

# USER'S      MANUAL

## ***EASY GP*** Gutta Percha Obturation System

\*The unit must be installed by a qualified engineer.

\*Only for user by dental professionals.

\*Read this operation manual carefully before installation or operation.





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## **REMARKS:**

**The pictures here are for reference only.**

**Real products shall prevail.**

**The parameters and pictures in this manual are subject to change without prior notice.**

Thank you for purchasing our device. Before operating the device, please fully read the manual and this manual should be saved for later use.

Will take the responsibility for the security, reliability, capability under the following conditions:

1. The installation, debugging, maintenance should be adjusted by the approbatory technician by our company or obtained related nation quality level license professions.
2. The power supply shall be in conformity with the relevant provisions of the state and the use requirements of device itself.
3. The device should be operated by licensed dental professionals with medical applied skill. The whole operation process should follow user's manual strictly.

**Please contact sales representative directly from whom you have bought this device for user's record and further after-sale service.**

## **SECTION 1: GENERAL INTRODUCTION**

F10 cordless gutta percha obturation system is a newly developed system which is composed of pen, gun and charging system. It provides accurate and predictable three-dimensional filling that will improve your efficiency as a clinician. The two function systems can be individually used or in adjunct with one another according to treatment conditions.

### **1.1 Basic principle**


Convert electrical energy to heat energy for root canal filling.

### **1.2 Features**

- Fantastic combination of filling method of vertical compaction and backfill. Pen (vertical compaction) and Gun (backfill).
- Heating is more faster than old model to improve efficiency.
- Forwarding gutta percha with trigger is no longer in a hard way.

- Battery power level display on the LCD
- Working status display on the LCD
- Digitizing temperature degree display for convenient setting.
- Use 0.9 inch OLED panel to avoid number display missing.
- Improve battery holding structure and injection needle structure
- Compact design complies with standard of human engineering.
- The Heat Insulator can be autoclaved.
- The beep sound can be heard during the operation.

## SECTION 2: MAIN TECHNICAL INDEX

Model Name	F10
Trade Name	EASY GP
Anti-shock type	Built-in power supply
Anti-shock level	Class B 
Harmful levels of protection into the liquid General Equipment	
Operation mode	Continuous Operation


Power: EASY GP Gun: ≤10W, EASY GP Pen: ≤10W


1)Charging System	1. Working voltage 2. Adapter  3.Charging time	Battery: DC 3.7Vdc I/P: AC100 ~240 V O/P: DC 7.5 V 2.5A 1.5 hours
2) Gun	1.Temperature sensor 2.Temperature set range	K type 100 ~ 200℃
3) Pen	1.Temperature sensor 2.Temperature range	IC 150 ~ 300℃
4) Operating time per charging	1. Gun 2. Pen	About 1 hour About 30 min For continuous use


**※ Notice: Special care is required for lithium battery in order to avoid any unnecessary trouble. Please read the information as follows:**

## Specifications of battery

- 1) Capacity: 3.7 Vdc, 1500 mAh
- 2) Input of charging base: 7.5Vdc, Output of charging base: 4.2Vdc
- 3) Operating condition:  
 Temperature: 5°C ~ 40°C                      Humidity: ≤80 %
- 4) Transportation and storage condition:  
 Temperature: - 10°C ~ 50°C                      Humidity: ≤80 %

 Batteries can not be placed near fire, recharged, put in backwards, mixed with used or other battery type to avoid explosion and electricity lead that will cause personal injury.

 There is the risk of explosion if battery is placed in an incorrect method. Replace only with the same type or equivalent type recommended by the manufacturer. Dispose of used batteries according to the local regulations.

 The obturation gun is designed to inject warmed gutta percha that is specially formulated into the root-canal directly. It's provides easy and fast filling, but it's recommended to use the pen to fill the apical part at first to avoid any overfilling or under filling and the gun can be used for filling the remained part of the canal.













The pen is designed for vertical condensation or down packing with warmed gutta percha in the canal. Besides, it can be used to cut off excessive gutta percha point.

## SECTION 3: SYMBOL

The following symbols may appear in this manual, on the label, or on it's accessories. Some of the symbols represent standards and compliances associated with the endo motor and its use.



Consult accompanying documents

	Caution
	Authorized Representative in the European Community
	CE Mark: conforms to essential requirements of the Medical Device Directive 93/42/EEC.
	Sterilizable up to the temperature specified at most
	Date of manufacture.
	Manufacturer
<b>SN</b>	Specifies serial number
	Type B applied part
	Refer to instruction manual / booklet
	The device should not be used after the end of the shown or the day
	DISPOSAL: Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.
	alert indicator displayed on the LCD screen
	Battery power indicator displayed on the LCD screen

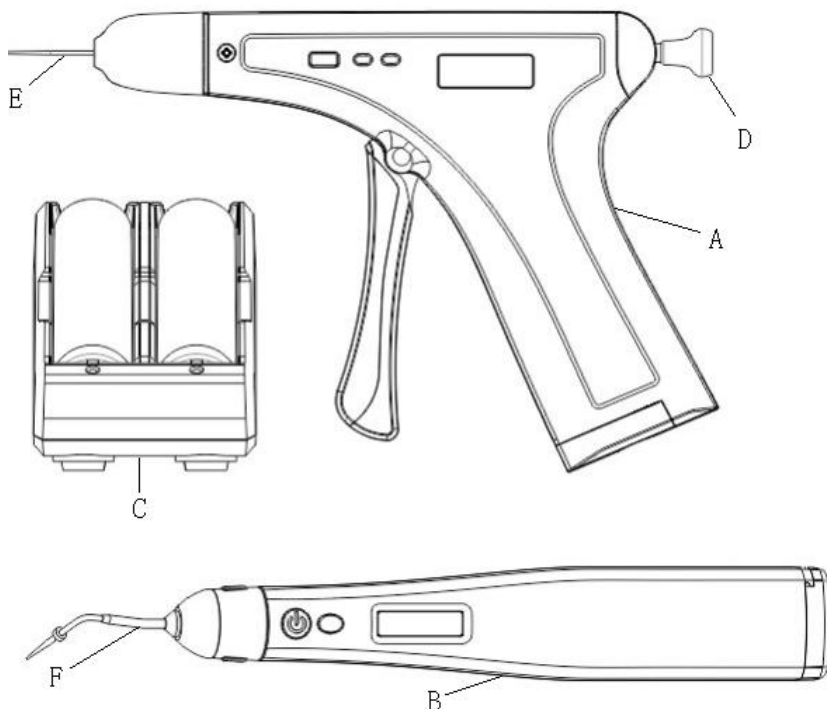
## SECTION 4: PRODUCT STRUCTURE

The whole system is composed of gun, pen, charging system, holders

and accessories.

The charging system includes charging base and adapter.

The accessories include heat insulator, brush, accessory tool, battery, injection needles for gun and heat tips for pen.



A. Gun

B. Pen

C. Charging Base

D. Plugger

E. Injection Needle

F. Pen Tip



## A. Gun



### Gun

used for backfilling.



### Pluggers

Used for forwarding the warmed gutta percha into the injection needle.



### LCD Display

Real-time temperature and battery power level display.



Real-time temperature animation display,



"Low battery,



Full power



### Insert gutta percha bar

Insert the gutta percha bar into heating chamber by using pliers.



Caution: One gutta perch bar at a time. Make sure that clean away the gutta percha in the chamber after each use.



### ▲ Button

Used for temperature set increase. Short press of this button will increase temperature by 10 °C to 200°C maximum value.



### ▼ Button

Used for temperature set decrease. Short press of this button will decrease temperature by 10 °C to 100 °C minimum value.



### PWR Button

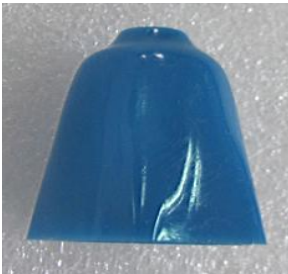
**Extended press (2-3 seconds)** for switching on/off the device, short press for starting/stopping the heating. gun will power off automatically when heating more than 15 minutes.

**⚠ After temperature setting finished, please short press the PWR button to start heating.**



### Trigger

Used for forwarding the GP bar into the root canal.



### Heat Insulator

Used for protecting the patient's oral cavity by insulating the heat. It can be autoclaved.



### Injection Needle

Used for injecting gutta percha into root canal.

- ※ 1. The tube can not be rotated at will.
- 2. Bend it by using accessory tool.



### Gun Holder

Used for the placement of iFill gun.



### Battery

Used for providing electric power



### Battery Lock

Used for locking the battery to avoid popping out.



### Brush

Used for cleaning away excessive gutta percha.



Caution: The brush can be used when the device cool off completely.



### Accessory tool

Used for screwing and unscrewing injection needle.

## B. Pen



### OPT Button

Extended press for switching on/off the device, short press for modes switch of "Size" and "Temp".

Notice: "Size" for Type of heat tips;

"Temp" for temperature grade.



### ADJ Button

Short press for selection of options.

"Size": "F", "FM", "M", "ML"

"Temp": "L", "H".



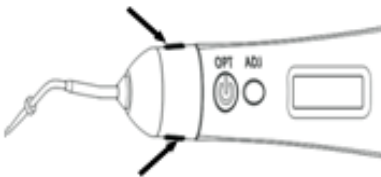
### Display Panel

Battery power level display

Heat tips status display

"⊙" means connected;

"⊗" means unconnected.



### Heating ON/OFF Switch Button

Holding down each of two buttons can start heating and the mark "⊗" will be displayed. "⊗" mean

heating on, "⊙" means heating off.

Heating over 30S will heating off automatically. When the mark "⊗"

occur, holding down heating ON/OFF switch button, the alarm can be heard.



**Heat Tips**

Type	Taper
F	02
FM	04
M	06
ML	08



**Pen Holder**

Used for the placement of iFill pen



**Battery Lock**

Used for locking the battery to avoid popping out.

## C. Charging System



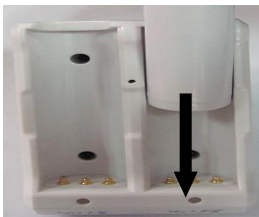
**Adapter**

Used for connecting charging base



**Charging base**

Used for charging the battery.



**Battery Charging**

Indicator showing yellow means in charging.  
Indicator showing green means full charging.

Indicator which does not light means unconnected.



**Charging Base Socket**

Power supply 7.5 Vdc Input

## SECTION 5: INSTALLATION AND SETTING

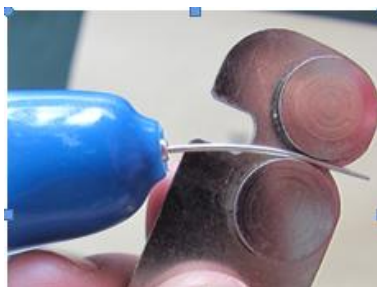
### 4.1 Installation of pFill Gun



Use the special accessory tool to fix the injection needle to the gun.



Put the heat insulator to the head of gun in order to protect the patient from heat.

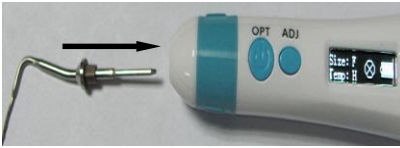


Use the special accessory tool to bend the injection needle to a proper position in order to inject the gutta percha into the root canal easily.



Push the Li-Battery into the battery chamber according to the direction of battery positive and negative electrodes, press the battery cover and lock the battery.

### 4.1 Installation of pFill Pen



Choose appropriate pen tip according to the operation demand; Inset the pen tip into pen.

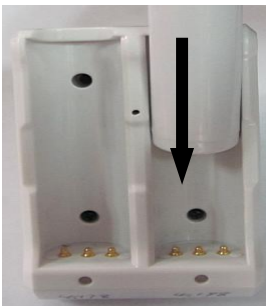


Push the Li-Battery into the battery chamber according to the direction of battery positive and negative electrodes,



Press the battery cover and lock the battery.

#### 4.1 Installation of Charging Base



Push the Li-Battery into the battery chamber according to the direction of battery positive and negative electrodes,



Insert the plug of power adapter into the socket of charging base.

#### 4.4 Temperature Setting of Gun

After turn on the power, press the keys ▲ (▼) ,the LCD will display current set value. Short press the key ▲ (▼) , the temperature will be go up or down accordingly. The temperature range which can be set is 100-200°C.

#### 4.5 Parameter Setting of Pen

The pen is designed for vertical condensation or down packing with warmed gutta percha in the canal. Besides, it can be used to cut off excessive gutta percha point.

- 1) Select the appropriate pen tip and insert it into the pen. Adjust the angle according to the tooth being treated and tighten firmly using the accessory tool provided. Available tip sizes provided are F, FM, M, and ML.
- 2) Pen tips status display and heating mode setting. Two modes available: LCD will display "H" and "L". "H" means high temperature and "L" means low temperature.

Pen tip status can be displayed on the middle of LCD with mark.



"⊙" means successfully connected, "⊗" means unconnected,  
 "☀" means heating,

### 3) Option setting

Press "OPT" key or "ADJ" key to start setting. Animated mark is current selected option.

Press "OPT" key can switch the options of "Size" and "Temp".

Wait animation 10 times or press heating ON/OFF switch button to exit the setting.

### 4) Option adjustment

Press "OPT" key or "ADJ" key to start setting. Animated mark is current selected option.

Press "OPT" can adjust the parameters of option. If current selected option is "Size", the mark "F", "FM", "M", or "ML" can be seen. If current selected option is "Temp", the mark "H" or "L" can be seen.

Wait animation 10 times or press heating ON/OFF switch button to exit the setting.

5) Memorization function: The current setting can be memorized.

## SECTION 6: INSTRUCTION OF OPERATION

It's important to keep following points to use this system efficiently and to avoid any mechanical trouble or dangerous condition.

Before using GP Obturation System, the dentists need to make good root canal preparation with endo motor.

Requirement for good root canal preparation:

1. All the root canal should be made as straight as possible

2. Root canals especially small collateral root canals should be cleaned as clean as possible!
3. The dentists must possess root canal cleaner like sodium hypochlorite and had better get a ultrasonic root canal cleaning device to make root canal clean and smooth enough for obturation.

During Operation of vertical condensation with obturation pen:

1. The heat tips should be 4-5mm far from apex point of root canal.
2. The heat tips should be fixed with white slide caliper provided after determining the length of root canal.
3. The gutta percha points (cone) should be 0.5-1mm shorter than the length of root canal.
- 4 Root canal perforation should be avoided when heating. This is very important.
5. All heat tips are easily broken although the quality of heat tips is very good! Heat tips are consumable!

When the dentists use obturation pen, they should be very tender and soft.

During Operation of backfilling with obturation gun:

Injection needles are also very fragile because it is made of silver!

The dentists had better not change angle of needle often, otherwise the needle is easily broken!

They had better confirm two kinds of angle of needle: one is for upper teeth, another is lower teeth.

In this way, the needle will be avoided bending to different angles often.

When running out of battery, the obturation gun can be still used directly with power adapter for heating.

※ However, for injection, cord use is not allowed for safety.

1. Pen tips, gun needles and heat insulators must be sterilized before application and follow the instructions supplied with autoclave unit. Sterilization cycle is recommended at 121 °C (250 °F) for 30 minutes or 131 °C (270°F) for 25 minutes.

2. The temperature of pen is preset at 160-240°C, and pen tip selection mode is preset at F, FM, M, ML.

Adjust the working temperature and pen tip mode according to working condition and pen tip size.

The maximum temperature of the gun is preset at 200°C. The dentists are free to choose 160-200°C as per the requirements of GP bar with different brand.

3. Because pen has the characteristics of fast heating and cooling please operate is carefully to avoid any accidents caused by burning.

4. The heater of the gun can be burnt out if there is no GP bar in the heating chamber during the operation of the gun. Make sure to load the GP bar before operating the gun

5. It's recommended to load just one GP bar at a time and to wait some times for pulling the trigger. Because the warmed gutta percha has a little cushion. Pulling trigger with excessive power may damage the groove on the plunger and it maybe the reason that the gutta percha leak from the needle.

## **A. Obturation Gun**

The gun is designed to inject warmed gutta percha that is specially formulated into the root-canal directly. It's provides easy

and fast filling, but it's recommended to use the pen to fill the apical part at first to avoid any overfilling or under filling and the gun can be used for filling the remained part of the canal.

1. Select the appropriate injection needle and attach it to the gun. Tighten firmly using the accessory tools provided.

Then put the battery inside the gun.

2. Put the heat insulator in the front of gun, and bend the needle according the condition of the tooth being treated.

3. To load the gutta percha bar, press down the plunger release button and pull the plunger out. There is no need to pull the plunger out completely, it is suggested to pull it out to leave enough space after GP bar loaded.

Please put one GP bar into the loading chamber and further push it into the heating chamber with the use of cotton pliers.

4. Push forward the plunger until the resistance of the gutta percha bar is felt.

5. Extended press the PWR button to start operation of obturation gun, to preset the temperature by pressing ▲ button or ▼ button. Due to gutta percha for different brands have a range of melting temperature; please do not preset the temperature too high (usually 160-200°C). Extended press of button ▲ will increase temperature by 10 °C at a time. Short press of button ▲ will increase the temperature at 1 °C at a time.

※ After preset the needed temperature, please short press the PWR button to start the heating.

6. Filling the warmed gutta percha with the gun by pulling a trigger

slowly. It needs to wait about two minutes until the gutta percha is warmed properly.

7. After use, remove remained gutta percha in the gun and power it off by pressing PWR button continuously.

8. Remove the needle before the gutta percha is cooled down, it's recommended to use new needle and heal insulator in each application to avoid the infection.

## **B. Obturation Pen**

The pen is designed for vertical condensation or down packing with warmed gutta percha in the canal. Besides, it can be used to cut off excessive gutta percha point.

1. Select the appropriate pen tip and insert it into the pen. Adjust the angle according to the tooth being treated and tighten firmly using the accessory tool provided. Available tip sizes provided are F, FM, M, and ML. (Short press POWER button for changing the size of pen tips).

2. Put the battery inside the obturation pen and press POWER to start the obturation pen

3. Adjust the pen tip mode depends on the tip size selected and adjust the working temperature according to working condition.

4. The pen is operated by pressing the spring switch. As we have stated before, special care is needed to avoid any accidents by burning. The spring switch must be placed in touch-free position at any place.

5. After use, extended press POWER button for switch off, if necessary.

## **C. Charging Sytem**

1. Each machine will be prepared with one more battery as stand by in order to make sure the machine can have enough power during the operation while another battery is out of electricity. It's highly recommended that leave the battery away from charging base when the battery has been fully charged in order to protect the life span of the battery, meanwhile, please try to preset lower temperature and less working intensity can also prolong the life of the battery.
2. Checking the charging state, when the battery is charging, the indicator light shows red color, when the battery is fully charged, the indicator light shows green.
3. When the battery is charging or stop using, please do not put it near metal in order to avoid the short circuit of the machine.
4. Please do not use other adapter if the adapter is damaged, please contact with distributor or manufacturer for solution!

## **SECTION 7: APPLICATION OF ROOT CANNAL FILLING**

### **First-Phase Preparation**

#### **1) Gutta percha point (Master cone)**

Select the appropriate gutta percha point as a master cone which has same taper and size with prepared root canal. Shorten 0.5-1 mm of the point than working length to avoid overfilling and to secure enough space to fill additional point.

#### **2. Hand plugger**

Prepare 2-3 hand plungers to compact the filled gutta percha.

#### **3. Pen tips**

Select the appropriate pen tip and sign the working length by using callipers, The signed working length should be 5-7 mm short than the length of root canal and make sure the pen tip size will not touch the root canal.

#### 4. Pen tips

Please select the appropriate size of pen tip according to the thickness at the 2/3 position of root canal coronal.

### **A. Vertical Condensation/Down Pack**

1. Dry the root canal, apply a thin layer of root canal sealer on the root canal wall, and put the GP cone in position.
2. Confirm the working length, warm the selected pen tip and cut off excess GP cone.
3. Put the gutta percha cone inside the root canal and then push it slowly into the apex by using warmed pen tip until the pen tip is 5-7 mm from the apex then stop warming the pen tip. (The whole process should be finished in 7-9 seconds)
4. Softly press the gutta percha cone for 10 seconds, warm the pen for 1 second again, and take out residual gutta percha cone. Compact the warmed gutta percha by using the hand squeezing device.
5. If the root canals need to place the post pin, the backfilling process can be omitted, leaving enough space for the post pin. If not, backing filling it with obturation gun.

### **B. Backfilling**

1. Put the gutta percha bar inside the heating chamber and then forwarding the plunger to the front until no move can be felt. Then warm the gutta percha bar to the setting value.
2. After the gutta percha has been warmed up and then insert the injection needle of the gun as far as it will go into the canal space without binding.
3. Activate the trigger and inject the warmed gutta percha into the canal until orifice by feeling the injected gutta percha push the tip out of the canal.
4. Compact the warmed gutta percha firmly by using the hand squeezing device.
5. Repeat previously mentioned 3-4 procedures until the entire canal is filled completely.
6. Confirm obturation with a radiograph.

## **SECTION 8: CLEANING & MAINTANANCE**

### **A. Obturation Gun**

It's recommended that the gun should be cleaned after every use to prevent built-up of excess gutta percha in the cylinder.

1. Adjust the unit into operating temperature. Press the plunger release button and pull the plunger out. Using a towel to wipe off gutta percha found on the plunger.
2. Turn the unit off and unplug the power cord. Let the gun be cooled before cleaning.
3. Insert the plunger and re-assemble the obturation gun.

### **B. Obturation Pen**



Clean the tips regularly with the use of a towel with the cleaning solution provided. Do not open the pen handpiece in any case.

If you want to clean the pen tip during operation (Heating state), please use dried towel, do not use wet cleaning solution.

## SECTION 9. TROUBLE SHOOTING

TROUBLES	CHECK
Can not be recharged	Check the power indicator
	Check that the adapter and charging base are connected properly
	Check that the battery and charging base are connected properly
	Check that the adapter and power socket are connected properly
No reaction after pressing button PWR	Check that battery is no-power.
	Please try to press button extendedly
	Check that the installation of battery is correct
	Check that the battery is in good order
Pen tip does not heat.	Check that pen tips are in good order.
	Check that activate heating operation
	Check that pen tips are firmed properly
No GP coming out of injection needle	Check that injection needle is blocked. If yes, clean the injection needle or change the new one.
	Check that the temperature comes up to the required degree.

It's not recommended to open or disassemble the control unit, pen and gun in any case and manufacturer or local dealer does not have any responsibility on problems or troubles caused by opening or disassembling the units by unauthorized person.

If there are any questions or suggestions, please feel free to contact sales representative.

## SECTION 10. ENVIRONMENTAL REQUIREMENTS

### OPERATING CONDITIONS

Ambient temperature: +5°C ~ +40°C

Relative humidity range: ≤80%

Atmospheric pressure: 50kPa~106kPa

### STORAGE AND SHIPPING CONDITIONS

Ambient temperature: -10°C ~ +50°C

Relative humidity range: ≤80%

Atmospheric pressure: 50~106kPa

Equipment is not suitable for storage in the presence of sunlight, rain, dust, and corrosive gasoline and volatile without poor ventilation. Transportation is applicable to all common method.

## SECTION 11. PACKING LIST

### Complete Set of Obturation System Include (Standard list):

Gun	1 PC	Gun Holder	1 PC
Pen	1 PC	Pen Holder	1 PC
Injection Needle	3 PCS	Pen Tip(4 types)	4 PCS
Charging base	1 PC	Battery	2 PCS
Adapter	1 PC	Accessory tool	1 PC
Heat Insulator	2 PCS	Brush	2 PCS
English Manual	1 PC	GP bar 50pcs	1 pack

**※ REMARKS:**

**For injection needles, two types are available.**

**Type A has 360° swivel (rotating) head, Type B has fixed head.**

## **SECTION 12. WARRANTY STATEMENT**

The device is maintained free of charge and doesn't require any routine maintenance within warranty period.

Do not modify and disassemble the device.

This instrument described below has been fully inspected and confronts to the current products specification.

The control part is guaranteed for its designated use, against original defects in materials and workmanship for a period of 12 months from date of purchase. The guarantee for spare parts is 6 months from date of purchase.

Products warranty or service will not be extended if (1) the product is repaired, modified, misused, disassembled, or using the parts are not provided by the manufacturer, (2) The serial number of the product is defaced or missing.

The guarantee for accessories is 6 months. All accessories of the device are damaged or needed to be renewed, the user can purchase new accessories from the seller.

## **WARNING**

The device is not repairable by user and contains no user serviceable parts. No modification of this equipment is allowed.

The user must check that the equipment functions safely and see that it is in proper working condition before being used.

The manufacturer does not require such preventive inspections by

other persons.

**Please contact the sales distributor directly from whom you purchase this device for user's record and further after-sale service.**

## **WARRANTY REGISTRATION FORM**

Item Name: \_\_\_\_\_

Model Name: \_\_\_\_\_

Serial No.: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Name of Distributor: \_\_\_\_\_

Authorized Distributors: \_\_\_\_\_

Stamp and Signature