stomdevice

INSTALLATION & MAINTENANCE MANUAL

THE FOLLOWING MANUAL IS VALID FOR THE BRAND

“x-mind dc” “xgenus dc” “Leadex70 dc”

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

MANUFACTURER
de Götzen S.r.l. - a company of ACTEON Group
Via Roma, 45
21057 OLGIATE OLONA (VA) – ITALY
Tel. +39 0331 376760
Fax +39 0331 376763
www.acteongroup.com
For information and technical assistance, contact the manufacturer
imaging.italysupport@acteongroup.com

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

THE RADIOGRAPHIC SYSTEM DESCRIBED IN THIS MANUAL REFERS TO A WALL INSTALLATION.
de Götzen S.r.l. – ACTEON Group RESERVES ITSELF THE RIGHT TO MODIFY THE PRODUCTION AND THE MANUAL WITHOUT NOTICE.
IT IS PROHIBITED TO MODIFY, COPY, REPRODUCE, DISPLAY, SHARE, DISCLOSE AND PUBLISH THIS MANUAL AND ALL OTHER DOCUMENTS REFERRING TO "SYSTEM" IN ANY FORM WITHOUT PRIOR WRITTEN CONSENT BY de GÖTZEN® S.r.l. – ACTEON Group.
THE MANUAL MUST ALWAYS BE KEPT NEAR THE MEDICAL DEVICE FOR FUTURE REFERENCE.
de Götzen S.r.l. – ACTEON Group SHALL NOT BE LIABLE FOR AN INCORRECT USE OF THE INFORMATION CONTAINED IN THIS MANUAL.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

CONTENTS

Summary

CONTROL PANEL 6
PRELIMINARY INFORMATION 7
1.1. PRELIMINARY INFORMATION 7
1.2. INFORMATION FOR THE INSTALLER 7
1.3 WARRANTY CONDITIONS 7
1.4. TRANSPORT CONDITIONS 8
1.5. SAFETY WARNINGS 8
RADIOGRAPHIC SYSTEM 12
2.1. RADIOGRAPHIC SYSTEM 12
2.2. SYSTEM COMPONENTS 13
2.3 OPTIONAL ACCESSORIES 14
2.4. OVERALL DIMENSIONS 14
2.5. SYMBOLS 16
INSTALLATION SPECIFICATIONS 18
3.1. INSTALLATION SPECIFICATIONS 18
INSTALLATION 20
4.1. INSTALLATION 20
4.2. UNPACKING 20
4.3. ASSEMBLING THE WALL PLATE 21
4.4. ASSEMBLING THE BRACKET 22
4.5. ASSEMBLING THE PANTOGRAPH ARM 23
4.6. ASSEMBLING THE TIMER 24
4.7. ASSEMBLING THE TUBEHEAD 25
4.8. BALANCING THE PANTOGRAPH ARM 27
ELECTRIC CONNECTION 30
5.1. ELECTRIC CONNECTION 30
CONFIGURATION 33
6.1. CONFIGURATION 33
6.2. CHANGING THE CONFIGURATION 34
START UP 36
7.1. START UP 36
INSTALLATION CHECK LIST 37

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

8.1. INSTALLATION CHECKS 37
DIAGNOSTIC 38
9.1. DIAGNOSTIC 38
CALIBRATION OF THE TUBEHEAD 40
ERROR MESSAGES 41
11.1. ERROR MESSAGES 41
SUGGESTED MAINTENANCE 43
12.1. SUGGESTED MAINTENANCE 43
12.2. CLEANING THE OUTER SURFACE 43
REPLACEMENT OF FUSES 45
13.1 FUSES REPLACEMENT 45
REPAIR 47
14.1. REPAIR 47
14.2. DISPOSAL 47
ANNEX 1 48
A1. TECHNICAL SPECIFICATIONS 48
ANNEX 2 49
A2. DRAWINGS AND DIMENSIONS 49
ANNEX 3 51
A3. INSTALLATION ELECTRICAL DIAGRAM 51

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

CONTROL PANEL



https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

PRELIMINARY INFORMATION

1.1. PRELIMINARY INFORMATION

Before beginning to use the radiographic system, it is mandatory to carefully read and follow the instructions contained herein, so as to obtain the best possible performance and to assure the safety of the patient, operator, device and environment.

Always pay close attention to the
CAUTION
WARNING
PLEASE NOTE
messages when operating the system.

LEGEND

CAUTION

*The word **CAUTION** identifies those occurrences which might compromise the operator's personal safety or cause injuries to people.*

WARNING

*The word **WARNING** identifies those occurrences which might compromise the radiographic system's performance.*

PLEASE NOTE

***PLEASE NOTE** serve to give special indications so as to facilitate maintenance or make important information clearer.*

1.2. INFORMATION FOR THE INSTALLER

CAUTION

The installer is responsible for the installation, with regards to the system safety and operation.

For safe and reliable installation of the radiographic system it is advisable to:
check that the voltage mentioned in the rating plate matches the line voltage;

- install the radiographic system according to the procedures described in this manual;
- provide the user with any information regarding the use of the radiographic system according to what stated in the manual;
- certify the work done by filling-in the "Installation Check-list" to be returned to de Götzen S.r.l. – ACTEON Group.

1.3 WARRANTY CONDITIONS

Inappropriate use or any arbitrary tampering with the equipment exempt de Götzen S.r.l. – ACTEON Group, as manufacturer of the radiographic system, from any service under warranty.

The warranty is valid only if the following precautions are taken:

- any repairs, modifications, adjustments, recalibrations must be performed only by de Götzen S.r.l. – ACTEON Group;
- the installation must be made by professionally qualified technicians according to the regulations in force;
- the system must be installed and used in compliance with the instructions given in this manual and for the purposes and applications for which it was designed;

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

- the power supply must be adequate to supply the required power indicated in the radiographic system's nameplate data;
- the system must be checked completely at least each 12 months by professionally qualified technicians according to the regulation in force; use the manuals provided with the device for reference;
- in case of repair, please use only spare parts from the manufacturer; otherwise basic safety and essential performances of the device will not be guaranteed.

1.4. TRANSPORT CONDITIONS

The radiographic system travels at the receiver's own risk.

All claims for damage or miscarriage regarding the shipment must be pointed out in the presence of the shipping agent. In case of miscarriages, or actual or suspected damage, the receiver shall indicate the proper reserves on the transport documentation or on the consignment note.

1.5. SAFETY WARNINGS

A few safety recommendations which should be followed when using the radiographic system are listed here below.

CAUTION

GENERAL REQUIREMENTS

RESPONSIBLE ORGANIZATION is the authority that has the responsibility for the USE and MAINTENANCE of the radiographic system.
The training and preparation of personnel is the responsibility of THE RESPONSIBLE ORGANIZATION.
the radiographic system is an X-ray generator and must be used and handled only by specialized surgeons, dentists and authorized personnel, who meet the requirements provided by the national laws in force in the country of installation.
It is mandatory for the RESPONSIBLE ORGANIZATION to provide a routine and special maintenance schedule for medical equipment; this schedule must be documented for every device and transmitted to the various operating levels (*). The preventive maintenance (that must be performed at least every 12 months), which includes functional, performance and safety tests of the device, must be carried out by qualified, authorized professional technicians. It is mandatory to ensure patients' health and safety and proper radiographic system operation (IEC 60601-1 etc.). These operations must be carried out according to the methods and frequency indicated in this manual and in the installation and maintenance manual.
The RESPONSIBLE ORGANIZATION must also provide for the safe and proper use of the equipment.
(*) For Italy refer to Presidential Decree 14/01/1997, Legislative Decree No. 81/2008 (as subsequently amended and modified).
Operators must know the environmental and operating specifications of the device, as well as the procedures to follow in the event of hazards or emergency stops.
The radiographic system has been designed to acquire radiographic images for dental intraoral X-ray imaging. The medical device must not be used for X-ray imaging of other body parts.
Carefully follow the instructions in this manual to install, operate and maintain the radiographic system. In the event that local laws and standards are more restrictive than the manufacturer's indications, the former supersede the latter.
The RESPONSIBLE ORGANIZATION must comply with the standards and regulations in force concerning the installation of the medical device in consideration of the place of installation.
The operator is responsible to monitor the patient and the parameters of the radiographic system throughout the entire duration of the X-ray examination.
It is prohibited to modify any part of the medical device.
de Götzen S.r.l. – ACTEON Group and its authorized technicians are not required to verify compliance of the installation site with local standards concerning electrical safety and X-ray protection and with any other directive concerning safety in force in the Country of installation.
The RESPONSIBLE ORGANIZATIONS of the facility must ensure compliance of the installation site with the local laws in force.
Before each examination, it is mandatory to apply to the collimator cone (Beam Limiting Device) a disposable protection sheath designed to cover the end part of the X-ray unit, which is more susceptible of being directly contaminated during the X-ray exposure (class I Medical Device Directive 93/42/EEC and subsequent amendments). It can come in contact with the patient's skin: verify biocompatibility according to the principles given in the ISO 10993 series of standards, refer for details to the disposable use protection's instructions for use.
Before operating the radiographic system, you must assure that the device has no visible signs of damage.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

CAUTION

PROTECTION AGAINST RADIATIONS

"The general principles regarding safety and protection of workers and people" must always be applied when using the unit:
1. Justification of the practice
2. Protection Optimization
3. Reduction of the limits of individual dose and risks
The system is a medical device that generates X-rays; therefore, both the patients and the operator are exposed to risks due to ionizing radiation. The physician must assess the actual need for X-ray exposure.
All personnel present during an X-ray examination must comply with safety regulations concerning protection against radiation. For their own safety, the operator must always keep a distance of more than 2 meters (6 ft.) and out of the path of the X-ray beam, in order to avoid the exposition to the stray radiation and residual radiation.
The medical device must be used in compliance with the local standards in force and with the international directives concerning radiation protection.
The device must comply with the guidelines and indications provided by an accredited specialist in radiation protection, who will recommend, if necessary, the additional shields or precautions for every specific case.
The device installation site must be shielded in compliance with the local standards in force to protect the operator, patient and other people against X-rays.
The operator and other personnel must keep clear from the patient during the scan.
The personnel involved in the radiographic examination must take all the safety measures concerning radiation protection.
The system generates X-rays: before using this X-ray system please refer to the regulation in force in your area concerning pediatric patients, pregnant women and anyone with health issues that contraindicate the use of X-rays. Investigate and make sure of this condition before starting the exposure.



This symbol indicates X-ray hazard.

CAUTION

MECHANICAL RISK

Before removing the tubehead from the positioning arm, RELEASE THE SPRING.
The sudden opening of the joint may cause damage to people and/or things.
Check that the installation of the unit complies with the mechanical specifications of the support (walls, ceiling, etc..) where it is installed.
Adjustments or any kind of attempt of repairing or disassembling must only be performed by qualified and authorized service personnel.
The radiographic system must not be used in environments or close to environments subjected to mechanical vibrations or mechanical shocks.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

CAUTION

ELECTRICAL SAFETY

The radiographic system contains high voltage. It's prohibited to inspect internal parts of the system.
Never attempt to open the X-ray tubehead.
The covers on the radiographic system must only be removed by qualified and authorized service personnel.
The unit must be used only in environments that are in compliance with all electrical safety standards set forth for medical environments.
To avoid the risk of electric shock, this device must only be connected to a supply mains with protective earth.
The unit is NOT equipped with protections against penetration of liquids; it will therefore be necessary to make sure that no water or other liquids penetrate inside in order to avoid short circuits or corrosion.
Always disconnect the radiographic system from the power supply and wait for 2 minutes before beginning to clean, disinfect and maintenance operations.
Do not connect the X-ray system to a multiple portable socket outlet (MPSO) nor to any type of extension cord.
External equipment intended for connection to signal input, signal output or other connectors shall comply with the relevant product standard e.g. IEC 60950-1 for IT equipment and the IEC 60601-series for medical electrical equipment. In addition, all such combinations shall comply with the safety requirements stated in the general standard CEI EN 60601-1, edition 3, clause 16. Any equipment not complying with the leakage current requirements in CEI EN 60601-1 shall be kept outside the patient environment i.e. at least 1,5 m from the patient support.
It is mandatory to use an isolation device (Separation Device) to isolate the equipment located outside the patient environment from the equipment located inside the patient environment. In particular, such a Separation Device is required when a network or data connection is made. The requirements on the Separation Device is defined in CEI EN 60601-1, edition 3, clause 16.
For the wall version of radiographic system:
based on the CEI EN 60601-1, the installation is a permanent type (fixed). IT IS NOT ALLOWED TO connect the equipment to the main supply using a plug.
The cone (beam limiting device) is an APPLIED PART of the system and it is classified as type B.

CAUTION

EMC COMPATIBILITY

EMC requirements must be considered and the "x-mind dc" must be installed and used accordingly with the specific EMC information provided in the accompanying documents.
The device complies with the EMC (Electromagnetic Compatibility) requirements, according to CEI EN 60601-1-2. Radio transmitting equipment, cellular phones etc. shall not be used in close proximity of the unit as they could influence the performance of the system.
Carefully read the indications relevant to the EMC in the dedicated appendix EMC compatibility of user manual.

Repairs and replacements of any component included cables, must be carried out only using genuine spare parts supplied by de Götzen S.r.l. Using other cables may negatively affect EMC performance.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

CAUTION

PROTECTION AGAINST EXPLOSIONS

The radiographic system MUST NOT be used in the presence of disinfectant, flammable or potentially explosive gases or vapours that might catch fire and cause damage.
In case these disinfectants have to be used, let the vapour completely disperse before turning on the radiographic system.

CAUTION

SYSTEM MODIFICATIONS OR UPGRADES

Modifications or upgrades of the system can be carried out only if advised by de Götzen S.r.l. – ACTEON Group and performed by authorized and qualified personnel, using ONLY genuine original spare parts of de Götzen S.r.l. – ACTEON Group.
de Götzen S.r.l. – ACTEON Group proscribes improper, unauthorized modifications or upgrades of the device, in order to avoid malfunctions resulting in breakdowns and/or accident for patient, operator and equipment.
Do not remove or attempt to remove the plastic covers of the device.
It is strictly forbidden to attempt to repair electronic or mechanical parts by yourself.
Disregarding this warning can result in irreversibly compromising the overall safety of the system and can be dangerous for operators, patients and environment.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

RADIOGRAPHIC SYSTEM

2.1. RADIOGRAPHIC SYSTEM

The radiographic system guarantees the maximum safety both for the operator and the patient.
It is built in compliance with the following European Directives:

- 93/42/EEC and subsequent amendments MEDICAL DEVICES
- EURATOM 96/29 IONISING RADIATIONS

and in compliance with the following American Standard:

The following protective measures were adopted in the design and construction of the unit:
- protection against the risk of electric injuries, ensured by a grounded protection conductor;
- protection against leakage radiation, made negligible by the shielded casing;
- protection against excessive radiations, thanks to the immediate activation of the safety device;
- protection against continuous service, since the system is designed, according to standards, not to allow the use in radioscopy;
- protection for the patient against dangerous radiations, obtained by means of the high frequency technology capable of producing a constant and hard radiation
- protection against exposure mistakes obtained with the self-compensating technology which, by revealing voltage fluctuation, is able to modulate the irradiation time ensuring the proper level of dose;
- protection for the operator against irradiation ensured by the extensible cable of the hand control which allows for a safety distance of more than 2 meters (6 ft.);
- protection against involuntarily selection of radiographic technique (FILM or DIGIT) obtained, according to standards, by means of the confirming on the selection key.

"ELECTRO-MEDICAL" CLASSIFICATION

According to paragraph §6 of the general safety regulations CEI EN 60601-1: 2007 on safety of medical equipment, the system is classified as: **Class I - Type B**

"MEDICAL DEVICES" CLASSIFICATION

According to the classification rules indicated in attachment IX of the EEC Directive 93/42 on medical devices and subsequent amendments the system is classified as: **Class IIb**

"E.M.C." CLASSIFICATION

According to paragraph §4 of the CEI EN 55011, the system is classified as: **Group 1 – Class B**

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

2.2. SYSTEM COMPONENTS

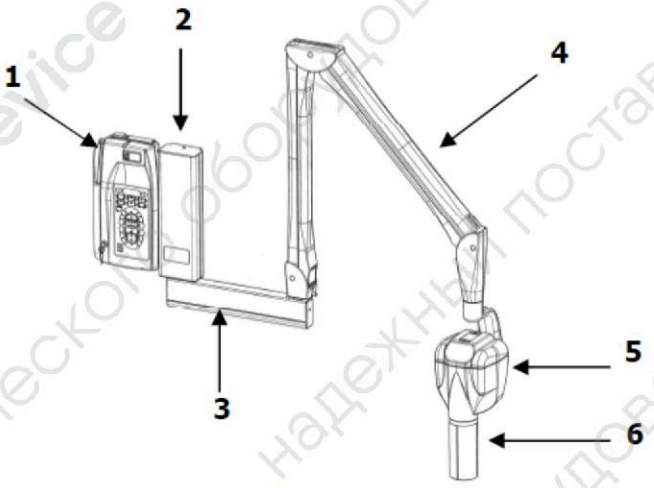


Fig. 1

radiographic system (Fig. 1) consists of:

1. TIMER
The timer is the control panel used to manage the exposure times and to safely use the tubehead.
To make the exposure, the control button with safety key is available.
The timer can be connected to n° 2 ac tubeheads.
In case of alternate current tubeheads the technology of the timer is "self - compensating":
depending on the line voltage fluctuation, the microprocessor automatically modifies the predetermined exposure time ensuring a constant dose to the patient.
This technological expedient avoids the repetition of the exposure because of over/under exposure errors.

2. WALL PLATE

3. BRACKET
The horizontal bracket is available in 3 different lengths (110 cm, 80 cm, 40 cm) and represents the support for the pantograph arm. Its shaft is fixed in a dedicated section of the timer (top or bottom) and allows for 180° movement.

4. PANTOGRAPH ARM
Thanks to the new shape and new mechanisms of the positioning arm, it can be adjusted in height and depth in order to precisely explore any spot in its reach.
It is made of light alloy with an ABS coating.

5. TUBEHEAD The system
The intra-oral tubehead "The system" is a monoblock type and its light alloy housing contains an airtight compartment.
The high voltage transformer, the X-ray tube and the expansion chamber are submerged in highly dielectric insulating oil inside a light alloy container.
The expansion chamber guarantees an adequate compensation to oil expansion for the entire temperature range.
The X-ray tube is located in the back part of the container, allowing a source-skin distance 50% higher than traditional structures.

6. CONE
The collimator cone or Beam Limiting Device represents the applied part of the device. Made of the polycarbonate, it allows:

- the correct distance between focal spot and skin
- dimension, direction and centering of X-ray beam
- the realization of different radiographic technique (bisecting and parallel technique).

During X-ray exposition, the collimator cone comes in contact with the skin of the patient.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

Before each exam, it is necessary to apply to the cone a disposable protective cover designed to cover the end part of the X-ray generator.
Such protection has two functions: avoid cross contamination (from patient to patient) and prevent the possibility of inflammations or other types of reactions of the skin caused by contact with the material that constitutes the cone.

2.3 OPTIONAL ACCESSORIES

- The system LIGHT (X-ray signaling lamp for external use)
- The system ECB (remote control button)

2.4. OVERALL DIMENSIONS

Fig. 2A, 2B, 2C give the overall dimensions of the possible supply conditions:
BRACKET 400: L = 41 cm – 16" 9/64
BRACKET 800: L = 82,5 cm – 32" 31/64
BRACKET 1100: L = 110 cm – 43" 5/16

BRACKET 400

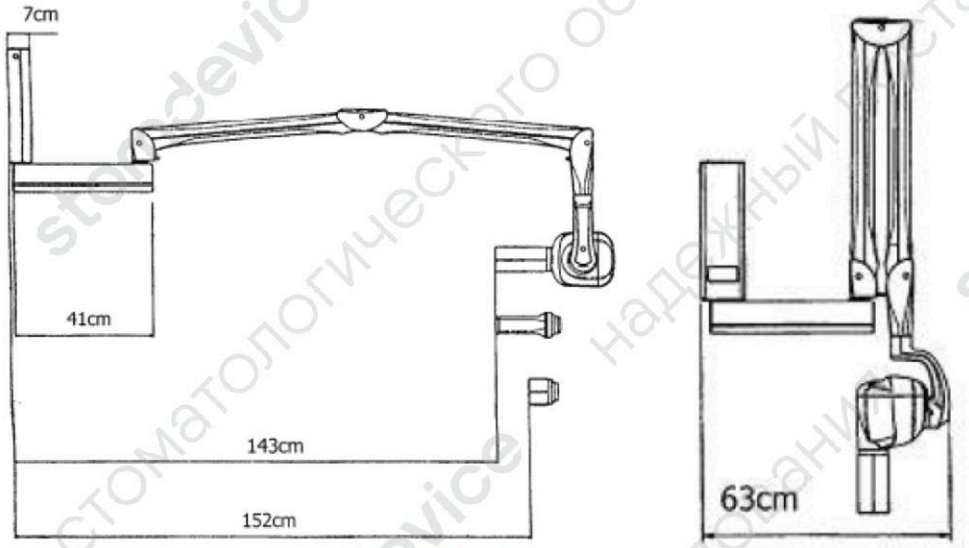


Fig. 2A

BRACKET 800

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

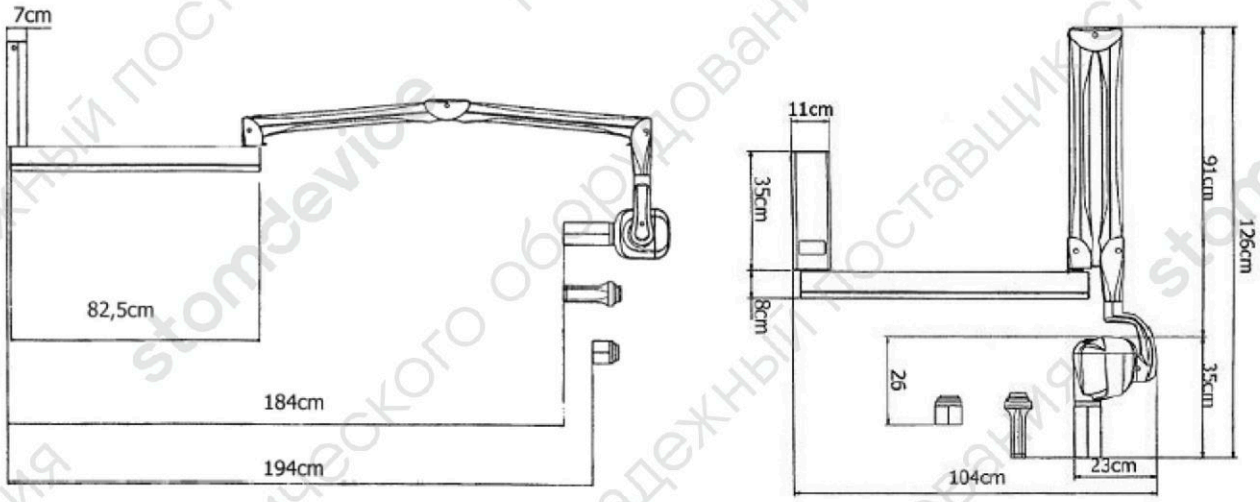


Fig. 2B

BRACKET 1100

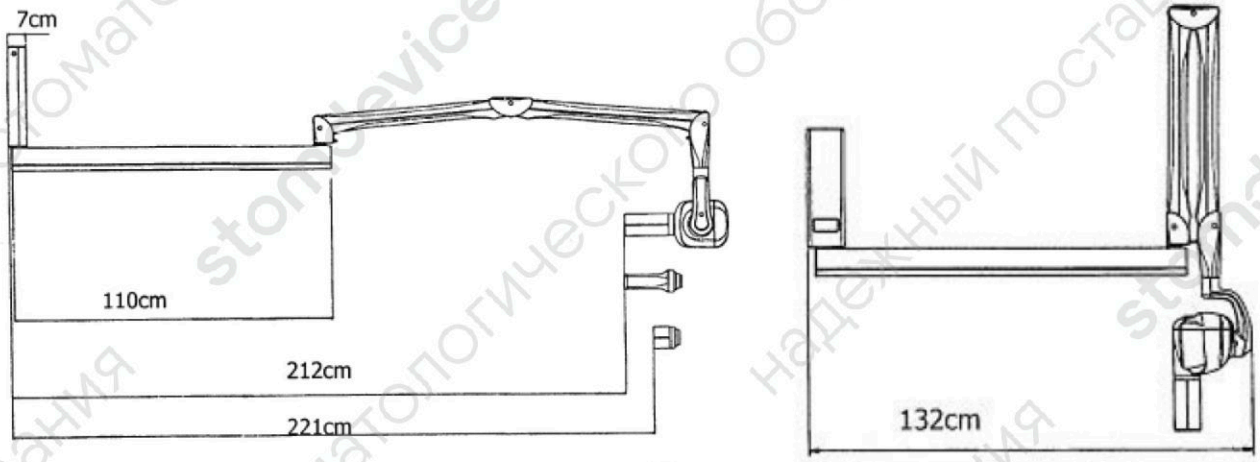


Fig. 2C

Fig. 3 and 4 show the typical dimensions of the radiographic system:

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

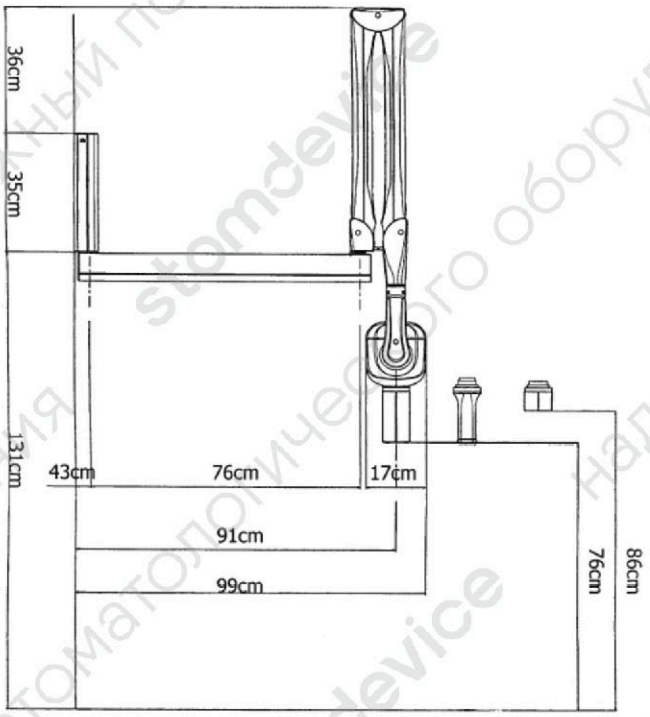


Fig. 3

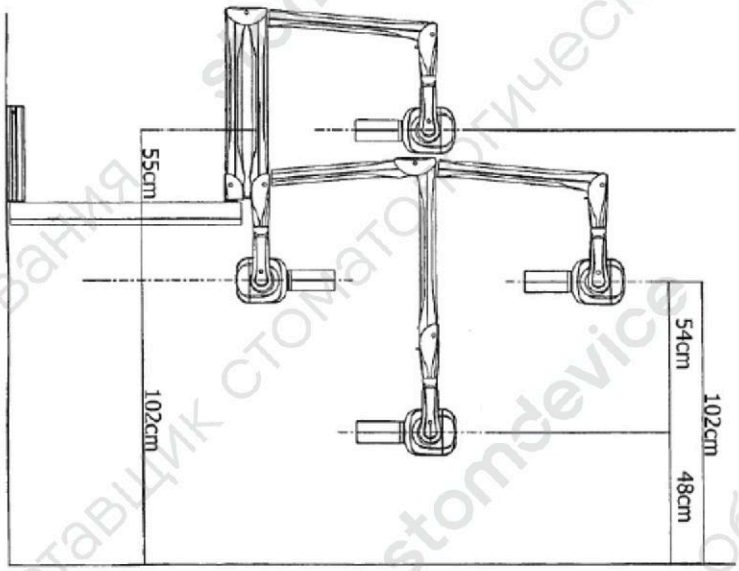
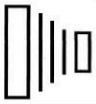


Fig. 4

2.5. SYMBOLS

PICTOGRAMS USED

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

	SYMBOL INDICATING THE MANUFACTURER
 XXXX	THIS SYMBOL GUARANTEES THAT THE RADIOGRAPHIC SYSTEM COMPLIES WITH THE REGULATIONS CONTAINED IN THE EUROPEAN DIRECTIVE EEC 93/42 REGARDING MEDICAL DEVICES
	SIZE OF THE FOCAL SPOT
	THE DEGREE OF PROTECTION AGAINST DIRECT AND INDIRECT ELECTRIC CONTACTS IS B TYPE
	SYMBOL INDICATING THE SERIAL NUMBER
	SYMBOL INDICATING DANGER DUE TO IONISING RADIATIONS
	X-ray EMISSION (IEC 60417)
	PAUSE (IEC 60417)
	ATTENTION REFER TO THE ATTACHED DOCUMENTS
	INSTRUCTIONS IN ELECTRONIC FORMAT
	REFER TO MANUAL'S INSTRUCTIONS
	WEEE (Waste Electrical and Electronic Equipment) SYMBOL, IN CONFORMITY WITH 2012/19/ CE DIRECTIVE AND EN 50419 STANDARD.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

INSTALLATION SPECIFICATIONS

3.1. INSTALLATION SPECIFICATIONS

WARNING

Prior to installing the radiographic system, the Responsible Organization must as certain that: the environment, the electric system and the power supply comply with the requirements needed, otherwise he must provide the required adjustment.

ENVIRONMENT REQUIREMENTS

- The installation environment must be wide enough: check that the size and overall dimension of the environment don't present any obstacle while positioning the radiographic system.
- The environment must not be exposed to explosion hazards and must not be pressurized.
- While operating, the ambient temperature must range within +5°C and +40°C.
- The storage temperature must range within -15°C and +50°C.
- The relative humidity must range within 25% and 75%.

REQUIREMENTS OF THE SUPPORTING WALL

- The radiographic system supporting wall must be able to stand a 200 Kg tear at every fixing point.

PLEASE NOTE

It is mandatory to check the nature and consistency of the wall and, if required, ask the support of a brickwork expert.
The walls of uncertain consistency must be provided with a buried counter plate or with a sandwich type system.

REQUIREMENTS OF THE ELECTRIC SYSTEM

- The electric system must comply with the regulations in force.
- The electric system must be able to supply the power and voltage required in the manufacturer's rating plate of the radiographic system (Chart A).

Chart A

MANUFACTURER'S RATING PLATE ELECTRIC SYSTEM	230 V ± 10%	115 V ± 10%
NOMINAL VOLTAGE	230 V	115 V
MINIMUM LINE VOLTAGE	207 V	103,5 V
MAXIMUM LINE VOLTAGE	253 V	126,5 V
FREQUENCY	50 / 60 Hz	50 / 60 Hz
ABSORBED POWER	1,2 kVA	1,1 kVA

Chart B

MANUFACTURER'S RATING PLATE	230 V ± 10%	115 V ± 10%
POWER SUPPLY VOLTAGE	198 ≤ V ≤ 253	103,5 ≤ V ≤ 126,5

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

MINIMUM CONDUCTOR SECTION MAXIMUM LINE LENGHT	1,5 mm2 10 m
MAXIMUM CONDUCTOR SECTION MAXIMUM LINE LEGHT	2,5 mm2 20 m

PLEASE NOTE

For longer lines, the conductor section must be increased in proportion.

- The cables (S11, S12 – S21, S22) connecting the timer and the X-ray signaling lamp for external use must be two-pole type, of section 0,5mm2.
- The electric line characteristics must have the following characteristics (Chart C):

Chart C		
MANUFACTURER'S RATING PLATE ELECTRICAL LINE	230 V ± 10%	115 V ± 10%
MAXIMUM VOLTAGE DROP	3 %	
APPARENT LINE RESISTANCE	0,5 Ω	0,2 Ω

ELECTRIC CONNECTIONS

WARNING

Prior to installing the radiographic system, it is advisable that all the electric connections are arranged.

TIMER

On the timer installation wall, according to the installation electric diagram, suitable runs for the following electric cables must be provided:

- timer electric cables;
- cables for the connection between timer and tubehead;
- cables for the connection between the timer and the X-ray signaling lamp for external use the system LIGHT (OPTIONAL);
- cables for the connection between the timer and the remote-control button the system ECB (OPTIONAL).

CAUTION

According to the relevant standard, the timer must be installed in a position that allows the operator to constantly control the radiographic exposure.

TUBEHEAD

On the wall plate installation wall, a suitable run for the cable connecting timer and tubehead must be provided.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

INSTALLATION

4.1. INSTALLATION

CAUTION

The radiographic system must be installed by professionally trained technicians, who must be able to certify their work by "Declaration of Conformity".

WARNING

Prior to installing the radiographic system, it is advisable to verify that all needed requirements have been satisfied (refer to Chapter 3).

4.2. UNPACKING

The components of the radiographic system are duly packed within a carton box, as shown in the

Fig. 5:

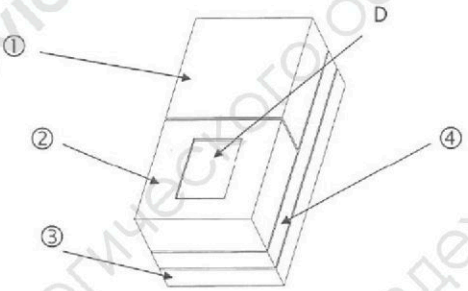


Fig. 5

1. TUBEHEAD PACKAGING
2. TIMER + OPTIONAL PACKAGING
3. PANTOGRAPH TYPE ARM PACKAGING
4. WALL PLATE and BRACKET PACKAGING

D QUICK START GUIDE and WARRANTY CARD

PLEASE NOTE

Prior to installation, duly check all components.

PLEASE NOTE

The carton board and the polystyrene foam can be completely recycled and can be disposed by authorized recycling companies.

PLEASE NOTE

It is advisable to store the original packaging to return the goods for repairs.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

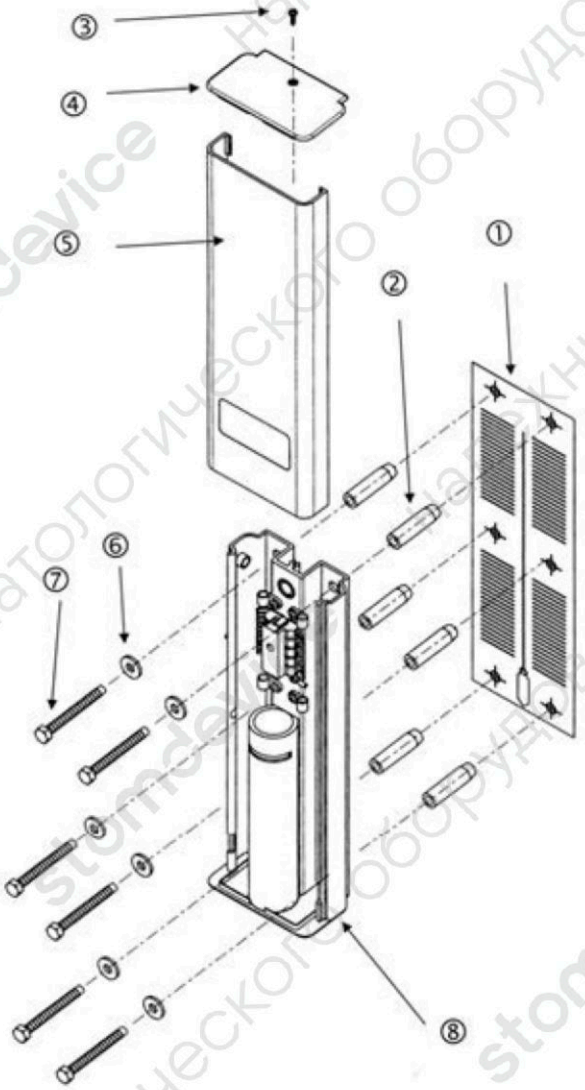
4.3. ASSEMBLING THE WALL PLATE

WARNING

When the timer is installed aside the wall plate, please consider what follows:
- *the timer must be mounted on the left side of the wall plate;*
- *the distance between timer and wall plate must be 2,5mm.*

WARNING

When the timer is installed aside the wall plate, please consider what follows:
- *the timer must be mounted on the left side of the wall plate;*
- *the distance between timer and wall plate must be 2,5mm.*



ASSEMBLY INSTRUCTION (refer to Fig. 6)

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

1. Take out from the packaging the wall plate and the drilling template 1.
2. Position the drilling template 1 on the radiographic system installation wall, at the required height (130cm from the base in the suggested height).
3. Fix the template 1 with adhesive tape.
4. Check the holes for verticality and alignment with the floor, using a plumb line.
5. Mark the wall plate 8 fixing holes.
6. If required, mark the holes for the electric cables connecting the timer to the tubehead.

PLEASE NOTE

To prevent any flaking in the white coat and to control the centre distances between the holes, it is advisable to start drilling with a tip Ø7, increasing this measure gradually.

7. Drill the fixing holes.
8. Remove the template 1 and insert the suitable anchor screws 2, according to the wall characteristics.
9. Unscrew the screw 3 and remove the plug 4 from the wall plate 8.
10. Withdraw the sliding cover 5.
11. Approach the wall plate 8 to the wall and insert the screws 7 with the relevant washers 6, then tighten alternately.
12. Check that the wall plate 8 is steadily fixed to the wall.

PLEASE NOTE

If the wall is not perfectly levelled, put a suitable shim between the wall and the wall plate, so as to prevent any possible deformations.

4.4. ASSEMBLING THE BRACKET

PLEASE NOTE

The 82,5cm and 110cm brackets are provided with a stop key 1 (Fig. 7A and 7B) to prevent the electric cable from twisting.

PLEASE NOTE

Generally, the stop key is installed so that the equipment position at rest is on the right side of a possible watcher standing in front of the wall plate (Fig. 7A). Should the position at rest be on the left side, the stop key must be rotated by 180° (Fig. 7B).

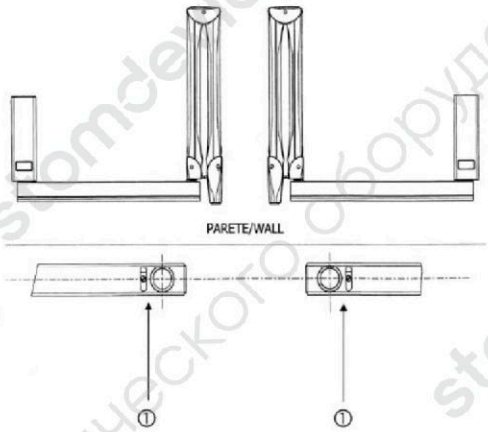
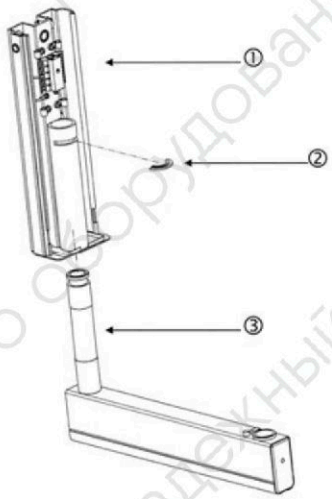


Fig. 7A Fig. 7B

ASSEMBLY INSTRUCTION (refer to Fig. 8)

1. Take out the bracket from the packaging.
2. Insert the bracket pin 3 into the wall plate 1 (upwards).
3. Insert the supporting rest 2.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ



PLEASE NOTE

Prevent all foreign matters (ground, dust, cement, etc.) from settling on the pin seat.
The pin must slide freely in its seat.
If required, thoroughly clean and lubricate with grease Molikote D.

PLEASE NOTE

Check accurately with a line level instrument, the exact concurrency between the bracket and the ground floor.

4.5. ASSEMBLING THE PANTOGRAPH ARM

ASSEMBLY INSTRUCTION (refer to Fig. 9)

1. Take out the pantograph arm from the packaging.
2. Remove the bracket plug 1 by unscrewing the fixing screw 2.
3. Slide the bracket guard slat 3.
4. Insert the pantograph group cable 5 into the bushing 4 and then the pantograph pin 6.
5. If required, clean the pin and the bushing and lubricate with grease Molikote D.
6. Insert the electric cable into the bracket housing 7.
7. Assemble the guard slat.
8. Insert the cable into the bracket and push it until reaches the pin outlet near the supply terminal board.

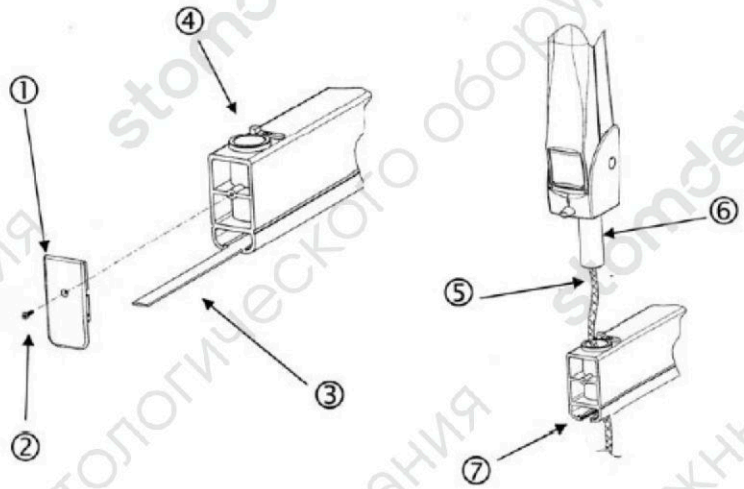


Fig. 9

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

4.6. ASSEMBLING THE TIMER

CAUTION

Check that the cable runs are arranged in the timer installation wall; check the compliance of the power supply with the installation specifications (refer to Chapter 3).

WARNING

Check that the rating data match the power supply voltage.

WARNING

When the timer is installed aside the wall plate, please consider what follows:

- *the timer must be mounted on the left side of the wall plate;*
- *the distance between timer and wall plate must be 2,5mm;*

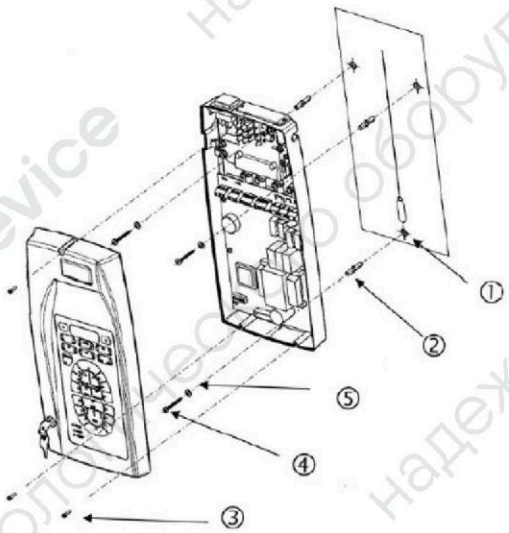


Fig. 10

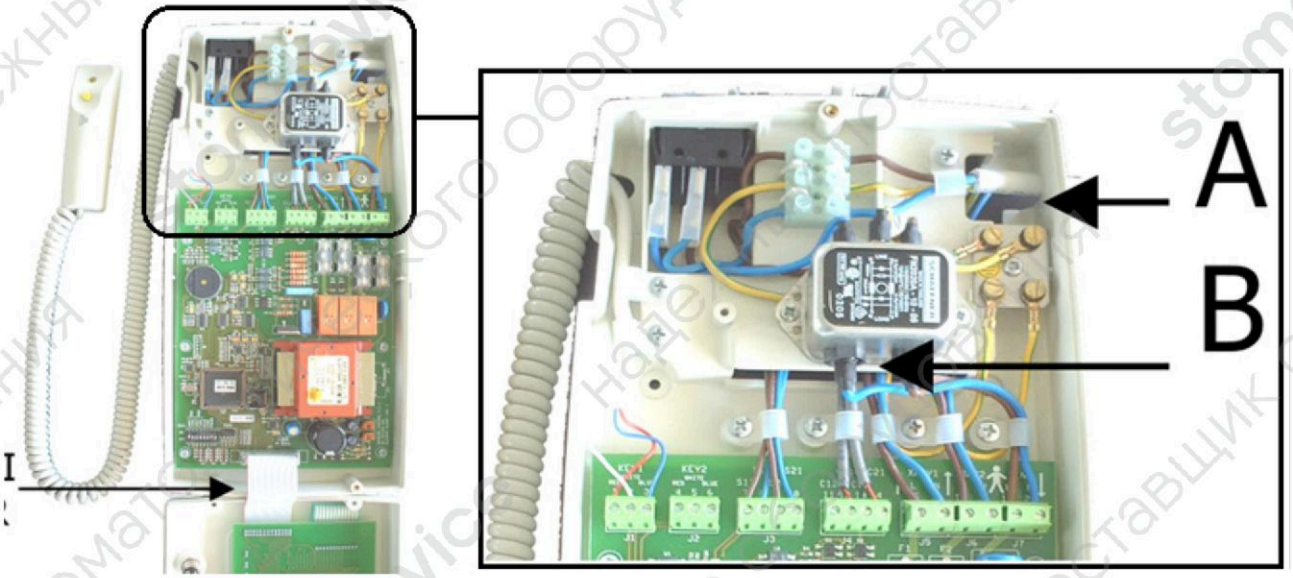
ASSEMBLY INSTRUCTION (refer to Fig. 10 - 11)

1. Take out the timer out of the packaging and take out the drilling template 1.
2. Position the drilling template 1 on the radiographic system installation wall, at the required height.
3. Fix the template 1 with adhesive tape.
4. Check the holes for uprightness and alignment with the floor, using a plumb line.
5. Mark the timer fixing holes on the wall using the drilling template.
6. If required, mark the holes for the electric cables connecting the timer to tubehead.
7. Drill using a Ø3 tip, then drill again with a Ø6 tip to prevent any flaking of the white coat.
8. Remove the template 1 and insert the suitable anchor screws provided 2.
9. Open the timer by unscrewing the three screws 8.
10. Withdraw the 26-pole connector from its seat to release both timer guards.
11. Approach the timer 8 to the wall and insert the electric feeding cables into the slot A or the slot B.
12. Insert the connection cables coming from the tubehead into the slot A or the slot B: when the timer is installed aside the wall plate insert in between the rubber cover for the electrical cable.
13. Insert the cables of the X-ray signaling lamp for external use (OPTIONAL) and the cables of the remote-control button (OPTIONAL) into the slot A or the slot B.
14. Approach the timer base 8 to the wall, matching the three anchor screws with the holes screw the screws with the relevant washers.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

PLEASE NOTE

The use of the slots A or B for the cables is arbitrary; use the slots which adapt better to the specific configuration of installation..



4.7. ASSEMBLING THE TUBEHEAD

ASSEMBLY INSTRUCTION

	1. Take from the packaging the tubehead. 2. Check that all the rating data match the power supply voltage.
	3. Remove both guards from the pantograph type arm by loosening the relevant screws.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

	4. Using a tip, act on the front coupling device.
	5. Remove both guards.
	6. Insert the tubehead pin into the pantograph head.
	7. Insert the supporting rest.
	8. Check that during insertion, the pin of the turning preventing device correctly fits the seat located on the pantograph head.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

	9. Couple the pantograph and tubehead connections and fit the into their seats.

CONE INSTRUCTION



1. Unlock the FIXATION screw using Allen key;
2. Remove the cone rotating it in anticlockwise direction;
3. Place the new cone rotating it in clockwise direction;
    a. Be sure to completely rotate it in clockwise direction;

WARNING

IF ROTATION IS:

A. NOT COMPLETE

OR

B. IS DONE IN WRONG DIRECTION

THE FIXATION BY SCREW SHALL NOT BE EFFECTIVE

4. Lock the FIXATION screw using Allen key.

4.8. BALANCING THE PANTOGRAPH ARM

CAUTION

The pantograph arm must be adjusted only when the tubehead is assembled (fig. 12).

WARNING

To prevent damages to the internal mechanism while performing adjustment and balancing tests, the adjustment key must not be left in place.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

WARNING

The adjustment key provided must be carefully kept.

PLEASE NOTE

To reach the adjustment screw X, the arm A must be put in vertical position.
To reach the adjustment screw Y, the arm B must be put in horizontal position.
The adjustment key provided can be inserted only under the above conditions.

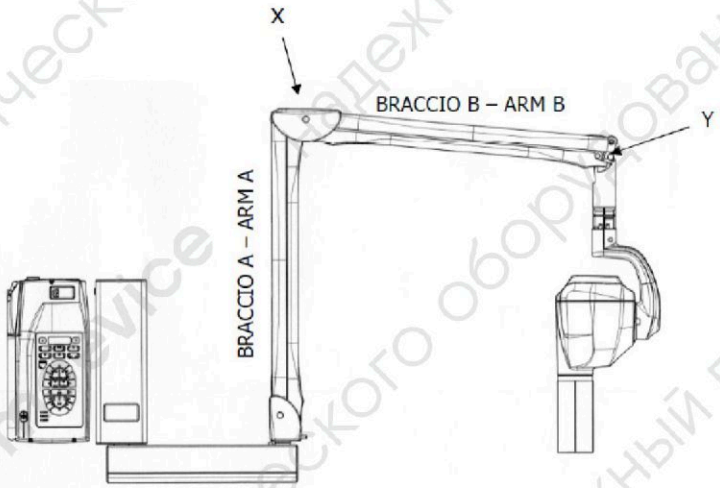


Fig. 12

INSTRUCTION (refer to Fig. 12)

1. BALANCING THE ARM, A

PLEASE NOTE

The pantograph arm is supplied with arm A already preloaded.
The arm B is supplied unloaded for safety reasons.

2. BALANCING THE ARM B

- arm A vertical
- arm B horizontal
- insert the adjustment key in Y
- load the spring by n° 22 turns
- withdraw the key

3. CHECKING THE BALANCING

bring the arm B in the different positions

IF IT DOES NOT KEEP THE POSITION

- bring the arm B to the horizontal position
- insert the adjustment key in Y
- rotate the adjustment key by half turn:
- clockwise if it tends to come down;
- counter clockwise if it tends to go up
- withdraw the key

PLEASE NOTE

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

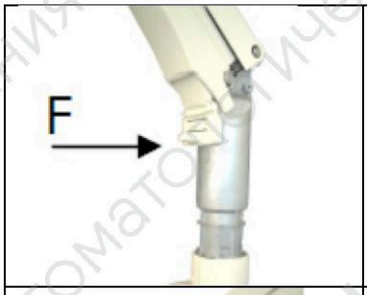
Repeat the test and adjustment until the arm B is steady and stable in all positions, even when the arm A is completely extended.

4. READJUSTMENT OF ARM A

- bring the arm A to the vertical position
- insert the adjustment key in X
- rotate the adjustment key by half turn: clockwise if it tends to come down; counter clockwise if it tends to go up
- withdraw the key

PLEASE NOTE

Repeat the test and adjustment until the arm A is steady and stable in all positions, even when the arm B is completely extended.

	5. Insert the movable finish F between the pantograph type arm guard and metal frame.
	6. Insert the pins of the guards into the relevant seats; then position them and check that the movable finish is coupled to the guards.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

ELECTRIC CONNECTION

5.1. ELECTRIC CONNECTION

CAUTION

Before proceeding to connections, the power supply must be cut off.

CAUTION

For electric safety, it is essential that the ground conductors are correctly connected.

WARNING

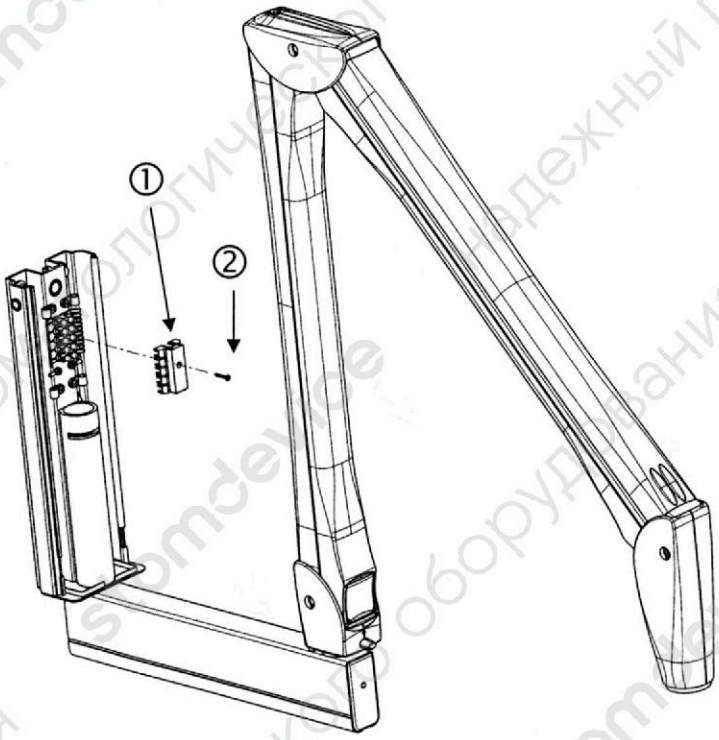
While performing the connection, always respect the polarity PHASE/ NEUTRAL.

WARNING

While stripping the cables, pay attention to the small copper wires that may fall on the printed circuit and cause short circuits or malfunctions.

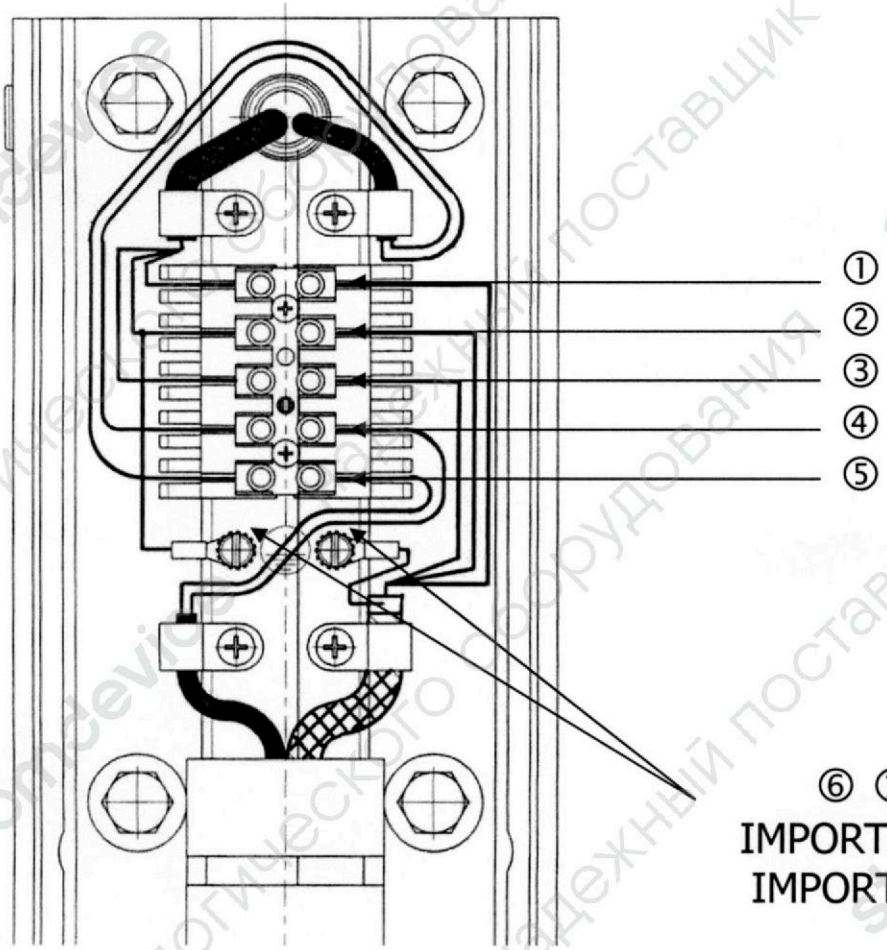
CONNECTION TO THE SUPPLY TERMINAL BOARD INSTRUCTION

1. Remove the terminal board cover 1 by unscrewing the fixing screw 2.



https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

2. Proceed with the electric connection as shown below:



TERMINAL BOARD CONNECTION DIAGRAM

1	BROWN	L = PHASE
2	YELLOW GREEN	T = GROUND
3	BLUE	N - NEUTRAL
4	BLACK	COMMUNICATION
5	RED	COMMUNICATION
6	YELLOW GREEN	T = GROUND
7	YELLOW GREEN	T = GROUND

THE COMMUNICATION CABLES ARE NOT POLARIZAED

3. Connect the pantograph cable shield to the grounding potential 6.

4. Connect the wall plate to the grounding potential 7.

5. Clamp the cables with the cable clamps provided.

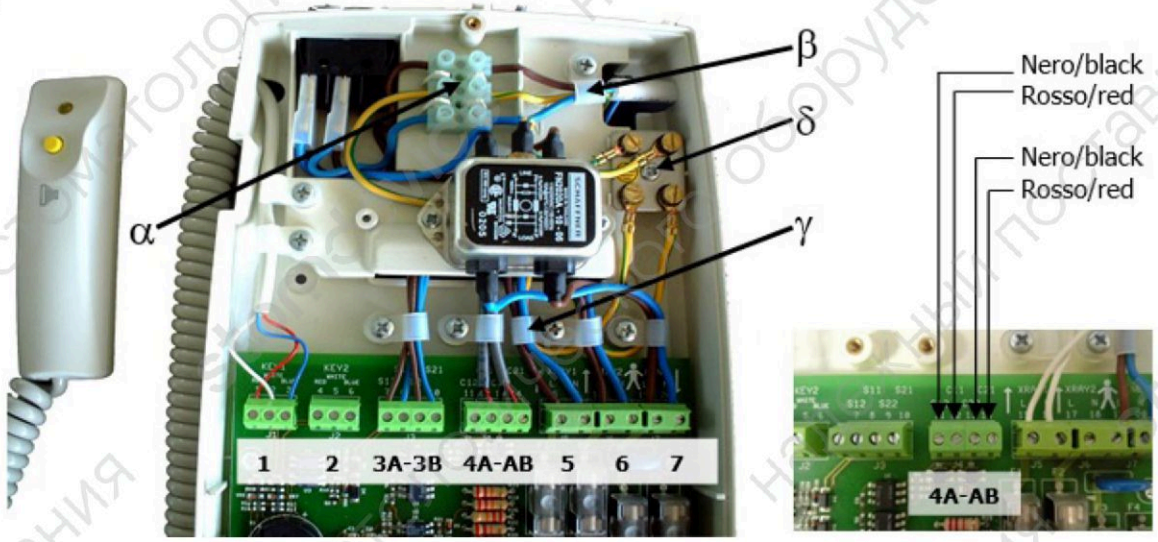
6. Reassemble the terminal board cover.

CONNECTION INSTRUCTION TO THE TIMER

1. Connect the power supply cable to the terminal board α.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

2. Insert the three mains cables into the rack.
3. Fix them with the cable clamp β.
4. Connect the cables coming from the tubehead 1 to the terminals XRAY1.
5. Connect the communications cables from the tubehead 1 to the terminals C11 and C12.
6. Connect the yellow-green grounding cable to the equipotential metal plate δ.
7. Connect the cables coming from the tubehead 2 to the terminals XRAY2.
8. Connect the communications cables from the tubehead 2 to the terminals C21 and C22.
9. Connect the yellow-green grounding cable to the equipotential metal plate δ.
10. Clamp the cables in the cable clamp γ.
11. Connect the Rx signalling lamps for external use (OPTIONAL).
12. Connect the remote-control buttons (OPTIONAL).
13. Check the configuration on the dip-switches.
14. Reconnect the 26-pole connector.
15. Close the timer with the three screws.
16. Mount the sliding cover and the plug of the. wall plate
17. Reconnect the power supply.



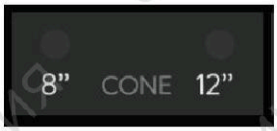
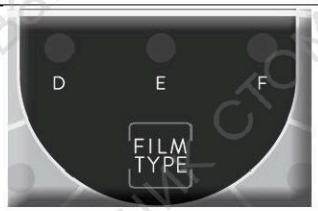
1	TUBEHEAD 1 CONTROL BUTTON	
2	TUBEHEAD 2 CONTROL BUTTON	OPTIONAL
3A	TUBEHEAD 1 RX SIGNALLING LAMP	OPTIONAL
3B	TUBEHEAD 2 RX SIGNALLING LAMP	OPTIONAL
4A	RS232 COMMUNICATION FOR TUBEHEAD 1	
4B	RS232 COMMUNICATION FOR TUBEHEAD 2	
5	TUBEHEAD 1 POWER SUPPLY	
6	TUBEHEAD 2 POWER SUPPLY	
7	TIMER POWER SUPPLY	

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

CONFIGURATION

6.1. CONFIGURATION

The **radiographic system** is provided in the "standard mode" configuration.
On the control panel the LED relevant to the following exposure parameters will light up:

	No. of the selected tubehead LED 1
	supplied cone LED 8" = SHORT CONE LED 12" = LONG CONE
	Type of tubehead LED DC = DIRECT CURRENT
	radiographic voltage LED 70kV
	radiographic current LED 8mA
	type of patient LED ADULT
	radiographic technique CONVENTIONAL LED D

The above configuration depends on the position of dip-switch on the timer electronic card:

LEGEND

ON = INSTALLED
OFF = NOT INSTALLED

IF THE LONG CONE IS USED 31cm = 12" (SSD)

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

	ON	OFF	
1	■		TUBEHEAD 1
2	■		TUBEHEAD DC
3	■		TUBEHEAD 2
4	■		TUBEHEAD DC
5		■	II° CONTROL BUTTON
6	■		LONG CONE 12'' (31cm)
7		■	NOT AVAILABLE
8		■	NOT AVAILABLE

IF THE SHORT CONE IS USED 20cm = 8" (SSD)

	ON	OFF	
1	■		TUBEHEAD 1
2	■		TUBEHEAD DC
3	■		TUBEHEAD 2
4	■		TUBEHEAD DC
5		■	II° CONTROL BUTTON
6		■	SHORT CONE 8'' (20cm)
7		■	NOT AVAILABLE
8		■	NOT AVAILABLE

6.2. CHANGING THE CONFIGURATION

Possible modifications of the exposure values

►radiographic voltage (60kV/70kV)
►radiographic current (4mA/8mA)
►type of patient (ADULT/CHILD)
(refer to "User's Manual")

Possible modifications of the exposure values

►cone (8" /12")
►type tubehead
► N° of control button
inside the timer, by changing the dip-switch position

THIS OPERATION MUST BE CARRIED OUT BY THE INSTALLER ONLY

DIP SWITCH	ON	OFF	PARAMETER
1	INSTALLED	NOT INSTALLED	TUBEHEAD 1
2	dc		TUBEHEAD TYPE 1
3	INSTALLED	NOT INSTALLED	TUBEHEAD 2
4	dc		TUBEHEAD TYPE 2
5	INSTALLED	NOT INSTALLED	II° CONTROL BUTTON
6	LONG 12'' = 30cm	SHORT 8'' = 20cm	CONE
7			NOT AVAILABLE
8			NOT AVAILABLE

INSTRUCTION

To change the number of the tubehead installed, move the dip-switch n° 1 or the dip-switch n° 3:

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

DIP SWITCH	1	3
	ON	ON
	OFF	OFF

►if the tubehead is connected to the XRAY1 terminal board, put the dip-switch n° 1 in the ON position; otherwise in OFF position;
►if the tubehead is connected to the XRAY2 terminal board, put the dip-switch n° 3 in the ON position; otherwise in OFF position.

PLEASE NOTE

It is possible to connect to the DC timer with 2 ***DC tubehead***

To change the amount of control buttons installed, move the dip-switch n° 5:

DIP SWITCH	5
	ON
	OFF

►with second control button move the dip-switch n° 5 to the ON position.

PLEASE NOTE

After modification, each tubehead is controlled by the corresponding button.

To change the cone installed, move the dipswitch n° 6:

DIP SWITCH	6
	ON
	OFF

►with short cone (8"=20cm (SSD)) move the dip-switch 6 to the OFF position;
►with long cone (12"=31cm (SSD)) move the dip-switch 6 to the ON position.

PLEASE NOTE

After modification, the set exposure times are automatically changed.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

START UP

7.1. START UP

CAUTION

When all connections are completed, the installer must check the electric safety and functions of the system.

INSTRUCTION

	Bring the main switch located on the upper part of the timer to the "I" position (ON)
	Bring the key switch to the "I" position (ON)

1. the green light turns on, indicating that the system is powered
2. the LEDs of the set parameters automatically light up
3. the exposure time is shown on the display

CAUTION

If an error is detected when the system is turned on, the anomaly is indicated as follows:
- emission of an intermittent acoustic signal (beep)
- MALFUNCTIONING INDICATOR LED
intermittently turns on
- the error code (E ....) appears on the display (refer to Chapter 8)
- all control panel functions are inhibited
In this case turn off the timer and then turn it back on.
If the error persists, call the "Assistance Service".

PLEASE NOTE

The exposure time and parameters which appear on the display are the last that were set before the timer was turned off.
If the timer remains inactive for a few minutes, it switches to the stand-by mode.
Press any key on the control panel to restore it to the operative mode.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

INSTALLATION CHECK LIST

8.1. INSTALLATION CHECKS

PLEASE NOTE

After the completion of the installation of the X-MIND DC, the installer technician MUST fill in the form contained in this document to certify that the device has been correctly installed.
The Installation Checklist Form must be completely filled in all the details, stamped and signed by the installer technician and must be sent by e-mail to de Götzen S.r.l.: ***imaging.italysupport@acteongroup.com***
de Götzen S.r.l. reserves the right to reject the filled Installation checklist Form if not correct or complete in each part or with any test not passed: in these cases, or if the form has not been sent to de Götzen, any kind of right of the user will be automatically off, including any kind of responsibility of the manufacturer.
Any future claims and/or complaint will be considered null and void.
Make 3 copies of the filled in form:
o One for de Götzen (soft copy)
o One for the User (keep it with the device documentation)
o One for the Dealer (installer technician)

PLEASE NOTE

If you encounter problems that don't allow to correctly pass the tests or you have any doubt for the correct installation of the equipment, contact immediately your referring technician or the manufacturer:
imaging.italysupport@acteongroup.com
Since the authorized installer technician is in charge to perform the installation and tests of the X-MIND DC, he/ she has the full responsibility of the correct installation of the equipment

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

DIAGNOSTIC

9.1. DIAGNOSTIC

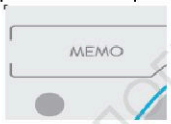
With radiographic system it is possible to set and visualize certain functional parameters.
To set the parameters, the installer must:

1. turn off the timer;
2. press simultaneously and keep pressed the keys:

(45) MANDIBULARY LOWER MOLAR
(43) MANDIBULARY LOWER CANINE

3. turn on the timer;
4. when the message INST is displayed, the installer can set the minimum exposure time in this way:
   - select the tubehead;
   - turn off the timer;
   - turn on the timer, by keeping pressed the 

key;
   - the message SEC is displayed for approximately 1s;
   - the present value of the lower set limit is displayed;
   - to change the value, press the keys 

   - to confirm press the 

key;
5. to exit this mode, turn the timer off and then on again.

WARNING

Both in digital and in conventional mode, the minimum exposure time must not be less than 0.08s.

To visualize the parameters, proceed as follows:

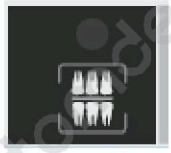
1. press simultaneously and keep pressed the keys:

(17) MAXILLA MOLAR
(47) MANDIBULARY MOLAR

2. press the key associated to the parameter one wishes to visualize:

KEY	DISPLAY PARAMETER

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

	RADIOGRAPHIC SYSTEM NOMINAL VOLTAGE
	LINE VOLTAGE
	MAXIMUM LINE VOLTAGE VALUE DETECTED
	MINIMUN LINE VOLTAGE VALUE DETECTED
	SOFTWARE VERSIN

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

CALIBRATION OF THE TUBEHEAD

10.1. CALIBRATION OF THE TUBEHEAD

CAUTION

During this operation there is X-ray output.
It is mandatory to adopt all the safety measures relevant to radioprotection.

INSTRUCTION

1. turn off the timer.

2. turn on the timer by keeping pressed the 

key.

3. the message TUBE is displayed.

4. select with the 

key the tubehead to calibrate.

5. take the exposure: on the control button press the  X-RAY key and keep it pressed until the acoustic signal (beep) stops and the yellow  LED turns off.

6. once the exposure has been taken, if the display does not show errors, the calibration has been successfully done.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

ERROR MESSAGES

11.1. ERROR MESSAGES

The following chart gives a list of error messages that may appear while radiographic system is working.
The chart also includes the causes of the error messages and what to do to solve them.

ERROR MESSAGES	CAUSE	SOLUTION
E00	RX1 TUBEHEAD IS NOT CONNECTED OR IS OUT OF ORDER	OUT OFF THE POWER SUPPLY CHECK THE FUSES AND TUBE-HEAD WIRING
E01	RX2 TUBEHEAD IS NOT CONNECTED OR IS OUT OF ORDER	OUT OFF THE POWER SUPPLY CHECK THE FUSES AND TUBE-HEAD WIRING
E02	CORRUPTED EEPROM DATA	OUT OFF THE POWER SUPPLY REPLACE TIMER BOARD
E03	EEPROM DATA NOT SAVED PROPERLY	OUT OFF THE POWER SUPPLY REPLACE TIMER BOARD
E07	LINE VOLTAGE VALUE NOT INCLUDED WITHIN THE NOMINAL VALUE	CHECK MAIN LINE VOLTAGE
E08	THE X-ray KEY ALWAYS SEEMS TO BE PRESSED	MAKE SURE IT IS NOT JAMMED OR DEFECTIVE
E09	ANOMALY IN THE CONTROL PANEL	CHECK FLAT CABLE WIRING OF KEYPAD BOARD AND LED BOARD
E12	THE EXPOSURE HAS BEEN PREMATURELY INTERRUPTED	KEEP THE X-ray KEY PRESSED TILL THE END OF THE EXPOSURE
E20	ANOMALY IN THE TRIAC/RELAY	OUT OFF THE POWER SUPPLY REPLACE TIMER BOARD
E21	ANOMALY IN THE ELECTRONIC CIRCUIT	OUT OFF THE POWER SUPPLY REPLACE TIMER BOARD
E22	ANOMALY IN THE CONTROL CIRCUIT	OUT OFF THE POWER SUPPLY REPLACE TIMER BOARD
E23	INCORRECT DIP-SWITCH CONFIGURATION	CHECK DIP-SWITCH CONFIGURATION
E24	THE CONTROL BUTTON DOES NOT CORRESPOND TO THE SELECTED TUBEHEAD	CHECK DIP-SWITCH CONFIGURATION
E30	THE TUBEHEAD DOES NOT WORK PROPERLY	CHECK TUBEHEAD WIRING AND TRY TO MAKE A TUBE HEAD CALIBRATION CHECK DIP-SWITCH CONFIGURATION
E32	THE TUBEHEAD IS NOT IN THE CORRECT MODE	CHECK DIP-SWITCH CONFIGURATION
E33	THE TUBEHEAD HAS NOT COMPLETED THE EXPOSURE	REPEAT THE EXPOSURE CARRY OUT THE TUBEHEAD CALIBRATION OTHERWISE, OUT OFF THE POWER SUPPLY AND REPLACE IT
E40	PROBLEM IN THE FREQUENCY OR REGULATION	CALL THE “ASSISTANCE SERVICE”
E41	THE TUBEHEAD IS NOT CALIBRATED	CARRY OUT WITH THE CALIBRATION OTHERWISE, OUT OFF THE POWER SUPPLY AND REPLACE IT
E42	EEPROM DATA NOT SAVED PROPERLY	CARRY OUT THE TUBEHEAD CALIBRATION OTHERWISE, OUT OFF THE POWER SUPPLY AND REPLACE IT
E43	CORRUPTED EEPROM DATA	CARRY OUT THE TUBEHEAD CALIBRATION OTHERWISE, OUT OFF THE POWER SUPPLY AND REPLACE IT

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

E44	OVERVOLTAGE ERROR	CARRY OUT THE TUBEHEAD CALIBRATION OTHERWISE, OUT OFF THE POWER SUPPLY AND REPLACE IT
E45	ANODE VOLTAGE OUT OF TOLERANCE	CARRY OUT THE TUBEHEAD CALIBRATION OTHERWISE, OUT OFF THE POWER SUPPLY AND REPLACE IT
E46	ANODE CURRENT OUT OF TOLERANCE	CARRY OUT THE TUBEHEAD CALIBRATION OTHERWISE, OUT OFF THE POWER SUPPLY AND REPLACE IT
E47	CONTROL CONNECTOR	CHECK THE RED AND BLACK WIRES CONNECTION
E48	PROBLEM IN THE REFERENCE VOLTAGE	OUT OFF THE POWER SUPPLY REPLACE TIMER BOARD
ERR	MAJOR ERROR	ALL FUNCTIONS ARE DISABLED RESET THE TIMER TO SEE THE CODE

PLEASE NOTE

*If you have any doubt for the correct solution contact immediately the manufacturer at **imaging.italysupport@acteongroup.com** Please, before calling take note of the ERROR CODE.*

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

SUGGESTED MAINTENANCE

12.1. SUGGESTED MAINTENANCE

In order to guarantee the safety of the radiographic system, it is necessary to set up a maintenance schedule.
The RESPONSIBLE ORGANISATION is responsible for planning and observing a maintenance schedule which must be executed by qualified technicians who must be able to certify their work with a "Conformity Declaration".

CAUTION

Run an inspection on the radiographic ystem and on its operation when it is installed and every twelve months.

Once a year, lubricate the pins and bushes of the wall plate and the positioning arm, as specified.

WARNING

Do not lose the adjustment key that comes with the system, since, in time, it could become necessary to make readjustments.

WARNING

If the parts should become hard to move or should squeak, call the "Assistance Service".

12.2. CLEANING THE OUTER SURFACE

Clean the external surface using a damp cloth and non-corrosive non oil-based detergent and disinfect it using a non-aggressive medical detergent.
Do not spray detergent or disinfectant directly on the device.
The spacer cone may be cleaned with cotton wool soaked with surgical alcohol.

INSTRUCTION

1. Cut off the power supply
2. Release the spring of the arm B of the pantograph type arm using the key provided
3. Remove the tubehead
4. Withdraw the wall plate guard
5. Remove the terminal board cover and disconnect the pantograph type arm cable
6. Remove the bracket plug and withdraw the guard slab
7. Remove the pantograph type arm and the relevant cable from the bracket
8. Remove the bracket from the wall plate
9. Check the vertical alignment of the wall plate: adjust if required
10. Check the six fixing screws of the wall plate: tighten if required
11. Clean the old lubricating grease from the bracket shaft: should the bracket shaft be damaged, install a new bracket
12. Clean the old lubricating grease of the bracket bush: should the bracket bush be damaged, install a new bracket
13. Grease the bracket shaft (use grease Molikote D)
14. Lubricate the bracket bush with lubrication grease (use grease Molikote D)
15. Install the bracket in the wall plate
16. Check the pantograph type arm cable: should it be damaged, send the pantograph type arm to the manufacturer for repairs
17. Check the pantograph type arm guards
18. Replace the damaged guards
19. Clean the old grease of the shaft: should the shaft be damaged, send the pantograph type arm to the manufacturer for repairs
20. Lubricate the pantograph type arm shaft with lubricating grease (use grease Molikote D) and reposition it in the bracket
21. Put again the pantograph type arm cable in the bracket and the wall plate, connect it to the terminal board and put in place the terminal board cover

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

22. Position the guard slab in the bracket
23. Position the bracket plug
24. Position the plate guard
25. Check the electric contact of the tubehead: if damaged, send the tubehead to the manufacturer for repairs
26. Clean the old grease from the tubehead assembly shaft
27. Grease the assembly shaft of the tubehead with a thin layer of lubricating grease (use grease Molikote D)
28. Position the tubehead again
29. Load the spring of the pantograph type arm B using the key provided
30. Give power and check the correct operation of the radiographic system

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

REPLACEMENT OF FUSES

13.1 FUSES REPLACEMENT

CAUTION

Potentially lethal shock hazard!
Make sure the mains is disconnected before proceed with the following operations.

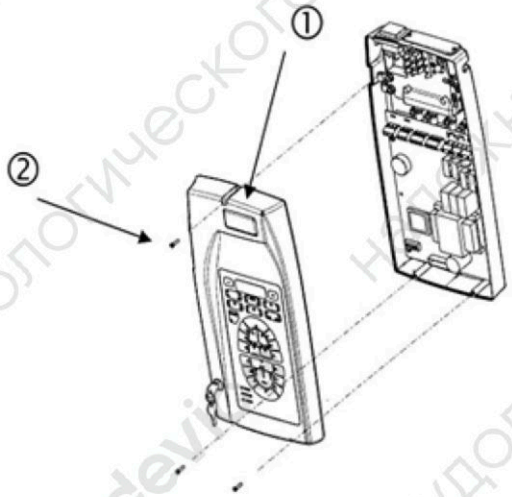
The timer electronic equipment is protected by n° 4 fuses located on the electronic board.
2 fuses to protect the tubeheads (one fuse for each tubehead channel)
1 or 2 fuses to protect the electronic board from power grid. (depending by the installation type, the x-ray control unit of the X-MIND DC)

1. Single Fuse on Live (F3) and metal pin on Neutral (F4): wall mounting version-permanently installed
2. Double Fuse on Live and Neutral (F3 and F4) : mobile version

To replace them proceed as follows:

INSTRUCTION

1. Out off the power supply.
2. Temporarily remove the guard of the timer 1 by unscrewing the fixing screws 2.

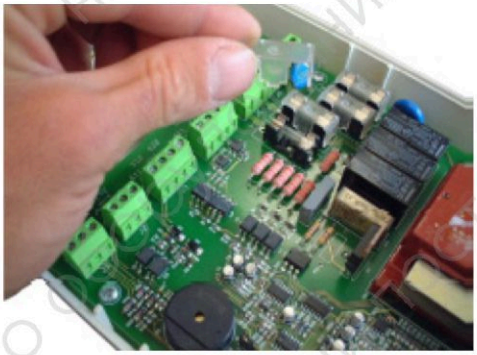


3. Spot the fuse to be replaced.



4. Remove the plastic protection.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ



5. Withdraw the fuse.
6. Replace it with one of the same type.

NOMINAL VOLTAGE	115 V ± 10%	230 V ± 10%
PROTECTION FUSES	12 AF – 250 V	8 AF – 250 V

7. Put in place the protection.
8. Close the timer guard.
9. Turn on the power supply.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

REPAIR

14.1. REPAIR

In case of a malfunction, send the defective part using the original packaging to:
de Götzen S.r.l. - Acteon Group
Via Roma 45
21057 OLGIATE OLONA VA ITALY
Tel. +39 0331 376760
Fax +39 0331 376763
E-mail: ***imaging.italysupport@acteongroup.com***

CAUTION

It is strictly prohibited to attempt repairs to any electronic or mechanical parts by yourself.
Failure to observe this warning can irreversibly compromise the overall safety of the system and can be dangerous for operators, patients and the environment.

14.2. DISPOSAL

The use of the WEEE symbol indicates that, at the end of its lifespan, this product may not be treated as household waste, but must be treated separately, in conformity to the Directive 2012/19/EC.
EU Council Directive 2012/19/EC (WEEE) imposes the disposal or recycling of electric and electronic equipment. The product is marked with the indicated icon. This product must not be disposed of as domestic waste. The crossed-out wheelie bin identifies a product placed on the market after the 13th of August 2005 (see EN 50419:2006). This product is subjected to Council Directive 2012/19/EU (WEEE) and implementation standards in force in your country.
The product must be disposed of or recycled to protect the environment.
Contact your supplier before disposing of this product.

CAUTION

It is strictly prohibited to attempt repairs to any electronic or mechanical parts by yourself.
Failure to observe this warning can irreversibly compromise the overall safety of the system and can be dangerous for operators, patients and the environment.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

ANNEX 1

A1. TECHNICAL SPECIFICATIONS

For technical specifications please refer to the ANNEXS of the Systems' operator manuals.

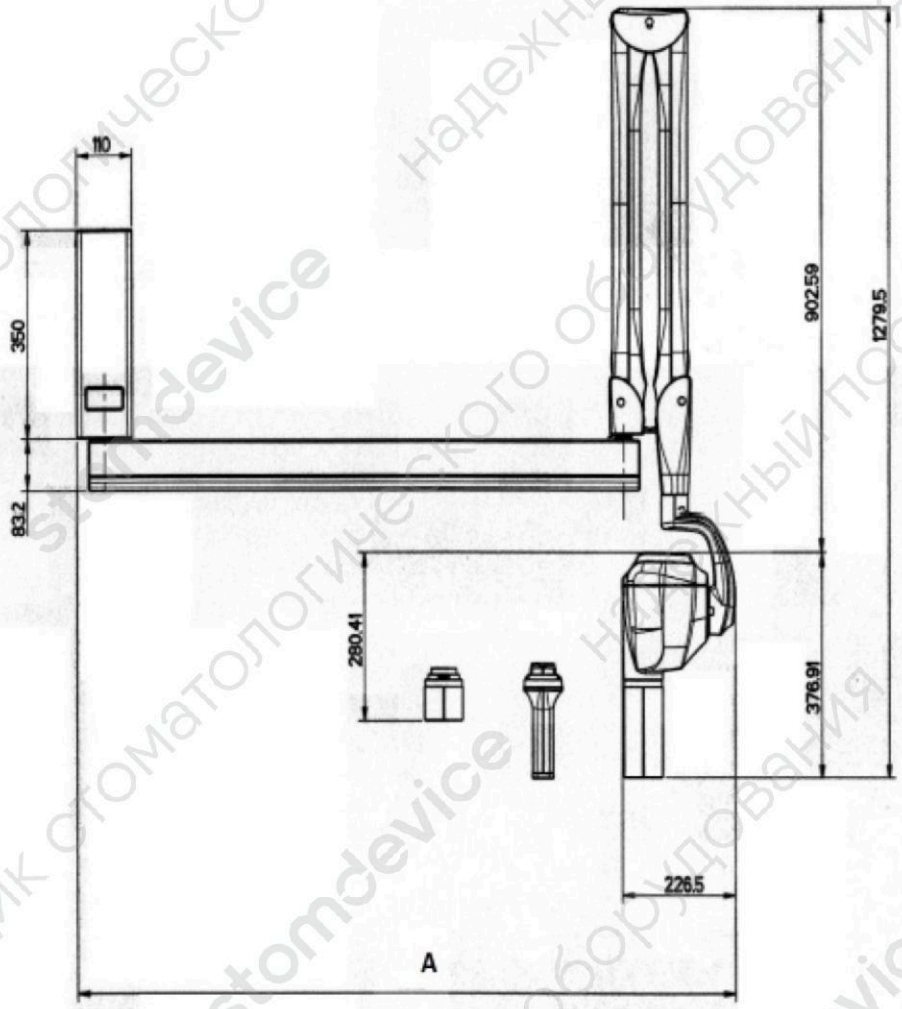
https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

ANNEX 2

A2. DRAWINGS AND DIMENSIONS

WALL INSTALLATION

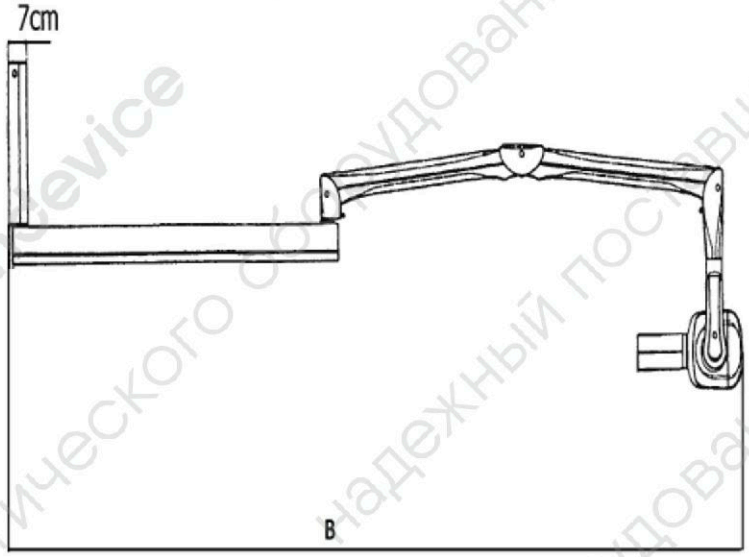
Lateral view (rest position)
Bottom mount



A	
40 cm (16'') bracket	63 cm
80 cm (31'') bracket	104 cm
110 cm (43'') bracket	132 cm

Lateral view (open)
Bottom mount

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ



B	
40 cm (16'') bracket	178 cm
80 cm (31'') bracket	220 cm
110 cm (43'') bracket	247 cm

The system can also be mounted with the timer on the top. For details, refer to the Installation and Maintenance Manual.

MOBILE INSTALLATION

"The system" exists also in the mobile version and it is sustained by the stand shown in the following figure:



IT IS NOT ALLOWED TO connect the equipment to the main supply using a plug unsupplied by de Götzen srl.

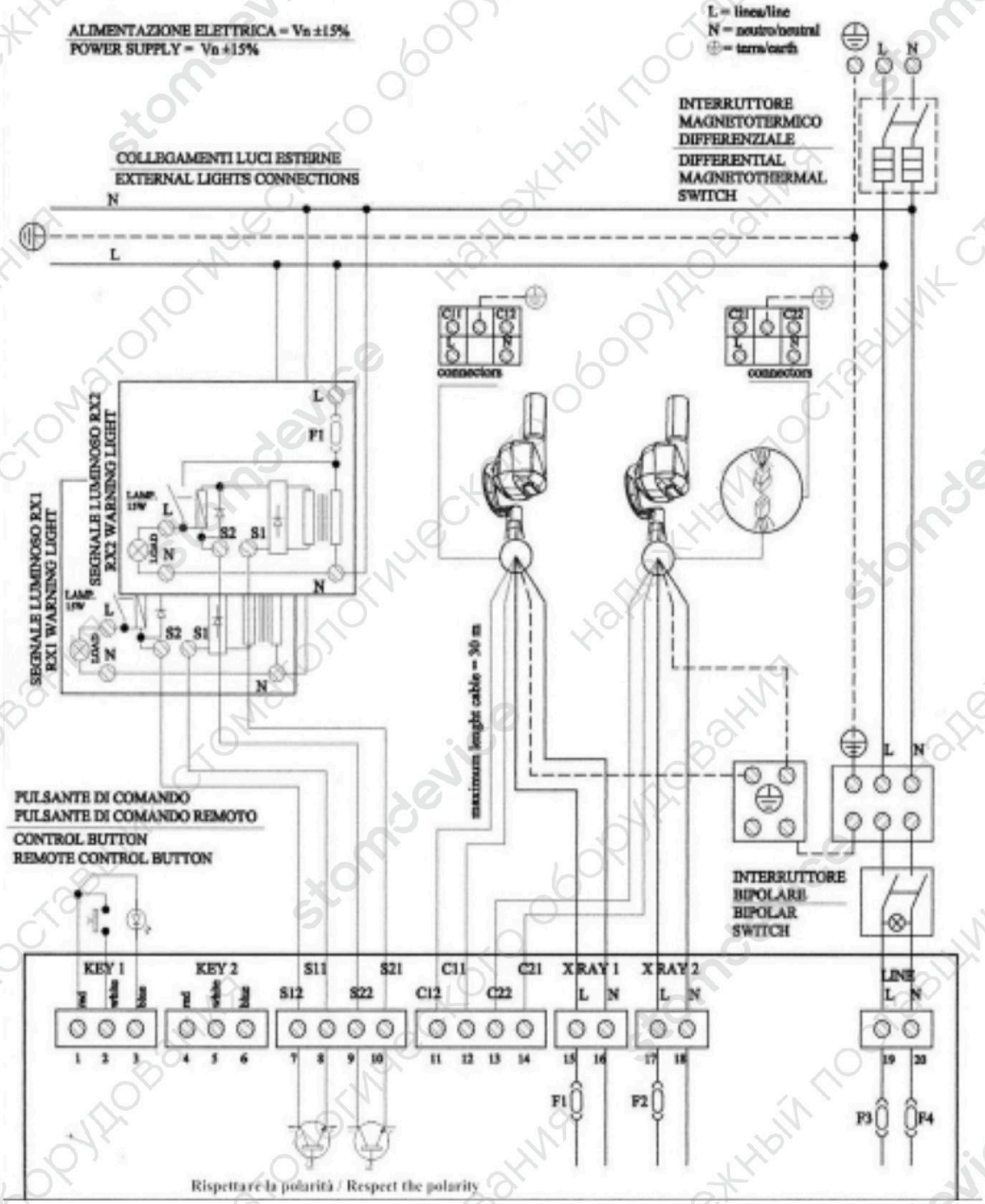
Using other cables may negatively affect EMC performance

For details, refer to the Mobile Unit Technical Note, supplied with this structure.

https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ

ANNEX 3

A3. INSTALLATION ELECTRICAL DIAGRAM



https://stomdevice.ru - стоматологическое и зуботехническое оборудование с доставкой по России и СНГ