

# ***RCTI-DY***

## **ENDO MOTOR**



***RCTI-DY*** must be installed by a qualified dental engineer.

Read this operation manual carefully before installation or operation.



## I. INTRODUCTION

Thank you for purchasing the **RCTI-DY** Endo Motor!

**RCTI-DY** is a kind of endodontic micromotor to drive NiTi instruments, which can assist the dentists to shape more standard root-canal in the process of root-canal treatment based on the micro-electronic control technology. This unit contributes to alleviate the dentist's working intensity.

## II. FEATURES

1. 22 settings for adjustable rotational speed ranging from 100 to 625rpm.
2. If the torque exceeds the setting value, the file will auto reverse to avoid the break-off in the root canal when the function of auto reverse is activated.
3. Adjustable Torque-- **6-52mN\*m**
4. Auto reverse and manual reverse are available.
5. Saving function—ten group of program data can be set!
6. Start the rotation of the Ni-Ti files with foot control pedal
7. LCD display

## III. SAFETY PRECAUTIONS

1. Before operation, please read the usage manual carefully!

2. Like all of the other electric facilities, this machine has an electromagnetism disturbance. When there is a patient who is now using the cardiac pacemaker, or there is an electronic operation, please don't put the machine around. The cardiac pacemaker sufferer, viz. the serious cardiac pulse abnormality sufferer, is forbidden to use this machine.

3. Equipment not suitable for use in the presence of flammable anesthetic mixture with air or nitrous oxide.

4. Check the product before use by rotating it, paying attention to looseness, vibration, noise and temperature. If any abnormal condition is found even slightly at that time, immediately stop use and contract your dealer.

5. Do not use a bent, damaged, deformed, or non-ISO-conforming file. Using such a file may result in personal injury due to its unexpected breaking or "flying way" during rotation.

6. Do not expose the unit, motor handpiece, battery or AC adapter to any liquid.

7. Before changing the head or file, turn off the power of the motor handpiece. Changing with the power kept on may cause unintended rotation by accidental touch of the ON/OFF button.

8. ONLY 1:1 contra angle could be connected to motor handpiece.

9. When the reverse rotation is set, the auto reverse function can also be activated.

10. Do not disassemble or alter the motor handpiece.

#### **IV. SPECIFICATION**

##### ***RCTI-DY* endo motor control unit**

Input DC6.6V-8.4V

Output DC 5V

##### ***RCTI-DY* endo motor AC adapter**

Input AC 110-240V 50/60 Hz

Output DC6.6V-8.4V

##### ***RCTI-DY* endo motor motor handpiece**

Voltage DC 5V Current 0.5 A

## **RCTI-DY endo motor Li-on battery**

Rated Voltage 7.4 V

Degree of protection against electric shock

—Type B applied part

Degree of Protection from ingress of liquids: None

Foot pedal: (protected against vertically falling water drop)

**RCTI-DY** endo motor complies to IEC60601-1 safety standard and the requirement of CE marking of Conformity.

## **V. PRODUCTS DESCRIPTION**

- 1.contra angle (optional)
2. motor handpiece
3. control unit
- 4.power cord connector
- 5.foot pedal connector
- 6.motor handpiece connector
7. operation panel

the LCD panel display turns off.



**Notice:**

Before the root canal treatment operation and after finishing the setting, the dentist could see the corresponding menu flashing on the LCD.

After flash stopped, please switch on the foot pedal, in this situation, root canal treatment operation can be available!

If the dentist does not follow this step order, the unit will not work!

**SPEED**

The present rotation speed sign is displayed on the lower right corner of LCD.

22 kind of adjustable speed could be adjusted ranging from 100-625rpm(min-1) are available.

Press SPEED "+" key once, speed will increase 25rpm(min-1) every time

Press SPEED "-" key once, speed will decrease 25rpm(min-1) every time

Hold and press SPEED "+" or SPEED "-" key, the speed will keep lasting increase or decrease up to the data dentist want!



## **TORQUE**

Torque range: **6–52mN\*m**

The torque value can be controlled, which is changing when the file is in motion in the root canal!

Press Torque "+" key once, speed will increase 0.1 nm\*m every time

Press Torque "-" key once, speed will decrease 0.1 nm\*m every time

Hold and press Torque "+" or Torque "-" key, the torque value will keep lasting increase or decrease up to the data dentist want!



### **Notice:**

If the torque exceeds the setting value, the file will auto reverse to avoid the break-off in the root canal when the function of auto reverse is activated.

If the torque exceeds the setting value, the file will stop rotating when the function of auto reverse is not activated.

In this situation, the dentist could step off the foot pedal and reset the torque value.

## **GEAR**

The gear ratio is 16:1, which can not be changed at present.

**ONLY 1:1 contra angle can be connected to the motor handpiece!**

## **SAVE**

Saving function

After setting up the program, if you would like to memorize this setting, please press "SAVE" key. Ten group of program setting data can be set for saving.



**Notice:** The unit will work under the latest setting program if no other operation is undertaken when the dentist restart the unit.

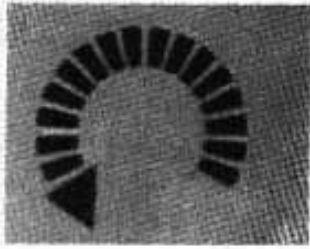
## **PROGRAM**

"PROGRAM" key is for selecting the proper program from the saving program data! The numbers 1-10 will be displayed on the top left corner of LCD, if ten group of program data have been saved!

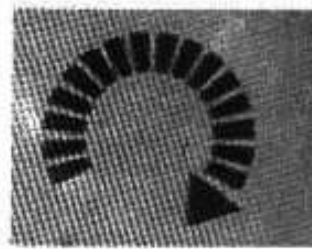
## **REVERSE**

The rotation direction of the file can be changed by this key. It can be changed while the file is in motion.





**Forward Rotation**



**Reverse Rotation**

The motor handpiece starts in reverse. If you want to forward rotation again, just press the REVERSE button on the control panel.

### **AUTO REVERSE**

The auto reverse mode can be selected by this key.



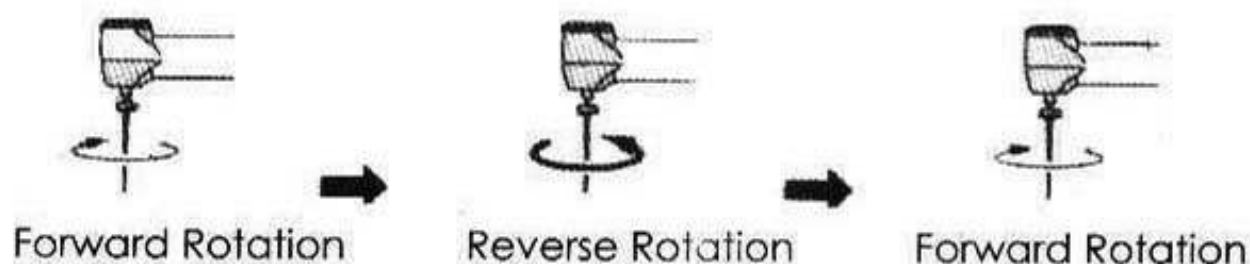
**AUTO REVERSE MARK**

The auto reverse mark is displayed on lower left corner of the LCD when activated.





When the function of auto reverse is not activated, this mark will not appear on the LCD alternately.

**When the reverse rotation is set, the auto reverse function can also be activated.**

**The the file starts rotation in reverse. When auto reverse function is activated, the file returns to normal rotation (forward rotation)**



### Notice:

When the battery goes down (when the remaining amount of battery mark indicates  or ) the load may not reach the preset torque limit value. In this case, the auto reverse function may not be activated. Please make sure that the battery is not significantly consumed to ensure the function of auto reverse (When the mark of battery mark indicates  or ).

### BATTERY SIGN

The mark will be flashed when the battery is being charged. The standard charging time is around 5 hours. When the charging has been completed, the mark will stop flashing.


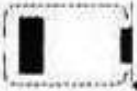
Ensure to charge 8 hours continuously for the first time.

The battery will gradually discharge over time even though the unit is not used. So it is strongly recommended to recharge the battery before reuse.

The charging time varies depending on the use, condition of battery and temperature.



**Notice:**

There will be a sound alarm at every 30s when the battery is Appro. 30-75% remains like , at every 5s when Less than 30% like . The unit will be automatically powered off when Low voltage like



Full charge



Appro. 30-75% remains



Less than 30%



Low voltage. Charge immediately

## **FOOT PEDAL**

To step on the foot pedal, the endodontic file starts to rotate. To remove from the foot pedal, the file stop rotating.

## **AC ADAPTER**

European plug or American plug is available.  
Connect to AC 110-240V power supply.

## **VI. CONNECTION**

### **Connect Motor Handpiece**

Align the positioning pins of the plug of motor handpiece with the positioning slots of motor handpiece connector and insert the plug in a secure way to ensure that it is fixed properly.



### **Notice:**

**To Insert the plug, do not do it in a forced way.**

**To remove the plug, hold the plug ring first, and then pull it out backward.**

### **Connect foot pedal**

Securely insert the plug of the foot pedal into foot pedal connector.

### **Connect AC adapter**

Securely insert the jack of AC adapter into the power connector in a proper way.

### **Connect the contra angle**

Align the positioning pins of the contra angle with

the positioning slots of motor handpiece and insert the head until they click.

When removing the contra angle, pull it out axially.

## **VII. MAINTENANCE**

When the surface of main body is polluted or dirtied, please rub the surface slightly with soft cloth stained with water or non-alcoholic disinfectant.

**Notice:** Ethanol, banana oil and light oil are not allowed.

## **VIII. DISINFECTION**

Please wipe the mainbody and accessories with the soft cloth stained with ethanol.

Disinfecting the front stainless part by autoclave is preferred

When the instrument is kept nonuse, please make it clean and dry.

## **IX TRANSPORTATION & STORAGE**

Ambient temperature: -40°C ~ +55°C

Relative humidity range: 10% ~ 93%

Atmospheric pressure: 86KPa~ 1006Kpa

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 methods.

## **X. ACCESSORY**

Standard accessories:

main unit	1 pc
foot pedal	1 pc
motor handpiece	1 pc
testing cord	1pc
AC adapter	1 pc
(European or American type)	
user's manual	1pc
contra angle(optional)	1pc
(drive 1:1)	

## **XI. WARRANTY**

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

This instrument is guaranteed for its designated use, against original defects in materials and workmanship for a period of 12 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.