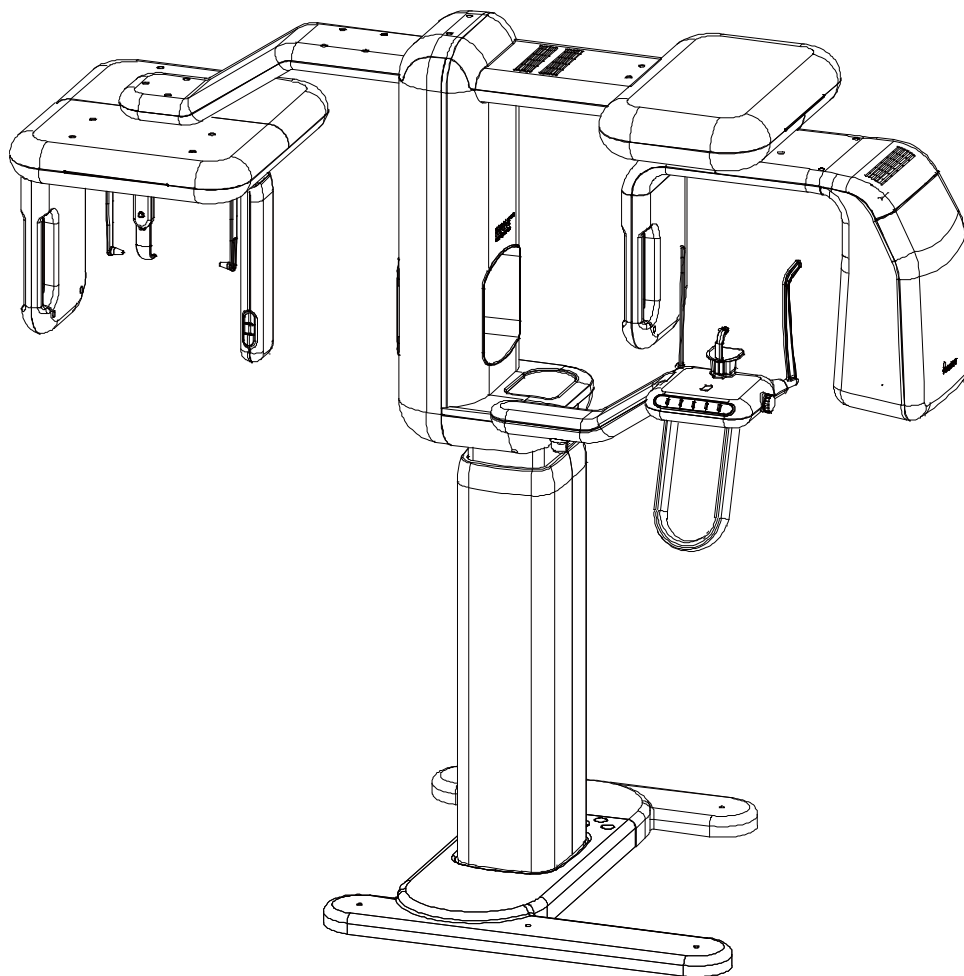

DENTAL X-ray Imaging System

PAPAYA & PAPAYA PLUS

User's Manual

2017.09.13 Document Ver.1.2



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This manual contains a general description and other information about the use PAPAYA, PAPAYA PLUS.
Please read this manual thoroughly for safe and effective use of the equipment.

The manufacturer, assembler, and the importer hold responsibility upon the performance of safety, trust and the article below.

- Guarantees the installation of the eligible professional, calibration, and repair.

Federal law restricts this device to sale by or on the order of physicians and dentists.
(Only U.S.A)

☐ Symbols used in Manual

This manual includes instructions and warnings.

Please check carefully what has been symbol displayed below.



This symbol is information about the special matters that require attention while using this software.



This symbol is warning the situation or environments which might bring danger to the patients or users.

□ Symbols used in product

Symbol	Description	Location
	AC (Exchange)	
	Ground	Boards
	OFF	On/Off switch
	ON	On/Off switch
	X-Ray Source Assembly, X-ray Exposure	Label
	Warning: dangerous voltage	GENERATOR
	WEEE Mark	Label
	Laser	Equipment
	Please refer to the user manual	Label
	Name of manufacturer, address	Label
	Manufacturing date	Label
	Authorized representative in the European community	Label
	Product serial number	Label
	The CE symbol indicates that this product complies with the European Directive for Medical Devices 93/42/ EEC as amended by 2007/47/EC as a class IIb device.	Label

1. Introduction of Product

1.1 Introduction of Product

PAPAYA Plus is a digital extraoral source X-ray system intended to produce panoramic and cephalometric(option) images of the oral and craniofacial anatomy for a precise treatment planning in adult and pediatric care. The system is used for dental & skull radiographic examination and diagnosis of teeth, jaw, oral structure, and skull by exposing an X-ray image receptor to ionizing radiation, with a digital imaging capability for taking both panoramic and cephalometric images.



PAPAYA is able to be capable of shooting panoramic image and PAPAYA PLUS is able to be capable of shooting cephalometric and panoramic image.

Features of PAPAYA Plus

- ☐ Dental Arch selection function of a variety of patients
- ☐ Choice of image quality and shooting speed
- ☐ Setting function of the best X-Ray irradiation conditions for each patient
- ☐ Minimize the exposure dose of the patient in control of the sectional X-Ray exposure
- ☐ Shooting various modes for a complete analysis of the TMJ
- ☐ Use of Tomography shooting function is possible with the addition of software and hardware upgrade. (Optional)

1.2 Warning before use

- The user is responsible for the maintenance and operation of the device. Please refer to "appendix .2 Maintance"

The electric circuit of this product uses the electric current which can cause death due to severe injury or electric shock. Please read how to use that is provided in this manual, such as the remedy of emergency, safety notes.

- This machine need to operate after studying of manual.
- Never let anyone remove the cover
- There is prohibition of installing different composite parts unless they are supplied by manufacturer.
- Do not connect equipment's power source with multi-adaptor or extension cord. This can cause defect or become cause of mal-function

□

Do not operate machine when the machine is defect or malfunctioning.
Please contact engineer or service center for help and do not adjust the machine.

It requires patient to remove the metal product the patient is wearing before shooting, such as hearing aids, dentures, dentures, hairpins, and other accessories. If you take a picture with the object as described above, there may be reflection or shadow image is displayed on the image. For your safety, scarf, scarves, ties, etc., it is recommended that you remove it.

- Do not use provided PC for unintended purpose. There is probability some problem could happen on transferring images and reconstructing if the PC uses for unintended purpose.



Do not modify this equipment without authorization of the manufacturer.

1.3 Electrical safety

Before using this product, please check below.

- ☐ Before connecting the power, check to see if the power supplying line is appropriate to this product. Check the power and connect the power cable of this product to its power socket.
- ☐ Check the categories mentioned above in case of power input of all accessory (the signal input/output including accessory).



To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth



Place this product away from other X-ray products, power generating equipment and broadcasting stations. If the product is sharing the power with other electric devices, abnormal image might occur.



The protection level of PAPAYA Plus is the 1st grade equipment or type-B equipment. This product does not prevent the invasion of liquid substances.



For reducing the risk of electrical shock, and when connecting to power, there needs protecting ground connection.



The electric circuit of this product uses the electric current which can cause death due to severe injury or electric shock. To avoid this kind of danger, do not remove any of the covering part.

To avoid failure and the danger that might cause serious injury or electric shock to users and patients, please acknowledge the safety procedures listed below.

- ☐ Before cleaning the product, always turn off the power and separate the power cord, and clean the product with lightly wet cotton or sponge.
- ☐ Turn off the power and unplugged when you are not using the machine.
- ☐ Never let anyone remove the cover except for the professional technician of GENORAY.
- ☐ Do not place food on any part of the product. They might get into the electric circuit and get into contact with electrical matters



The product is not waterproof to water, soap or liquid substances. If the liquid contacts the product, it may cause fire or electric shock. If the liquid was in the product by accident, do not touch the power cord connecting to the power, and wait until the liquid is completely dry.

The user should follow the safety guideline provided below.

- ☐ Turn off the power and separate the power cable from the socket.
- ☐ Stay far away from the place where the product has been installed.
- ☐ Ask for help around you.
- ☐ Please acknowledge how to use the fire extinguisher for precaution.



Abnormal use of fire extinguisher could be dangerous and cause fire or electric shock. To avoid this kind of danger, check to see if the product can be used where the product has been installed, and always use the authorized product.

This product generates the electromagnetic energy. If the product is affected by electromagnetic interference, turn off the power and change the location of the product.

In this case, It should be connected to another socket. If you need help, please contact our service center.

1.4 Radiation Safety

Must comply with all radiation laws and regulations with the local jurisdiction.

When taking exposures, the x-ray room of the floor, wall material and radiation protection must be strengthened.

When taking exposures, operators and service personnel must protect themselves from radiation.

Protect the patient from scattered radiation by placing a protective lead apron over the patient.

- ☐ When taking an X-ray exposure of a child or pregnant woman, consult a doctor.
- ☐ Always comply with recommended X-ray dose when taking an X-ray exposure of a child.
- ☐ Before taking an exposure, ask any female patient of childbearing age whether she might be pregnant.
- ☐ All patients must be provided with a shielded apron for gonad protection .
- ☐ Avoid unnecessary exposure, use suitable collimation fit according to body type of child.
- ☐ Avoid additional exposures by unnecessary movement of a child, must be accompanied by an adult.

Precautions for the patient is a using pacemaker, artificial heart,

Malfunction can occur when taking a pulsed X-ray exposure continuously.

Avoid exposure directly to the part of the pacemaker and artificial heart. Always use the lowest possible x-ray dose.



The unit may be dangerous to the user and the patient, if the safety regulations and standard procedures in this manual ignored.

1.5 Overheat equipment

Overheating of the high voltage generator, a warning is displayed below.

10°C ~ 54°C



Green => X-RAY exposure possible.

Upper than 55°C



Red => X-RAY exposure impossible
(high voltage generator is overheated)

When the high-voltage generator is overheated, please turn off the equipment. It has to have a cooling time of 2-3 hours. After then turn on the power, please make sure that it is ready for exposure.



There is a possibility that when you use continuously without cooling time of the product, damage occurs in the X-ray tube, please use it to protect the Cooling Time After exposing.

1.6 Use condition

1) Condition of movement & Storing

- Temperature : -20°C ~ 60°C
- Relative humidity: 5% ~ 95% RH (But, No dew condensation)
- Air pressure : 500 ~ 1100 hPa

2) Condition of movement when using

- Temperature: 15°C ~ 30°C
- Relative humidity : 5% ~ 75% RH (But, No dew condensation.)

3) Please avoid these conditions for the operation/storing of this device.

- Exposure to humidity
- Exposure to
- Exposure to dust
- Exposure to high humidity
- Exposure to condition where has problem with ventilation
- Exposure to salty air.
- Exposure to chemical / harmful gas.

1.7 Treatment of waste

It is regular custom to follow the law of each country when handling of waste including devices. Please follow the regulations of each country

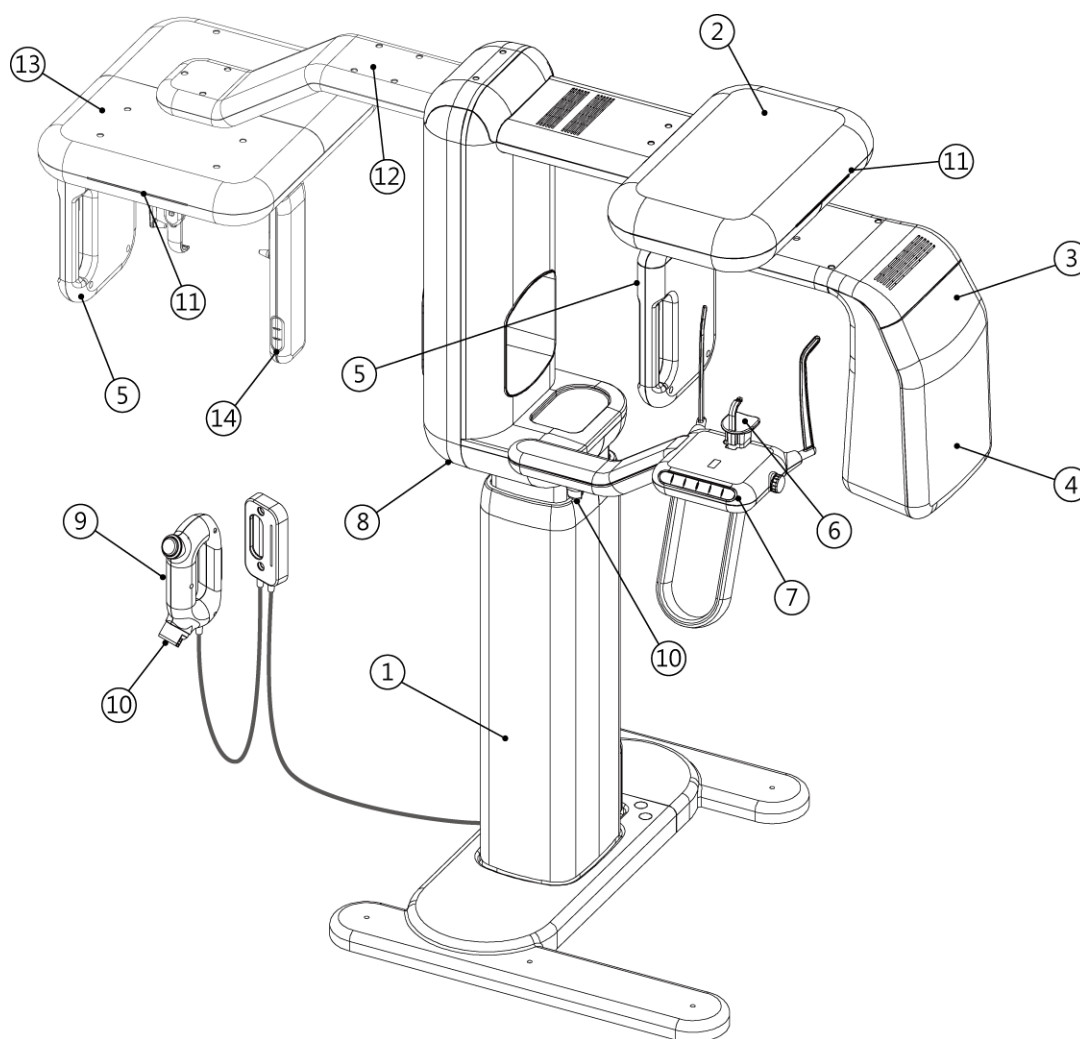
- 1) X-ray tube : Industrial waste disposal facility
- 2) Metal Frame : Recycle
- 3) Plastic : Recycle
- 4) PCB & Boards : Industrial waste disposal facility.

2. PAPAYA Composition

2.1 Structure and appellation



This machine has panoramic only model of PAPAYA and has added cephalo exposure that is PAPAYA Plus. Each model's composition or exterior, please refer to below pictures.

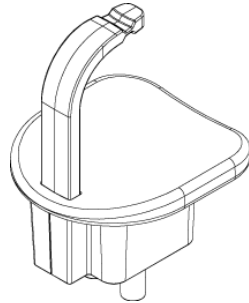


1)	Fixed column	8)	On/off Switch
2)	Driving Unit	9)	Hand Switch
3)	Gantry Unit	10)	Emergency stop switch
4)	X-ray source assembly	11)	Device status LED
5)	Detector	12)	Cephalometric Arm (PAPAYA Plus)
6)	Patient supporting area	13)	Cephalometric Unit (PAPAYA Plus)
7)	Equipment's control button	14)	2nd Equipment's control button (PAPAYA PLUS)

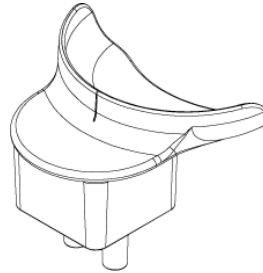
2.2 Accessories

2.2.1 Chin rest

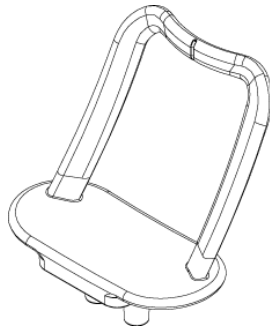
Patient's condition or according to exposure mode, chin rest can be changeable.



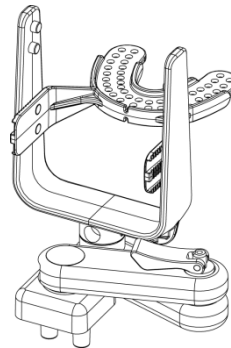
[Standard Exposure]



[For No Teeth Patient]

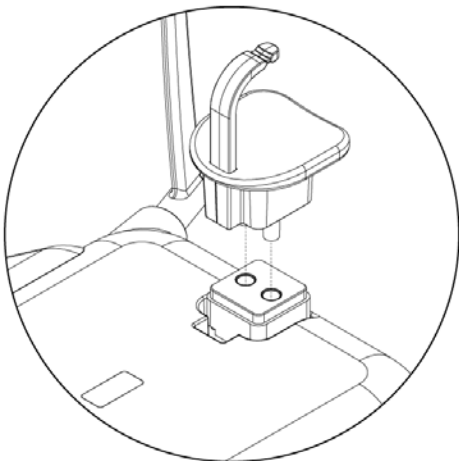


[SINUS & TMJ mode Mode]



[CUST mode]

2.2.2 Chinrest change method



For appropriate exposure mode, insert correct chin rest to designated hole.

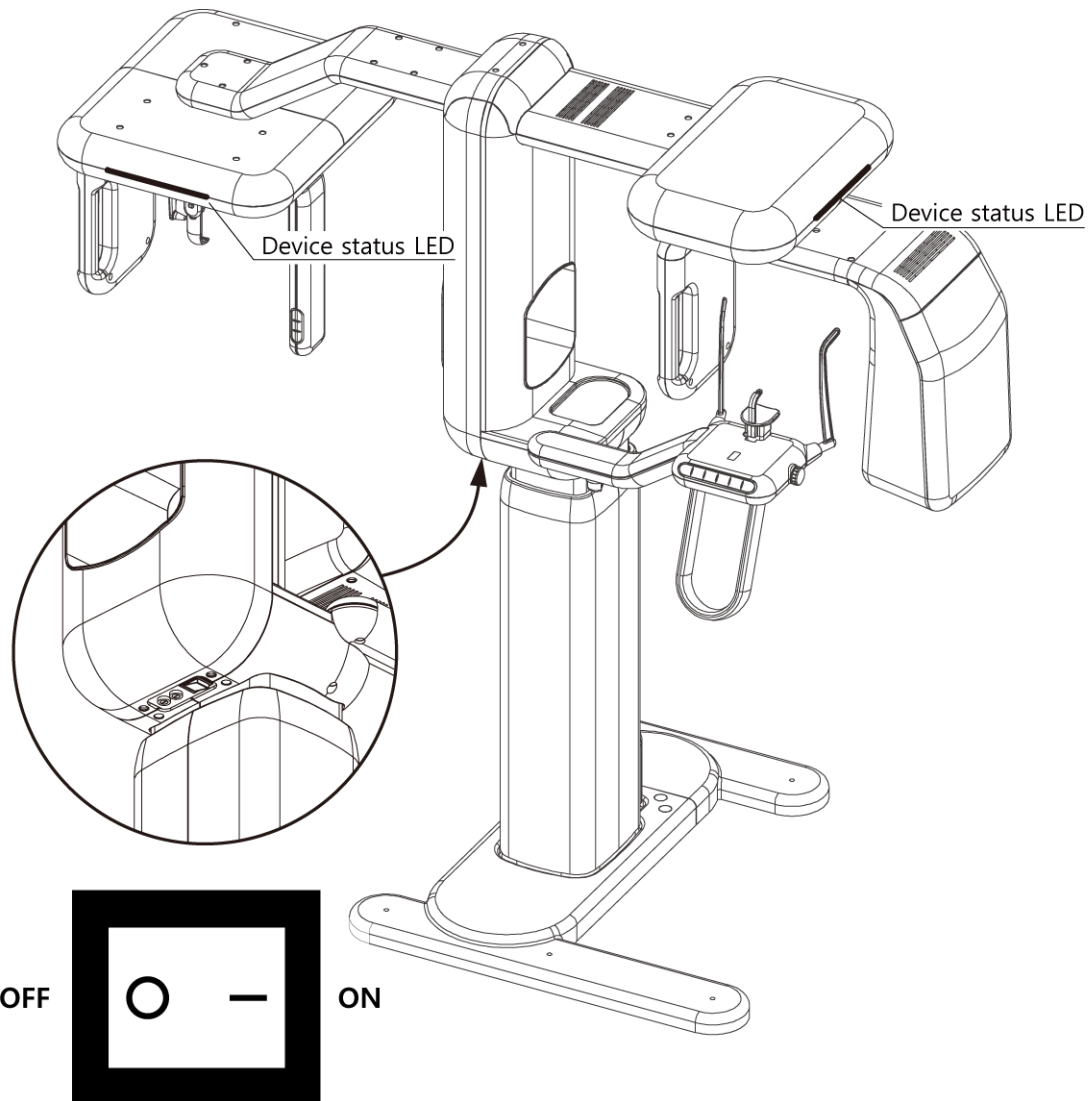


Must use spare part that is provided by manufacturer. If you damage machine when using different spare part, and then the manufacturer does not have responsibility of fault.

2.3 On / Off Switch

On/Off switch is located at equipment's below part.

If turning on equipment's switch, and the equipment's LED has light and displays equipment's waiting condition.



It needs to have warming up time for using this machine.

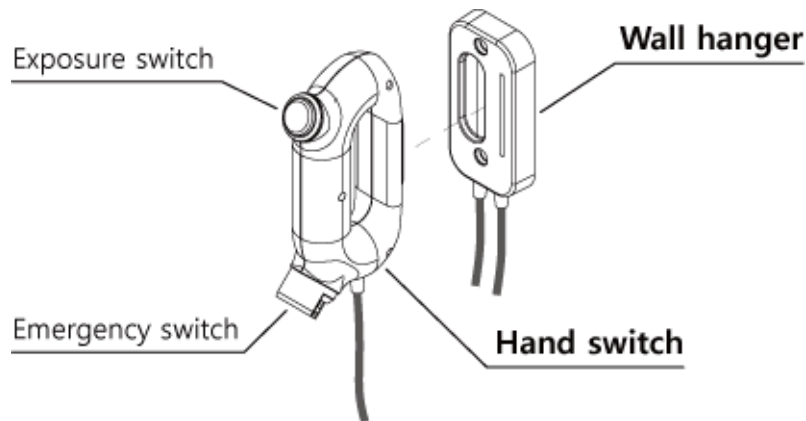


If there is a false indication on the main screen or indicator, because it may give a risk to user and patient, please contact our service center immediately.

2.4. Exposure switch

2.4.1 Hand switch

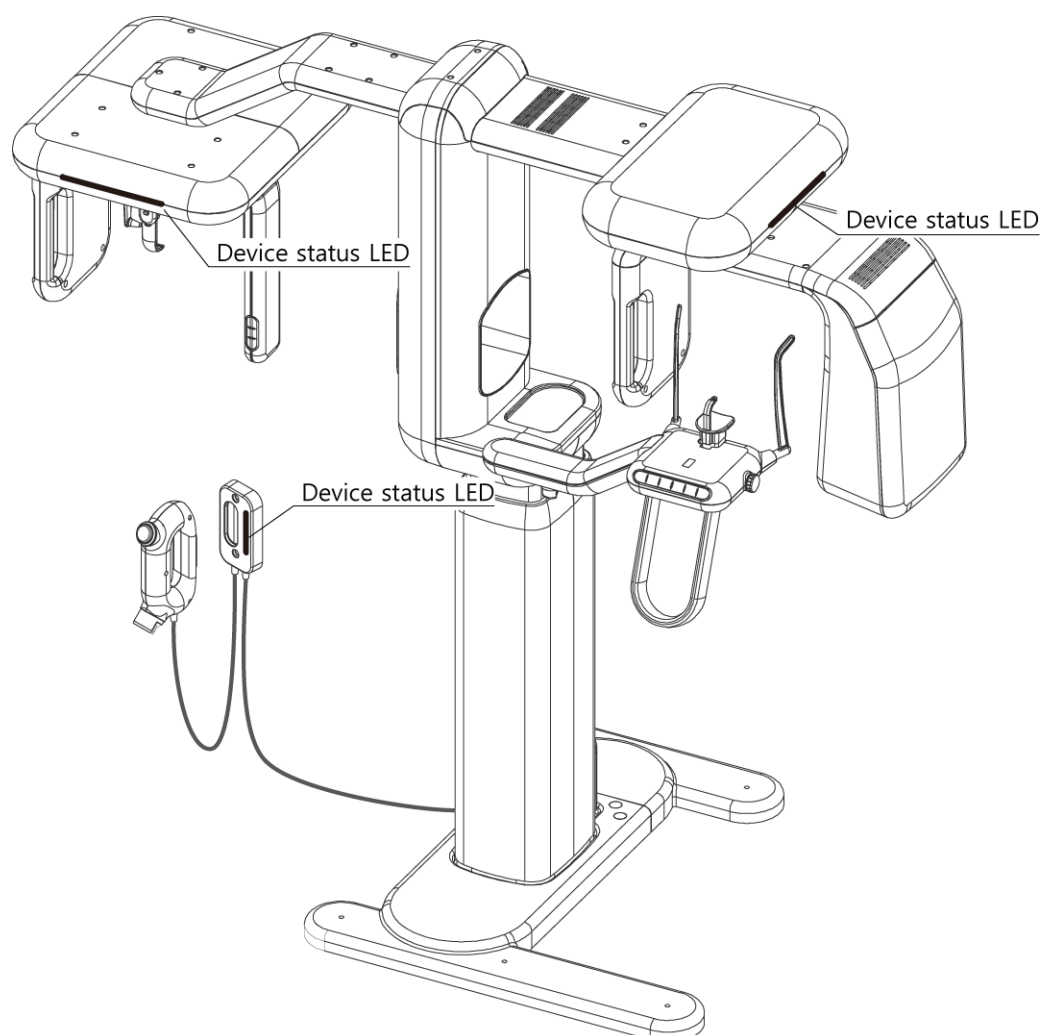
Hand switch can be hung on the wall. It has a X-ray exposure switch and a emergency stop switch. While emergency switch is used when equipment is malfunctioning or it can harm patient.



Exposure switch need to be pushed continuously while is to exposure patient's diagnostic image. If during exposure, switch is not pushed and machine's movement is stopped instantly and at OP, advisor word will be displayed.

2.5 Device status LED

LED will light various color depending on equipment's status.
It is on the equipment and hand switch hanger.

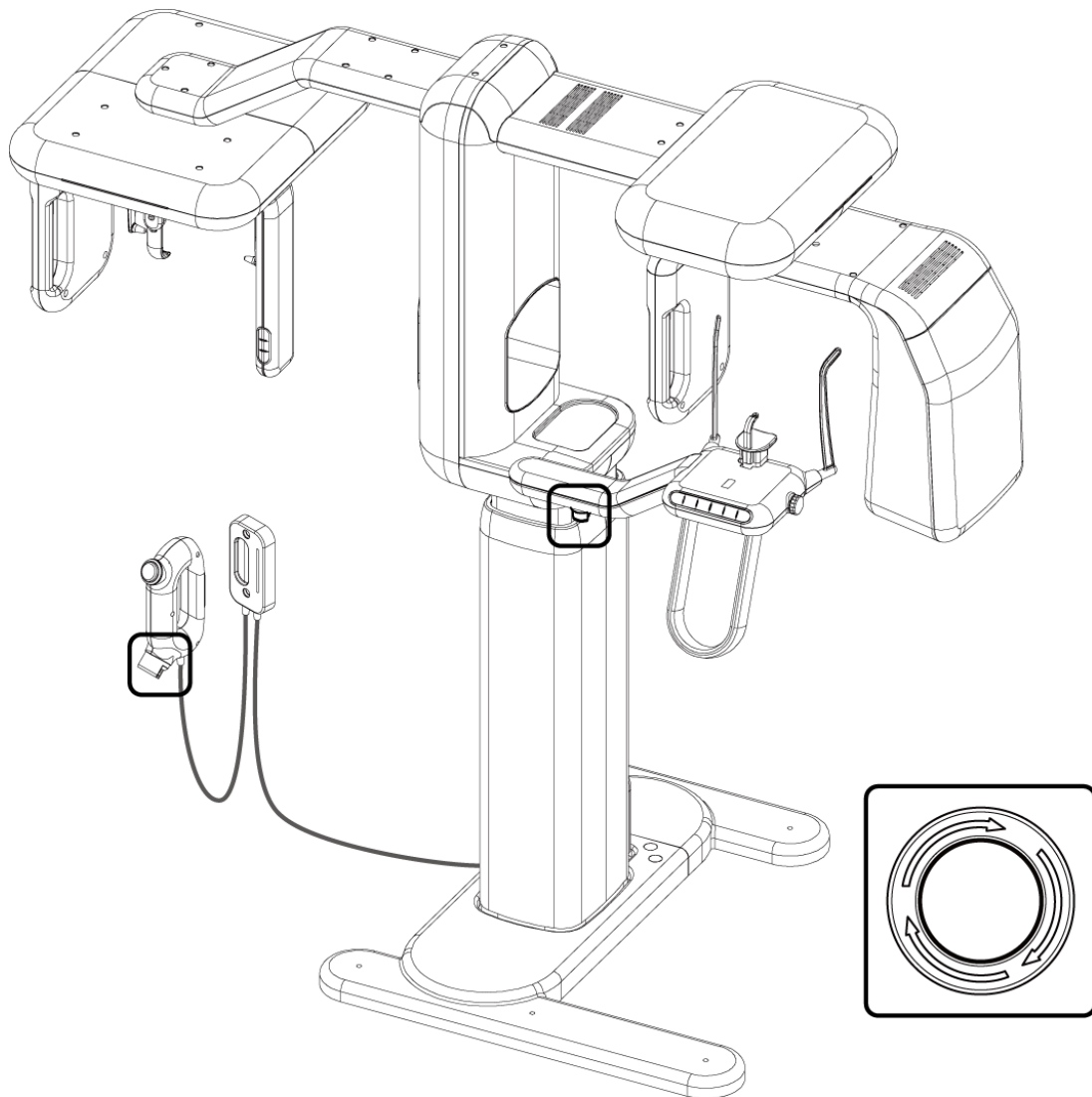


LED Color	description
Blue	Rotating side is at rotation
Yellow	while X-ray exposure
Green	When X-ray exposure, ready
Red	While taking exposure, error occurs or pushing emergency switch

2.6 EMERGENCY SWITCH

When emergency situation happens and push button and equipment's driving unit or X-ray source assembly's power supply stops and machine will stop.

- Emergency stop switch is located at above picture.
- Pushing emergency button can let machine stop.
- Device will be restarted by turning in the direction of the arrow.



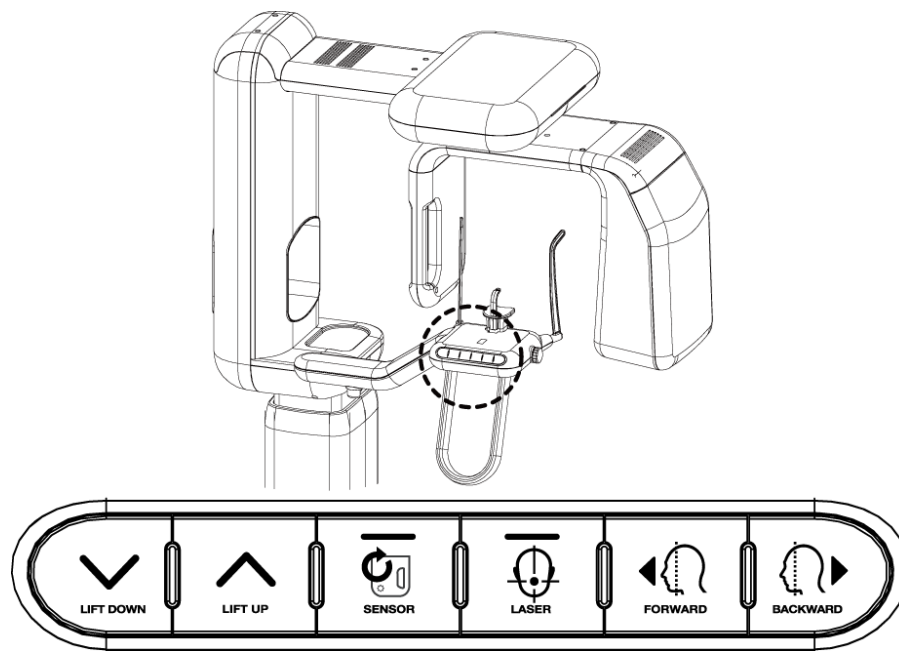
This button should be use for emergency situation.

2.7 Equipment's Control Button

Equipment is controlled by equipment's control button and controls equipment's movement or controls laser. Each button's function is as below.



Do not adjust the machine during operation.



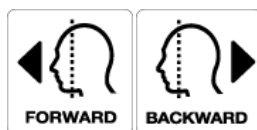
Controlling equipment's height
LIFT DOWN
LIFT UP



Using when user wants to change the detector.



Turn ON/OFF equipment's laser. When pushing once, laser turns on and pushing one more time and laser turns off. Laser will turn OFF after time. It will turn OFF automatically.



Using when equipment's gentry is moved forward and backward. By using laser, use to decide patient's exposure location.

FORWARD : moving gentry to user.

BACKWARD : moving gentry, opposite side to user..

2.7.1 CUST mode Control button

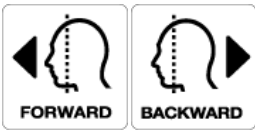
During Tomo mode, operation pantel will be changed for easy shooting X-ray.
Please use the sure to read the contents of the following.



Gantry moves to the CT imaging position.



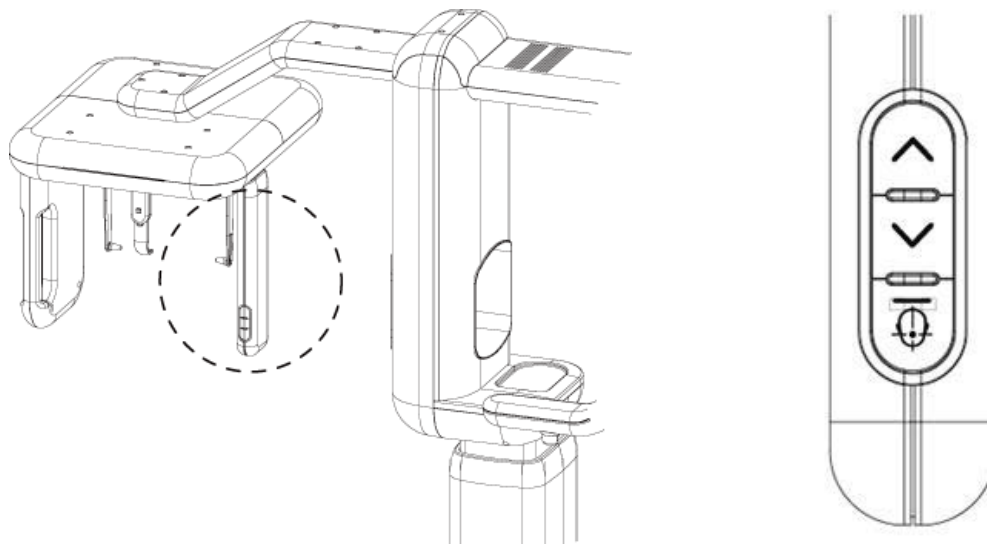
Moving gantry for Laser point



To a position that is not likely to cause interference, move the Gantry pre-determine the interference of the shooting equipment and patients.

2.8 2nd Equipment control Button

2nd Equipment control button can adjust the equipment's height and laser on/off.



Controlling equipment's height

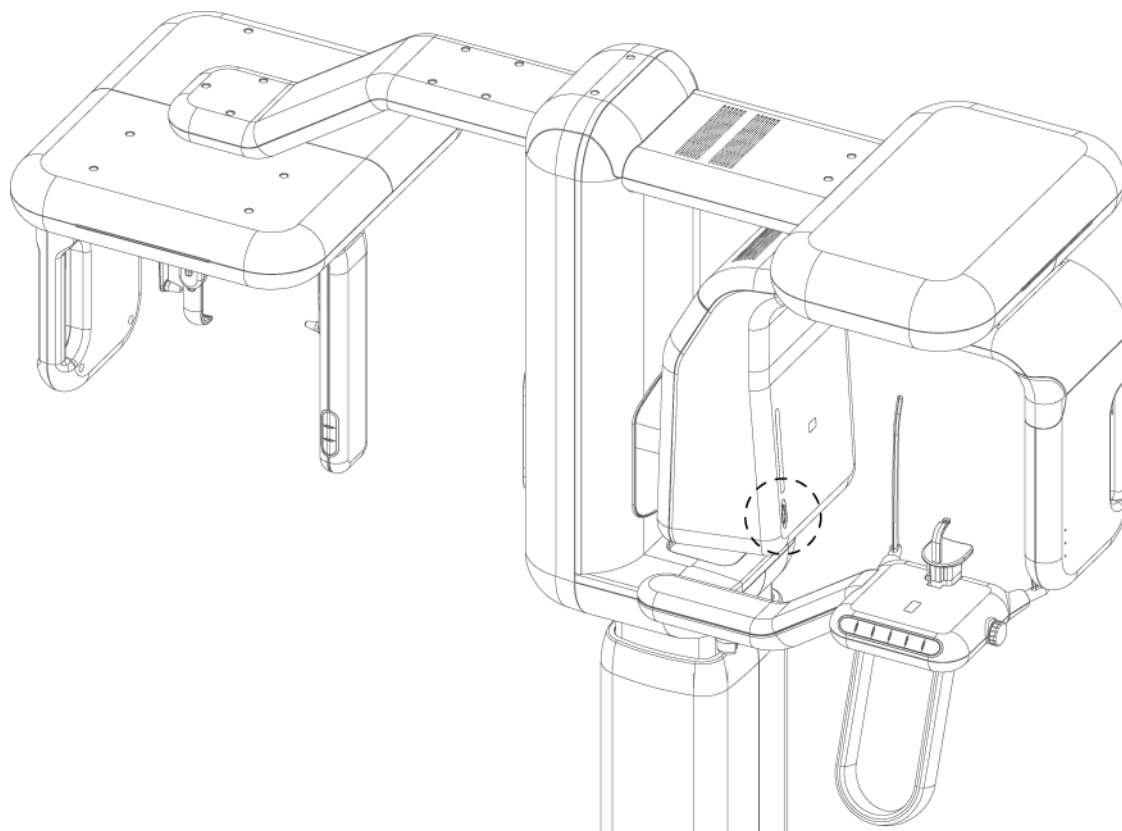
- LIFT DOWN
- LIFT UP



Turn on/off equipment's laser. When pushing once, laser turns on and pushing one more time and laser turns off. Laser will turn off after time. It will turn off automatically.

2.9 Lase control knob

Before to exposure, when controlling patient's position, using laser control knob to adjust to Frankfort line.

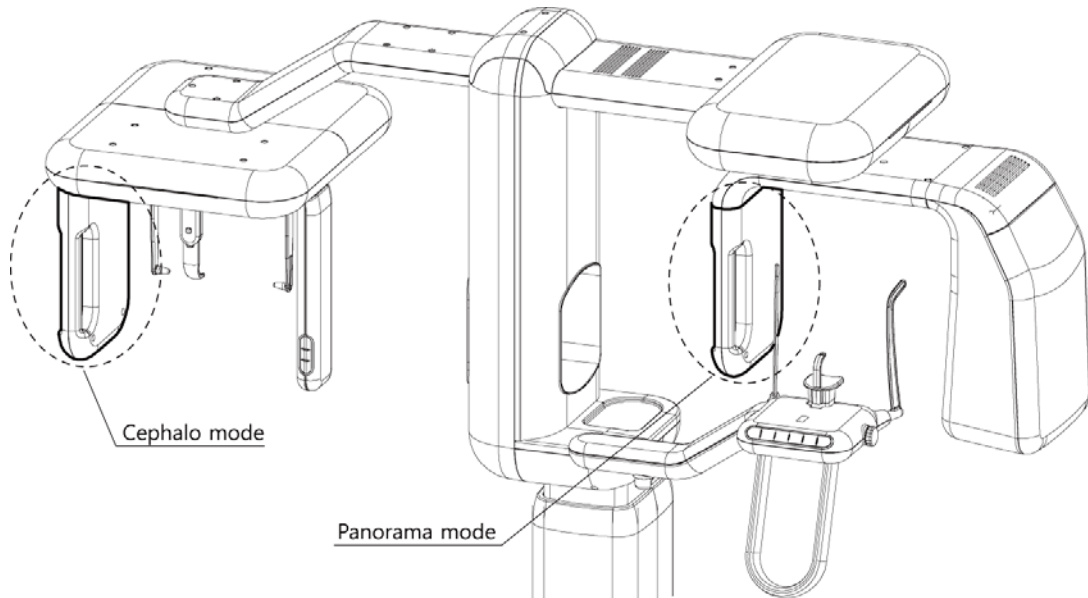


Frankfort plane is the straight line connecting upper part of an earhole & lower part of eyes.



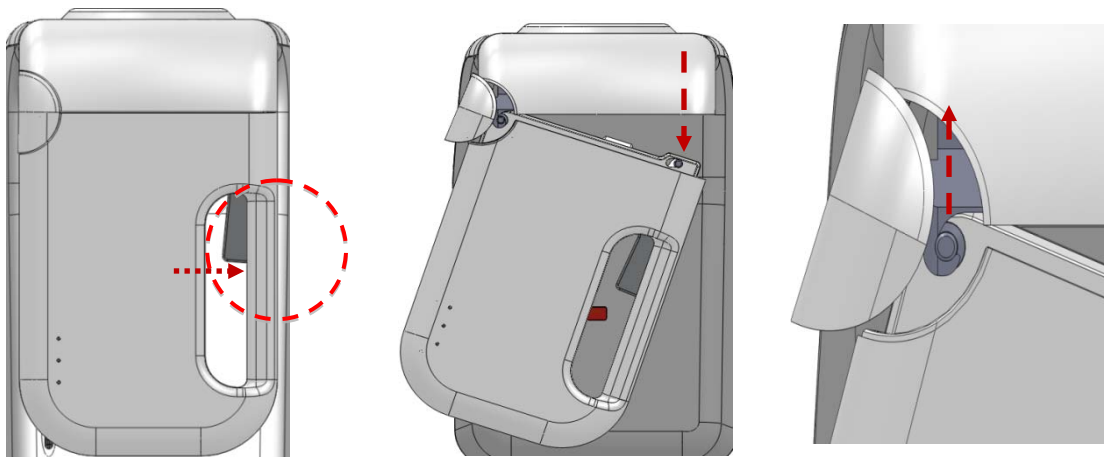
2.10 Position of detector

The detector is removable depending on exposure mode.



2.10.1 Detector Install & remove

Detector Detachable Method



Pushing detector handle
area's switch.

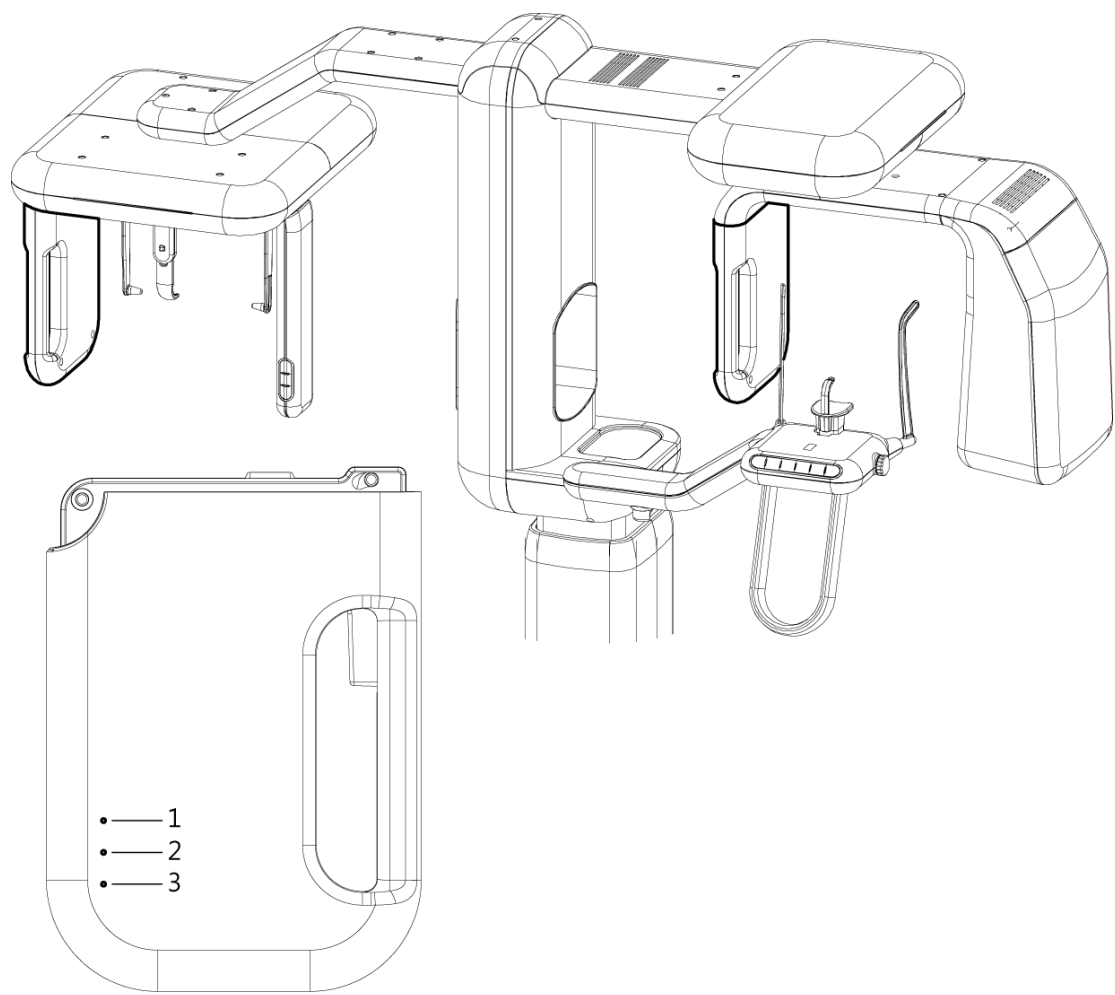
While pushing switch, pull
detector downward..

By disassembling hook part
and pushing detector upward
and detector will fall out.



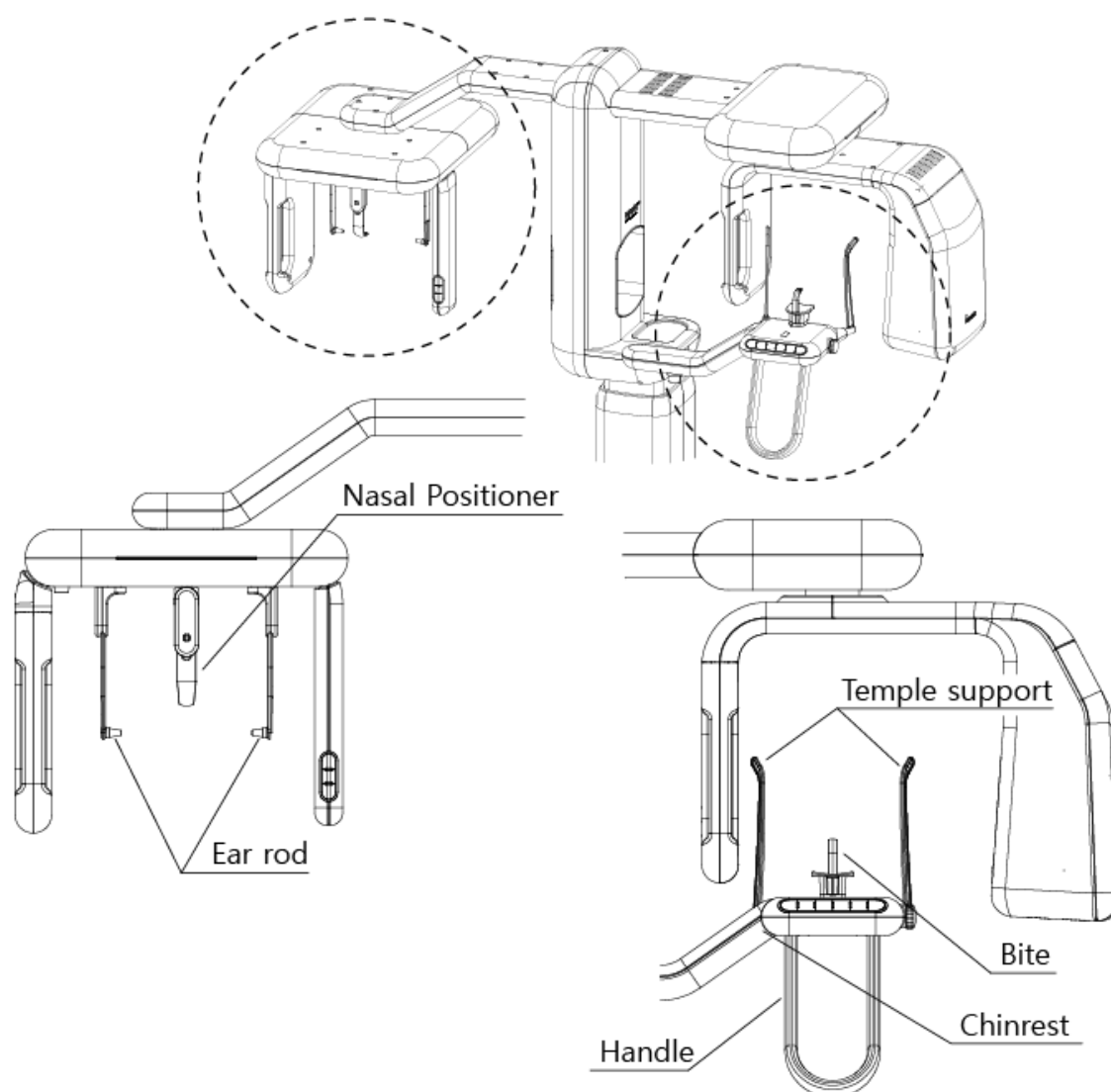
Following above change method and doing reverse way and detector will be attached.

2.11 Device status LED



	LED Color	Description
1)	Blue	While X-ray exposure and send a image, (Off light after completion)
2)	Blue	
3)	Green	On supply power

2.12 Patient supporting part



After exposure, please clean up the patient supporting part with alcohol cotton or gauze.

3. OP (Operation panel)

3.1 OP structure



[Operation Panel Program screen]

1	Time Display	Displaying current time.	
2	Patient's Information Display Screen	Displaying patient's information Ex. ID Age (Sex) Name	
3	Exposure Program Display	Displaying selected exposure program	
4	Exposure Mode Choose Button	Choosing equipment's exposure mode.	Refer to 3.2
5	Exposure Program Choose Button	Choosing equipment's exposure mode by exposure program.	Refer to 3.2
6	Patient's Size Choose Button	Choosing according to patient's size by pre-set value.	Refer to 3.3
7	Image Quality Choose Button	Deciding exposure image's quality.	Refer to 3.4
8	Exposure Condition Display and Change Part	Controlling equipment's exposure condition manually.	Refer to 3.5
9	Equipment display	Display equipment's condition	Refer to 3.6
10	Jaw shape selection button	Choosing patient jaw shape and size	Refer to 3.7
11	Order list button	Managing patient information and order list	Refer to 3.8
12	Equipment Movement Button Part	Deciding exposure condition and preparation completion and opinion.	
13	Option setting		Refer to 3.9

3.2 X-ray Exposure Mode

Papaya Plus provides various types of X-ray exposure mode. At operation panel program screen (OP), user can select the exposure program by pushing exposure mode button.

No.	Mode	Program		Reference
1	Panoramic mode		Standard	3.2.1
			Orthogonal	
			Bitewing	
	TMJ mode		Lateral	
			PA	
			LAT – PA	
	Sinus mode		Midsagittal	
			Lateral	
			PA	
2	Cephalo mode		Lateral	3.2.2
			AP	
			PA	
			Water's view	
			SMV	
			Carpus	
3	CUST mode		Maxillary center	3.2.3
			Maxillary right	
			Maxillary left	
			Mandible center	
			Mandible right	
			Mandible left	

3.2.1 Panoramic

• Panoramic

Standard

Standard panoramic has standard panorama's image field of view and Taking exposure.



Orthogonal

Orthogonal Panoramic is comparison to Standard panoramic program that takes x-ray exposure with x-ray beam's angle as 90° of penetration to chin, and produce field of view. At standard panoramic image, teeth is overlapping and effect is decreasing, but exposure area's opposite side's shadow of teeth and chin and add an effect.



Bitewing

Bitewing Panoramic program works at panoramic image and take exposure of bitewing area and take exposure of trajectory of patient. In basic, Bitewing Panoramic is orthogonal panoramic and take exposure with same angle.



• TMJ

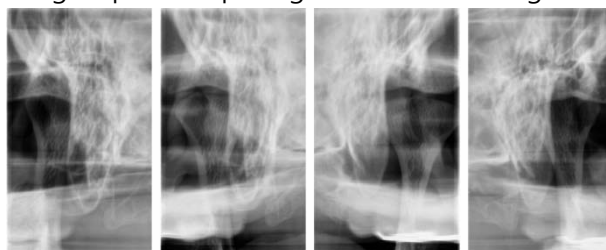
Lateral

TMJ lateral exposure has function of trajectory and side of temporomandibular joint. Taking exposure of both sides of temporomandibular joint and comparing, patient opens mouth and the patient closes mouth to distinguish temporomandibular joint exposure.



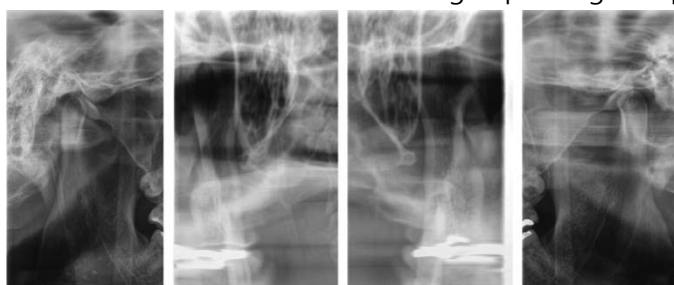
PA

TMJ PA takes exposure of temporomandibular joint's PA direction and take exposure with trajectory direction. Both sides of temporomandibular joint can take exposure and using as patient opening mouth and closing mouth.



LAT-PA

Lateral – PA program takes exposure of temporomandibular joints' PA and Lateral It will be able to take total 4 times shooting depending on open and close for Lateral and PA.



• Sinus



Lateral Mid

Sinus midsagittal exposure enables to take exposure of maxillary sinus and use it. The image's focus is on midsagittal surface.



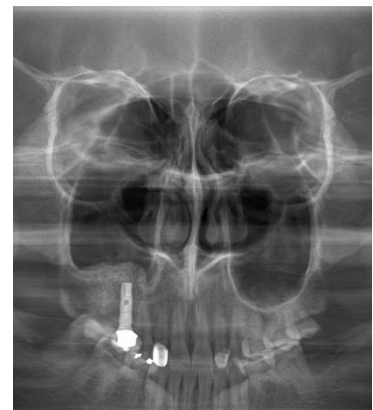
Lateral

Sinus lateral exposure is like Sinus midsagittal, at maxillary sinus, take a exposure at maxillary sinus' trajectory. From midsagittal surface's standard, now focus surface can be toward left or right side.



Sinus PA

Sinus PA takes an exposure at PA's direction of maxillary sinus.



3.2.2 Cephalo

• Cephalo



Lateral

Cephalo lateral exposure has at patient's side, and X-ray beam's penetration of direction.



AP

Cephalo AP exposure is that at toward AP's direction, X-ray penetrate and taking exposure of skull.



PA

Cephalo PA exposure is that at toward PA's direction, X-ray penetrate and taking exposure of skull.



Water's

Water's view is when the patient is at with Frankfort line and with detector surface, and taking exposure with 45 degree angle slope and is exposing area of head.



• Cephalo



SMV(Submento vertex)

SMV takes exposure of according to patient's Frankfort line and the surface of detector is leveled with horizon and put patient in this position to take exposure.



Carpus

Carpus takes exposure of wrist. In order to do Carpus exposure, using carpus exposure wrist panel(Optional) and install it and take exposure

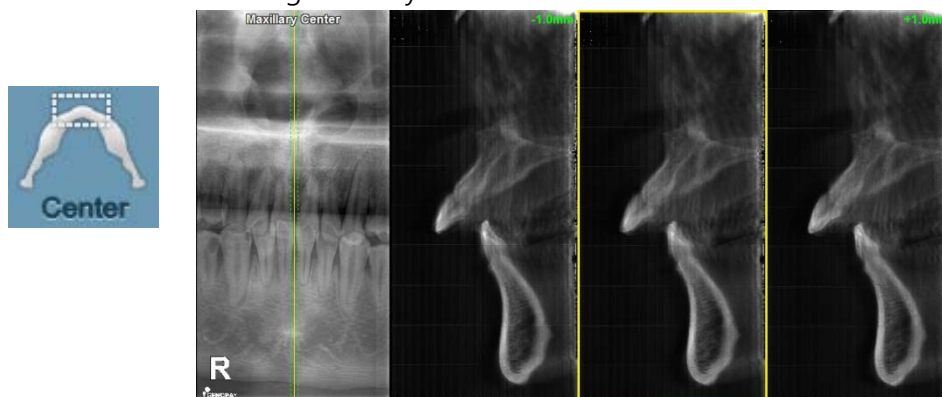


3.2.3 CUST (Option)

• CUST

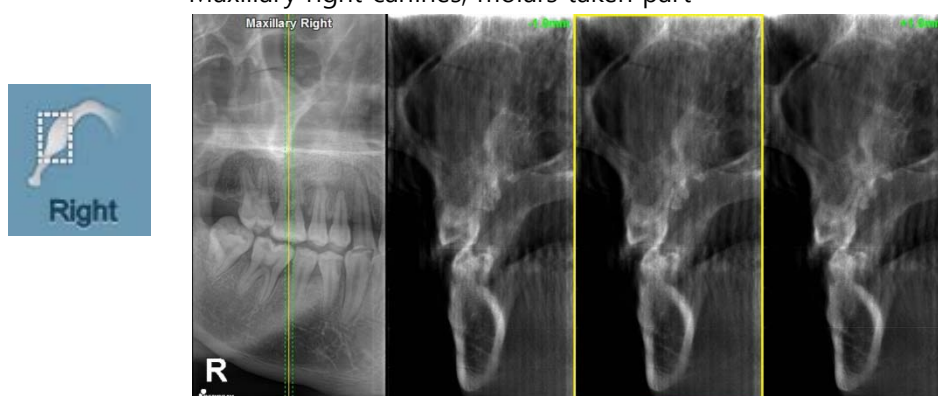
Maxillary Center

Shooting maxillary anterior



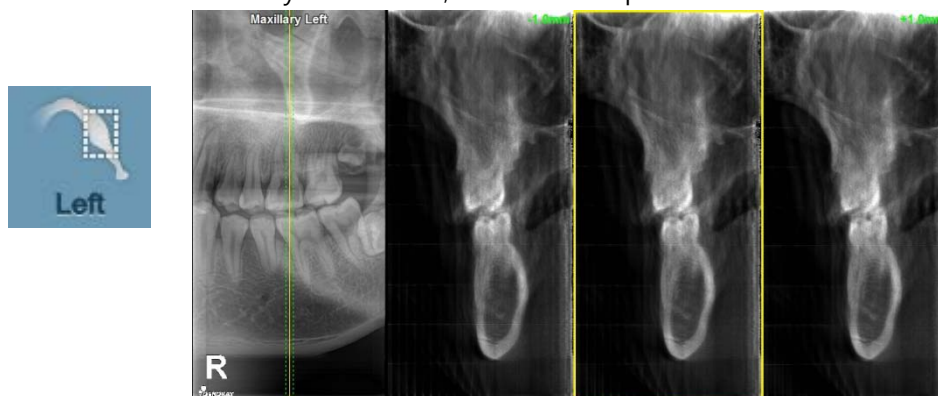
Maxillary Right

Maxillary right canines, molars taken part



Maxillary Left

Maxillary left canines, molars taken part



• CUST

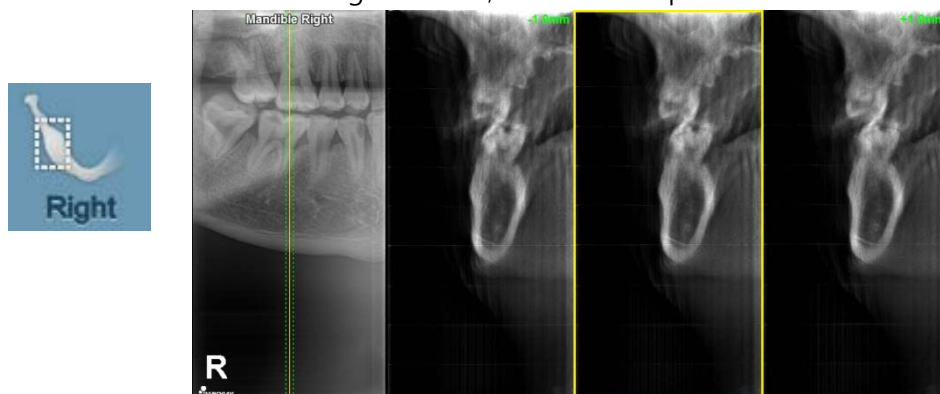
Mandible Center

Mandibular incisors taken part.



Mandible Right

Mandibular right canines, molars taken part



Mandible Left

Mandibular left canines, molars taken part.



3.3 Patient size



At all exposure program, according to patient's size and can choose appropriate patient's size.

Among 4 different size, can choose one size, and according to choice of size of patient, each exposure program has saved X-ray exposure condition with trajectory. At each exposure program, X-ray exposure condition is set up differently.

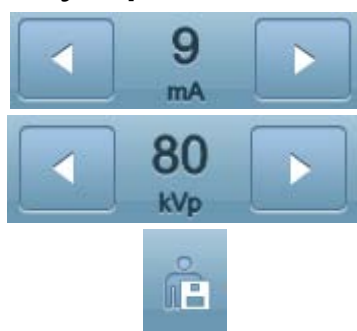
3.4 Exposure Speed and Change of Image Quality



Select the image resolution you wish to use in Panoramic and Cephalo mode. From top and down, the icons represent normal, fast and HD.

- Fast : It is used when you want to reduce the exposure time and get the lower quality to avoid patient's movement.
- HD : It is used when you want to get good quality image by adding the exposure time

3.5 X-ray exposure condition setting



X-ray condition can be changed by clicking the left or right arrow button of kVp & mA condition value on the x-ray condition display screen like the below image. kVp can be changed 1kVp per 1 click and mA can be changed 0.5mA per 1 click. The exposure time can't be changed. Changed exposure condition can be saved by clicking save button.



The exposure condition value is chosen automatically when choosing patient size & exposure program. If you'd like to change the exposure condition by yourself, you can hand operated.

3.6 Device condition display screen

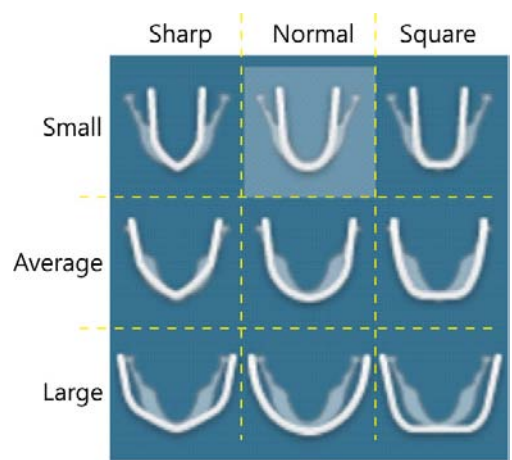
Device condition display screen shows the current condition of device.

Condition	Description
	It shows the connection of device & PC. When the device is connected with PC, it turns orange color.
	Green => Possible to X-RAY exposure Red => Impossible to X-RAY exposure (Upper than 55°C, high voltage generate is overheated.) When the high-voltage generator is overheated, please turn off the equipment. It has to have a cooling time of 2-3 hours. After then turn on the power, please make sure that it is ready for exposure.
P C	It shows the connection condition of the detector. Connected to panorama : P (Violet) Connected to cephalo : C (Bluish)



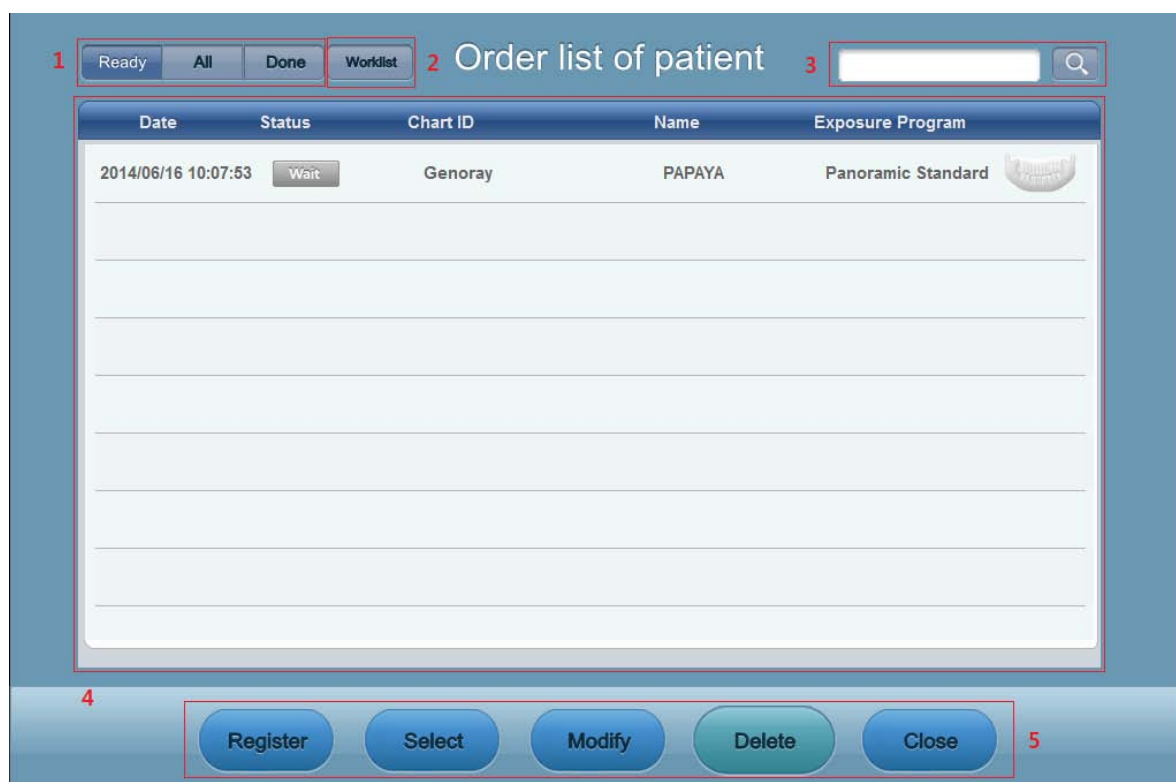
Please make sure that before proceeding the shooting, it is capable of shooting in the state to check the status display section of the equipment without fail.

3.7 Selection of Jaw shape



User can choose different jaw shape and size of patients. There are 9 options by following 3 jaw shape (Sharp, Normal, Square) and 3 jaw size (Small, Average, Large).

3.8 Order list



Click the order list button, refer to 2.1, then the order list management window will be appeared.

1)	Order status filter	Displaying patients' information of registered order by following selected filtration option. - Ready : Displaying order information be in ready and wait status. - All : Displaying all order information. - Done : Displaying order information exposure is finished.
2)	Worklist	Loading patients' information from worklist server.
3)	Search	Searching order information.
4)	Order information window	Displaying registered order information. (Exposure time, status, ID, name, exposure program etc)
5)	Order management button	Managing order. - Register : Executing order registration window. - Select : Selecting registered order of order list for taking image. Modify: Modifying registered order information. - Delete : Deleting registered order information. - Close : Closing order list and returning to main screen of OP.

3.8.1. Order registration

Patient registration list will be appered on the screen by clicking order registration.
Register patient by selecting shooting program information and patient.

Register

Patient ID ✓

Patient name ✓

Social security

Mobile phone

Address

Gender

Female

Male

Other

Date of birth

2014-06-16

Email

Panoramic

Standard

Orthogonal

Bitewing

TMJ

Lateral

PA

Double Lat-PA

Sinus

Lateral

Lateral Mid

PA

Cephalometric

Lateral

AP

PA

Water's View

SMV

Carpus

CUST

Center

Right

Left

Center

Right

Left

Cancel

Register

3.9 Option setting

User can set the options for the use of environment PAPAYA OP program.

The screenshot shows the 'Setting' window for the PAPAYA OP program. It features four tabs: 'General', 'DB Server', 'DICOM', and 'Technician'. The 'General' tab is selected, displaying the following settings:

- Screen:**
 - Language: ENG (dropdown)
 - Font: Arial (dropdown)
 - DAP: Not use (dropdown)
 - Date Format: YYYY/MM/DD (dropdown)
 - Clinic Name: (text input)
- Volume Control:**
 - A slider bar with a value of 100 displayed below it.
 - R Mark Display: ☒ R Mark
- Version:**
 - PAPAYA OP: 1.1.4.140601-2.1
 - PAPAYA REC: 1.1.4.140601-2.1
 - M/B: (text input)
 - Sound: (text input)
 - LIFT: (text input)
 - Sensor Serial num: CAEC011
 - Serial num: (text input)

At the bottom of the window are 'Cancel' and 'Save' buttons.

TAP designation	Explanation
General	Screen configuration, equipment, and display the program version
DB Server	Data structures and data management settings
DICOM	Set external link and DICOM-related functions
Technician	Engineer mode

3.9.1 General

Screen

Language KOR

Font Arial

DAP Not use

Date Format YYYY/MM/DD

Clinic Name zxcv

Volume Control

- 100 +

R Mark Display

☒ R Mark

Version

PAPAYA OP 1.1.1.140401-2.1

PAPAYA REC 1.1.1.140401-2.1

M/B

Sound

LIFT

Sensor Serial num NO_DETECTOR_SERIAL

Serial num

Designation	Explanation
Language	Setting language
Font	Setting Font
DAP	Setting DAP output measurement
Date Format	Setting data format.
Clinic Name	Clinic Name input/save
Volume control	Controlling machine's sound
R-Mark	Setting exposure images' position mark's printing out / not printing out
PAPAYA OP	PAPAYA OP Program version
PAPAYA Bridge	PAPAYA Bridge Program version
PAPAYA REC	PAPAYA REC Program version
M/B	PAPAYA Main board version
Sound	PAPAYA Sound controller
LIFT	PAPAYA LIFT version
Sensor Serial num	Sensor number

3.9.2 DB Server

SQL Server Information

Server Name

Triana Server Name

Data Folder Information

Temp Image

Triana image

Parameters

Trouble shoot

☐

☐

☐

Designation		Explanation
SQL Server Information	Server Name	Setting Order DB's usage path.
	Triana Server Name	Setting DB path at Triana
Data folder Information	Temp Image	At PAPAYA OP, setting saved image path
	Triana Image	At Triana, by managing image, making image saving path
	Parameter	Setting parameter path
Trouble shoot	When problem happens, pushing button to solve problem.	

3.9.3 DICOM

The screenshot displays a software interface for DICOM configuration, organized into several panels:

- Equipment Information:** Includes fields for AETitle (set to TRIANA) and Modality (set to PANORAMA / PX), with a Modify Item button.
- Storage Server:** Features a Preset dropdown menu and buttons for Insert Item, Modify, Delete Item, and Connect Test.
- MWL Server:** Contains a checkbox for MWL Server, an Information field (set to AETITLE/127.0.0.1/104) with Modify and Connect Test buttons, a Modality dropdown (set to PX), and buttons for Insert Item, Modify Item, and Delete Item.
- DICOM Printer:** Includes a Preset dropdown, a DICOM Image field (set to D:\Parameters\WETC\WSMPTE.dcm) with a browse button (...), buttons for Insert Item, Modify, Delete Item, and Print Test, and a DICOM Specific Character Set dropdown (set to ASCII (ISO_IR 6)).
- System Log:** A large text area for logs with a Reset button at the bottom right.
- Linkage:** Contains checkboxes for Use Linkage Triana (checked), Use ESM (Enterprise Study Management), and Use Custom file. The ESM section has a field (D:\Parameters\WESM) with browse and Info buttons. The Custom file section has a field with browse and Info buttons. The Command section has a large text area and a Set button.

Designation	Explanation
Linkage	Setting about interface about compatibility
Equipment Information	Inputting machine's information for DICOM usage
Storage Server	Setting DICOM Storage server
MWL Server	Setting Work list server
DICOM Printer	Setting DICOM Printer
System Log	When pushing Connect/Print test button and printing out processing result

4. Image acquisition



It requires patient to remove the metal product the patient is wearing before shooting, such as hearing aids, dentures, dentures, hairpins, and other accessories. If you take a picture with the object as described above, there may be reflection or shadow image is displayed on the image. For your safety, scarf, scarves, ties, etc., it is recommended that you remove it.

4.1 Image acquisition

4.1.1 Triana software

Please follow the process below after running Triana software to operate OP for the device operation.

1) Patient registration

①		Click the patient registration button
---	--	---------------------------------------

Register for new patient

②	Patient Information Patient Name Patient ID Date of birth 2016-06-20 EX)19700131(YYYYMMDD) Gender Others Social security Referring Physician Category Access Number Patient Comment Study Description Email Address1 Zip/Postal Code Home Phone Mobile Phone Close Register
---	---

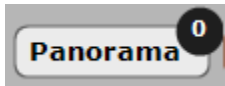
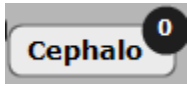
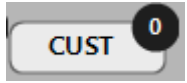
Patient enrollment in the left pane and enter the "Patient Information".

After typing the information, click the Register button to complete patient enrollment.

Import of patient information

②	On the " Patient lost", searching for a patient in a condition the patient's name, chart number, date of registration and etc is entered by double click.
---	---

2) OP running

①		Panoramic	After complete to Patient enrollment, user selects the device in the Selection tab of the instrument. If Tomo or cephalo is optional specification (Cust) function is included, not only panorama, but also user can choose cephalo or Tomograph (CUST) function.
		Cephalo (Option)	
		Tomo(Cust) (Option)	
②		Image acquisition button	Select the device, and press the button image acquisition, OP screen for shooting is displayed.



For more information related to Triana, please refer to the TRIANA manual.

4.2.2 OP execution

Please follow the steps below.

1)

Click the registration button for starting order list(refer to 3.8)

After selecting the shooting program and input of patient information, and then complete the registration in the "Register" button.

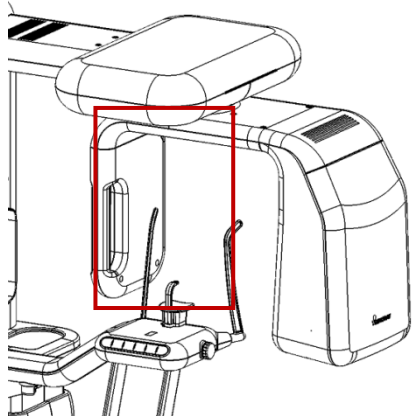
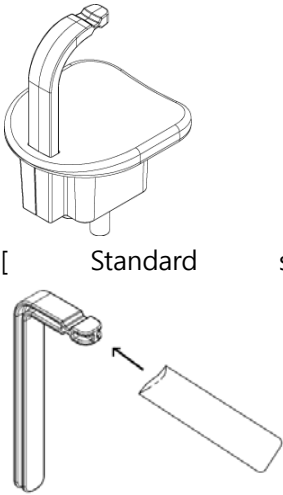
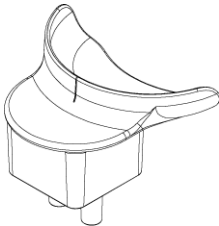
2)

Date	Status	Chart ID	Name	Exposure Program
2014/06/16 10:07:53	Ready	Genoray	PAPAYA	Panoramic Standard

Information registered in the list of order, order list will be displayed.

4.2 Panoramic mode positioning of the patient

Panoramic mode will take a panoramic image of the upper and under chin.

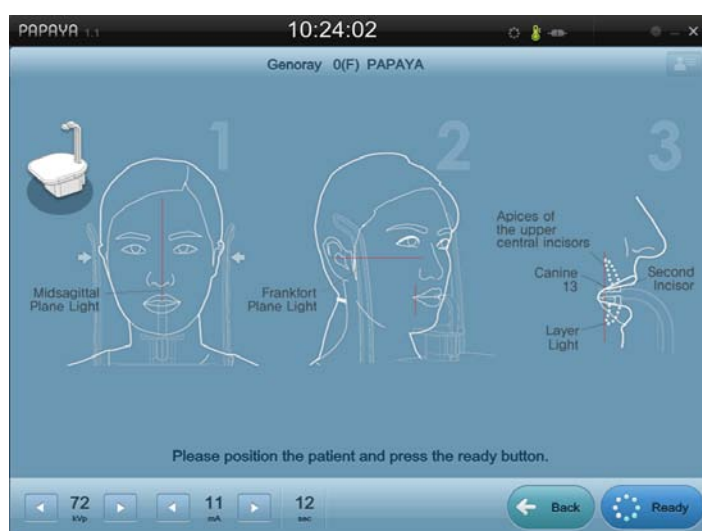
1)		Set the detector on the panoramic exposure position. For information about how to install the detector, please refer to 2.9.1.
2)	 [Standard shooting]	Attached Standard Chin rest and bite on the machine. Please use the bite covered with a health protection cover. The health protective cover that has been used once, please do not re-use by removing after the shooting.
	 [For edentulous patients]	If there is any tooth, in the case of a patient difficult to bite, please use a bite for edentulous patient bite.  The chin rest installing method, please refer to the number 2.2.2.
3)		To run OP by patient enrollment and Panoramic selection. (Refer to 4.1)

4)



Set the shooting conditions and Panoramic mode of OP that were performed, and when you click the bottom right of the "OK" button, the screen sort of position of the patient is displayed.

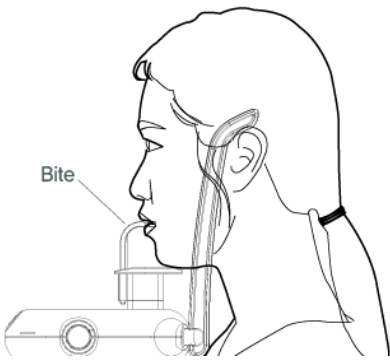
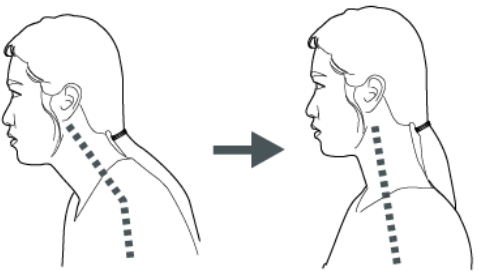
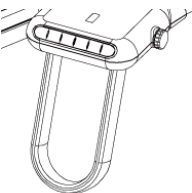
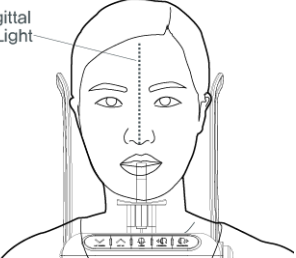
5)

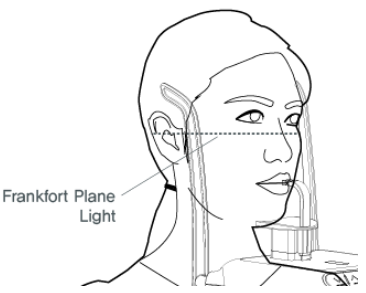
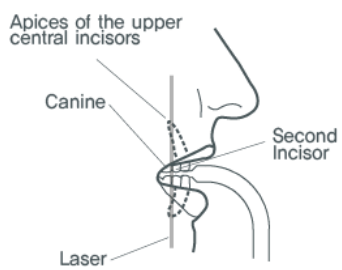
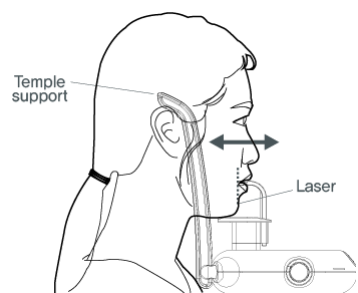


After positioning the patient, the operation buttons of the device to adjust the height to match the height of the patient.



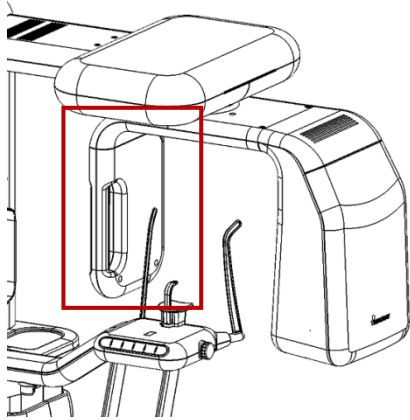
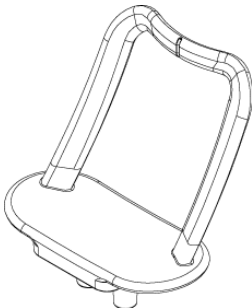
After moving to the screen sort of position of the patient, it is not possible to change the X-ray condition. To suit your changing needs of the program or X-ray exposure, then you can reset it by pressing the "back" button.

6)		After covering bite with a vinyl cover, Let patient bite it as shown in the picture.
7)		Let the patient be positioned according to open/close the mouth. If patient can't raise their neck, set the height of device by using device set button.
8)		When the position of patient is correct, lead the patient grab the handle.
9)		Set the position of patient by pressing laser button for the patient stands on correctly.  Laser is consists of 3, you should let the patient be positioned for all 3 lasers correctly to get a good quality of image.
10)		When the laser is turned on, set midsagittal laser to midsagittal of patient by moving patient's head.

11)		Set Frankfort laser to Frankfort of patient by controlling angle of patient's head. If the position of laser is not correct, set the height of laser by moving Frankfort laser control knob.  Frankfort plane is the straight line connecting upper part of an earhole & lower part of eyes. 
12)		Finally move the position of laser by using 'FORWARD' & 'BACKWARD' button on patient control button to be canine laser positioned on TMJ of patient. 'FORWARD' button moves to user's direction but 'BACKWARD' button moves to opposite direction of user's.  Laser is turned off automatically after few minutes or if the exposure starts.
13)		Check whether the position of 3 lasers is correct after positioning the patient by using Temple support. If it is not correct, let the patient positioned correctly.

4.3 TMJ mode patient positioning set

TMJ mode takes the image of lower teeth on TMJ part.

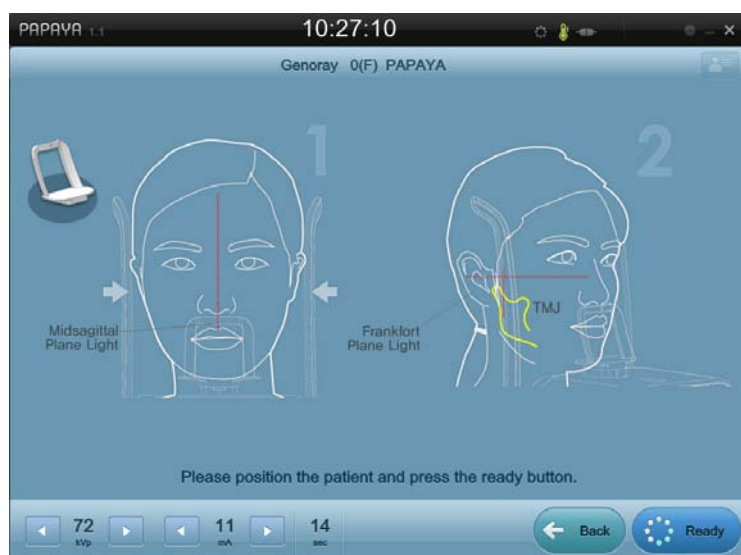
1)		Set detector on panorama position.(Refer to 2.9.1)
2)	 [TMJ mode]	To set the TMJ chin-rest on the equipment.  The chin rest installing method, please refer to the number 2.2.2.
3)	To run OP by patient enrollment and Panoramic selection. (Refer to 4.1)	

4)



Set TMJ mode & exposure condition on operating OP and click "Confirm" on right-low side, patient position control screen will come out.

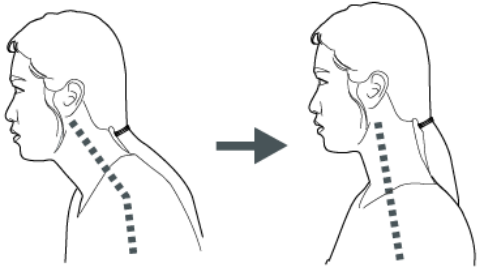
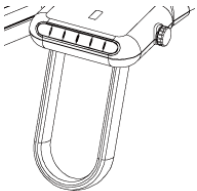
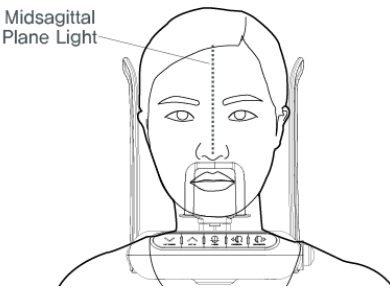
5)

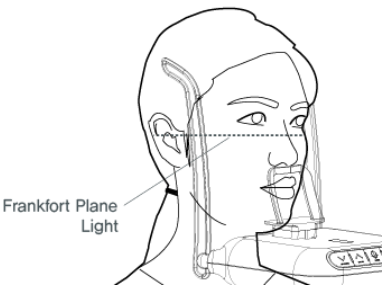
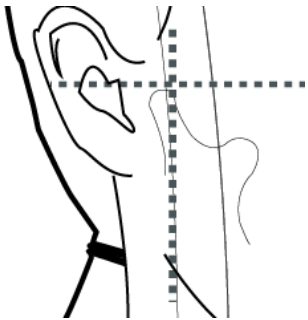
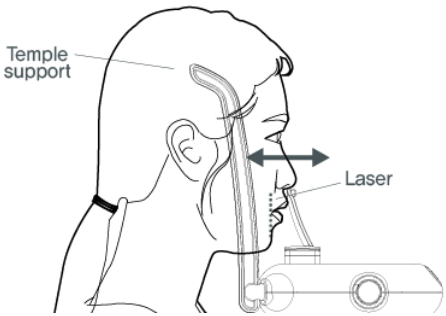


Set the height by using control button after being the patient positioned.

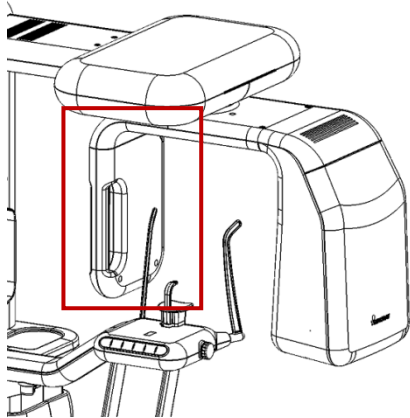
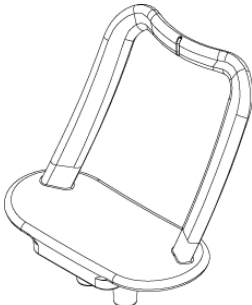


After moving to the screen sort of position of the patient, it is not possible to change the X-ray condition. To suit your changing needs of the program or X-ray exposure then you can reset it by pressing the "back" button.

6)		Let the patient lean on the chin-rest like the image left. Let the patient be positioned according to open/close the mouth.
7)		After covering bite with a vinyl cover, Let patient bite it as shown in the picture.
8)		When the position of patient is correct, lead the patient grab the handle.
9)		Set the position of patient by pressing laser button for the patient stands on correctly. Laser is consists of 3, you should let the patient be positioned for all 3 lasers correctly to get a good quality of image.
10)		When the laser is turned on, set midsagittal laser to midsagittal of patient by moving patient's head.

11)	 Frankfort Plane Light	Set Frankfort laser to Frankfort of patient by controlling angle of patient's head. If the position of laser is not correct, set the height of laser by moving Frankfort laser control knob. Frankfort plane is the straight line connecting upper part of an earhole & lower part of eyes. 
12)		Move the position of laser by using 'FORWARD' & 'BACKWARD' button on patient control button to be canine laser positioned on TMJ of patient. 'FORWARD' button moves to user's direction but 'BACKWARD' button moves to opposite direction of user's. In the case of the exposure program is set to PA mode, move the Frankfort laser to the TMJ PA laser marked position and adjust patient's head angle to position the TMJ is on to the laser line. 
13)	 Temple support Laser	Check whether the position of 3 lasers is correct after positioning the patient by using Temple support. If it is not correct, let the patient positioned correctly. Laser is turned off automatically after few minutes or if the exposure starts.

4.4 Sinus mode patient positioning set

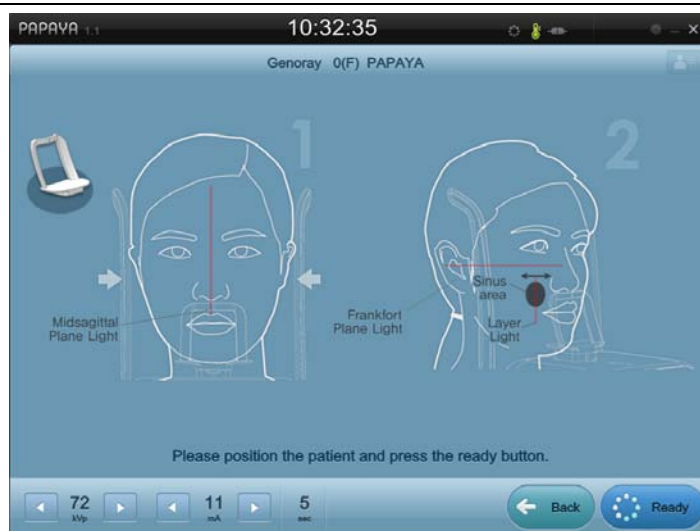
1)		Set detector on panorama position. (Refer to 2.9.1)
2)	 [Sinus mode chin rest]	Install the chin-rest for [Sinus mode] on device.  The chin rest installing method, please refer to the number 2.2.2.
3)	To run OP by patient enrollment and Panoramic selection. (Refer to 4.1)	

4)



Set Sinus mode & exposure condition on operating OP and click "Confirm" on right-low side, patient position control screen will come out.

5)



Set the height by using control button after being the patient positioned.

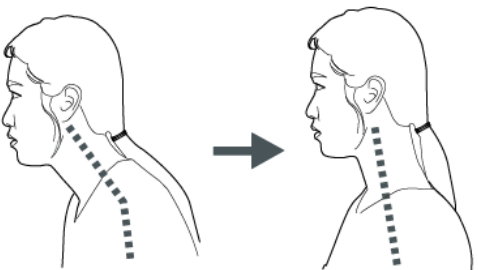
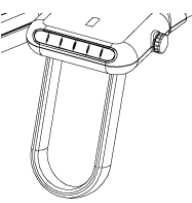
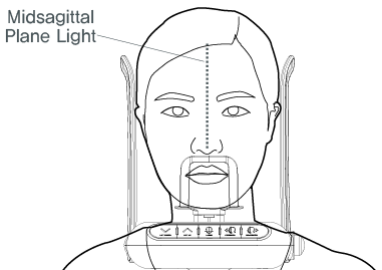
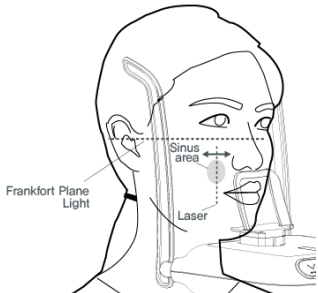


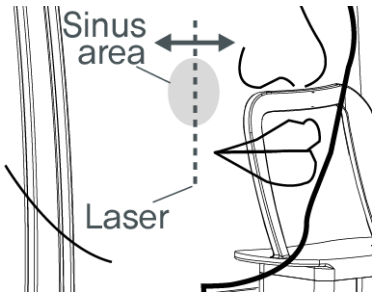
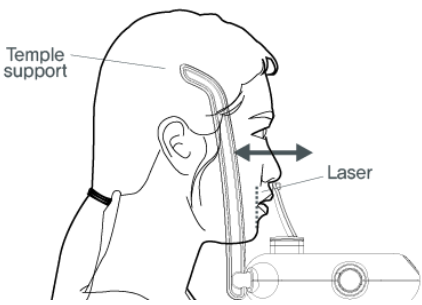
After moving to the screen sort of position of the patient, it is not possible to change the X-ray condition. To suit your changing needs of the program or X-ray exposure then you can reset it by pressing the "back" button.

6)

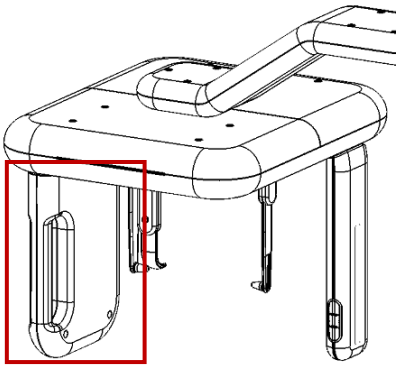


Let the patient lean on the chin-rest like the image left.

7)		Let the patient be positioned according to open/close the mouth. If patient can't raise their neck, set the height of device by using device set button.
8)		When the position of patient is correct, lead the patient grab the handle.
9)		Set the position of patient by pressing laser button for the patient stands on correctly.
		 Laser is consists of 3, you should let the patient be positioned for all 3 lasers correctly to get a good quality of image.
10)		When the laser is turned on, set midsagittal laser to midsagittal of patient by moving patient's head.
11)		Set Frankfort laser to Frankfort of patient by controlling angle of patient's head. If the position of laser is not correct, set the height of laser by moving Frankfort laser control knob.  Frankfort plane is the straight line connecting upper part of an earhole & lower part of eyes. 

12)	 The diagram shows a side profile of a patient's head. A dashed line indicates the 'Sinus area' with a horizontal double-headed arrow. A 'Laser' is shown as a point on this line, with a vertical dashed line extending from it. The patient is positioned in a chair, and the laser is part of a larger device.	Move the position of laser by using 'FORWARD' & 'BACKWARD' button on patient control button to be canine laser positioned on Sinus of patient. 'FORWARD' button moves to user's direction but 'BACKWARD' button moves to opposite direction of user's.
13)	 The diagram shows a side profile of a patient's head. A 'Temple support' is shown on the left side of the head. A 'Laser' is shown on the right side of the head, with a horizontal double-headed arrow indicating its position. The patient is positioned in a chair, and the laser is part of a larger device.	Check whether the position of 3 lasers is correct after positioning the patient by using Temple support. If it is not correct, let the patient positioned correctly.  Laser is turned off automatically after few minutes or if the exposure starts.

4.5 Cephalo mode position of patient

1)		Set detector on cephalo position. Please refer to 2.9.1 how to install detector
2)	Select the patient registration and Cephalo mode, and then run OP (Refer to 4.1)	
3)		Set mode & exposure condition on operating OP and click "Confirm" on right-low side, then "Confirm" button turns to "Ready" button, patient position control screen comes out.

4)	 Set the height by using control button after being the patient positioned.
	 After moving to the screen sort of position of the patient, it is not possible to the X-ray condition. To suit your changing needs of the program or X-ray ex then you can reset it by pressing the "back" button.
5)	Let the patient positioned according to exposure program after being Ear rod positioned to ear hole of the patient.
6)	Set the position of patient by pressing laser button of device set button while the patient bites the bite correctly.
7)	Laser enters horizontally. Control the angle of laser & patient's Frankfort according to exposure program.
Frankfort plane is the straight line connecting upper part of an earhole & lower part of eyes.	

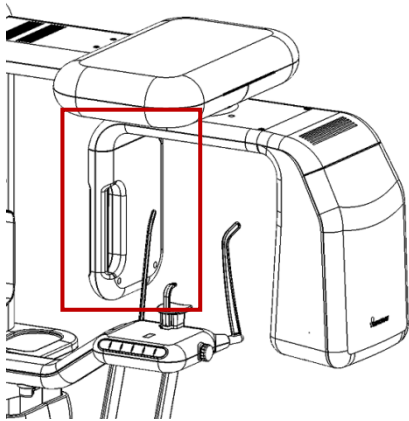
4.6 CUST mode position of patient (Option)

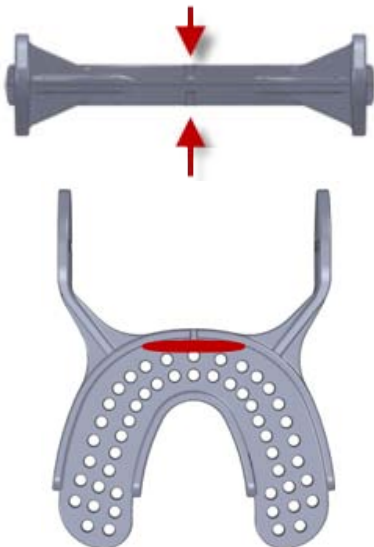


In order to use CUST,
Hasp Key must be plugged into PC



CUST shoots Tomography of the upper and the lower jaw.

1)		Put the detector into a spot of panorama shooting Refer to 2.9.1 for how to put it
2)		Prepare Bite plate with Bite index Impression which contains Polyvinyl is appropriate to use.

		Bite plate has two number of size, small and big
		Place the middle of dental-arch at the spot where is marked with red color arrows. Bite the plate as deep as possible to place incisor at the front as much as possible.
3)	Run OP by selecting patient registration and CUST	

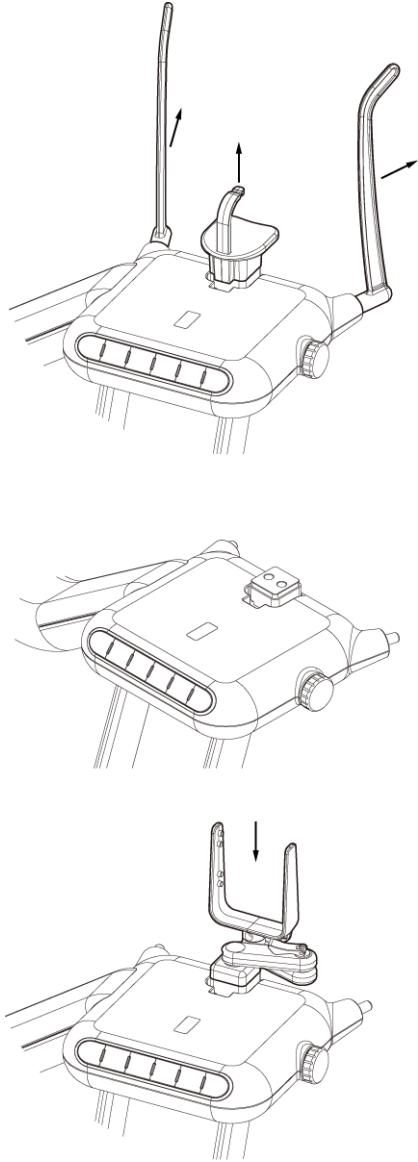
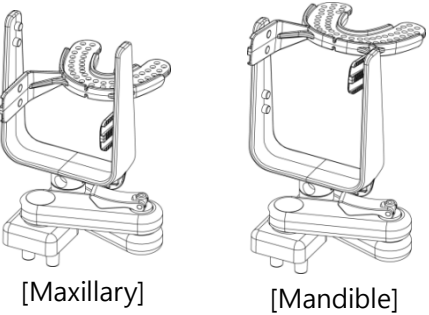
4)

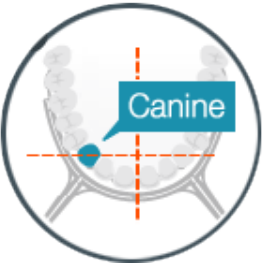


After to configure condition for shooting at executed OP and click the confirm button at the bottom of the screen, appear the picture of alignment of patient.

5)



6)		Remove chinrest and install CUST mode positioner on the equipment.
7)	 [Maxillary] [Mandible]	According to location of dental-arch, put Bite plate

8)		Maxillary Incisor	According to shooting parts, Locate Bite index appropriately. ① Locate Bite index appropriately in order to place a part where you want to shoot at where Canine laser and Mid-sagittal laser converged For taking the Maxillary Incisor image, make the location of canine laser at the middle of canine marked ② Circumvolve Bite index to make dental arch of shooting part and Canine laser be horizontal ③ The picture on the left explains, how to locate Bite index.
		Mandible Incisor	
		Left canine/molar	
		Right canine/molar	

Change for the operation of the equipment operation button CUST mode at the time to make it easier to shoot. Please note information, before using.

		Shift gantry to better location where patients can easily enter or exit. While pushing the button it is working.
		Shifting gantry to another spot for focusing laser
		Move the gantry to two places where there is a lot of potential interference occur, check the interference before let patient in. The gantry will be moving during pushing the button.
		

9	Help a patient to bite Bite index again. If the place is too small as much as patient feel uncomfortable to enter into this equipment, push the SENSOR one of the operation button in order to help the patient.
10	Before shooting, check whether gantry and patient's interruption occur or not. By pushing FORWARD or BACKWARD button one of the operation buttons, The gantry will be shifting. . while shifting gantry, move attentively because colliding with patient could be occurred ① Press the "SENSOR" button, the patient will be in and out of shooting position. The patient may be bumped by the gantry when you move, please move carefully. ② When you press the "LASER" button, gantry will be moved to a position where it is possible to locate the position of Bite index. ③ After adjusting the position of Bite index, please back to the step of 8 and try then again.

4.7 Image taking



Users should exposure from the position safe from X-ray.

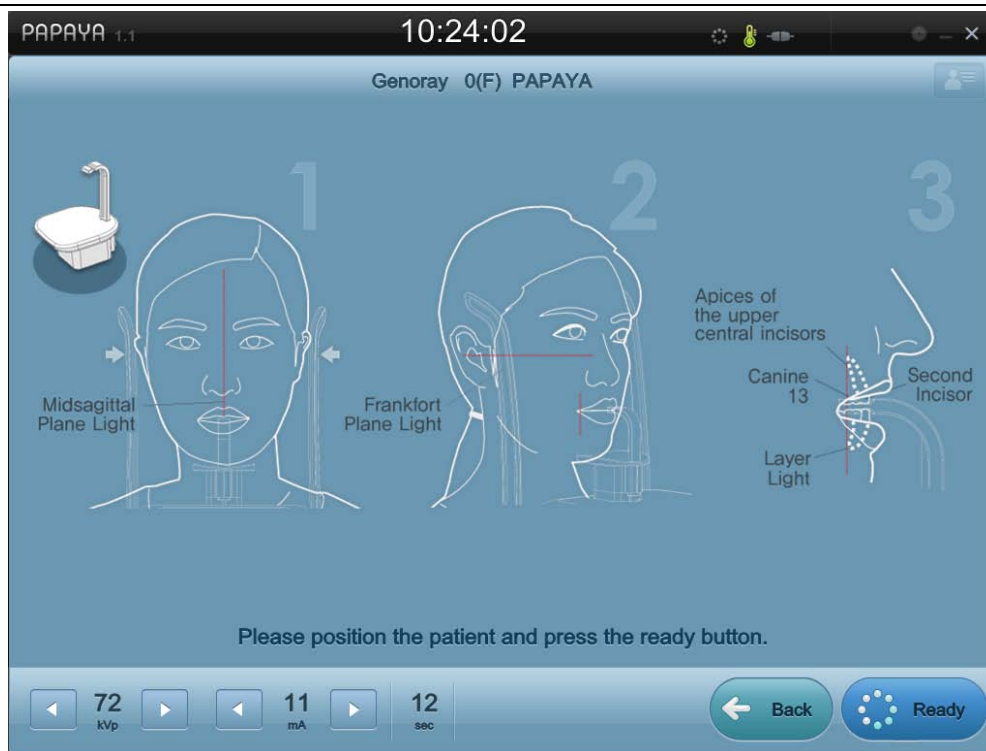


Please keep pressing the switch during exposure. If the users take their hands off from shot switch, the exposure is stopped and then, the error message comes out about the abnormal shut down.



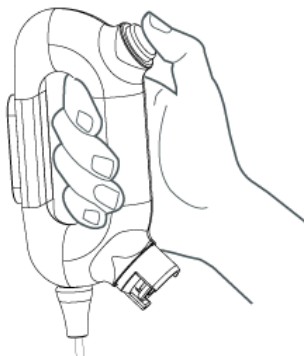
Focus on patient & condition of device during exposure. If the emergency situation is occurred, take the hands off right away and then press emergency switch

1)



After finishing the fixing the position of patient, press 'Ready' button of right-low part of OP after informing the patient not to move.

2)



After the message for taking a X-ray image from OP, the exposure starts when pressing X-ray shot switch.

When the exposure starts, OP shows X-ray warning message & the image taking, and final image comes out again after the complete.

3)



If CUST Mode of (option), after shooting the Scout image first, to enter the stage of TOMO image shooting. After taking the Scout video, if there is no problem, shoot 10 times for 3 seconds for processing the CUST image by pressing the "Preparation" button again. Scout. All shooting time takes 1 minute and 10 seconds.

4)



4.8 Condition message

No.	Message	Explanation
1	The detector was connected wrong. Please connect the detector on panoramic side.	After selecting the panorama program, it will be displayed when the sensor is in the state of non-attachment of the panoramic sensor portion.
2	The detector was connected wrong. Please connect the detector on cephalometric side.	After selecting the cephalometric radiography program, it will be displayed when the sensor is in the state of not attachment of the cephalometric sensor portion.
3	Please position the patient and press the ready button.	It is displayed at the stage of shooting steps. When you press the "Ready button" to start the preparation of X-ray exposure.
4	Ready for exposure...	After taking a shooting position, it will be displayed when you press the "Ready button "
5	Press exposure switch	It is displayed ready for X-ray is complete. When you press the exposure button, and conducted a exposure of x-ray, the acquisition of the image will be appeared.
6	Scanning...	Image acquisition status is displayed by pressing the exposure button
7	Return to initial position.	It is displayed when the rotation part is moved to the initial position.
8	Failure in scan/return process	The above message is displayed when the image acquisition is interrupted.
9	Image reconstructing	It appears in the stage of the panoramic / cephalometric imaging after the acquisition of the image is complete.
10	Image correcting	It appears in the stage of the panoramic / cephalometric imaging after the acquisition of the image is complete.
11	Image Processing	It appears in the stage of the panoramic / cephalometric imaging after the acquisition of the image is complete.
12	Emergency	The above message is displayed when the Emergency switch is pressed.
13	Please wait. The machine is still moving.	The above message is displayed when the device is in motion.
14	Position the ear-post like above illustration.	The above message is displayed when the ear-post is not suit for choice exposure program. Please let position as shown in image.
15	Position the nasal like above illustration.	The above message is displayed when the Nasal-support part is not suit for choice exposure program. Please let position as shown in image.
16	CUST reconstructing...	CUST reconstructing process on the screen.

4.9 Image Control

After image exposure finishes and on screen, image is displayed and before push "save" button and can do image control

Function	Control method	Explanation
	Drag mouse's left button	Move image within window (Up/down/left/right)
	Drag mouse's right button	Control Brightness
	Drag mouse's both left and right	View enlarge or minimize
	Double click mouse's left button	Re-size image with size of window
	Double click mouse's right button	initialize image to before control brightness

TOMO mode (option)

Function	Control method	Explanation
	Drag mouse's left button	Movement of section on the scout image
	Drag mouse's right button	Control Brightness
	Double click mouse's right button	Reset the image before control brightness.

4.10 TWAIN interface

If user's program supports Twain interface, and by using TWAIN data source in which is named, "PAPAYA" (TWAIN Version 2.1) and can send image to user's program. Sending methods are supported with Native Mode Transfer and Buffered Memory Mode Transfer.

The image acquisition by using PAPAYA data source is following.

- 1) Connect TWAIN session by choosing "PAPAYA" among TWAIN data source with in user's program
- 2) At user's program, the command of Acquire and send this command, and progress on OP's full screen mode.
- 3) From contents of 3.2 to 3.6, depending upon exposure mode and choose exposure mode and control patient position, and then try exposure of X-ray.
- 4) After exposure steps are finished normally and click "save" button and send user's program called, "PAPAYA."
- 5) In TOMO Mode (option) case, After you capture an image of a plurality of sheets with the image capture button, and then click the "Save" button, "PAPAYA" will transmit the images to your program.



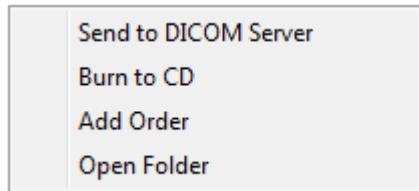
- 1) Image Capture button Image capture button on the screen
- 2) Screenshot of the list A list of captured screen

When the transfer is complete, OP screen automatically closes, and then exit the TWAIN session.



TWAIN data source can send image according to usage of Multi Focus that enables to send more than 1 page. If on user's program and try to receive 1 page of image, and un-check the check mark on content of 2.9.1's at general option tab and un-check All Save's checkbox.

4.11 OP additional function



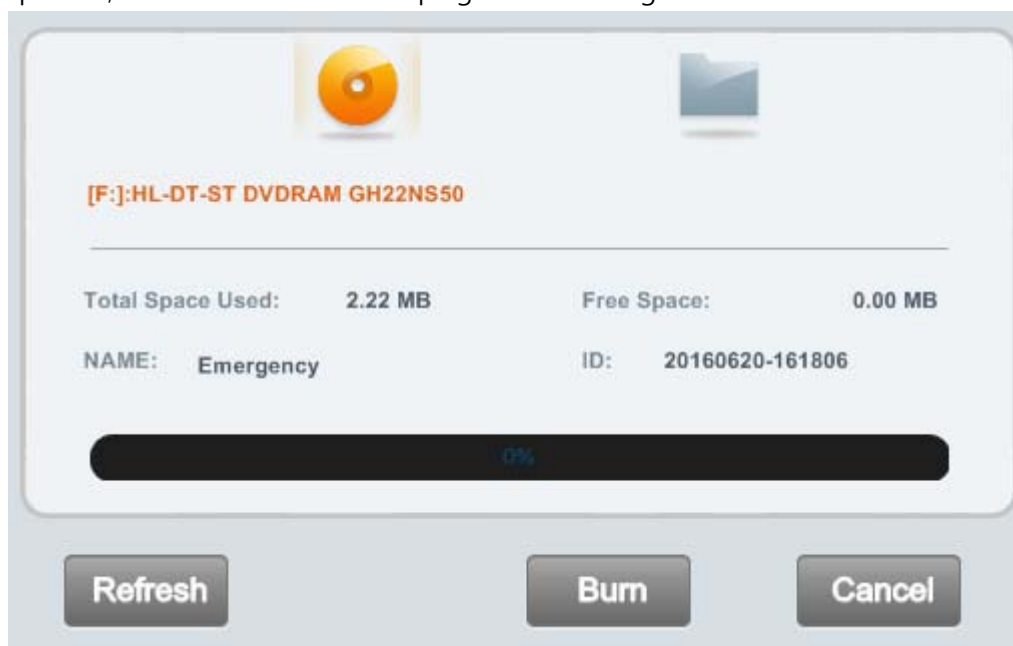
OP enables burning CD, sending to DICOM server, registering additional command, opening of patient date folder. Burning CD and sending of DICOM server function is able for patient who completed taking exposure. On order list window, clicking mouse's right button and by choosing patient and pop-up menu appears for choosing additional function.

4.11.1 Sending to DICOM server

At pop-up menu, by choosing send, and this function allows to pre-set to send image to DICOM server. The DICOM server information is written on 2.9.3 and on DICOM option tab's lower left side and set on Storage Server. By pushing "Insert Item" button, and input information window appears and input AETitle, IP, Port, and Timeout and push "Insert" button. At Storage Server's Preset list, and choose server in which will be sent and finish job by pushing "Save" button.

4.11.2 Burning CD

After taking exposed image and save them by using CD-ROM like media storage device or hard disk. On pop-up menu, choose "Save to CD" and progress CD burning window.



For media storage device, choosing right side at device list and save image. Checking by Total Space Used

and Free Space and click "Burning" button. After burning is completed and finish and click "Close" button. When saving at hard disk or USB, by pushing  button and choose save path and process burning. With image, image viewer of CDSee is also saved.

Media device is connected, but device list doesn't appear and can't choose device, and push "Refresh" button for updating the device list



On same path inside of CDSee folder, progress CDSee.exe and view saved image.

4.11.3 Register addition order

Additional order function is that on previous ordered list, and patient need additional exposure and doesn't input basic personal information. Then choose exposure program and do registration for order. If you choose additional order, and have chosen patient's basic information is updated and progress with registration ordered window. By choosing exposure program, and click "Register" button, and the order is added on ordered list.

4.11.4 Opening of patient's folder

When choosing opening of folder, search window is opened by starting from where the images are in saved folder.

5. Precautions after using, Methods of storage and maintain

5.1 Cleaning and Method

1) Turn OFF the power switch and disconnect the power plug after use

Please grasp and pull the plug, don't pull wire only.

Patient contact portion and the equipment, accessories, please cleaning and disinfection so as not to interfere with use..

- Cover of equipment: Please wipe gently with a sponge or damp cloth

- Contacted part by patients:: You clean with gauze or cotton which has been moistened with rubbing alcohol or high-pressure sterilization of up to 135 °C:

2) Please do not use disinfectant or detergent a corrosive.

Please note that no liquid drips into the device at the time of cleaning.

5.2 Storage

1) Do not install the equipment on the place where is wetted.

2) Do not install it in the place there is possibility of causing adverse effects due to air containing atmospheric pressure, temperature, humidity, ventilation, dust, salt, and sulfur content.

3) The equipment should keep safety state without tilt, vibration, and etc. (including during transport)

4) Please do not install it in the place of the occurrence of gas and the storage location of the chemical.

5.3 Maintain

1) User has to check the machine regularly for performance.

Please refer to "Appendix 2. Maintenance" .

2) If you want to re-use equipment that has not been used for a long time, please use after it was confirmed that it is working properly for safety. Please be inspected by qualified service center headquarters.

6. Product contents

6.1 Classification and complied standards

6.1.1 Classification

Electrical classification	Class I, Type B
Item	Digital Panoramic dental x-ray diagnostic imaging equipment

6.1.2 Complied standards

- IEC/EN 60601-1	- IEC/EN 60601-1-2
- IEC/EN 60601-1-3	- IEC/EN 60601-2-7
- IEC/EN 60601-2-28	- IEC/EN 60601-2-32

6.2 Power and other information

1) Input

Input Power Supply	AC 200-230V AC 120V~ (USA)
Power Capacity	2.2 kVA
Frequency	50 / 60 Hz
Apparent maximum allowed (impedance)	$\leq 0.2 \Omega$

2) Total filtration

	0.5mmAl (OPX-105)
Inherent filtration	0.8 mmAl (D-054SB)
Additional filtration	2.0mmAl

3) Etc

SID	Panoramic: 480 mm Cephalo: 1650 mm
SSD	Panoramic: 248 mm Cephalo: 1359 mm
Maximum tube current	12 mA
Maximum voltage	90 kV
Maximun kV, mA	90 kV, 12 mA
Lowest mAs	36 mAs
Overcurrent interdediate spinning frame character	Fuse 15A
Ground	B type ground

Environmental conditions

While using	
- Temperature	+10°C ~ +40°C
- Humidity	30%~75%RH
While storage	
- Temperature	-40°C to +70°C
- Humidity	10%~100% RH

6.3 Specifications of main part

6.3.1 X-ray source assembly

1) Input

Constant value	Single flooring
Frequency	50/60Hz
Voltage	230VAC $\pm$ 10%
Supply capacity	2.2 kVA

2) Output

kV range	60kV ~ 90kV
mA range	4~12 mA
Radiation irradiation time	PANORAMA: max 17sec CEPHALO: max 17sec

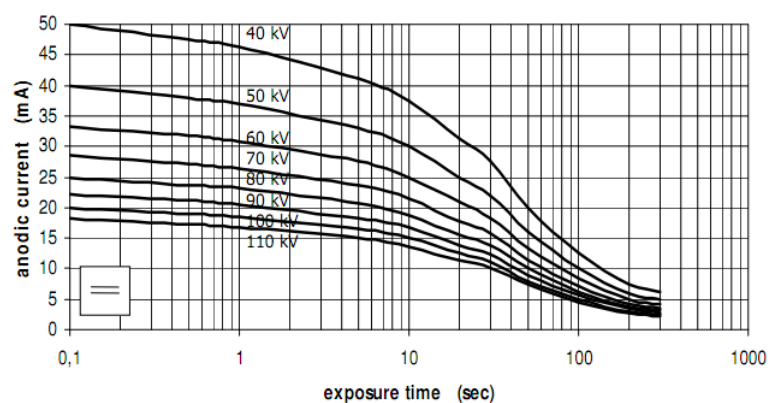
3) Dimension and weight

Dimension	246(W) X 254(H) X 125(D)
Weight	about 20Kg

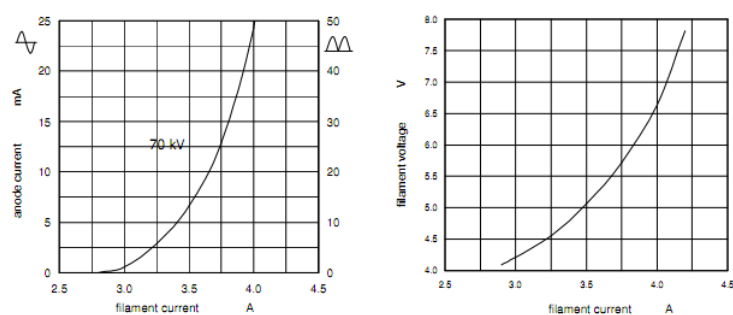
6.3.2 X-ray tube

1) MODEL	OPX – 105 (CEI)
2) Electrical data	
Circuit	DC(CENTER GROUNDED)
Operating voltage of the tube	110kV
Focus	0.5mm
Positive input voltage at 0.1S (DC)	2000 W
3) Mechanical Data	
Dimensions	Overall length: 148mm Maximum tube diameter: 57mm
Type	Stationary (Fixed type)
Target Angle	5°
Target material	Tungsten
Inherent Filtration	0.5 mm Al
Cooling Method	Oil cooling
Cooling Time	10 min
4) Thermal Characteristics	
Anode Heat Storage Capacity	30 kJ
Maximum Anode Cooling rate	200 W

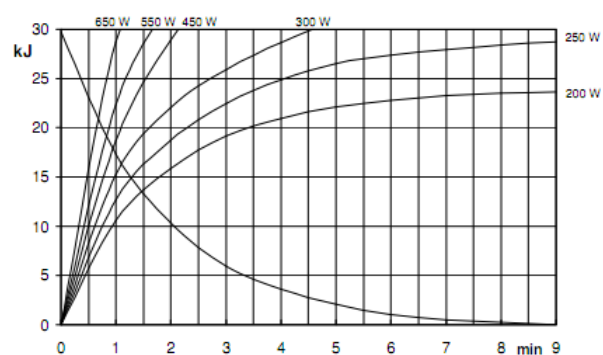
1) Maximum Rating Charts (Absolute maximum rating charts)



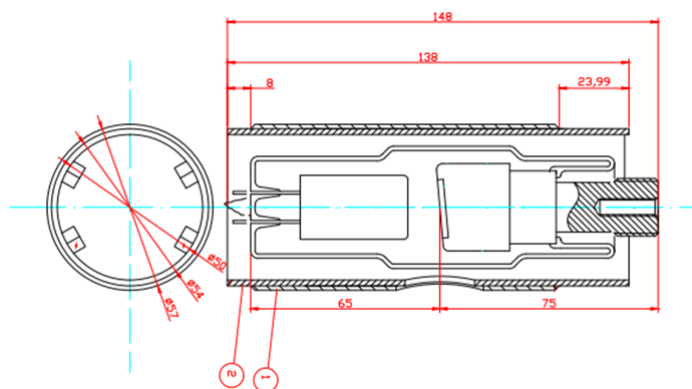
2) Emission Characteristics



3) Anode Thermal Characteristics

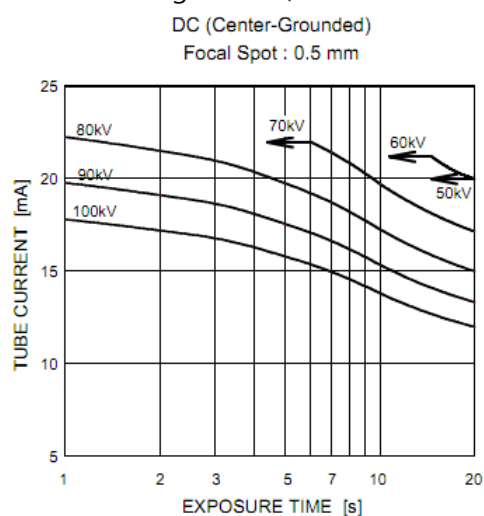


4) OPX/105 dimension (Measurment:mm)

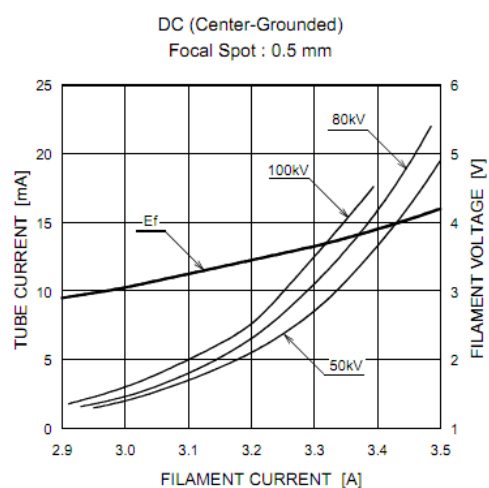


1) MODEL	D-054SB (Toshiba)
2) Electrical data	
Circuit	DC(CENTER GROUNDED)
Operating voltage of the tube	110kV
Focus	0.5mm
Positive input voltage at 0.1S (DC)	1750 W
3) Mechanical Data	
Dimensions	Overall length: 146mm Maximum tube diameter: 58mm
Type	Stationary (Fixed type)
Target Angle	5°
Target material	Tungsten
Inherent Filtration	0.8 mm Al
Cooling Method	Oil cooling
Cooling Time	10 min
5) Thermal Characteristics	
Anode Heat Storage Capacity	35 kJ
Maximum Anode Cooling rate	250 W

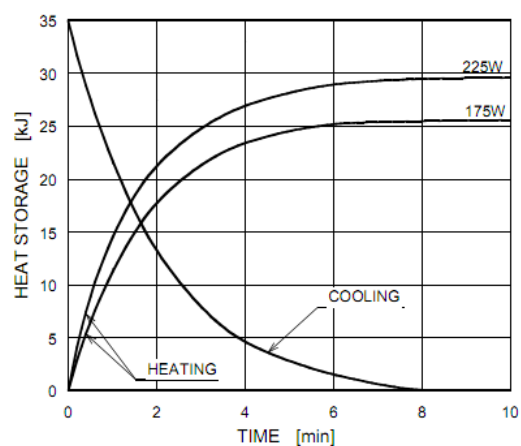
(1) Maximum Rating Charts (Absolute maximum rating charts)



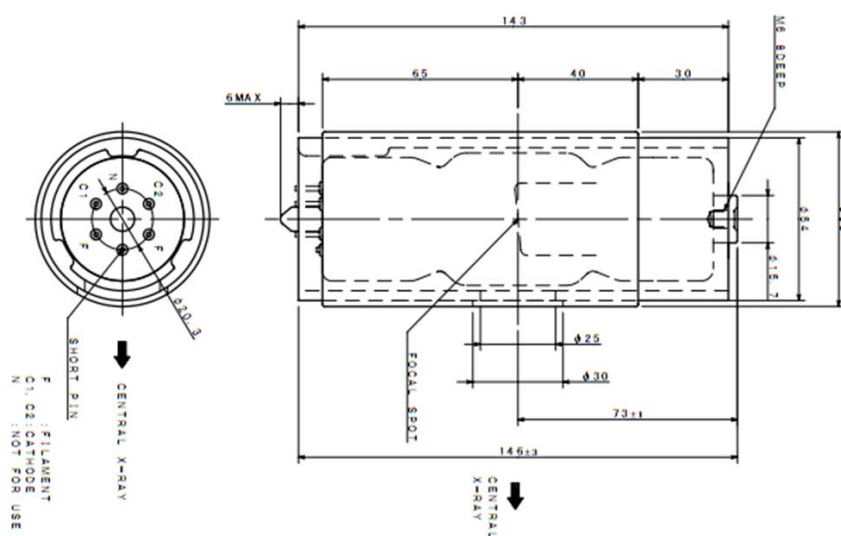
(2) Emission Characteristics



(3) Anode Thermal Characteristics



(4) D-054SB dimension (measurment: mm)



6.3.3 Detetor

☐ XID-C15DP (for panorama)

Part	Details	Specifications
Sensor Chip	Sensor Material	CdTe, 750 um
	Pixel Size (um)	100 um
	Active Area (mm)	150 x 4.8
	Dynamic Range (dB)	≥ 72
	DQE(70kV,0lp,mm)	≥ 0.8
	MTF(2lp,mm)	≥ 0.8
Electronics	Power Supply Requirement	Digital +5V/1A, Analog +5V/1A
	Command I/O	3 TTL trigger
	Data I/O	GigE
	Frame Rate (fps)	200
	Data Bits Per Pixel	12 bit
Mechanical Dimension	Size (mm)	73W*168H*21.05D
	Weight (g)	340

☐ XID-C24DC (for panorama & cephalo)

Part	Details	Specifications
Sensor Chip	Sensor Material	CdTe, 750 um
	Pixel Size (um)	100 um
	Active Area (mm)	240 x 4.8
	Dynamic Range (dB)	≥ 72
	DQE(70kV,0lp,mm)	≥ 0.8
	MTF(2lp,mm)	≥ 0.8
Electronics	Power Supply Requirement	Digital +5 V/1 A, Analog +5 V/1 A
	Command I/O	3 TTL trigger
	Data I/O	GigE
	Frame Rate (fps)	Pano: 200, Ceph: 125
	Data Bits Per Pixel	12 bit
Mechanical Dimension	Size (mm)	73W*255H*21.7D
	Weight (g)	505

☐ Extor-P(for Panoramic)

Part	Details	Specifications
Sensor Chip	Sensor Material	CMOS
	Pixel Size (um)	75 um
	Active Area (mm)	150 x 6.45
	Dynamic Range (dB)	≥ 72
	DQE(70kV,0lp,mm)	≥ 0.7
	MTF(1lp,mm)	≥ 0.6
Electronics	Power Supply Requirement	Digital +5 V/1 A, Analog +5 V/1 A
	Command I/O	3 TTL trigger
	Data I/O	GigE
	Frame Rate (fps)	200
	Data Bits Per Pixel	12 bit
Mechanical Dimension	Size (mm)	73W*168H*21.7D
	Weight (g)	380

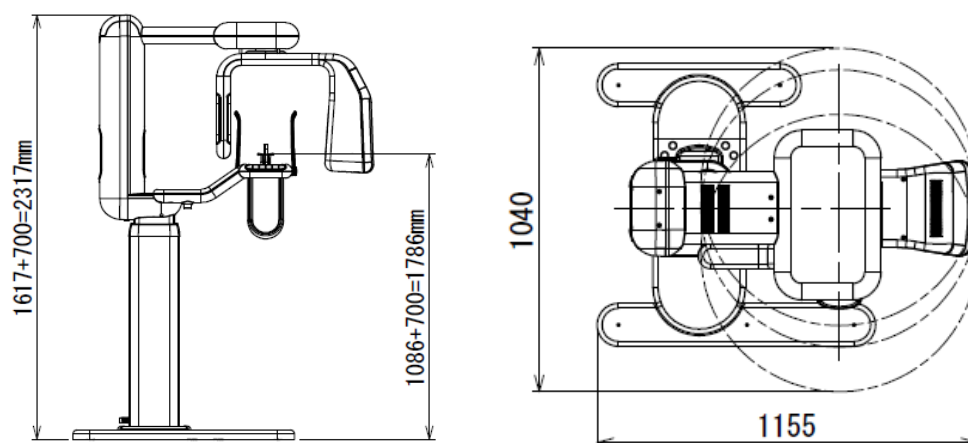
☐ Extor-C(For Cephalo)

Part	Details	Specifications
Sensor Chip	Sensor Material	CMOS
	Pixel Size (um)	75 um
	Active Area (mm)	225 x 6.45
	Dynamic Range (dB)	≥ 72
	DQE(70kV,0lp,mm)	≥ 0.7
	MTF(1lp,mm)	≥ 0.6
Electronics	Power Supply Requirement	Digital +5 V/1 A, Analog +5 V/1 A
	Command I/O	3 TTL trigger
	Data I/O	GigE
	Frame Rate (fps)	125
	Data Bits Per Pixel	12 bit
Mechanical Dimension	Size (mm)	73W*255H*21.7D
	Weight (g)	550

6.4 Dimensions and Weights

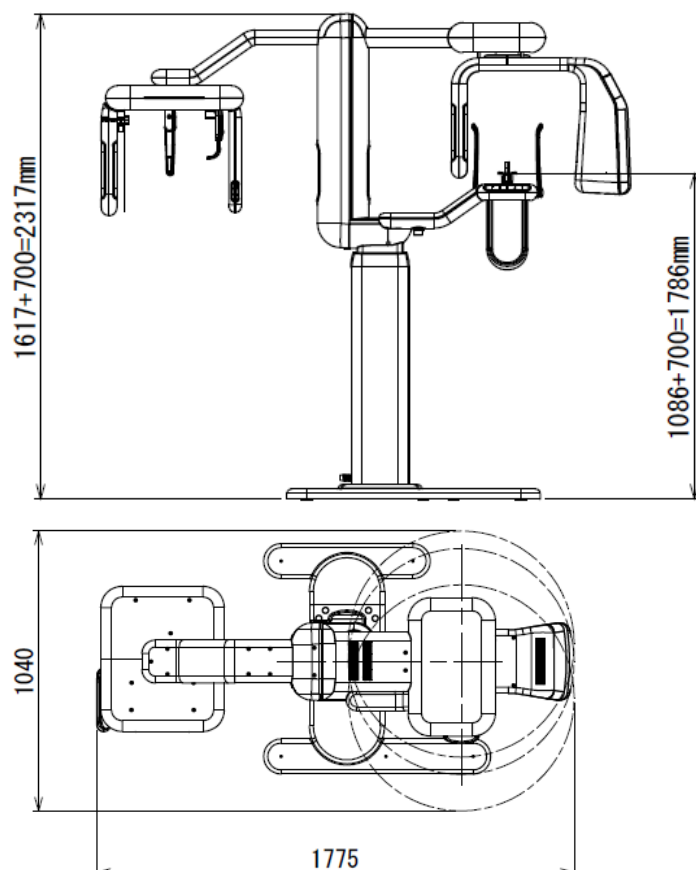
☐ PAPAYA

- Weight: 110 kg $\pm$ 5%
- Dimensions: 1040 x 1155 x 2317 (Measurement:: mm)



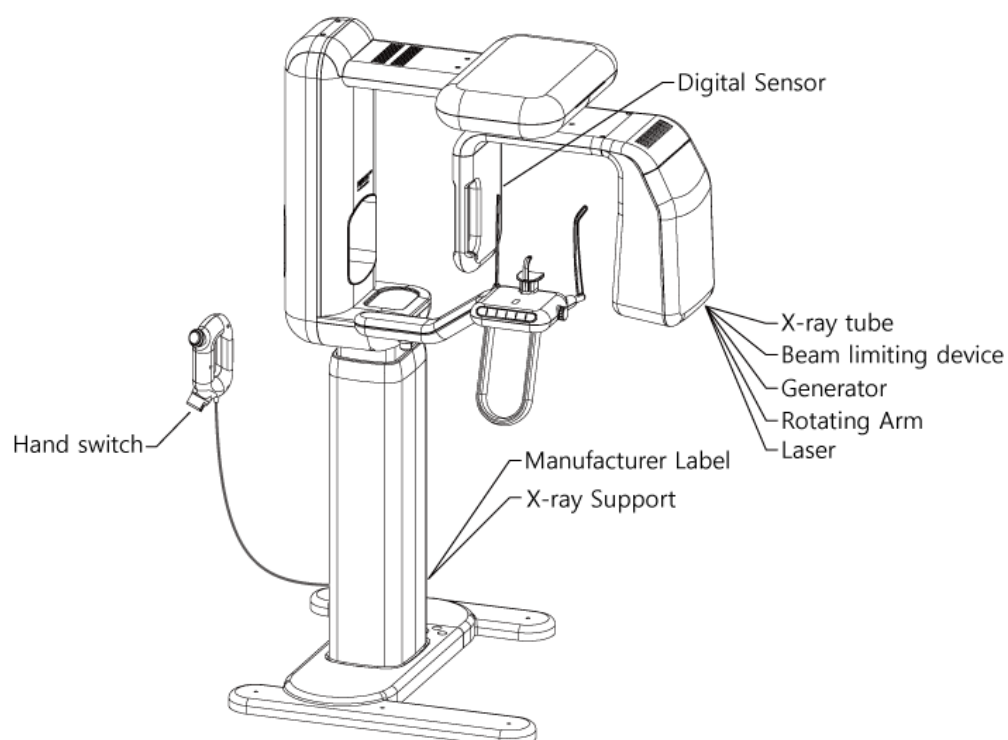
☐ PAPAYA Plus

- Weight: 140 kg $\pm$ 5%
- Dimensions: 1040 x 1775 x 2317 (Measurment : mm)

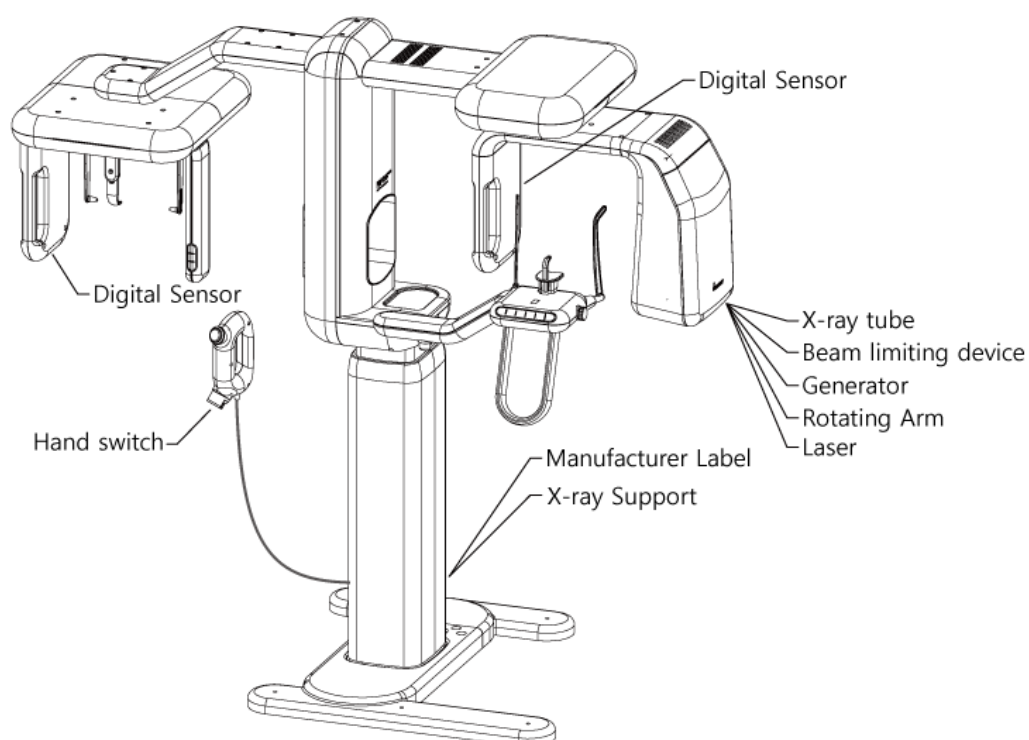


6.5 Labeling

☐ PAPAYA



☐ PAPAYA Plus



6.5.1 Manufacturer label

1) CE



- Product Name
: Digital Panoramic X-ray system
- Model : PAPAYA
- SN 
- Power Voltage : 200-230 V~, 50/60 Hz
- Input Power : 2.2 kVA
- Max. Power Rating : 90 kV, 12 mA
- Focal Spot Size : 0.5 mm
- Cooling Time : 10 min (between each X-ray exposure)
- Filtration : 2.5 mmAl (Inherent - 0.5 mm Al, Added - 2 mm Al)
- Total Weight : 110 kg

 **CAUTION**

 See accompanying documents

 **GENORAY. Co., Ltd**
 512, 560, Dunchon-daero, Jungwon-gu, Seongnam-si Gyeonggi-Do, Korea
 Tel : +82-31-740-4100 Fax : +82-31-737-8018

 **Obelis s.a.**
 Boulevard Général Wahis 53, 1030 Brussels, BELGIUM
 Tel : +32-2-732-59-54 Fax : +32-2-732-60-03



- Product Name
: Digital Panoramic X-ray system
- Model : PAPAYA
- SN 
- Power Voltage : 200-230 V~, 50/60 Hz
- Input Power : 2.2 kVA
- Max. Power Rating : 90 kV, 12 mA
- Focal Spot Size : 0.5 mm
- Cooling Time : 10 min (between each X-ray exposure)
- Filtration : 2.8 mmAl (Inherent - 0.8 mm Al, Added - 2 mm Al)
- Total Weight : 110 kg

 **CAUTION**

 See accompanying documents

 **GENORAY. Co., Ltd**
 512, 560, Dunchon-daero, Jungwon-gu, Seongnam-si Gyeonggi-Do, Korea
 Tel : +82-31-740-4100 Fax : +82-31-737-8018

 **Obelis s.a.**
 Boulevard Général Wahis 53, 1030 Brussels, BELGIUM
 Tel : +32-2-732-59-54 Fax : +32-2-732-60-03



- Product Name
: Digital Panoramic & Cephalometric X-ray system
- Model : PAPAYA Plus
- SN 
- Power Voltage : 200-230 V~, 50/60 Hz
- Input Power : 2.2 kVA
- Max. Power Rating : 90 kV, 12 mA
- Focal Spot Size : 0.5 mm
- Cooling Time : 10 min (between each X-ray exposure)
- Filtration : 2.5 mmAl (Inherent - 0.5 mm Al, Added - 2 mm Al)
- Total Weight : 140 kg

 **CAUTION**

 See accompanying documents

 **GENORAY. Co., Ltd**
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 Tel : +82-31-740-4100 Fax : +82-31-737-8018

 **Obelis s.a.**
 Boulevard Général Wahis 53, 1030 Brussels, BELGIUM
 Tel : +32-2-732-59-54 Fax : +32-2-732-60-03



- Product Name
: Digital Panoramic & Cephalometric X-ray system
- Model : PAPAYA Plus
- SN 
- Power Voltage : 200-230 V~, 50/60 Hz
- Input Power : 2.2 kVA
- Max. Power Rating : 90 kV, 12 mA
- Focal Spot Size : 0.5 mm
- Cooling Time : 10 min (between each X-ray exposure)
- Filtration : 2.8 mmAl (Inherent - 0.8 mm Al, Added - 2 mm Al)
- Total Weight : 140 kg

 **CAUTION**

 See accompanying documents

 **GENORAY. Co., Ltd**
 512, 560, Dunchon-daero, Jungwon-gu, Seongnam-si Gyeonggi-Do, Korea
 Tel : +82-31-740-4100 Fax : +82-31-737-8018

 **Obelis s.a.**
 Boulevard Général Wahis 53, 1030 Brussels, BELGIUM
 Tel : +32-2-732-59-54 Fax : +32-2-732-60-03

2) CFDA

GENORAY #512 Byucksan Technopia 434-6, Sangdaewon1-Dong, Jungwon-Gu, Seongnam-Si, Gyeonggi-Do, 462-716, Korea
Tel : +82-31-740-4100 Fax : +82-31-737-8018

- 产品名称：口腔全景X射线机
- 型号：PAPAYA
- 注册人及生产商：Genoray Co., Ltd.
- 注册证编号：国食药监械（进）字2014第3302966号
- 产品标准编号：YZB/R0K 3303-2014
- 产品生产日期： S/N：
- 使用期限：10年
- 电源条件：单相 220 VAC ■ 频率：50/60Hz
- 输入电源：2.2 kVA
- 使用条件：连续运行，间歇加载
- 分类：I 类 B型  韩国制造

 当心电离辐射！  查阅随机文件！

■ 代理人：上海康达医疗器械集团股份有限公司
地址：上海市浦东新区芙蓉花路333号1号楼 联系电话：021-62436666

GENORAY #512 Byucksan Technopia 434-6, Sangdaewon1-Dong, Jungwon-Gu, Seongnam-Si, Gyeonggi-Do, 462-716, Korea
Tel : +82-31-740-4100 Fax : +82-31-737-8018

- Product Name
: Dental x-ray system, panoramic, digital
- Model : PAPAYA
- Registration and Manufacturer : Genoray Co., Ltd.
- Registration certification No : CFDA (I)20143302966
- Registration standard No : YZB/R0K 3303-2014
- Production date/Lot No: S/N:
- Service life : 10 years
- Power supply requirement : Single phase 220 VAC
- Frequency : 50/60 Hz ■ Input Power : 2.2 kVA
- Usage condition :
continuous operation with intermittent loading
- Classification : Class I Type B  MADE IN KOREA

 Take care of X-ray Radiation!  Read accompany documents!

■ Agent in China : Shanghai Kangda Medical Equipment Group Corporation, Ltd.
Address : Building 1, No.333 Furonghua Rd, Pudong New Area, Shanghai, China
Telephone : 021-62436666

GENORAY #512 Byucksan Technopia 434-6, Sangdaewon1-Dong, Jungwon-Gu, Seongnam-Si, Gyeonggi-Do, 462-716, Korea
Tel : +82-31-740-4100 Fax : +82-31-737-8018

- 产品名称：口腔全景X射线机
- 型号：PAPAYA Plus
- 注册人及生产商：Genoray Co., Ltd.
- 注册证编号：国食药监械（进）字2014第3302966号
- 产品标准编号：YZB/R0K 3303-2014
- 产品生产日期： S/N：
- 使用期限：10年
- 电源条件：单相 220VAC
- 频率：50/60Hz ■ 输入电源：2.2kVA
- 使用条件：连续运行，间歇加载
- 分类：I 类 B型  韩国制造

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- Product Name
: Dental x-ray system, panoramic, digital
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- Registrant and Manufacturer : Genoray Co., Ltd.
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Telephone : 021-62436666

6.5.2 Manufacture label

X-ray Tube

- Model : OPX-105
- Manufacturer : CEI (Italy)
- Maximum Tube Voltage : 110 kV
- Inherent Filtration : 0.5 mmAl
- Focal Size : 0.5 mm
- Serial No.:

X-ray Tube

- Model : D-054SB
- Manufacturer : Toshiba(Japan)
- Maximum Tube Voltage : 110 kV
- Inherent Filtration : 0.8 mmAl
- Focal Size : 0.5 mm
- Serial No.:

X-ray Generator

- Model : DP-1G
- Manufacturer : GENORAY Co., Ltd.
- Max. Power Rating: 90 kV, 12 mA
- Serial No.:

Beam Limiting Device

- Model : DP-1BL
- Manufacturer : GENORAY Co., Ltd.
- Serial No.:

Rotating Arm

- Model : DP-1RA
- Manufacturer : GENORAY Co., Ltd.
- Rotating Angle : 220°
- Serial No.:

X-Ray Support

- Model : DP-1S
- Manufacturer : GENORAY Co., Ltd.
- Dimension (W*H*D mm) : 890*830*2312
- Serial No.:

Detector

- Model : XID-C24DC
- Manufacturer : I3 System
- Active Area : 4.8x240 mm
- Serial No.:

Detector

- Model : XID-C15DP
- Manufacturer : I3 System
- Active Area : 4.8x150 mm
- Serial No.:

Detector

- Model : EXTOR-P
- Manufacturer : GENORAY Co., Ltd.
- Active Area : 6.45 x 150 mm
- Serial No. :

Detector

- Model : EXTOR-C
- Manufacturer : GENORAY Co., Ltd.
- Active Area : 6.45 x 225 mm
- Serial No. :

Hand Switch

- Model : DP-HS
- Manufacturer : GENORAY Co., Ltd.

Appendix 1. Error message & temporary countermeasure

An error message is displayed when the X-ray control device execution is difficult with the normal function due to a problem with using the product. Check the message, please take appropriate action. If the same symptom is repeated even after the measures based on a temporary measure, please contact the service center.

☐ Firmware Error message

1)	Code No.	CODE-E001
	Error message	kV low occurred
	Temporary countermeasure	Please retry by restarting the device
2)	Code No.	CODE-E002
	Error message	kV high occurred
	Temporary countermeasure	Please retry by restarting the device
3)	Code No.	CODE-E003
	Error message	mA low occurred
	Temporary countermeasure	Please retry by restarting the device
4)	Code No.	CODE-E004
	Error message	mA high occurred
	Temporary countermeasure	Please retry by restarting the device
5)	Code No.	CODE-E005
	Error message	OCP
	Temporary countermeasure	Please retry by restarting the device
6)	Code No.	CODE-E006
	Error message	OVP
	Temporary countermeasure	Please retry by restarting the device
7)	Code No.	CODE-E007
	Error message	Tank outside Overheat
	Temporary countermeasure	Please turn off the device, and have a cooling time of 2~3 hours.

8)	Code No.	CODE-E008
	Error message	Tank inside Overheat
	Temporary countermeasure	Please turn off the device, and have a cooling time of 2~3 hours.
9)	Code No.	CODE-E009
	Error message	Exposure button is released.
	Temporary countermeasure	If user release the button inadvertently, please try again, after error message is disappeared.
10)	Code No.	CODE-E010
	Error message	Gantry rotating overload
	Temporary countermeasure	Please retry by restarting the device
11)	Code No.	CODE-E011
	Error message	Y-axis moving overload
	Temporary countermeasure	Please retry by restarting the device
12)	Code No.	CODE-E012
	Error message	Ceph detector moving overload
	Temporary countermeasure	Please retry by restarting the device
13)	Code No.	CODE-E013
	Error message	Second Collimator Moving Overload
	Temporary countermeasure	Please retry by restarting the device.
14)	Code No.	CODE-E014
	Error message	Collimator has occurred overload.
	Temporary countermeasure	Please retry by restarting the device
15)	Code No.	CODE-E015
	Error message	No program at FPGA
	Temporary countermeasure	Apply for services.
16)	Code No.	CODE-E016
	Error message	Exposure switch was pressed.
	Temporary countermeasure	Apply for services.

17)	Code No.	CODE-E017
	Error message	No communication response from the lift board
	Temporary countermeasure	Apply for services.
18)	Code No.	CODE-E018
	Error message	X-ray no output response.
	Temporary countermeasure	Apply for services.
19)	Code No.	CODE-E019
	Error message	X-ray output signal is different.
	Temporary countermeasure	Apply for services.
20)	Code No.	CODE-E020
	Error message	No SD card
	Temporary countermeasure	Apply for services.
21)	Code No.	CODE-E021
	Error message	This audio file does not exist on the SD card.
	Temporary countermeasure	Apply for services.
22)	Code No.	CODE-E022
	Error message	During rotation, Time out
	Temporary countermeasure	please retry by restarting the device
23)	Code No.	CODE-E023
	Error message	Exposure program is wrong.(Gantry)
	Temporary countermeasure	Please try again by restarting Papaya OP and the device
24)	Code No.	CODE-E024
	Error message	Exposure program is wrong.(Y-axis)
	Temporary countermeasure	Please try again by restarting Papaya OP and the device

25)	Code No.	CODE-E025
	Error message	Exposure program is wrong.(Ceph detector-axis)
	Temporary countermeasure	Please try again by restarting Papaya OP and the device
26)	Code No.	CODE-E026
	Error message	Exposure program is wrong.(Ceph collimator-axis)
	Temporary countermeasure	Please try again by restarting Papaya OP and the device
27)	Code No.	CODE-E027
	Error message	The exposure program is not correct(First Collimator sensor axis)
	Temporary countermeasure	- Apply for service.
28)	Code No.	CODE-E028
	Error message	The door of the shield room is opened.
	Temporary countermeasure	- Close the door of the shield room.
29)	Code No.	CODE-E029
	Error message	During initialisation of equipment, rotation of rotation part was stopped.
	Temporary countermeasure	- After checking the collision with an object, switch off and on the equipment. ※ If the rotation is stopped without a collision, apply for service.
30)	Code No.	CODE-E030
	Error message	The firmware version is incompatible.
	Temporary countermeasure	- Apply for service.

☐ Software Error message

1)	Code No.	CODE-S001
	Error message	Unable to allocate memory credit
	Temporary countermeasure	Restart Program
2)	Code No.	CODE-S002
	Error message	Can not prepare Sensor
	Temporary countermeasure	Restart Program

3)	Code No.	CODE-S003
	Error message	Patients are not registered
	Temporary countermeasure	Restart Program
4)	Code No.	CODE-S004
	Error message	Image reception was interrupted
	Temporary countermeasure	Network or PC is instability Check the Network Restart PC
5)	Code No.	CODE-S005
	Error message	Film Mount registration failed
	Temporary countermeasure	Check setting menu (DB Server->Data Folder Information)
6)	Code No.	CODE-S006
	Error message	Calibration file is not exist
	Temporary countermeasure	Check Calibration data file and Sesnsor number.
7)	Code No.	CODE-S007
	Error message	TDI data error
	Temporary countermeasure	Restart program
8)	Code No.	CODE-S008
	Error message	Image information is not created
	Temporary countermeasure	Restart program
9)	Code No.	CODE-S009
	Error message	Image missing data
	Temporary countermeasure	Network or PC is instability Check the Network Restart PC
10)	Code No.	CODE-S010
	Error message	Network or PC is instability
	Temporary countermeasure	Check the connect Network

11)	Code No.	CODE-S011
	Error message	Unsupported graphics card
	Temporary countermeasure	Check the graphic specification
12)	Code No.	CODE-S012
	Error message	Sensor sleep mode : On
	Temporary countermeasure	Re-exposure
13)	Code No.	CODE-S013
	Error message	Not enough Z drive capacity.
	Temporary countermeasure	- Confirm whether to install the Z drive. - Check the installed Z drive capacity. ※ If the same symptom occurs, apply a service request.
14)	Code No.	CODE-S014
	Error message	Shared folder error.
	Temporary countermeasure	- Check the settings menu. (DB Server->Data Folder Information)
15)	Code No.	CODE-S015
	Error message	Failed to create DCM file.
	Temporary countermeasure	- Check ' DCM file path ' in the log file. ※ If the same symptom occurs, apply a service request.
16)	Code No.	CODE-S016
	Error message	Unable to connect to the worklist server.
	Temporary countermeasure	- Check the following articles. → Set worklist service. (DICOM->MWL Server) → Set worklist service. ※ If the same symptom occurs, apply a service request.
17)	Code No.	CODE-S017
	Error message	Unable to initialize folder associated with exposure.
	Temporary countermeasure	- Please re-boot the program. ※ If the same symptom occurs, apply a service request.
18)	Code No.	CODE-S018
	Error message	Unable to connect to detector
	Temporary countermeasure	- Please re-boot the program. ※ If the same symptom occurs, apply a service request.

19)	Code No.	CODE-S019
	Error message	Image receiving buffer error
	Temporary countermeasure	- Please re-boot the program ※ If the same symptom occurs, apply a service request.
20)	Code No.	CODE-S020
	Error message	Unable to access file
	Temporary countermeasure	- Check 'tif file path' in the log file ※ If the same symptom occurs, apply a service request.
21)	Code No.	CODE-S021
	Error message	Exposure setting is not correct.
	Temporary countermeasure	- Check the following articles in the log file. → GEP file path. → Select detector(Pano/Ceph). ※ If the same symptom occurs, apply a service request.
22)	Code No.	CODE-S022
	Error message	'exposure_program.ini' file not found.
	Temporary countermeasure	- Please rerun the program ※ If the same symptom occurs, apply a service request.
23)	Code No.	CODE-S023
	Error message	There is no exposure data information.
	Temporary countermeasure	- Please retake an exposure. ※ If the same symptom occurs, apply a service request.
24)	Code No.	CODE-S024
	Error message	Unable to find TWAIN driver.
	Temporary countermeasure	- Please re-boot the program. ※ If the same symptom occurs, apply a service request.
25)	Code No.	CODE-S025
	Error message	Unable to allocate memory
	Temporary countermeasure	- Please re-boot the program. ※ If the same symptom occurs, apply a service request.

Appendix 2. Maintenance

The user needs to check that all safe related the equipment operation before using it.
Machine and parts should be checked by routine maintenance.

INSPECTION PERIOD	INSPECTION LIST	INSPECTOR	RESULT					
			1	2	3	4	5	Remarks
EVERY DAY	On / Off Switch	User						
	wire connection							
	Turn off after using							
	Equipment cleanliness							
	disinfection							
	On / Off Switch							
	Up/Down, Right/Left buttons							
	Exposure Hand Switch							
	Patient Registration							
	Image Save and Load							
EVERY WEEK	Temperature & Humidity	User						
	Emergency Button							
EVERY 1YEARS	Tube Voltage Accuracy Test							
	Tube Current Accuracy Test							
	Exposure Dose to the patient							
WHEN THE MACHINE HAS NOT BEING USED FOR 6 MONTH	Tube Voltage Accuracy Test							
	Tube Current Accuracy Test							
	Exposure Dose to the patient							
	Detector calibration							



In order to maintain the quality of the image and the equipment. please go to test and inspection periodically.

Appendix 3. X-ray exposure table & DAP(Dose area product)

A. Standard Panoramic mode

* Patient type	Recommended X-ray exposure			DAP (mGy*cm ²)	Dose (mGy)
	kVp	mA	Exposure Time(sec)		
Big	72	11	12	67.05	12.65
Male	68	9	12	48.38	9.13
Female	65	7	12	33.60	6.34
Child	62	5	12	17.52	3.31

B. Orthogonal Panoramic mode

* Patient type	Recommended X-ray exposure			DAP (mGy*cm ²)	Dose (mGy)
	kVp	mA	Exposure Time(sec)		
Big	72	11	12	67.05	12.65
Male	68	9	12	48.38	9.13
Female	65	7	12	33.60	6.34
Child	62	5	12	17.52	3.31

C. Bitewing Panoramic mode

* Patient type	Recommended X-ray exposure			DAP (mGy*cm ²)	Dose (mGy)
	kVp	mA	Exposure Time(sec)		
Big	72	11	8.5	47.70	9.00
Male	68	9	8.5	34.42	6.50
Female	65	7	8.5	23.90	4.51
Child	62	5	8.5	17.52	3.31

*Patient type: See the last page in this section.

D. Lateral TMJ

* Patient type	Recommended X-ray exposure			DAP (mGy*cm ²)	Dose (mGy)
	kVp	mA	Exposure Time(sec)		
Big	72	11	8	44.70	8.43
Male	68	9	8	32.25	6.08
Female	65	7	8	22.40	4.23
Child	62	5	8	11.68	2.20

E. PA TMJ mode

* Patient type	Recommended X-ray exposure			DAP (mGy*cm ²)	Dose (mGy)
	kVp	mA	Exposure Time(sec)		
Big	75	11	8	48.40	9.13
Male	72	9	8	36.57	6.90
Female	68	7	8	25.08	4.73
Child	65	6	8	15.93	3.01

F. Lateral Sinus Midsagittal, Lateral Sinus mode

* Patient type	Recommended X-ray exposure			DAP (mGy*cm ²)	Dose (mGy)
	kVp	mA	Exposure Time(sec)		
Big	72	11	5	27.94	5.27
Male	68	9	5	20.16	3.80
Female	65	7	5	14.00	2.64
Child	62	5	5	7.30	1.38

G. PA Sinus

* Patient type	Recommended X-ray exposure			DAP (mGy*cm ²)	Dose (mGy)
	kVp	mA	Exposure Time(sec)		
Big	75	11	9	54.45	10.27
Male	72	9	9	41.14	7.76
Female	68	7	9	28.22	5.32
Child	65	6	9	17.92	3.38

*Patient type: See the last page in this section.

H. Lateral, PA, AP Cephalometric / Water's View / SMV (Submento vertex) mode

* Patient type	Recommended X-ray exposure			DAP (mGy*cm ²)	Dose (mGy)
	kVp	mA	Exposure Time(sec)		
Big	85	10	8	8.67	0.83
Male	83	10	8	8.23	0.79
Female	81	9	8	7.02	0.67
Child	80	9	8	5.66	0.54

I. Carpus mode

* Patient type	Recommended X-ray exposure			DAP (mGy*cm ²)	Dose (mGy)
	kVp	mA	Exposure Time(sec)		
Big	70	7	8	3.96	0.38
Male	67	6	8	3.04	0.29
Female	63	5	8	2.18	0.21
Child	60	4	8	1.27	0.12

J. CUST Maxillary Center mode/Mandible Center mode.

* Patient type	Recommended X-ray exposure			DAP (mGy*cm ²)	Dose (mGy)
	kVp	mA	Exposure Time(sec)		
Big	75	10	35	192.5	36.32
Male	72	10	35	177.8	33.55
Female	70	8	35	134.4	25.36
Child	68	8	35	125.44	23.67

K. CUST Maxillary Left & Right mode/Mandible Left & Right mode.

* Patient type	Recommended X-ray exposure			DAP (mGy*cm ²)	Dose (mGy)
	kVp	mA	Exposure Time(sec)		
Big	82	10	35	236.59	44.64
Male	78	10	35	211.4	39.89
Female	75	8	35	154	29.06
Child	72	8	35	142.24	26.84

*Patient type: See the last page in this section.

* See the table below for the Patient type.

Age Group		PAPAYA Plus's Standard	
Child		≤ 12	-
Adult	Male	≥ 13	-
	Female		-
	Big		$\geq 600\text{mm}$, head circumference

- A child is defined as a person who is younger than 12 years old.
- If the patient's head is bigger than 600mm circumference, you can select the Big setting for exposure.



Genoray Co.,Ltd. develops equipments continually. Manual and specifications subject to change without notice

GENORAY Co.,Ltd.

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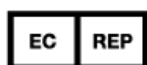
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