

ICT_{motor}

Operating Instruction



Contents

1. Safety guidelines	3	7.5 Program change and save	13
2. Caution	3	Change STEP	13
3. Components	4	Change RPM	13
4. Technical specification	5	Change torque	13
5. Components description		Change direction	14
5.1 Main body	6	Change the gear ratio	14
5.2 Foot controller	7	Change the irrigation amount	15
5.3 Micromotor	7	Foot controller	16
6. Product installation		8. Sterilization	17
6.1 Power connection	8	8.1 Micromotor sterilization	17
6.2 Configuration of irrigation components	8	9. Cleaning and storage	
6.3 Connection of irrigation tube of handpiece	9	9.1 Main body and foot controller	18
6.4 Connection of components	9	9.2 Micromoto	18
7. Operation		10. Maintenance	19
7.1 Turn on the unit	11	11. Trouble shooting during operation	20
7.2 Control panel functions	11	12. Labeling description	
7.3 LCD display description	11	12.1 Symbol description	21
7.4 Program choice and modification	12	12.2 Label-displaying position	22
		13. Electromagnetic compatibility	23

Dear Customers

The iCTmotor from Dentium is a driving engine for dental handpiece, designed for dentists to perform dental surgery and implantology. The main unit is designed to operate a specific dental micromotor that drives dental handpiece fitted with appropriate tools to cut hard and soft tissues in the mouth and to screw dental implants. This device is optimized for dental implant procedure, featuring user-programmable controller to change parameters of dental handpiece for every surgical steps of dental implant.

For the safety of both patient and dental practitioner, please read and understand this Operating Instruction prior to the initial usage of this product. For technical support or any issues associated with this product, please contact the authorized service center for prompt technical service.

1. Safety guidelines

In order to avoid personal injury or property damage, please observe all safety precautions as specified in this Operation instruction. Precautions are indicated as below.

	NOTIFICATION
	This symbol indicates useful information or reference details for the user.
	DANGER
	This symbol indicates hazardous situations that might lead to serious physical injury or critical property dama
	WARNING
	This symbol indicates dangerous situation that might lead to physical harm or property damage.
	NOTIFICATION
	Indication for use

The Dentium surgical micromotor iCTmotor and Implant system, are microprocessor driven surgical micromotors used in implantology procedures. The Dentium surgical micromotors iCTmotor, consists of a microprocessor controlled unit, foot pedal, electric micromotor, support rods and sterile, disposable, irrigation tubes.

2. Caution

- The iCTmotor should be operated by dentists or authorized specialists.
- Read this User's Manual thoroughly before operation for the first time, in order to avoid unintended incidents or accident.
- If repair or inspection is required, please contact the nearest authorized dealer.
- Sterilize all subcomponents that are subject to sterilization before each operation for disinfection.
Detailed sterilization instruction is included in this manual.
- Put the handpiece on the handpiece rack for idling during usage.
- If any abnormal condition occurs, such as unusual noise or overheated components, please stop using the device and contact the nearest authorized dealer for support
- The foregoing warranty shall not apply to defects resulting from unauthorized disassembling or using ingenuine components or parts. In the event of modifications by third parties, the warranty shall become null and void.
We recommend using only genuine spare parts for the operation and repair of the iCTmotor.
- Do not place similar medical electrical devices near the iCTmotor as these devices may disrupt the performance of this device. To mitigate disruptive electromagnetic interference, position the iCTmotor away from RF transmitters and other sources of electromagnetic energy.
- Dropping or exerting excessive forces onto the device may cause the device to malfunction or fail to meet the desired performance standard.
- While the burr (cutting tool) is rotating, it should be handled with extra care to avoid injury of the user.
- Do not assemble or disassemble the handpiece with micromotor during operation. Before each usage, try to pull out the handpiece from the micromotor to make sure they are well assembled.
- To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth
- Do not modify this equipment without authorization of the manufacturer
- Do not put your hand in to the irrigation pump gap

3. Components



No.	Name	Quantity
①	Main body(Including irrigation pump)	1
②	Foot controller	1
③	Micromotor(Including cable)	1
④	Irrigation Stanchion	1
⑤	AC power cable	1
⑥	Sterilization cap	1
⑦	Tube holder	10
⑧	Handpiece rack	1

※ Actual components may look different with this drawing.

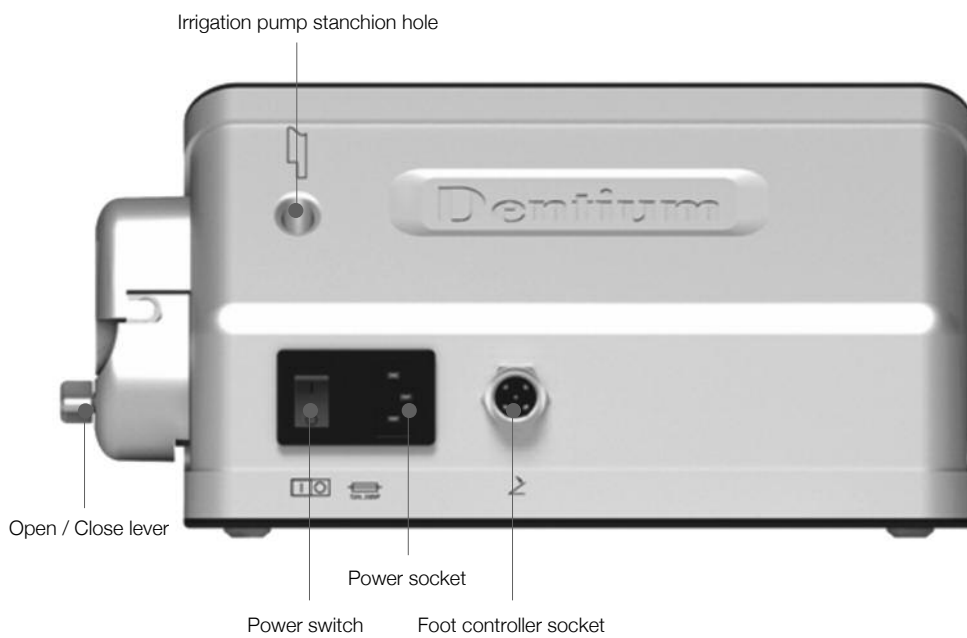
4. Technical specification

Dimension	Main body: 25(W)×17(D)×14(H) cm Micromotor: Ø2.6×13.4 (L) cm Foot controller: 18(W)×16(D)×3.8(H) cm
Material specification	Main body: Plastic Foot controller: Plastic Micromotor: Aluminum
Weight	Main body: 2.5 kg Foot controller: 0.45 kg Micromotor: 0.4 kg
Speed and torque range of the handpiece	Rotational speed: 20 - 2000 rpm Rotational torque: 5 - 70 N·cm (Gear ratio 20:1)
Water-proof grade of foot controller	IPX 1
Amount of inlet water	Level 1: 40 ml/min Level 2: 50 ml/min Level 3: 60 ml/min
Input power voltage and frequency	AC100-240V~ 50/60Hz, 100VA
Operating environment	Temperature: 10 ~ 35 °C Relative humidity: 80 % (Maximum) Atmosphere pressure: 800 ~ 1,060 hPa
Delivery and storage	Temperature: -10 ~ +60 °C Relative humidity: 85 % (Maximum) Atmosphere pressure: 700 ~ 1,060 hPa
Warranty	1 year

5. Components description

5.1 Main body (iCTmotor(WH-1))

※ Actual components may look different with this drawing.

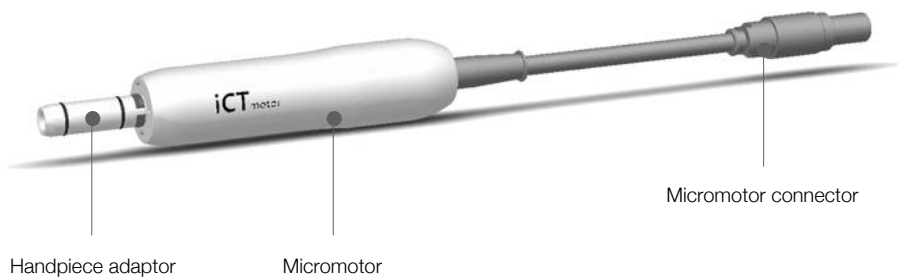


5. Components description

5.2 Foot controller



5.3 Micromotor



6. Product installation

6.1 Power connection

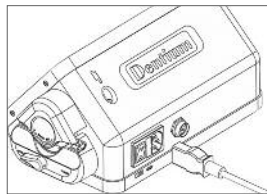


WARNING

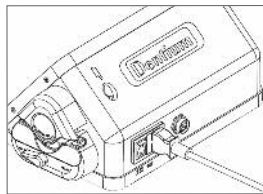
- Dry your hand completely before connecting the power cable
- This product has the Free voltage function (AC100-240V~ 50/60Hz)
- To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth

❖ Power cord connection

Plug the power connector into the socket [Figure-1] on the back of the main body



[Figure-1]



[Figure-2]

6.2 Configuration of irrigation components

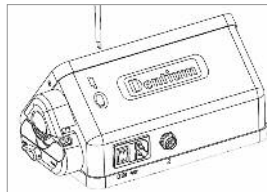


WARNING

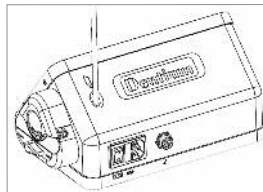
- Refer to the manual of the liquid and tube from the respective manufacturer to use them properly
- The irrigation tubes are disposable. Please discard the tube after each usage.

❖ Installation of the irrigation stanchion

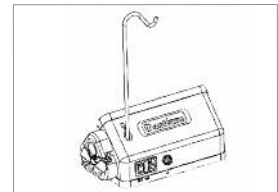
Place the flat part of the stanchion [Figure-3] to the top of the main body, and then insert the stanchion into the receptacle on the main body.



[Figure-3]



[Figure-4]



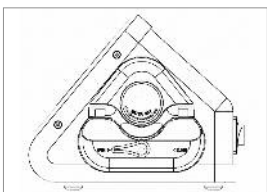
[Figure-5]

❖ Insertion of the irrigation tube

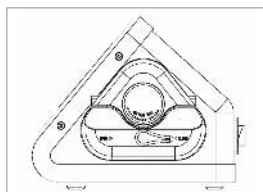
1) Rotate the OPEN/CLOSE lever to "OPEN" position to open the cover for tube insertion. [Figure-6]

2) Insert the irrigation tube into the adapter by using both hands.

Place the irrigation tube right in the middle of the roller so that it is not kinked or crushed. [Figure-7] Turn the OPEN/CLOSE lever to "CLOSE" after the irrigation tube is placed properly in the tube guide



[Figure-6]



[Figure-7]

6. Product installation

6.3 Connection of irrigation tube of handpiece



WARNING

- More detailed information on the handpiece can be referred to the user manual of handpiece or contra-angle provider
- The irrigation tube is a disposable. Do not reuse it.

6.4 Connection of components



WARNING

- Before plugging or unplugging the connectors, be sure to turn "OFF" the power of the main body.
- Make sure the mark [↔] imprinted on the connector is facing up and then plug it into the connector socket
- The life-time of micromotor and handpiece may rapidly be reduced by over heat from continuous operation. It is recommended to follow operation time specified below.



WARNING

Maximum duration of non continuous usage (Load Time): **3 Minutes**,
Cooling interval between each procedure (Colling Time): **10 Minutes**



LCD will show this error message if the handpiece is disconnected or not connected well. Check the connection for normal usage.

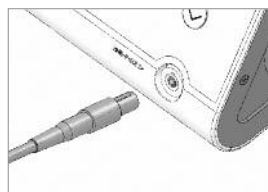


LCD will show this error message if the foot connector is disconnected or not connected well. Check the connection for normal usage.

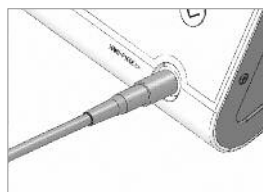
❖ Micromotor connection

Locate the marking [↔] of the connector joint upward and push it into the micromotor socket to connect. [Figure-8]

※ It will make a "click" sound at the joint when correctly connected.



[Figure-8]



[Figure-9]

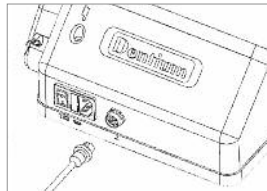
❖ Micromotor disconnection

When disconnecting, grab and pull the connector joint.

6. Product installation

❖ Connection of foot controller

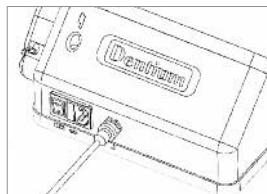
- 1) Align the foot connector key with the socket and then insert it.[Figure-10]
- 2) Turn the tightening nut clockwise.



[Figure-10]

❖ Foot controller disconnection

- 1) Turn the tightening nut counterclockwise.
- 2) When disconnecting, Grab and pull the tightening nut.



[Figure-11]

7. Operation

7.1 Turn on the unit



Power switch (I/O) can be found in the back side of the product. Press “I” side down.

7.2 Control panel functions

Button	Description of Function
	Move the user program (“STEP”) up
	Move the user program (“STEP”) down
	Activate the data mode to initiate program modification and save the changed data
	Increase the data cursor is on
	Decrease the data cursor is on.

7.3 LCD display description



- A) Displays the current STEP. (STEP 1 ~ 6)
- B) Displays the rpm currently set. (It displays the real-time rpm while the motor runs.)
- C) Displays the torque currently set. (It displays the real-time torque while the motor runs.)
- D) Displays the rpm gauge setting as the ratio graphic.
- E) Displays the rotational direction of the handpiece.
(The letters F and R stand for "FORWARD" and "REVERSE" respectively)
- F) Displays the gear reduction ratio of the handpiece.
- G) Displays the irrigation flow rate.

7. Operation

7.4 Program choice and modification

iCTmotor provides you with the optimized program solution for each STEP of protocol for the Dentium implant installation as default from the factory as below <Table-1>. This program can be changed by the user according to preferences.

❖ PROGRAM(STEP) INFORMATION

STEP	Ratio	Process	rpm	Torque	Pump	Direction
1	20 : 1	Drilling	1000	35	●●●	
2	20 : 1	Countersinking	300	35	●●●	
3	20 : 1	Implant Insertion or Tapping	20	35	○●○	
4	20 : 1	Cover & Healing con- nection	100	5	●●●	
5	20 : 1	Removal	20	55	○●○	
6	20 : 1	Spare	20	5	○●○	

[Table-1]



NOTIFICATION

Please note that the above details are not the standard guidance for every implant system.

7. Operation

7.5 Program change and save



WARNING

All program changes completely after stopping the operation of the machine must be running.

❖ Change STEP

- 1) Program button “” will move the steps upward (STEP 1-2-3-4-5-6)
- If you press the button continuously, steps will rotate.
(The Program move key in the Foot pedal unit will make the same change.)
- 2) Program button “” will move the steps downward (STEP 6-5-4-3-2-1)
- If you press the button continuously, steps will rotate.

❖ Change RPM

- 1) Press the SELECT “” button to activate the cursor.
- 2) Move the cursor to the rpm change sector by pressing the “SELECT” button repeatedly.
- 3) Press “” or “” button set the target rpm value.
- 4) Press “SELECT” to save the rpm value displayed on the LCD display.
(It will save the value automatically if the value is not changed in 5 seconds)



- The rpm will increase / decrease by the increment value specified in the below Table-2.

(Unit: rpm)

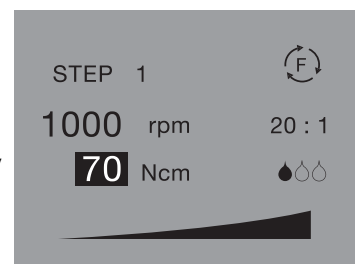
Setting rpm	Increment
15 - 50	5
60 - 100	10
200 - 2000	100

[Table-2]

- ※ Rotation speed may become fluctuated (+/- 10%) in the speed below 25 rpm.

❖ Change torque

- 1) Press the SELECT “” button to activate the cursor.
- 2) Move the cursor to the torque change sector by pressing the “SELLECT” button repeatedly.
- 3) Press “” or “” button to set target torque value.
- 4) Press “SELLECT” to save the torque value displayed on the LCD Display.(It will save the value automatically if the value is not changed in 5 seconds)






- The torque will increase / decrease by the increment value of 5 N·cm

- ※ Torque may become fluctuated(+/- 10%) in the torque below 5 N·cm.

7. Operation

❖ Change direction




- 1) Press the SELECT “” button to activate the cursor
- 2) Move the cursor to the rotating direction change sector by pressing the “SELECT” button repeatedly.
- 3) Press “” or “” button to change direction.
- 4) Press “SELECT” to save the direction displayed on the LCD display.
(It will save the value automatically if the value is not changed in 5 seconds)



NOTIFICATION

- Long beep sound will be given continuously if you put the rotation as reverse direction by the control panel, and short beep sound by the foot controller.
- “F” stands for Forward, and “R” stands for Reverse.

❖ Change the gear ratio

- 1) Press the SELECT “” button to activate the cursor.
- 2) Move the cursor to the Gear ratio change sector by pressing the “SELECT” button repeatedly.
- 3) Press “” or “” button to change the gear ratio.
- 4) Press “SELECT” to save the gear ratio displayed on the LCD display.
(It will save the value automatically if the value is not changed in 5 seconds)



※ The available rpm and torque ranges respect to the gear ratio are shown as in the Table-3.

Gear ratio	rpm	Torque(N·cm)
20 : 1	20 - 2000	5 - 70 N·cm
27 : 1	15 - 1400	
32 : 1	15 - 1200	

[Table-3]

7. Operation

※ Compatible contra-angles are summarized in the Table-4. Follow the instructions of respective manufacturer for the maintenance or detailed practical usage.

Manufacturer	Model	Gear ratio	Maximum torque
W&H(Austria)	WI-75 E/KM	20 : 1	5 - 70 N \square cm
Bien-Air(Swiss)	CA20 : 1	20 : 1	5 - 55 N \square cm

[Table-4]



WARNING

This compatibility chart is subject to change without notice in advance. The brand and product names are trademarks or their respective companies.

❖ Change the irrigation amount

- 1) Press the "SELECT" button to activate the cursor.
- 2) Move the cursor to the Irrigation amount change sector by pressing the "SELECT" button repeatedly.
- 3) Press " \triangleleft " or " \triangleright " button to change the irrigation amount
- 4) Press "SELECT" to save the irrigation amount displayed on the LCD display.
(It will save the value automatically if the value is not changed in 5 seconds.)



- ※ Water irrigation can be disabled by pressing the " \triangleleft " or " \triangleright " button.
- ※ Irrigation amount can be adjusted in 3 steps. Please refer to the below table for the amount of irrigation in each step.

(unit: mL/min)

Step marking	Irrigation amount(Max)
	OFF
	40 mL
	50 mL
	60 mL

[Table-5]

7. Operation

❖ Foot controller



Standard



Option

- ※ The device makes short beep sounds when the actual torque value reaches 90% of the target torque value. Once torque value reaches 100% of the target torque, the device makes long beep sound and the Micromotor will stop in 0.5 second.
- ※ The device will make short beep sounds if the handpiece is working in reverse direction.
- ※ The parameters can be adjustable (STEP change) only if the device has come to complete stop.



NOTIFICATION

Other genuine optional components can be used after proper configuration guided by the manufacturer.

8. Sterilization

Please follow the instructions in the below to prevent secondary infection due to contamination of the equipment.



WARNING

- Sterilize and clean the equipment before operation.
- When sterilizing with high-pressure steam, wrap and seal the equipment with the sterilizing pouch.
- Please cool off sufficiently and dry the parts sterilized by high-pressure steam before use.

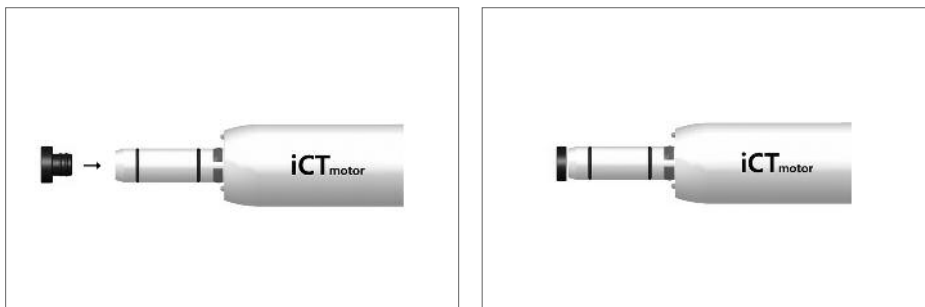


DANGER

- If sterilized without the sterilization pouch, the equipment may get damaged.
- The parts that can be sterilized using high-pressure steam are Micromotor (including cable) and the handpiece rack.

8.1 Micromotor sterilization

- 1) Block the handpiece connector's opening with a sterilization cap to avoid steam penetration into the device. [Figure-12].



[Figure-12]

- 2) Pack and seal the micromotor (including cable) in the high-pressure sterilization pouch.
- 3) Sterilize using high-pressure steam.



WARNING

Working condition of high-pressure steam:
 Maximum 134℃, more than 5 minutes and less than 20 minutes
 The maximum number of Sterilization: 100 times

9. Cleaning and storage



WARNING

- Electrical components **MUST** be disconnected with the A/C power when cleaning.
- **DO NOT** bend the power cable, micromotor cable or foot controller cable.
- **AVOID** cleaning the device and sub-components using the compressed air by nozzle.

9.1 Main body and foot controller

- 1) Wash outside of the equipment body only by using 80% of ethylic alcohol or the exclusive cleaning solution for prevention of microbial infection. Be careful not to let the buttons be damaged by excessive force or sharp object.
- 2) Please do not let alien substances such as detergent or water get into the main body.

9.2 Micromotor

- 1) Please do not let any liquid substance permeate in the micromotor connector.
- 2) Store the micromotor and handpiece separately.



WARNING

- **DO NOT** disassemble the micromotor itself.
(The foregoing warranty shall not apply to defects resulting from disassembling)

10. Maintenance

- Make it sure that the sheath of the cables has not been peeled off. Please coil the cables round to store.
- In case any abnormal condition occurs, such as unusual noise or over-heating of the components, please stop using the product and contact the nearest authorized Dentium dealer for technical support.
- It generally applies that disposal of this product must comply with the relevant national regulations.

10.1 Daily check point

Unit	Check list
Main Body	1) Is the power switch of the idling equipment set as "O"? 2) Is there any damage in the display panel and buttons? 3) Are the display color and data being displayed vividly?
Micromotor	1) Is the micromotor cable not damaged? 2) Is there any damage in the micromotor connector? 3) Has any screw loosened in the micromotor?
Foot-controller	1) Is the foot connector not damaged? 2) Is the foot controller running smoothly when operating up and down?

11. Trouble shooting during operation



WARNING











- Device check up must be done in the environment of no water or moisture.
- Power must be off for trouble shooting process.
- Below <Table-6> shows simple troubles that user can fix. If none of the below options correct the problem, please contact the nearest authorized dealer.

Troubles	Cause & Solution		Page
Display not working	Cause	A. Power supply is not stable.	9
	Solution	a1. Plug out the power socket from the consent, wait for 5 seconds and plug in. a2. Press the power button On ("I").	
Buttons not working	Cause	A. Device is in working mode or previous orders are not processed. B. Designated value has not been activated.	15~17
	Solution	a. Wait until the device gets to a complete stop and try again. b. Use the "SELECT" button to activate the selected value.	
Handpiece not working	Cause	A. Handpiece got dirt or out of order. B. Foot controller or Motor connector is improperly connected	10~11
	Solution	a. Refer to the manual for the handpiece from the manufacturer. b. Remove and reconnect the connectors or check the connections	
Irrigation not working	Cause	A. Irrigation tube is damaged or blocked. B. Irrigation stopper is tightened. C. Irrigation mode is not activated. D. Irrigation tube is improperly connected.	9~10
	Solution	a. Replace the tube or clean the handpiece nozzle. Refer to the manual of the handpiece for cleaning. b. Open the stopper. c. Activate the Irrigation mode. d. Disconnect and reconnect the foot controller or micromotor.	

[Table-6]

12. Labeling description

12.1 Symbol description

	B type (Handpiece part)		Follow instructions for use
	Use separate collection for the terminated electric and electronic equipment		Manufacturer
	Europe Representative		CE Marking
	Protection earth		Earth
	Caution and warning		Caution Moving Machinery

12. Labeling description

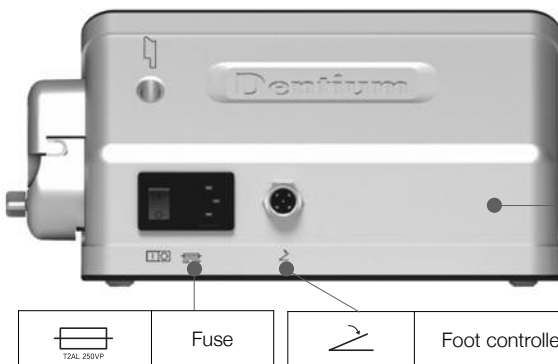
12.2 Label-displaying position

❖ Main body (front)

※ Actual settings may differ from image shown.

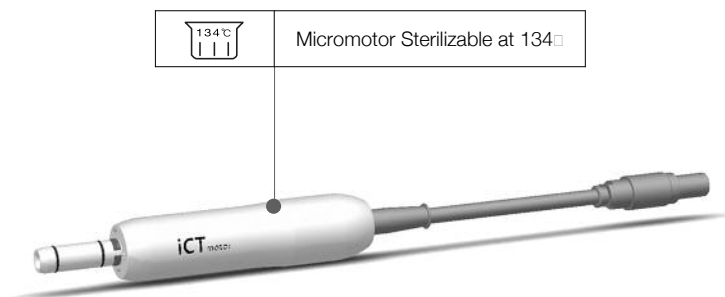


❖ Main body (Rear)



Dentium For Dentists By Dentists iCTmotor (WH-1) Serial No. : Date of Manufacture :		Protection Class : Class1, Type B Input Power : 100-240V~ 50/60Hz, 100VA CE 0123 Non-continuous operation (3min ON/10min OFF)
Dentium Co., Ltd. 209, 501-502, 504 Gyeonggi 5620 Center, 906-5, Iuidong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea, 443-796 Tel +82-70-7098-4027 Fax +82-31-888-5567 Head Office: 3105 Trade Tower 159, Samgong-dong, Kangnam-gu, Seoul, Korea, 135-729 Tel +82-2-501-8560 Fax +82-2-567-9578 DongBang Acuprime Ltd. 1 Forrest Units, Hennock Road East, Marsh Barton, Exeter EX2 8RU, UK Tel +44 1392 829500 Fax +44 1392 823232		

❖ Micromotor



13. Electromagnetic compatibility

13.1 Guidelines and manufacturer's declaration-electromagnetic emissions

The model iCTmotor is intended for use in the electromagnetic environment specified below.

The customer or the user of the model iCTmotor should assure it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment-guidance
RF emissions	Group1	The model iCTmotor uses 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.
CISPR11		
RF emissions	Class B	The model iCTmotor is suitable for use in all locations including domestic establishments and those directly connected to the public power supply network with low-voltage that is supplied to the buildings used for domestic purposes.
CISPR11		
Harmonic emissions	Class A	The model iCTmotor is suitable for use in all establishments including domestic establishments and those directly.
IEC 61000-3-2		
Voltage fluctuations flicker emissions	Fulfilled	To be connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
IEC 61000-3-2		

13. Electromagnetic compatibility

13.2 Guidance and manufacturer's declaration-electromagnetic immunity:


The Model iCTmotor image intensifier is intended for use in the electromagnetic environment specified below. The customer or the user of the Model iCTmotor image intensifier should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Conformance level	Electromagnetic environment-guidance
Electrostatic discharge(ESD) IEC 61000-4-4	±6KV contact ±8KV air	±6KV contact ±8KV air	Floors should be made of wood or concrete or have ceramic tiles. When the floor is made of synthetic material, the relative humidity must be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2KV for power supply lines ±1KV for input/output lines	±2KV for power supply lines ±1KV for input/output lines	Main power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1KV differential mode ±2KV common mode	±1KV differential mode ±2KV common mode	Main power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% UT(>95% dip in UT) for 0.5 cycle 40% UT(60% dip in UT) for 5 cycles 70% UT(30% dip in UT) for 25 cycles <5% UT(>95% dip in UT) for 5s	<5% UT(>95% dip in UT) for 0.5 cycle 40% UT (60% dip in UT) for 5 cycles 70% UT(30% dip in UT) for 25 cycles <5% UT(>95% dip in UT) for 5s	Main power quality should be that of a typical commercial or hospital environment. If the user of the Model iCTmotor requires continuing operation under power interruptions, it is recommended that the Model iCTmotor image intensifier be powered from an uninterruptible power supply or a battery
Power frequency (50/60HZ) magnetic field IEC 61000-4-8	3A/m	3A/m	If image distortion occurs, it may be necessary to position the Model iCTmotor image intensifier further from sources of power frequency magnetic fields or to install magnetic shielding. The power frequency magnetic field should be measured in the intended installation location to assure that it is sufficiently low.

13. Electromagnetic compatibility

13.3 Guidance and manufacturer's declaration-electromagnetic immunity

The Model iCTmotor image intensifier is intended for using in the electromagnetic environment specified below. The customer or the user of the Model iCTmotor should assure that it is used in such an environment

Immunity test	IEC 60601 test level	Conformance level	Electromagnetic environment-guidance
<p>Conducted RF IEC 61000-4-6</p> <p>Radiated RF IEC 61000-4-3</p>	<p>3Vrms 150kHz to 80MHz</p> <p>3V/m 80MHz to 2.5GHz</p>	<p>3Vrms</p> <p>3V/m</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the Model iCTmotor including cables than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance: $d = 1,2\sqrt{P}$ $d = 1,2\sqrt{P}$ 80MHz to 800MHz $d = 2,3\sqrt{P}$ 800MHz to 2.5GHz where P is the maximum output power rating of the transmitter in watts(W) according to the transmitter manufacturer and d is the recommended separation distance in meters(m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey^a, should be less than the compliance level in each frequency range^b.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol.</p> 

NOTE 1: At 80MHz, 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

^a. Field strengths from fixed transmitters, such as base stations for radios, 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 Model iCTmotor is used exceeds the applicable RF compliance level above, the Model iCTmotor should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Model iCTmotor

^b. Over the frequency range 150KHz to 80MHz, field strengths should be less than 3V/m.

13. Electromagnetic compatibility

13.4 Recommended separation distances between portable and mobile RF communications equipment and the Model iCTmotor:

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

Rated maximum output power of transmitter (Watts)	Separation Distance according to frequency of transmitter (Meters)		
	150kHz to 80MHz $d = 1,2\sqrt{P}$	80MHz to 800MHz $d = 1,2\sqrt{P}$	800MHz to 2.5GHz $d = 2,3\sqrt{P}$
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
100	12	12	23

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) according to the transmitter manufacturer.

NOTE 1 At 80MHz and 800MHz, 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.

13. Electromagnetic compatibility

Dentium iCTmotor(WH-1), a dental engine, is designed in accordance with the medical device regulation, and is made and inspected under a strict quality control system. Dentium Co., Ltd. warrants that this warranty conforms with the international warranty regulation of the consumer protection act.

1) Warranty Information.

- 1) Dentium Co., Ltd warrants to the original purchaser that Dentium iCT and accessories are free from defects in material and workmanship under normal use and service for the period commencing upon the date of purchase and continuing for the specified period of time of 1 year.
- 2) This limited warranty is conditional upon the proper use of the product by the purchaser. During the applicable warranty period, Dentium Co., Ltd will repair or replace any defective component part of the product without charge to the purchaser. However, if Dentium Co., Ltd determines that the product is not covered by this limited warranty, then the purchaser must pay all parts, shipping and labor charges for the repair.
- 3) Upon your purchase, please fill out the following form and send it to the following fax number
+82-2-567-9578
- 4) When you make any claim under this warranty, it is essential that you present the warranty form to the manufacturer.
- 5) Product life of this device is 3-year.

2) This Limited Warranty does not cover, and repair expenses will be billed for

- defects or damage from accident, misuse, abnormal use, abnormal conditions, improper storage.
- defects or damage from external causes such as collision with an object, or from fire, flooding, sand, dirt, windstorm, lightening, earthquake, or exposure to weather conditions.
- defects or damage from improper testing, operation, maintenance, installation, service or adjustment not furnished or approved by Dentium Co., Ltd.
- defects or damage caused from ignorance of warning indications in this IFU (Instruction For Use)

Product	iCTmotor(WH-1)	Customer information (Please fill out the form upon purchase)	
Purchased date		Dentistry	
Manufactured date		Address	
Lot number			
Warranty Period	1 year	Phone number	

