any potential hindrances before adjusting the operating table. Otherwise, it can cause property damage.**

NOTE

- **If the operating table is set to the reverse position, all the function keys, except for the up/down key, will also change accordingly.**

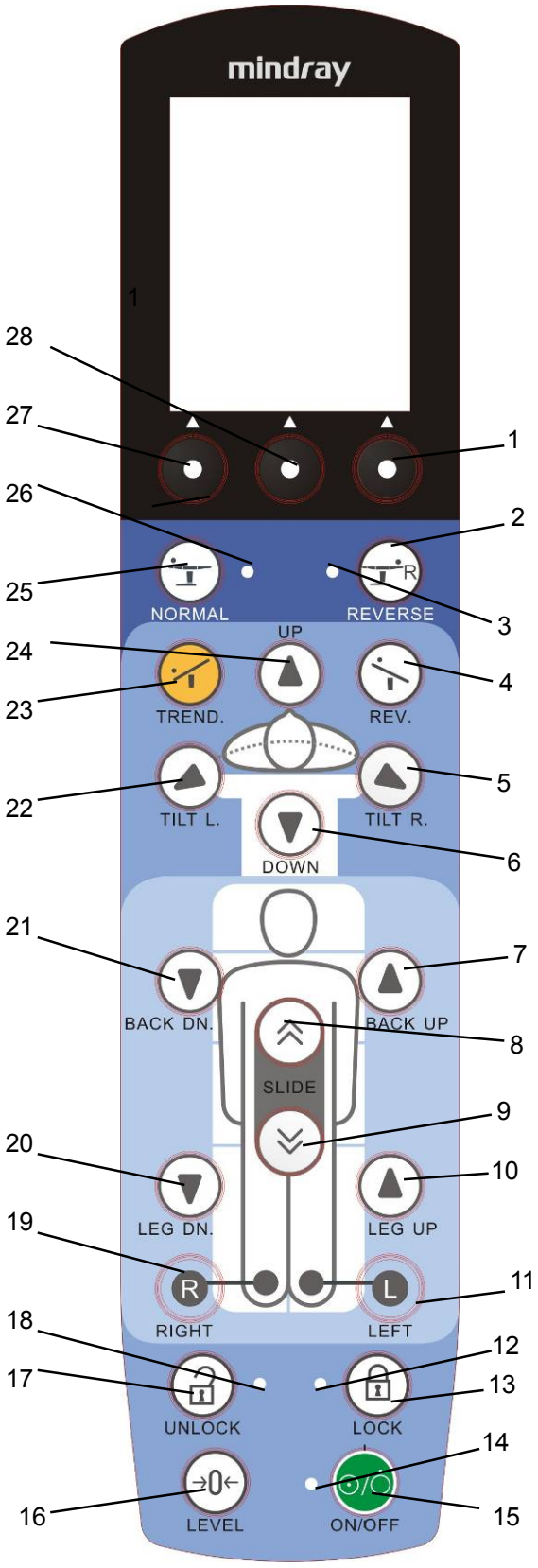


Figure 2-8 Corded hand control

1 Re-flex position/back	2 Reverse position
3 Reverse position indicator	4 Reverse trendelenburg position (foot down)
5 Tilt to right	6 Table top down
7 Back plate up	8 Longitudinal slide toward head end
9 Longitudinal slide toward foot end	10 Leg plates up
11 Left leg plate	12 Locking indicator
13 Locking castors	14 Power indicator
15 Power switch	16 0-position
17 Unlocking castors	18 Unlocking indicator
19 Right leg plate	20 Leg plates down
21 Back plate down	22 Tilt to left
23 Trendelenburg position (head down)	24 Table top up
25 Normal position	26 Normal position indicator
27 Flex position/choose	28 Menu/confirm

You can:

1. Press any key to turn on the corded hand control and recall the operating.
2. Press

to turn on/off the operating table.
3. Press and hold

to obtain the 0-position.
4. Press

to lock the castors.
5. Press

to unlock the castors.
6. Press and hold

+

or

+

to raise/lower the right leg plate.
7. Press and hold

+

or

+

to raise/lower the left leg plate.
8. Press and hold
(7, 10 or 24) to raise the table top/back plate/both leg plates.
9. Press and hold
(6, 20 or 21) to lower the table top/back plate/both leg plates.
10. Press and hold

to tilt the table top left.
11. Press and hold

to tilt the table top right.
12. Press and hold

to obtain the trendelenburg position (head down).

13. Press and hold

to obtain the reverse trendelenburg position (foot down).

14. Press and hold

to longitudinally slide the table top toward the foot end.

15. Press and hold

to longitudinally slide the table top toward the head end.

16. Press

or

to obtain the normal position or reverse position.

⚠ WARNING

- **After adjusting the operating table, be sure to switch off the hand control.**
- **Each time before using the operating table, check all functions by pressing every functional key for 2 to 3 seconds. Make sure all the keys can work normally. Do not use the damaged operating table.**

⚠ CAUTION

- **When adjusting the operating table, make sure the cord of the hand control is not jammed by the joints.**

NOTE

- **When the corded hand control has been idle for about 90 seconds, it will be switched off automatically.**
- **If the table top is sloped (trendelenburg position) by more than 10°, it cannot slide toward the head end.**

2.3.4.2 Indicators

There are five indicators on the corded hand control: power indicator, normal position indicator, reverse position indicator, locking indicator and unlocking indicator. See the table below for details.

Table 2-2 Indicator definitions of corded hand control with LCD

Indicator	State	Definition
Power indicator	Green	The operating table is switch on.
	Off	The operating table is switch off.
	Orange and flashing or green and flashing	The operating table may malfunction.
Normal position indicator	Green	The operating table is in normal position.
Reverse position indicator	Green	The operating table is in reverse position.
Locking indicator	Orange	The castors are locked.
Unlocking indicator	Red	The castors are unlocked.

NOTE

- **10 minutes after the first low battery alarm, the operating table will power off automatically.**
- **It takes about 10 hours to fully charge the battery.**

2.3.4.3 LCD Interface

1. When the corded hand control with LCD is switched on, initial interface will be displayed.

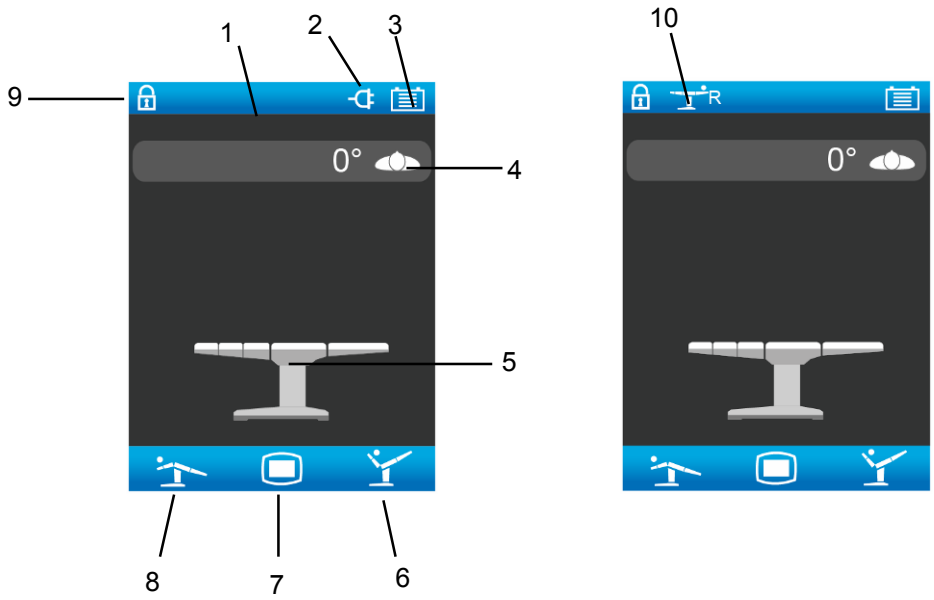


Figure 2-9 Initial interface

1 Status bar	2 AC icon
3 Battery icon	4 Left/right tilt icon
5 Table top icon	6 Re-flex position/back icon
7 Confirm icon	8 Flex position/select icon
9 Locking icon	10 Reverse position icon

Table 2-3 Status icon definitions of corded hand control with LCD

Name	Icon	State	Definition
AC icon		/	The operating table is AC powered.
Battery icon (operating table)		Static	Battery capacity of the operating table
		Dynamic	The batteries are charging.
		Red and blinking	The batteries are low.

NOTE

- **Five minutes after the first low battery alarm, the operating table will power off automatically.**
- **It takes about 8 hours to fully charge the battery.**

2.3.4.4 Locking Icon

1. The locking icon

is displayed when the locking key is pressed.
2. Then the locking icon is displayed in the status bar when the castors are locked.

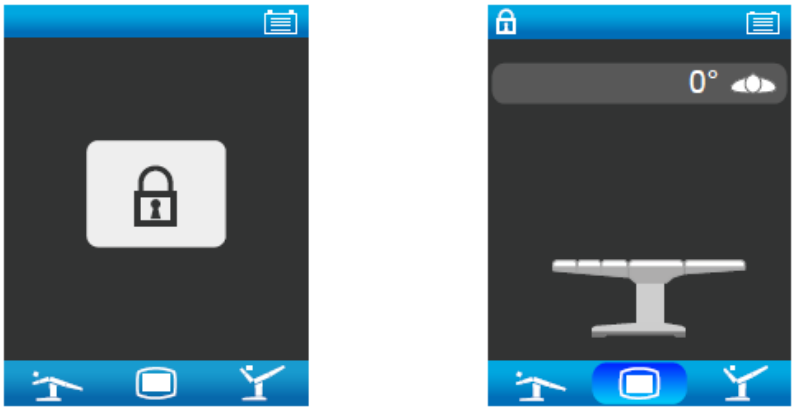


Figure 2-10 Locking icon

NOTE

- **The operating table can only be adjusted when the castors are locked (lock function is active).**
- **If the castors are not locked (unlock function is active), then only the slope can be adjusted in emergencies.**

2.3.4.5 Unlocking Icon

1. The unlocking icon

will be displayed when the unlocking key is pressed.
2. Then the unlocking icon will be displayed in the status bar when the castors are unlocked.

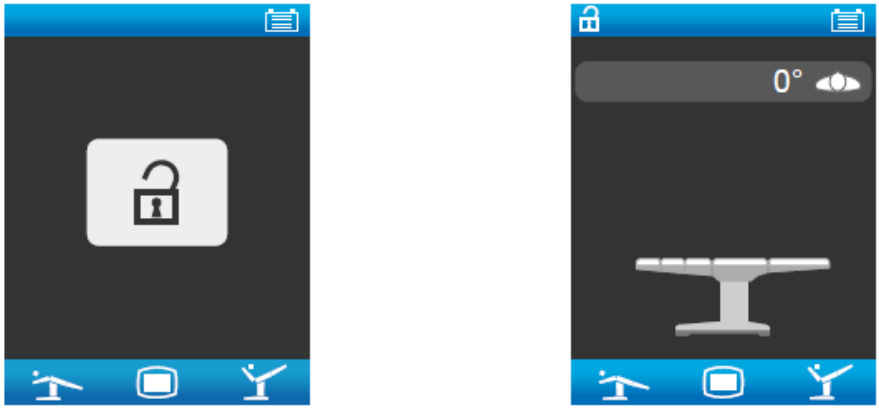


Figure 2-11 Unlocking icon

NOTE

- **The operating table can only be adjusted when the castors are locked (lock function is active).**
- **If the castors are not locked (unlock function is active), then only the slope can be adjusted in emergencies.**

3. The following icon will be displayed, if the operating table is unlocked and sloped.

Figure 2-12 Slope the operating table (unlocking)

2.3.4.6 Tilting the Operating Table

When the operating table is adjusted, the screen on the controller will display the corresponding movement and angle. As Figure 2-13 shows, the screen displays sign during tilting operating table to right or left.

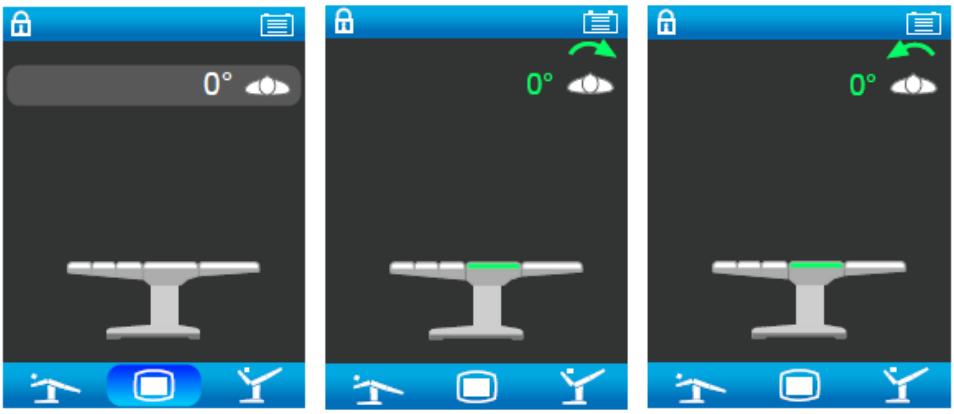
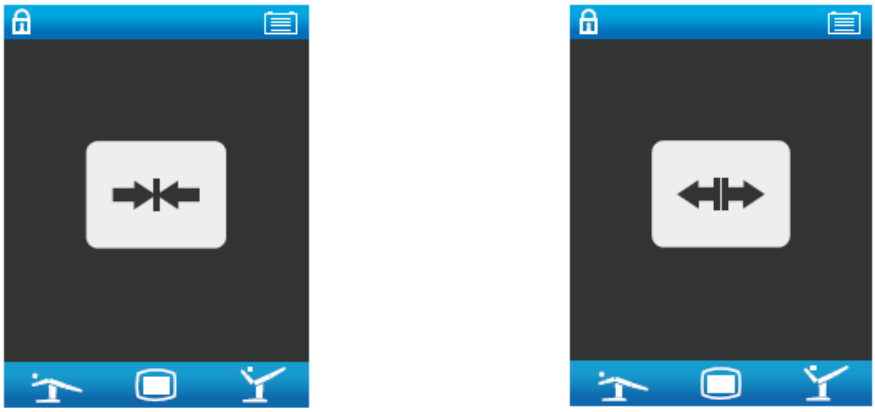


Figure 2-13 Tilt the operating table to right

2.3.4.7 Module Recognition System (optional)

1. As Figure 2-14 shows, when the leg plate is connected, the icon (A) will be displayed.
2. As Figure 2-14 shows, when the leg plate is detached, the icon (B) will be displayed.



（A） （B）

Figure 2-14 Module recognition

⚠ CAUTION

- **Do not use the individual adjustment function for the leg plates in conjunction with single-part accessory.**

2.3.4.8 Limit Icon

This operating table features a limit indication function. When the table top moves to a limit position, the corresponding parts of the operating table icon will be yellowed and the override panel beeps (one tone). See Figure 2-15 for example. This function applies to the following movements:

- Trendelenburg/ reverse trendelenburg position
- Tilt to left/right
- Back plate up/down
- Flex/re-flex position.

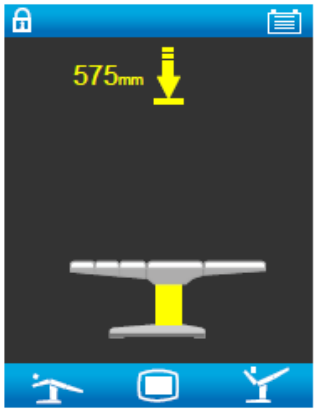


Figure 2-15

⚠ CAUTION

- **If the 0-position function is activated, the table top automatically levels and slides to the centre position. Closely watch the table top movement, and release the key when the table top no longer moves.**

2.3.4.9 Error Icon

If the error icon is displayed, contact the customer service department authorized by Nanjing Mindray for help.

Figure 2-16 Error icon

2.3.4.10 Position Memory

10 positions can be stored. The first position is preset the beach chair position and it cannot be revised by users. If users want to store other positions, see chapter 2.3.4.10.2 for details.

2.3.4.10.1 Recall Position

1. As Figure 2-17 shows, press “confirm” button to enter the menu.

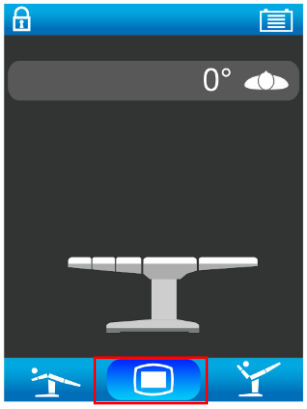


Figure 2-17

2. As Figure 2-18 shows, choose the “Recall position” and press the confirm button.

Figure 2-18 Menu

3. As Figure 2-19 shows, press the “choose” button to choose the position.

Figure 2-19 Select the position

4. As Figure 2-20 shows, press and hold the “confirm” button until a sound signal (2 tones) is heard..

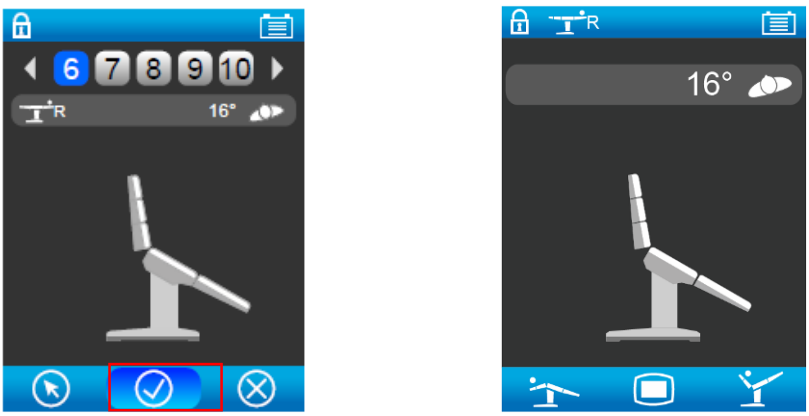


Figure 2-20 Recalling the position

2.3.4.10.2 Store Position

1. Adjust the operating table to the object position and see chapter 2.3.4.1 shows.
2. As Figure 2-21 shows, press “confirm” button to enter the menu.

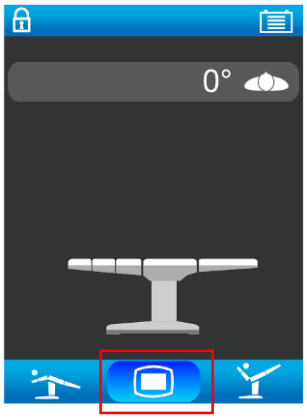


Figure 2-21 Store position

3. As Figure 2-22 shows, choose the “Store position” and press the “confirm” button.

Figure 2-22 Menu

4. As Figure 2-23 shows, choose the desired number and press the “confirm” button. If the position is stored, you will hear a sound signal (two tones).

Figure 2-23 Confirm

5. As Figure 2-24 shows, the icon will back to the Initial interface after the position is stored.

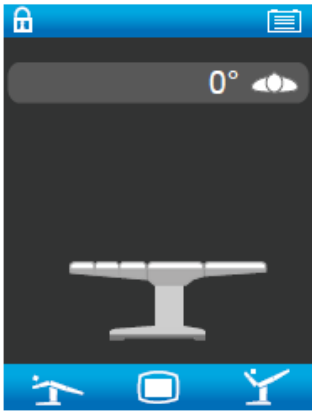


Figure 2-24 Initial interface

NOTE

- **The “factory settings” can be used only for customer service engineer authorized by Nanjing Mindray.**

2.3.4.11 Attaching the Hand Control to the Side Rail

See chapter 2.3.3.5 for details.

2.3.5 IR Remote Control with LCD (optional)

2.3.5.1 Coding

The IR remote control with LCD can control the operating table only after the match code operation is executed. See the procedure below for details:

1. Press and hold both of the up key "

" + the down key "

" for 5 seconds.
2. In 15 seconds, press and hold the button on the override panel, until the override panel beeps (2 tones).

2.3.5.2 Code Label

The operating table and the associated IR remote control are marked by adhesive code labels:

1. The adhesive code labels are affixed to the operating table column next to the IR receiver.
2. The adhesive labels are affixed to the back of the IR remote control with LCD.

The adhesive code labels bear a number from 0 to 9:

1. left: 0, 1, 2 ...9
2. right: 0, 1, 2 ...9

Examples of preset IR system codes Markings:

1 5
3 0
2 3
8 9

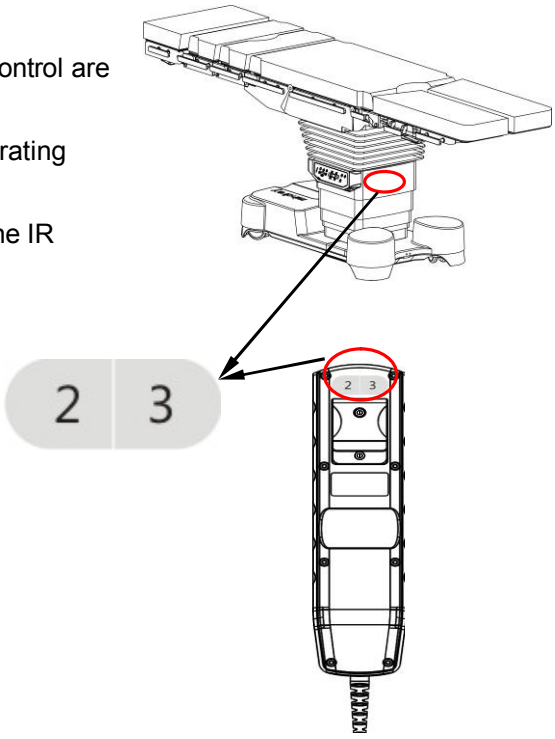


Figure 2-25 Code label

NOTE

- **If the IR remote control with LCD is not shipped with the operating table, you can attach the code label to the operating table and the IR remote control yourself after the match code operation is executed.**

2.3.5.3 Keys

You can use the IR remote control with LCD to:

- turn on /off the IR remote control with LCD
- lock / unlock the castors
- normal / reverse position
- raise / lower the table top
- obtain the trendelenburg / reverse trendelenburg position
- tilt the table top to left / right
- raise / lower the back plate
- raise / lower the leg plate (left / right leg plate)
- obtain the flex /re-flex position (optional)
- longitudinally slide the table top toward the head/ foot end (optional)
- obtain the 0-position (levels the table top and slides it to the central position)

⚠ CAUTION

- **Do not use the individual adjustment function for the leg plates in conjunction with single-part accessory.**
- **Be sure to remove any potential hindrances before adjusting the operating table. Otherwise, it can cause property damage.**

NOTE

- **If the operating table is set to the reverse position, all the function keys, except for the up/down key, will also change accordingly.**

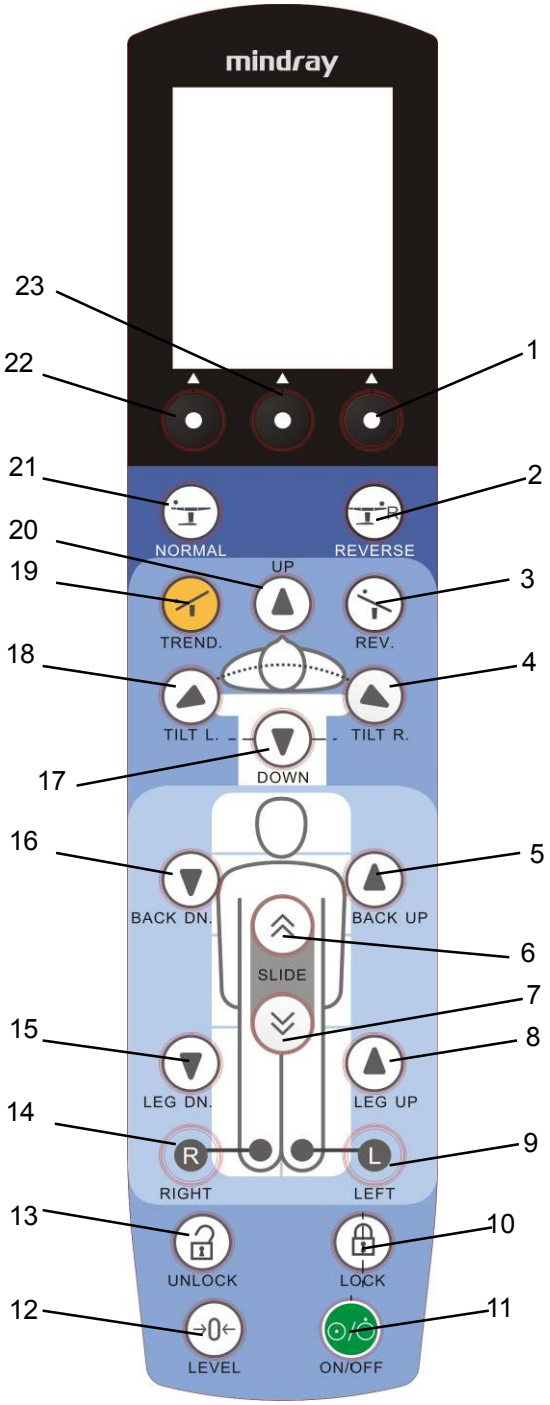


Figure 2-26 Corded hand control

1 Re-flex position/back	2 Reverse position
3 Reverse trendelenburg position (foot down)	4 Tilt to right
5 Back plate up	6 Longitudinal slide toward head end
7 Longitudinal slide toward foot end	8 Leg plates up
9 Left leg plate	10 Locking castors
11 Power switch	12 0-position
13 Unlocking castors	14 Right leg plate
15 Leg plates down	16 Back plate down
17 Table top down	18 Tilt to left
19 Trendelenburg position (head down)	20 Table top up
21 Normal position	22 Flex position/choose
23 Menu/confirm	

You can:

1. Press any key to turn on the corded hand control and recall the operating.
2. Press

to turn on/off the operating table.
3. Press and hold

to obtain the 0-position.
4. Press

to lock the castors.
5. Press

to unlock the castors.
6. Press and hold

+

or

+

to raise/lower the right leg plate.
7. Press and hold

+

or

+

to raise/lower the left leg plate.
8. Press and hold
(5, 8 or 20) to raise the table top/back plate/both leg plates.
9. Press and hold
(15, 16 or 17) to lower the table top/back plate/both leg plates.
10. Press and hold

to tilt the table top left.
11. Press and hold

to tilt the table top right.
12. Press and hold

to obtain the trendelenburg position (head down).
13. Press and hold

to obtain the reverse trendelenburg position (foot down).

14. Press and hold

to longitudinally slide the table top toward the foot end.

15. Press and hold

to longitudinally slide the table top toward the head end.

16. Press

or

to obtain the normal position or reverse position.

⚠ WARNING

- **After adjusting the operating table, be sure to switch off the hand control.**
- **Each time before using the operating table, check all functions by pressing every functional key for 2 to 3 seconds. Make sure all the keys can work normally. Do not use the damaged operating table.**

NOTE

- **If the operating table does not respond to the command even though the function key is completely depressed, either re-aim the hand control or move to a slightly different transmission position. In such cases the infrared receiver at the column is being blocked by a person's body.**
- **When the IR remote control with LCD has been idle for about 90 seconds, it will be switched off automatically.**
- **If the table top is sloped (trendelenburg position) by more than 10°, it cannot slide toward the head end.**
- **10 minutes after the first low battery alarm, the operating table will power off automatically.**
- **It takes about 10 hours to fully charge the battery.**
- **It is recommended that the IR remote control with LCD be slid into the mobile charging station if it is idle.**

2.3.5.4 LCD Interface

1. When the IR remote control with LCD is switched on, the initial interface will be displayed.

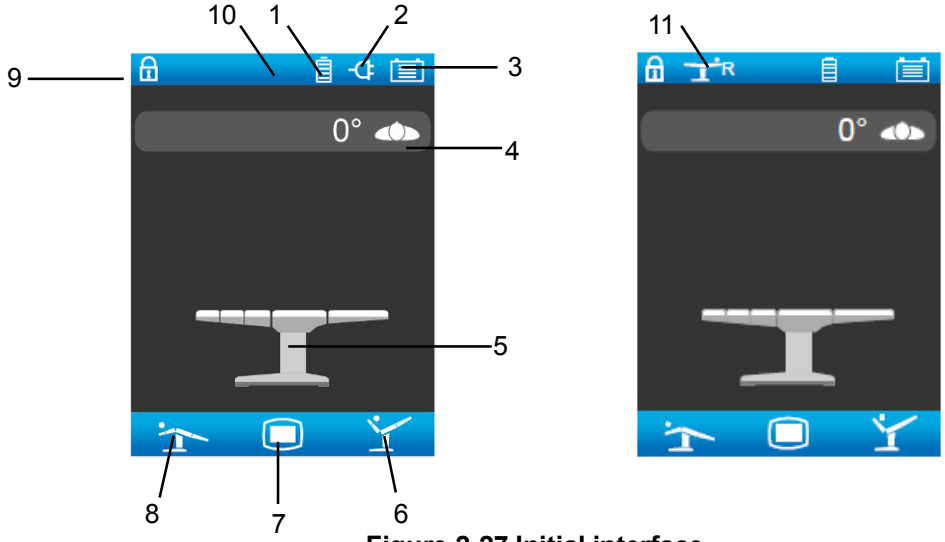


Figure 2-27 Initial interface

1 Battery icon (IR remote control with LCD)
2 AC icon
3 Battery icon (operating table)
4 Left/right tilt icon
5 Table top icon
6 Flex position/back icon
7 Confirm icon
8 Re-flex position/select icon
9 Locking icon
10 Reverse position icon
11 Status bar

Table 2-4 Status icon definitions of IR remote control with LCD

Name	Icon	State	Definition
AC icon		/	The operating table is AC powered.
Battery icon (operating table)		Static	Battery capacity of the operating table
		Dynamic.	The batteries are charging.
		Red and blinking	The batteries are low.
Battery icon (IR remote control with LCD)		Static	Battery capacity of the IR remote control with LCD
		Dynamic.	The IR remote control with LCD is being charged.
		Red and blinking	The batteries are low.

NOTE

- **10 minutes after the first low battery alarm, the IR remote control with LCD will power off automatically.**
- **It takes about 10 hours to fully charge the battery.**
- **Each time before using the operating table, check all functions by pressing every functional key for 2 to 3 seconds. Make sure all the keys can work normally. Do not use the damaged operating table.**

2.3.5.5 Locking Icon

1. The locking icon

is displayed when pressing the locking key.
2. Then the locking icon is displayed in the status bar when the castors are locked.

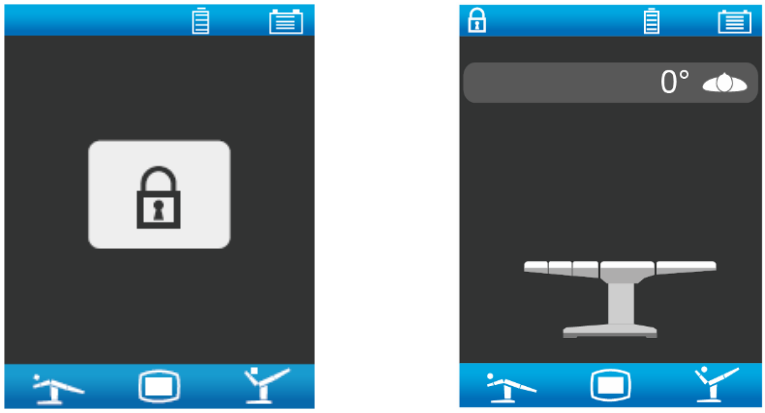


Figure 2-28 Locking icon

NOTE

- **The operating table can only be adjusted when the castors are locked (lock function is active).**
- **If the castors are not locked (unlock function is active), then only the slope can be adjusted in emergencies.**

2.3.5.6 Unlocking Icon

1. The unlocking icon

is displayed when pressing the unlocking key.
2. Then the unlocking icon is displayed in the status bar when the castors are unlocked.

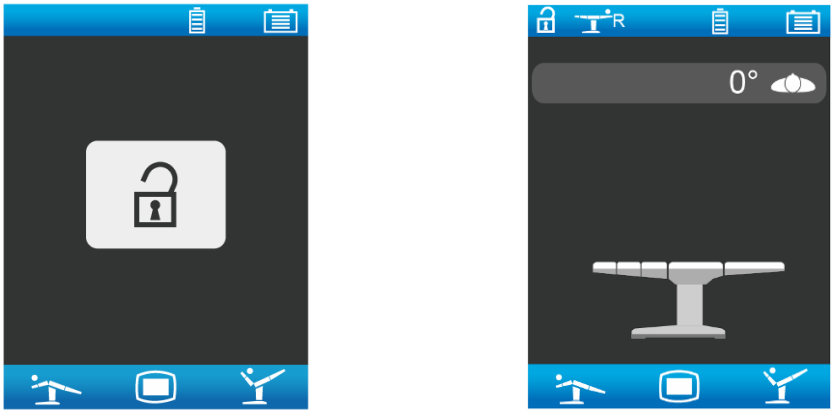


Figure 2-29 Unlocking icon

NOTE

- **The operating table can only be adjusted when the castors are locked (lock function is active).**
- **If the castors are not locked (unlock function is active), then only the slope can be adjusted in emergencies.**

3. The following icon will be displayed, if the operating table is unlocked and sloped.

Figure 2-30 Slope the operating table (unlocking)

2.3.5.7 Error Icon

As Figure 2-31 shows, if the error icon is displayed, contact the customer service department authorized by Nanjing Mindray for help.

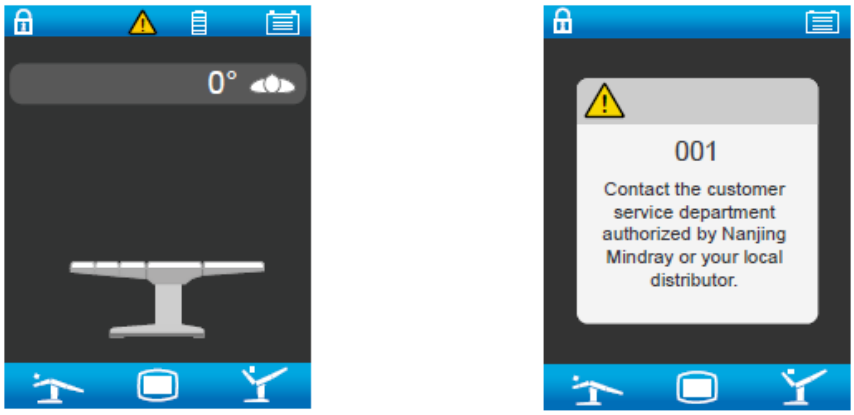


Figure 2-31 Error icon

2.3.5.8 Mobile Charging Station for IR Remote Control with LCD (optional)

2.3.5.8.1 Charging the Battery in the IR Remote Control with LCD

1. Connect the mobile charging station to the mains.
2. Slide the IR remote control with LCD (1), oriented correctly, into the charging station (2) until the lower end of the IR remote control with LCD makes contact with the stop.

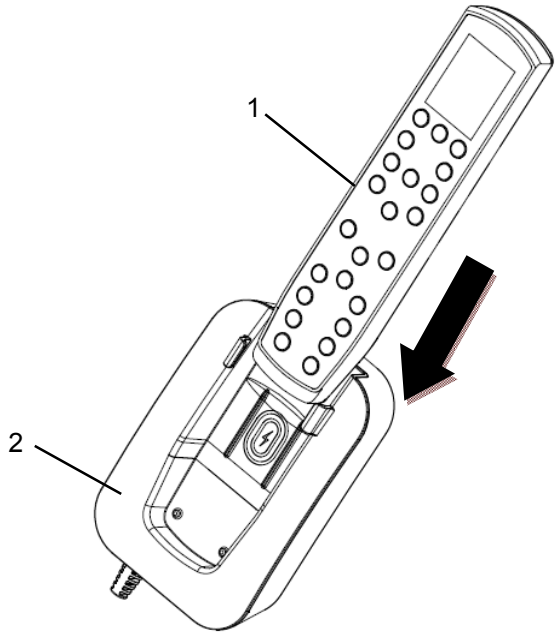


Figure 2-32 Mobile charging station for IR remote control with LCD

There is only one indicator on the mobile charging station: power indicator. See the table below for details.

Table 2-5 Indicator definitions of IR remote control with LCD

Indicator	State	Definition
Power indicator	Red	The mobile charging station is connected with the mains.
	Green and flashing	The batteries are charging.

⚠ CAUTION

- **The IR remote control with LCD is reliably placed if the power indicator of the mobile charging station is green and flashing.**

2.3.5.9 Attaching the Hand Control to the Side Rail

See chapter 2.3.3.5 for details.

2.3.6 Foot Switch (optional)

The operation of the foot switch see the “foot switch operator’s manual” for details.

⚠ CAUTION

- **Be sure to use the foot switch according to the “foot switch operator’s manual”.**

NOTE

- **If the operating table is set to reverse position, the components controlled by the buttons for the back plate and leg plate are reversed.**

2.4 Patient Orientation

2.4.1 Definition of Patient Orientation

⚠ WARNING

- **Be sure to select the patient orientation correctly. Otherwise, it may result in operating table adjustments in a wrong direction.**
- **Check the correct patient orientation prior to making any adjustment. The patient orientation is indicated on the hand control by the normal indicator or the reverse position indicator.**

The patient orientation depends on the position of the patient on the table top with regard to the operating table base.

2.4.1.1 Normal Patient Orientation

As the Figure 2-33 shows, the upper part of the patient's body is located above the operating table base (1).

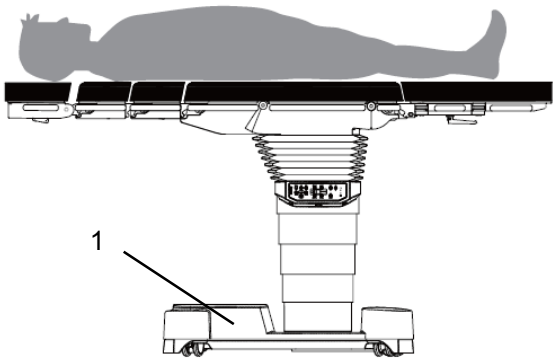


Figure 2-33 Normal patient orientation

2.4.1.2 Reverse Patient Orientation

As the Figure 2-34 shows, the patient's legs are located above the operating table base (1).

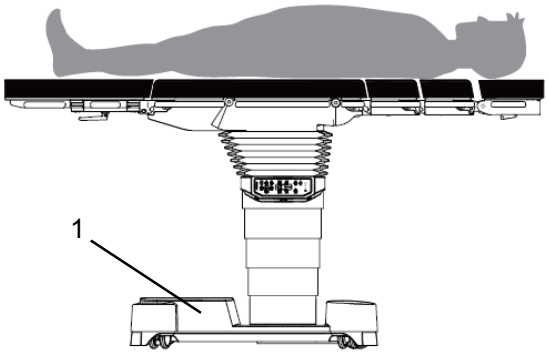


Figure 2-34 Reverse patient orientation

2.4.2 Setting the Patient Orientation

Depending on the position of the patient, the patient orientation needs to be set so that the adjustment function can be carried out correctly.

1. Press the NORMAL button to obtain the normal position and the normal position indicator is green.
2. Press the REV button to obtain the reverse position and the reverse position indicator is green.

2.5 Mechanical Adjustments

2.5.1 Dual-joint Head Plate (optional)

⚠ WARNING

- **When removing/installing the dual-joint head plate, be sure to grasp it with both hands. Otherwise, it can fall and cause personal injury and/or property damage.**
- **Exercise caution when removing/installing the head plate. Do not pinch yourself.**
- **The maximum load of the dual-joint head plate is 15kg. Do not use it beyond this limit.**
- **If accessories are used, make sure the weights of the accessories installed on the dual-joint head plate and of the patient's head add up no more than 15kg.**
- **Do not install such devices as arm boards, anesthesia frames and infusion holders on the dual-joint head plate. Otherwise, the dual-joint head plate can move unexpectedly.**
- **When using the dual-joint head plate, be sure to cover it with a sterile surgical drape.**
- **Each time before using the pad, check it carefully. Do not use the worn or damaged pad.**
- **Be sure to use the pad provided by Nanjing Mindray only.**

2.5.1.1 Removing Dual-joint Head Plate

1. Hold the dual-joint head plate with both hands and push the locking button with fingers.
2. As Figure 2-35 shows, lift the dual-joint head plate and pull it out.

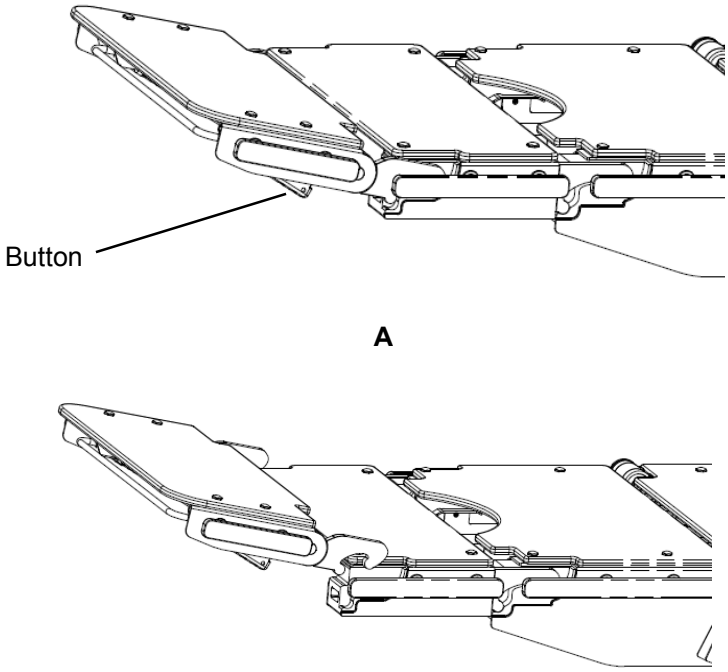
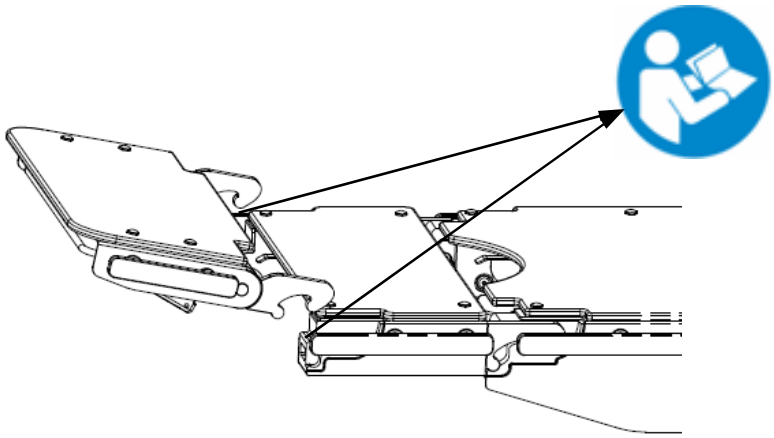


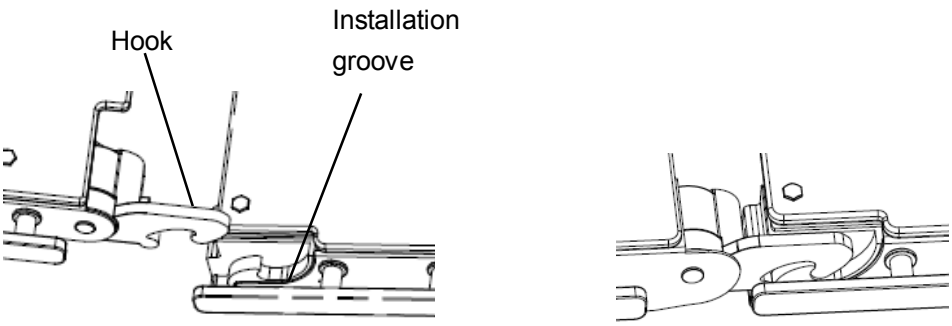
Figure 2-35 Removing the dual-joint head plate

2.5.1.2 Installing Dual-joint Head Plate

1. Hold the dual-joint head plate with both hands.
2. As Figure 2-36 (A) shows, hang the head plate onto the installing grooves. The head plate is reliably installed if you hear a click.
3. Make sure the hooks are hung fully as figure 2-36 (B) shows.
4. Pull the dual-joint head plate to check whether it has been installed properly.



A



B

Figure 2-36 Installing the dual-joint head plate

⚠ WARNING

- **The label means: be sure to install and remove the dual-joint head plate strictly as instructed in the manual.**

2.5.1.3 Adjusting Dual-joint Head Plate

1. As Figure 2-37 shows, hold the dual-joint head plate with both hands (palms up) and pull the release bracket (1) outward with fingers.
2. Raise or lower the dual-joint head plate to the desired position.
3. Release the dual-joint head plate and the bracket.
4. Pull the dual-joint head plate to check whether it has been adjusted properly.
5. Pull the release button (3) with one hand and raise or lower the upper plate (4) to the desired position with the other hand.
6. Release the upper plate (4) and the release button (3).

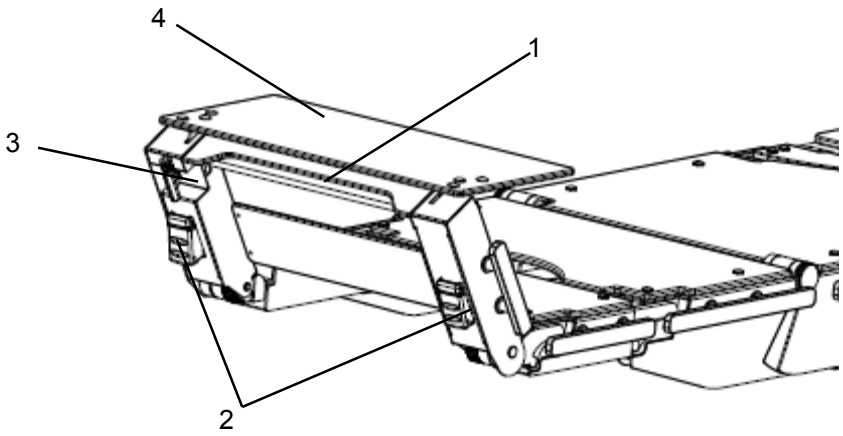


Figure 2-37 Adjusting the dual-joint head plate

⚠ WARNING

- **When lowering the dual-joint head plate, be sure to do it slowly and smoothly. Do not hurt the patient.**
- **Make sure the dual-joint head plate is reliably installed before using it.**

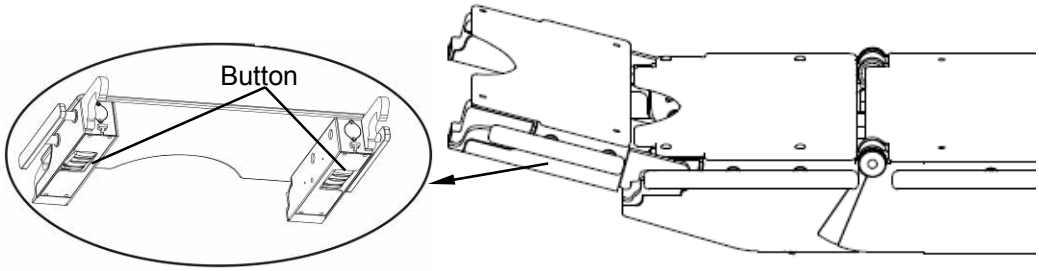
2.5.2 Extension Plate (optional)

⚠ WARNING

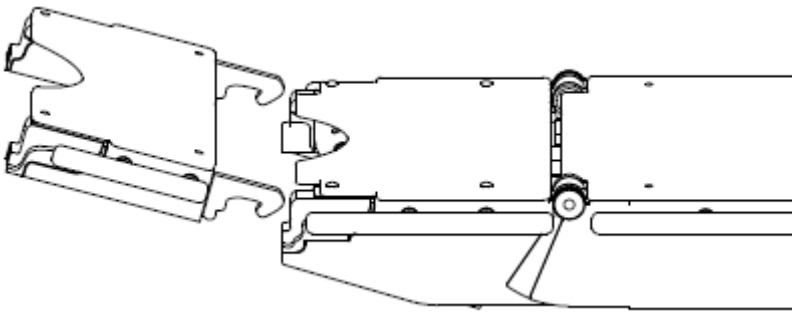
- **When removing/installing the extension plate, be sure to grasp it with both hands. Otherwise, it can fall and cause personal injury and/or property damage.**
- **Exercise caution when removing/installing the extension plate. Do not pinch yourself.**
- **The maximum load of the extension plate is 55kg. Do not use it beyond this limit.**
- **If accessories are used, make sure the weights of the accessories installed on the extension plate and of the patient's back add up no more than 55kg.**
- **When using the extension plate, be sure to cover it with a sterile surgical drape.**
- **Each time before using the pad, check it carefully. Do not use the worn or damaged pad.**
- **Be sure to use the pad provided by Nanjing Mindray only.**

2.5.2.1 Removing Extension Plate

1. Hold the extension plate with both hands.
2. As Figure 2-38 shows, lift the extension plate and pull it out.



A



B

Figure 2-38 Removing the extension plate

2.5.2.2 Installing Extension Plate

1. Hold the extension plate with both hands.
2. As Figure 2-39 (A) shows, hang the extension plate onto the installing grooves. The extension plate is reliably installed if you hear a click.
3. Make sure the hooks are hung fully as Figure 2-39 (B) shows.
4. Pull the extension plate to check whether it has been installed properly.

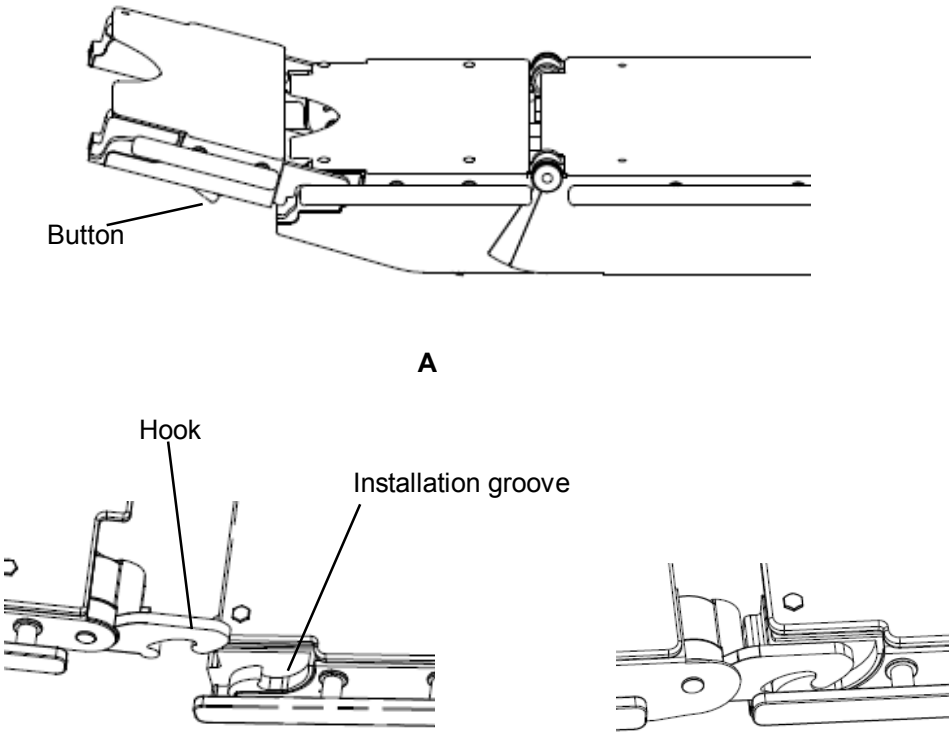


Figure 2-39 Installing the extension plate

2.5.3 Dual-joint Leg Plate (optional)

⚠ WARNING

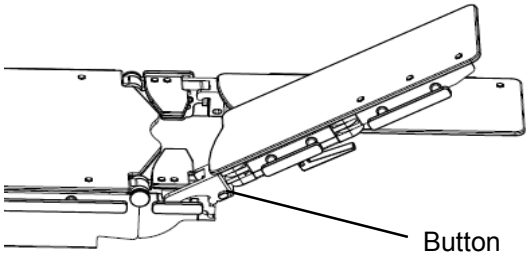
- **When removing/installing the dual-joint leg plate, be sure to grasp it with both hands. Otherwise, it can fall and cause personal injury and/or property damage.**
- **Exercise caution when removing/installing the dual-joint leg plate. Do not pinch yourself.**
- **Placing the patient improperly can tip over the operating table. Be sure to place the patient in the right direction. Do not place the patient's trunk on the dual-joint leg plate.**
- **When using the dual-joint leg plate, be sure to cover it with a sterile surgical drape.**
- **The maximum load of the dual-joint leg plate is 35 kg. Do not use it beyond**

this limit.

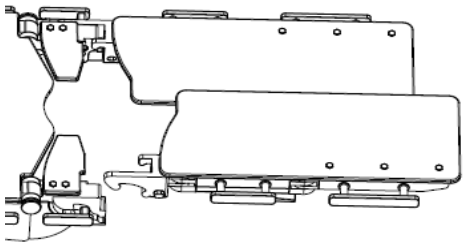
- **If accessories are used, make sure the weights of the accessories installed on the dual-joint leg plate and of the patient's leg add up no more than 35 kg.**
- **When adjusting the patient's body position, do not reach beneath the table top or touch the moving parts. Otherwise, you can be pinched.**
- **When tilting or sloping the table top or when adjusting the leg plate ensure that the table top does not collide with the column or the operating table base.**
- **Make sure that the dual-joint leg plates are not crossed /on top of each other before adjusting the leg plates for the horizontal position. Otherwise, it can cause personal injury and/or property damage.**
- **Each time before using the pad, check it carefully. Do not use the worn or damaged pad.**
- **Be sure to use the pad provided by Nanjing Mindray only.**

2.5.3.1 Removing Dual-joint Leg Plate

1. As Figure 2-40 (A) shows, hold the dual-joint leg plate with one hand, and press the locking button with the thumb.
2. As Figure 2-40 (B) shows, lift and pull out the dual-joint leg plate.



A



B

Figure 2-40 Removing the dual-joint leg plate

2.5.3.2 Installing Dual-joint Leg Plate

1. Hold the dual-joint leg plate with both hands.
2. As Figure 2-41 shows, hang the leg plate onto the installing grooves. The leg plate is reliably installed if you hear a click.
3. Make sure the hooks are hung fully as Figure 2-41 (B) shows.
4. Pull the dual-joint leg plate to check whether it has been installed properly.

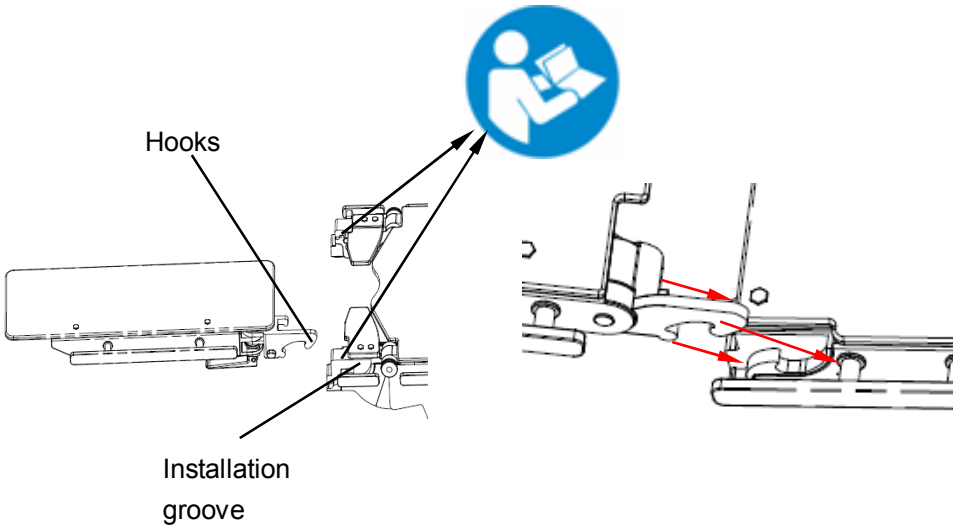


Figure 2-41 Installing the dual-joint leg plate

⚠ WARNING

- **The label means: be sure to install and remove the dual-joint leg plate strictly as instructed in the manual.**

2.5.3.3 Adjusting Dual-joint Leg Plate

To move the dual-joint leg plate up/down:
Use the corded hand control/Corded Hand Control with LCD/IR remote control with LCD to move the dual-joint leg plate up/down. See chapter 2.3.3.1, 2.3.4.1 and 2.3.5.2 for details.

⚠ CAUTION

- **Before adjusting the dual-joint leg plate, make sure nothing is under it.**

To move the dual-joint leg plate left/right:

1. Loose the handle (1).

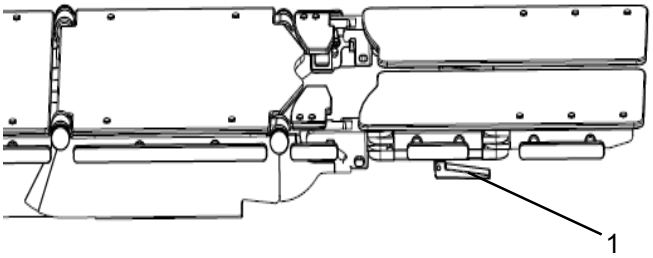


Figure 2-42 Loosing the handle of the dual-joint leg plate

2. Adjust the dual-joint leg plate left/right to the desired position.

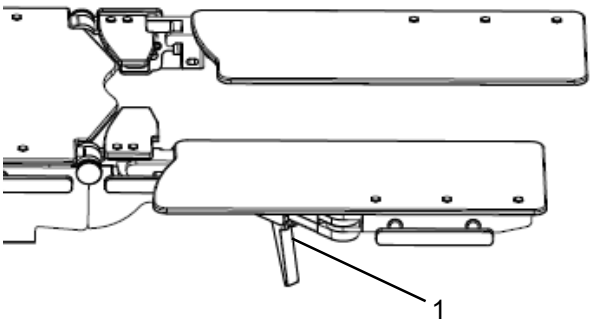


Figure 2-43 Moving dual-joint leg plate left/right

3. Tighten the handle (1).

2.5.4 Head Plate (optional)

The head plate is optional. See the “head plate operator’s manual” for details.

2.5.5 Upper Back Plate (optional)

The upper back plate is optional. See the “upper back plate operator’s manual” for details.

2.5.6 Leg Plate (optional)

The leg plates are optional. See the “leg plate operator’s manual” for details.

2.6 Table Pad

⚠ WARNING

- **Each time before using the pad, check it carefully. Do not use the worn or damaged pad and replace damaged pad immediately.**
- **Liquid can penetrate damaged pad and cause hygienic problems.**
- **When disinfecting the patient's skin, make sure the disinfectant does not accumulate under the patient.**

2.6.1 Foam Pad

2.6.1.1 Installing Pad

1. Lay the pad on the table.
2. Make sure that the Velcro strap (loop) on the pad is fully aligned with that on the table top (hook).
3. Check whether the pad is reliably installed.

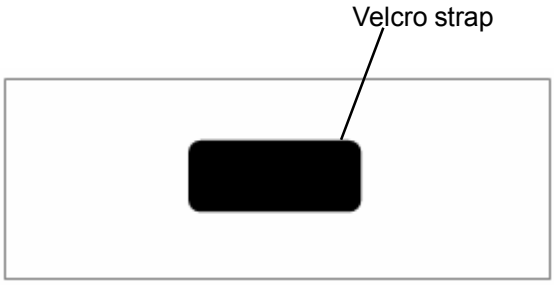


Figure 2-44 Installing pad

2.6.1.2 Removing Pad

Grasp the pad with both hands, and then remove it.

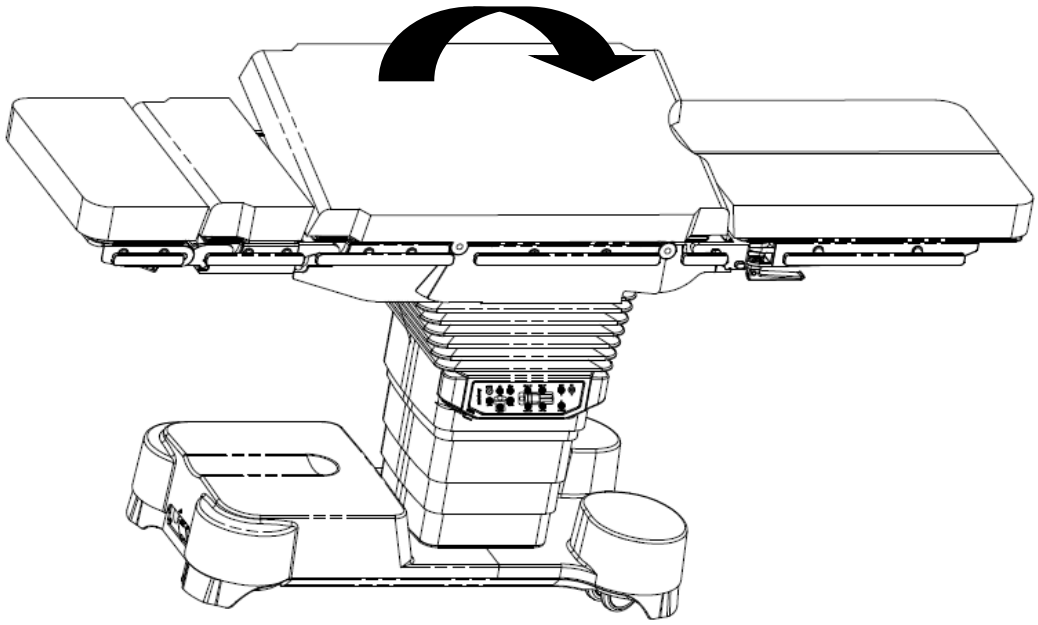


Figure 2-45 Removing table pad

⚠ WARNING

- **Make sure the holes on the bottom of the pad are fully aligned with the screws on the table, and the pad is well secured by the screws.**
- **Be sure to only use the cleaning agents and methods recommended in this manual to clean the pad. Otherwise, it can cause personal injury and/or property damage.**
- **Each time before using the pad, check it carefully. Do not use the worn or damaged pad.**
- **When using the pad, be sure to cover it with a sterile surgical drape.**

⚠ CAUTION

- **Pad should be stored lying flat and horizontal.**
- **When removing the pad, be sure to grasp it with both hands.**
- **Before installing the pad, make sure that the table top is dry.**

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3 Patient Positioning

3.1 Patient Positioning at an Overall Load between 230kg and 460 kg

3.1.1 General

⚠ WARNING

- **If accessories are used, make sure the weights of the accessories installed on the operating table and of the patient add up no more than the permissible overall load.**
- **Only use accessory which is approved for its share of the load imposed by the weight of a patient.**
- **The pictorial views in this chapter show the recommended accessory for patient positioning considering the patient weight. Refer to chapter A.6 for the complete list of the accessories used.**
- **If the load on the operating table exceeds 230kg, half-yearly maintenance is required.**
- **Never extend the swivel castors of the mobile operating table if the overall load exceeds 230kg (unlock function is prohibited). Otherwise, it can cause the operating table tipping.**

When the patient positioning at an overall load between 230kg and 460kg, please observe the following functional restrictions:

1. Lock the castors.
2. Reverse patient orientation is not permitted
3. Longitudinal slide not permitted
4. maximum extension of the table top head end: 510 mm
5. maximum extension of the table top foot end: 680 mm
6. Maximum slope (Trendelenburg/reverse Trendelenburg) ±20°
7. Maximum tilt (left/right) ±5°
8. Maximum back plate adjustment +80° / -10°
9. Maximum leg plates adjustment ±10°

10. The beach chair position may be used for adiposity surgery taking into consideration the required supports.

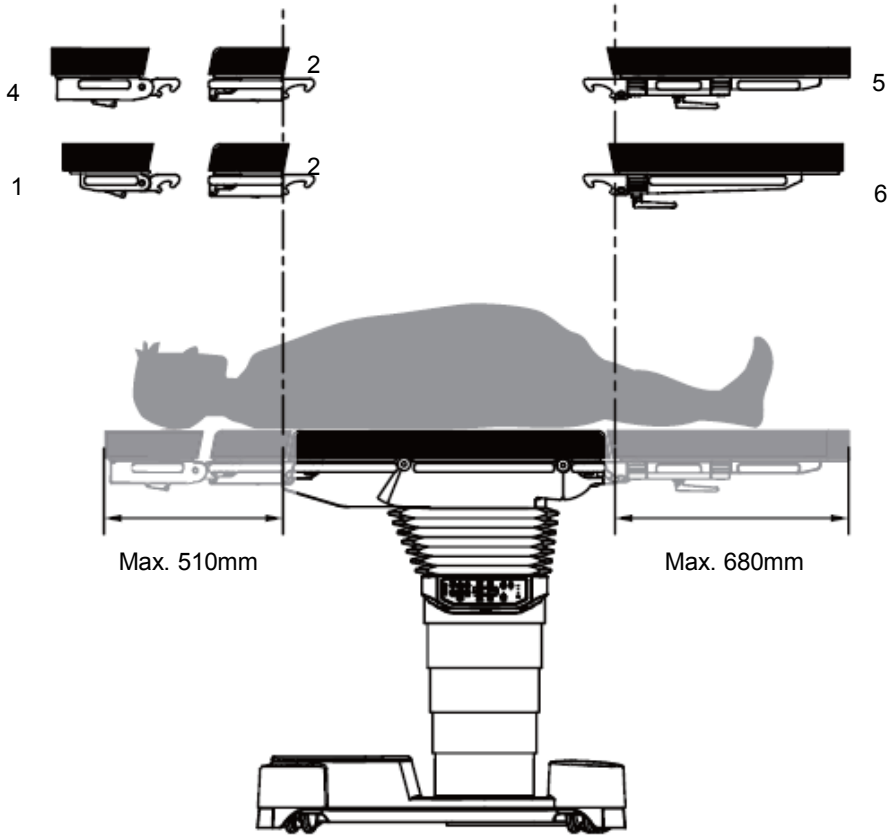

Figure 3-1 Normal position/230kg to 460kg of over load

1 Head plate	2 Upper back plate
3 /	4 Dual-joint head plate
5 Dual-joint leg plate	6 Leg plate

3.2 Patient Positioning at an Overall Load between 135kg and 230kg

3.2.1 General

⚠ WARNING

- **If accessories are used, make sure the weights of the accessories installed on the operating table and of the patient add up no more than the permissible overall load.**
- **Only use accessory which is approved for its share of the load imposed by the weight of a patient.**
- **The pictorial views in this chapter show the recommended accessory for patient positioning considering the patient weight. Refer to chapter A.6 for the complete list of the accessories used.**

When the patient positioning at an overall load between 135kg and 230kg, please observe the following functional restrictions:

1. Operating table not immobilized (unlock)/normal patient orientation
   - Operating table is in the lowest height.
   - maximum extension of the table top head end: 760mm.
   - maximum extension of the table top foot end: 930mm.

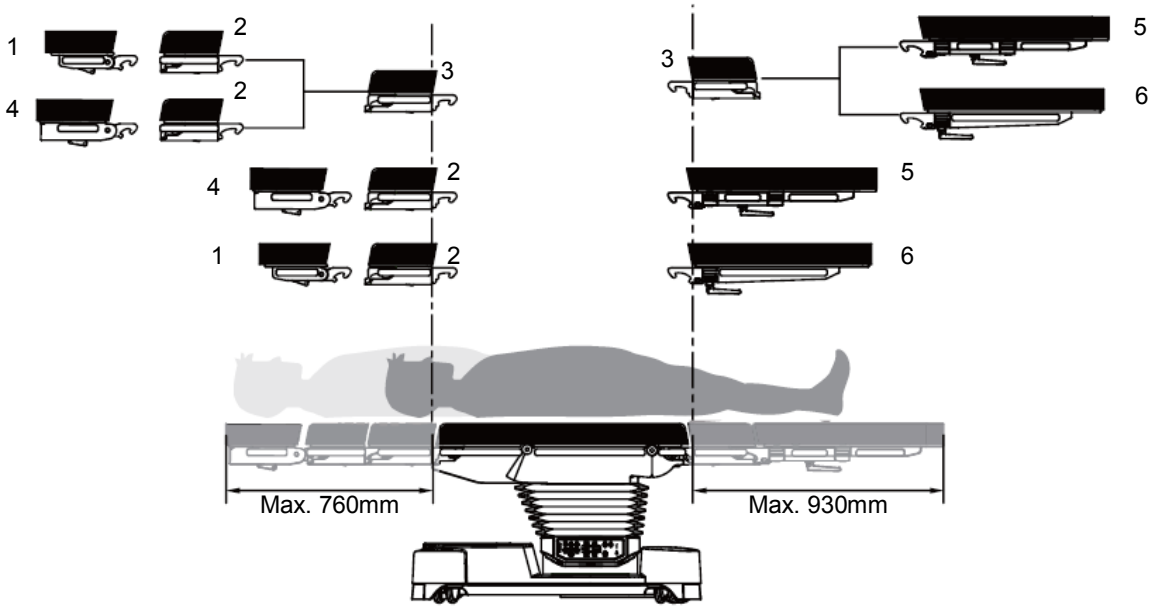

Figure 3-2 Normal position/135kg to 230kg of overall load/unlock

1 Head plate
2 Upper back plate
3 Extension plate
4 Dual-joint head plate
5 Dual-joint leg plate
6 Leg plate

2. Operating table not immobilized (unlock)/reverse patient orientation
   - Operating table is in the lowest height.
   - maximum extension of the table top head end: 930mm.
   - maximum extension of the table top foot end: 650mm.

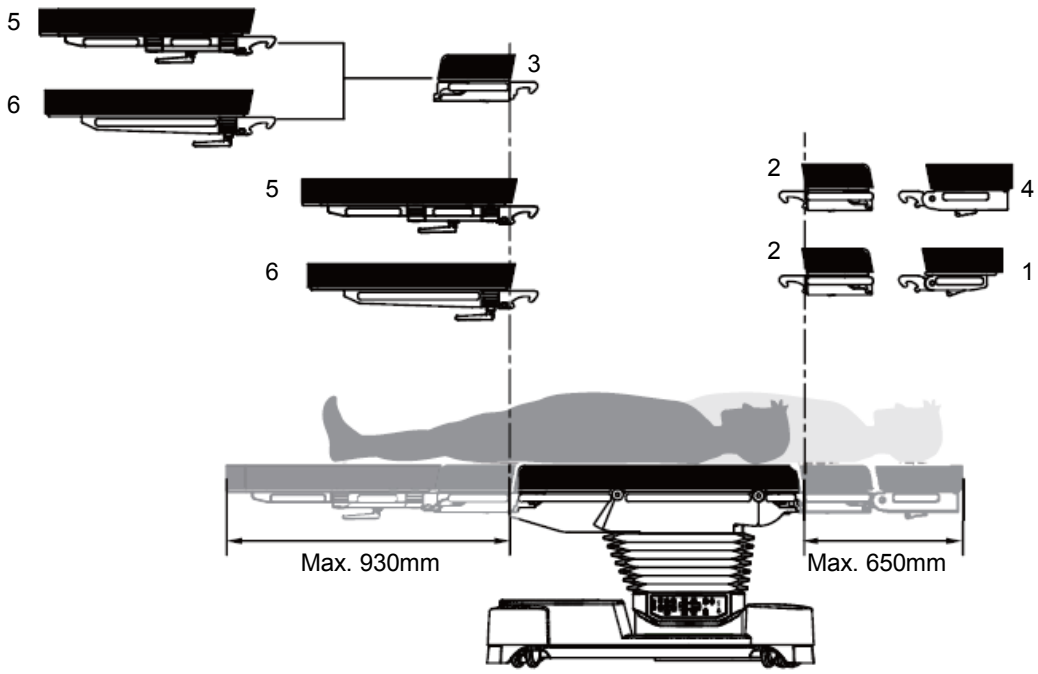

Figure 3-3 Reverse position/135kg to 230kg of overall load/unlock

1 Head plate
2 Upper back plate
3 Extension plate
4 Dual-joint head plate
5 Dual-joint leg plate
6 Leg plate

3. Operating table immobilized (lock)/normal patient orientation:
   - maximum extension of the table top head end: 760mm.
   - maximum extension of the table top foot end: 930mm.

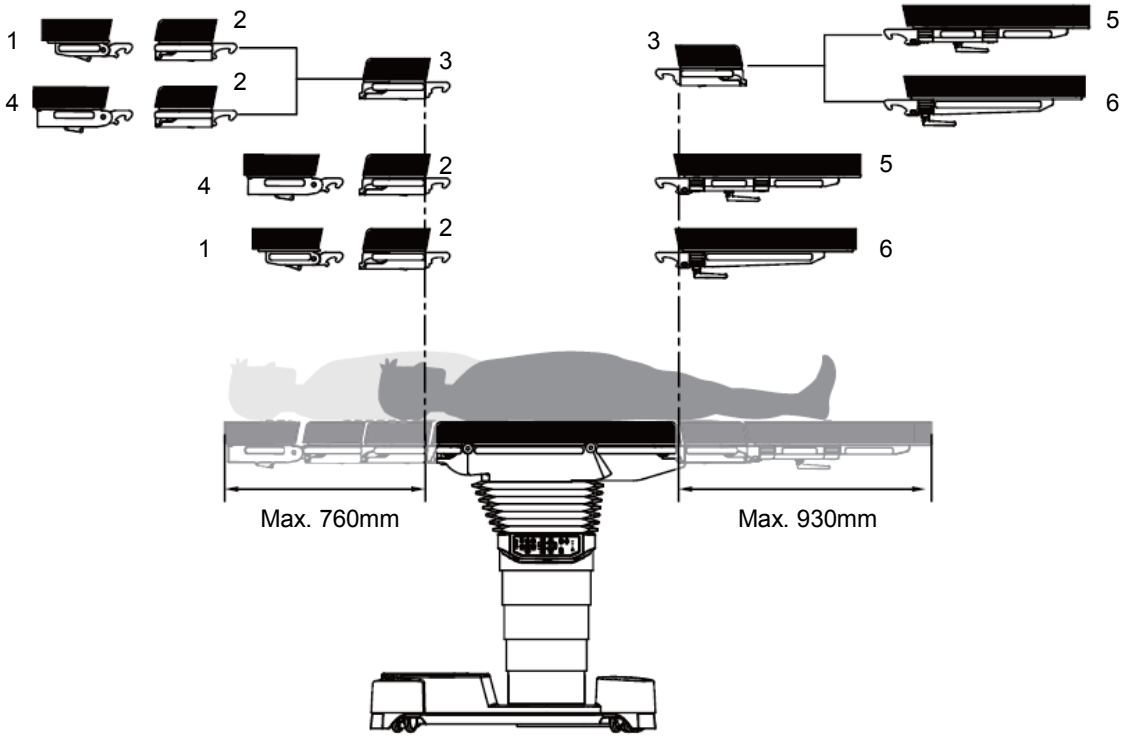

Figure 3-4 Normal position/135kg to 230kg of overall load/lock

1 Head plate
2 Upper back plate
3 Extension plate
4 Dual-joint head plate
5 Dual-joint leg plate
6 Leg plate

4. Operating table immobilized (lock)/reverse patient orientation:
   - maximum extension of the table top head end: 930mm.
   - maximum extension of the table top foot end: 650mm.

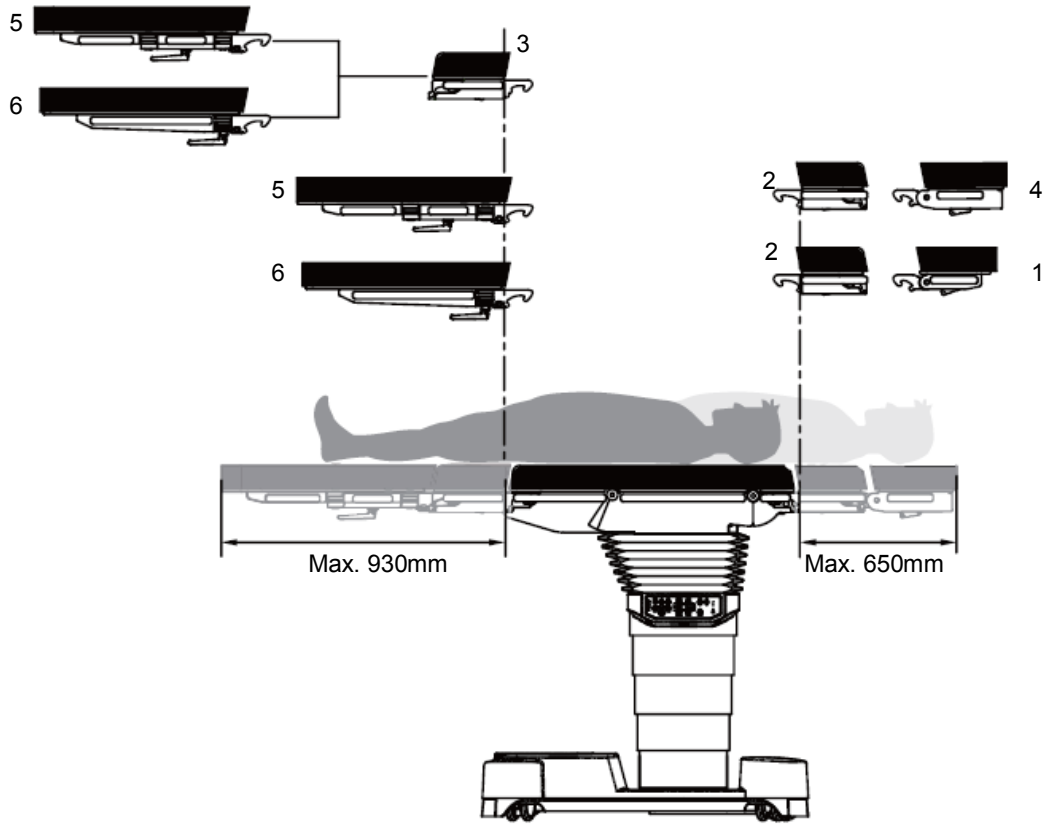

Figure 3-5 Reverse position/135kg to 230kg of overall load/lock

1 Head plate
2 Upper back plate
3 Extension plate
4 Dual-joint head plate
5 Dual-joint leg plate
6 Leg plate

3.3 Patient Positioning with an Overall Load of up to 135 kg

3.3.1 General

⚠ WARNING

- **If accessories are used, make sure the weights of the accessories installed on the operating table and of the patient add up no more than the permissible overall load.**
- **Only use accessory which is approved for its share of the load imposed by the weight of a patient.**
- **The pictorial views in this chapter show the recommended accessory for patient positioning considering the patient weight. Refer to chapter A.6 for the complete list of the accessories used.**

When the patient positioning with an overall load of up to 135kg, please observe the following functional restrictions:

1. Operating table not immobilized (unlock) / normal patient orientation
   - maximum extension of the table top head end: 760mm.
   - maximum extension of the table top foot end: 930mm.
   - maximum height (bottom edge of pad): 940mm.

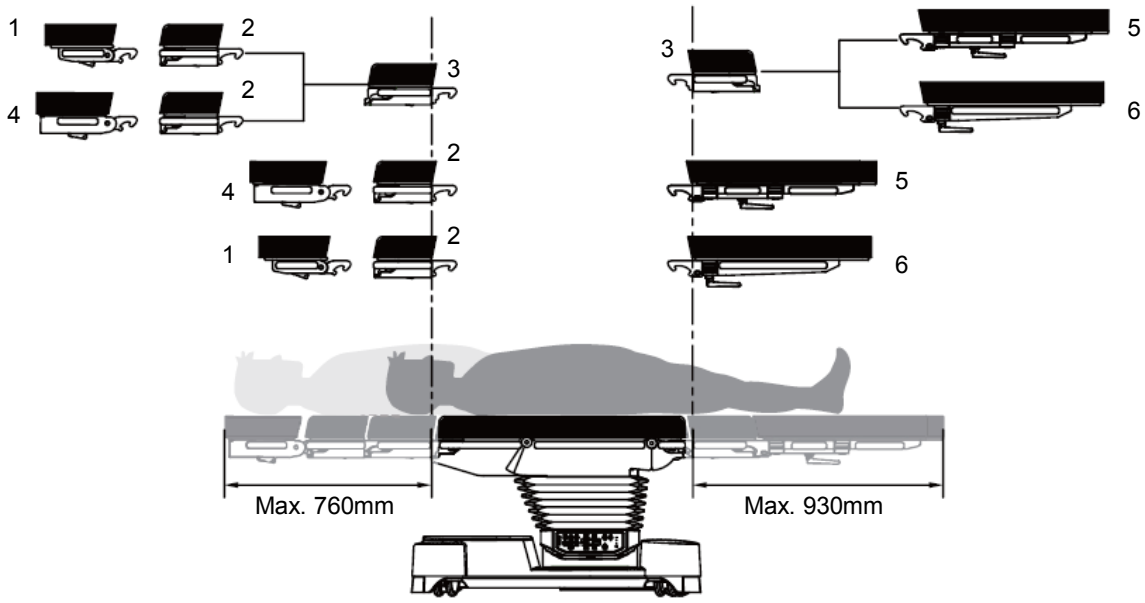

Figure 3-6 Normal position/up to an overall weight of 135kg/unlock

1 Head plate
2 Upper back plate
3 Extension plate
4 Dual-joint head plate
5 Dual-joint leg plate
6 Leg plate

2. Operating table not immobilized (unlock) / reverse patient orientation
   - maximum extension of the table top head end: 1130mm.
   - maximum extension of the table top foot end: 760mm.
   - maximum height (bottom edge of pad): 940mm.

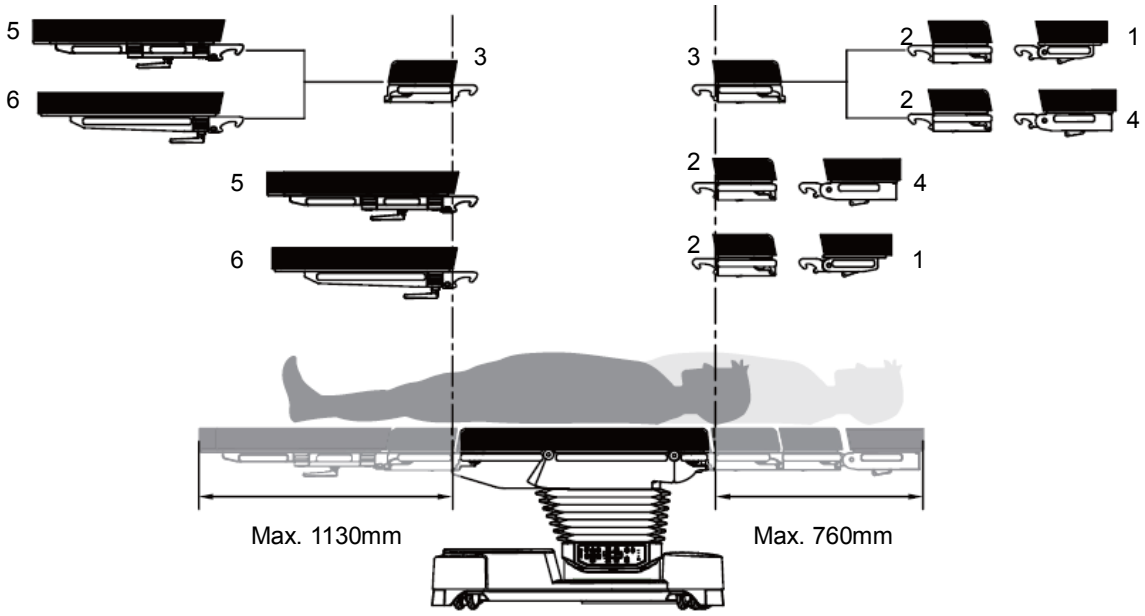

Figure 3-7 Reverse position/up to an overall weight of 135kg/unlock

1 Head plate
2 Upper back plate
3 Extension plate
4 Dual-joint head plate
5 Dual-joint leg plate
6 Leg plate

3. Operating table immobilized (lock) / normal patient orientation
   - maximum extension of the table top head end: 850 mm.
   - maximum extension of the table top foot end: 1180 mm.

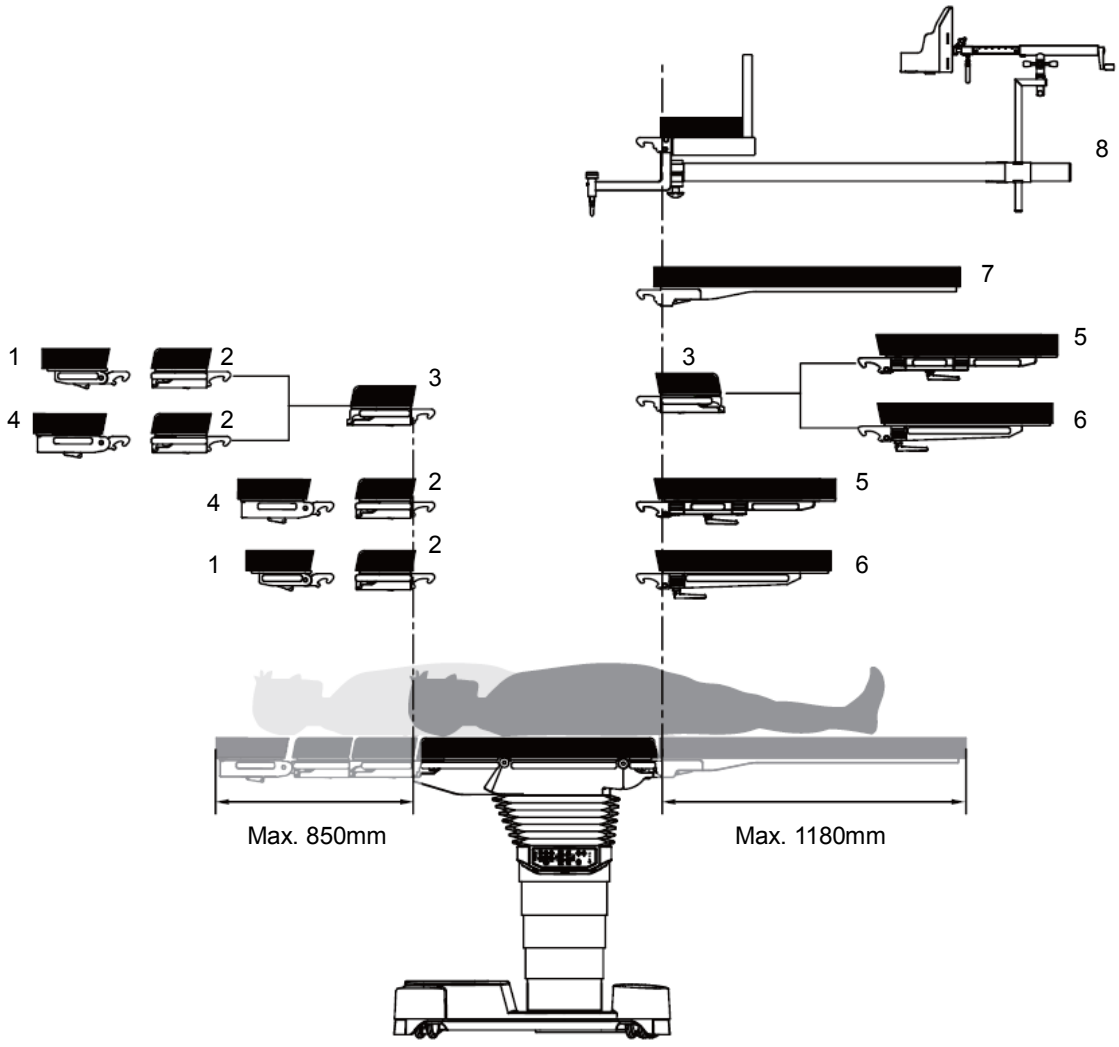

Figure 3-8 Normal position/up to an overall weight of 135kg/lock

1 Head plate
2 Upper back plate
3 Extension plate
4 Dual-joint head plate
5 Dual-joint leg plate
6 Leg plate
7 Carbon fiber cardiac operating plate
8 Carbon fiber orthopedic extension device

4. Operating table immobilized (lock) / reverse patient orientation
   - maximum extension of the table top head end: 1130 mm.
   - maximum extension of the table top foot end: 1180 mm.

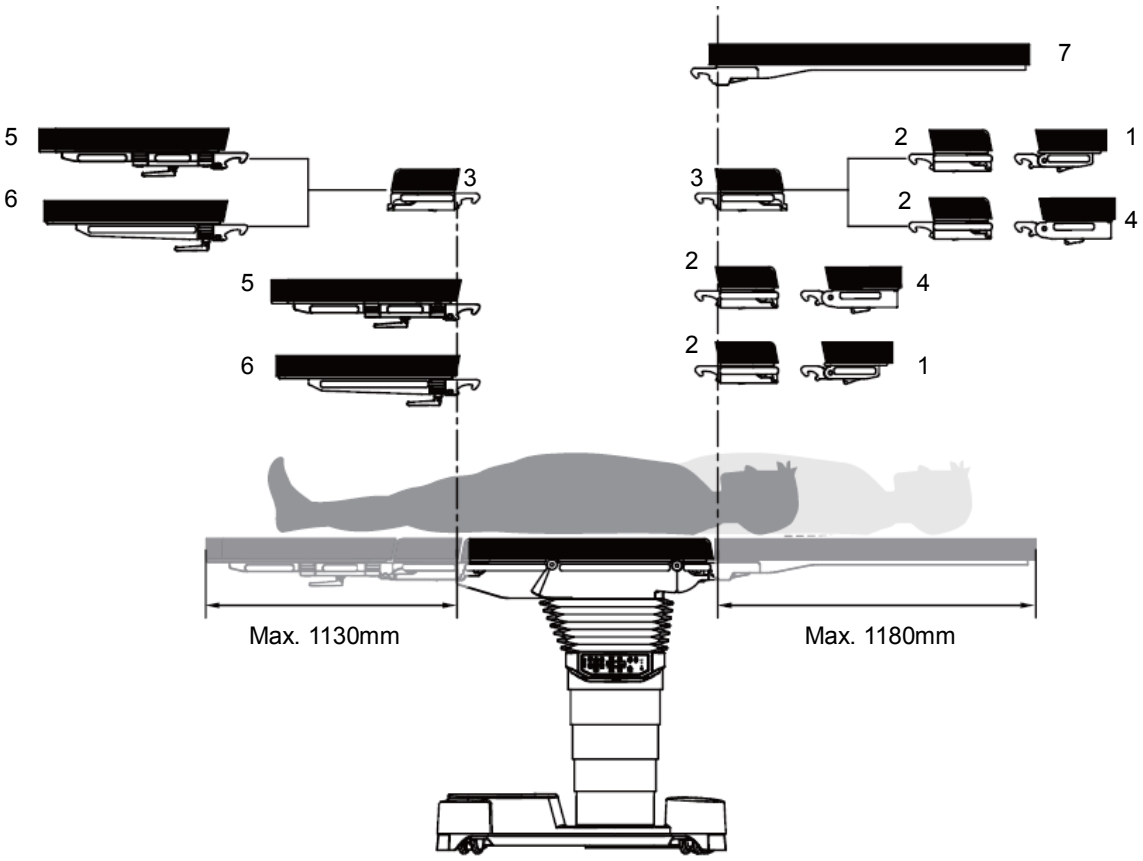

Figure 3-9 Reverse position/up to an overall weight of 135kg/lock

1 Head plate	2 Upper back plate
3 Extension plate	4 Dual-joint head plate
5 Dual-joint leg plate	6 Leg plate
7 Carbon fiber cardiac operating plate	8 /

4 Cleaning and Disinfection

4.1 General

The product must be cleaned and wipe or spray disinfected after every use.

⚠ WARNING

- **Remove the mains plug from the socket before cleaning/disinfection.**
- **Liquid should never be allowed to enter live parts.**
- **It is strictly advised to observe the manufacturer instructions regarding how to use the detergents and disinfectants as well as the valid hospital hygiene rules.**
- **Always wear gloves for cleaning and disinfection, otherwise it can cause infection.**
- **Be sure to strictly follow the recommended cleaning/disinfecting methods to clean/disinfect the operating table.**
- **Do not use the cleaning agents or disinfectants containing alcohol where such medical devices as electrosurgical units, defibrillators or defibrillator monitors can be used. Otherwise, it can cause fire and/or explosion hazards.**

⚠ CAUTION

- **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.**
- **Do not clean/disinfect the operating table mechanically.**
- **Improper cleaning/disinfection can damage the operating table.**
- **Use proper amount of the cleaning agent to clean the operating table, and remove any excessive agent and/or liquid by a dry cloth.**
- **Perform visual and functional inspections after each cleaning and disinfection process.**

4.1.1 Recommended Cleaning Agents and Disinfectants

- Mildly alkaline (soap solution)
- Aldehydes
- Quaternary compounds
- Guanidine derivative
- 2% alkaline glutaraldehyde (for metal part)

⚠ CAUTION

- **Do not clean/disinfect the operating table mechanically.**
- **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.**
- **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 cleaning devices.**
- **Do not use scouring agents.**
- **Do not use water containing metal particles, any metal tools (such as wire brushes or steel wool), or products containing hydrochloric acid to clean the operating table.**

4.1.2 Forbidden Cleaning Agents and Disinfectants

- Disinfectants containing alcohol (e. g. hand disinfectants)
- Disinfectants containing chlorine or compounds which can release chlorine (not suitable for metal parts)
- Halogenides (e. g. fluorites, chlorides, bromides, iodides)
- Dehalogenating compounds (e. g. fluorine, chlorine, bromine, iodine)
- Products that may scratch the surface (e. g. scouring agents, wire brushes, wire wool)
- Standard commercial solvents (e. g. benzene, thinner)
- Water containing iron particles
- Cleaning sponges containing iron
- Products containing hydrochloric acid

4.2 Cleaning

4.2.1 Preparations

1. Put operating table into the horizontal position.
2. Raise the operating table up to the highest position.
3. Use surgical drapes to cover the operating table when not in use.

4.2.2 Cleaning Procedure

1. Use the correct dose of multi-purpose detergent with water for the degree of surface contamination and in accordance with the instructions of the detergent manufacturer.
2. Thoroughly wipe off the product with a soft cloth slightly wetted in a multi-purpose detergent solution.
3. Ensure that the product is free of contamination and encapsulated particles of grime.
4. Thoroughly wipe off the product with a soft cloth dipped in clean water.
5. Ensure that the product is free of detergent residues.
6. Dry product with a dry, absorbent and lint free cloth. This will help to reduce pathogen growth on the product's surface.
7. Disinfect the product after every cleaning.

⚠ WARNING

- **Exercise caution for the gaps when cleaning or disinfecting the table top. Otherwise, you can be pinched.**

⚠ CAUTION

- **In the event of very dirty product surfaces, carry out an additional disinfection procedure before cleaning the product.**
- **Use only all-purpose cleaners which are slightly alkaline (soap solution) and contain tensides and phosphates as the active cleaning agents. In the event of heavily contaminated surfaces, use concentrated multi-purpose detergent.**
- **Improper cleaning can cause property damage! Residues of physiological saline solutions (e. g. sodium chloride) can attack the surfaces of the product. Remove residues of physiological saline solutions with a cloth**

dipped in clean water. Then dry the product with a dry, lint free cloth.

- **Do not spray cleaning agent directly into the joints or gaps and never use a high-pressure cleaning unit!**
- **Cleaning causes lubricants to be flushed out of the product. Re-lubricate the product according to the lubrication instructions.**

4.3 Disinfection

4.3.1 General

⚠ WARNING

- **Exercise caution for the gaps when cleaning or disinfecting the table top. Otherwise, you can be pinched.**

⚠ CAUTION

- **Agents containing alcohol can form explosive vapor mixtures and ignite where high-frequency equipment is being used. Do not use agents containing alcohol where high-frequency equipment is being used.**
- **Material damage due to excessive exposure times! Exceeding the specified exposure time of the disinfectant may damage the surfaces. Remove disinfectant residues with a cloth dipped in clean water. Then dry the product with a dry, lint free cloth.**

4.3.2 Disinfection Procedure

1. Disinfect (wipe or spray) the product in accordance with the instructions of the detergent manufacturer each time after the product is cleaned.
2. Thoroughly wipe off the product with a soft cloth dipped in clean water.
3. Ensure that the product is free of disinfectant residue.
4. Dry product with a dry, absorbent and lint free cloth.
5. Perform visual and functional inspections.

4.4 Table Pad

⚠ WARNING

- **Each time before using the pad, check it carefully. Do not use the worn or damaged pad and replace damaged pad immediately.**
- **Any worn or damaged pad should be replaced immediately.**
- **Moisture or liquid can penetrate the damaged pad and hygiene requirements are then no longer satisfied.**
- **Do not clean/disinfect the pad mechanically.**
- **Do not use the cleaning agents or disinfectants containing alcohol.**

⚠ CAUTION

- **Improper cleaning and disinfection can cause property damage.**
- **The adhesive capacity of the pad on the hard paper plate will be reduced if the hook tapes of the Velcro fastener on the hard paper plate are contaminated. To avoid damage to the hook tapes we recommend the removal of contamination using a plastic comb.**
- **Pad should be stored lying flat and horizontal.**
- **When removing the pad, be sure to grasp it with both hands.**
- **Before installing the pad, make sure that the table top is dry.**
- **Do not use the disinfectant containing alcohol.**
- **Do not use the disinfectant containing chlorine or compounds which can release chlorine.**

4.4.1 Cleaning

1. Remove the pad.
2. Clean the pad with a wet cloth.
3. Wipe the pad dry.
4. Before installing the pad, make sure the pad and its Velcro straps are dry.

4.4.2 Disinfection

Do not use the disinfectants containing alcohol to clean the pad. Disinfectants containing aldehydes are recommended.

4.5 Swivel Castor

1. Turn the swivel castors outward.
2. Use a cloth dipped in a surface disinfectant to clean the swivel castors.

5 Maintenance

5.1 Inspections and Maintenance

5.1.1 Inspections

Perform the following inspections each time before using the operating table, or at least once a day.

1. Has the operating table been properly cleaned and/or disinfected?
2. Have the castors been properly locked?
3. Are there any cracks on the pad?
4. Have the pad been firmly fixed on the table top?
5. Are there any damaged mechanical parts?
6. Are there any damaged cables?
7. Are all table-top movements functional?

5.1.2 Maintenance

1. Complete electrical / safety inspections should be conducted every year by personnel authorized by Nanjing Mindray.
2. It is recommended that the operating table be serviced by professionals every year.
3. It is recommended that the hydraulic oil be replaced by professionals every 5 years.

⚠ CAUTION

- **The operating table may be used only when properly lubricated and fully functional. It is recommended that lubricate the operating table every year by personnel authorized by Nanjing Mindray.**
- **If the load on the operating table exceeds 230kg, half-yearly maintenance is required.**

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6 Troubleshooting

6.1 Malfunctions and Troubleshooting

⚠ WARNING

- **The chapter is meant to help you solve common problems 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 Nanjing Mindray for help. Unauthorized device servicing is not allowed.**
- **Device servicing is to be performed by personnel authorized by Nanjing Mindray only. Unauthorized device servicing can cause personal injury and/or property damage.**
- **Device servicing should be strictly based on technical data supplied by Nanjing Mindray. If you are in need of more technical data, contact the customer service department authorized by Nanjing Mindray or your local distributor.**

Error	Cause	Solution
The operating table cannot be turned on.	1. The battery is dead and the mains supply is not connected. 2. The power switch on the base of the operating table is off. 3. The operating table is in transport mode.	1. Check whether the mains supply is connected. 2. Check whether the battery is sufficiently charged. 3. Check whether the power switch is on. 4. Press and hold the key on the override panel for 3 seconds.
When you press the key, the table top can not be slid and a sound signal (one tone) is heard.	The table top is in the extended range.	Press and hold .
The battery indicator is blinking.	The battery is low.	Connect the operating table to the mains supply.

6.2 Extending the Castors in Emergency

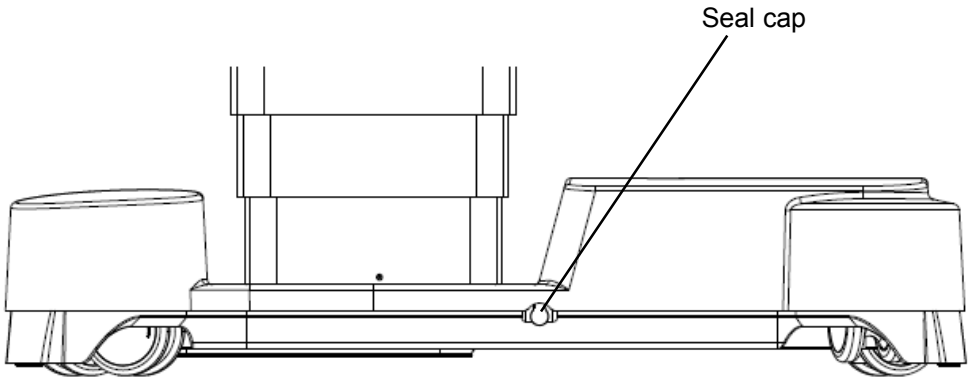

Figure 6-1 Extending the castors in emergency

1. Open the seal cap at the base.
2. Insert an 8mm Allen key into the opening.
3. Turn the Allen key clockwise until the castors are extended (visual check). When the castors are fully extended, it will be very difficult or impossible to turn the Allen key.
4. Insert the seal cap.
5. Move the defective operating table to the desired location and park it on its castors (secure it, if required).
6. Inform the customer service department.

⚠ CAUTION

- **In case the castors are extended do not press the locking button. Otherwise, the castors cannot be extended.**

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7 Clamp

7.1 Intended Use

The clamp is intended to serve as an adaptor to mount operating table accessories.

Four types of clamps are available:

- Heavy radial clamp
- Light radial clamp
- Heavy square clamp
- Light square clamp

⚠ WARNING

- **There are totally 4 types of clamps available. Use the clamp that exactly matches your accessories. Otherwise, it can cause personal injury and/or property damage.**
- **The clamps are to be used with Nanjing Mindray's accessories only. Do not use them on other accessories.**

7.2 Heavy Radial Clamp

7.2.1 Specifications

1. Height: 160mm
2. Length: 120mm
3. Width: 70mm
4. Permissible rod diameter: Φ16mm
5. Weight: 0.9kg
6. Suitable side rail: 25×10mm

7.2.2 Components

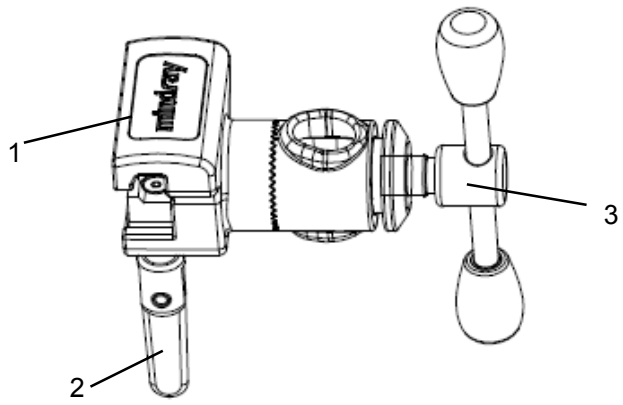

Figure 7-1 Heavy radial clamp

1 Clamp housing
2 Locking screw
3 Locking handle

7.2.3 Installation and Use

7.2.3.1 Inspection before Use

The clamp is maintenance-free. However, wear due to use and aging can compromise its functionality and safety. Check the clamp carefully each time before use. Do not use the clamp if you see any sign of wear or damage.

⚠ WARNING

- **Be sure to check the clamp each time before use. Do not use worn or damaged clamps.**

7.2.3.2 Installation and Use

1. Slide the clamp housing onto the side rail of the operating table.
2. Tighten the locking screw to lock the clamp.
3. Insert the accessory into the opening of the clamp.
4. Tighten the locking handle to lock the accessory.
5. Make sure both the clamp and the accessory are reliably installed.

⚠ WARNING

- **Make sure the clamp is tightly locked on the side rail and positioned upright. Otherwise, the accessory can fall and cause personal injury and/or property damage.**
- **Make sure both the locking screw and the locking handle are properly tightened. Otherwise, the accessory can fall and cause personal injury and/or property damage.**

7.3 Light Radial Clamp

7.3.1 Specifications

1. Height: 160mm
2. Length: 120mm
3. Width: 60mm
4. Permissible rod diameter: Φ16mm
5. Weight: 1.0kg
6. Suitable side rail: 25×10mm

7.3.2 Components

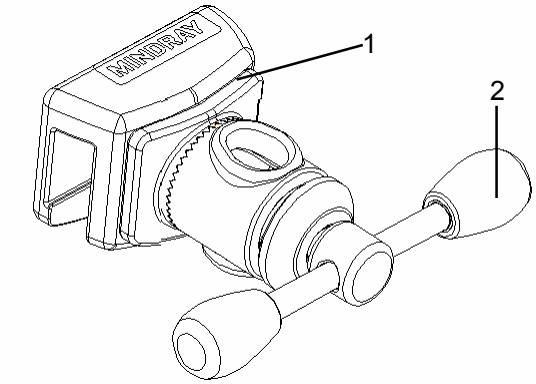

Figure 7-2 Light radial clamp

1 Clamp housing

2 Locking handle

7.3.3 Installation and Use

7.3.3.1 Inspection before Use

The clamp is maintenance-free. However, wear due to use and aging can compromise its functionality and safety. Check the clamp carefully each time before use. Do not use the clamp if you see any sign of wear or damage.

⚠ WARNING

- **Be sure to check the clamp each time before use. Do not use worn or damaged clamps.**

7.3.3.2 Installation and Use

1. Slide the clamp housing onto the side rail of the operating table.
2. Insert the accessory into the opening of the clamp.
3. Tighten the locking handle to lock the accessory.
4. Make sure both the clamp and the accessory are reliably installed.

⚠ WARNING

- **Make sure the clamp is tightly locked on the side rail and positioned upright. Otherwise, the accessory can fall and cause personal injury and/or property damage.**
- **Make sure the locking handle is properly tightened. Otherwise, the accessory can fall and cause personal injury and/or property damage.**
- **Before removing the accessory, be sure to hold the clamp. Otherwise, it can fall and cause personal injury and/or property damage.**

7.4 Heavy Square Clamp

7.4.1 Specifications

1. Height: 120mm
2. Length: 100mm
3. Width: 90mm
4. Permissible rod diameter: 20×20mm
5. Weight: 0.6kg
6. Suitable side rail: 25×10mm

7.4.2 Components

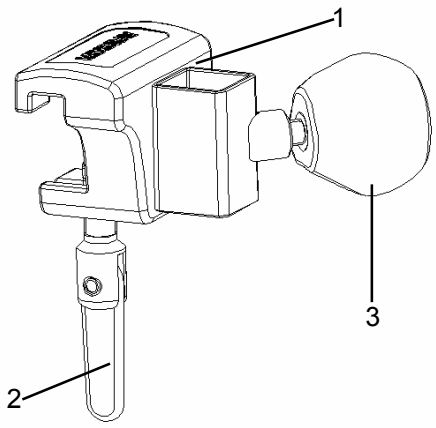

Figure 7-3 Heavy square clamp

1 Clamp housing
2 Locking screw
3 Locking handle

7.4.3 Installation and Use

7.4.3.1 Inspection before Use

The clamp is maintenance-free. However, wear due to use and aging can compromise its functionality and safety. Check the clamp carefully each time before use. Do not use the clamp if you see any sign of wear or damage.

⚠ WARNING

- **Be sure to check the clamp each time before use. Do not use worn or damaged clamps.**

7.4.3.2 Installation and Use

1. Slide the clamp housing onto the side rail of the operating table.
2. Tighten the locking screw to lock the clamp.
3. Insert the accessory into the opening of the clamp.
4. Tighten the locking handle to lock the accessory.
5. Make sure both the clamp and the accessory are reliably installed.

⚠ WARNING

- **Make sure the clamp is tightly locked on the side rail and positioned upright. Otherwise, the accessory can fall and cause personal injury and/or property damage.**
- **Make sure both the locking screw and the locking handle are properly tightened. Otherwise, the accessory can fall and cause personal injury and/or property damage.**

7.5 Light Square Clamp

7.5.1 Specifications

1. Height: 50mm
2. Length: 90mm
3. Width: 50mm
4. Permissible section: 6×25mm or Φ12mm
5. Weight: 0.4kg
6. Suitable side rail: 25×10mm

7.5.2 Components

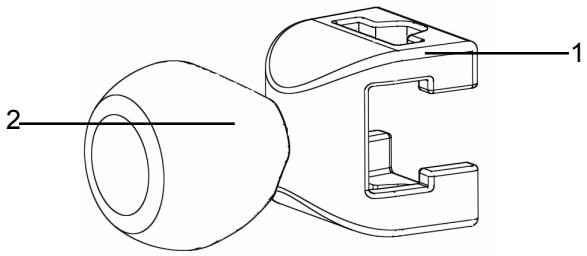

Figure 7-4 Light square clamp

1 Clamp housing

2 Locking handle

7.5.3 Installation and Use

7.5.3.1 Inspection before Use

The clamp is maintenance-free. However, wear due to use and aging can compromise its functionality and safety. Check the clamp carefully each time before use. Do not use the clamp if you see any sign of wear or damage.

⚠ WARNING

- **Be sure to check the clamp each time before use. Do not use worn or damaged clamps.**

7.5.3.2 Installation and Use

1. As Figure 7-5 shows, slide the clamp housing onto the side rail of the operating table.
2. Insert the accessory into the opening of the clamp.
3. Tighten the locking handle to lock the accessory.
4. Make sure both the clamp and the accessory are reliably installed.

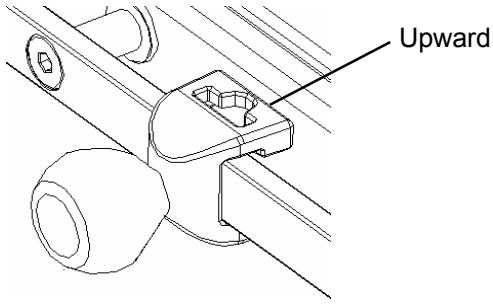

Figure 7-5 Correctly installing the clamp

⚠ WARNING

- **Make sure the clamp is tightly locked on the side rail and positioned upright. Otherwise, the accessory can fall and cause personal injury and/or property damage.**
- **Make sure the locking handle is properly tightened. Otherwise, the accessory can fall and cause personal injury and/or property damage.**
- **Be sure to correctly install the clamp, as Figure 7-5 shows. Otherwise, it can fall and cause personal injury and/or property damage.**
- **Before removing the accessory, be sure to hold the clamp. Otherwise, it can fall and cause personal injury and/or property damage.**

7.6 Cleaning and Disinfection

7.6.1 Cleaning

All-purpose cleaning agents are recommended.

NOTE

- **Use the mildly alkaline cleaning agent (soap solution) to clean the clamp.**
- **All-purpose cleaning agents are those containing tensides and phosphates as the active cleaning ingredients.**
- **Use proper amount of the cleaning agent to clean the clamp, and remove any excessive agent and/or liquid by a dry cloth.**

If the surface is extremely soiled,

1. Use the concentrated cleaning agent to clean the clamp.
2. Rinse the clamp with clean water.
3. Use a dry cloth to wipe the clamp.

⚠ CAUTION

- **Be sure to only use the recommended agents and methods to clean the clamp.**
- **Do not use high-pressure cleaning devices.**
- **Do not use scouring agents.**
- **Do not use water containing metal particles, any metal tools (such as wire brushes or steel wool), or products containing hydrochloric acid.**

7.6.2 Disinfection

The following disinfectants are recommended:

- Aldehydes
- Quaternary compounds
- Guanidine derivatives

⚠ WARNING

- **Be sure to strictly follow the recommended cleaning/disinfecting methods to clean/disinfect the operating table.**
- **Do not use the cleaning agents or disinfectants containing alcohol where such medical devices as electrosurgical units, defibrillators or defibrillator monitors can be used. Otherwise, it can cause fire and/or explosion hazards.**

⚠ CAUTION

- **Do not use the disinfectants containing alcohol.**
- **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.**
- **Be sure to only use the recommended disinfectants and methods.**
- **Do not use scouring agents.**
- **Do not use water containing metal particles, any metal tools (such as wire brushes or steel wool), or products containing hydrochloric acid.**
- **Do not disinfect the clamp mechanically.**

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8 Anesthesia Frame

8.1 Intended Use

The anesthesia frame is intended to hold the surgical sheet used for sterile cover of the patient.

Three types of anesthesia frames are available:

- Heavy anesthesia frame
- Light anesthesia frame
- U-shaped anesthesia frame

⚠ WARNING

- **The anesthesia frame is part of the operating table system. Familiarize yourself with operation of the operating table before installing and using it.**
- **The anesthesia frame is only to be used with the operating tables and the clamps made by Nanjing Mindray. Do not use it with other products. Otherwise, it can cause personal injury and/or property damage.**

8.2 Heavy Anesthesia Frame

8.2.1 Specifications

1. Height: 890mm
2. Adjustment range: 470 - 890mm
3. Width: 650mm (elongation tubes not included)
4. Diameter: Φ16mm
5. Length of the elongation tube: 300mm
6. Suitable clamp: heavy or light radial clamp
7. Weight: 2.7kg

8.2.2 Components

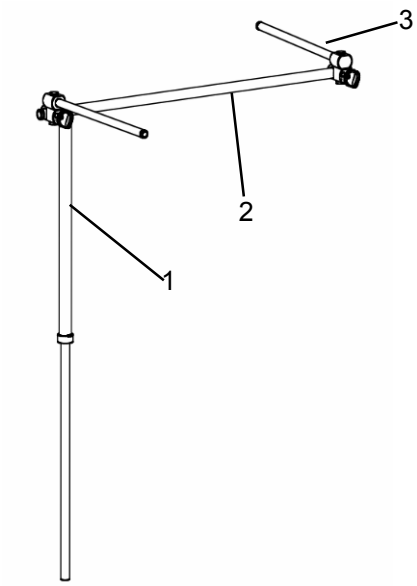

Figure 8-1 Heavy anesthesia frame

1 Vertical pole

2 Horizontal pole

3 Elongation tubes

8.2.3 Installation and Use

8.2.3.1 Inspection before Use

The anesthesia frame is maintenance-free. However, wear due to use and aging can compromise its functionality and safety. Check it carefully each time before use. Do not use it if you see any sign of wear or damage.

⚠ WARNING

- **Be sure to check the anesthesia frame each time before use. Do not use the worn or damaged anesthesia frame.**

8.2.3.2 Installation and Use

1. Slide the clamp housing onto the side rail of the operating table.
2. Tighten the locking screw to lock the clamp.
3. Insert the vertical pole of the anesthesia frame into the opening of the clamp.
4. Adjust the vertical pole to a suitable height.
5. Tighten the locking handle to lock the anesthesia frame.
6. Hang the surgical sheet on the horizontal pole of the anesthesia frame.
7. Make sure both the clamp and the anesthesia frame are reliably installed.

⚠ WARNING

- **Only the radial clamps match the vertical pole of the heavy anesthesia frame. Do not use other clamps. Otherwise, it can cause personal injury and/or property damage.**
- **Make sure the clamp is tightly locked on the side rail and positioned upright. Otherwise, the anesthesia frame can fall and cause personal injury and/or property damage.**
- **Make sure the anesthesia frame is tightly fixed by the locking handle and positioned upright. Otherwise, the anesthesia frame can fall and cause personal injury and/or property damage.**

8.3 Light Anesthesia Frame

8.3.1 Specifications

1. Height: 890mm
2. Width: 650mm
3. Diameter: Φ12mm
4. Suitable clamp: light square clamp
5. Weight: 1.5kg

8.3.2 Components

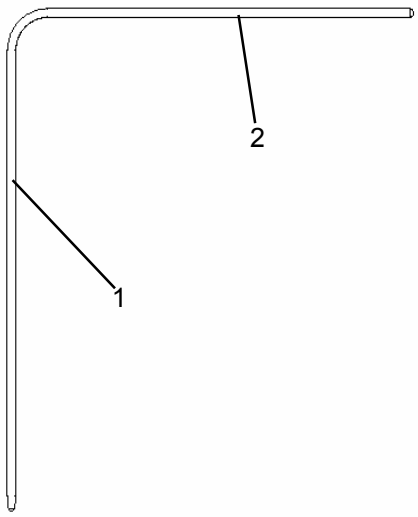

Figure 8-2 Light anesthesia frame

1 Vertical pole

2 Horizontal pole

8.3.3 Installation and Use

8.3.3.1 Inspection before Use

The anesthesia frame is maintenance-free. However, wear due to use and aging can compromise its functionality and safety. Check the clamp carefully each time before use. Do not use the clamp if you see any sign of wear or damage.

⚠ WARNING

- **Be sure to check the anesthesia frame each time before use. Do not use the worn or damaged anesthesia frame.**

8.3.3.2 Installation and Use

1. Slide the clamp housing onto the side rail of the operating table.
2. Insert the vertical pole of the anesthesia frame into the opening of the clamp.
3. Adjust the vertical pole to a suitable height.
4. Tighten the locking handle to lock the accessory.
5. Hang the surgical sheet on the horizontal pole of the anesthesia frame.
6. Make sure both the clamp and the anesthesia frame are reliably installed.

⚠ WARNING

- **Only the light square clamps match the vertical pole of the light anesthesia frame. Do not use other clamps. Otherwise, it can cause personal injury and/or property damage.**
- **Make sure the clamp is tightly locked on the side rail and positioned upright. Otherwise, the anesthesia frame can fall and cause personal injury and/or property damage.**
- **Make sure the anesthesia frame is tightly fixed by the locking handle and positioned upright. Otherwise, the anesthesia frame can fall and cause personal injury and/or property damage.**

8.4 U-shaped Anesthesia Frame

8.4.1 Specifications

1. Height: 682mm
2. Adjustment range: 470 - 890mm
3. Width: 560mm
4. Diameter: Φ12mm
5. Suitable clamp: light square clamp
6. Weight: 1.6kg

8.4.2 Components

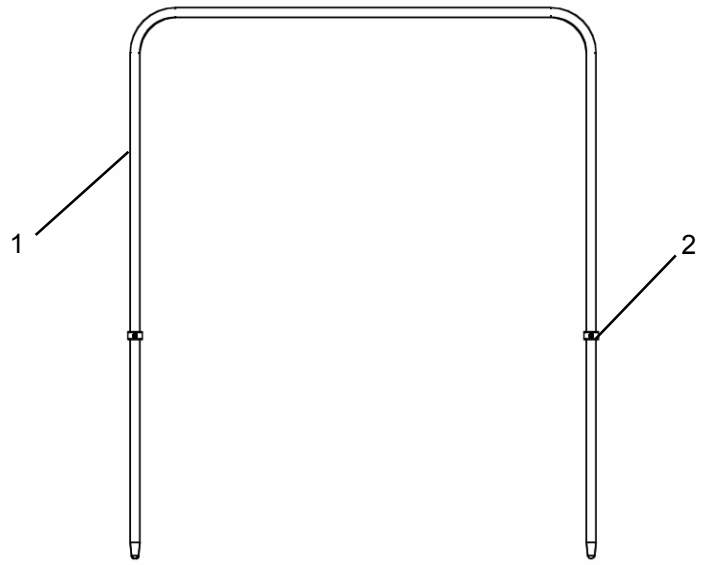

Figure 8-3 U-shaped anesthesia frame

1 Vertical pole

2 Rod fixture

8.4.3 Installation and Use

8.4.3.1 Inspection before Use

The anesthesia frame is maintenance-free. However, wear due to use and aging can compromise its functionality and safety. Check it carefully each time before use. Do not use it if you see any sign of wear or damage.

⚠ WARNING

- **Be sure to check the anesthesia frame each time before use. Do not use the worn or damaged anesthesia frame.**

8.4.3.2 Installation and Use

1. Slide the clamp housing onto the side rail of the operating table.
2. Tighten the locking screw to lock the clamp.
3. Insert the vertical pole of the anesthesia frame into the opening of the clamp.
4. Adjust the vertical pole to a suitable height.
5. Tighten the locking handle to lock the anesthesia frame.
6. Hang the surgical sheet on the horizontal pole of the anesthesia frame.
7. Make sure both the clamp and the anesthesia frame are reliably installed.

⚠ WARNING

- **Only the light square clamp match the vertical pole of the heavy anesthesia frame. Do not use other clamps. Otherwise, it can cause personal injury and/or property damage.**
- **Make sure the clamp is tightly locked on the side rail and positioned upright. Otherwise, the anesthesia frame can fall and cause personal injury and/or property damage.**
- **Make sure the anesthesia frame is tightly fixed by the locking handle and positioned upright. Otherwise, the anesthesia frame can fall and cause personal injury and/or property damage.**

8.5 Cleaning and Disinfection

8.5.1 Cleaning

All-purpose cleaning agents are recommended.

NOTE

- **Use the mildly alkaline cleaning agent (soap solution) to clean the anesthesia frame.**
- **All-purpose cleaning agents are those containing tensides and phosphates as the active cleaning ingredients.**
- **Use proper amount of the cleaning agent to clean the anesthesia frame, and remove any excessive agent and/or liquid by a dry cloth.**

If the surface is extremely soiled,

1. Use the concentrated cleaning agent to clean the anesthesia frame.
2. Rinse the anesthesia frame with clean water.
3. Use a dry cloth to wipe the anesthesia frame.

⚠ CAUTION

- **Be sure to only use the recommended agents and methods to clean the anesthesia frame.**
- **Do not use high-pressure cleaning devices.**
- **Do not use scouring agents.**
- **Do not use water containing metal particles, any metal tools (such as wire brushes or steel wool), or products containing hydrochloric acid.**

8.5.2 Disinfection

The following disinfectants are recommended:

- Aldehydes
- Quaternary compounds
- Guanidine derivatives

⚠ WARNING

- **Do not use the cleaning agents or disinfectants containing alcohol where such medical devices as electrosurgical units, defibrillators or defibrillator monitors can be used. Otherwise, it can cause fire and/or explosion hazards.**

⚠ CAUTION

- **Do not use the disinfectants containing alcohol.**
- **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.**
- **Be sure to only use the recommended disinfectants and methods.**
- **Do not use scouring agents.**
- **Do not use water containing metal particles, any metal tools (such as wire brushes or steel wool), or products containing hydrochloric acid.**
- **Do not disinfect the anesthesia frame mechanically.**

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9 Arm Board

9.1 Intended Use

The arm board is intended to position the patient's arm (one for each arm) during the surgery.

Two types of arm boards are available:

- Heavy arm board
- Light arm board

⚠ WARNING

- **The arm board is part of the operating table system. Familiarize yourself with operation of the operating table before installing and using it.**
- **The arm board is only to be used with the operating tables and the clamps made by Nanjing Mindray. Do not use it with other products. Otherwise, it can cause personal injury and/or property damage.**

9.2 Heavy Arm Board

9.2.1 Specifications

1. Length: 600mm
2. Width: 170mm
3. Height: 210mm
4. Height adjustment range: 75mm
5. Pole diameter: Φ16mm
6. Suitable clamp: heavy or light radial clamp
7. Weight: 2.1kg
8. Maximum load: 8.5kg
9. Lateral adjustment range: 180°
10. Vertical adjustment range: 30° up, 35° down

9.2.2 Components

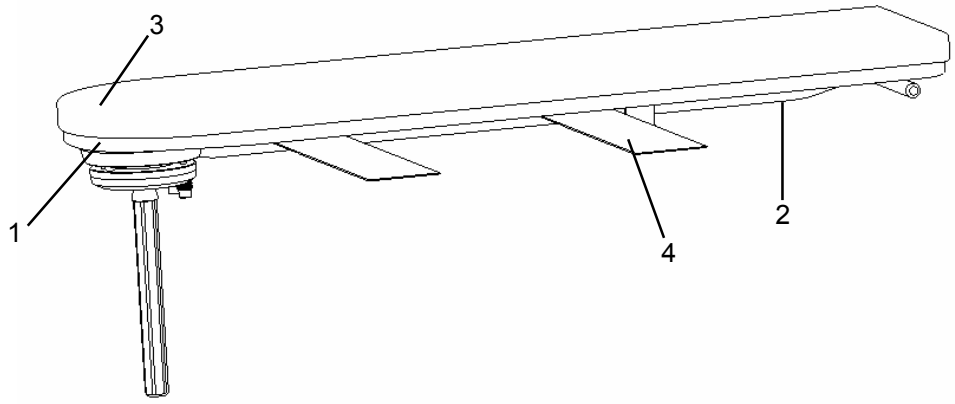

Figure 9-1 Heavy arm board

1 Arm board	2 Release bracket
3 Arm board pad	4 Fastening strap

9.2.3 Installation and Use

9.2.3.1 Inspection before Use

The arm board is maintenance-free. However, wear due to use and aging can compromise its functionality and safety. Check it carefully each time before use. Do not use it if you see any sign of wear or damage.

⚠ WARNING

- **Be sure to check the arm board each time before use. Do not use the worn or damaged arm board.**

9.2.3.2 Installation and Use

1. Slide the clamp housing onto the side rail of the operating table.
2. Tighten the locking screw to lock the clamp.
3. Insert the vertical pole of the arm board into the opening of the clamp.
4. Adjust the vertical pole to a suitable height.
5. Tighten the locking handle to lock the arm board.
6. Adjust the arm board vertically and/or laterally to a suitable position.
7. Secure the patient's arm with the fastening strap.
8. Make sure both the clamp and the arm board are reliably installed.

⚠ WARNING

- **Only the radial clamps match the vertical pole of the heavy arm board. Do not use other clamps. Otherwise, it can cause personal injury and/or property damage.**
- **Make sure the clamp is tightly locked on the side rail and positioned upright. Otherwise, the arm board can fall and cause personal injury and/or property damage.**
- **Make sure the arm board is tightly fixed by the locking handle and positioned upright. Otherwise, the arm board can fall and cause personal injury and/or property damage.**
- **The maximum load of the arm board is 8.5 kg. Do not use it beyond this limit.**

- **Do not lean on the arm board during the surgery. Otherwise, the patient's arm can be permanently damaged.**
- **Be sure to regularly check the position of the patient's arm during the surgery.**
- **It is recommended the arm board be positioned parallel to the table top. Otherwise, collision hazard is possible.**
- **When using the arm board, be sure to cover it with a surgical drape.**

9.3 Light Arm Board

9.3.1 Specifications

1. Length: 550mm
2. Width: 140mm
3. Height: 140mm
4. Weight: 2.1kg
5. Lateral adjustment range: 180°
6. Maximum load: 8.5kg

9.3.2 Components

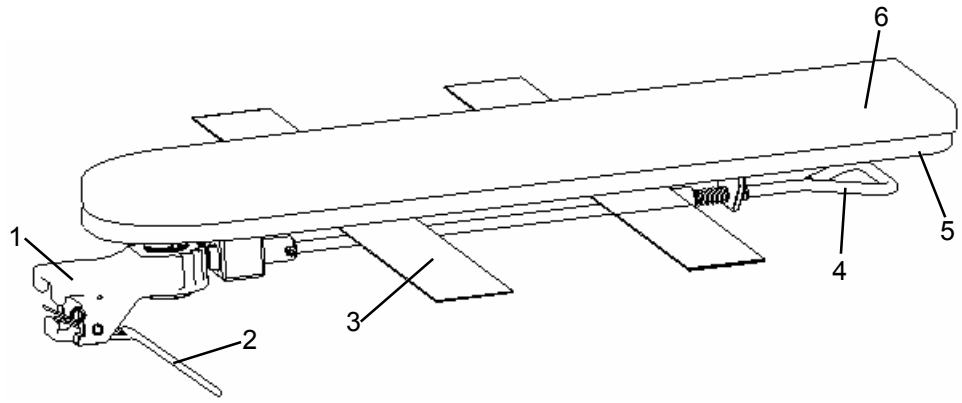

Figure 9-2 Light arm board

1 Clamp	2 Locking handle
3 Fastening strap	4 Adjustment lever
5 Arm board	6 Arm board pad

9.3.3 Installation and Use

9.3.3.1 Inspection before Use

The arm board is maintenance-free. However, wear due to use and aging can compromise its functionality and safety. Check the clamp carefully each time before use. Do not use the clamp if you see any sign of wear or damage.

⚠ WARNING

- **Be sure to check the arm board each time before use. Do not use worn or damaged arm boards.**

9.3.3.2 Installation and Use

1. Hold the arm board with one hand.
2. Hold the clamp with the other hand.
3. Slide the clamp onto the side rail of the operating table and release the clamp.
4. Pull the adjustment lever and move the arm board to the desired position.
5. Secure the patient's arm with the fastening strap.
6. Make sure the arm board is reliably installed.

⚠ WARNING

- **Make sure the clamp is tightly locked on the side rail and positioned upright. Otherwise, the arm board can fall and cause personal injury and/or property damage.**
- **The maximum load of the arm board is 8.5 kg. Do not use it beyond this limit.**
- **Do not lean on the arm board during the surgery. Otherwise, the patient's arm can be permanently damaged.**
- **Be sure to regularly check the position of the patient's arm during the surgery.**
- **It is recommended the arm board be positioned parallel to the table top. Otherwise, collision hazard is possible.**
- **When using the arm board, be sure to cover it with a surgical drape.**

9.4 Cleaning and Disinfection

9.4.1 Cleaning

All-purpose cleaning agents are recommended.

NOTE

- **Use the mildly alkaline cleaning agent (soap solution) to clean the arm board.**
- **All-purpose cleaning agents are those containing tensides and phosphates as the active cleaning ingredients.**
- **Use proper amount of the cleaning agent to clean the arm board, and remove any excessive agent and/or liquid by a dry cloth.**

If the surface is extremely soiled,

1. Use the concentrated cleaning agent to clean the arm board.
2. Rinse the arm board with clean water.
3. Use a dry cloth to wipe the arm board.

⚠ CAUTION

- **Be sure to only use the recommended agents and methods to clean the arm board.**
- **Do not use high-pressure cleaning devices.**
- **Do not use scouring agents.**
- **Do not use water containing metal particles, any metal tools (such as wire brushes or steel wool), or products containing hydrochloric acid.**

9.4.2 Disinfection

The following disinfectants are recommended:

- Aldehydes
- Quaternary compounds
- Guanidine derivatives

⚠ WARNING

- **Do not use the cleaning agents or disinfectants containing alcohol where such medical devices as electrosurgical units, defibrillators or defibrillator monitors can be used. Otherwise, fire or explosion hazards are possible.**

⚠ CAUTION

- **Do not use the disinfectants containing alcohol.**
- **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.**
- **Be sure to only use the recommended disinfectants and methods.**
- **Do not use scouring agents.**
- **Do not use water containing metal particles, any metal tools (such as wire brushes or steel wool), or products containing hydrochloric acid.**
- **Do not disinfect the arm board mechanically.**

9.4.3 Cleaning/Disinfecting Pad

⚠ WARNING

- **Liquid can penetrate damaged pad and cause hygienic problems.**
- **When disinfecting the patient's skin, make sure the disinfectant does not accumulate under the patient.**

⚠ CAUTION

- **Do not use the worn or damaged pad.**
- **Do not clean/disinfect the pad mechanically.**
- **Do not use the disinfectants containing alcohol.**
- **Do not use the disinfectants containing chlorine or compounds which can release chlorine.**

NOTE

- **The pad should be stored lying flat and horizontal.**
- **Before installing the pad, make sure that the arm board is dry.**

9.4.3.1 Cleaning

1. Remove the pad.
2. Clean the pad with a wet cloth.
3. Wipe the pad dry.
4. Before installing the pad, make sure the pad and its Velcro strap are dry.

9.4.4 Cleaning Fastening Strap

Close the strap, and then wash, dry-clean, and iron it. After washing the Velcro strap, dry it properly.

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10 Appendices

A Technical Specifications

A.1 Classification

A.1.1 According to Annex IX of the EU Directive 93/42/EEC

1. Operating table: Class I
2. Mobile Charging Station for IR Remote Control with LCD: Class II

A.1.2 According to the Type of Protection against Electrical Shock

Class I.

⚠ WARNING

- **The operating table depends on the protective earth system to protect against electrical shock. Before installing it, check and make sure that the protective earth system in the operating room is reliable and safe.**

A.1.3 According to Degree of Protection against Electrical Shock

1. Applied part is classified as type B.
2. Table pad is considered as applied part.

A.1.4 According to Mode of Operation

Intermittent: 10 minutes on /20 minutes off.

A.1.5 According to the Protection against Harmful Ingress of Water or Particulate Matter

1. Operating table: IPX4
2. Foot switch: IPX8

A.1.6 According to the Degree of Safety of Application in the Presence of a Flammable Anesthetic Mixture with Air or With Oxygen or With Nitrous Oxide

The operating table cannot be used in the presence of a flammable anesthetic mixture with air or with oxygen or with nitrous oxide.

A.2 Environment

A.2.1 AC power

1. Power supply: 100-240V,50/60Hz
2. Input power: 100-240V～5.4-2.3A

A.2.2 Battery

1. Voltage: 24V DC (12V×2)
2. Time to fully charge the battery: 10h

NOTE

- **Fully charged batteries can run the operating table for about one week.**
- **10 minutes after the first low battery alarm, the operating table will power off automatically.**
- **We recommend recharging the batteries overnight, but at least every 2 days, even if low battery alarm of the rechargeable batteries has not been indicated yet. Regular recharging of the batteries will not only ensure sufficient battery power available for the operation programme, it will also serve to prolong the useful life of the rechargeable batteries.**
- **Do not use the damaged battery. If the battery is dead, contact the customer service department authorized by Nanjing Mindray or your local distributor.**
- **If the operating time of the battery (fully charged) is noticeably shorten, contact the customer service department authorized by Nanjing Mindray or your local distributor.**

A.2.3 Fuse

250V T6.3AH

A.2.4 Operating Environment

1. Temperature: 5°C-40°C
2. Humidity: 15%-95%, non-condensing
3. Atmospheric pressure: 70kPa-106kPa

A.2.5 Storage and Transportation

1. Temperature: -40°C-+60°C
2. Humidity: 10%-95%, non-condensing
3. Atmospheric pressure: 50kPa-106kPa

⚠ CAUTION

- **During transportation, make sure that the operating table is well protected from rain, snow or mechanical collision.**
- **The operating table should be installed in a room that is dry, draughty and without caustic gas.**

A.2.6 Environmental Protection

1. Packaging: The packaging is made of materials compatible with the environment. The packaging should be disposed of in compliance with local governmental or hospital regulations.
2. Batteries: Batteries can be turned in to your local disposal system for proper handling.

A.3 Load

1. Maximum load: 460kg
2. When the patient positioning at an overall load between 230kg and 460kg, please observe the following functional restrictions:
   1) Lock the castors.
   2) Reverse patient orientation is not permitted.
   3) Longitudinal slide not permitted.
   4) maximum extension of the table top head end: 510mm.
   5) maximum extension of the table top foot end: 680mm.
   6) Maximum slope (trendelenburg/reverse trendelenburg) ±20°.
   7) Maximum tilt (left/right) ±5°.
   8) Maximum back plate adjustment +80° / -10°.
   9) Maximum leg plates adjustment ±10°.
   10) The beach chair position may be used for adiposity surgery taking into consideration the required supports.
3. When the patient positioning at an overall load between 135kg and 230kg, please observe the following functional restrictions:
   1) Operating table not immobilized (unlock)/normal patient orientation
      - Operating table is in the lowest height.
      - maximum extension of the table top head end: 760mm.
      - maximum extension of the table top foot end: 930mm.
   2) Operating table not immobilized (unlock)/reverse patient orientation
      - Operating table is in the lowest height.
      - maximum extension of the table top head end: 930mm.
      - maximum extension of the table top foot end 650mm..
   3) Operating table immobilized (lock)/normal patient orientation:
      - maximum extension of the table top head end: 760mm.
      - maximum extension of the table top foot end: 930mm.
   4) Operating table immobilized (lock)/reverse patient orientation:
      - maximum extension of the table top head end: 930mm.
      - maximum extension of the table top foot end 650mm.

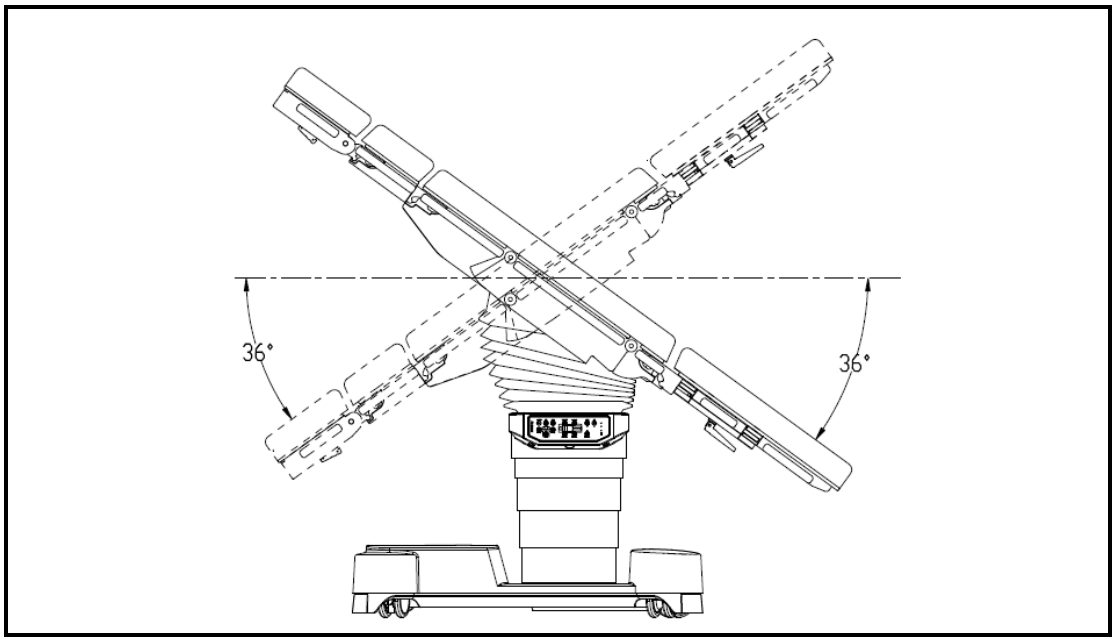
4. When the patient positioning with an overall load of up to 135kg, please observe the following functional restrictions:

   1) Operating table not immobilized (unlock) / normal patient orientation
      - maximum extension of the table top head end: 760mm.
      - maximum extension of the table top foot end: 930mm.
      - maximum height (bottom edge of pad): 940mm.
   2) Operating table not immobilized (unlock) / reverse patient orientation
      - maximum extension of the table top head end: 1130mm.
      - maximum extension of the table top foot end: 760mm.
      - maximum height (bottom edge of pad): 940mm.
   3) Operating table immobilized (lock) / normal patient orientation
      - maximum extension of the table top head end: 850mm.
      - maximum extension of the table top foot end: 1180mm.
   4) Operating table immobilized (lock) / reverse patient orientation
      - maximum extension of the table top head end: 1130mm.
      - maximum extension of the table top foot end: 1180mm.

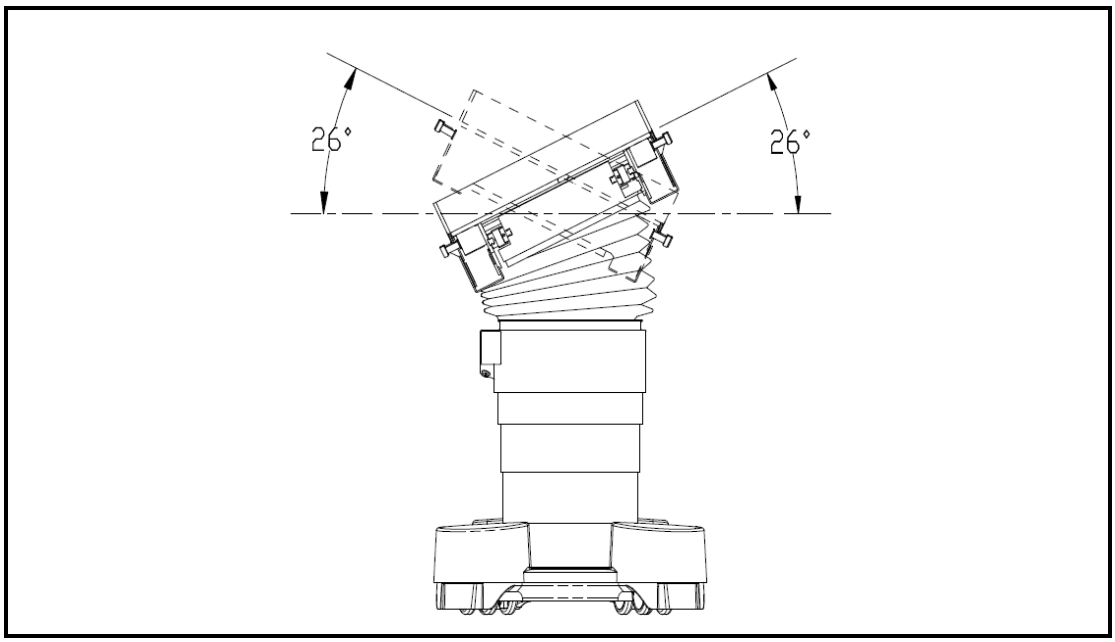
A.4 Specifications

A.4.1 HyBase 8300

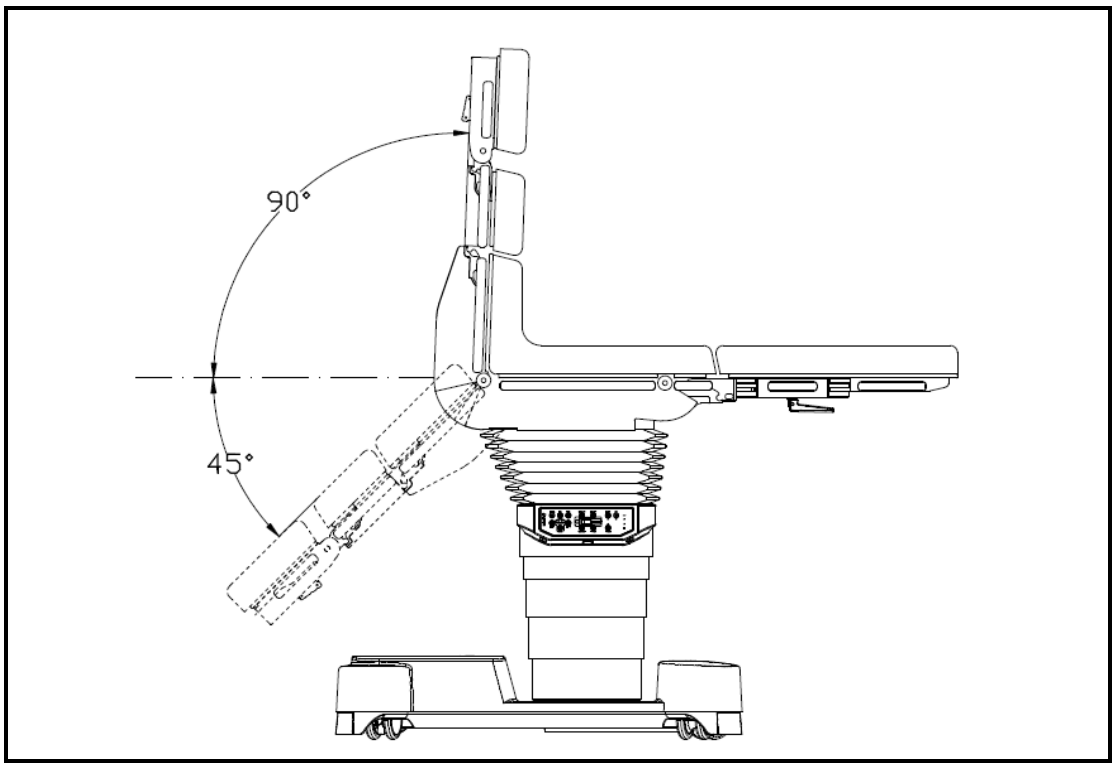
1. Table top trendelenburg/ reverse trendelenburg: 36°±5°.



2. Table top tilt left/right: 26°±5°.



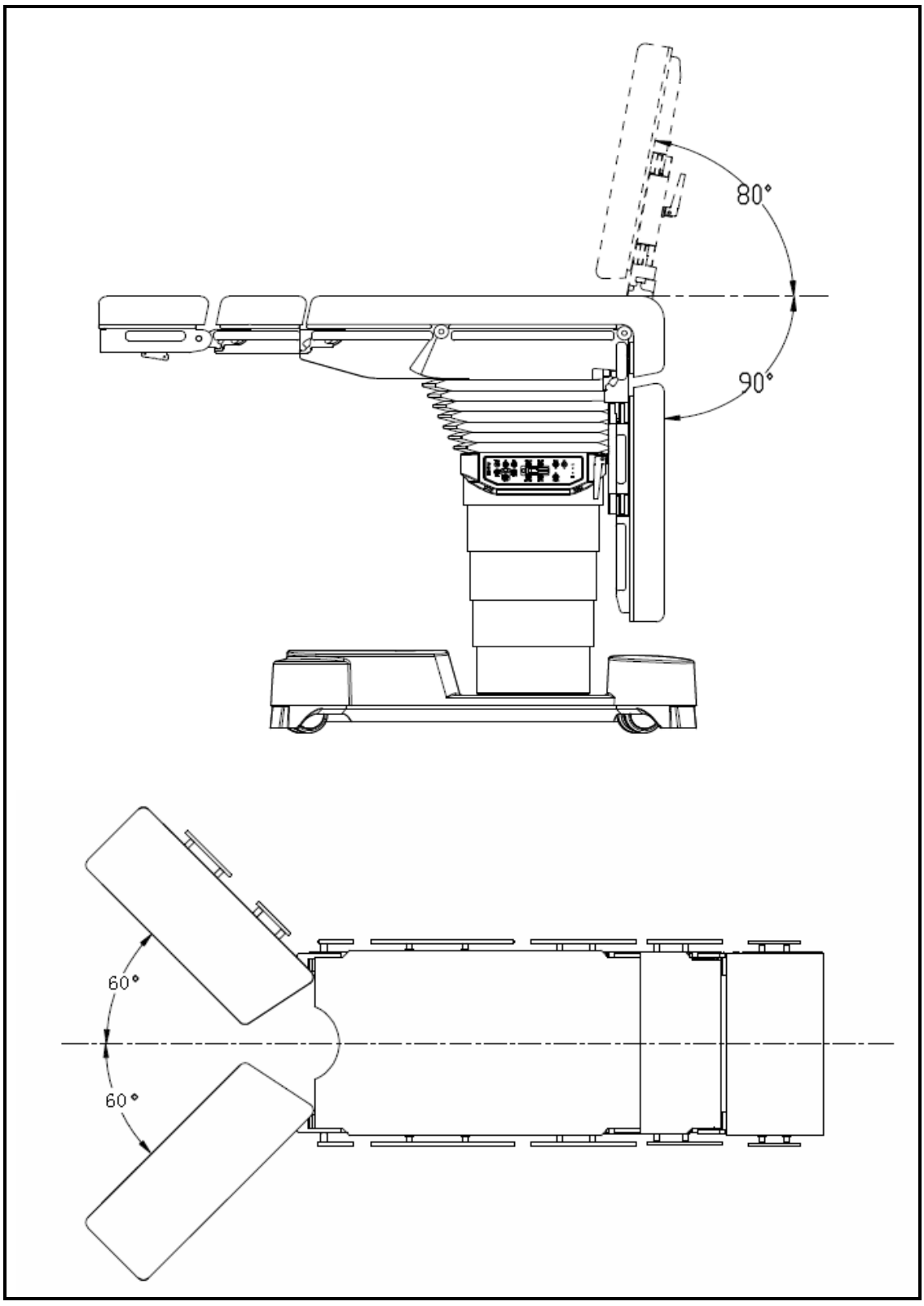
3. Back plate up/down: up 90°±5°, down 45°±5°.



4. The table top is in 0-position.

   Dual-joint leg plate up/down: up about 80°±5°, down 90°±8°,

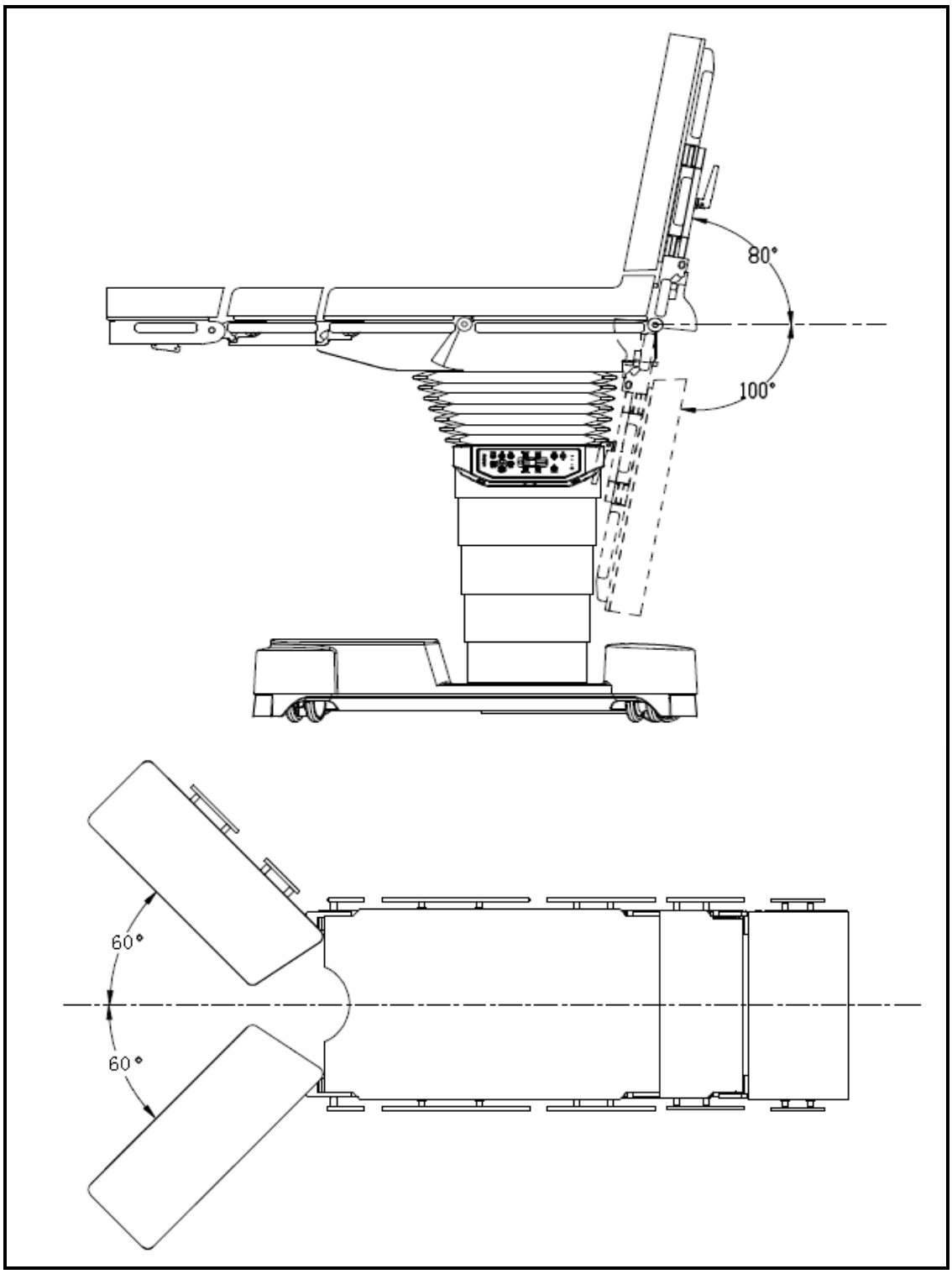
   Dual-joint leg plate left/right: left 60°±5°, right 60°±5°.



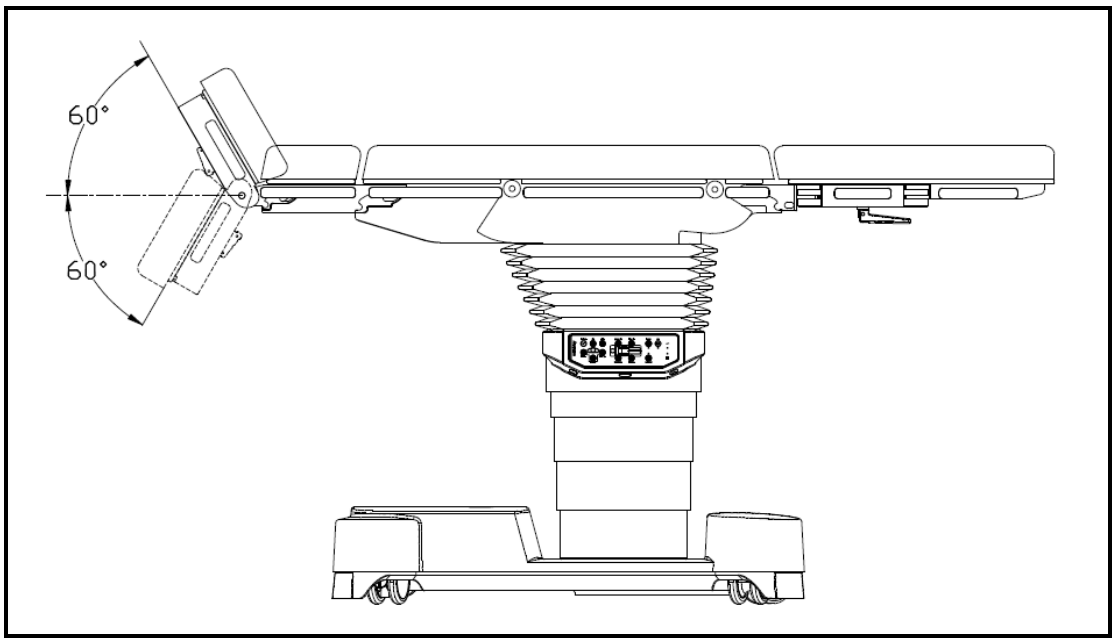
5. The table top is slid to the limit of the foot end.

   Dual-joint leg plate up/down: up about 80°±5°, down 100°±8°,

   Dual-joint leg plate left/right: left 60°±5°, right 60°±5°.

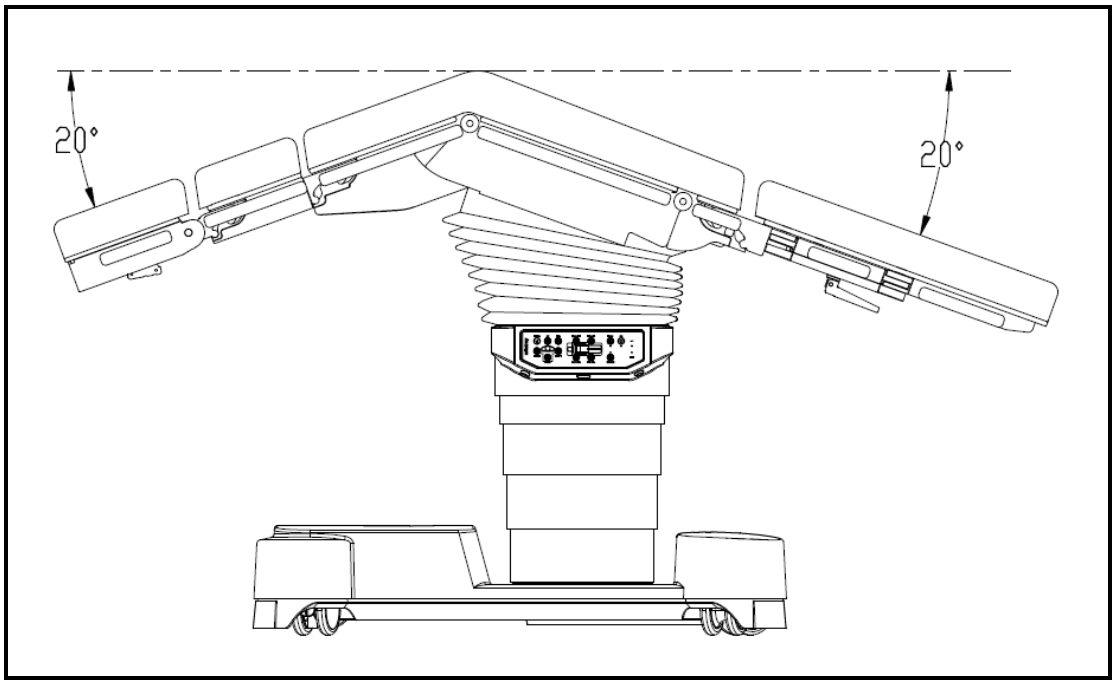


6. Dual-joint head plate up/down: up 60°±5°, down 60°±5°.



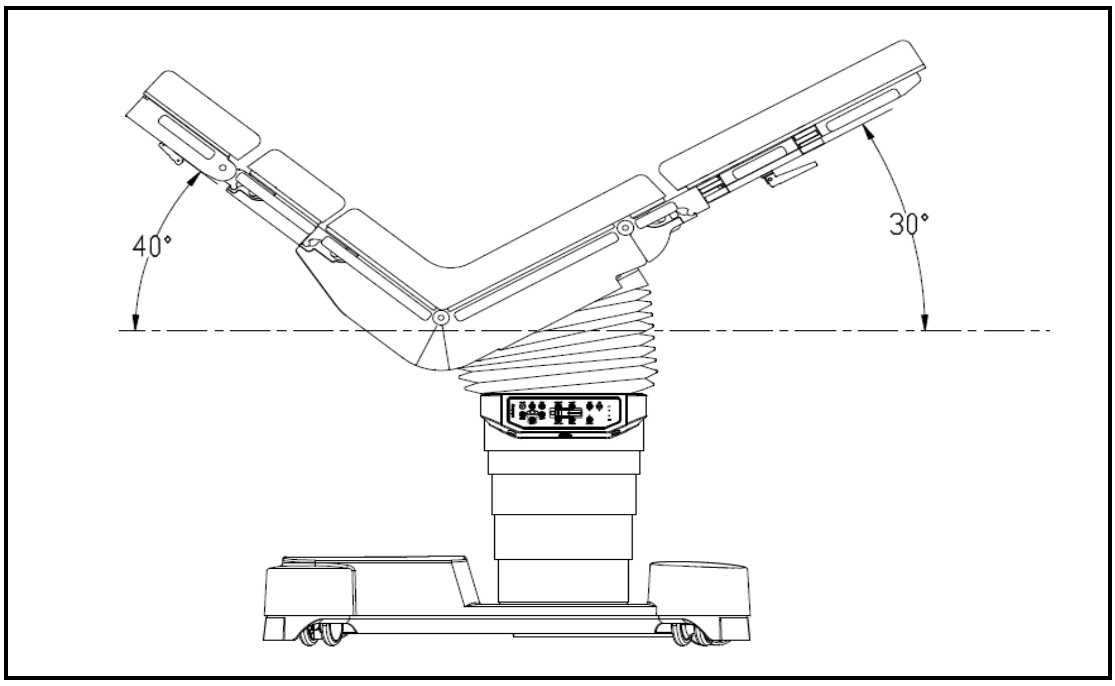
7. Reverse trendelenburg: 20°±5°.

   Back plate down: 20°±5°.



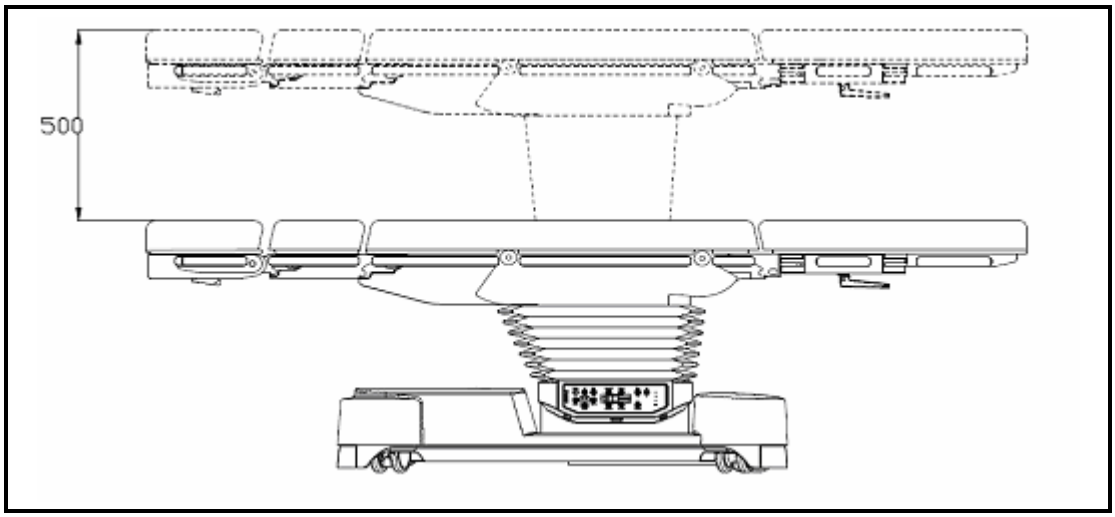
8. Trendelenburg: 30°±5°.

   Back plate up: 40°±5°.

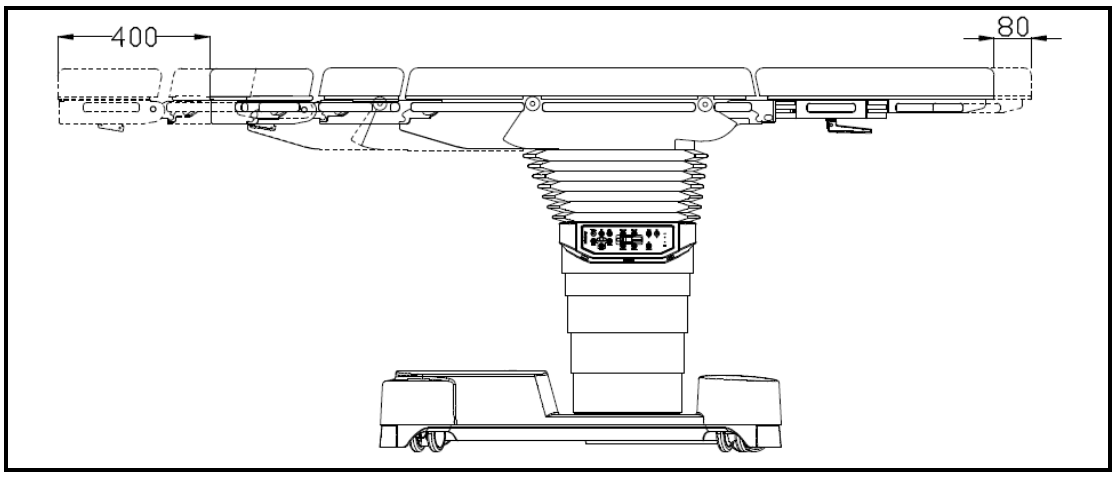


9. Maximum table-top height: 1075mm±10mm.

   Minimum table-top height: 575mm±10mm.



10. Table top longitudinal slide: 480mm±10mm.



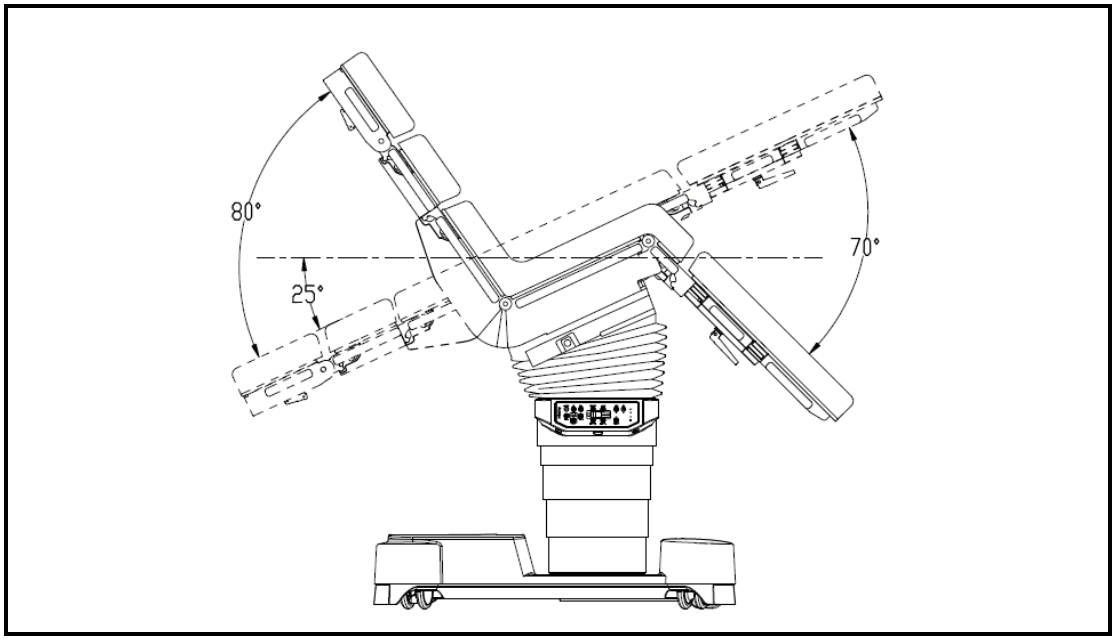
NOTE

- **The longitudinal slide (400mm) consists of a standard range of 230mm and an extended range of 170mm in the direction of the head. See chapter 1.2.7 for details.**

11. Back plate up: 80°±5°.

    Trendelenburg: 25°±5°.

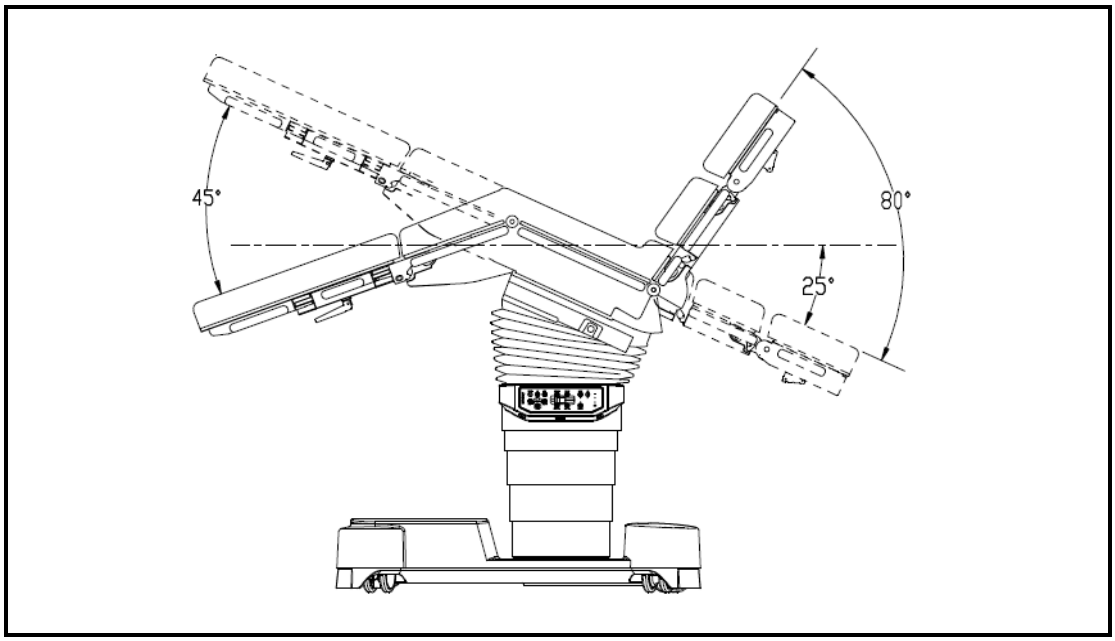
    Dual-joint leg plate down: 70°±5°.



12. Back plate up: 80°±5°.

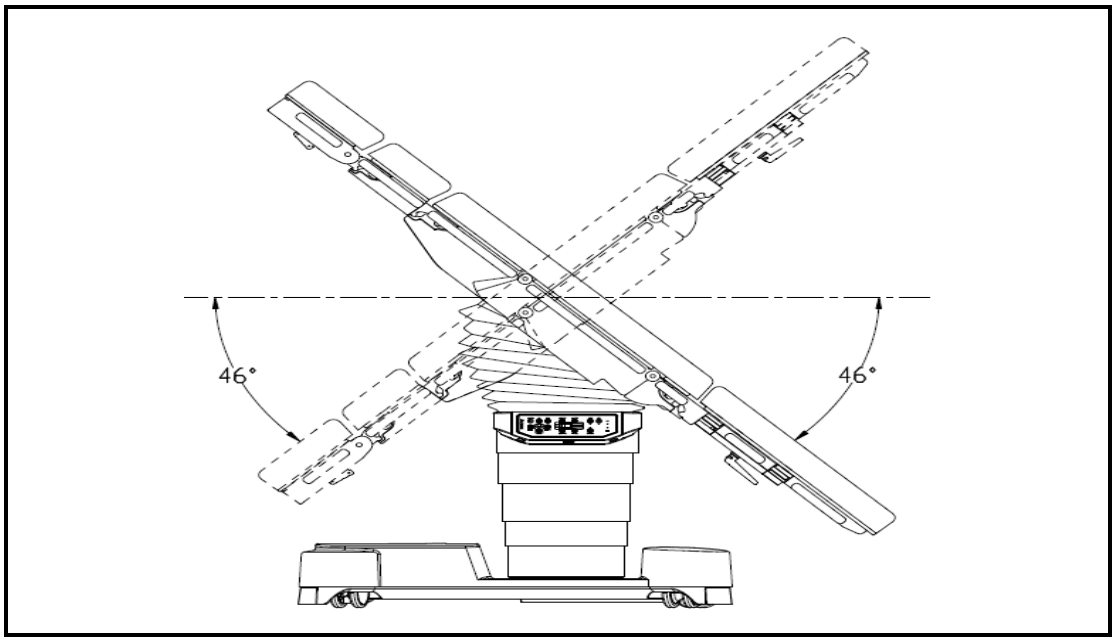
    Trendelenburg: 25°±5°.

    Dual-joint leg plate down: 45°±5°.

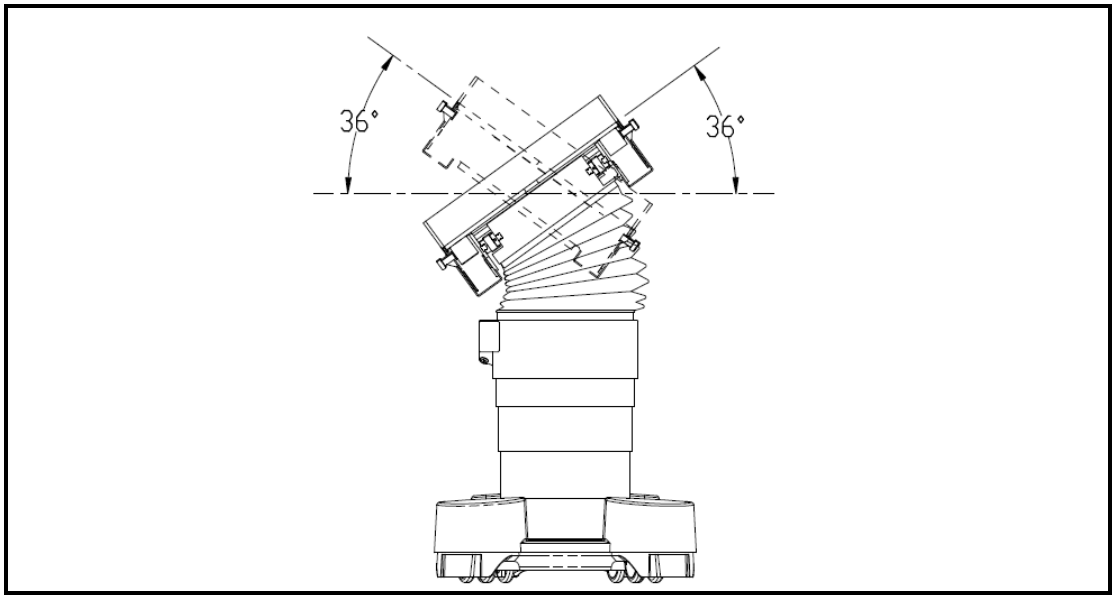


A.4.2 HyBase 8500

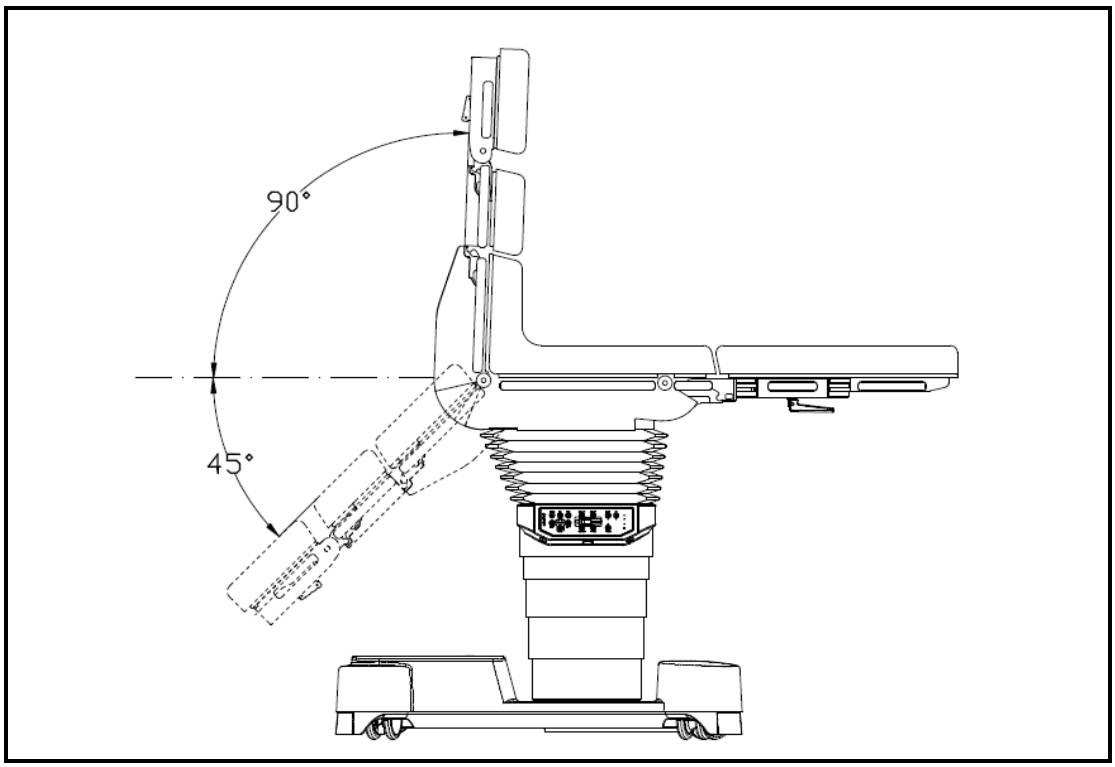
1. Table top trendelenburg/ reverse trendelenburg: 46°±5°.



2. Table top tilt left/right: 36°±5°.



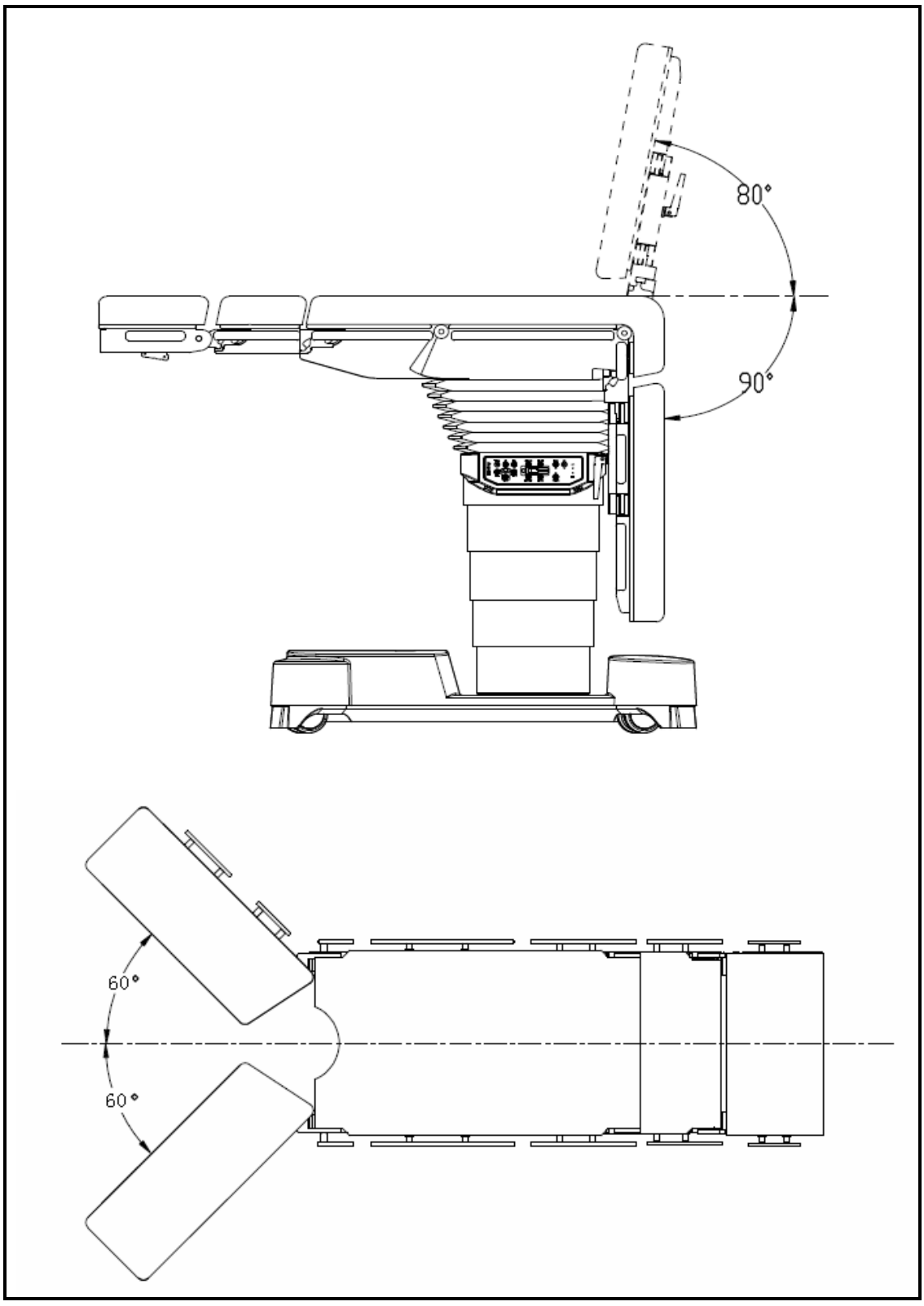
3. Back plate up/down: up 90°±5°, down 45°±5°.



4. The table top is in 0-position.

   Dual-joint leg plate up/down: up about 80°±5°, down 90°±8°,

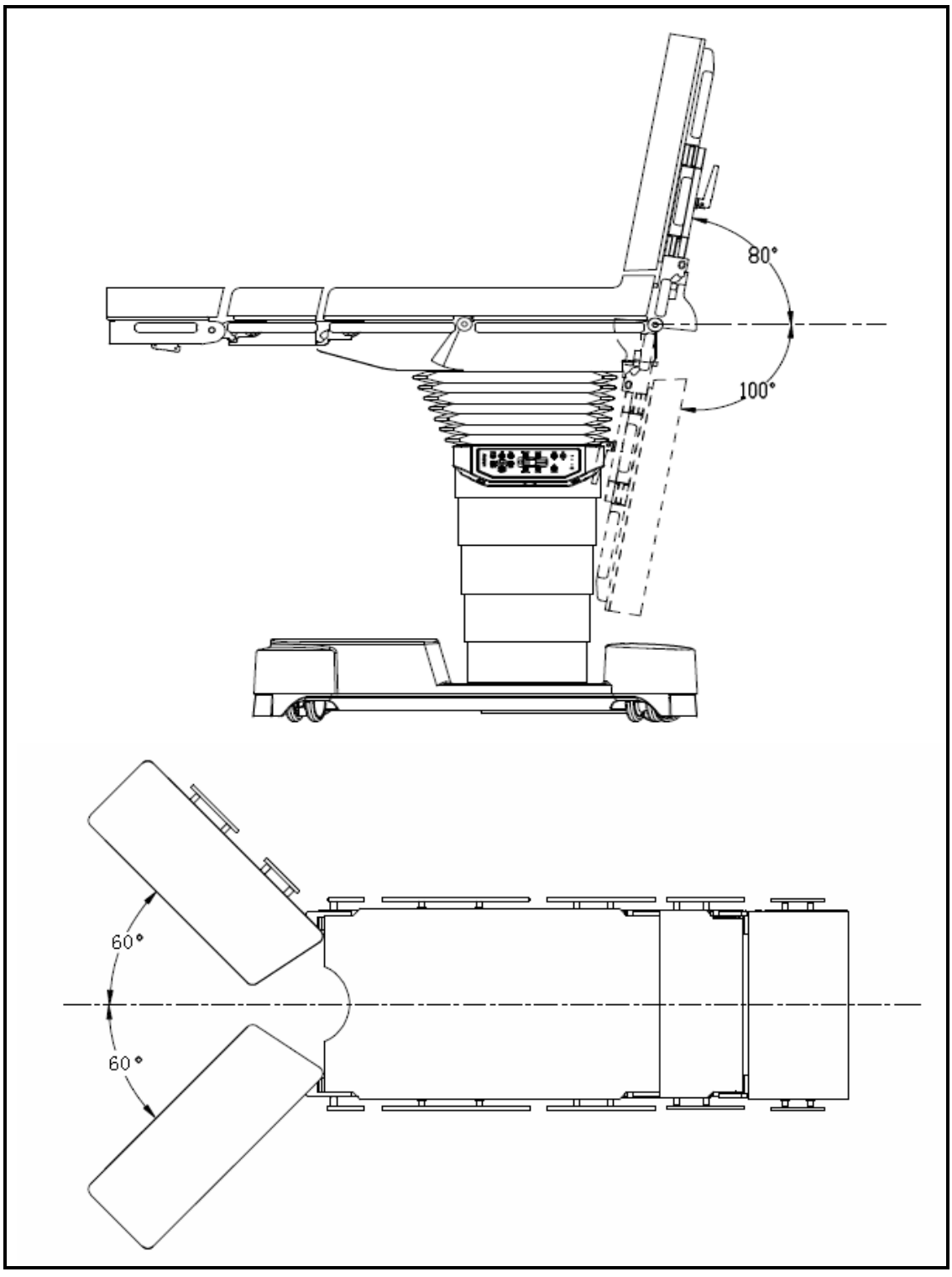
   Dual-joint leg plate left/right: left 60°±5°, right 60°±5°.



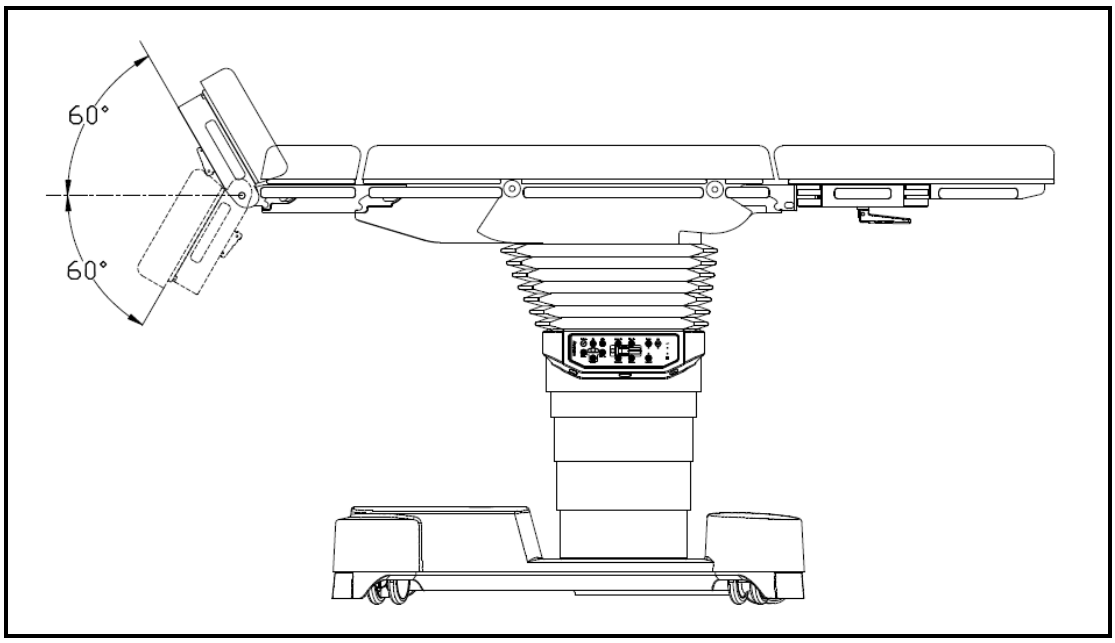
5. The table top is slid to the limit of the foot end.

   Dual-joint leg plate up/down: up about 80°±5°, down 100°±8°,

   Dual-joint leg plate left/right: left 60°±5°, right 60°±5°.

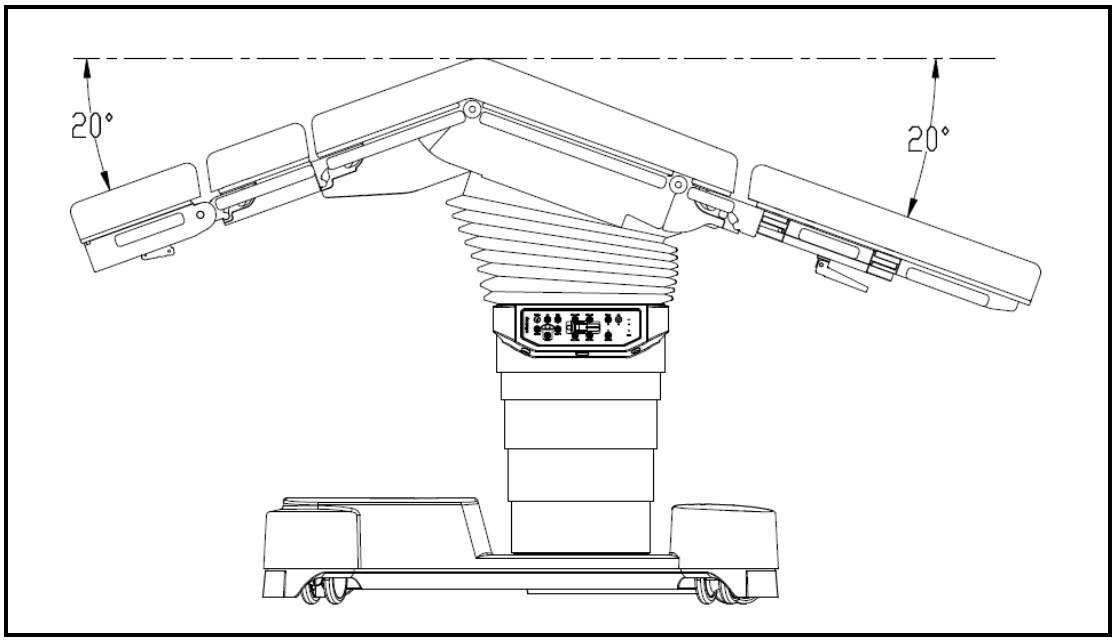


6. Dual-joint head plate up/down: up 60°±5°, down: 60°±5°.



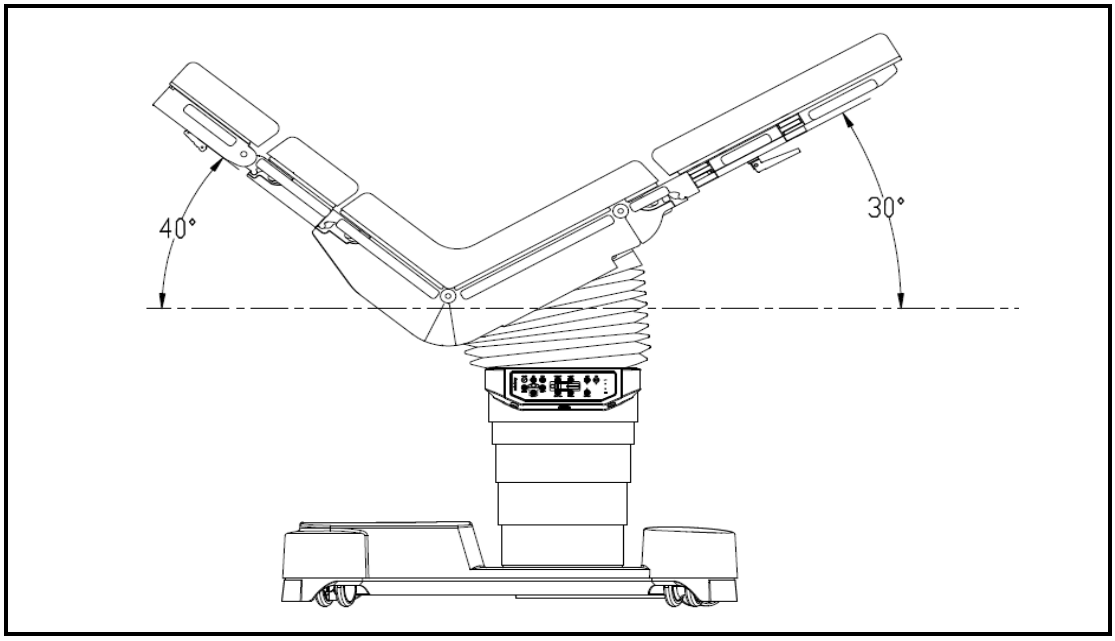
7. Reverse trendelenburg: 20°±5°.

   Back plate down: 20°±5°.



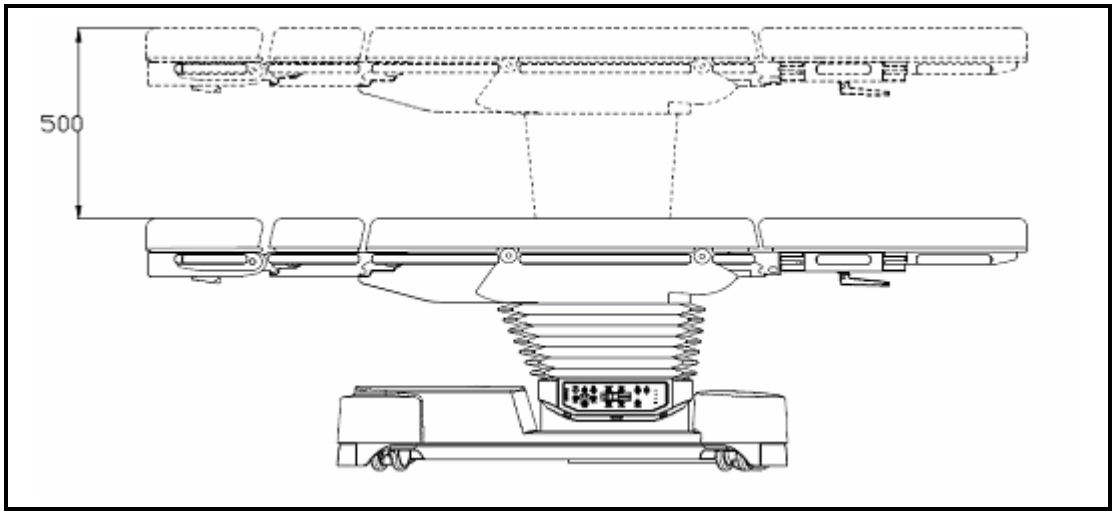
8. Trendelenburg: 30°±5°.

   Back plate up: 40°±5°.

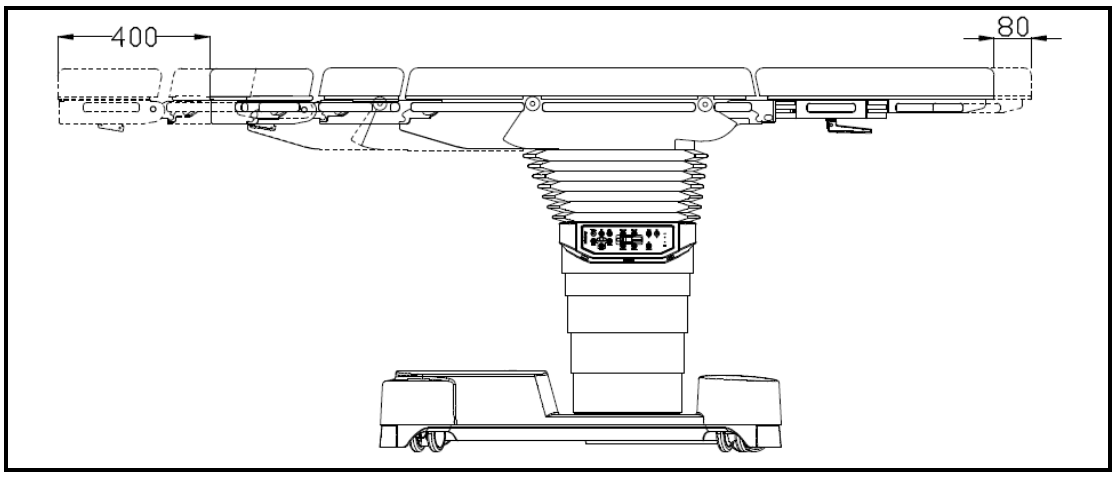


9. Maximum table-top height: 1200mm±10mm.

   Minimum table-top height: 700mm±10mm.



10. Table top longitudinal slide: 480mm ±10mm.



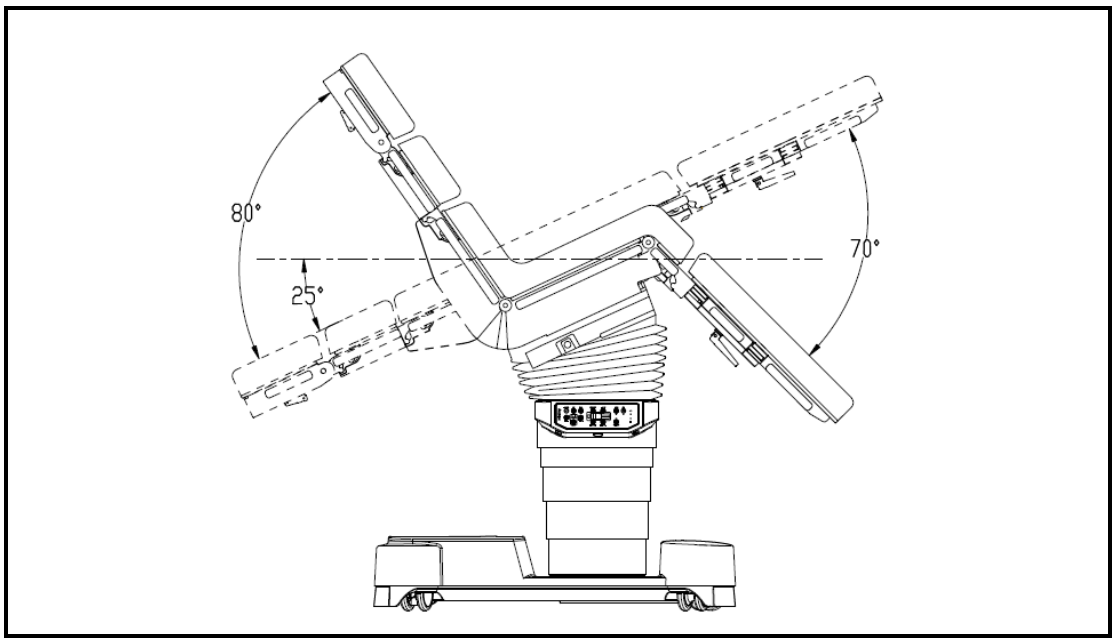
NOTE

- **The longitudinal slide (400mm) consists of a standard range of 230mm and an extended range of 170mm in the direction of the head. See chapter 1.2.7 for details.**

11. Back plate up: 80°±5°.

    Trendelenburg: 25°±5°.

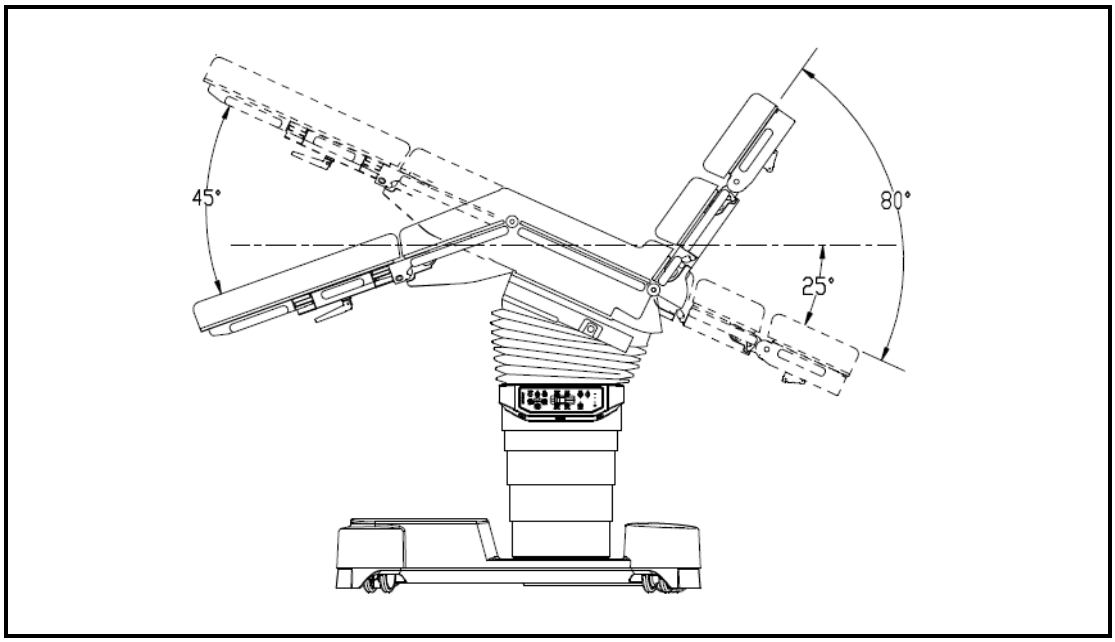
    Dual-joint leg plate down: 70°±5°.



12. Back plate up: 80°±5°.

    Trendelenburg: 25°±5°.

    Dual-joint leg plate down: 45°±5°.



A.5 Accessories

No.	Name	Remark
1	Light quadrate clamp	
2	Heavy quadrate clamp	
3	Light radial clamp	
4	Heavy radial clamp	
5	Heavy shoulder support	
6	Light shoulder support	
7	Heavy body support	
8	Light body support	
9	Heavy leg support	
10	Light leg support	
11	Light anesthesia frame	
12	Heavy anesthesia frame	
13	U-Shaped anesthesia frame	
14	Universal adaptor	
15	Double arm board	
16	Arm board for the lateral position	
17	Head rest (HyHead-1)	
18	Head rest (HyHead-2)	
19	Ophthalmic operating plate	
20	Heavy arm board	
21	Light arm board	
22	Body strap	
23	Suspended arm strap	
24	Wristlet	
25	Leg holder with loops	
26	Arm operating table	
27	Stirrup	
28	Thigh holder	
29	Shank holder	
30	Foot plate	
31	Cassette fixer	
32	Infusion holder	
33	Foot switch	
34	Accessory cart	
35	Mayo instrument tray（HyIntable-1）	
36	Instrument tray（HyIntable-2）	
37	Memorized foam pad	

38	Pad for intervertebral disc operations	
39	Prostrate head pads	
40	Donut head pads	
41	Horseshoe head pads	
42	Universal supine pads	
43	Ophthalmic head pads	
44	Universal head pads	
45	Universal arm board pads	
46	Elbow protectors	
47	Wrist protectors	
48	Lateral pads	
49	Prostrate pads	
50	Chest-hipbone pads	
51	Hip pad with special bubble	
52	Fracture table post pads	
53	Body protectors	
54	Universal dome shaped pads	
55	Lateral arm/leg pads	
56	Heel pads	
57	Universal square pads	
58	Ankle protectors	
59	Table pads	
60	Hand grip	
61	Table width extender	
62	Lead-acid battery	
63	IR remote control with LCD	
64	Corded hand control	
65	Corded hand control with LCD	
66	Mobile charging station	
67	Head plate	
68	Leg plate	
69	Dual-joint head plate	
70	Dual-joint leg plate	
71	Extension plate	
72	Carbon fiber extension plate	
73	Upper back plate	
74	Carbon fiber table top	
75	Carbon fiber cardiac operating plate	
76	Carbon fiber accessory adaptor	
77	Carbon fiber arm board	
78	Carbon fiber orthopaedic extension device	
79	Cart	

NOTE

- **If you want to know more information, please see the accessories brochure for details.**

A.6 EMC

The device meets the requirements of 60601-1-2:2007.

NOTE

- **Using accessories and cables other than those specified can cause increased electromagnetic emission or decreased electromagnetic immunity of the device.**
- **The device should not be used adjacent to or stacked with other devices. If adjacent or stacked use is necessary, make sure that normal operation is possible.**
- **The device needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided below.**
- **Other devices can affect this device even though they meet the requirements of CISPR.**
- **Use of portable or mobile communication devices will degrade the performance of the device.**

Table 10-1 Guidance and Declaration - Electromagnetic Emissions

<table>
<tr><th colspan="3">Guidance and Declaration - Electromagnetic Emissions</th></tr>
<tr><td colspan="3">The device is suitable 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.</td></tr>
<tr><th>Emissions test</th><th>Compliance</th><th>Electromagnetic environment - guidance</th></tr>
<tr><td>Radio frequency (RF) emissions
CISPR 11</td><td>Group 1</td><td>The device 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.</td></tr>
<tr><td>Radio frequency (RF) emissions
CISPR 11</td><td>Class A</td><td rowspan="3">The device is suitable for use in all establishments other than domestic and those directly connected to a low voltage power supply network which supplies buildings used for domestic purposes.</td></tr>
<tr><td>Harmonic emissions
IEC 61000-3-2</td><td>IEC 61000-3-2</td></tr>
<tr><td>Voltage fluctuations/flicker emissions
IEC 61000-3-3</td><td>Complies</td></tr>
</table>

Table 10-2 Guidance and Declaration - Electromagnetic Immunity

Guidance and Declaration - Electromagnetic Immunity			
The device is suitable 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	**IEC60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 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 (EFT) IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines (>3 m)	±2 kV for power supply lines ±1 kV for input/output lines (>3 m)	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % U_T (>95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25 cycles <5 % U_T (>95 % dip in U_T) for 5 s	<5 % U_T (>95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25 cycles <5 % U_T (>95 % dip in U_T) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the equipment requires continued operation during power mains interruptions, it is recommended that the equipment be powered from an uninterruptible power supply (UPS).
Power frequency (50/60 HZ) magnetic field IEC 61000-4-8	3 A/m	3 A/m	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 AC mains voltage prior to application of the test level.			

Table 10-3 Guidance and Declaration - Electromagnetic Immunity

<table>
<tr><th colspan="4">Guidance and Declaration - Electromagnetic Immunity</th></tr>
<tr><td colspan="4">The device is suitable 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.</td></tr>
<tr><th>Immunity test</th><th>IEC60601 test level</th><th>Compliance level</th><th>Electromagnetic environment - guidance</th></tr>
<tr><td>Conduced RF
IEC
61000-4-6</td><td>3 Vrms
150 kHz to 80 MHz</td><td>3 Vrms
150 kHz to 80 MHz</td><td rowspan="2">Portable and mobile RF communications equipment should be used no closer to any part of the system, including cables, than the recommended separation distance calculated from the equation appropriate for the frequency of the transmitter.
Recommended separation distances:
$d = 1.2\sqrt{P}$ 80 MHz - 800 MHz
$d = 2.3\sqrt{P}$ 800 MHz - 2.5 GHz
Where, P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).
Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey [a], should be less than the compliance level in each frequency range [b]. Interference can occur in the vicinity of equipment marked with the following symbol: .</td></tr>
<tr><td>Radiated RF
IEC
61000-4-3</td><td>3 V/m
80 MHz to 2.5 GHz</td><td>3 V/m
80 MHz to 2.5 GHz</td></tr>
<tr><td colspan="4">Note 1: At 80 MHz to 800 MHz, the separation distance for the higher frequency range applies.
Note 2: These guidelines can not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</td></tr>
<tr><td colspan="4">a. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. 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 can be necessary, such as reorienting or relocating the device.
b. Field strengths should be less than 3 V/m between 150 kHz and 80 MHz.</td></tr>
</table>

Table 10-4 Recommended Separation Distance between Portable/Mobile RF Communications Equipment and the Device

Recommended Separation Distance between Portable/Mobile RF Communications Equipment and the Device			
The device is suitable 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/mobile RF communications equipment (transmitters) and the device as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter (W)	**Separation distance in meters (m) according to frequency of the transmitter**		
	150k - 80MHz $d = 1.2\sqrt{P}$	80M - 800MHz $d = 1.2\sqrt{P}$	800M - 2.5GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23
For transmitters rated 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 separation distance for the higher frequency range applies. Note 2: These guidelines can not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

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