Owandy-RX PRO

SERVICE MANUAL

Owandy RADIOLOGY

DETAILS OF THE DOCUMENT

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1. MANUFACTURER:

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1. GENERAL WARNING

WARNING - CAUTION

THIS IS NOT A STAND ALONE MANUAL! READ AND CONSULT CAREFULLY ALL THE OTHER OFFICIAL ACCOMPANYING DOCUMENTS OF THE X-MIND UNITY BEFORE SERVICING ACTIONS.
WHEN YOU ARE READING THIS MANUAL AND EACH TIME DURING SERVICING ACTIVITIES, IT IS MANDATORY TO REFER, TO THE PRECAUTIONS AND INSTRUCTIONS CONTAINED IN THE OTHER OFFICIAL ACCOMPANYING DOCUMENTS OF THE UNIT (INSTALLATION&MAINTENANCE MANUAL, OPERATOR'S MANUAL, OFFICIAL TECHNICAL NOTES OF THE MANUFACTURER, ETC.)

WARNING

ESD WARNING!
Pay attention when managing PCB boards! Permanent damage may occur on devices subjected to high energy electrostatic discharges. Therefore, proper ESD precautions are recommended to avoid performance degradation or loss of functionality.
All PCB boards are made up by electronic components sensitive to electrostatic discharge (ESD).
Permanent damage may occur on devices subjected to high energy electrostatic

discharges. Therefore, proper ESD precautions are recommended to avoid performance degradation or loss of functionality.

⚠ CAUTION

The construction of the room where device is installed must ensure adequate shielding from ionizing radiation (if requested from your country regulations and laws) , and operators' position must meet the safety requirements

These requirements vary state by state and it's the responsibility of the RESPONSIBLE ORGANIZATION comply with local radiation safety requirements.

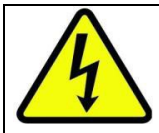
The electrical system of the facility is provided of an adequate ground system complies with IEC - US National Electrical Code and CEI regulations or with Local Laws and regulations.

For Italy, the electrical system must be executed in workmanlike way and complies with CEI 64-8 included all collateral and specific regulations concerning medical locations.

⚠ CAUTION

The periodical maintenance controls (at least each 12 - twelve - months) are mandatory to assure the safety and the correct functioning of the Owandy-RX PRO during time. The RESPONSIBLE ORGANIZATION of the device is obliged to set up all the necessary procedures to assure the correct execution of the periodic maintenance schedule of the device.

! WARNING - ⚠ CAUTION



ELECTRICAL SHOCK HAZARD!

For your safety, before begin whatever maintenance or service operation ALWAYS remember to shut down the main power of the device and main supply breaker switch (If installed).

CAUTION DOUBLE POLE/NEUTRAL FUSING

⚠ CAUTION

RADIATION CAUTION!

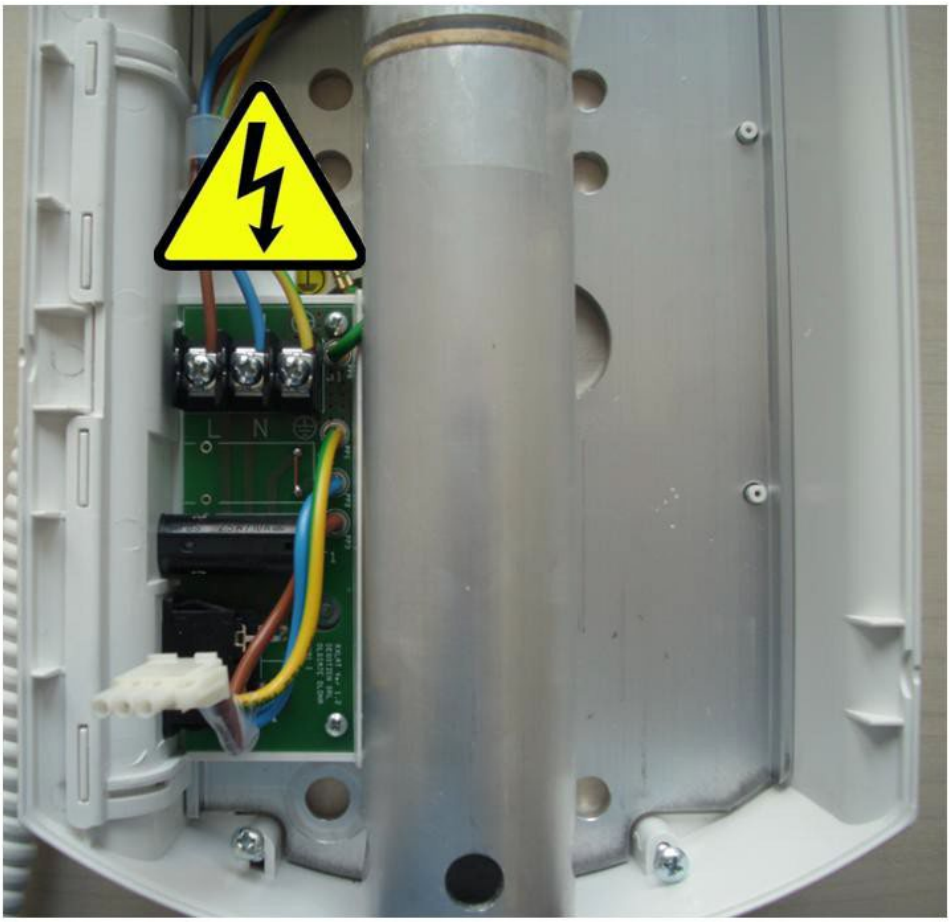
During some operations, X-rays will be emitted. Take precautions in order to be protected from X-rays emission.

! WARNING - ⚠ CAUTION

ELECTRICAL SHOCK HAZARD!

For your safety, before begin whatever service operation ALWAYS remember to shut down the main power and totally disconnect the unit from any active powered device.

IMPORTANT! It is necessary to wait at least another 2 minutes after detachment from the mains before beginning opearate!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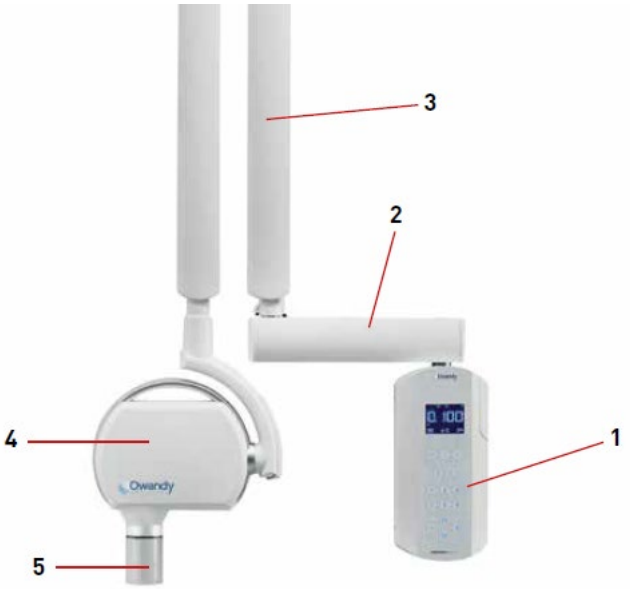
2. PRELIMINARY INFORMATION

2.1. SYSTEM COMPONENTS

The Owandy-RX PRO radiographic system consists of:



1. Owandy-RX PRO TIMER and WALL PLATE
2. HORIZONTAL BRACKET
3. PANTOGRAPH TYPE ARM (SCISSOR)
4. TUBEHEAD (X-Ray Source)
5. COLLIMATOR CONE
<u>OTHER OPTIONALS</u>
□ **REMOTE EXPOSURE SWITCH**
□ **Owandy-RX PRO LIGHT** (Rx signalling lamp for external use)

3. ADVANCED ERRORS LIST

The alarm codes are composed with the “E” letter followed by a number that identifies the unit (Control Unit=“1” or Tube-head=“2”) plus a three-digit number.
Here below this chart provides enough information in order to check or replace possible faulty components.
Numbers and letters correspond to a list of operations and replacement provided in the following chapters.
The sequence of operations should be respected in order to be more efficient during the checks.
Do not replace parts not indicated in the list and for further details about available spare parts, please check spare parts document.

Code	Messag e	Sequence of checks or replacements (Refer to the following chapters for instructions)	Possible faulty component
-	System doesn’t turn on	**1 - A - B**	Fuse, RXCC, RXCD
E101	memory fail	**2 - B**	RXCD
E102	memory fail	**2 - B**	RXCD
E103	memory fail	**2 - B**	RXCD
E104	memory fail	**2 - B**	RXCD
E105	no response from generator	**3 - 4 - A - E - B**	RXCC, Tubehead
E106	wrong response from generator	**2**	-
E107	emission start fail	**3 - 4 - A - E - B**	RXCC, RXCD, Tubehead
E108	emission too long	**2**	-
E109	button released beforehand	**6 - B**	Exp. switch (Local or remote) RXINT
E110	wrong use of button	**6 - C - A - B**	Exp. switch (Lcoal or remote) RXINT
E111	keyboard pressed at boot	**2 - B**	RXCD
E112	button pushed at boot	**6 - C - A - B**	RXCD
E113	wrong use of keyboard	**2 - B**	RXCD
E114	button release timeout	**6 - C - A - B**	Exp. switch (Local or remote) RXINT, RXCC,
E115	wrong parameters in generator	**2**	-
E116	generator reset during emission	**2 - E**	Tubehead
E117	calibration start fail	**3 - 4 - A - E - B**	RXCC, Tubehead
E118	calibration too long	**2**	-
E119	button pushed during cooling	**6 - C - A - B**	Exp. switch (Local or remote) RXINT, RXCC, RXCD

Code	Messag e	Sequence of checks or replacements (Refer to the following chapters for instructions)	Possible faulty component
E120	cooling time disabled	**2**	-
E121	button pushed during stand-by	**6 - C - A - B**	Exp. switch (Local or remote) RXINT, RXCC,
E122	memory fail	**2 - B**	RXCD
E123	power relay fail	**2 - A - B**	RXCC, RXCD
E124	power relay fail	**2 - A - B**	RXCC, RXCD
E125	power board fail	**2 - A - B**	RXCC, RXCD
E126	power board fail	**2 - A - B**	RXCC, RXCD
E127	power board fail	**2 - A - B**	RXCC, RXCD
E128	power board fail	**3 - 4 - A - E - B**	RXCC, Tubehead, RXCD
E201	generator memory	**2 - E**	Tubehead
E202	generator memory	**2 - E**	Tubehead
E203	generator memory	**2 - E**	Tubehead
E204	generator memory	**2 - E**	Tubehead
E205	generator not calibrated	**8**	-
E206	tube voltage too low	**8 - E**	Tubehead
E207	tube voltage too high	**8 - E**	Tubehead
E208	electrical discharge on hv	**8 - E**	Tubehead
E209	tube current too low	**8 - E**	Tubehead
E210	tube current too high	**8 - E**	Tubehead
E211	filament voltage too low	**E**	Tubehead
E212	filament voltage too high	**E**	Tubehead
E213	tube unit not connected	**E**	Tubehead
E214	button released beforehand	**3 - 4 - A - E - B**	RXCC, Tubehead, RXCD
E215	generator internal power supply	**3 - 4 - A - E - B**	Tubehead, RXCC
E216	generator internal power supply	**E**	Tubehead
E217	generator mode	**3 - 4 - A - E - B**	RXCC, Tubehead, RXCD
E218	safe circuit fail	**E**	Tubehead
E219	tube current too low	**8 - E**	Tubehead
E220	tube current too high	**8 - E**	Tubehead
E221	no tube voltage feedback	**3 - 4 - A - E - B**	Tubehead, RXCC

Code	Messag e	Sequence of checks or replacements (Refer to the following chapters for instructions)	Possible faulty component
E223	tube unit temperature too high	**2 - E**	Tubehead
E224	tube unit temperature too low	**2 - E**	Tubehead
E225	tube unit temp. sensor fail	**2 - E**	Tubehead
E226	tube unit temp. sensor fail	**2 - E**	Tubehead
E227	Voltage reference fail	**2 - E**	Tubehead
E228	Voltage reference fail	**2 – E**	Tubehead
E229	Tube filament fail	**2 – E**	Tubehead
E231*	*	****	*
E232	System error	**2 – E**	Tubehead

- * ERROR CODE NOT PROVIDED : empty error code, no error with this code.

4. TROUBLESHOOTING - CHECKS AND REPLACEMENTS CHART

LIST OF CHECKS	LIST OF REPLACEMENTS
1. Check fuse and mains	A. Replace RXCC Board
2. Restart the system	B. Replace RXCD Board
3. Check Cable 3.1	C. Replace RXINT Board
4. Check Cable 3.2	D. Replace RXLAT Board
5. Check Cable 4	E. Replace whole tubehead
7. Check cable 8	
8. Perform tube calibrations	

4.1 Diagnostics

The alarm codes are made with the “E” letter followed by a number that identifies the unit (main unit “1” or inverter “2”) plus a two-digit number.

Code	Message	Description	Resettable
E101	memory fail	EEPROM fault	NO
E102	memory fail	I_2C bus EEPROM fault	NO
E103	memory fail	EEPROM DMA readings fault	NO
E104	memory fail	EEPROM DMA writings fault	NO
E105	no response from generator	Lost communication between inverter and generator	NO
E106	wrong response from generator	NAK response from inverter	YES
E107	emission start fail		YES
E108	emission too long		YES
E109	button released beforehand	Exposure button released too early during the exposure	YES
E110	wrong use of button	Exposure button pressed when not ready/armed	YES
E111	keyboard pressed at boot	Keyboard pressed during boot time	NO
E112	button pushed at boot	Exposure button pressed during boot time	NO
E113	wrong use of keyboard	Keys pressed during an exposure	YES
E114	button release timeout	Exposure button released beforehand after an exposure	YES
E115	wrong parameters in generator	Exposure parameters (kV, mA, exposure time, mode) does not match with the ones set in the control box	YES
E116	generator reset during emission	inverter has been reset during an exposure	YES

Code	Message	Description	Resettable
E117	calibration start fail	Calibration	YES
E118	calibration too long	Calibration time too long	YES
E119	button pushed during cooling	Exposure button pressed during the tube cooling phase	YES
E120	cooling time disabled	Tube cooling phase disabled	YES
E121	button pushed during stand-by	Exposure button pressed beforehand during stand-by	YES
E122	memory fail	Parameters out of range	NO
E123	power relay fail	power relay failure (relay OFF)	NO
E124	power relay fail	power relay failure (relay ON)	NO
E125	power board fail	power board failure	NO
E126	power board fail	power board failure	NO
E127	power board fail	power board failure	NO
E128	power board fail	power board failure	NO
E201	generator memory	Inverter EEPROM error	NO
E202	generator memory	Inverter I_2C EEPROM error	NO
E203	generator memory	Inverter EEPROM DMA readings fault	NO
E204	generator memory	Inverter EEPROM DMA writings fault	NO
E205	generator not calibrated	Calibration not yet done	YES
E206	tube voltage too low	Anodic voltage too low	YES
E207	tube voltage too high	Anodic voltage too high	YES
E208	electrical discharge on hv		YES
E209	tube current too low	Anodic current too low	YES
E210	tube current too high	Anodic current too high	YES
E211	filament voltage too low	Filament voltage too low	YES
E212	filament voltage too high	Filament voltage too high	YES
E213	tube unit not connected	High voltage unit not connected	NO
E214	button released beforehand	Enable signal released beforehand during an exposure	YES
E215	generator internal power supply	12V internal voltage too low	NO
E216	generator internal power supply	12V internal voltage too high	NO
E217	generator mode	Wrong exposure enabling signal activation	YES
E218	safe circuit fail	Security interlock fault	NO
E219	tube current too low	Mean anodic current too low	YES
E220	tube current too high	Mean anodic current too high	YES
E221	no tube voltage feedback	Missing HV feedback	NO
E223	tube unit temperature too high	Monoblock over temperature	YES
E224	tube unit temperature too low	Monoblock under temperature	YES
E225	tube unit temp. sensor fail	Monoblock temperature sensor fault (open circuit)	YES

Code	Message	Description	Resettable
E226	tube unit temp. sensor fail	Monoblock temperature sensor fault (short circuit)	YES
E227	voltage reference fail	generator voltage reference too low	YES
E228	voltage reference fail	generator voltage reference too high	YES
E229	tube filament fail	tube filament not connected or blown	NO
E230	ace acquisition end fail	ACE emission stop missed and 14mAs reached	YES
E232	system error	hardware error	NO

4.2 TROUBLESHOOTING – EXPLANATION AND DETAILED ACTIONS

To avoid the risk of electric shock, after switching off the X-MIND unity wait at least 2 minutes before any maintenance servicing operation.
Keep the X-MIND unity ALWAYS DISCONNECTED from the mains supply.

Description

If the display and the leds on the control panel don't light up after toggling the main switch to ON, there might be a problem.

Possible Cause 1

This problem may occur in case of power failure. Check the mains voltage.

Possible Cause 2

This problem may occur in case of fault in mains cable. Check the mains cable.

Possible Cause 3

This problem may occur in case of blown fuse/fuses. Check and replace, if necessary, the fuse/fuses.

Possible Cause 4

This error may be caused by a fault in the RXCC board.
Check the led LD21 on the RXCD board (near the flat cable connector J4): if this one is off, try to replace the RXCC board.

Possible Cause 5

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E101: MEMORY FAIL

Description

This error relates to the EEPROM memory installed on RXCD board. It occurs when the data checksum is not valid. The firmware automatically restores default data and the checksum.

Possible Cause 1 (occasional error)

This error may occur after a firmware updating.
Switch off and on the XM2 and check all parameters.

Possible Cause 2 (occasional error)

This error may occur after a HV discharge.

Switch off and on the XM2 and check all parameters.

Possible Cause 3 (frequent or constant error)

This error may be caused by an hardware fault. In this case the switching off and on procedure doesn't solve the problem.
Try to replace the RXCD board.

E102: MEMORY FAIL

Description

This error relates to the EEPROM memory installed on RXCD board.

Possible Cause 1 (occasional error)

This error may occur after a HV discharge.
Switch off and on the XM2 and check all parameters.

Possible Cause 2 (frequent or constant error)

This error may be caused by a hardware fault on I^2C bus.
Try to replace the RXCD board.

E103: MEMORY FAIL

Description

This error relates to the EEPROM memory installed on RXCD board.

Possible Cause 1 (occasional error)

This error may occur after a HV discharge.
Switch off and on the XM2 and check all parameters.

Possible Cause 2 (frequent or constant error)

This error may be caused by a microcontroller fault.
Try to replace the RXCD board.

E104: MEMORY FAIL

Description

This error relates to the EEPROM memory installed on RXCD board.

Possible Cause 1 (occasional error)

This error may occur after a HV discharge.
Switch off and on the XM2 and check all parameters.

Possible Cause 2 (frequent or constant error)

This error may be caused by a microcontroller fault.
Try to replace the RXCD board.

E105: NO RESPONSE FROM GENERATOR

Description

This error relates to the communication between the control unit and the inverter unit.

Possible Cause 1

This error may be caused by a fault in the communication cable that connects the control unit with the fork (cable #2.1).
Check that cable.

Possible Cause 2

This error may be caused by a fault in the communication cable that connects the fork with the tubehead (cable #2.2).
Check that cable.

Possible Cause 3

This error may be caused by a fault in the flat cable that connects the RXCD board to the RXCC board (cable #3).
Try to replace the RXCC board.

Possible Cause 4

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 5

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 6

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

Possible Cause 7

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

E106: WRONG RESPONSE FROM GENERATOR

Description

This error relates to the communication between the control unit and the inverter unit. It is due to an incorrect data sent by the control unit to the tubehead.

Possible Cause 1

This error may be caused by a temporary malfunctioning of the RXCD board.
Switch off and on the XM2 and check all parameters.

Possible Cause 2

This error may be caused by a temporary malfunctioning of the RXHVC board.
Switch off and on the XM2.

E107: EMISSION START FAIL

Description

This error relates to the missing exposure start by the tubehead.

Possible Cause 1

This error may be caused by a fault in the communication cable that connects the control unit with the fork (cable #2.1).
Check that cable.

Possible Cause 2

This error may be caused by a fault in the communication cable that connects the fork with the tubehead (cable #2.2).
Check that cable.

Possible Cause 3

This error may be caused by a fault in the flat cable that connects the RXCD board to the RXCC board (cable #3).
Try to replace the RXCC board.

Possible Cause 4

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 5

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 6

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

Possible Cause 7

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

E108: EMISSION TOO LONG

Description

This error appears when the real exposure duration, controlled by the tubehead, is longer than the exposure duration selected on the control unit.

Possible Cause 1

This error may be caused by a temporary malfunctioning of the RXCD board.
Switch off and on the XM2.

Possible Cause 2

This error may be caused by a temporary malfunctioning of the RXHVC board.
Switch off and on the XM2.

E109: BUTTON RELEASED BEFOREHAND

Description

This error appears when the exposure button is released before the programmed end of the exposure. If the button was pressed really firmly during the whole exposure then there might be a problem. Consider that this error may be caused both by the local switch and by the remote switch.

Possible Cause 1 (local switch)

This error may be caused by a fault in the local switch or in its cable.
Check the local switch and its cable.

Possible Cause 2 (remote switch)

This error may be caused by a fault in the remote switch or in its cable.
Check the remote switch and its cable.

Possible Cause 3 (remote switch)

This error may be caused by a fault in the flat cable that connects the RXINT board with the RXCC board.
Check the flat cable.

Possible Cause 4 (remote switch)

This error may be caused by a fault in the RXINT board.
Check the electrical continuity:
between the pin 2 of J2 connector and the pin 3 of J3 connector
between the pin 3 of J2 connector and the pin 4 of J3 connector.

Possible Cause 5 (local or remote switch)

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 6 (local or remote switch)

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E110: WRONG USE OF BUTTON

Description

This error appears when the exposure button is pressed while the XM2 is not ready/armed. If the button was not pressed by the operator then there might be a problem. Consider that this error may be caused both by the local switch and by the remote switch.

Possible Cause 1 (local switch)

This error may be caused by a fault in the local switch or in its cable.
Check the local switch and its cable.

Possible Cause 2 (remote switch)

This error may be caused by a fault in the remote switch or in its cable.
Check the remote switch and its cable.

Possible Cause 3 (remote switch)

This error may be caused by a fault in the flat cable that connects the RXINT board with the RXCC board.
Check the flat cable.

Possible Cause 4 (remote switch)

This error may be caused by a fault in the RXINT board.
Try to replace the RXINT board.

Possible Cause 5 (local or remote switch)

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 6 (local or remote switch)

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E111: KEYBOARD PRESSED AT BOOT

Description

During the power up the unit checks that all keys are released. If a key is detected pressed, this error is displayed. If no key was pressed by the operator then there might be a problem.

Possible Cause

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E112: BUTTON PUSHED AT BOOT

Description

During the power up the unit checks that the exposure button is released. If the exposure button is detected pressed, this error is displayed. If the exposure button was not pressed by the operator then there might be a problem. Consider that this error may be caused both by the local switch and by the remote switch.

Possible Cause 1 (local switch)

This error may be caused by a fault in the local switch or in its cable.
Check the local switch and its cable.

Possible Cause 2 (remote switch)

This error may be caused by a fault in the remote switch or in its cable. Check
the remote switch and its cable.

Possible Cause 3 (remote switch)

This error may be caused by a fault in the flat cable that connects the RXINT board with the RXCC board.
Check the flat cable.

Possible Cause 4 (remote switch)

This error may be caused by a fault in the RXINT board.
Try to replace the RXINT board.

Possible Cause 5 (local or remote switch)

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 6 (local or remote switch)

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E113: WRONG USE OF KEYBOARD

Description

This error appears when one or more keys are pressed during the exposure. If no key was pressed by the operator then there might be a problem.

Possible Cause

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E114: BUTTON RELEASE TIMEOUT

Description

This error appears if the exposure button is detected pressed 10 seconds after the exposure end. If the exposure button was not pressed by the operator then there might be a problem. Consider that this error may be caused both by the local switch and by the remote switch.

Possible Cause 1 (local switch)

This error may be caused by a fault in the local switch or in its cable.
Check the local switch and its cable.

Possible Cause 2 (remote switch)

This error may be caused by a fault in the remote switch or in its cable. Check
the remote switch and its cable.

Possible Cause 3 (remote switch)

This error may be caused by a fault in the flat cable that connects the RXINT board with the RXCC board.
Check the flat cable.

Possible Cause 4 (remote switch)

This error may be caused by a fault in the RXINT board.
Try to replace the RXINT board.

Possible Cause 5 (local or remote switch)

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 6 (local or remote switch)

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E115: WRONG PARAMETERS IN GENERATOR

Description

This error relates to the communication between the control unit and the inverter unit. It is due to a mismatch between the exposure parameters sent by the control unit and the same parameters set in the tubehead.

Possible Cause 1

This error may be caused by a temporary malfunctioning of the RXCD board.
Switch off and on the XM2.

Possible Cause 2

This error may be caused by a temporary malfunctioning of the RXHVC board.
Switch off and on the XM2.

E116: GENERATOR RESET DURING EMISSION

Description

This error occurs when the RXHVC board is reset during an exposure.

Possible Cause 1

This error may be caused by a HV discharge. Switch off and on the XM2. If the HV discharge is frequent the entire tubehead must be inspected.

Possible Cause 2

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 3

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

E117: CALIBRATION START FAIL

Description

This error relates to the missing exposure start by the tubehead.

Possible Cause 1

This error may be caused by a fault in the communication cable that connects the control unit with the fork (cable #2.1).
Check that cable.

Possible Cause 2

This error may be caused by a fault in the communication cable that connects the fork with the tubehead (cable #2.2).
Check that cable.

Possible Cause 3

This error may be caused by a fault in the flat cable that connects the RXCD board to the RXCC board (cable #3).
Try to replace the RXCC board.

Possible Cause 4

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 5

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 6

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

Possible Cause 7

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

E118: CALIBRATION TOO LONG

Description

This error appears when the control unit detects that the real duration of calibration, controlled by the tubehead, is longer than it should.

Possible Cause 1

This error may be caused by a temporary malfunctioning of the RXCD board.
Switch off and on the XM2.

Possible Cause 2

This error may be caused by a temporary malfunctioning of the RXHVC board.
Switch off and on the XM2.

E119: BUTTON PUSHED DURING COOLING

Description

This error appears when the exposure button is pressed when the XM2 is in idle phase (tube cooling). If the button was not pressed by the operator then there might be a problem. Consider that this error may be caused both by the local switch and by the remote switch.

Possible Cause 1 (local switch)

This error may be caused by a fault in the local switch or in its cable.
Check the local switch and its cable.

Possible Cause 2 (remote switch)

This error may be caused by a fault in the remote switch or in its cable. Check
the remote switch and its cable.

Possible Cause 3 (remote switch)

This error may be caused by a fault in the flat cable that connects the RXINT board with the RXCC board.
Check the flat cable.

Possible Cause 4 (remote switch)

This error may be caused by a fault in the RXINT board.
Try to replace the RXINT board.

Possible Cause 5 (local or remote switch)

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 6 (local or remote switch)

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E120: COOLING TIME DISABLED

Description

This one is a warning that informs that the idle phase (tube cooling) is disabled. The factory operators can disable the idle phase for test purpose by setting the “tube cooling” parameter to “no”.

E121: BUTTON PUSHED DURING STAND-BY

Description

This error appears when the exposure button is pressed while the XM2 is in stand-by. If the button was not pressed by the operator then there might be a problem. Consider that this error may be caused both by the local switch and by the remote switch.

Possible Cause 1 (local switch)

This error may be caused by a fault in the local switch or in its cable.
Check the local switch and its cable.

Possible Cause 2 (remote switch)

This error may be caused by a fault in the remote switch or in its cable. Check
the remote switch and its cable.

Possible Cause 3 (remote switch)

This error may be caused by a fault in the flat cable that connects the RXINT board with the RXCC board.
Check the flat cable.

Possible Cause 4 (remote switch)

This error may be caused by a fault in the RXINT board.
Try to replace the RXINT board.

Possible Cause 5 (local or remote switch)

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 6 (local or remote switch)

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E122: MEMORY FAIL

Description

This error relates to the EEPROM memory installed on RXCD board. It occurs when some EEPROM data is out of range. The firmware automatically restores default data and the checksum.

Possible Cause 1 (occasional error)

This error may occur after a firmware updating.
Switch off and on the XM2 and check all parameters.

Possible Cause 2 (occasional error)

This error may occur after a HV discharge.
Switch off and on the XM2 and check all parameters.

Possible Cause 3 (frequent or constant error)

This error may be caused by an hardware fault. In this case the switching off and on procedure doesn't solve the problem.
Try to replace the RXCD board.

E123: POWER RELAY FAIL

Description

This error relates to the power section diagnostic.

Possible Cause 1

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 2

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E124: POWER RELAY FAIL

Description

This error relates to the power section diagnostic.

Possible Cause 1

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 2

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E125: POWER BOARD FAIL

Description

This error relates to the power section diagnostic.

Possible Cause 1

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 2

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E126: POWER BOARD FAIL

Description

This error relates to the power section diagnostic.

Possible Cause 1

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 2

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E127: POWER BOARD FAIL

Description

This error relates to the power section diagnostic.

Possible Cause 1

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 2

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E128: POWER BOARD FAIL

Description

This error relates to the power section diagnostic.

Possible Cause 1

This error may be caused by a fault in the power cable that connects the control unit with the fork (cable #1.1).

Check that cable.

Possible Cause 2

This error may be caused by a fault in the power cable that connects the fork with the tubehead (cable #1.2).
Check that cable.

Possible Cause 3

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 4

This error may be caused by a fault in the tubehead.
Try to replace the tubehead.

Possible Cause 5

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

E201: GENERATOR MEMORY

Description

This error relates to the EEPROM memory installed on RXHVC board. It occurs when the data checksum is not valid. The firmware automatically restores default data and the checksum.

Possible Cause 1 (occasional error)

This error may occur after a firmware updating.
Switch off and on the XM2 and check all parameters.

Possible Cause 2 (occasional error)

This error may occur after a HV discharge.
Switch off and on the XM2 and check all parameters.

Possible Cause 3 (frequent or constant error)

This error may be caused by an hardware fault. In this case the switching off and on procedure doesn't solve the problem.
Try to replace the tubehead.

E202: GENERATOR MEMORY

Description

This error relates to the EEPROM memory installed on RXHVC board.

Possible Cause 1 (occasional error)

This error may occur after a HV discharge.
Switch off and on the XM2 and check all parameters.

Possible Cause 2 (frequent or constant error)

This error may be caused by a hardware fault on I_2C bus.
Try to replace the tubehead.

E203: GENERATOR MEMORY

Description

This error relates to the EEPROM memory installed on RXHVC board.

Possible Cause 1 (occasional error)

This error may occur after a HV discharge.
Switch off and on the XM2 and check all parameters.

Possible Cause 2 (frequent or constant error)

This error may be caused by a microcontroller fault.
Try to replace the tubehead.

E204: GENERATOR MEMORY

Description

This error relates to the EEPROM memory installed on RXHVC board.

Possible Cause 1 (occasional error)

This error may occur after a HV discharge.
Switch off and on the XM2 and check all parameters.

Possible Cause 2 (frequent or constant error)

This error may be caused by a microcontroller fault.
Try to replace the tubehead.

E205: GENERATOR NOT CALIBRATED

Description

This one is a warning that informs that the tube calibration has not yet been executed. If the tube calibration has already been executed then there might be a problem.

Possible Cause

This error may occur after a generator memory error (errors E201, E202, E203, E204). Perform the tube calibration.

E206: TUBE VOLTAGE TOO LOW

Description

This error may occur during an exposure when the measured anodic voltage is lower than the anodic voltage set-point and this difference is more than 10%.

Possible Cause 1

This error may be caused by an anodic current out of range.
Perform the tube calibration.

Possible Cause 2

This error may be caused by a fault in the tubehead.
Try to replace the tubehead.

E207: TUBE VOLTAGE TOO HIGH

Description

This error may occur during an exposure when the measured anodic voltage is greater than the anodic voltage set-point and this difference is more than 10%.

Possible Cause

This error may be caused by a fault in the tubehead.
Try to replace the tubehead.

E208: ELECTRICAL DISCHARGE ON HV

Description

This error may occur during an exposure when a high voltage discharge is detected.

Possible Cause 1

This error may be caused by an anodic current out of range.
Perform the tube calibration.

Possible Cause 2

This error may be caused by a fault in the tubehead.
Try to replace the tubehead.

E209: TUBE CURRENT TOO LOW

Description

This error may occur during an exposure when the measured anodic current (instant value) is lower than the anodic current set-point and this difference is more than 20%.

Possible Cause 1

This error may be caused by a tube calibration too old.
Perform the tube calibration.

Possible Cause 2

This error may occur after a HV discharge.
Switch off and on the XM2.

Possible Cause 3

This error may be caused by a fault in the tubehead.
Try to replace the tubehead.

E210: TUBE CURRENT TOO HIGH

Description

This error may occur during an exposure when the measured anodic current (instant value) is greater than the anodic current set-point and this difference is more than 20%.

Possible Cause 1

This error may be caused by a tube calibration too old.
Perform the tube calibration.

Possible Cause 2

This error may occur after a HV discharge.
Switch off and on the XM2.

Possible Cause 3

This error may be caused by a fault in the tubehead.
Try to replace the tubehead.

E211: FILAMENT VOLTAGE TOO LOW

Description

This error may occur when the measured filament voltage is lower than the filament voltage set-point and this difference is more than 20%.

Possible Cause 1

This error may be caused by a fault in the cable that connects the RXHVM board to the tube filament. Try to replace the tubehead.

Possible Cause 2

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

Possible Cause 3

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 4

This error may be caused by a fault in the RXHVM board.
Try to replace the tubehead.

Possible Cause 5

This error may be caused by a fault in the tube.
Try to replace the tube.

E212: FILAMENT VOLTAGE TOO HIGH

Description

This error may occur when the measured filament voltage is greater than the filament voltage set-point and this difference is more than 20%.

Possible Cause 1

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

Possible Cause 2

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

E213: TUBE UNIT NOT CONNECTED

Description

This error occur when the RXHVM board is not detected.

Possible Cause 1

This error may be caused by a fault in the RXHVM board.

Try to replace the tubehead.

Possible Cause 1

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 2

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

E214: BUTTON RELEASED BEFOREHAND

Description

This error appears when the RXHVC board detects as disabled the exposure enable signal during an exposure.

Possible Cause 1

This error may be caused by a fault in the communication cable that connects the control unit with the fork (cable #2.1).
Check that cable.

Possible Cause 2

This error may be caused by a fault in the communication cable that connects the fork with the tubehead (cable #2.2).
Check that cable.

Possible Cause 3

This error may be caused by a fault in the flat cable that connects the RXCD board to the RXCC board (cable #3).
Try to replace the RXCC board.

Possible Cause 4

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 5

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 6

This error may be caused by a fault in the RXCD board.

Try to replace the RXCD board.

Possible Cause 7

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

E215: GENERATOR INTERNAL POWER SUPPLY

Description

This error appears when the internal +12V power supply of the inverter unit is lower than the nominal value and this difference is more than 10%.

Possible Cause 1

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

Possible Cause 2

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 3

This error may be caused by a fault in the communication cable that connects the control unit with the fork (cable #2.1).
Check that cable.

Possible Cause 4

This error may be caused by a fault in the communication cable that connects the fork with the tubehead (cable #2.2).
Check that cable.

Possible Cause 5

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

E216: GENERATOR INTERNAL POWER SUPPLY

Description

This error appears when the internal +12V power supply of the inverter unit is greater than the nominal value and this difference is more than 10%.

Possible Cause 1

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

Possible Cause 2

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

E217: GENERATOR MODE

Description

This error appears when the inverter unit detects an activation of the exposure enable signal without reception of the exposure mode serial command by the control unit.

Possible Cause 1

This error may be caused by a fault in the communication cable that connects the control unit with the fork (cable #2.1).
Check that cable.

Possible Cause 2

This error may be caused by a fault in the communication cable that connects the fork with the tubehead (cable #2.2).
Check that cable.

Possible Cause 3

This error may be caused by a fault in the flat cable that connects the RXCD board to the RXCC board (cable #3).
Try to replace the RXCC board.

Possible Cause 4

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

Possible Cause 5

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 6

This error may be caused by a fault in the RXCD board.
Try to replace the RXCD board.

Possible Cause 7

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

E218: SAFE CIRCUIT FAIL

Description

This error appears due to an internal safety signal of the RXHVC board.

Possible Cause

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

E219: TUBE CURRENT TOO LOW

Description

This error may occur at the end of an exposure when the measured anodic current (average value) is lower than the anodic current set-point and this difference is more than 10%.

Possible Cause 1

This error may be caused by a tube calibration too old.
Perform the tube calibration.

Possible Cause 2

This error may occur after a HV discharge.
Switch off and on the XM2.

Possible Cause 3

This error may be caused by a fault in the tubehead.
Try to replace the tubehead.

E220: TUBE CURRENT TOO HIGH

Description

This error may occur at the end of an exposure when the measured anodic current (average value) is greater than the anodic current set-point and this difference is more than 10%.

Possible Cause 1

This error may be caused by a tube calibration too old.
Perform the tube calibration.

Possible Cause 2

This error may occur after a HV discharge.
Switch off and on the XM2.

Possible Cause 3

This error may be caused by a fault in the tubehead.
Try to replace the tubehead.

E221: NO TUBE VOLTAGE FEEDBACK

Description

This error appears when the inverter unit doesn’t detect high voltage presence at the very beginning of an exposure.

Possible Cause 1

This error may be caused by a fault in the power cable that connects the control unit with the fork (cable #1.1).
Check that cable.

Possible Cause 2

This error may be caused by a fault in the power cable that connects the fork with the tubehead (cable #1.2).
Check that cable.

Possible Cause 3

This error may be caused by a fault in the RXHVM board.
Try to replace the tubehead.

Possible Cause 4

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

Possible Cause 5

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 6

This error may be caused by a fault in the RXCC board.
Try to replace the RXCC board.

E223: TUBE UNIT TEMPERATURE TOO HIGH

Description

This error appears when the temperature in the X-ray chamber is greater than the parameter "HV °C Up Lim". If the real temperature of the X-ray chamber is lower than the parameter "HV °C Up Lim" then there might be a problem.

Possible Cause 1

This error may be caused by a fault in the RXHVM board.
Try to replace the tubehead.

Possible Cause 2

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 3

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

E224: TUBE UNIT TEMPERATURE TOO LOW

Description

This error appears when the temperature in the X-ray chamber is lower than the parameter "HV °C Lo Lim". If the real temperature of the X-ray chamber is greater than the parameter "HV °C Lo Lim" then there might be a problem.

Possible Cause 1

This error may be caused by a fault in the RXHVM board.
Try to replace the tubehead.

Possible Cause 2

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 3

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

E225: TUBE UNIT TEMP. SENSOR FAIL

Description

This error appears when a temperature sensor fault is detected.

Possible Cause 1

This error may be caused by a fault in the RXHVM board.
Try to replace the tubehead.

Possible Cause 2

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 3

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

E226: TUBE UNIT TEMP. SENSOR FAIL

Description

This error appears when a temperature sensor fault is detected.

Possible Cause 1

This error may be caused by a fault in the RXHVM board.
Try to replace the tubehead.

Possible Cause 2

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 3

This error may be caused by a fault in the RXHVP board.
Try to replace the RXHVP tubehead.

E227: VOLTAGE REFERENCE FAIL

Description

This error appears when the internal voltage reference is fault.

Possible Cause

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

E228: VOLTAGE REFERENCE FAIL

Description

This error appears when the internal voltage reference is fault.

Possible Cause

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

E229: TUBE FILAMENT FAIL

Description

This error appears when no tube filament current is detected.

Possible Cause 1

This error may be caused by a fault in the connection between the X-ray tube and the RXHVM board.
Try to replace the tubehead.

Possible Cause 2

This error may be caused by a fault in the connection between the RXHVM board and the RXHVP board.
Try to replace the tubehead.

Possible Cause 3

This error may be caused by a fault in the RXHVP board.
Try to replace the tubehead.

Possible Cause 4

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

E230: ACE ACQUISITION END FAIL

Description

This error appears when the inverter unit doesn't receive the emission stop command by the ACE sensor and 14mAs are reached.

Possible Cause 1

This error may occur after a HV discharge.
Switch off and on the XM2 and check all parameters.

Possible Cause 2

This error may be caused by a fault in the communication cable that connects the RXHVC board with the ACE (cable #8.2).
Check that cable.

Possible Cause 3

This error may be caused by a fault in the RXHVC board.
Try to replace the tubehead.

Possible Cause 4

This error may be caused by a fault in the ACE.
Try to replace the ACE.

E231: * EMPTY ERROR CODE

- * ERROR NOT AVAILABLE

E232: SYSTEM ERROR

Description

This error appears when an internal hardware fault is detected.

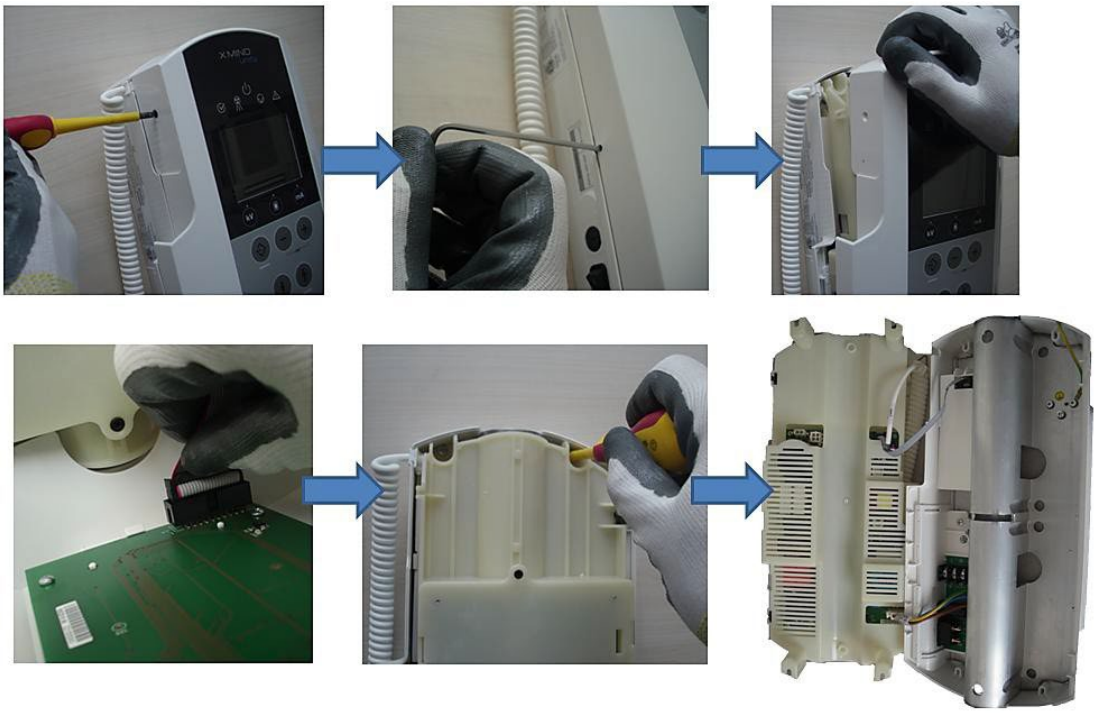
Possible Cause

This error may be caused by a fault in the RXHVC board.

Try to replace the tubehead.

5. CHECKS INSTRUCTIONS

HOW TO OPEN CONTROL UNIT:



HOW TO OPEN FORK COVER:

5.1. 1 - Check fuse and mains

CAUTION DOUBLE POLE/NEUTRAL FUSING

CHECK FUSE:

1. Locate the fuses and main switch at left-bottom side of the timer.

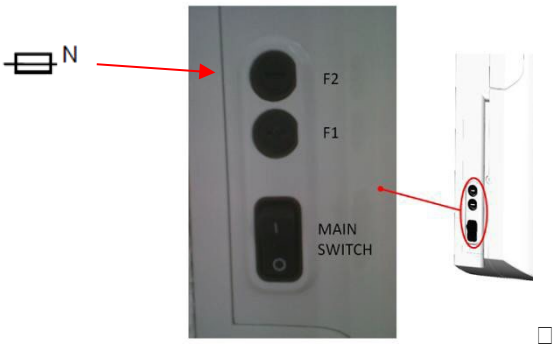


Fig. 13.1

F1= Live Fuse

F2= Neutral Fuse N

2. Turn the power off putting the mains switch on “0”
3. Using a flat screwdriver unscrew (anticlockwise) the fuse holder and replace the fuse.

Fig. 13.2

1. Remove the fuse

Fig. 13.3

2. Check if the fuse is burned, if it is replace the fuse with same rated fuse type:

4.

Fig. 13.4

MANUFACTURERS RATING PLATE	**100 - 240 VAC**
FUSES F1 type - 5x20	**T10A H 250V**
FUSES F2 type - 5x20	**T10A H 250V**

5. After replacement, screw in the fuse holder to close it.

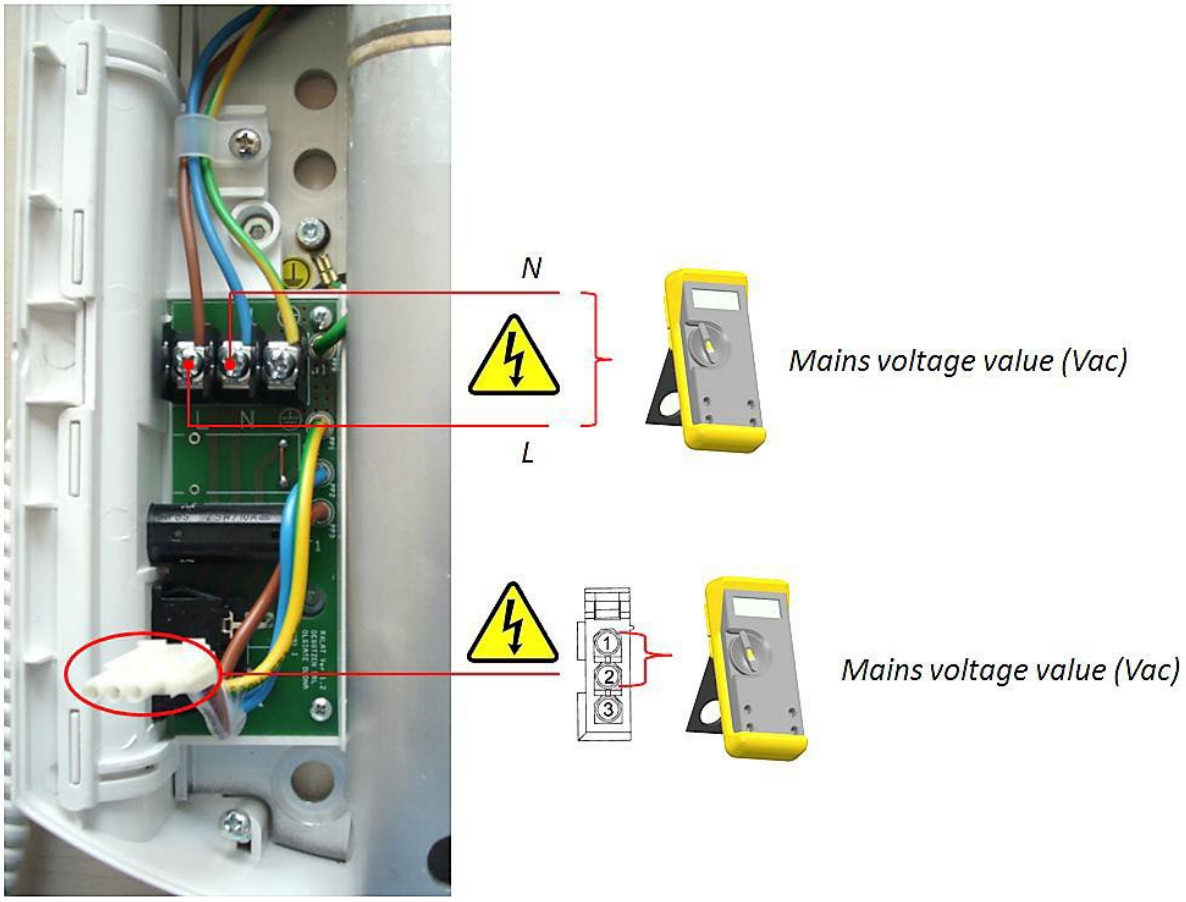
Fig. 13.5

6. Turn the power back on

CHECK MAINS:

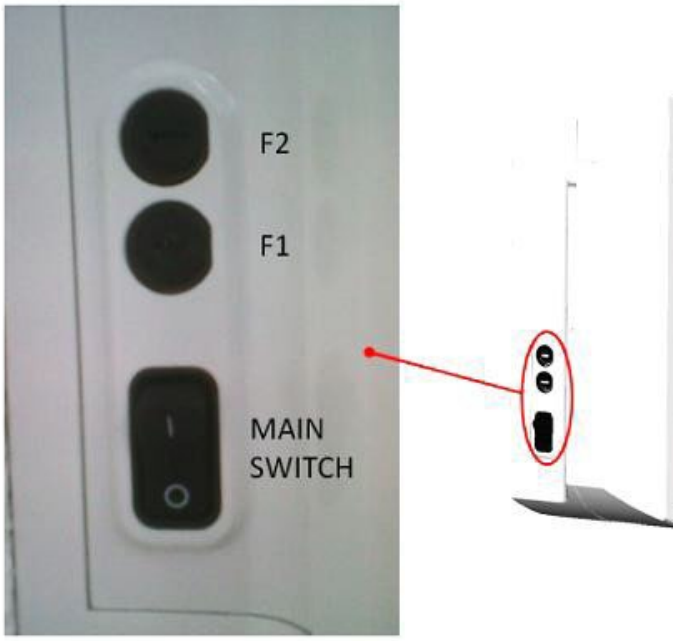
Turn OFF the mains.

1. Open control unit until reach RXLAT pcb.
2. Turn ON the mains.
3. Paying attention measure the voltage on the terminals and connector as indicated below.

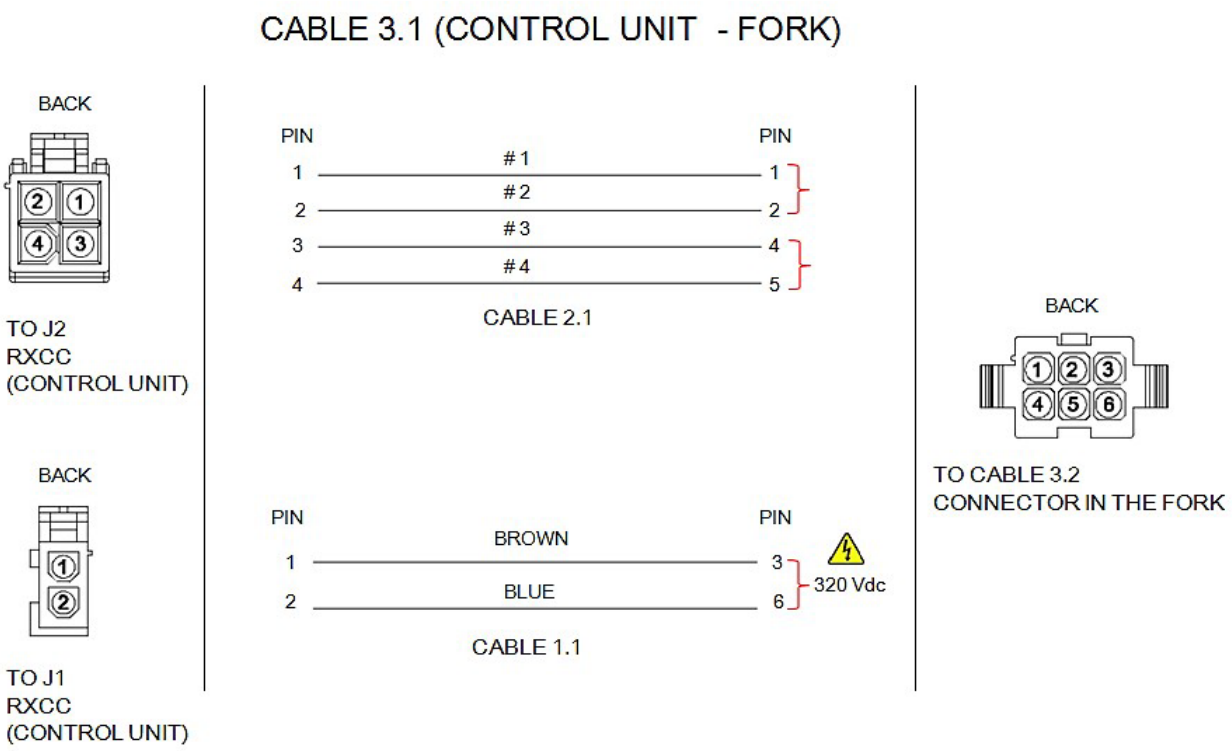


5.2. 2 - Restart the system

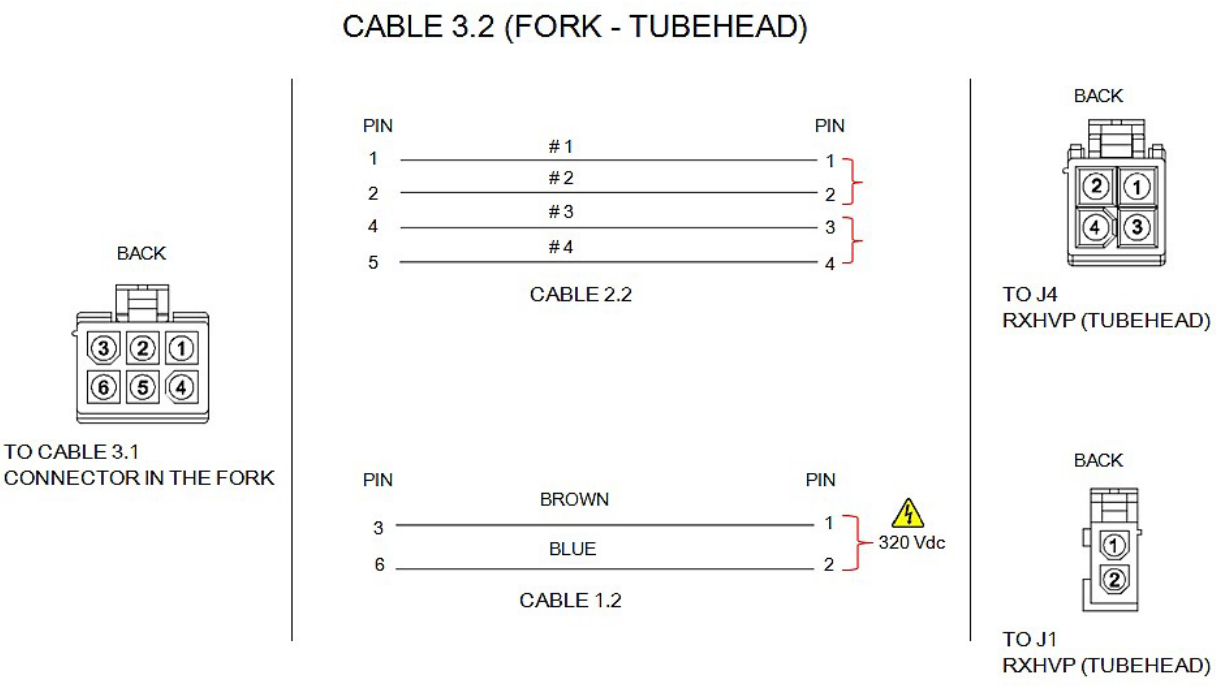
1. Turn OFF the system moving main switch on 0.
3. Wait 10 seconds.
2. Turn ON the system moving main switch on 1.



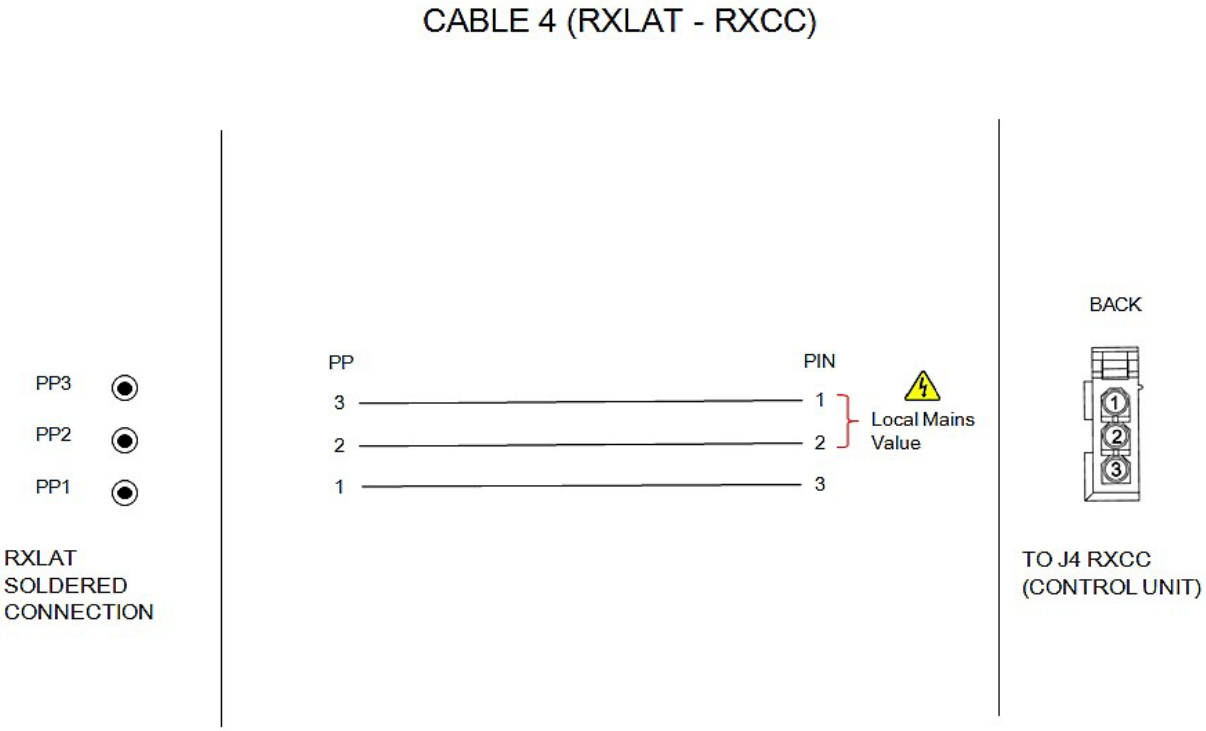
5.3. 3 - Check cable 3.1



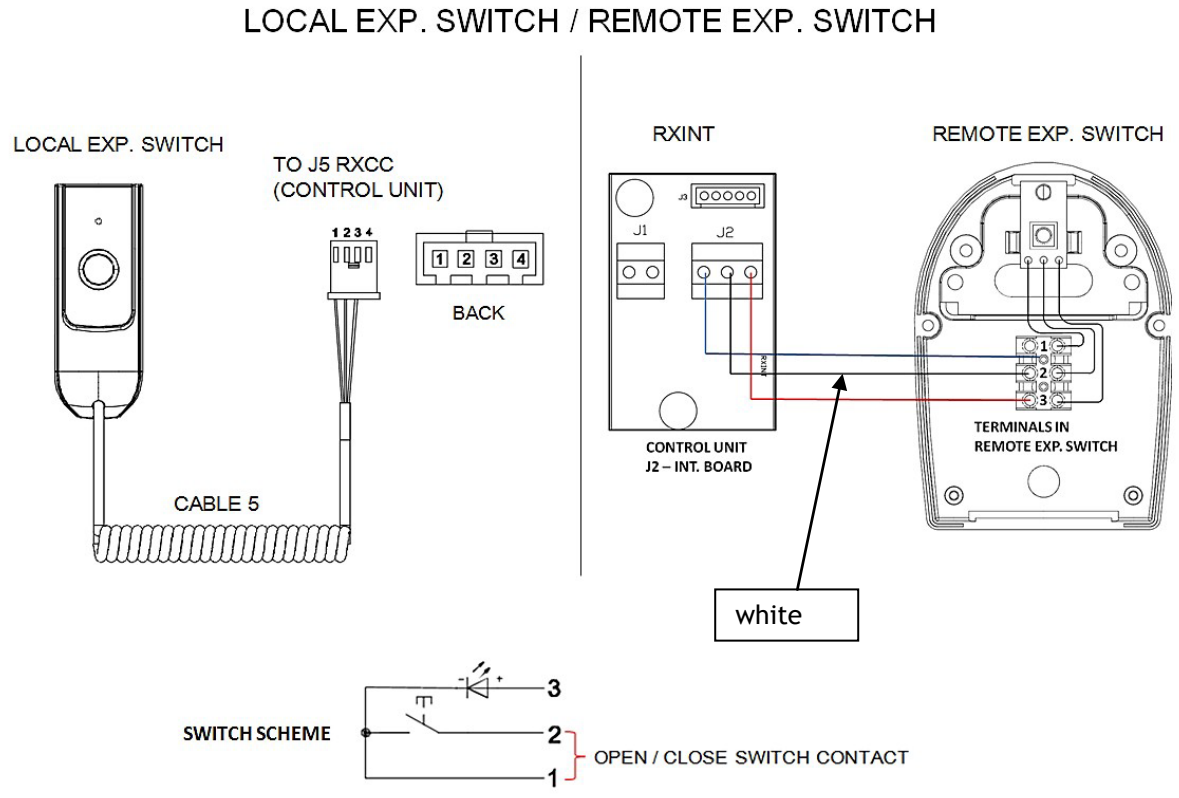
5.4. 5 - Check cable 3.2



5.5. 4 - Check cable 4



5.6. 6 - Check cable 5 / 6 and exp. switch functioning (Local and remote)



5.7 Perform tube calibration

X-Ray tube calibration procedure:

1. Press and keep pressed key mA 

for 5 seconds until message “TUBE CALIBRATION” appears on the display
2. Take a safety position far from the x-ray beam, press and keep pressed the exposure key  . On the display will appear “CAL. IN PROGRESS” message, Exp. Led  is lit and an intermittent acoustic sound is emitted.
3. At the end of the procedure, acoustic sound stops and on the display appears “CAL. SUCCESS” message.
4. After waiting the pause time (it will be longer than the normal rest time), the timer back to standard functioning and it is ready for a new exam.

PLEASE NOTE

The calibration procedure takes about 50 s

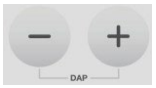
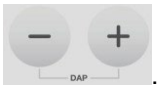
After this procedure, PAUSE led  ***is blinking and all the functions are inhibited. Please wait until it completes the cooling time due to the tube calibration before perform any further operation.***

5.8 Setting demo mode (from fw ver. 2.17)

TO SET DEMO MODE, PLEASE, PROCEED FOLLOWING THE INSTRUCTION BELOW:

1. Press and keep pressed 

and 

buttons for 5 seconds, until the SET mode is enabled
2. Scroll down the menu using  until DEMO MODE in lower section of the display will appear
3. Press  button to select demo mode type
4. Scroll the DEMO MODE TYPE using  . It will show you 3 option:
   - OFF: demo mode disable
   - BASE: demo mode without ACE simulation
   - ACE: full demo with simulation
5. Press  button to set the selected mode
6. Press 

button to exit the SET mode

   At the end of the procedure reboot the timer. At the start-up, “DEMO” will be shown on the display.

6. ADVANCED SETTING MENU (SERVICE ONLY)

REFER TO “INSTALLATION AND MAINTENANCE MANUAL CHAPTER 7.1 PAGE 85

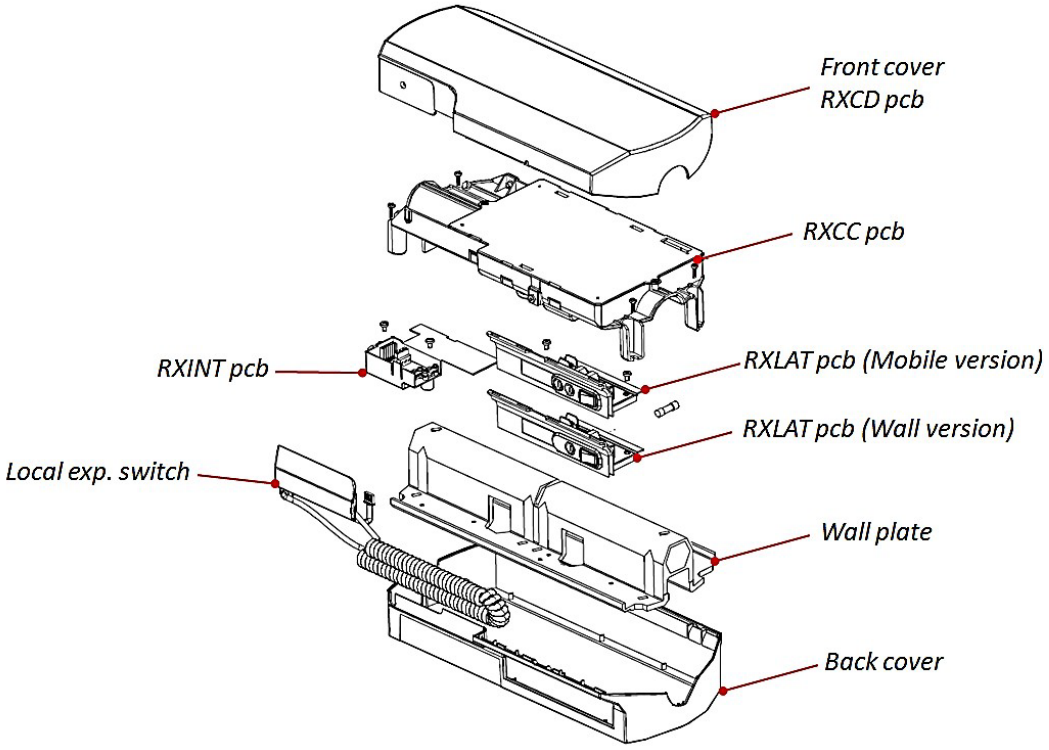
7. CHECKING THE EXPOSURE FACTOR

REFER TO “INSTALLATION AND MAINTENANCE MANUAL” CHAPTER 10 PAGE 90

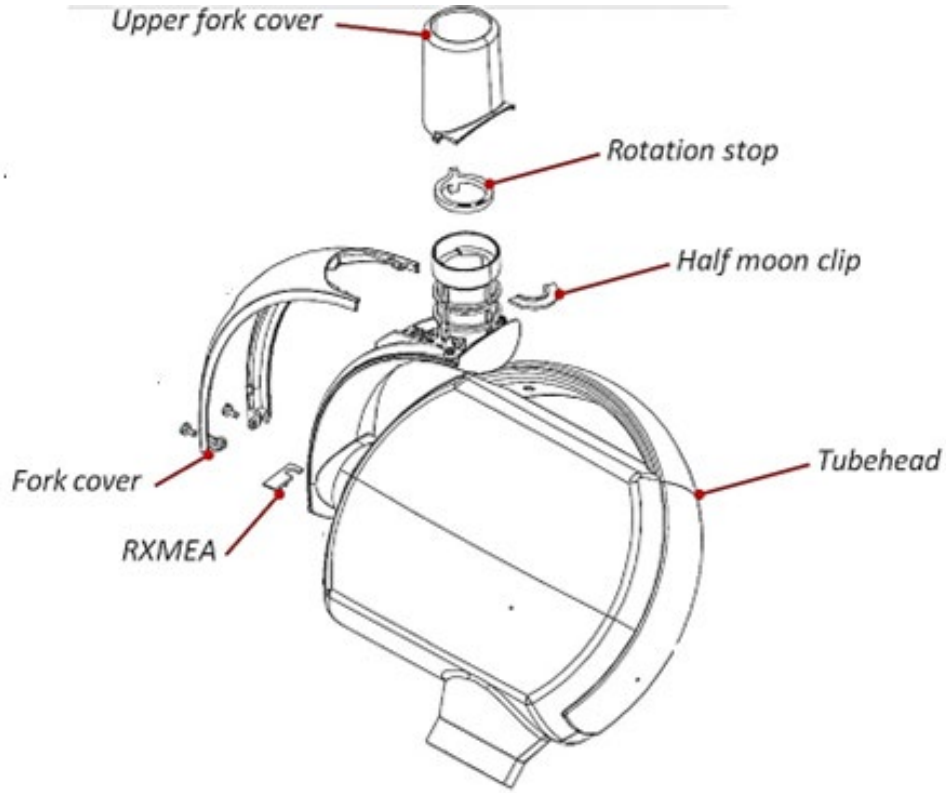
8. REPLACEMENTS INSTRUCTIONS

8.1. Components location

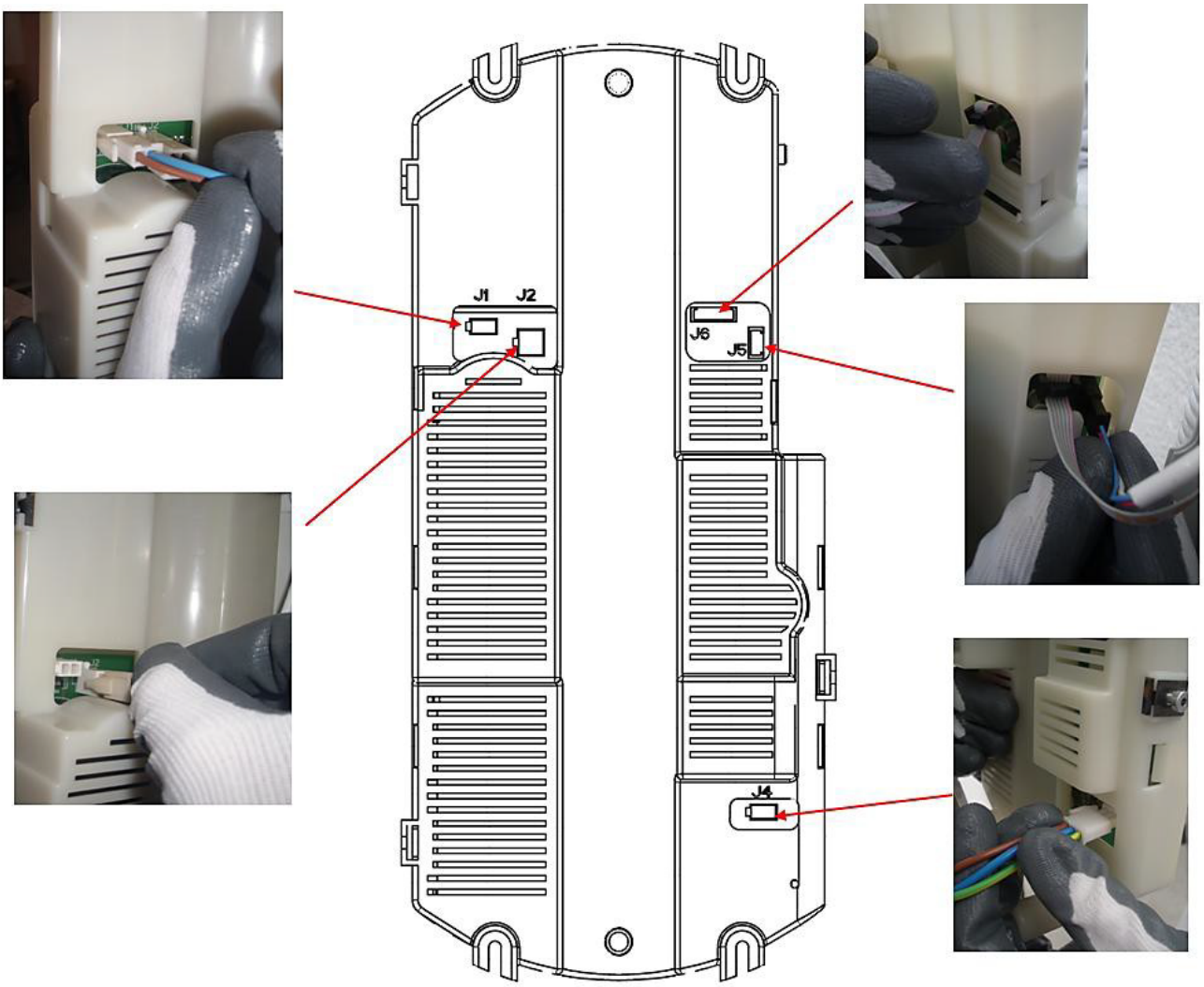
Control unit:

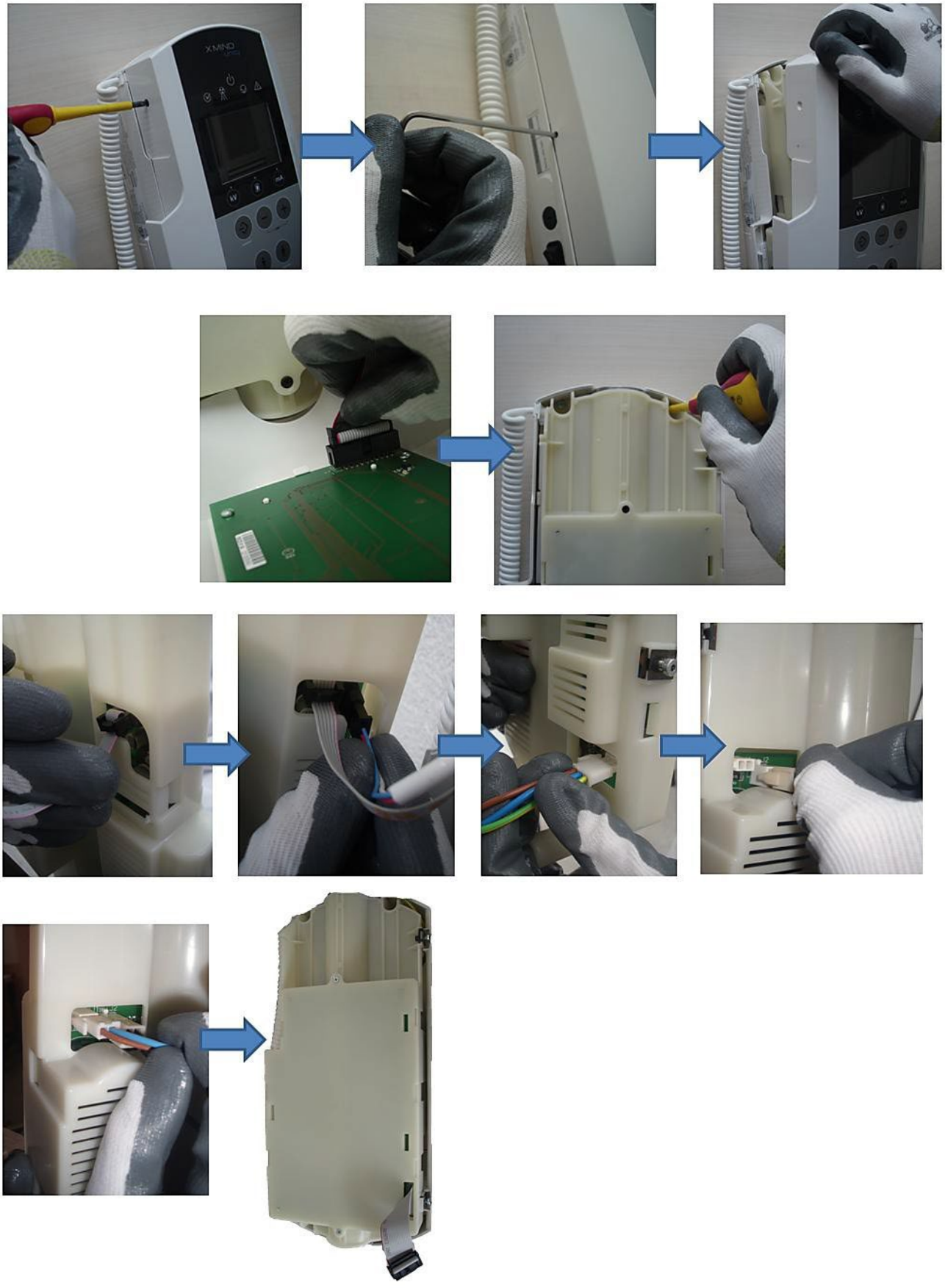


Tubehead:


Upper fork cover
Rotation stop
Half moon clip
Fork cover
RXMEA
Tubehead

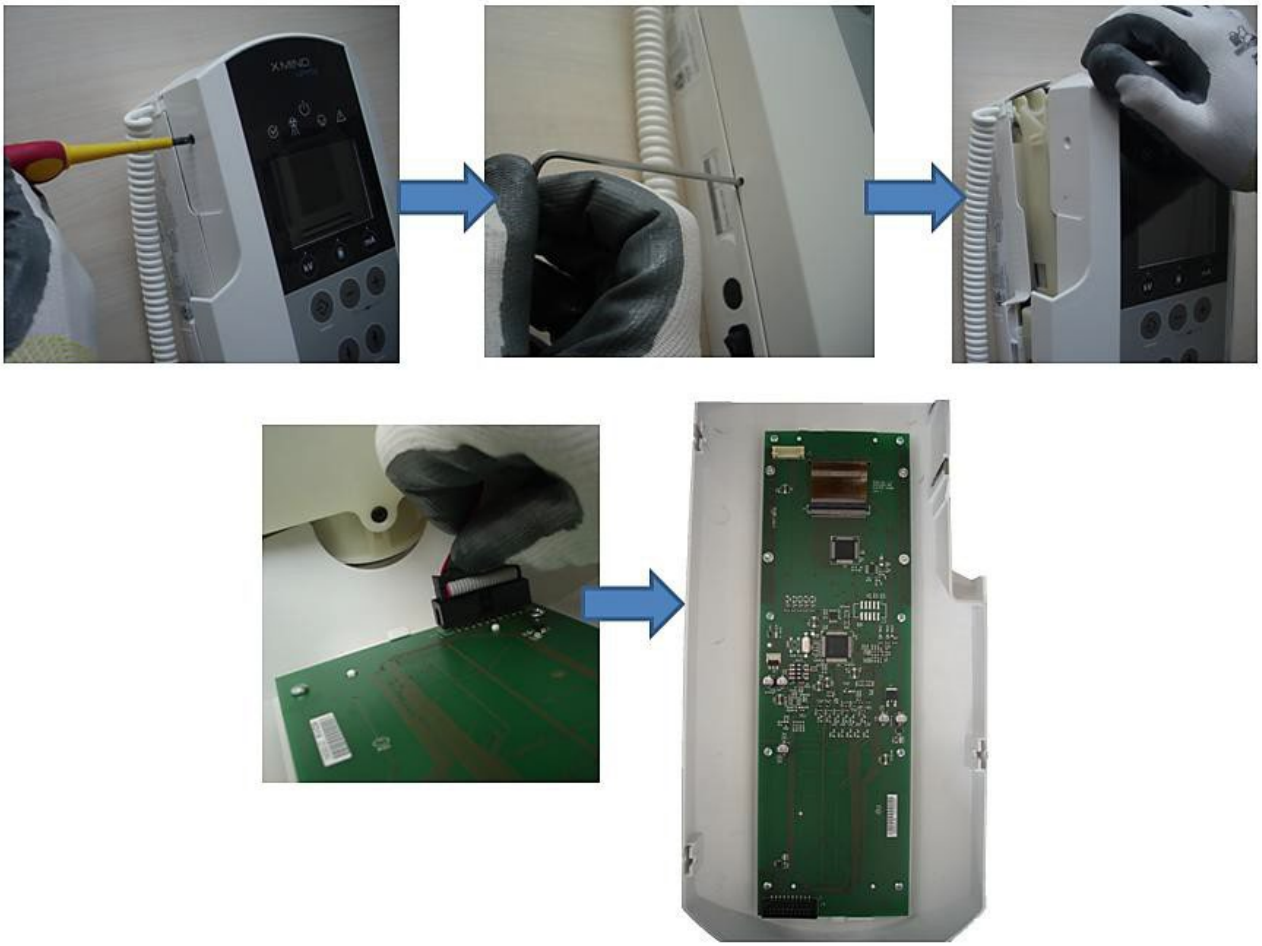
8.2. A - Replace RXCC Board





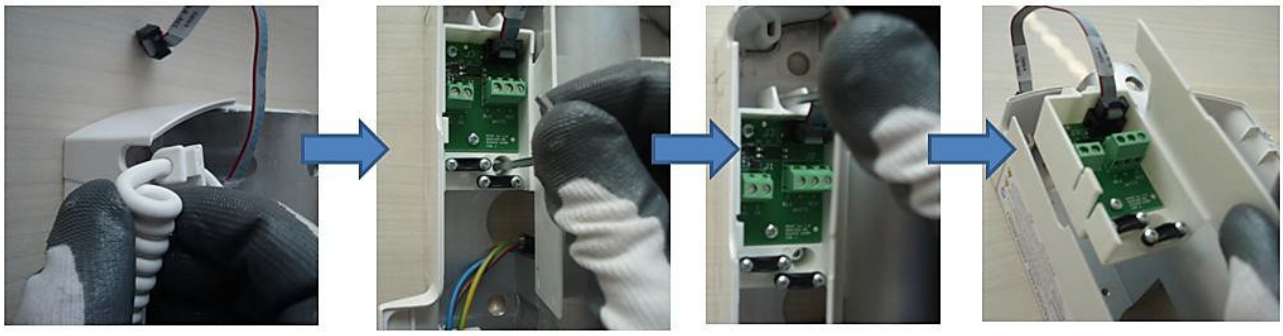
Follow step by step the procedure shown above to dismount the RXCD board

8.3. B - Replace RXCD Board



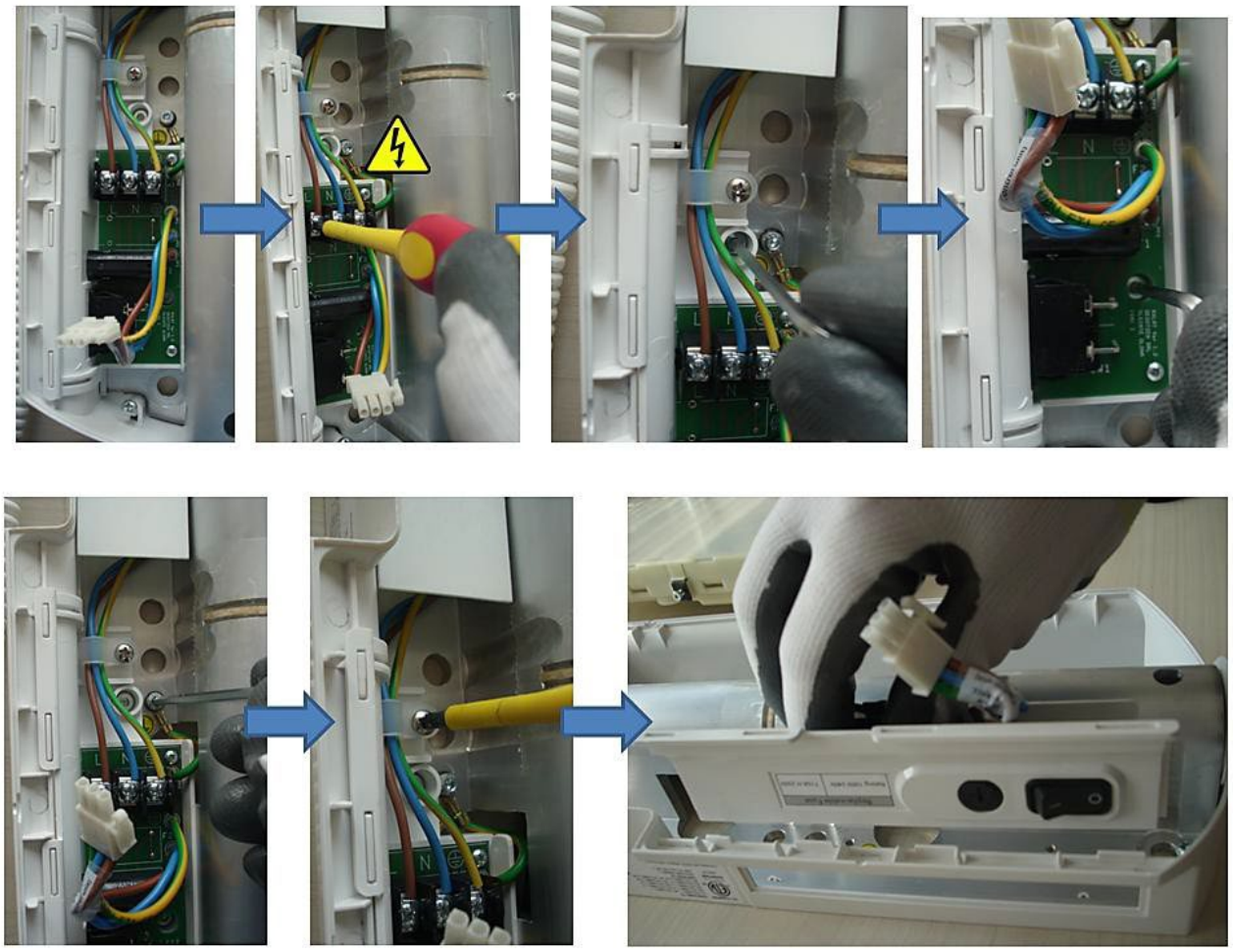
Follow step by step the procedure shown above to dismount the RXCD board

8.4. C - Replace RXINT Board



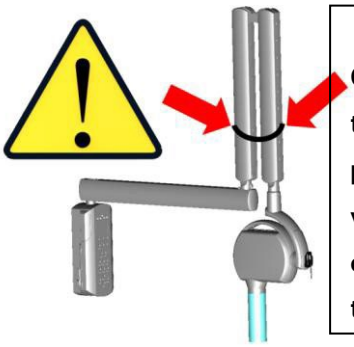
Follow step by step the procedure shown above to dismount the RXINT Board

8.5. D - Replace RXLAT Board



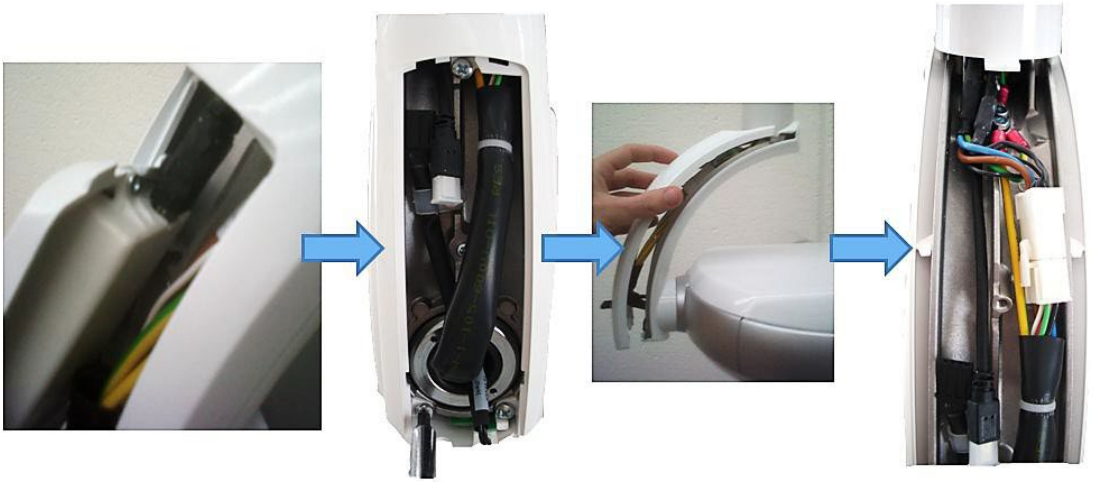
Follow step by step the procedure shown above to dismount the RXLAT board

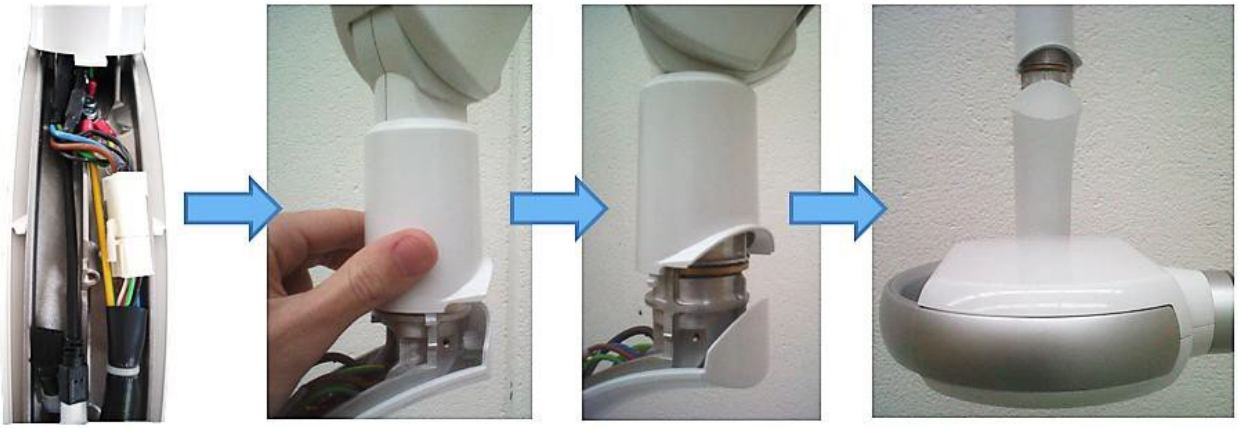
8.6. E - Replace TUBEHEAD



PAY ATTENTION:

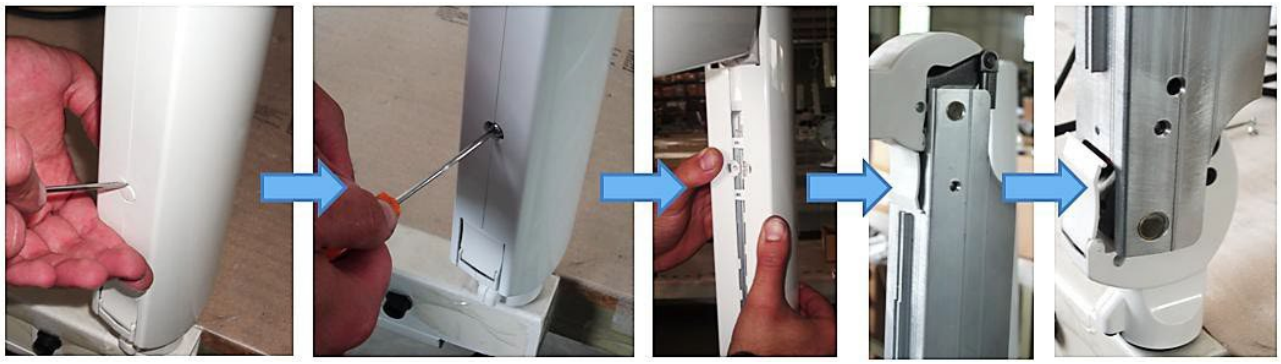
Check the spring tension is uncharged, or lock the scissor arm as shown in the picture, before proceeding to replace the tubehead; otherwise when you will dismount it, the scissor arm will open wide istantantaneously. This can damage the operator and the arm

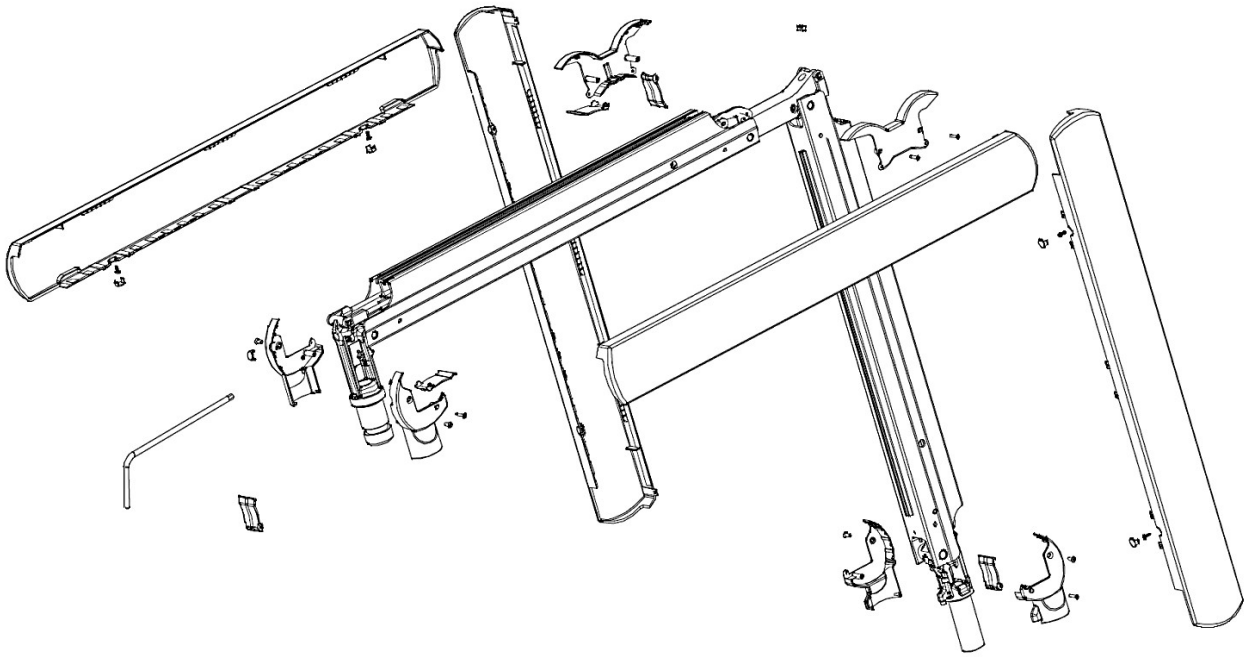




Follow step by step the procedure shown above to dismount the tubehead

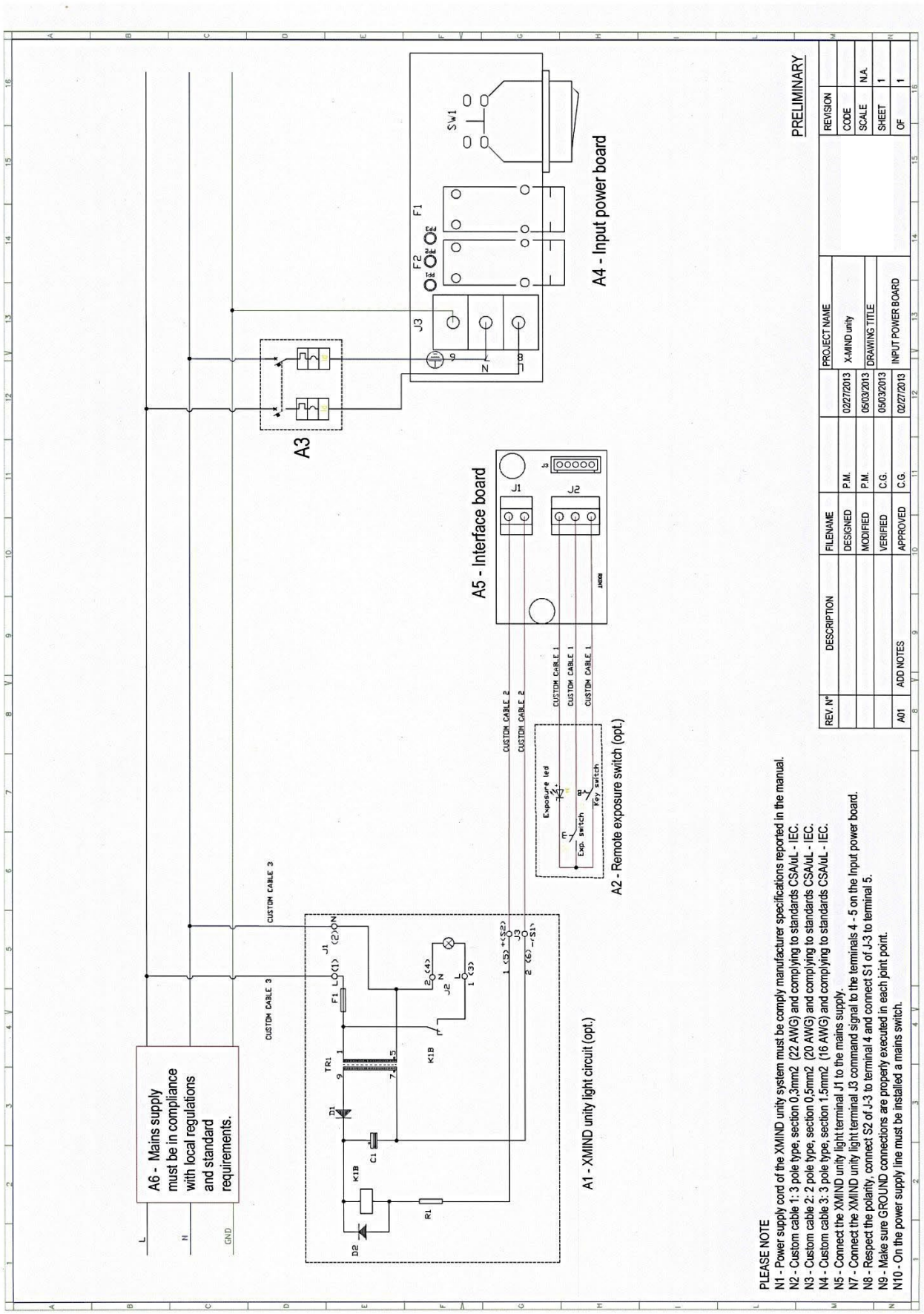
9. Owandy-RX PRO PANTOGRAPH ARM COVERS

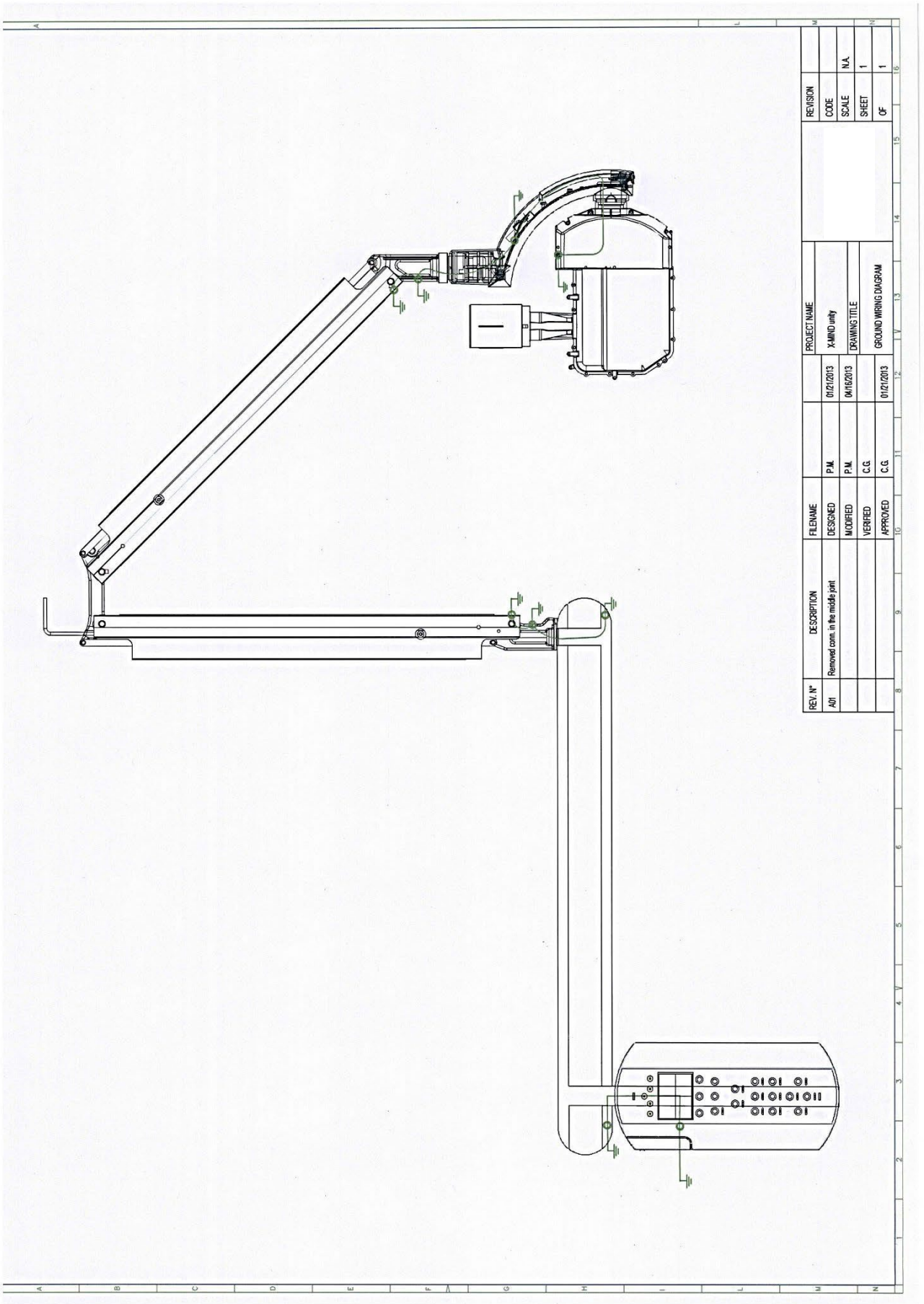


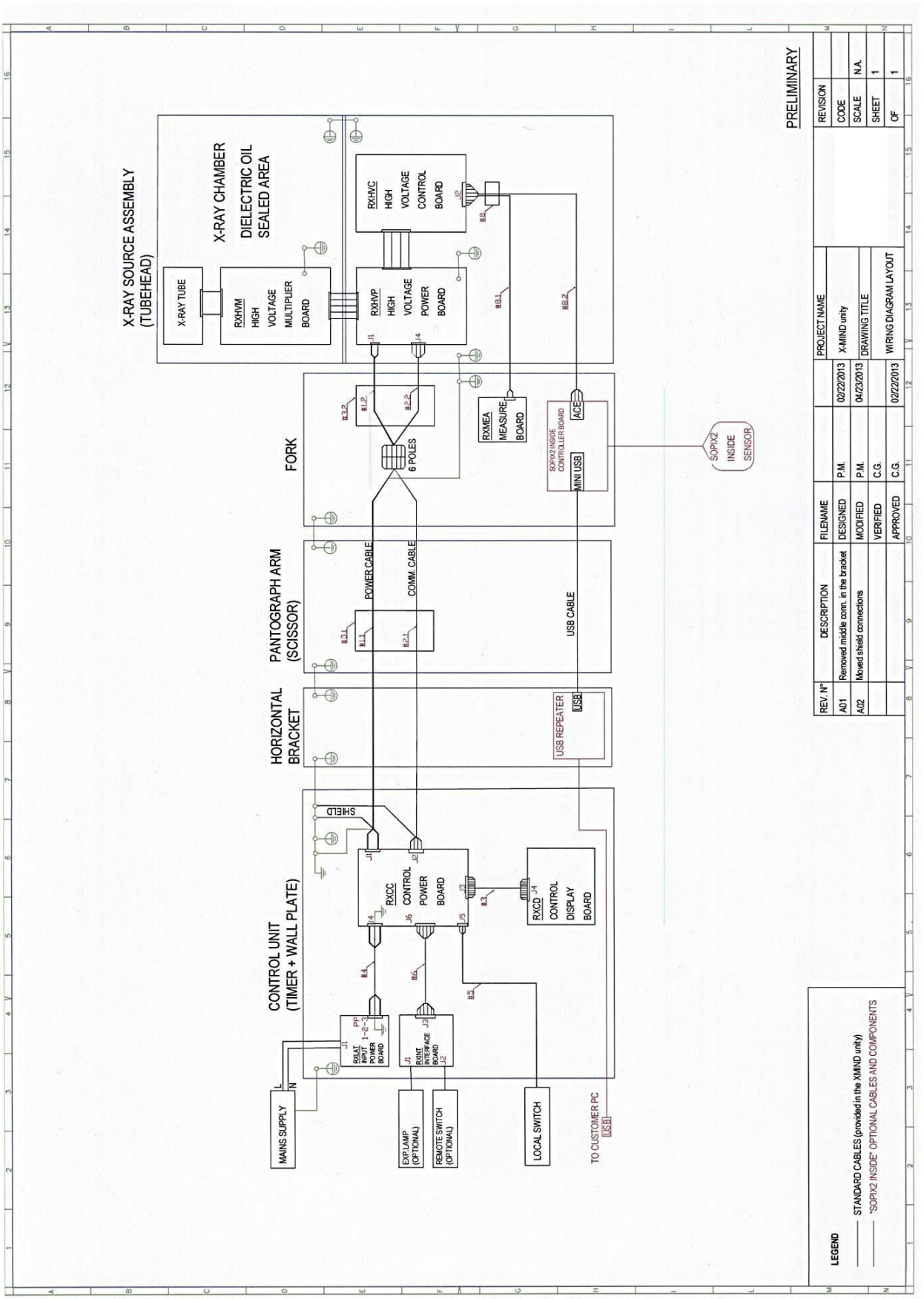


Follow step by step the procedure shown above to dismount the arm covers

10. ELECTRICAL SCHEME




REV. N°
DESCRIPTION
FILENAME
A01
Removed conn. in the middle joint
DESIGNED
P.M.
01/21/2013
MODIFIED
P.M.
04/16/2013
VERIFIED
C.G.
APPROVED
C.G.
01/21/2013
PROJECT NAME
X-MIND unity
DRAWING TITLE
GROUND WIRING DIAGRAM
REVISION
CODE
SCALE
N.A.
SHEET
1
OF
1


X-RAY SOURCE ASSEMBLY (TUBEHEAD)
X-RAY TUBE
X-RAY CHAMBER DIELECTRIC OIL SEALED AREA
RXHVM HIGH VOLTAGE MULTIPLIER BOARD
RXHVP HIGH VOLTAGE POWER BOARD
RXHVC HIGH VOLTAGE CONTROL BOARD
FORK
6 POLES
RXMEA MEASURE BOARD
SOPIX2 INSIDE CONTROLLER BOARD
MINI USB
ACE
SOPIX2 INSIDE SENSOR
PANTOGRAPH ARM (SCISSOR)
POWER CABLE
COMM. CABLE
USB CABLE
HORIZONTAL BRACKET
USB REPEATER
CONTROL UNIT (TIMER + WALL PLATE)
SHIELD
RXCC CONTROL POWER BOARD
RXCD CONTROL DISPLAY BOARD
RXLAT INPUT POWER BOARD
RXINT INTERFACE BOARD
MAINS SUPPLY
EXP.LAMP (OPTIONAL)
REMOTE SWITCH (OPTIONAL)
LOCAL SWITCH
TO CUSTOMER PC
LEGEND
STANDARD CABLES (provided in the XMIND unity)
"SOPIX2 INSIDE" OPTIONAL CABLES AND COMPONENTS
PRELIMINARY
REV. N°
DESCRIPTION
FILENAME
A01
Removed middle conn. in the bracket
DESIGNED
P.M.
02/22/2013
A02
Moved shield connections
MODIFIED
P.M.
04/23/2013
VERIFIED
C.G.
APPROVED
C.G.
02/22/2013
PROJECT NAME
X-MIND unity
DRAWING TITLE
WIRING DIAGRAM LAYOUT
REVISION
CODE
SCALE
N.A.
SHEET
1
OF
1