

Surgical Table

LUVIS | ST300



* Be sure to read the user manual before using this product.

■ Manufacturer Information

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■ Document Information

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0	2024/12/06	First edition

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“WARNING : Modification of this equipment is not allowed”

Be sure to read the user manual before using this product.

1 Introduction

1.1 User manual

This user manual contains information necessary for the safe and effective use of this product. The user manual is part of the product and must be followed. Before using the product, carefully read the entire user manual. To ensure proper use, it is essential to familiarize yourself with the user manual. The user manual should be kept at the location where the product is used, and all users of the product should always have full access to it. Residual risks associated with product handling are identified in the document using safety signs. It lists necessary safety measures and the risks that may arise if they are not followed. Safety signal words information is classified as follows so that you can understand the contents of warnings and precautions and the warnings and precautions indicated on the product.



WARNING

This signal word denotes a dangerous situation that may lead to death or severe injury, unless precautionary measures are taken.



CAUTION

This signal word denotes a dangerous situation that may lead to moderate or slight injury, unless precautionary measures are taken.



NOTICE

This signal word denotes a situation that may lead to product or environmental damage, unless precautionary measures are taken.

The warnings and precautions in this user manual regarding operation and inspection apply to the intended use of this product (surgical activities). If the product is used for purposes other than surgical operations and inspections, the responsibility for safety in performing surgical operations and inspections not covered in this user manual lies with the user.

1.2 Intended purpose

- The LUVIS ST300 surgical table is used to support and position the patient from the start of anesthesia through the surgery and until the end of anesthesia.
- The LUVIS ST300 surgical table has height adjustment functionality to suit the purpose of the surgery and can freely change and set the patient's body position.
- The LUVIS ST300 surgical table is a configurable surgical table and can support the patient using mattresses and accessories.
- The LUVIS ST300 can be used to take anterior and posterior X-ray images of the patient with a general X-ray Machine from tabletop, except for the column parts of the surgical table.
- The LUVIS ST300 should be used by medical professionals (e.g., surgeons, nurses, biomedical technicians).

1.2.1 Intended use

- The positioning and task-specific transport of a patient before/during/after surgery within a specifically designated surgical ward. The patient is positioned on the surgical table in accordance with general practice and teaching.
- Cleaning the surgical table surfaces and mattress with suitable means according to the directives of the medical facility.
- Storage of the surgical table in a room intended for that purpose.
- Regular maintenance of the surgical table in accordance with the prescribed maintenance intervals by qualified service technicians.
- Initial operation by the operator.
- Repair and disposal of the surgical table must be performed by qualified technicians as required.

Be sure to read the user manual before using this product.

1.2.2 Operating Principle

The LUVIS ST300 surgical table is a full-function design offering a high level of patient positioning and imaging flexibility to the surgical team. The surgical table can be operated by external power (AC power) or by internal power (battery power). Hydraulic cylinders are used to articulate the tabletop. Hydraulic pressure is provided by a motor driven pump.

A hand controller or backup controller is used to control table positions.

The tabletop is divided into the following sections:

- Head section
- Back section
- Kidney Elevator
- Hip section
- Leg section

1.3 Contraindication

- Objects, devices or materials unrelated to the intended purpose must not be transported to the LUVIS ST300 surgical table.
- The LUVIS ST300 surgical table is not suitable for lying down on patients other than its intended purpose.
- The allowable load must not be exceeded.
- Objects with sharp edges should not be placed on the mattress.
- Adhesive film must not be placed on the mattress.
- Do not continue to use a damaged mattress.
- Do not continue to use a damaged power cord.
- The surgical table must not be used with flammable mixtures of anesthetic agents.
- Operators must not make any changes to the medical device.
- The patient must not protrude beyond the edge of the surgical table's tabletop in the vertical direction. However, accessories for this purpose are an exception.
- The surgical table may only use approved accessories.

1.4 Responsibility of the operator

The surgical table is not intended for use with products of other manufacturers and where DENTIS CO.,Ltd has not conducted any compatibility tests. However, DENTIS CO.,Ltd does not exclude the possibility of use with third party products. If the operator intends to combine the surgical table with third party products, the operator is responsible for this combination. DENTIS CO.,Ltd does not take any responsibility for the combination of the surgical table with third-party products. The guarantee/warranty for DENTIS CO.,Ltd products may become void if they are combined with third-party products.

The operator is the natural or legal person who directly operates the product for commercial or economic purposes or allows a third party to use it. The operator has legal product responsibility regarding the protection of personnel or third parties.

The medical devices may only be operated and used according to their intended purpose and the general rules of technology.

The medical devices may only be operated and used by people who have the training or knowledge required to do this.

Training on the proper handling of the medical device is required. However, training is not required when the medical device is self-explanatory or when instructions for a product with the same design have already been provided.

Interconnected medical devices, as well as those combined with accessories, including software or other objects, may be operated and used only if they are suitable for use in this combination, taking into account their intended purpose and the safety of patients, users, employees or third parties.

Before the medical device is applied, the user must ensure that the product is operational and in an appropriate state and the user must further have read the user manual as well as other, attached, safety-relevant information and maintenance manual.







Be sure to read the user manual before using this product.

1.5 Use environment

- Temperature : +10°C ~ +40°C
- Humidity : 20% ~ 80%
- Atmospheric pressure : 540mbar ~ 1060mbar
- Operating altitude: ≤ 5000m
- The surgical table must not be used in areas where there is a risk of explosion.

1.6 Storage and transport conditions

The surgical table must be stored and transported under the following conditions:

-  Temperature : -10°C ~ 50°C
-  Humidity : 10% ~ 85%
-  Atmospheric pressure : 540mbar ~ 1060mbar
-  Fragile packaged goods
-  Top
-  Protect against moisture

1.7 Service life

The service lifetime is 10 years, if used normally.

Be sure to read the user manual before using this product.

2 Safety precaution

2.1 Please read carefully before use.

When using the product, never do the following.

Failure to do so may result in damage to the surgical table, electric shock, and/or fire.

Any serious incident involving the device must be reported to the manufacturer and the competent authorities where the user and/or patient is located.

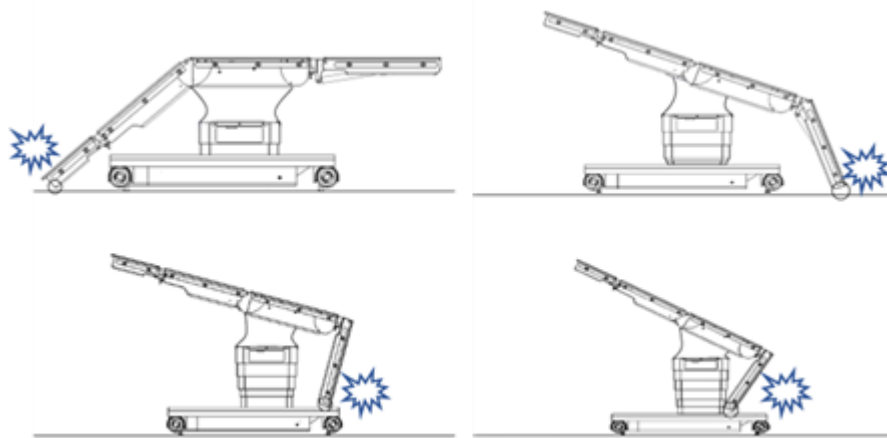
2.1.1 Pinch Point



WARNING

The surgical table has a risk of collision with the floor or the surgical table's column while articulating. Before using the surgical table, all pinch points must be checked and understood.

- Between the head section and floor.
- Between the leg section and floor.
- Between the leg section and base cover.
- Between the leg section and column cover.

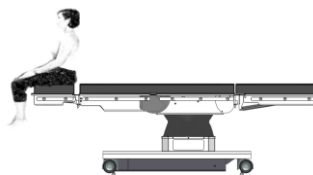


2.1.2 Head section or Leg section



WARNING

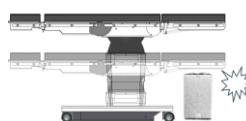
Do not step on or sit on the head section or leg section. The surgical table may fall and cause injury.



WARNING

Before lowering the surgical tabletop or performing a reverse Trendelenburg, ensure there is a device under the leg section.

If the leg section comes into contact with a device that applies excessive force, it may damage the leg section.



Be sure to read the user manual before using this product.



WARNING

When moving the patient on the surgical table or changing the patient's position, do not apply excessive force to the head section or leg section. The surgical table may be deformed or damaged.

2.1.3 Hand Controller



WARNING

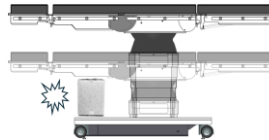
- Do not forcefully pull the hand controller receptacle.
- Do not subject the hand controller to strong shock or drop it on the floor. The hand controller may be damaged.

2.1.4 Base cover top



WARNING

Do not place objects on the base cover. The surgical table may be damaged when lowering the surgical tabletop or performing Trendelenburg or performing lateral tilting.



2.1.5 Power cord



WARNING

Be careful not to damage the power cord. Damage to the power cord may cause electrical injury due to electric shock and may result in a fire hazard.

- Do not place heavy objects on the power cord.
- Do not press the power cord with the wheels of the device.
- Do not pull the power cord forcibly.
- Do not shower clean the power cord.
- Do not connect the power cord where it is difficult to disconnect the power cord.

2.1.6 Installation of the surgical table



WARNING

- Do not install the surgical table on an uneven floor. The surgical table may shake, making normal procedures difficult.
- Do not place another pad under the brake pad to lift the surgical table. The surgical table may fall and cause injury.

2.1.7 Patient position during surgery



WARNING

- Always attach the mattress securely to the surgical table to prevent it from falling. The mattress may dislodge and cause injury to the patient.
- Position the patient's body at least 1.5 cm away from the metal side rails. Use of an electric scalpel, etc. may generate high temperatures in the side rail, which may result in burns.
- Patient Positioning
Proceed with the following steps.
 - a) Align the female Velcro fastener of mattress and male Velcro fastener of the tabletop surface, and attach it.
 - b) Place the patient on the mattress.
 - c) Adjust the patient's position according to the surgical purpose.

Be sure to read the user manual before using this product.

2.1.8 High-frequency surgical devices



WARNING

The surgical table dissipates electrostatic charges according to the currently valid regulations and standards. The functions of the surgical table that are driven by electric system may be interrupted by the simultaneous use of high-frequency surgical devices.

The use of high-frequency surgical devices exposes the patient to a risk of burns. The following safety measures must be strictly adhered to:

- Follow the device manufacturer's instructions for use.
- Place the patient only on a dry cloth or mattress. The patient must avoid contact with moist materials.
- The patient should be positioned on a surgical table insulated with metal parts and conductive cushions or hoses.

2.1.9 Malfunction due to other devices



WARNING

The medical or non-medical devices of other manufacturers might use the same frequency range as the surgical table and the infrared remote control. If devices using the same frequency range or a multiple of the frequency range are operated in one room, they may interfere with one another. This may cause the surgical table to malfunction.

Examples of possible sources of interference:

- HF surgical devices
- Radio remote controls for other devices (e.g., monitors)

2.1.10 Other



WARNING

Do not disassemble and/or modify the surgical table. Otherwise, malfunction may occur.



WARNING

For hygiene, be sure to use sterilized drapes on the areas on this product where the patient comes into contact with it.



WARNING

Patient position

When using the tabletop or accessories to secure a patient's body position, always observe the patient's condition. Being in the same position for long periods of time causes neuroparalysis or bedsores.



WARNING

Maximum overall load (patient and accessories)

- 1000 lb. (454 kg) : Patient support including height of tabletop up/down (when centered on the column in Normal Orientation)
- 551 lb. (250 kg) : Full table articulation, including Slide
- 350 lb. (159 kg) : Reverse Mode



WARNING

Preventative maintenance and inspection

- Be sure to inspect and maintain the surgical table before and after use. Depending on age and frequency of use, the surgical table may require replacement of parts due to excessive wear, deterioration, or damage.
- For preventive maintenance and inspection, please contact your dealer or DENTIS CO.,Ltd directly.

Be sure to read the user manual before using this product.



WARNING

Anti-static

- Do not use the surgical table with floors and/or accessories without anti-static measures. This may interfere with surgery.
- If an anti-static path is necessary, surgical table must be positioned on anti-static floor or connected to equipotential cable.



WARNING

Surgical table(LUVIS ST300) is Class I equipment. In order to avoid the risk of an electric shock, the equipment must be connected to a mains supply with PE(protective earth)



CAUTION

Devices and accessories used with this product

- Before using any other device or accessory, carefully read the device's instruction manual and ensure that the surgical table will not be adversely affected. Contact your dealer or DENTIS CO.,Ltd before installing third-party accessories. Some accessories cannot be equipped.
- While operating the surgical table, check the position of any other devices or accessories used together. They may come into contact with each other during surgery, and the surgical table, instruments, and accessories may be damaged.



CAUTION

Cleaning and Disinfection

- When cleaning and disinfecting the surgical table after use, be sure to unplug the power cord from the medical outlet. Otherwise, there is a risk of electric shock.
- Be sure to use disinfectants approved by Dentis Co., Ltd.



CAUTION

Moving and transporting

- Do not move the surgical table with a patient on it.
- Before moving the surgical table, disinfect the entire surgical table to prevent infection.
- Store the product in a container so that it does not get exposed to dust, and the weather.



CAUTION

Disposal



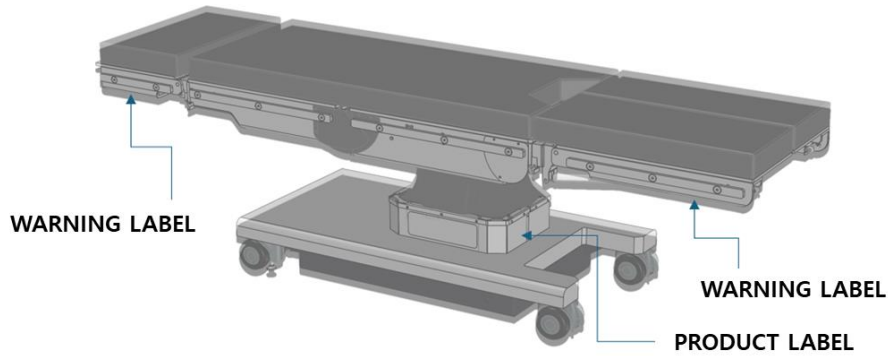
- In accordance with the European Union Waste Electrical and Electronic Equipment (WEEE) Directive, all electrical components and batteries must be disposed of in accordance with local regulations. Please contact your local distributor for proper disposal.
- When the surgical table is no longer usable, a qualified service technician must remove the lead-acid battery from the surgical table. Please properly package the removed battery and send it to Dentis Co., Ltd Customer Support Center. When returning, a hazard sign must be displayed.

Be sure to read the user manual before using this product.

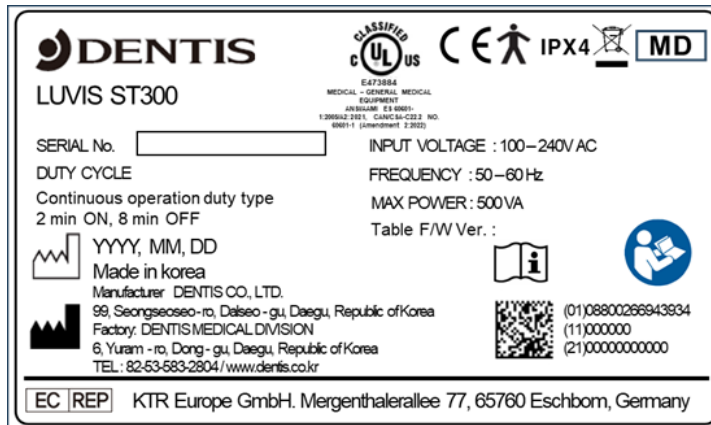
2.2 Label

The surgical table is labeled in the positions shown below. Be sure to read the label before use.

2.2.1 Product label & Warning and Caution labels



- Product label



- WARNING / CAUTION labels



- Emergency brake release valve



Be sure to read the user manual before using this product.

2.2.2 Symbol & sign

Symbol & Sign	Description	Remark
	WARNING This signal word denotes a dangerous situation that may lead to death or severe injury, unless precautionary measures are taken.	Noted in the - Manual - Table
	CAUTION This signal word denotes a dangerous situation that may lead to moderate or slight injury, unless precautionary measures are taken.	Noted in the - Manual
	NOTICE This signal word denotes a situation that may lead to product or environmental damage, unless precautionary measures are taken.	Noted in the - manual
MAIN SWITCH	Switch to turn the table system on/off	Noted in the - Power panel
	“ON” (Table system connect the power source)	Noted in the - Power panel
○	“OFF” (Table system disconnect the power source)	Noted in the - Power panel
	Equipotential terminal	Noted in the - Power panel
100V-240V AC	Permitted operating voltage range	Noted in the - Power panel
MAIN FUSE 5x20 T6.3AH 250V,2ea	Mains input fuse type	Noted in the - Power panel
BATTERY FUSE 5x20 T20AL 250V	Battery input fuse type	Noted in the - Power panel
	Battery Indicator E (Empty) : Battery charge status is less than 20% F (Full) : Batteries charge status is over 80%	Noted in the - Power panel
	Refer to the User manual	Noted in the - Product label
	Indication of protection against electric shock (Class B)	Noted in the - Product label
IPX4	Enclosure Class (Splash-proof)	Noted in the - Product label
	Indicates waste disposal information When disposing of this product, do not dispose of it as unsorted waste. Sort out and discard recyclable parts.	Noted in the - Product label

Be sure to read the user manual before using this product.

	User must refer to the instructions for use	Noted in the - Product label
	CE Mark	Noted in the -Product label
	UL Mark MEDICAL – GENERAL MEDICAL EQUIPMENT ANSI/AAMI ES 60601-1:2005/A2:2021, CAN/CSA-C22.2 NO.60601-1 (Amendment 2:2022)	Noted in the -Product label
	Unique Device Identification (UDI) comprising: (01) UDI - DI [Global Trade Item Number (GTIN)] (11) UDI - PI [Date of manufacture (year/month/day)] (21) UDI - PI (Serial number)	Noted in the - Product label
	European authorized representative	Noted in the - Product label
	Date of manufacture	Noted in the - Product label
	Manufacturer	Noted in the - Product label
	Storage and transport temperature -10°C ~ 50°C	Noted in the - Manual - Packing box
	Storage and transport humidity 10% ~ 85%	Noted in the - Manual - Packing box
	Storage and transport atmospheric pressure 540mbar ~ 1060mbar	Noted in the - Manual - Packing box
	Fragile packaged goods	Noted in the - Manual - Packing box
	Protect against moisture	Noted in the - Manual - Packing box
	Top	Noted in the - Manual - Packing box
	Limited stackability (2 level)	Noted in the - Manual - Packing box
	Recycle	Noted in the - Manual - Packing box

Be sure to read the user manual before using this product.

3 Component Description

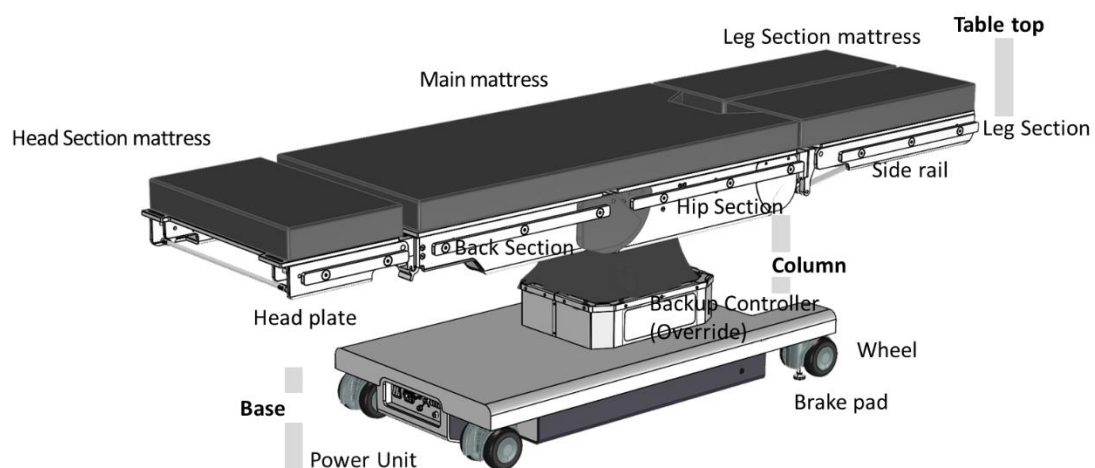
3.1 Description of LUVIS ST300 surgical table

The LUVIS ST300 surgical table consists of a four-part tabletop that can be adjusted to various angles to suit the patient's needs. The hip section and back section are firmly connected, and the head section and leg section can be mounted on the joint adapters on the hip section and back section. Accessories can be attached to the side rail.

The surgical table has the following adjustments.

- LEVEL position
- Height adjustment
- Lateral tilting
- Trendelenburg / Reverse Trendelenburg
- Flex, Reflex
- Longitudinal slide
- Back section adjustment
- Kidney elevator
- Reverse mode

The head section and leg section rotation angles can be adjusted manually. The reverse mode of the surgical table can be selected electrically. Operation of the surgical table in reverse mode is the same as in normal mode. The standard way to control the surgical table is to use a hand control. The surgical table can be used in internal power mode or external power mode. The surgical table is equipped with four wheels that can move freely. Floor locking brakes are used for safe installation.



[LUVIS ST300]

Be sure to read the user manual before using this product.

3.2 Hand controller

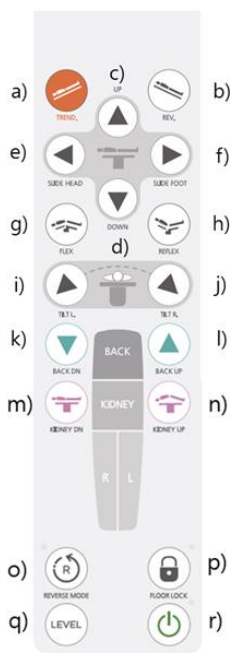


WARNING

- If your hand control is broken or lost, use the backup controller only in emergency situations.

3.2.1 Hand Controller Description

The hand controller provided by LUVIS ST300 is used in wired mode.



- Hand controller
 - A) Function buttons
 - B) Wire connection receptacle
- Function buttons of hand controller
 - a) Trendelenburg button
 - b) Reverse Trendelenburg button
 - c) Tabletop lift up
 - d) Tabletop lift down
 - e) Longitudinal slide to head button
 - f) Longitudinal slide to foot button
 - g) FLEX button
 - h) REFLEX button
 - i) Left tilting button
 - j) Right tilting button
 - k) Back section head down button
 - l) Back section head up button
 - m) Kidney elevator down button
 - n) Kidney elevator up button
 - o) Reverse Mode button
When reverse mode is activated, the red LED lamp lights up.
 - p) Floor Lock / Unlock button
When in "Floor lock" status, the green LED lamp lights up.
 - q) LEVEL button
 - r) Sleep Mode button
When sleep mode is activated, the green LED lamp blink.

Be sure to read the user manual before using this product.

3.2.2 Hand Controller Sleep mode

The sleep mode of the hand controller is designed to prevent malfunction due to accidental button presses while the hand controller is not in use.



- **Activate Sleep Mode**
After a certain period of time (approximately 20 seconds) following functional operation by the hand controller, or by briefly pressing and releasing the Sleep Mode button, the hand controller will activate to sleep mode.



- **Deactivate Sleep Mode**
To deactivate sleep mode, briefly press and release the desired operation button. Sleep mode will be deactivated, and the green LED lamp will turn on.

Be sure to read the user manual before using this product.

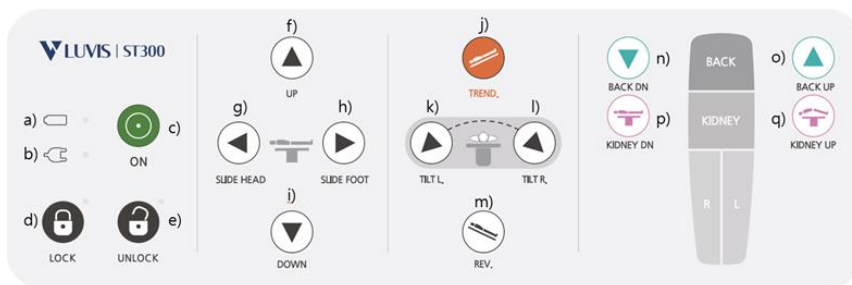
3.3 Backup controller (Override)



WARNING

- If your hand control is broken or lost, use the backup controller only in emergency situations.
- The backup controller does not provide REVERSE MODE. Monitor the patient's position. Injury may occur due to a patient falling.

The backup controller is attached to the right cover of the column. The backup controller is blocked by default to prevent the operation of the operating table functions by mistake. To activate each function button, you can only do so while pressing and holding the C) activation button.



- a) Internal power charging status of the surgical table
 - Green Lamp
 - Orange Lamp
 - Red Lamp
- b) External power usage status of the surgical table (green lamp lights up)
- c) Backup controller function activation button
- d) LOCK button(Green Lamp) : Surgical table brake fixed
- e) UNLOCK button(Green Lamp) : Surgical table brake released
- f) Tabletop height up button
- g) Longitudinal slide to head button
- h) Longitudinal slide to foot button
- i) Tabletop height down button
- j) Trendelenburg button
- k) Left tilting button
- l) Right tilting button
- m) Reverse Trendelenburg button
- n) Back section down button
- o) Back section up button
- p) Kidney elevator down button
- q) Kidney elevator up button

Be sure to read the user manual before using this product.

4 Operation
4.1 Installation and battery charging



WARNING

- Connect the equipotential cable between the earth terminal and the equipotential terminal of the surgical table to create an equipotential connection with other medical equipment. If the equipotential cable is not connected, an electrical potential difference may occur between the medical devices, which could lead to improper functioning of the product or serious bodily harm.



CAUTION

- Prepare the equipotential wire yourself.
- When moving this product, always ensure that the power cord and the equipotential cable are disconnected.
- Contain an instruction not to position the surgical table so that it is difficult to operate the disconnection device.
- When connecting or disconnecting the power cord, be sure to turn off the main switch first.



NOTICE

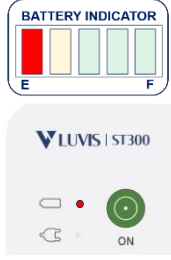

- When battery indicator bars are down, only locking brake works

4.1.1 Installing the surgical table

- Move the surgical table to a flat area.
- Turn on the main switch.
- Check the battery indicator.
- The battery charging indicator on the base of surgical table.

Indicator	Status	Meaning	Activity
	<p>All bars are lit up in green. Internal power charging status of backup controller lit up in green.</p>	<p>The batteries are sufficiently charged.</p>	<p>No action is required</p>
	<p>Bars 4 to 3 are lit up in green. Internal power charging status of backup controller lit up in green.</p>	<p>The batteries are sufficiently charged.</p>	<p>It is possible to charge the batteries using the external power supply.</p>
	<p>Bars 2 are lit up in orange. Internal power charging status of backup controller lit up in orange.</p>	<p>The batteries are more than half empty.</p>	<p>Connect the surgical table to the external power supply so that the batteries can be charged.</p>

Be sure to read the user manual before using this product.

	<p>Bar 1 is lit up in red. Internal power charging status of backup controller lit up in red.</p>	<p>The batteries are almost empty</p>	<p>Connect the surgical table to the external power supply so that the batteries can be charged.</p>
	<p>All bars are down. Internal power charging status of backup controller blinking red.</p>	<p>The batteries are flat, limited movements of the surgical table</p>	<p>Connect the surgical table to the external power supply so that the batteries can be charged.</p>

4.1.2 Installation space

Ensure a space of approximately 2.5 meters in front, behind, and on both sides of the surgical table during installation.

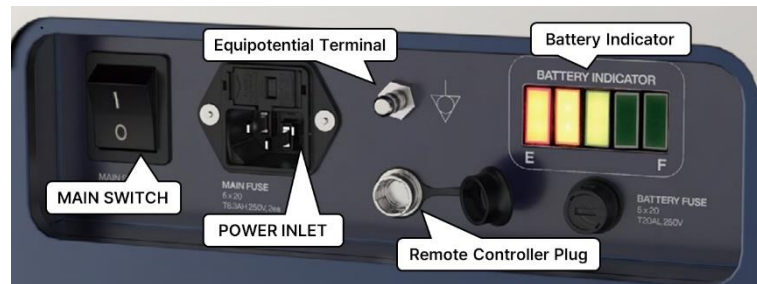
Be sure to read the user manual before using this product.

4.1.3 Charging battery



CAUTION

- To avoid risk of electric shock, connect the product to a power source provided with a protective ground.
- Be sure to use the dedicated power cord provided by Dentis Co., Ltd.
- Before inserting the power cord into the power inlet, make sure the power inlet is free of liquid or dust.
- When completely turning off the power, unplug the power cord from the medical outlet.
- When connecting or disconnecting the power cord, be sure to turn off the main switch first.



- Connect the product's power inlet and a medical outlet with the power cord.
- When you turn on the main switch, the surgical table's batteries charging begins. (During charging, the battery indicator lights turn on sequentially.)



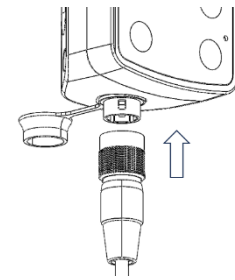
NOTICE

- Be sure to charge the battery when using the product for the first time or after it has not been used for a long period. Batteries naturally discharge when not in use or when stored.
- When the surgical table is not in use, turning off the main switch can reduce power consumption and extend battery life.
- It takes at least 10 hours to charge the battery fully.
- A fully charged battery enables approximately 50 operates (approximately 10 days) without recharging.
- The number of operations may be limited depending on the environment of the surgical table and battery performance.
- When storing for a long time, charge the battery fully and turn off the main switch before storing. Recharge the battery at least once every 6 months.
- If the battery indicator lights on the base of the surgical table lights up only in red while using the surgical table on battery power, charge the battery immediately. When the battery is discharged, external power must be connected for operation.
- When the battery charging begins, the battery indicator lights on step by step and lights on the current battery charging status.
- When the battery is charging, the user can operate the surgical table.
- The battery of the surgical table uses lead-acid battery. The lead-acid battery does not allow replacement by user. Request replacement from your dealer or Dentis Co., Ltd.
- If the battery discharges quickly even after charging, battery performance may deteriorate. Request repairs from your dealer or Dentis Co., Ltd.
- The surgical table battery life is approximately 2 years. When the battery reaches the end of its life, ask your dealer or Dentis Co., Ltd. for a replacement battery.
- The battery life depends on the environment of the operating. Frequently charging and discharging the battery of the surgical table may lead to a faster deterioration of the battery's performance.

Be sure to read the user manual before using this product.

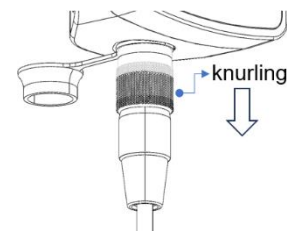
4.1.4 Connect spiral cable to hand controller

- Insert the spiral cable connector correctly according to the receptacle guide of the hand controller.
- While pressing the spiral cable connector, rotate it to the right or left and fully insert it.
- Pull the spiral cable connector slightly to check that it is secure.
- Proceed in the same way when connecting to the base receptacle.



4.1.5 Disconnect the spiral cable from the hand controller

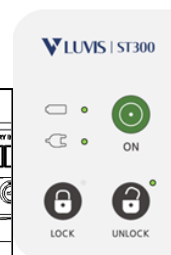
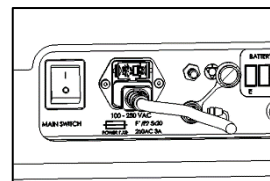
- Hold the knurling area and pull backwards to unlock the receptacle.
- In that state, pull the spiral cable connector to disconnect the spiral cable.
- Proceed in the same way when connecting to the base receptacle.



4.2 Turning the main switch on and off

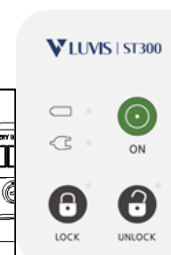
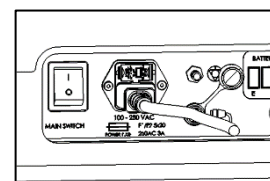
4.2.1 Turn on the main switch

- Turn on the main switch at the base of the surgical table.
- The battery indicator at the base of the surgical table lights up.
- The backup controller battery lamp lights up in green. When an external power source is connected, the external power lamp lights up in green.



4.2.2 Turn off the main switch

- Turn off the main switch at the base of the surgical table.
- The battery indicator light on the bottom of the surgical table turns off.
- The backup controller battery lamp turns off. When external power is connected, the external power lamp turns off.



Be sure to read the user manual before using this product.

- 4.3 Lock or unlock of surgical table locking brake
To operate the surgical table function, the locking brake must be locked.

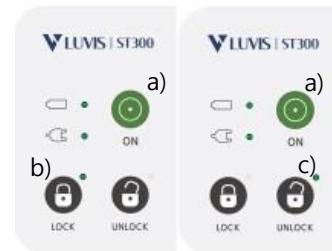


WARNING

- After locking the locking brake, check that the surgical table is securely fixed.
- Be sure to operate the surgical table using a hand controller. Sensors are not applied on the backup controller.

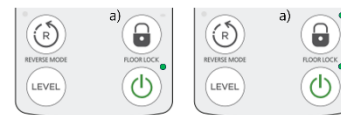
- 4.3.1 Lock or unlock of surgical table locking brake by backup controller

- When pressing the a) ON button and b) pressing the b) LOCK button, the green lamp lights up and the locking brake is locked.
- While pressing the a) ON button pressing the c) UNLOCK button, the green lamp goes out and the locking brake is unlocked.



- 4.3.2 Lock or unlock of surgical table locking brake by hand controller

- If you press the a) FLOOR LOCK button at the bottom of the hand controller, the green lamp lights up and the brake is locked.
- To release the locking brake a) If you press the FLOOR LOCK button, the green lamp goes out and the locking brake is unlocked.



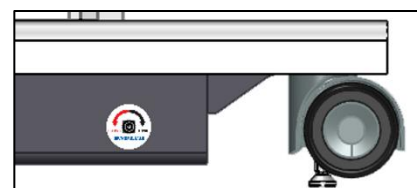
- 4.4 Emergency locking brake release



WARNING

- If the backup controller button does not work, move the patient to safety and then release the emergency locking brake.
- If the emergency locking brake release is not re-engaged after being released, operating the surgical table may result in patient injury such as a fall.

- There is an emergency locking brake release valve lever on the lower right side of the surgical table base. Rotate counter-clockwise using a hexagon socket wrench (6mm).
- Move the surgical table and check whether the locking brake is released.
- After checking, rotate the locking brake release valve lever clockwise until it stops rotating.
- Move the surgical table.



Be sure to read the user manual before using this product.

4.5 Lateral tilting



WARNING

- When placing the patient on the surgical table and tilting the tabletop, be sure to use fixing accessories to secure the patient. The patient may fall from the surgical table and suffer injury.
- Risk of collision when lateral tilting
When operating the lateral tilting function, you may hit the instruments, equipment, floor, base cover, column cover at the bottom of the tabletop.
 - Monitor the function process of the tabletop and stop the movement if there is a risk of collision.
 - Adjust the parts at risk of collision in the opposite direction.
 - Check the function area of the surgical table and, if necessary, remove devices or equipment.



NOTICE

- The maximum lateral tilting angle to the right and left is 25° from the level position.
- The lateral tilting function stops at the horizontal position. To continue the function, release the button and press the button again.

The lateral tilting function allows the surgical table to rotate to the left or right based on the direction the user is facing at the head end of the patient, which is at the center of rotation of the width of the surgical table by the electro-hydraulic system. The left tilting is a function that tilting the patient to left in the view from the head side. The Right tilting is a function that tilting the patient to right in the view from the head side.

- Left tilting of tabletop
Press the TILT L. button on the backup controller or hand controller.
- Right tilting of tabletop
Press the TILT R. button on the backup controller or hand controller.
- The backup controller is pressed together with the “ON” button.



Hand Controller



Backup Controller



Be sure to read the user manual before using this product.

4.6 Trendelenburg / Reverse Trendelenburg



WARNING

- When placing the patient on the surgical table and operating the Trendelenburg function, be sure to use fixing accessories to secure the patient. The patient may fall from the surgical table and suffer injury.
- Risk of collision when Trendelenburg function
 - When operating the Trendelenburg / Reverse Trendelenburg function, you may hit the instruments, equipment, floor, base cover, column cover at the bottom of the tabletop.
 - Monitor the operation process of the tabletop and stop the movement if there is a risk of collision.
 - Adjust the parts at risk of collision in the opposite direction.
 - Check the operation area of the surgical table and, if necessary, remove devices or equipment.

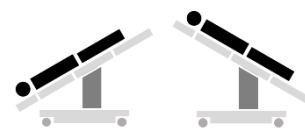


NOTICE

- The maximum Trendelenburg / Reverse Trendelenburg angle is 30° from the level position.
- The Trendelenburg / Reverse Trendelenburg function stops at the level position. To continue the function, release the button and press the button again.

The Trendelenburg / Reverse Trendelenburg function allows the surgical table to rotate, which is at the center of rotation of the length of the surgical table by the electro-hydraulic system. The Trendelenburg is a function that moves the patient's head downwards. The Reverse Trendelenburg is a function that moves the patient's head upwards.

- Trendelenburg
Press the TREN. button on the backup controller or hand controller.
- Reverse Trendelenburg
Press the REV. button on the backup controller or hand controller.
- The backup controller is pressed together with the "ON" button.



Hand Controller



Backup Controller



Be sure to read the user manual before using this product.

4.7 Back section angle adjustment



WARNING

- During the back section angle adjustment, do not put your hands into the gap between the back section and hip section. Otherwise, injury may result.
- Risk of collision when back section angle adjustment function
 - When operating the back section angle adjustment function, you may hit the instruments, equipment, floor, base cover, column cover at the bottom of the tabletop.
 - Monitor the operation process of the tabletop and stop the movement if there is a risk of collision.
 - Adjust the parts at risk of collision in the opposite direction.
 - Check the operation area of the surgical table and, if necessary, remove devices or equipment.

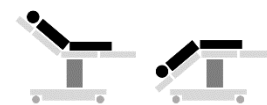


NOTICE

- The maximum back section up / back section down angle is 90° / - 40° from the level position.
- The back section angle adjustment function stops at the level position. To continue the function, release the button and press the button again.
- The back section angle adjustment function may be limited depending on the position of longitudinal slide. If a larger adjustment range is required, the longitudinal slide should be changed.

The back section angle adjustment function allows the back section to rotate upwards and downwards by the electro-hydraulic system. The back section up is a function that moves the patient's head upwards. The back section down is a function that moves the patient's head downwards.

- Back section up
Press the BACK UP button on the backup controller or hand controller.
- Back section down
Press the BACK DN button on the backup controller or hand controller.
- The backup controller is pressed together with the "ON" button.



Hand Controller



Backup Controller



Be sure to read the user manual before using this product.

4.8 Tabletop height adjustment



WARNING

- Risk of collision when tabletop height adjustment function
When operating the tabletop height adjustment function, you may hit the instruments, equipment, floor, base cover, column cover at the bottom of the tabletop.
 - Monitor the operation process of the tabletop and stop the movement if there is a risk of collision.
 - Adjust the parts at risk of collision in the opposite direction.
 - Check the operation area of the surgical table and, if necessary, remove devices or equipment.



NOTICE

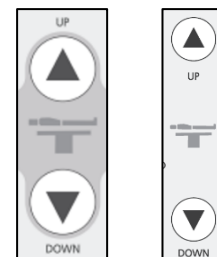
- The height adjustment range of the tabletop is a maximum of 1000mm and a minimum of 600mm.

The tabletop height adjustment function allows the height of tabletop to be adjusted by adjusting the height of the column by the electro-hydraulic system.

- Tabletop height up
Press the UP button on the backup controller or hand controller.
- Tabletop height down
Press the DOWN button on the backup controller or hand controller.
- The backup controller is pressed together with the “ON” button.



- Hand Controller / Backup Controller



Be sure to read the user manual before using this product.

4.9 Longitudinal slide of tabletop



WARNING

- During the longitudinal slide of tabletop, do not put your hands into the gap of tabletop. Otherwise, injury may result.
- Accessories mounted on the side rail may collide with the column when the longitudinal slide of tabletop function.
- Risk of collision when longitudinal slide of tabletop function
When operating the longitudinal slide of tabletop function, you may hit the instruments, equipment, floor, base cover, column cover at the bottom of the tabletop.
 - Monitor the operation process of the tabletop and stop the movement if there is a risk of collision.
 - Adjust the parts at risk of collision in the opposite direction.
 - Check the operation area of the surgical table and, if necessary, remove devices or equipment.



NOTICE

- The longitudinal slide of the tabletop is 70 mm from the center towards the head and 230 mm towards the foot.
- When operating the longitudinal slide to foot function with the back section adjusted downwards, the back section will adjust horizontally at the center point for safety.
- If the longitudinal slide to foot is operating when the back section is lower than level position, the back section will be move to level position at the center of the longitudinal slide, and the longitudinal slide will be continued.

The longitudinal slide of tabletop function allows the tabletop to slide longitudinally toward the head and foot by the electro-hydraulic system.

- Longitudinal slide to head
Press the SLIDE HEAD button on the backup controller or hand controller.
- Longitudinal slide to foot
Press the SLIDE FOOT button on the backup controller or hand controller.
- The backup controller is pressed together with the "ON" button.



- Hand controller



- Backup Controller



Be sure to read the user manual before using this product.

4.10 Flex / Reflex



WARNING

- During the FLEX or REFLEX function, do not put your hands into the gap between the back section and hip section. Otherwise, injury may result.
- Risk of collision when FLEX and REFLEX
When operating the FLEX and REFLEX function, you may hit the instruments, equipment, floor, base cover, column cover at the bottom of the tabletop.
 - Monitor the operation process of the tabletop and stop the movement if there is a risk of collision.
 - Adjust the parts at risk of collision in the opposite direction.
 - Check the operation area of the surgical table and, if necessary, remove devices or equipment.

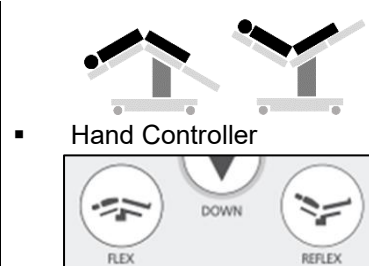


NOTICE

- When the tabletop is slid towards the leg, FLEX and REFLEX functions may be limited.
- The FLEX and REFLEX functions are not available in the backup controller.

The FLEX and REFLEX functions allow the tabletop to adjust the FLEX and REFLEX angle by alternatively rotating the back section and Trendelenburg by the electro-hydraulic system.

- FLEX
Press the FLEX button on the hand controller.
- REFLEX
Press the REFLEX button on the hand controller.



4.11 Kidney elevator



WARNING

- During the kidney elevator working, do not put your hand into the gap of kidney elevator. Otherwise, injury may result.

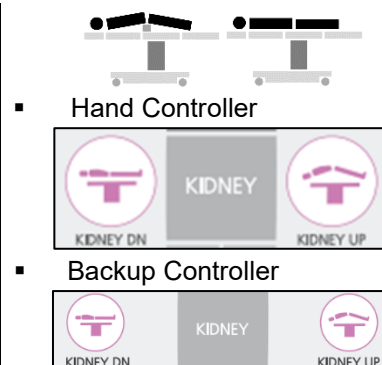


NOTICE

- The maximum lifting height of kidney elevator is 110mm.

Kidney elevator function allows the kidney elevator to rise and lower by the electro-hydraulic system.

- Kidney elevator up
Press the KIDNEY UP. button on the backup controller or hand controller.
- Kidney elevator down
Press the KIDNEY DN. button on the backup controller or hand controller.
- The backup controller is pressed together with the "ON" button.



Be sure to read the user manual before using this product.

4.12 REVERSE MODE



WARNING

- When operating the surgical table in REVERSE MODE, check the patient's position direction. If operated in the opposite direction, the patient may fall from the table and suffer injury.
- Be sure to switch to REVERSE mode after replacing the leg section and head section. If you press the function button before switching to REVERSE mode, the detachable section may break and cause injury to the patient.

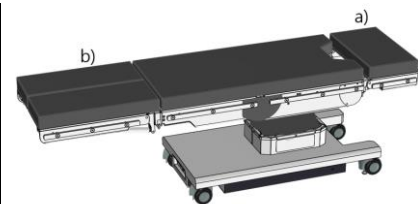


NOTICE

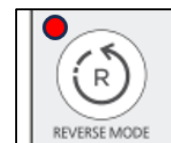
- When switching to REVERSE MODE, back section angle adjustment, FLEX and REFLEX functions are limited.
- If the back section angle is not level, REVERSE MODE function is limited. If REVERSE MODE function is needed, the back section angle must be leveled.

When using the surgical table with the head section attached to the leg section position and the leg section attached to the head section position, with the patient positioned in the opposite direction, be sure to switch to REVERSE MODE.

- REVERSE MODE activation**
Press the REVERSE MODE button on the hand controller. When the red lamp turns on, the surgical table has been activated to REVERSE MODE.
- Trendelenburg, tilting and Longitudinal slide are switched to suit the direction of the patient position.



- Hand Controller**



4.13 LEVEL

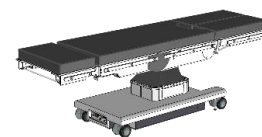


WARNING

- When operating LEVEL, remove accessories mounted on the surgical table.
- The surgical table and accessories may be damaged by attached accessories during LEVEL operation.

This function switches the surgical table to a horizontal position as shown in the picture on the right.

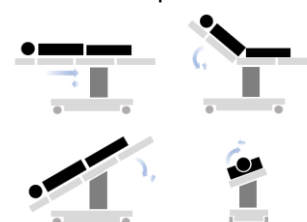
- LEVEL position**
If you press and hold the LEVEL button on the hand controller, the surgical table will begin to transition to a horizontal state. When the LEVEL transition is completed, the surgical table will stop.
- The sequence of LEVEL position function is lateral tilting, Trendelenburg & back section, longitudinal slide, height of tabletop.
- LEVEL Compensation function**
To ensure the accurate leveling of the tabletop, a compensation function is performed during the LEVEL operation. When the LEVEL operation is executed from the positions of left tilting, Trendelenburg, back section elevation, or head-side horizontal movement, the tabletop first moves to a level position and then performs the compensation function in the opposite direction.



- Hand Controller**



- LEVEL compensation function**



Be sure to read the user manual before using this product.

4.14 Head section angle adjustment



WARNING

Before adjusting the head section angle, check that the head section is fixed. If the head section is not fixed, injury to the patient or damage to the head section may occur due to the head section coming off.



NOTICE

The maximum angle at which the head section can be achieved is from 30° to - 90° from the horizontal position.

The head section angle is adjusted by adjusting the gas spring cylinder built into the head section.

- **Unlock angle adjustment lever**
Hold the angle adjustment lever and the head section at the same time and pull the angle adjustment lever to unlock the gas cylinder.
- **Head section angle adjustment**
With the angle adjustment lever unlocked, rotate the head section up and down to the desired angle, then release the angle adjustment lever to fix the section angle.

- **Unlock angle adjustment lever**



- **Head section angle adjustment**



4.15 Leg section rotation



WARNING

After rotating the leg section, be sure to turn the rotation locking lever to lock the gear. If not locking, the leg section may rotate freely, causing injury to the patient and damage to peripheral devices.



NOTICE

The outward rotation angle of the leg section is 90° to the right and left respectively.

The principle of leg section rotation is to adjust the rotation angle by unlocking the gear to unlock the rotation locking lever and then rotating and locking it.

- **Unlock rotation locking lever**
Rotate the rotation locking lever counter-clockwise to unlock the gear.
- **Rotate**
After rotating the leg section to the desired position, rotate the rotation locking lever clockwise to lock the gear.

- **Lock / Unlock of Rotation locking lever**



- **Rotating**



Be sure to read the user manual before using this product.

4.16 Leg section angle adjustment



WARNING

- Before adjusting the leg section angle, check that the leg section is fixed. If the leg section is not fixed, injury to the patient or damage to the leg section may occur due to the leg section coming off.
- During the leg section angle adjustment, do not put your hands into the rotating link area. Otherwise, injury may result.



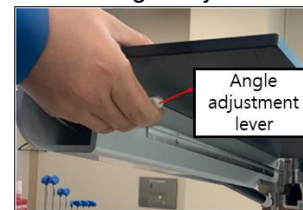
NOTICE

The rotation angle of the leg section is +10 to -90 degrees.

The leg section angle is adjusted by adjusting the gas spring cylinder built into the leg section.

- **Unlock angle adjustment lever**
Hold the angle adjustment lever and the leg section at the same time and pull the angle adjustment lever to unlock the gas cylinder.
- **Leg section angle adjustment**
With the angle adjustment lever unlocked, rotate the leg section up and down to the desired angle, then release the angle adjustment lever to fix the leg section angle.

- **Unlock angle adjustment lever**



- **Leg section angle adjustment**



4.17 Head section attaching and detaching



WARNING

When attaching the head section, be sure to check the locking status. An unsafe locking status may result in injury to the user due to the head section falling.

There is a locking clamp to fix the head section automatically when attaching the head section.

- **The head section attaching**
Insert the head section shaft into the two holes in the back section or hip section by pushing it in until it is fully seated. The locking clamp is activated automatically. Check the locking status by pulling the head section.
- **The head section detaching**
Pull the locking clamp with both hands to unlock it and then detach the head section.

- **Head section attaching**



- **Head section detaching**



Be sure to read the user manual before using this product.

4.18 Leg section attaching and detaching



WARNING

- When attaching the leg section, be sure to check the locking status. An unsafe locking status may result in injury to the user due to the leg section falling.
- The leg section may fall due to its weight. It should be attached and detached using both hands.

There is a locking clamp to fix the leg section automatically when attaching the leg section.

- The leg section attaching**
Insert the leg section shaft into the hole in the back section or hip section by pushing it in until it is fully seated. The locking clamp is activated automatically. Check the locking status by pulling the leg section.
- The leg section detaching**
Pull the locking clamp with one hand to unlock it and then detach the leg section with both hands.

- Leg section attaching**





- Leg section detaching**



4.19 Surgical Table indirect LED & Buzzer notification

The surgical table has indirect LED and Buzzer. This allows for visual and auditory representation of the various status of the surgical table. When the indirect LED is lit on, the buzzer sounds.

This table shows the indirect LED status meaning.

Type	Indirect LED Status	meanings
	The indirect LED on the base will blink.	During brake locking or unlocking operation by hand controller
	The indirect LED on the base lights up continuously.	When each function of the tabletop is restricted when operated by the hand controller

Be sure to read the user manual before using this product.

5 Cleaning and disinfection

5.1 Introduction

In this chapter, explain how to clean and disinfect the operating table after use. Separate cleaning and disinfection.

Operators must ensure that surgical table cleaning and disinfection procedures are hygienically effective and comply with medical facility guidelines and country-specific regulations. Do not use high-pressure cleaners, steam cleaners, water jets, etc. to clean the surgical table. In addition, the surgical table cannot be cleaned by machine. You must clean it by hand with appropriate tools.

During cleaning, use a detergent that can be mixed with water. Remove visible or invisible contamination before cleaning.

During disinfecting, use appropriate disinfectants and disinfection methods. During disinfection, it prevents infection by killing or deactivating pathogens.

Cleaning and disinfection procedures must be performed before using the surgical table for the first time.

Before each use, the user must ensure that the surgical table is cleaned and disinfected.

5.2 Cleaning and disinfection agents



WARNING

Do not use any abrasive agents for cleaning.



CAUTION

Cleaners and disinfectants can cause rashes or irritation if they come into contact with the skin.



CAUTION

- When lifting, carrying, or moving the detachable section, be careful to avoid straining your back. If necessary, request assistance from others. Do not remove multiple detachable sections or heavy and cumbersome accessories from the surgical table at the same time.
- Do not use high-pressure cleaners, steam cleaners, water jets, etc. to clean the surgical table. In addition, the surgical table cannot be cleaned by machine. You must clean it by hand with appropriate tools.
- Do not spray disinfection agents directly into the joints or gaps.
- Disinfectant based on halogens and peroxide compounds are not suitable.
- Do not use any abrasive agents for disinfection.
- Make sure to use Dentis Co., Ltd. authorized disinfectants. The disinfectants are as shown below.
 - Sodium hypochlorite (diluted for use, 0.1%)
 - Chlorhexidine (chlorhexidine gluconate 0.5%)
 - Benzalkonium chloride (invert soap 10%)
 - Povidone iodine
 - Ethanol 80%
 - Hydrogen peroxide
 - Saline 0.9%
 - Isopropyl alcohol(IPA)

Be sure to read the user manual before using this product.

- 5.3 Preparing the surgical table
- Lock the surgical table brakes to prevent it from moving.
 - Remove all accessories from the surgical table, including instruments on the surgical table or accessories on the side rails. To do this, pay attention to the manufacturer's instructions for each product.
 - Remove all towers / wipes and lining from the surgical table.
 - Press LEVEL button to transition the surgical table to a horizontal state
 - Adjust height of the tabletop to suit cleaning and disinfection.
 - Turn off the main switch to block the power source.
 - Remove the power cord from medical outlet.
- 5.4 Cleaning
- Wear the necessary personal protective equipment.
 - Simply remove contamination using a suitable method.
 - Prepare detergent. Be sure of the detergent concentration.
 - Clean all mattresses on the surgical table and store them in a disinfected storage area.
 - Clean the top of the surgical table and the surface of each section thoroughly.
 - Clean the side rails and detachable sections of the top of the surgical table thoroughly.
 - Remove the detachable section and clean them thoroughly.
 - Clean the tabletop frame by longitudinally sliding the table.
 - Clean the bellows and column cover thoroughly.
 - Clean the base cover thoroughly.
 - Visually inspect the entire surface of the surgical table. There should be no residue on the surface and no visible contamination. Surfaces that still show signs of contamination are cleaned again. All mattresses and sections of the tabletop must be completely dry before disinfection can begin.
- 5.5 Disinfection
- Prepare appropriate disinfectants and disinfection methods.
 - Disinfect the storage area.
 - Disinfect mattresses and parts stored in the storage area with a disinfectant.
 - When the detachable sections are dried, attach it to the surgical table.
 - Disinfect the entire surface of the surgical table including detachable sections.
 - Install the mattress and disinfect the sides of the mattress along with the side rails.
 - Disinfect the bellows and column cover thoroughly.
 - Disinfect the base cover thoroughly.
 - Inspect the mattress for cracks or other visible damage. You should not continue to use a damaged mattress.
 - Connect the power cord to medical outlet.
 - Protect the surgical table from contamination using suitable methods.

Be sure to read the user manual before using this product.

6 Maintenance and inspection
6.1 Inspection before/after use



WARNING

Be sure to check the following before and after use. If there is a problem, request repairs from your dealer or Dentis Co., Ltd. Otherwise, problems may arise during surgery.

Part	Before	After
Mattress	Check the mattresses for any damage.	Check the mattresses for any damage or contamination.
Tabletop plate	Check the plate for any damage.	Check the plate for any damage or contamination.
Hand controller	Press the buttons on the hand controller to check that all functions are working properly.	Check the hand controller for any damage.
Backup Controller	Press the buttons on the backup controller to check that all functions are working properly.	Check the backup controller for any damage.
Main Switch	Press the main switch on the base control unit to see if the external power lamp or internal power lamp on the backup controller	
Oil leak	Check for hydraulic oil on the floor or base surface.	Check for hydraulic oil on the floor or base surface.
Battery	Make sure the battery charging status.	
Power cord	Check the power cord for exposed wires and damaged plugs.	

6.2 Periodic replacement parts

Dentis Co., Ltd. states that the following parts must be replaced periodically for safe use. Replacement times are approximate. Depending on usage conditions and/or frequency of use, early replacement may be required.

Part	Replacement period
Battery	2 years
Hand controller	3 years to 4 years
Castor	5 years to 7 years
Brake Pad	3 years to 5 years
Power Cord	5 years to 7 years



NOTICE

The replacement period above are estimates. Replacement period may vary depending on usage conditions and/or frequency of use.

Be sure to read the user manual before using this product.

- 6.3 Software version information
The version information of the control software which is installed in the surgical table can be checked on the product label.
- 6.4 Periodic maintenance
The first maintenance is performed three years after the user receives the surgical table. Starting from the 4th year, the surgical table is maintained every year. The product must be serviced by a qualified service technician. Contact information for service technicians is provided by the Dentis Customer Service. Dentis Co., Ltd. recommends signing a maintenance contract to ensure that maintenance is carried out at an appropriate time.

Be sure to read the user manual before using this product.

7 Specification

Model		LUVIS ST300
Electrohydraulic adjustments		
Height of Tabletop	Highest	1,000 mm
	Lowest	600 mm
Trendelenburg angle	Head up	30 °
	Head down	30 °
Lateral tilt angle	Left	25 °
	Right	25 °
Back section angle	Back up	90 °
	Back down	40 °
Longitudinal slide	Head direction	70 mm
	Foot direction	230 mm
Kidney elevator Height	Highest	110 mm
FLEX / REFLEX		140 ° / 90 °
LEVEL		Trendelenburg, Lateral tilt, Back section, Tabletop height, Longitudinal slide
Floor Lock		Lock / Unlock
Control device	Hand Controller	Tabletop height, Trendelenburg, Lateral tilt, Back section, Kidney elevator, Longitudinal slide, FLEX (REFLEX), LEVEL, REVERSE MODE, Floor Lock
	Backup Controller	Tabletop height, Trendelenburg, Lateral tilt, Back section, Kidney elevator, Longitudinal slide, Floor Lock
Manual adjustments		
Head section	Head up	30 °
	Head down	90 °
Leg section	Leg up	10 °
	Leg down	90 °
Leg section rotation	Left / Right	90 ° / 90 °
Detachment		Head section, Left leg section, Right leg section
Other		Brake Release valve
Classification		
Classification of application part		Type B for the whole Surgical table
Electrical safety class		Safety class I
Degree of protection against water penetration		IPX4
Electrical information		
External power supply		100V - 240V AC 50Hz - 60 Hz
Internal power supply		24V, 24Ah, 2S1P
Power consumption		maximum 500 VA
Mode of operation		S6 Continuous operation duty type : 2 min ON, 8 min OFF
Dimensions		
Length of surgical tabletop		2123 mm
Width of surgical tabletop		520 mm
Width of surgical tabletop with side rail		572 mm
Side rail	US	28.5 mm (H) * 9.5 mm (W)
	EU	25 mm (H) * 10 mm (W)
	Asia	32 mm (H) * 9 mm (W)
Length of base		1096 mm
Width of base		572 mm
Overall load	<ul style="list-style-type: none"> ▪ 1000 lb. (454 kg) : Patient support including height of tabletop up/down (when centered on the column in Normal Orientation) ▪ 551 lb. (250 kg) : Full table articulation, including Slide ▪ 350 lb. (159 kg) : Reverse Mode 	
Weight of surgical table		About 280 kg

Be sure to read the user manual before using this product.

8 Troubleshooting

Situation	Cause	Fix instruction
1. When the main switch is turned on, the surgical table cannot turn on.	The Batteries are totally discharged.	Connect the power cord to turn on the surgical table in external power mode and charge the batteries.
	The power cord does not connect correctly	Reconnect the power cord.
	The main fuse is blown	Replace the main fuse. (250V, 5*20mm, T6.3AH)
	The battery fuse is blown	Replace the battery fuse. (250V, 5*20mm, T20AL)
	Defective power cord or power supply unit.	Notify customer service.
2. The External power indicator is off even when the power cord is connected.	The power cord does not connect correctly	Reconnect the power cord.
	The main fuse is blown	Replace the main fuse. (250V, 5*20mm, T6.3AH)
	Defective power cord or power supply unit.	Notify customer service.
3. The batteries cannot charge, and the internal power indicator is blinking red.	The battery fuse is blown	Replace the battery fuse. (250V, 5*20mm, T20AL)
	Defective battery.	Notify customer service.
4. The surgical table does not respond when the hand controller function button is pressed.	The surgical table is turned off	Turn on the main switch to turn on the surgical table.
	Defective hand controller.	To operate the surgical table, use the backup controller. Notify customer service.
5. The surgical table does not respond when the backup controller function button is pressed.	The backup controller function button is not activated.	Press the "ON" button and function button simultaneously.
	The floor locking brake is released. In this case, the surgical table adjustment function is disabled.	Lock the floor locking brake.
	Defective control unit.	To move the surgical table, release the emergency locking brake. Notify customer service.
6. The surgical table cannot move.	The Hydraulic motor is overheated.	Wait for about 30 minutes to operate the surgical table.
	Defective electro-hydraulic system.	Notify customer service.
7. The surgical table does not move and the indirect LED lights up, when the hand controller function button is pressed.	The floor locking brake is released. In this case, the surgical table adjustment function is disabled.	Lock the floor locking brake.
	The REVERSE MODE is activated. In this case, certain function is disabled.	Deactivated the REVERSE MODE.
	The Batteries are flat.	Connect the power cord to turn on the surgical table in external power mode and charge the batteries.
8. The surgical table moves in the opposite direction to the patient.	The patient direction on the tabletop and the operation mode of controller is different.	Activate / Disactivate the reverse mode based on the patient direction.

Be sure to read the user manual before using this product.

- 9 **Repair**
Only qualified service technicians may repair the products. The contact details for service technicians are available from the Dentis Co., Ltd. Technical Customer Service

- 10 **Disposal**



In accordance with the European Union Waste Electrical and Electronic Equipment (WEEE) Directive, all electrical components and batteries must be disposed of in accordance with local regulations. Please contact your local distributor for proper disposal.

When the surgical table is no longer usable, a qualified service technician must remove the lead-acid battery from the surgical table. Please properly package the removed battery and send it to Dentis Co., Ltd Customer Support Center. When returning, a hazard sign must be displayed.

Be sure to read the user manual before using this product.

11 Electromagnetic compatibility



WARNING

Faulty operation of the surgical table

- The surgical table may only be used with accessories approved by the manufacturer and original cables. The use of other accessories and cables may increase the transmission of electromagnetic interference or reduce the resistance of the surgical table to electromagnetic interference. This may result in faulty operation.
- The use of the surgical table in immediate proximity to other devices should be avoided. If it nevertheless has to be placed next to other devices, appropriate functioning of the surgical table must be tested before use.
- Mobile RF (radio frequency) communication devices and their peripherals, such as antenna cables and external antennas, must have a minimum distance of 30 cm to the surgical table and its cables. A smaller distance may result in a reduction in the functionality of the surgical table.

Medical devices are subject to special precautions regarding electromagnetic compatibility and must be installed and used according to the specifications of the manufacturer.

The surgical table is used in a professional facility of the health care service.

With respect to emissions, the properties of this device mean it is appropriate for use in industrial areas and hospitals (CISPR 11, Class A). If used in a domestic setting (for which Class B is generally required in accordance with CISPR 11), this device may cause radio interference. The user may be required to take adequate measures, such as conversion or realignment of the device.

Important performance characteristics according to IEC 60601-1:

- The surgical table remains in the position set by the user. The location can only be changed by user actions.

No measures to maintain basic safety and the main performance characteristics of the surgical table with regard to EMC are required during the expected service lifetime.

The surgical table is intended for use in the vicinity of HF surgical equipment. The interference resistance of the surgical table was only tested for radiated fields in the electromagnetic environment specified below.

Guidelines and manufacturer's declaration – electromagnetic interference resistance		
The LUVIS ST300 surgical table is intended for use in the electromagnetic environment described below. The operator or user should ensure that it is operated in such an environment.		
Emission measurements	Compliance	Electromagnetic environment – Guidelines
HF emissions in accordance with CISPR 11	Group 1	The surgical table uses RF energy exclusively for its internal functioning. Its RF emission levels are therefore very low, and it is unlikely that neighboring electronic devices will be adversely affected.
HF emissions in accordance with CISPR 11	Class A	The surgical table is intended for use in establishments other than domestic ones and those connected directly to the public low-voltage network that supplies buildings used for domestic purposes.
Harmonic emissions in accordance with IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions in accordance with IEC 61000-3-3	fulfilled	

Be sure to read the user manual before using this product.

Guidelines and manufacturer's declaration – electromagnetic interference resistance			
The LUVIS ST300 surgical table is intended for use in the electromagnetic environment described below. The operator or user should ensure that it is operated in such an environment.			
Immunity tests	IEC 60601-1 test level	Compliance level	Electromagnetic environment – Guidelines
Electrostatic discharge (ESD) according to IEC 61000-4-2	±8 kV contact discharge ±15 kV air discharge	±8 kV contact discharge ±15 kV air discharge	The flooring should be made of wood or concrete or have ceramic tiles. If the floor is made of synthetic material, the relative humidity must be at least 30 %.
Rapid transient electrical interference variables/bursts as per IEC 61000-4-4	±2 kV for mains power cables ±1 kV for input and output cables 100 kHz repetition rate	±2 kV for mains power cables ±1 kV for input and output cables 100 kHz repetition rate	The quality of the mains power should be that of a typical commercial or hospital environment.
Surges according to IEC 61000-4-5	±1 kV live conductor – live conductor voltage ±2 kV live conductor – protective earth voltage	±1 kV live conductor – live conductor voltage ±2 kV live conductor – protective earth voltage	The quality of the mains power should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage fluctuations of power supply according to IEC 61000-4-11	0 % UT; 0,5 cycle a) 0 % UT; 1 cycle 70 % UT; 25/30 cycles b) 0 % UT; 250/300 cycles b)	0 % UT; 0,5 cycle a) 0 % UT; 1 cycle 70 % UT; 25/30 cycles b) 0 % UT; 250/300 cycles b)	The quality of the mains power should be that of a typical commercial or hospital environment.
Magnetic field at supply frequency (50/60 Hz) according to IEC 61000-4-8	30A/m	30A/m	The magnetic fields for the network frequency should comply with values commonly found in commercial and hospital environments.
a) at 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° b) at 0° Note: UT is the AC mains voltage prior to applying the test level.			

Avoid environments with electromagnetic fields and interference above the given levels.

Guidelines and manufacturer's declaration - electromagnetic interference resistance		
The LUVIS ST300 surgical table is intended for use in the electromagnetic environment described below. The operator or user should ensure that it is operated in such an environment.		
Immunity test	IEC 60601-1 test level	Compliance level
Conducted RF interference in accordance with IEC 61000-4-6	3 V 0.15 MHz – 80 MHz 6 V In the ISM band between 0.15 MHz and 80 MHz a)	3 V 0.15 MHz – 80 MHz 6 V In the ISM band between 0.15 MHz and 80 MHz a)
Radiated RF interference in accordance with IEC 61000-4-3	3V/m 80MHz~2.7GHz	3V/m 80MHz~2.7GHz
The ISM radio bands (ISM = industrial, scientific and medical) between 0.15 MHz and 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz; 26.957 MHz to 27.283 MHz and 40.66 MHz to 40.70 MHz. The amateur radio frequencies between 0.15 MHz and 80 MHz are 1.8 MHz to 2.0 MHz; 3.5 MHz to 4.0 MHz; 5.3 MHz to 5.4 MHz, 7 MHz to 7.3 MHz, 10.1 MHz to 10.15 MHz, 14 MHz to 14.2 MHz, 18.07 MHz to 18.17 MHz, 21.0 MHz to 21.4 MHz, 24.89 MHz to 24.99 MHz, 28.0 MHz to 29.7 MHz and 50.0 MHz to 54.0 MHz.		

Be sure to read the user manual before using this product.

Immunity level of RF fields from wireless communication device

Table: Special frequencies

Test frequency (MHz)	Band (MHz)	Service	Modulation	Maximum output (W)	Distance (m)	Immunity level (V/m)
385	380∞390	TETRA 400	Pulse modulation 15 Hz	1.8	0.3	26
450	430∞470	GMRS 460 FRS 460	Pulse modulation FM ±5 kHz variation, 1kHz sine	2	0.3	28
720	704∞787	LTE band 13, 17	Pulse modulation 217 Hz	0.2	0.3	9
75						
780						
810	800∞960	GSM 800/900 TETRA 800 iDEN 820 CDMA 850 LTE band 5	Pulse modulation 18 Hz	2	0.3	28
870						
930						
1720	1700∞1990	GSM 1800 CDMA 1900 GSM 1900 DECT LTE band 1,3,4,25 UMTS	Pulse modulation 217 Hz	2	0.3	28
1845						
1970						
2450	2400∞2570	Bluetooth WLAN 802.11b/g/n RFID 2450 LTE band 8	Pulse modulation 217 Hz	2	0.3	28
5240	5100∞5800	WLAN 802.11a/n	Pulse modulation 217 Hz	0.2	0.3	9
5500						
5785						

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