

Guilin Woodpecker Medical Instrument Co., Ltd.

# Contant

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#### Preface

Guilin Woodpecker Medical Instrument Co., Ltd. is a high-tech enterprise in researching, developing, and producing dental equipment, and has a perfect quality assurance system, main products including ultrasonic scaler, curing light, apex locator and ultrasurgery etc.

NOTE: Although the ME equipment conforms to the intent of the standard EN 60601-1-2 in relation to electromagnetic compatibility, electrical equipment may produce interference. If interference is suspected, move equipment away from sensitive device or contact us. The portable and mobile RF communication equipment can affect this instrument's normal operation.

## 1. Introduction

#### 1.1 Features:

1.1.1 Five working modes: Turbo, Normal, Ortho, Soft, Pulse

1.1.2 Time setting: Turbo: 1S, 3S

Ortho: 3Sx10, 5Sx10

Normal, Soft, Pulse: 5S, 10S, 15S, 20S

1.1.3 Constant light intensity. The solidification effect is not affected by the consumption of remaining power.

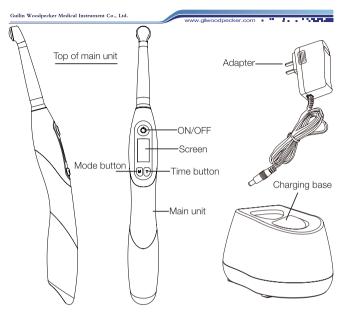
## 1.2 Principle and Application

- 1.2.1 B-Cure adopts the principle of ray radiation to solidify the lightsensitive resin by shooting at it in a short time.
- 1.2.2 This product is used for dentistry. It has the function of accelerating the material of dental restoration curing.

# 2. Product Performance Structure and Components

B-Cure curing light (dentistry) is mainly composed by LED, light hood,top of main unit, disposable sleeve, charging base, battery, adapter, main unit.





# 3. Basic Technical Specifications

- 3.1 Size: 262.5mm×45mm×28.5mm
- 3.2 Net weight: 128g
- 3.3 The components of machine:
- 1.Maint unit \*1
- 3.Light hood\*1
- 5.Adapter\*1
- 7.Battery kit\*2
- 9. Qualified certificate\*1

- 2.Top of main unit\*1
- 4.Instruction manual\*1
- 6.Charging base\*1
- 8.Disposable sleeve \*50



#### 3.4 Adapter:

3.4.1 Classified by power supply

The power supply by the rechargeable battery.

3.4.2 Rechargeable Lithium battery:

Battery model: 14500, Battery capacity: 750mAh

Battery has over-voltage, over current and short circuit protection

3.4.3 Adapter(charge)

Approved adapter is specified as a part of me equipment Adapter

Input: 100-240V~ 50/60Hz 0.4A Max

Output: 5V===1A

3.4.4 Input power:100-240V~ 50/60Hz 0.4A Max

#### 3.5 Light source:

- 3.5.1 10W high power blue light LED
- 3.5.2 Emitted Wavelength Range:385nm-515nm
- 3.5.3 Typical wavelength peaks:460±15nm and 400±15nm
- 3.5.4 Classes: Exempt Risk Group (based on IEC 60601-2-57:2011)
- 3.5.5 AEL: 3.9×10<sup>-3</sup>J
- 3.5.6 Check method: When operate machine properly, LED luminous means LED is in good condition.
- 3.5.7 The wavelength of our curing light machine can match with dental resin material which are commonly used on clinical, such as 3M and Dentsply.
  - 3.5.8 Irradiance tolerance range: ±10%
  - 3.5.9 Work condition:

Environment temperature: +5°C to +40°C

Relative humidity: 30%~75%

Atmophere pressure: 70kPa to106kPa

## 3.6 Safety classification

- 3.6.1 Protection type against electrical shock: Class II
- 3.6.2 Protection degree against electrical shock: Type B
- 3.6.3 Protection against harmful ingress of water or particular matter:



#### Curing Light Warranty Card

Name of Customer		
Address Details		
Postal Code		
Tel		(1)
Model		For Customer
Product No.		
Purchase Date		
Contact Person		
Date	Maintenance Record	Repairer

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Distributor:		
		- 1

#### Curing Light Warranty Card

Name of Customer		
Address Details		
Postal Code		
Tel		(II)
Model		For Distributor
Product No.		
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Distributor:	

Seal

ordinary equipment (IPX0), can't be waterproof.

- 3.6.4 Operating mode: Non-continuous operation.(Run 400s, protect 30s)
- 3.6.5 Safety in the presence of flammable anesthetic mixture with air, oxygen or nitrous oxide: not suitable under this condition.
  - 3.6.6 Software version: Software release version: V1

## 4. Installation and Demounting

- 4.1 Aim the mounting holes which on the upper of machine ,and make the long side of Top of main unit inserted to it (must screw the Top of main unit to the end, don't inclined inserted).
- 4.2 When the battery needs to be charged, connect the plug of the adapter into the 100V-240V~ power supply. Then connect the output plug of the adapter to the 5V===1A input plug of the pedestal, then put the main unit or battery kit into the pedestal. Please pull out the adapter after charging. The pedestal can charge any combination of two battery kits or main units (in differing states of charge) at the same time.
  - 4.3 Take out the disposable sleeve and put it on the main unit.

WARNING: The disposable sleeves are single patient use only. Discard used disposable sleeves in standard waste after each patient.

## 5. Operation

- 5.1 Press the mode button to set the working mode.
- 5.2 Light intensity
- 5.2.1 Turbo: 2800~3000 mW/cm<sup>2</sup> 5.2.2 Ortho: 1800~2000 mW/cm<sup>2</sup>
- 5.2.3 Normal, Soft, Pulse: 1000~1200 mW/cm<sup>2</sup>
- 5.3 5.3 Press the time button to set the solidifying time:

Turbo: 1S, 3S

Ortho: 3Sx10, 5Sx10



Normal, Soft, Pulse: 5S, 10S, 15S, 20S

- 5.4 When operating, aim the Top of main unit at the correct position, press the power button, a "di"sound will appear, the LED shine the blue light and start to work under the selected mode. Screen began to display the countdown time. When the countdown back to 00,the work finished .Then the screen will return to setting time.
- 5.5 While operation, press the power switch button can stop work at any time.
- 5.6 At the end of a working cycle, the next working cycle can be started immediately by short pressing the button. If the main unit gets hot obviously, please turn off the device until the main unit becomes cool. Please don't make it continuously illuminate more than 10 times.
- 5.7 Low power detect circuit is fixed inside of the main unit, when low power is detected, the battery symbol Display screen flashing, please charge in time.
- 5.8 Connect the adapter well when charge. Insert the main unit or battery kit into the pedestal. Orange light indicates the battery is charging, green light indicates the battery is full charge.
- 5.9 When operating finish, please clean the Top of main unit with calico to avoid infecting the light intensity.
- 5.10 This equipment will turn off automatically if don't any action within 2 minutes, turn it on by press power button.
- 5.11 The effective light intensity of this equipment is much more higher than Halogen Lamp, The solidified depth of the curing light composites resin for 10 seconds will not less than 4mm.
- 5.12 The top of main unit at the front end is not removable for sterilization and disinfection at a temperature of 134°C and a pressure of 0.22 MPa.
- 5.13 The curing light is equipped with over-heat protection system. It can continuously work 400s, For example, if the timing time is set to 20 seconds, the machine can work for 20 consecutive times. If the



machine shuts down after 5 seconds, the remaining available time is 395 seconds, and so on until the remaining available time is 0, the machine will enter the overheat protection state, and after 60 seconds, the machine will recover to normal for 400 seconds. If the machine does not work for a single interval of more than 60 seconds during use, the machine will automatically return to normal for 400 seconds. If it enters hibernation, the machine will automatically return to normal for 400 seconds after restarting.

## 6. Cleaning and Processing

- 6.1 Do not wipe the light curing machine with corrosive cleaning agents, and do not place the light curing machine in an autoclave, ultrasonic cleaning machine, or soak in any disinfectant, cleaning solution or liquid. Failure to follow the attached treatment instructions may result in inoperable lightcuring machines.
- 6.2 The cleaning and processing of main unit, top of main unit and the light hood are as follows.
- Before each use, wipe the surface of the machine with a soft cloth or paper towel soaked in 75% medical alcohol for 3 minutes, and dry with a clean soft cloth to keep the surface dry. Repeat wiping at least 3 times.
- After each use, wipe the surface of the equipment with a soft cloth dipped in clean water (distilled water or deionized water) or a clean disposable papertowel until the surface of the parts is free of stains, and then dry with a clean soft cloth to keep the surface of the equipment dry. Repeat wiping at least 3 times.
- 6.3 Before each use of the machine, the device should be placed in a disposable sleeve to avoid contact between the top of main unit and the patient's skin or oral mucosa. After use, the disposable isolation sleeve should be removed from the machine and discarded according to relevant regulations, and the disposable isolation sleeve is prohibited from reuse to prevent cross-infection.



## 7. Precaution

- 7.1 Please recharge the battery at least 4 hours before first time usage.
- 7.2 When using, the disposable sleeve should be put into the top of main unit to avoid contact between the main unit or other parts and the patient's skin or oral mucosa.
- 7.3 After use, the disposable sleeve should be removed from the top of main unit and disposed of in accordance with the relevant regulations, and the disposable isolation sleeve is prohibited from being reused to prevent cross-infection.
- 7.4 During operation, the light should be aimed straightly at the resin to ensure the effect of solidification.
- 7.5 Be sure to use the original light hood to avoid the blue light hurt eyes. Prohibit aiming light at eyes directly.
- 7.6 Only the original adapter could be used, because other brand adapters are likely to damage the circuit.
- 7.7 It is forbidden to use metal or other conductors to touch the charging point of main unit, because it may burn the internal circuit or make the lithium short circuit.
- 7.8 Charging the battery in the condition of cool and ventilated. Please make sure of pressing out the buckle between the main unit and the pedestal, otherwise the battery charging might be failed because of the poor contact.
- 7.9 Do not disassemble the Lithium battery, it will lead to the circuit short or the electrolyte leakage.
- 7.10 Do not squeeze, shake and short the battery, do not store the battery with metal material.
- 7.11 The instrument has electromagnetic interference. Do not use around the electronic operation, at the same time have a strong electromagnetic interference environment should be careful to use the instrument.



- 7.12 It is forbidden to use when charging or operation.
- 7.13 This product should be used by trained, qualified dentists. And this product is suitable for dental patients. Must be use in hospital or professional medical site.
- 7.14 To avoid electromagnetic interference, the device should be installed at the medical site which meet the requirement of EMC.
- 7.15 Temperature Warning: When the equipment is continuously used for a long time to irradiate, the maximum temperature of its top of main unit can be up to 52.5°C, the equipment should be used intermittently to avoid prolonged irradiation, or in the feeling that the temperature rises significantly, stop using the equipment.

WARNING: The adapter should be connected to the socket which is easy for operator to touch.

WARNING: High temperature burn, The machine can not direct shining to the skin tissue like lips and mucosa.

## 8. Contraindication

- 8.1 The heart disease patients, pregnant women and children should be cautious to use this equipment.
- 8.2 People who are prone to photobiological reactions (including patients with solar urticaria or erythropoietic protoporphyria) or those currently undergoing treatment with photosensitizing pharmaceuticals.

## 9. Daily maintenance

- 9.1 The disposable sleeve helps prevent cross contamination and helps keep dental composite material from adhering to the surface of the lens and main unit.
- 9.2 This equipment does not include the self-maintainable spare parts. The maintenance of this equipment should be taken by the appointed professional or special repair shop.
- 9.3 Please use accessory which is designed and supplied by our company, contract with the local dealer or our company if you want to





buy. It may cause potential dangers to curing light or other damages which is designed and supplied by other manufacturers.

- 9.4 The accessory of the product should be cleaned by clean water or sterilized liquid. Do not soak.
- 9.5 Please clean the resin remained on the Top of main unit after using to avoid infecting the life-span or solidified effect.
- 9.6 If you do not use the main unit for a long time, be sure to charge the main unit's lithium battery every six months to prevent damage to the lithium battery from prolonged storage.

## 10. Troubleshooting

Faults	Possible causes	Solutions
No indication No response.	1.Battery is out of power.     2.Battery is protected.     3.Faulty of battery.	1.Charging. 2.Please put the curing light into the pedestal for charging, then the battery works again. 3.Please contact our special repair shop or us.
The mainframe screen displays: "Battery low!"	Low battery	Charges for 30 minutes and automatically returns to normal
The host screen displays: "LED Error!"	LED light abnormality	Contact your local distributor or our company
The main unit screen displays, "( Countdown 60)s LED	Thermal protection circuitry operates after too long a period of continuous use	Stop the use of 60S, wait for the end of the countdown, the machine can resume normal use
Light intensity is weak.	There is resin on the top of the Top of main unit	1.Clean the resin. 2.Change a new Top of main unit.



If all the above solutions have been completed, the machine still can not work normally. Please contact our special repair shop or us.

## 11. Storage and transportation

- 11.1 The equipment should be handled carefully and lightly, kept away from the shaking source, installed or stored at shadowy, dry, cool and ventilated places.
- 11.2 Don't store the equipment together with articles that are combustible, poisonous, caustic, and explosive.
- 11.3 This equipment should be stored in the environment where the humidity is 10%~93%, the atmosphere pressure is 70kPa~106kPa and the temperature is -20°C~+55°C.
- 11.4 Excess impact or shake should be prevented during transportation. Handle with care.
- 11.5 Don't put it together with dangerous articles during transportation.
  - 11.6 Keep it away form the sun, rain or snow during transportation.

## 12. After service

From the date this equipment has been sold, base on the warranty





card, we will repair this equipment free of charge if it has quality problems, please refer to the warranty card for the warranty period.

## 13. Environmental protection

There are no harmful factors in our product. You can deal with it based on the local law.

## 14. Symbol instruction



Follow instructions for use





Screw inside/outside



Type B applied part



Ordinary equipment



Date of manufacture



Manufacturer



Class II equipment



Used indoor only



Serial number



Handle with care



Time Setting Key



Mode Settina Kev



Adapter DC output inside positive and outside negative



Direct current



Alternating current



Power on, Start/ Stop button



Keep dry



Recovery



Battery level indication/charging indication



Appliance compliance WEEE directive



Atmospheric pressure for storage







Temperature limitation for storage



Humidity limitation for storage

## 15. EMC - Declaration of conformity

The device has been tested and homologated in accordance with EN 60601-1-2 for EMC. This does not guarantee in any way that this device will not be effected by electromagnetic interference Avoid using the device in high electromagnetic environment.

Guidance and manufacturer's declaration - electromagnetic emissions
The models B-Cure are intended for use in the electromagnetic
environment specified below. The customer or the user of the models
B-Cure should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The models B-Cure use RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR11	Class B	The models D. Curre are quitable for
Harmonic emissions IEC 61000-3-2	Class A	The models B-Cure are suitable for used in domestic establishment and in establishment directly connected to a low voltage power supply network
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	which supplies buildings used for domestic purposes.

Guidance & Declaration — electromagnetic immunity



The models B-Cure are intended for use in the electromagnetic environment specified below. The customer or the user of the models B-Cure should assure that It is used in such an environment.

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Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance		
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.		
Electrical fast transient/burst IEC 61000-4-4	±2kV for power supply lines ±1 kV for Input/ output lines	±2kV for power supply lines ±1kV for interconnecting cable	Mains power quality should be that of a typical commercial or hospital environment.		
Surge IEC 61000-4-5	±1 kV line to line ±2 kV line to earth	±1 kV line to line	Mains power quality should be that of a typical commercial or hospital environment.		



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Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4- 11.	$ \begin{array}{l} <5 \% \ U_T \\ (>95\% \ dip \ in \\ U_T.) \ for \ 0.5 \\ cycle \\ 40 \% \ U_T \\ (60\% \ dip \ in \ U_T) \\ for \ 5 \ cycles \\ 70\% \ U_T \\ (30\% \ dip \ in \ U_T) \\ for \ 25 \ cycles \\ <5\% \ U_T \\ (>95 \% \ dip \ in \ U_T) \ for \ 5 \ sec \\ \end{array} $	$ \begin{array}{l} <5 \% \ U_T \\ (>95\% \ dip \ in \\ U_T ) \\ \text{for } 0.5 \ \text{cycle} \\ 40 \% \ U_T \\ (60\% \ dip \ in \ U_T ) \\ \text{for } 5 \ \text{cycles} \\ 70\% \ U_T \\ (30\% \ dip \ in \ U_T ) \\ \text{for } 25 \ \text{cycles} \\ <5\% \ U_T \\ (>95 \% \ dip \ in \ U_T ) \\ \text{for } 5 \ \text{sec} \end{array} $	Mains power quality should be that of a typical commercial or hospital environment. If the user of the models B-Cure require continued operation during power mains interruptions, it is recommended that the models B-Cure be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30A/m	30A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE U <sub>T</sub> is the a.c. mains voltage prior to application of the test			

NOTE  $U_T$  is the a.c. mains voltage prior to application of the test level.

Guidance & Declaration - Electromagnetic immunity					
The models B-Cure are intended for use in the electromagnetic					
environmer	environment specified below. The customer or the user of the models				
B-Cure should assure that it is used in such an environment.					
Immunity IEC 60601 test Compliance Electromagnetic					
test	level	level	environment - guidance		



NOTE I At 80 MHz end 800 MHz. the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.



<sup>a</sup> Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the models B-Cure are used exceeds the applicable RF compliance level above, the model B-Cure should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the models B-Cure.

<sup>b</sup> Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.

Recommended separation distances between portable and mobile RF communications equipment and the models B-Cure

The models B-Cure are intended for use in electromagnetic environment in which radiated RF disturbances is controlled. The customer or the user of the models B-Cure can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the models B-Cure are recommended below, according to the maximum output power of the communications equipment.

Rated	Separation distance according to frequency of		
maximum	transmitter /m		
output power	150kHz to	80MHz to	000M1 I= +0 0 EOL I=
of transmitter	80MHz	800MHz	800MHz to 2,5GHz d=2.3×P <sup>1/2</sup>
W	d=1.2×P <sup>1/2</sup>	d=1.2×P <sup>1/2</sup>	U=2.3×P
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3



For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) accordable to the transmitter manufacturer. NOTE I At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

#### 16. Statement

All rights of modifying the product are reserved to the manufacturer without further notice. The pictures are only for reference. The final interpretation rights belong to GUILIN WOODPECKER MEDICAL INSTRUMENT CO., LTD. The industrial design, inner structure, etc, have claimed for several parents by WOODPECKER, any copy or fake product must take legal responsibilities.



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Scan and Login website for more information





## Harm of fake products

pre. are two brands of Guillin woodpecker medical instrument company. Recently, growing fake ultrasonic scaler handpieces, tips curing lights are produced and sold on the market, which do harm to users' interest. On this issue, We Woodpecker will crack down fake products and provide safe and secure medical instrument products.

#### Harm of fake ultrasonic scaler handpieces.

- 1.1 Fake handpieces with poor-designed inner structure can lead to frequent power leakage, which may cause medical accidents.
- 1.2 Material used on fake handpieces don't pass biocompatible test, which can easily lead to irritability and poisoning.
- 1.3 Fake handpieces have quality problems of overheating, non-vibration and cracking, which cause ultrasonic scalers out of order.
- 1.4 Fake handpieces can't be compatible with ultrasonic scalers, thus leading to circuit burn out.

#### 2. Harm of fake scaler tips.

- 2.1 Fake tips are low in toughness, poor in resistance and easy to crack, thus easily cause medical accident.
  2.2 Fake tips' screw threads are roughly processed, which can cause handpiece's screw loosing and cracking.
- 2.3 Material used on fake tips is inferior and easily rusting, which can cause infection of patient.
- 2.4 Fake tips have used problem of poor water-spraying, bad screw-thread fit and water leaking, which leads ultrasonic scalers work wrongly.

#### 3. Harm of fake curing light.

- 3.1 Fake curing light's batteries can cause self-ignite, even explosion with poor-quality material and no complete charging management.
- 3.2 Light intensity of fake curing light is not constant, when battery level goes down under 60%, it would lead to incomplete solidification of resin, causing secondary dental caries.

#### Warranty Instruction

#### I Period validity:

Two years on the device, one year on the battery, excluding the light guide and light hood

#### II Range of warranty:

Within the warranty period of validity, we are responsible for any troubles caused by quality problems or products technique and structure.

- III The following are beyond our warranty:
- 1. The damage caused by disobeying the operation instruction or lack of the needed condition.
- 2. The damage caused by unsuitable operation or disassembly without authorization.
- 3. The damage caused by unadvisable transportation or preservation.
- 4. There isn't the seal of distributor or the warranty card isn't filled in completed.
- 5. The warranty is not including optical fiber and light hood.

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