

APPLICATION

The **AMTAI** T800 Series Surgical Table is a mobile, electro-hydraulic surgical table of optimal quality. With the addition of appropriate accessories, it is capable of supporting minimally invasive surgery and a wide range of general surgical procedures, including cardiac and vascular surgery, endoscopy, urology, gynecology, nephrology, neurology, ophthalmology, and orthopedics.

DESCRIPTION

AMTAI T800 Series Surgical Table is powered either by facility electricity, or internal batteries. There are twelve models in T800 Series as follows:

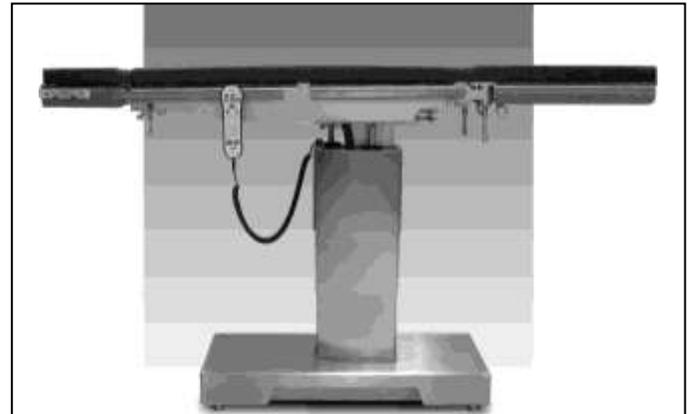
Func. Models	Tabletop Slide	Kidney Elevator	Floor Lock	Utility
T800LSK.1	√	√	√	100~120 50/60 Hz 5 Amp
T800LS.1	√	N/A	√	
T800LK.1	N/A	√	√	
T800L.1	N/A	N/A	√	
T800SK.1	√	√	manual	
T800S.1	√	N/A	manual	
T800K.1	N/A	√	manual	
T800.1	N/A	N/A	manual	
T800LSK.2	√	√	√	200~240 50/60 Hz 3 Amp
T800LS.2	√	N/A	√	
T800LK.2	N/A	√	√	
T800L.2	N/A	N/A	√	
T800SK.2	√	√	manual	
T800S.2	√	N/A	manual	
T800K.2	N/A	√	manual	
T800.2	N/A	N/A	manual	

The T800 Series Surgical table includes multiple powered functions, such as floor locks (T800LSK, T800LS, T800LK, T800L), Trendelenburg/reverse Trendelenburg, height adjustment, lateral tilt, back articulation, and tabletop sliding. These tables are rated to support 800 lb (364 kg) patients both in NORMAL and REVERSE patient orientation.

STANDARDS

The T800 Series Surgical Table is in compliance with national and international safety standards for electro-medical equipment, and meets the applicable requirements of the following standards:

- **Underwriters Laboratories (UL) Standard 60601-1 – 1st Ed.**, as certified by ETL Testing Laboratories, Inc.
- **Standard CAN/CSA-C22.2 No. 601.1-90, Rev. February 1998**, Standard for Electro-Medical Equipment, as certified by ETL Testing Laboratories, Inc.
- **EN 60601-1: 1993, Amendment 2, 1995, Electrical Safety**, as certified by ETL Testing Laboratories, Inc.
- **EN 60601-2-46 – 1st Ed.**, as certified by ETL Testing Laboratories, Inc.



Appearance is typical – some details may vary.

- **IEC 601-1-2: 2001, Electromagnetic Compatibility**, as certified by Electronics Testing Center, Taiwan
- **CE marked to the Medical Device Directive, 93/42/EEC**
- **FDA Good Manufacturing Practices Regulations 21CFR820 for Medical Devices**
- **Class 1 Equipment**
- **Suitable for intermittent operation**, five minutes per every ten minutes
- **IPX-4 (Fluid Ingress Protection)**

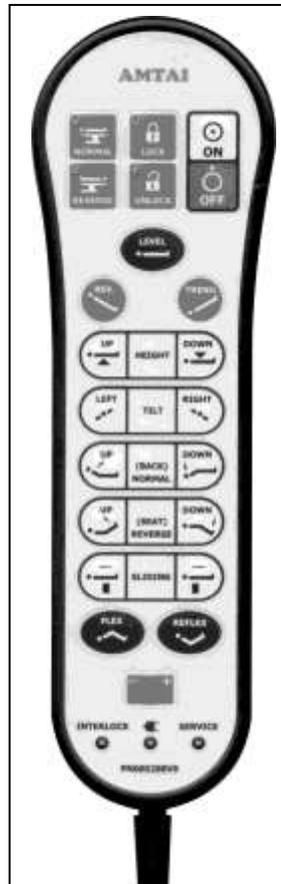
FEATURES

Microprocessor Controlled Hydraulic System: Provides tabletop articulation. All tables feature an auxiliary override (backup) function for the control systems.

Electrical System: Uses microprocessor technology to control the power supply, the hydraulic pump motor, and the hydraulic valves. The control system consists of three microprocessors for main control, power management, and remote control. Located in the base, the main microprocessor selects which output to actuate based upon inputs from the hand pendant, table sensors, and the optional foot controller. The power management microprocessor is located on the same PCB as the main microprocessor. It charges the battery, detects and displays the battery power levels, and protects the battery from over-discharge. The microprocessor located in the hand pendant sends user inputs (from touch pad buttons) to the main microprocessor. It also receives feedback signals from the main microprocessor, and turns on the proper status LEDs. A sealed 24 VDC battery is used for power backup. A separate override control system allows the operation of basic table functions, should the main microprocessor or the hand pendant become inoperative. The auxiliary control switches provide essential override capabilities during an emergency situation.

Hydraulic System: Provides the motive force for all powered articulations of the table. A 24-VDC electric motor drives a 0.2 gpm (0.75 lpm), 1921 psi (132 bar) nominal capacity pump. Hydraulic oil pressure is limited by a relief valve, while a rotary valve directs fluid to hydraulic cylinders. All hoses are made of flexible thermoplastic, and all hose and port connections are sealed with oil seals. Load holding valves and filters are built into all manifold ports which feed each cylinder. The rotary valve can be manually operated in case of electrical failure, using the valve position indicator on the base of the table.

Hand Pendant: Constructed from two injection-molded black plastic covers, and is the primary control for table operation. It has a 2'-9" (85 cm) long coiled cord, which reaches 14'-8" (447 cm) when extended, and has molded strain reliefs on each end. The hand pendant is plugged into a receptacle located on top of the central column. The keypad is backlit, which helps when operating it in the dark. Its membrane touch pads provide input signals to the self-contained PC board, with the potential to activate all table functions and articulations. LED indicators provide table operation information and diagnostic status.



Base: Made of AC2B-F gravity casting aluminum alloy, with a chromate coating treatment. Its top is enclosed by a one-piece stainless-steel cover, which also forms a shroud for the lower portion of the column. For the T800LSK, T800LS, T800LK, and T800L, four swivel casters facilitate easy table relocation, while the four floor locks are self-compensating up to 1/8" (3 mm). The T800SK, T800S, and T800K models are equipped with two straight and two swivel casters for table relocation, and have two floor locks which are manually adjustable up to 1/4" (6 mm). At the head of the base are the line power inlet with protective fuses, a receptacle with a waterproof cover for the optional foot controller, the AC power indicator, and the 10-segment LED bar which displays battery power level and error codes. Inside the base are the transformer, bridge rectifier, hydraulic power assembly, hydraulic valve, pressure switches, main control PCB assembly, and driver PCB assembly.

Column: Offset from the center of the base, and houses the lift cylinder, the Trendelenburg/reverse Trendelenburg cylinder and frame, the tilt cylinder, the support column,

hydraulic tubing, and electrical wiring. These components are fully enclosed by four telescoping stainless-steel sleeves. Each sleeve section is of two-piece construction for service accessibility. At the top of the column are receptacles where the hand pendant and the optional wireless interface are plugged in.

Superstructure: Includes an optional manual gear drive for the kidney elevator, and the hydraulic lines and cylinders required to articulate the tabletop. The superstructure is mounted to the column through a tilt frame made of A356/T6 aluminum alloy. On the tilt frame, there is a PCB assembly which detects the angle of the tabletop. Models outfitted with the slide function have a cylinder installed on the tilt frame in order to longitudinally slide the entire tabletop. Tabletop section frames are constructed from A356/T6 gravity casting aluminum alloy and stainless steel #304. Hydraulic positioning mechanisms are located inboard from the frame sides in order to help prevent the entanglement of drapes.

Tabletop: 20.5" (52 cm) wide, and divided into five hinged sections; the head, back, and seat sections, all with built-in 14" wide cassette tunnels underneath, and the left and right leg sections. All sections are constructed of radiolucent phenolic board, and drilled holes are provided for the attachment of optional radiographic top sections. The seat section includes a perineal cutout. A patient grounding/potential equalization post is located at the bottom of both sides of the seat section. The back and seat sections are electro-hydraulically positioned using hydraulic cylinders. The headrest and leg sections are positioned using manual, spring-loaded ratchet mechanisms. Two hook fastener tape strips on the longitudinal sides of the tabletop sections permit instant application and removal of 2.5" (63.5 mm) thick mattress pads. Stainless-steel side rails extend the full length of the table.

Head Section: Attached to the back section for NORMAL patient orientation, or can be attached to the seat section for REVERSE patient orientation. The head section can be raised 0-90° or lowered 0-90° from horizontal, and locked in 15° increments. The spring-loaded handle is located under the outer end of the section for easy access.

Detachable Leg Section: Attached to the seat section for NORMAL patient orientation, or can be attached to the back section for REVERSE patient orientation. The leg section can be raised 0-30° or lowered 0-90° from the horizontal position, and locked in at 10° increments in between.

Kidney Elevator: Located at the seat end of the back section, and is manually raised and lowered with a ratchet that flips up into a stored position when not in use. The ratchet operates a dual rack-and-pinion mechanism through a jointed drive shaft. The kidney elevator is made of carbon fiber for increased x-ray translucency. Maximum height of the elevator is 4.7" (12 cm) above the tabletop.

Angle Sensors and Pressure/Limit Switches: Used to prevent sectional conflict, the sensors are also used in assisting the articulation of table positions.

Self-Diagnostic Service/Error Codes: Written into table firmware to provide fast and precise troubleshooting, so as to minimize OR downtime.

Red Emergency Stop Button: Located in the upper right-hand corner of the hand pendant, the red "off" button also functions as an easy-to-find emergency stop button. In case the table were to malfunction and move on its own, this button will immediately stop any table movement.

Hand Pendant Sleep Mode: In order to prevent unintentional pressing of the hand pendant buttons, the hand pendant will automatically go to sleep after 4 minutes of inactivity. To use again, simply press the "on" button.

Battery Conservation Mode: If the table is left unplugged for 10 days or longer, the hand pendant will cease to function, in order to prevent battery drainage. Simply plug the table into the AC mains and the hand pendant will function normally.

OPTIONS

Foot Controller: Available for any T800 Series Surgical Table, and used in conjunction with the hand pendant to provide the surgeon with Trendelenburg/reverse Trendelenburg positions, vertical motion, and side tilt control during surgical procedures. The foot controller includes three foot actuated rocker switches, a stainless-steel protective guard, and a signal cord extending to 9.8' (300 cm) in length.

TABLE OPERATION

The T800 Series Surgical Table is primarily operated using the hand pendant, which performs the following:

- Power ON/OFF touch pads. When switched on, a backlit display lights up all the touch pads, helpful during dark procedures such as endoscopic surgery.
- Power mode/condition indicator LEDs (AC line, battery, and low battery)
- Floor lock function and actuate touch pads
- Patient orientation function and actuate touch pads
- Position actuate touch pads
- Interlock and service status LEDs

The tabletop is articulated by pressing the desired position actuate touch pad on the hand control (or optional foot control pedals). The power must be turned on and the floor locks engaged (T800LSK, T800LS, T800LK, and T800L only) before positioning touch pads will function.

Tabletop position is adjusted as follows:

- Patient orientation is confirmed.

- On the hand pendant, the selected position actuate touch pad is pressed down, then released when the desired position has been reached.

The ranges of tabletop nominal movements are as follows:

- **Return-to-level** – The tabletop can be returned to level by pressing the LEVEL touch pad. The table will move until it reaches level or until the pad is released.
- **Trendelenburg** – 30° maximum from horizontal
- **Reverse Trendelenburg** – 30° maximum from horizontal
- **Height** – 26.8" (68 cm) minimum to 44" (112 cm) maximum
- **Side Tilt** – 20° maximum to right or left of horizontal
- **Back** – up 80° maximum (30° in REVERSE orientation) or down 50° maximum (30° in REVERSE orientation) from horizontal
- **Leg** – up 30° maximum or down 90° maximum from seat section, and open 90° to either left or right side
- **Slide** – 12.2" (31 cm) for T800LS(K) and T800S(K)
- **Flex** – back section down 25° maximum with seat section down 25° maximum from horizontal
- **Reflex** – back section up 30° maximum with seat section up 30° maximum from horizontal

Override System: Allows table operation in case of primary control malfunction. The table control system automatically actuates NORMAL patient orientation and shuts down primary control when override switches are engaged. Located on the base's front end, the valve position indicator is manually rotated to select the intended movement, then the table is articulated using adjacent toggle switches.

PREVENTIVE MAINTENANCE

AMTAI representatives can provide information regarding annual maintenance schedule and agreements for periodic inspections and adjustments to help ensure low-cost peak performance.

ENGINEER DATA

Approximate Net Weight of Tables:

T800LS: 431 lb (196 kg)	T800LSK: 442 lb (201 kg)
T800S: 416 lb (189 kg)	T800SK: 427 lb (194 kg)
T800L: 411 lb (187 kg)	T800LK: 422 lb (192 kg)
T800: 396 lb (180 kg)	T800K: 407 lb (185 kg)

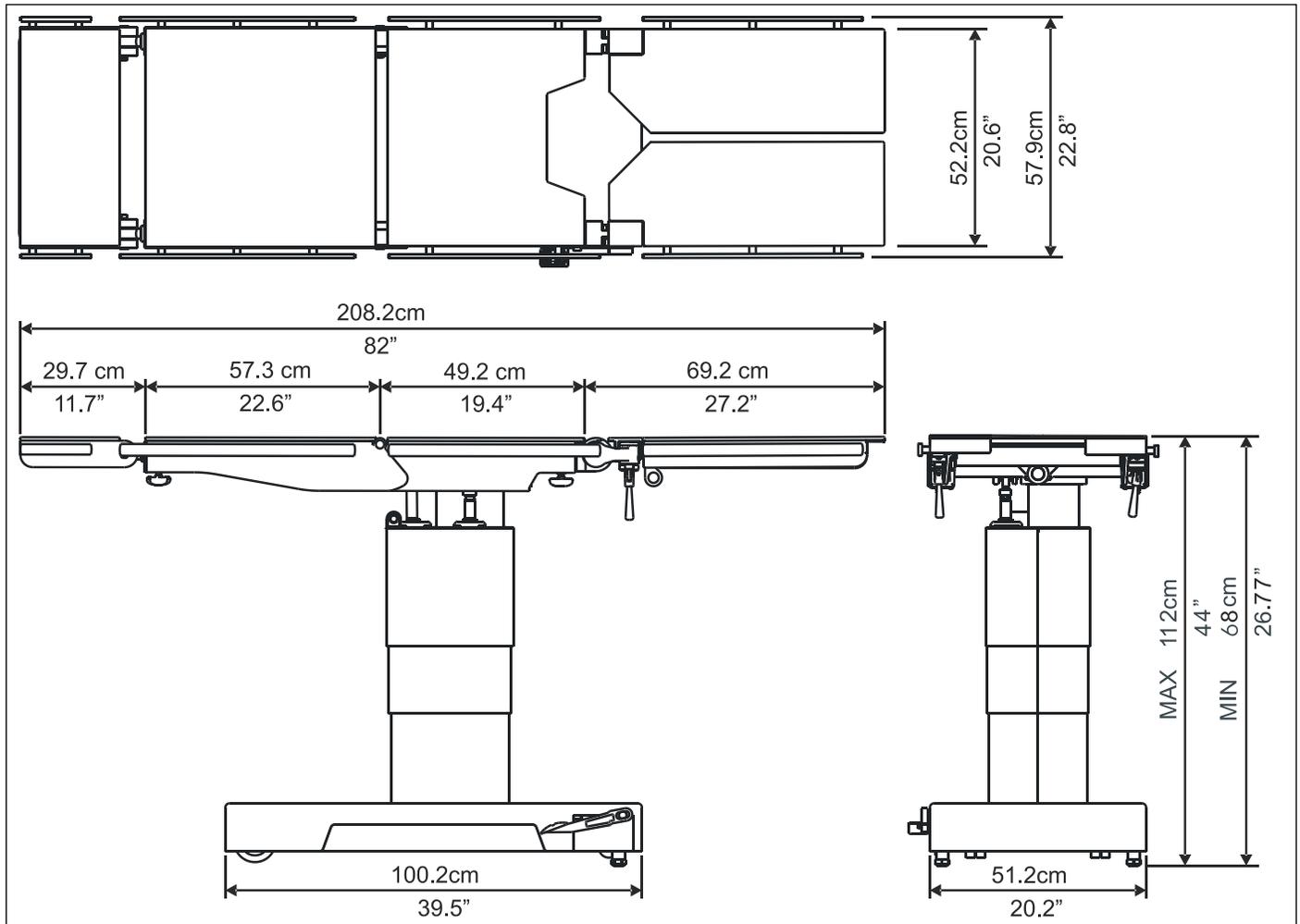
Image Amplification Coverage:

	Orientation	Slide	Head End	Leg End
T800 (L)(S)(K)	Normal	Stroke in	36.8"/93.5cm	31.1"/78.9cm
		Stroke out	24.3"/61.6cm	43.7"/110.9cm
	Reverse	Stroke in	13.7"/34.7cm	54.2"/137.7cm
		Stroke out	26.3"/66.7cm	41.6"/105.7cm
T800 (L)(K)	Normal	NA	34.8"/88.5cm	33.4"/84.9cm
	Reverse	NA	16"/40.7cm	52.2"/132.7cm

Note: 14.4 (36.6 cm) in width

NOTES

1. Separate ground wire to ground the patient or equalize potential is not furnished by AMTAI.
2. **WARNING – EXPLOSION HAZARD:** Table must not be used in the presence of flammable anesthetics.



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