



Sicher Holdings Ltd.
16 Beresford Square, London, SE18
United Kingdom
E : info@sicherholding.com
www.sicherholding.com

**SUPERIOR
TECHNOLOGY
EXTENDED
DURABILITY
ERGONOMIC
DESIGN**

SICHER
UNITED KINGDOM

| ENDO MOTORS |



Endo Plus | User Manual



www.sicherholding.com

**SUPERIOR
TECHNOLOGY
EXTENDED
DURABILITY
ERGONOMIC
DESIGN**

14. Maintenance record

Send back Date	Problem	Reason	Resend Date	Accendant	Remark
Solution :					

Send back Date	Problem	Reason	Resend Date	Accendant	Remark
Solution :					

Send back Date	Problem	Reason	Resend Date	Accendant	Remark
Solution :					

Note: the company reserves the machine design, technology or product parts, instruction manual and machine package content of the right to change at any time, without prior notice, the product in kind prevail, pictures for reference only, the final power of interpretation owned by the company.

Sicher is a UK based global brand; owned by Sicher Holdings Ltd. UK, is incorporated as per the laws of England and Wales under the company registration number 10902574. Sicher caters to a wide range of products in healthcare industry including highly innovative dental equipments and consumables. We lay great emphasis in producing high quality, innovative, reliable and affordable healthcare products and accessories.

Innovation, product design and service are the key drivers of our existence. Over the years, through our key business partnerships with the industry, we have been able to develop products which addresses the relevant needs of the market. Sicher is constantly expanding our product range across all medical equipments, dental equipments, consumables, disposables and accessories.

Our goal is to always meet and exceed expectations of our customers and we strive to create value for them through every customer touchpoint. Sicher is committed to serving the needs of our patrons in the field of dentistry – technicians, practitioners and hygienists. Innovation, design-built and unparalleled value for money in product quality; supported by our customer centric service advisors for an outstanding after sales service, sets us apart from our competitors.

11. Transportation and storage

Storage Condition : Temperature : - 40°C~55°C ;

Humidity : < 80% ;

Atmospheric pressure : 50KPa~106KPa.

Environmental conditions: Not near from fire equipment or flammability material

Transportation : Suitable for common mode of transportation,

12. Product List

Main Unit	1
Battery Charger	1
Contra Angle (16 : 1)	1
Adapter	1
Cover	1
Manuel	1
Probe Cord	1
File Holder	2
Contrary Electrode	4
Long File Holder	2

Foreword

Thanks for using the cordless endo motor. For the sake of safety and efficient using of this product, please read this manual carefully.

This equipment meets the national standard: GB9706.1 -2007, medical electrical equipment Part 1 and general requirements for safety.

Protection against electrical shock: class II , type B
We'll take the responsibility for the product's safety, reliability and property under the following conditions:

1. Installation, commissioning and maintenance of the equipment should operate by professionals approved by our company or who gain national appropriate level qualifications.

2. This equipment should be operated by qualified or approved personnel. Operator should have specialized medical application skills, and work follow the manual.

3. The equipment can't be used in the environment with flammable anesthetic gases mixed with air or nitrous oxide.

This device is a dental instrument, besides dental treatment, please don't use it.

Our company reserves the right to modify the design, technology, accessories, manual and package content for this equipment. Please prevail in kind. If there is difference between pictures and object, please make the object as the standard.

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13. After-sale service

It's 1 year warranty for the main unit and charging base of the cordless endo motor. After 1 year warranty, we will charge you the spare parts fee. 6 months warranty for the accessories,

Warranty Information

Clients Information	
Client	
Phone	
Address	
Dealer Information	
Dealer	
Phone	
Address	
Serial No	
Invoice No	
Sales Date	
Stamp	

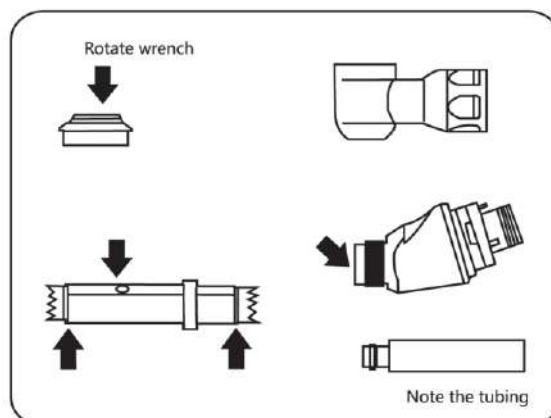
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Notice: Our Company won't take responsibility for the following case:

1. Faults and damage caused by maintenance without authorization.
2. Faults and damage due to any Refitting are unauthorized.
3. Faults and damage result from factor of other company's products.
4. Faults and damage result from using non specified spare parts when maintaining equipment.
5. Fault and damage because of failure to comply with the precautions and operation method described in the manual.
6. Faults and damage due to inappropriate environment for operation, such as the environment for supply, installation etc.
7. Faults and damage caused by earthquakes, floods, lightning and other irresistible factors.

1. Introduction

Cordless endo motor is a professional equipment for root canal treatment. It converts electrical energy into mechanical energy, and then controls the rotation and transmission through the motor. It uses micro motor to achieve the purpose of expanding the root canal in the root canal treatment. Cordless handpiece delivers freedom of movement.



10. Sterilization

Please sterilization only for the electrical contra angle.

Autoclave Sterilization:

Using brush (don't use metal thing) to remove dirt on the surface, then cleaning it by soft cloth with alcohol.

The limited temperature of Autoclave sterilization is 135℃ (For example, 120℃ for 20 min, 132℃ for 15 min).

Please put it in a sterilization bag and keep it in clean place if not use.

Notice:

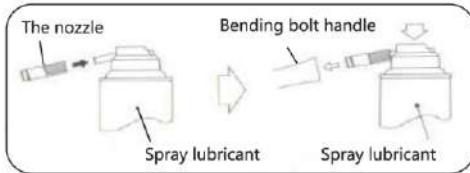
Please sterilization only for the electrical contra angle.

Because of the base layer of the autoclave is near the heat source, high temperature, so it would be better put it in the middle or top layer.

Strongly acidic water is strictly prohibited for use, also don't use sterilization liquid to washing, dipping, wipe the product.

Maintenance:

- a: Oil injection maintenance: turn the nozzle into the oil outlet of the spray lubricant, remove the car needle from the bender (figure 3), insert the outer sheath of the bender, and spray it for at least 2 seconds.
- b: Disassemble the maintenance: loosen the lock of the bending part of the mobile phone and remove the transmission gear, as (FIG. 4) lubricating oil in the indicated part of the arrow.



Note: it is recommended to use: "open" the cleaning maintenance method, the bending machine is filling the oil, after reloading, please load the motor for 1 minute to ensure the uniform distribution of lubricating oil.

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If you forget to turn off the power after use, the power will be turned off automatically in 5 minutes without any operation.

The system will automatically save the pre-shutdown mode content when it is turned off, and the content of the interface will be restored next time.

7. Cautions

- 1) Don't use damaged, winding or unqualified burs, it will cause accident if use.
- 2) Please comply with the bur speed by manufacturer appointed when using.
- 3) Don't put or use this product in the strong sunshine place or near high temperature place.
- 4) Please pay attention when put the main unit in the charging base, the operation panel should be outward, misdirection will damage the product or can't charge.
- 5) Don't put the lubricating oil in the main unit or don't put the main unit in autoclave sterilization.
- 6) Our product is not water-proof. Don't let water or liquid in it, to avoid short circuit, rusting or discoloring.
- 7) Don't drop the main unit and the charging base, put it in the flat safe place.
- 8) Please use the configured adapter when charging, don't use other adapter.
- 9) Please use the electric contra angle provided or approved by our factory, otherwise it maybe cause the misoperation.
- 10) Please don't use our product in the electromagnetic

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Features

- 1) Lightweight, ergonomic design, easy to carry.
- 2) With 16:1 electric contra angle
- 3) It could store 9 programs. The parameter could be preset or modified according to actual operation. P1-P6 for endo treatment mode, P7 for polishing mode, P8 for taking the broken file mode, P9 for reciprocating mode.
- 4) The equipment will auto-reverse or auto reverse & stop, auto-stop according to different torque and resistance.
- 5) Use soft starting and stop, provide convenient operation and protect the file from broken when suffer instant impact.
- 6) Electric contra angle are autoclave sterilization up to 135℃.
- 7) Built-in recharging and high capacity battery not only brings convenience of replace battery, but also save the cost.
- 8) It will has an alarm when the battery is lower.

2. Range of application and contraindications

Cordless endo motor applies to stomatology. It use to expand the root canal in the root canal therapy such as pulp necrosis, chronic pulpitis, chronic apical periodontitis (incl. periapical granuloma, periapical abscess and periapical cyst), pulp-periodontal syndrome and for who has system disease which not suitable for teeth extraction but in need of treatment or keep offending teeth temporarily

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4. Structure

MODEL : Endo Plus

Structure :

- 1、 Handpiece
- 2、 Battery Charger

Cordless endo motor is consist of motor, LCD screen, keypad, control circuit, Charging circuit, plastic shell, lithium battery Led Light and Probe Cord ,File holder Contrary Electrode ,

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Contraindications

It can't be used with high frequency surgical equipment.
Heart patients use it with cautious!
People who use implantable electronic devices like heart pacemaker are not suitable to use it without doctor's advice.

3. Technical parameter

Degree of protection against harmful into the liquid:
Common equipment (not anti-closed inlet device)
Operational Mode: Continuous operation

Main Unit

Battery Voltage:3.7Vdc
Battery capacity:1050mAh
Net weightabout :200g

Adapter

Adapter voltageAC:100~240V 50/60Hz
Output voltage:5Vdc
Output current:1A

8. Troubleshooting

Problem	Reason & Solution
Doesn't work	No power, please charge it.
	Press the ON/OFF button in short time, please press the ON/OFF button more than 1 second.
	POWER ON/OFF button is broken, please contact with the dealer or manufacturer
No charging display	Doesn't connect well with adapter, please pull out and try it again.
	There are other things in the bottom of the machine or charging base, please clean it.
	Doesn't put the main unit in the right place of the charging base.

9. Maintenance

If not using for a long time, when you reuse it, please check it works normally and safely or not.

If not using for a long time, please make sure to charge it every month, in order to protect the working life of the battery.

From the purchasing date, the working life is about 5 years.

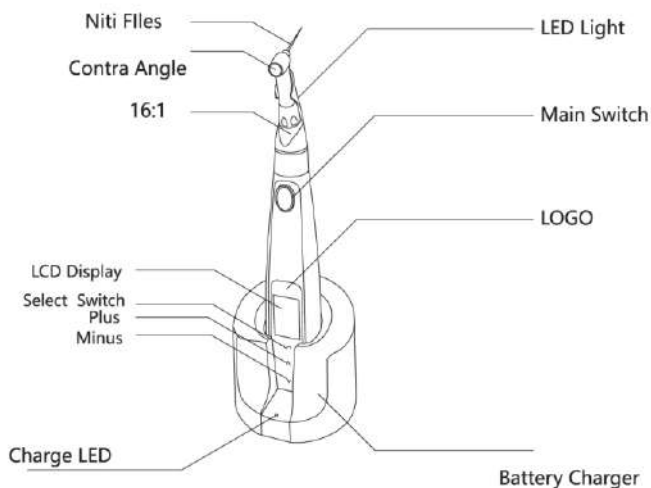
Please clean the surface of the main unit by soft cloth with neutral detergent, and then using wet cloth to clean it.

Notice: Don't use lacquer thinner or benzene for cleaning.
Don't put the product under the blazing sun for a long time or near the flammability material, avoid battery explosion.

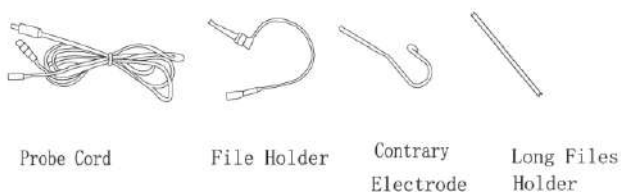
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5. Operation panel introduction



Spareparts :



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Prompt:

If the graph does not move, it indicates a connection error:

1. Check whether the wire is connected correctly;
2. The contact of clean file clip and contact probe;
3. If necessary, rinse the root canal and start measuring again.
4. We suggest that no measurement should be made if the connection is not successful.
5. Enter the inspection mode and check the function of the equipment.

Measurement process

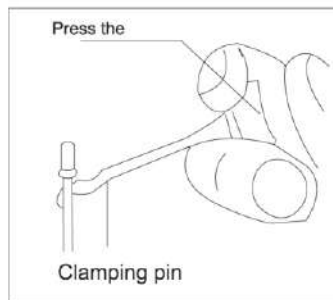
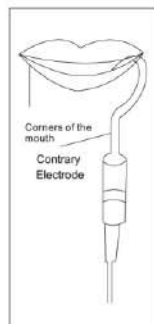
Root canal crown and intermediate region.

1. Slowly insert the measuring file into the root canal
 2. File the complete root canal image.
- The tip passes through the crown of the root canal and the middle region toward the root tip area.
Mobile (reference page 14-15)

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6.Usage method

- 1.Check that the file holder and contrary electrode are properly connected to the probe cord.
- 2.Hook the Contrary Electrode in the corner of the patient' s mouth.
- 3.Check that the file holder and contrary electrode are properly connected to the probe cord.
- 4.Canal Measurement display will appear when the file is inserted in the canal



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POWER ON/OFF button

Power ON: Press the Main Switch button more than 2 Seconds to turn on the equipment.

Power ON: Press the Main Switch button more than 3 Seconds to turn off the equipment.

Motor Start / Pause button

After turn on the equipment, press Main Switch 1 Seconds the motor star to work. Press it again , The motor will stop ;

Selection button-- S

Long press about 3 seconds, "S" key, can switch program function.

Press "S" button to adjust the function mode and speed torque.

The order : Speed setting (SP) → Program selection(P)

→Torque setting selection (TQ) →Speed setting (SP) 。

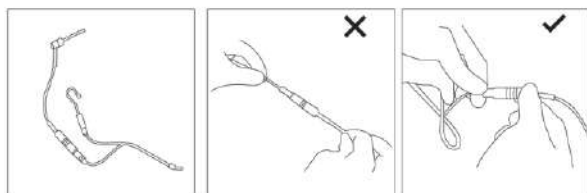
When you select a flicker screen data, you can adjust the data.

When the value is set, press the S button again, and the data is saved in the program.

The program "P"

- 1.Click the "S" button to select the mode of work under P mode;
- 2.There are 9 working procedures available, adjustable speed and torque.
- 3.Increases or decreases the parameters of each selected item.
- 4.When the current project is flashing, click "+/- button". The parameters of the current project can be changed.

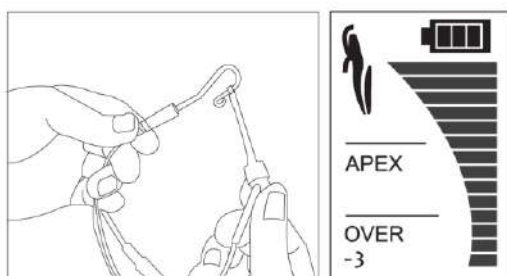
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Note: do not pull the wire when inserting or pulling out the measuring line and file clip. Please follow the correct operation in the picture.

Please make sure the link is normal at each connection.(Operate as follows.)

- a:Press the power switch. Make sure the screen shows the length of the root canal.
- b. Confirm whether the measuring line is correctly inserted into the local socket.
- c.Confirm that the measuring wire socket connects all components.
- d.See figure. Confirm that the indicator bar on the display screen is fully displayed and stable display number "-3", as shown in the figure, otherwise the file clip or measuring line is damaged and must be replaced.



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Battery power display:

: Full battery

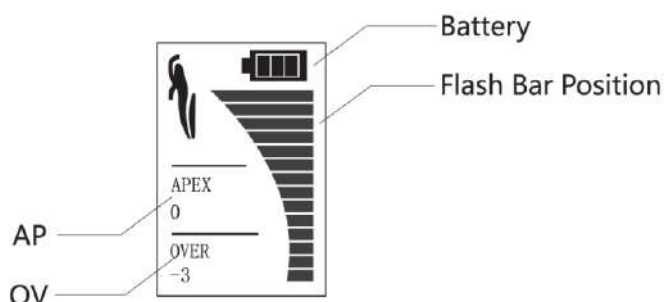
: 20%-80%

: <20%

: Low power, please charge it immediately

*Notice: It's normal that power display will change when meet resistance because of large power output.

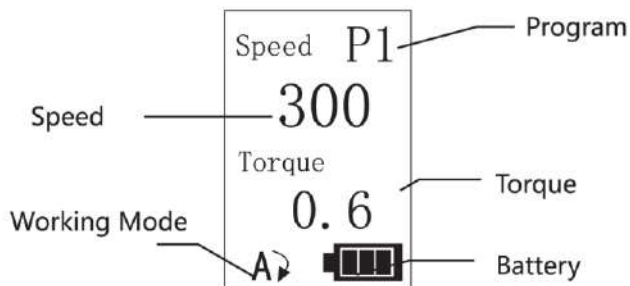
Display Screen for Canal Measurement :



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Speed (rpm)	Speed ratio	Torque (N•cm)
140~600	16:1	0.6~4.0

Instructions



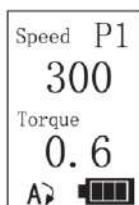
08

4.Preparations

- 1.The use alone without a preoperative and postoperative radiograph is not a recommended practice, since may not be able to work properly in all conditions. It is recommended to take an X-ray prior to the use of the unit, and compare the information given by both means.
- 2.The dentists should know the teeth position and average length well, and master the operation skills.
- 3.The root cavity exposes sufficiently and the root canal cannot be blocked.
- 4.Prior to the use of the device, the liquid and or tissue debris in the access cavity must be wipe out with a cotton pellet and keep the access cavity dry.
- 5.The very dry canals must be moistened with an irrigation solution, such as the normal saline or hydrogen peroxide solutions, and then dry the access cavity with a cotton pellet and airblower.
- 6.If the root canal is bleeding or the blood overflow from the apical foramen, the measurement can be continued when the bleeding is stopped.
- 7.The retreatment of the root canals must be completely removing the remnants prior to use.
- 8 Concentrations of NaClO solutions higher than 3% may result in reduced accuracy.
- 9 As a safety precaution in order to avoid over-instrumentation, it is recommended to subtract 0.5mm to determine the working length for shaping.
- 9 If the bar graph makes a sudden large movement or immediate display 'OVER' when the file insert to the canal, continue push the file slowly towards the display returns to normal

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Program Code: P1-P9



P1-P6 for Endo Treatment Mode:

3 following parameters can be set: Speed, Torque, and Auto-control setting.

Speed: 140-600rpm

Torque: 0.6-4.0N.cm

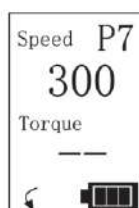
Auto-control mode:

⬅️ A ➡️ Auto-reverse

A ➡️ Auto reverse & stop

➡️ Auto-stop

*After setting well, press P button for a few seconds, saving the parameters in the current program code.



P7 for Polishing Mode:

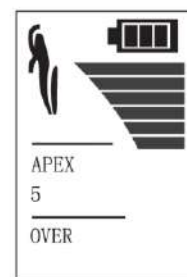
Speed: 140-600rpm

Torque: —

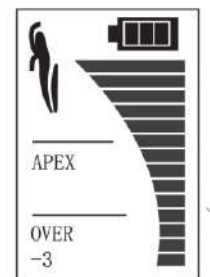
Auto-control mode: ➡️ Forward

*After setting well, press P button for a few seconds, saving the parameters in the current program code.

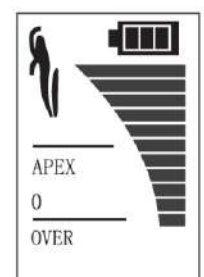
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The safety area



The danger zone



Segmented regions

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3.Component handling method

Inserted the components in the bent head rotation shaft hole, gently rotate, find corresponding card slot with needle semicircle part, find a place, insert part first, don't press the button on, with a slightly bigger force pressed components into the machine, to hear the sound of "cut", namely the components have been received on the machine. When taken out, press the button on the machine and pull the component out of the machine.



When loading and unloading components, be sure to turn off the power.

When installing the component, make sure to pull down several components before and after to confirm that the pin is stable.

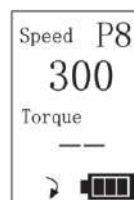
Please keep the machine clean and clean, the stain may cause the machine to run wrong.

4.A link to the measuring line.

Insert the measuring line plug into the right side of the host.

Note:

- please use this instrument carefully, do not fall, impact. Otherwise it will damage the machine.
- If the power plug insertion is not fully plugged into the socket, it cannot be measured.
- Connect all components of a good product.



P8 for taking the broken file Mode:

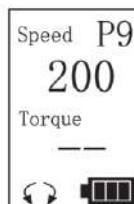
Making a platform on the fracture surface of broken file, choosing suitable microscopic drill, operating under the microscope and cutting under reverse mode.

Speed: 140-600rpm

Torque: —

Auto-control mode:  Reverse

*After setting well, press P button for a few seconds, saving the parameters in the current program code.



P9 for Reciprocation Mode:

Under reciprocation Mode, just using one file for forming a root canal.

Speed: 160-300rpm

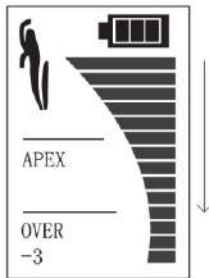
Torque: —

Auto-control mode:  Reciprocation

(Forward:35°,Reverse:145°)

*After setting well, press P button for a few seconds, saving the parameters in the current program code.

Instructions :



The Measurement Bar shows the location of the file tip. The Flash Bar blinks on and off when the file is inside the canal.

The 0.5 meter reading shows where the file tip is about 0.5 to 1.0 mm from the anatomical apex.

The numbers 1, 2, and 3 on the meter do not indicate length in millimeters.

Occasionally the meter will make a sudden and large movement as soon as the file is inserted into the root canal, but it will return to normal as the file is advanced down towards the apex.

5. Instructions

1.Charging

- Insert the charger plug into the charging socket.
- Put the main engine panel outward into the charging seat. At this time, there should be no other foreign matter in the socket of the charging seat.
- Charging about 2 hours can be charged.

2.Loading and unloading method

When the component is connected to the host, the slot pin of the component and the positioning slot of the host are aligned to the insertion until the "click" can be heard.

When disassembling, pull out in parallel.

Note: turn off the power and operate

