

PHOENIX

Elevating Radiographic Table

Technical Manual

CE
1011



manufactured for

APELEM SAS

9 Avenue du canal Philippe Lamour

30660 Gallargues-le-Montueux

France



Control-X Medical Zrt. - Öv u. 29.

H-1141 Budapest, Hungary

21 pages

Document: #4877 / 05

© Control-X Medical



PLEASE READ THIS PAGE CAREFULLY

- This equipment must be installed, operated and maintained with the understanding that potential hazards exist for all who work with it unless necessary precautions are taken against injury and/or property damage from high voltage and/or X-ray radiation.
- The responsibility of the manufacturer is limited to providing adequate installation, operating and service instructions and information about possible hazards. The manufacturer shall not be liable for injury, loss of any kind, or non-compliance with the specifications, if it was a result of improper handling, installation, operating, servicing, repair or maintenance of this equipment.
- Only properly trained and qualified service personnel should perform installation, maintenance or repair. Failure to follow established safety procedures and practices could result in serious bodily injury or death and/or property damage. This equipment employs lethal voltages that may be present even if power is disconnected. Always make sure that the power is turned off and the energy storage capacitors are discharged before attempting any repair or other work on any circuits in this equipment.
- When this equipment is operated in conjunction with X-ray tubes and energized, X-rays will be produced. All persons working with X-rays must take necessary precautions to protect themselves against the effects of X-ray radiation. This equipment is designed to operate as a part of an X-ray system. To ensure safe-operating conditions only trained and qualified personnel shall operate the equipment, and only with all required beam-limiting devices and protective barriers in place.
- It is the user's responsibility to ensure that the government regulations are observed in the installation and operation of the unit.
- To ensure that this equipment performs according to the specifications it must be installed, operated and serviced according to the information provided in this document.
- To ensure the safe and efficient operation of the equipment, a periodic service inspection shall be performed annually, as it is recommended in the maintenance section of this manual.
- Additional application and safety information can be obtained from the manufacturer upon request.

TABLE OF CONTENTS

1	INTRODUCTION	4
1.1	Scope of the Technical Manual.....	4
1.2	Liability Notes	4
2	IMPORTANT SAFETY INFORMATION	5
2.1	Compatibility.....	6
3	SPECIFICATIONS	7
3.1	Specifications Data.....	8
3.2	Duty Cycle	9
3.3	Cleaning, Sterilization	9
3.4	Applicable Standards and Regulations.....	9
3.5	Explanation of Symbols.....	10
3.6	Operator Controls	10
3.7	Accessories.....	11
4	SHIPPING ARRANGEMENT	11
5	UNPACKING THE EQUIPMENT.....	12
6	INSTALLATION INSTRUCTIONS	13
6.1	Room Preparation.....	13
6.2	Table Installation.....	14
6.3	Bucky Installation.....	14
6.4	Grid Installation	14
6.5	Installation of the Table Top	15
6.6	Electrical Connection	15
6.7	Setting of the Table Functions	16
7	TROUBLE-SHOOTING.....	19
8	MAINTENANCE	20
8.1	Lubrication	20
8.2	Mechanical testing.....	20
9	SCHEMATICS AND BOARD LAYOUT	21

1 INTRODUCTION

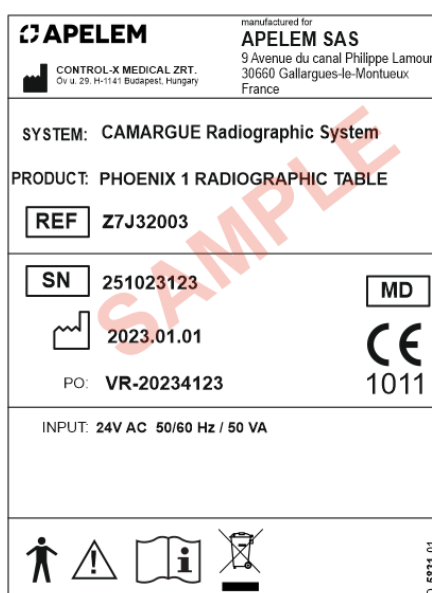
1.1 Scope of the Technical Manual

This Installation Manual is provided for service engineers. All service personnel must be trained and authorized by Control-X Medical to perform any procedure related to installation covered in this document. The service engineers have to possess a good understanding of general medical/X-ray equipment and the nature and potential dangers of high voltage and X-ray radiation.

The manual contains all the necessary information on installing the equipment. However, additional documentation may be needed from the manufacturer to perform a complete system installation.

The Technical Manual covers the following models:

P/N	Model #	Description
PHX1(CAMARGUE)	Phoenix1	Phoenix 1 elevating radiographic table, without table top (CAMARGUE)



Phoenix Table Product Label Sample

The product label is located on the side cover of the table, below the tabletop.

1.2 Liability Notes

The manual should be read thoroughly before installing the unit. Control-X Medical is not responsible for any damage or malfunction resulting from deviations from the instructions set forth in this manual. In addition, Control-X Medical is not responsible for any installation or service-related procedure performed by unauthorized person(s).

2 IMPORTANT SAFETY INFORMATION

The manual should be read thoroughly before installing and/or using the equipment. You must comply with the instruction of this manual in order to perform a safe and trouble-free installation. You must observe and comply with all the safety symbols and notices listed in this manual and located on the unit.



WARNING!

ELECTRICAL CONNECTIONS

- The power cable must be connected to the generator so the equipment shall be in operation when the generator is powered on.
- The connection between the generator and the X-ray tube must be made with shielded high-voltage cables including the grounding conductor. The high voltage cable must be UL certified for medical use.
- All interconnection cables and wires (including but not limited to the rotor cable and interlock cables) have to be UL certified (where applicable) and must comply with the NEC and local codes. The strain relief bushing and wiring methods of these cables and wires must comply with the NEC and local codes.
- The power cable must be connected to the generator so that the unit becomes operational only when the generator is powered on.
- The equipment shall not be operated without a proper protective ground connection.

Risks of Injury, Death, Electrical Shock and Fire

- The PHOENIX Elevating Table is part of a complete x-ray room. The equipment (X-ray tube, collimator assembly, high voltage cables) are directly connected to the generator, which involves high voltage (both AC and DC), high-energy components capable of causing serious injury or death. In some cases, the high voltage may be present even after disconnecting the generator from the mains. Extreme caution must be exercised during installation, servicing and operation.
- Do not use the equipment in the presence of flammable anesthetics as an explosion may occur.
- For continued protection against risk of fire, replace fuses only with same type and rating.
- Before cleaning the unit, the power shall be turned off and kept off until the cleaning material has evaporated.
- Avoid overloading the table on tabletop ends if top is moved in foot (or head) direction!

COMPATIBILITY

All accessories used with the equipment (including, but not limited to X-ray tubes and collimators) have to be CE certified / UL recognized for medical application.

2.1 Compatibility

The PHOENIX radiographic table is compatible with all the tube stands, manufactured (or distributed) by Control-X Medical. These models include all models of the TS99 tube stand family and ceiling tube mounts. It is also compatible with any other tube stand that has an indicator showing when the axis of the x-ray beam is perpendicular to the plane of the image receptor and proper indication of the SID within 2 percent. If you have any questions relating to the compatibility of this equipment with other non-listed products, please contact the manufacturer or its representative companies.

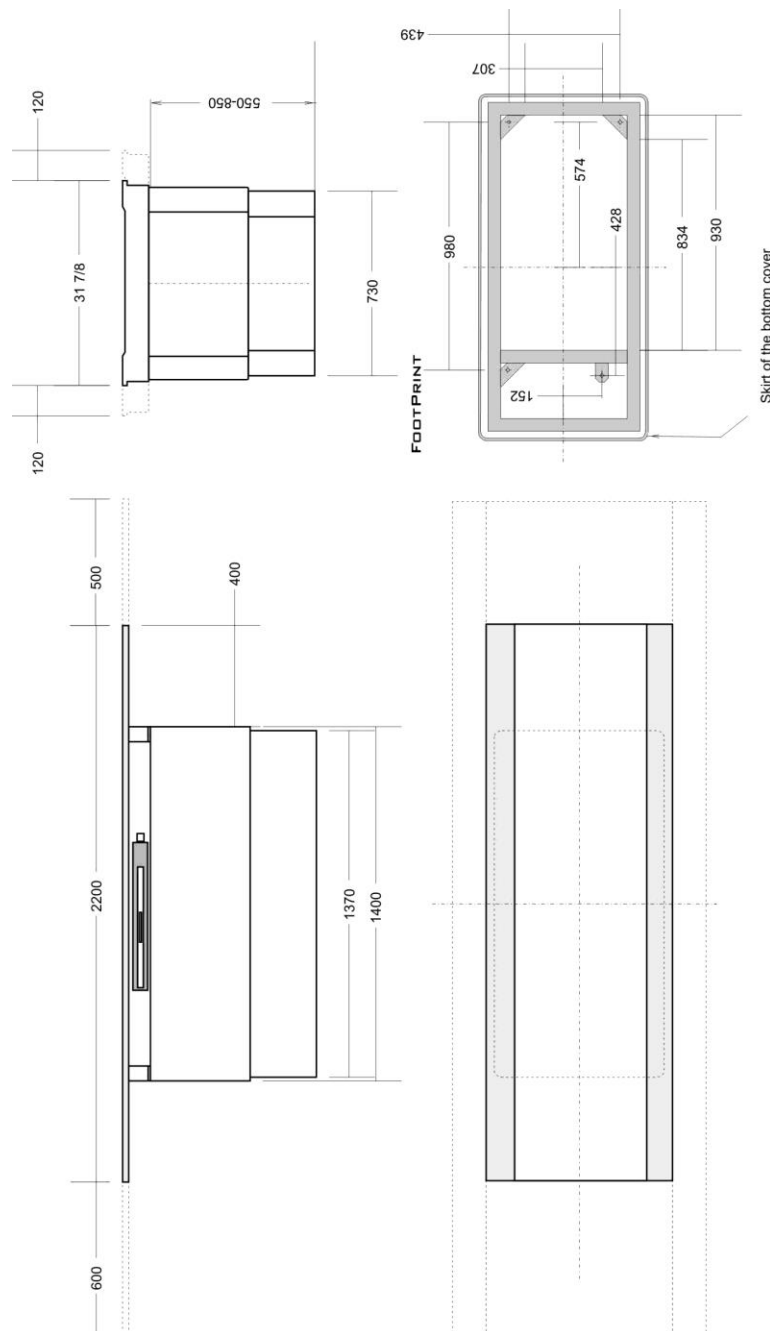


WARNING!

All accessories used with the tube stand (including, but not limited to X-ray tubes and collimators) have to be CE certified / UL recognized for medical application.


3 SPECIFICATIONS

The PHOENIX Elevating Radiographic Table is not a stand-alone device, it is used with other equipment as a supplementary unit. The table is designed to accommodate the patients during the radiological examination and its "elevating" feature enables it to position the patient during the examination as well as assisting with getting on and off of the equipment.



Phoenix Table Mechanical Dimensions and Floor Plan

3.1 Specifications Data

MECHANICAL DATA		[mm]	[inch]
Length of the table base		1400	55.1
Width of the table base		730	28.7
Length of the tabletop	Medical, normal	2200	86.6
	Medical, short	1854	73
	Veterinary, long	2200	86.6
	Veterinary, normal	1854	73
	Veterinary, short	1524	60
Width of the tabletop		810	31.9
Minimum height of the tabletop		550	21.6
Operational height of the tabletop		750	29.5
Maximum height of the tabletop	Normal vesion	850	33.5
	H version	900	35.4
Maximum weight rating on the table ⁽¹⁾		250 kg (550 lbs.) ⁽¹⁾	
MOVEMENTS		[mm]	[inch]
Vertical movement	Normal version	300	11.8"
	H version	350	13.8"
Longitudinal move- ment for each tab- le-top lengths	2200 (86.6")	500/600 ⁽²⁾	19.7" / 23.6" ⁽²⁾
	1854 (73")	327/427	12.9"/16.8"
	1524 (60")	162/262	6.4"/10.3"
Teb-top transversal movement	Normal version	±120	±4.75"
	H version	±130	±5.12"
POWER REQUIREMENTS			
Voltage	230 VAC ±10% (opt. 117 VAC) ⁽³⁾		
Cycles	50 Hz / 60 Hz		
Current input	Standby: 150 mA when elevating without load: 2.5 A (5A for 117VAC input)		
ENVIRONMENTAL DATA			
Storage temperature range		-20 °C to 55 °C (-4 to 131°F)	
Ambient temperature		0 to +40°C (32 to 104°F)	
Max. relative humidity (operating)		80%	
Max. relative humidity (storage)		90%	
Environment protection class		IP20	
PRODUCT CLASSIFICATION			
Protection against electric shock		 Type B Equipment	

⁽¹⁾ Weight rated at evenly distributed weight on tabletop in center position of the top.

⁽²⁾ Longitudinal movement in foot/head direction

- (3) The X-ray generator provides the voltage required for the operation of the PHOENIX Elevating Radiographic Table. The operating voltage shall be specified at the time of ordering.

3.2 Duty Cycle

The PHOENIX Elevating Radiographic Table is not designed to operate in continuous mode. The operating duty cycle is less than 10%. To prevent damage to the equipment and to reduce risk of fire, the table can only be moved for a **maximum of 30 seconds every 5 minutes**. (There must be a 4.5 minute pause after each 30 second movement.) The operating cycle is related to the elevating functions of the table. The brakes operate in continuous mode.

At typical installations, the table is electrically connected to the generator, so when the generator is turned off, the table will be inoperable.

3.3 Cleaning, Sterilization

The PHOENIX table does not require special cleaning or sterilization. However it is recommended to clean the tabletop at regular intervals out of hygienic considerations. For cleaning purposes use soapy water or equivalent cleaning solution. Apply cleaning solution with a paper towel and wipe down the surface. If for some reason the tabletop requires sterilization, rubbing alcohol may be used.

At least once a month external parts should be wiped to remove foreign material that may have accumulated.









To protect the finish, polish the equipment with pure liquid paste wax. Do not use wax containing a cleaning substance. Polish all enameled surfaces.

3.4 Applicable Standards and Regulations

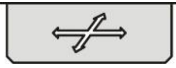



- | | | |
|----|----------------|--|
| 1. | MDD 93/42/EEC | Medical Device Directive |
| 2. | IEC 60601-1 | Medical electrical equipment -
Part 1: General requirements for safety |
| 3. | IEC 60601-1-1 | Medical electrical equipment -
Part 1-1: General requirements for safety - Collateral standard:
Safety requirements for medical electrical systems |
| 4. | IEC 60601-1-2 | Medical electrical equipment -
Part 1-2: General requirements for safety - Collateral standard:
Electromagnetic compatibility - Requirements and tests |
| 6. | IEC 60601-2-32 | Medical electrical equipment -
Part 2-7: Particular requirements of associated equipment of X-ray
equipment |
| 7. | ISO 13485 | Medical devices - Quality management systems - Requirements for
regulatory purposes |

3.5 Explanation of Symbols

The following is a list of symbols used in the manuals and on the product label (the symbols conform to standards EN 60601-1 and EN 15223-1):

	Date of manufacture, located on the product label.
	Name and address of manufacturer, located on the product label.
	Catalogue number of product - located on the product label.
	Serial Number of product - located on the product label.
	Single-phase AC main supply - located on the product label.
	WARNING! Refer to manual for additional safety information - located on the product label.
	Type B equipment - located on the product label.
	Protective earth ground – located inside the equipment at the main grounding terminal.

3.6 Operator Controls

Symbol	Function
	Foot Pedal for tabletop longitudinal and transversal disposition
	Foot Pedal for upward table motion
	Foot Pedal for downward table motion
	Emergency Stop Switch Push it to fully switch off the table. Turn the knob to the right to switch the table back again.

3.7 Accessories

Model / Type	Standard or Optional	Description
2200-HG	Standard	Patient handgrip, only for medical tables
13140 / CXB-17*	Optional	Bucky**
13310 / CX-GC-17 BS*	Optional	Grid cabinet**
10310M17*	Optional	Short (34"-44") grid
13520 / CXT-17*	Standard	Cassette tray
17100 / A-3A*	Optional	AEC detector

* Or compatible type

** Phoenix tables are equipped with Bucky's OR grid cabinets

4 SHIPPING ARRANGEMENT

The PHOENIX Elevating Radiographic Table is packaged in 2 crates for shipping and is not completely assembled when shipped.

The transporting crates contain the following parts, assemblies

Crate 1

- Radiographic table (If the table was ordered as a component of a system, it is completed with Bucky, tray and optional AEC chamber. The grid is packed in the general accessory box.)
- Accessories, manuals

Crate 2

- Tabletop

Table Crate		
Dimensions 880 x 1530 x 840 (34.6" x 60.25" x 33") Gross weight: 230 kg (510 lbs)		
QTY	Part/dwg #	Description
1	PHOENIX / VPHX Table	Phoenix / VPHX Table
1	2200-HG	Patient handgrip (only for PHOENIX tables)
1	Bucky or Grid Cabinet	OPTIONAL – Built-in Bucky or Grid Cabinet with grid and optional AEC detector
Tabletop Crate		
Dimensions:		
2280 x 900 x 70 (89.75" x 35.4" x 2.75") Gross weight: 53 kg (118 lbs) – 2200 mm		
1930 x 900 x 70 (76" x 35.4" x 2.75") Gross weight: 46 kg (102 lbs) – 1850 mm		
1610 x 850 x 70 (63.4" x 33.5" x 2.75") Gross weight: 36 kg (80 lbs) – 1530 mm		
QTY	Part/dwg #	Description
1	2200-M-xxxx-17 or 2730-Vxx-05	Table top (1530, 1850 or 2200 mm)

5 UNPACKING THE EQUIPMENT

Examine all the crates carefully at the time of the delivery. If damage is apparent have the delivering driver write, "damaged shipment" on all copies of the freight bill and sign it. In case that obvious damage is discovered, the Freight Company should be notified immediately and asked to inspect the damage. Rules may vary from country to country for the timeframe of accepting damage claims, so please check local regulations concerning this matter.

Open the crates and boxes carefully. Do not dispose of them until you have located all parts and the equipment is fully assembled.

To prevent any damage to the equipment, replace the lid of the crate temporarily and do not proceed opening the crate further until the room preparation is finished. Prepare the room according to the site planning kit.

Unpack the unit in the following sequence:

- Remove the foil covering from the table and from the tabletop
- Clean any grease or dust, accumulated during transportation from the unit,
- Remove the accessories from the crate

Arrange the cleaned unit to protect it from any damage and to not obstruct the installation work.




CAUTION!

The Phoenix Table is a heavy object. Lift and move with help.

6 INSTALLATION INSTRUCTIONS

6.1 Room Preparation

The table shall be mounted on a concrete floor with four bolts. Please use shims if needed for proper alignment.



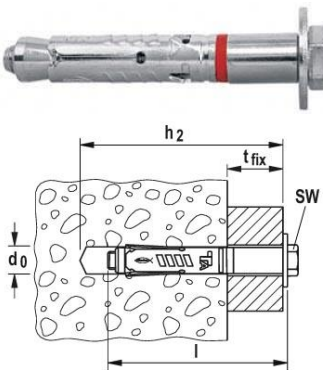
The floor of the installation site should be prepared to have load strength of a minimum 550 lb. at each anchoring point, and the concrete strength should comply with local codes.

ATTENTION!

The Phoenix table requires at least C20/25 grade reinforced concrete floor according to EN 206-1:

Concrete grade	Group	Compression strength of D=150mm / h=300mm object	Compression strength of 150mm cube
C20/25	Ordinary concrete	20 N/mm ²	25 N/mm ²

When anchoring the equipment, the following anchoring or equivalent shall be used (**anchors are not included and types used should be selected according to actual floor quality**):

Anchor type	Bore depth (h ₂)	Bore diameter (d ₀)
	4 x Fischer TA M8T/25 S M8	Min. 95 mm (3 3/4 ") Ø12 mm (15/32")

If the radiographic system includes a tube stand, that should be installed first. The position of the tube stand will determine the location of the table. Please also refer to the drawings of the manuals.

Since the Phoenix Table does not have a visible Power ON indication, the main wall switch of the

room shall be equipped with a green Power ON indicator light. The Phoenix Table is ON whenever the main wall switch green indicator is ON.

6.2 Table Installation

- Set and align the table to the center of the X-ray beam (collimator light).
- Mark the positions of the table mounting holes.
- Move the table from its final location and free the area for drilling the mounting holes.
- Drill 4 holes of appropriate diameter for the 1/2" (12-mm) anchors.
- Install the anchors. (Anchors are not part of the consignment.)
- Reposition the table and anchor it with the supplied bolts, use shims if needed for appropriate leveling.



ATTENTION!

If the dimensions of the room prevent the installation of the tabletop from the head or foot end after the table is anchored proceed with paragraphs 6.3, 6.4, 6.5, and return to 6.2 / 7) afterwards.

- Check the level of the table in longitudinal and cross table directions. If adjustment is necessary, place the necessary amount of "U" shape shim plates under the appropriate corner of the table.
- Leveling reference points:
 - Cross-table direction: ball bearings located in the two ends of the table's transversal frame
 - Longitudinal direction: plane of the tabletop
- that the mounting screws are holding it securely on the carriage. Remove If the table comes with the Bucky device already installed, double check the holding straps from the carriage and make sure it runs smoothly throughout its travel. (If the table does not have a Bucky device installed, proceed with the following instruction.)

6.3 Bucky Installation

(If Bucky and the tray has been already installed in the table, disregard this section)

The holding brackets and the switch assembly are factory mounted on the holding carriage and electrically connected according to SC-25-02 schematic.

- Position the Bucky on the carriage. The cassette tray opening should face the front of the table.
- Remove the cover of the motor compartment.
- Fix the Bucky from the side using 4 bolts. Connect the Bucky switch cable as per the provided drawing.

6.4 Grid Installation

- Detach the spring from the frame.
- Remove the frame from the Bucky.
- Disconnect two of the grid-mounting brackets on one side and loosen the other two.

- Locate the tube-side mark on the grid, place it properly into the frame, and secure it against movement.
- Restore the frame, spring and the compartment cover.

6.5 Installation of the Table Top

- Depending upon the intended mounting end, remove the appropriate end stops.
- Slide the tabletop onto the transversal frame. The longitudinal tabletop brakes may stop the sliding process.
- Carefully press the brakes down against the springs until you are able to push the tabletop into position. (Please check Section 6.7.4 for cleaning the brakes before installation).
- Reattach the table stops.

6.6 Electrical Connection



ATTENTION!

Do not connect the table to the power supply unless the red security (shipping) bracket is removed.

- Connect one end of the power cord to the terminal of the electronic board P1, 6-7. The table can be delivered with 117 V or 230 V motor. In all cases the configuration of the TR1 transformer (jumpers) is in compliance with the motor used.



ATTENTION!

Please check the voltage configuration before connecting the table to the power line.

- All wiring inside the table has been prepared to accept the installation of the Bucky device. A 10-conductor cable is delivered with the table, the bucky device, the brake switch and the brake has to be connected as per drawing.
- Connect the Bucky cable to the P2 terminal. Refer to the connection chart displayed on the drawing and in the IBC-430 (CXB-17) manual for the Bucky. If using any other Bucky device, please refer to the corresponding manual!



ATTENTION!

Please make sure the safety table switch (next to the printed circuit board) is in "ON" position. If this switch is in the "OFF" position, no electrical functions will be possible.

6.7 Setting of the Table Functions

6.7.1 "STOP- time" Duration Adjustment

The PHOENIX elevating table features two circuits where the duration of the vertical movement STOP time and the transversal movement of the tabletop are adjustable.

Radiographic Operating Height

While raising or lowering the table, it automatically stops for approximately 1.5 second when the tabletop reached 745 mm [29.3"] from the floor (radiographic operating height). To adjust required time delay, configure J4 or J5 jumper blocks according to the following chart

J4	J5	Time [sec]
OFF	OFF	0
ON	OFF	0.5
OFF	ON	1.0
ON	ON	1.5

Tabletop Transversal Center-Position

While moving the tabletop in the transversal direction, it automatically stops for approximately 1.5 second in center position. To adjust required the duration of this time, configure J6 or J7 jumper blocks according to the following chart.

J6	J7	Time [sec]
OFF	OFF	0
ON	OFF	0.5
OFF	ON	1.0
ON	ON	1.5

6.7.2 Safety Feature Settings

The Phoenix elevating table is equipped with several safety features that prevent the undesired operation of the table (i.e. patients getting on or off the table and involuntarily stepping on the foot pedal) and avoid accident.

Vertical Movement

The table vertical movement cannot be started unless the operator initiates it either by pressing the Bucky release switch while stepping on the foot pedal or double tapping on the foot pedal. To activate the preferred feature install jumper on either J2 or J8. If you want to disable this feature then both jumpers shall be installed. The double tapping feature has been already set up at the factory.



ATTENTION!

Despite both safety features can be disabled we do not recommend to install both jumpers.

Tabletop Brake

The tabletop brake-release electronics has a programmable double tapping feature, similar to the vertical movement safety circuitry. If J9 jumper is removed this feature is activated for the transversal movement. Installing J3 jumper this feature is applied for both longitudinal and transversal tabletop motion as well.

Crash Guard

To prevent damage to the table while lowering accidentally on any object, a standard crash guard is installed. This guard stops the down motion when the tabletop is pushed upward.

The switches are calibrated by factory. If recalibration is needed the following steps are shall be taken.

1. In order to prevent the possible collisions between the tabletop and the crash guard, it has to be set up properly. In the first step, the actuator lever (1) has to be levelled using a set screw (2). The tip of the actuator lever has to be just slightly lower than the topmost point of the load-bearing (3).

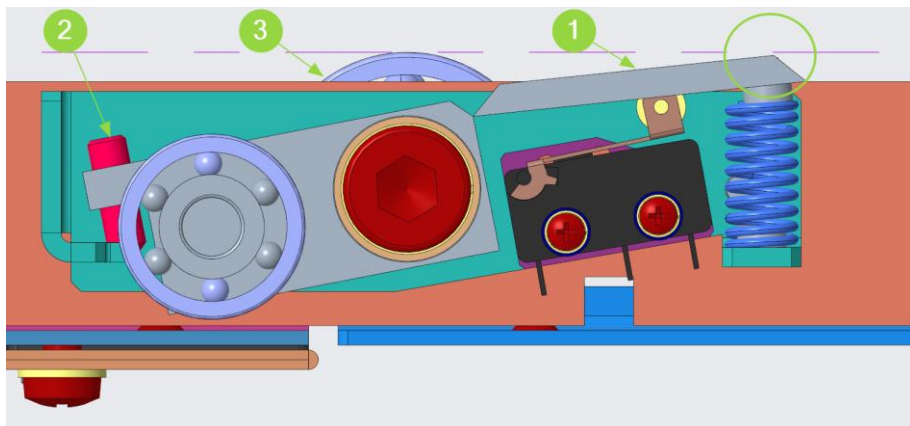


Fig.1. – Correct setup

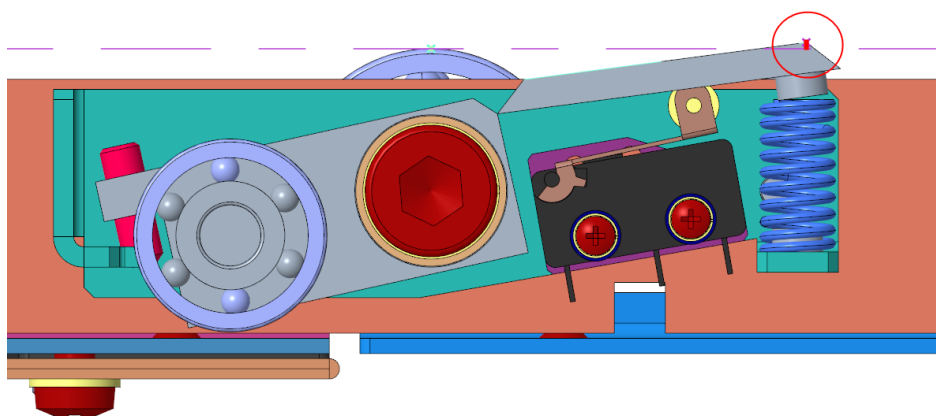


Fig. 2. – Incorrect setup

2. This is followed by the switching point adjustment. After loosen the screws (5) the micro-switch can be translated along the red arrow and re-tightened in the desired position. In the optimal setup the actuator lever travels 1.5 -2 mm to the switching point.

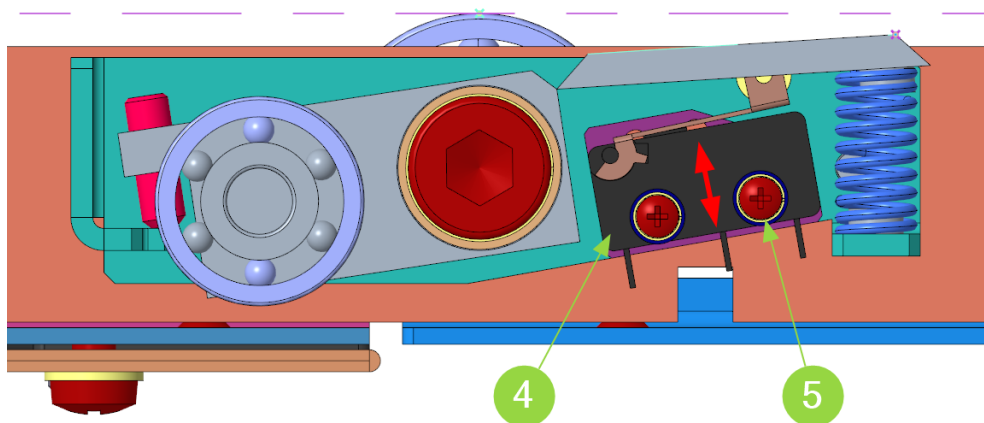


Fig. 3. – Positioning of the microswitch

6.7.3 Position Switches

The table position switches are adjusted in the factory. If you need to make an adjustment on these switches, they are located in the front left area of the table. Please remove the front covers to have access to the switches. Loosening the bolts on the holding bracket the switches can be adjusted in either direction. Once you finished the required adjustment, tighten the bolts and restore the covers.

6.7.4 Tabletop Brakes

The function of the brakes is to hold the tabletop in a fixed position while the releasing foot pedal is not activated. If the tabletop tends to move in any directions while the brakes are activated, please check the surface of the brakes and the rails system facing the brakes. The brakes and rails are treated before shipment to avoid oxidation on the surface, so this protecting layer may reduce effectiveness of the brakes. If needed brakes and rails must be cleaned. Remove all protecting grease or oil from the surface to have best performance. To get access to the cross-table brakes, remove the side cover on both sides (inside the table) of the transverse travel bearing assembly, clean the brakes, and surface as necessary. The longitudinal brakes are underneath the tabletop, you need to slide the top in one and the other direction (remove the stopping end-pieces first) to have access to the brakes.

7 TROUBLE-SHOOTING

The table is not functional

1. Check the incoming power line
2. Check S1 Emergency (On/Off) Switch
3. Check the incoming line voltage and setting of the TR1 transformer (117/230 V)
4. Check F1, F2 and F3 fuses on the printed circuit board

No "UP" or "DOWN" travel

1. Make sure the foot pedal is actuated simultaneously with the Bucky release switch. If OK, interlock jumper is set ON. (Safety feature is ON). To disable it, remove J2.
2. Check F1, F2 and F3 fuses on printed circuit board
3. Check the operation of the S6 and S7 pedal switches.
4. Check the operation of S2, S3, S4 and S5 the limit switches and the interconnecting cables
5. Check outgoing voltage to M1 motor on P5 terminal
6. Check the operation of K1 and K2 relays on the PC board
7. Check C4 motor capacitor
8. If the motor rotates, check the linear actuator

No Four-way table-top release

1. Check the operation of the S8 and S9 brake release switches.
2. Check D17 LED indicating the presents of the 24 VDC.
3. Check the operation of K3 and K4 relays

No longitudinal travel brake release

1. Check the operation of the S8 and S9 brake release switches.
2. Check D17 LED indicating the presents of the 24 VDC.
3. Check D17 LED indicating the presents of the 24 VDC.

No longitudinal travel brake release

Check Jumper J3 and put on jumper

Center lock on transverse travel too long (short)

Remove or add jumpers on positions J6 and J7

745 mm (29.3") stop at radiographic position too long (short)

Remove or add jumpers on positions J4 and J5

8 MAINTENANCE

The PHOENIX Elevating Radiographic Table requires regular maintenance work.



WARNING!

Repairs shall be carried out by a trained and qualified technician, or in a service workshop, or in the manufacturing factory.

In order to keep the equipment in good operating condition it is necessary to perform regular inspections.



WARNING!

If the equipment is used frequently, an inspection should be performed every month. In case the device is used only occasionally, random maintenance inspection shall be carried out at a 3-6 months interval.

The objective of this inspection is to reveal and eliminate any hidden malfunctions. The inspection shall include the following:

Check all brakes and moving parts every 6 months. Movements must be smooth and without any excessive noise. Brakes must hold the tabletop firmly in every position. When released they must not obstruct movement.

8.1 Lubrication

Bearings and guiding rods should always be well lubricated to prevent premature wear-out. Bearings operating without dust covers should be inspected regularly and lubricated with grease when necessary.

Check the guiding rods of the table elevation, cross movement and the side rails of the tabletop. If dust or other substances or contaminate there are present, clean them and apply a thin layer of grease. Lubricate all moving or rotating elements.



WARNING!

Only acid free grease and oil may be used for treatment.

8.2 Mechanical testing

Check the 4 anchoring bolts for proper tightness as well as all assembling screws and nuts. If necessary tighten loose connections.

Check the proper position of the ball and guide bearings. If necessary perform adjustment to the eccentric axles. Check end stops of the tabletop and Bucky device.

9 SCHEMATICS AND BOARD LAYOUT

See D-2064 - PHCTR1 PC Board Technical Reference

REVISION HISTORY

Revision	Date	Description of Changes	Modified Page(s)
01	2020.12.10	Original release	Whole document
02	2021.05.05	APELEM SAS address changed, modified label sample, fix tpyos	Several pages
03	2021.05.31	Formatting changes	Several pages
04	2023.03.16	Change business structure + update la- bel,	1 st , 1.1 section
05	2023.05.17	Add crash guard setup procedure to 6.7.2	19