

PORTABLE DENTAL X-RAY MACHINE

User Manual

Preface

This operation instruction includes usage and technical content of portable x-ray system. In order to operate the machine and ensure the safety, it is used by the law qualified personnel.

a) Notice

Consider the radiational danger for the patients and the users, please ensure the safety and comply with the content of instructions.

b) Introduction

This product is the equipment combined with the high frequency switch DC 70KV tube voltage and 1mA tube current X-ray, which can be taken a photograph in the arm or solid and can be used with digitized sensor and film x-ray system.

c) Product Feature

1. The product is adopted by the micro-processor for processing the high-frequency switching start from little Ripple amount DC high voltage to draw stable x-ray output, thereby obtain high-resolution images.
2. The machine takes advantage of stable high-efficiency DC high voltage and takes a photograph with small amount of X-ray, which reduces the X-ray irradiation dose for the patient and user.

3. Multilayer X-ray shielding, give full consideration to the safety of users.

The Preservation and Delivery

After long time stop using the machine, removing the battery from the machine custody. (Or stop using for long time, it need to charge battery every 3 months.)

a) Method of Preservation

1. Please keep in the dry place.
2. Please keep in places not affected by the negative effects of pressure, temperature, ventilation, sunlight, dust, salt, sulfur powder and air, etc.
3. Please note that the security status caused by the tilt, vibration, shock.
4. Please keep the place from chemical storage sites or dangerous gas explosion.
5. In order to ensure the normal running, please note that maintain the temperature as follows:
 - 1) The temperature and humidity range of custody: $-5-40^{\circ}\text{C}$, $\leq 90\%$
 - 2) The temperature and humidity range of usage: $5-40^{\circ}\text{C}$, $\leq 80\%$

Product Parameters

- a) The rated parameters of x-ray production device
 - ◆Tube voltage: 70kv (fixed)
 - ◆Tube current: 1mA (fixed)
 - ◆High voltage generating circuit: High frequency switch
 - ◆X-ray control method: Microprocessor control
 - ◆Time setting range: 0.05-1.2 seconds
- b) Weight: 1.95kg
- c) Size: 215*140*160 mm
- d) X-ray tubing
 - ◆Type: bipolar fixed x-ray tube
 - ◆X-ray tube Model: DG-073B-DC
 - ◆The size of x-ray tube focal spot: 0.3*0.3mm
 - ◆ANODE heating unit: 8.5Khu
 - ◆Maximum tube voltage: 75Kv
 - ◆Target angle: 21°
 - ◆Total filtration: 1.6mmAL (Origin filtration: 0.8mmAL, Additional filtration: 1mmAL)
 - ◆X-ray irradiation range: 73mm (roundness)
- e) Useage voltage: battery DC16.8V
- f) Charger: Input AC100-240V, Output: DC16.8V

Product Composition:

This product is composing of host and charger etc.



- 1. Fixed tie
- 2. Power soft-switching
- 3. Subtraction adjustment
- 4. Work start button
- 5. Recharge Stand
- 6. External start
- 7. The main power switch
- 8. Base



9. The open of battery replacement
10. Status display
11. Battery charge
12. Work time
13. Units level degrees
14. Teeth straight edge



Method of usage

1. Upon receiving, open the box and check the product for possible damage during shipping.
2. Make sure the fittings on the encasement list are packaged within the box.
3. Install the blue ray tube to the foreside of the ball head, then tighten it.
4. Turn on the Power ; the pilot lamp will be light up.



5. Press on the button of power, then LCD display the “READY”. Now the equipment is in standby mode. (If there is abnormal, the LCD will

show the “ERROR”) 

6. When the machine under the “READY”, press on the button, then it

will show the falshing pictures of teeth. The LCD displays the pictures of sixe parts’ teeth in palate and mandible contains anteriors, canines and molars.



7. During using the soft-switching, it can not change the setting procedure and need to use the main power to reset.
8. After adjusting the model, press on the start key and begin to take a photo. (Notice: gently press 0.5 sec to turn it on)
9. Turn the power off when the work is finished, press POWER, making sure the pilot lamp is off. Don't keep the machine long in standby mode.

Developing the Dental film

1. Picture the tooth following the right operating procedure of the X-ray Unit, then take the film out from the mouth.
2. Use a syringe to extract 4-5 mi of imaging liquid.
3. Transfuse the liquid into the bag, nip both the ends and the sides of the bag with thumbs and first fingers(knead the film).
4. Open the end of the bag about ten minutes after transfusing the liquid into the bag.
5. Take the film out, put it into clear water, and rinse it. Don't wipe the surface of the film with the surface to prevent damage to the image.
6. Observe and diagnose after the film becomes dry.

Points for Attention

1. Make sure the angle of film, tooth, and ball head are properly aligned when taking a picture. Keep them steady until the last step of picturing; making sure that there is no change in any of their positions.
2. Remember to turn the power Off when work is done.
3. The equipment should not be repeated taking photos within three minutes.
4. The battery DC socket connected to the DC IN socket on the back of the machine, and confirmed that the back of the charging LED is red
5. Battery charging will be used machine's accessories dedicated charger.
6. The battery is a consumable item, with the passage of time; the time of usage will be slowly reduced compared with the initial purchase. For safe use, it is recommended to replace the battery 2 years
7. The battery is the high efficiency of the lithium-polymer battery. When charging for one time, X-ray may be irradiated more than 100 times.
8. To reach accurate the amount of X-ray irradiation, it is recommended to use good sensitivity film and sensors which is level 4. According to the different requirements of manufacturing company, it requires the user to change the irradiation time
9. The equipment switches into protection mode automatically when the voltage is incorrect. If this occurs, it will not be able to carry out the normal work of filming.
10. Handle the ball head gently while in use, so as not to damage the delicate component.
11. If a situation occurs, preventing the machine from taking regular pictures, contact the seller to solve the problem instead of trying to service the product yourself.
12. Keep the tooth film and the liquid in a proper place and use them within the shelf-life period.
13. Other requests accordance with the scope of the technical parameters.
14. Please read the manual carefully before using.