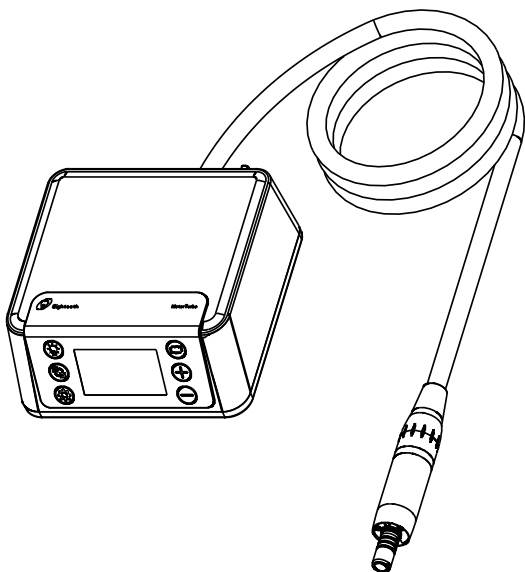


MotorTurbo



Dental low-voltage Electrical Motor

USER MANUAL

Changzhou Sifary Medical Technology Co., Ltd.

P/N: IFU- 6435004

Version: S01

Issued: Oct.15,2021

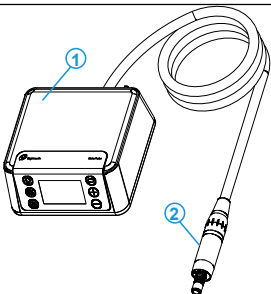
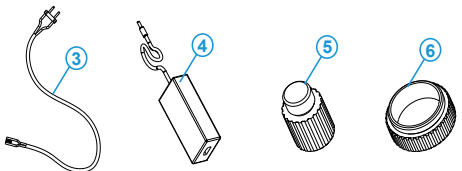
Size:87mm X 180mm

Content




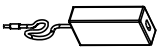



1. Scope of MotorTurbo	4
1.1 Parts Identification	4
1.2 Components and Accessories	4
2. Symbols used in the User Manual	5
3. Before Use	6
3.1 Intended Use	6
3.2 Contraindications	6
4. Install and disassemble the MotorTurbo	8
4.1 Connect the host	8
4.2 Installation and removal of motor	8
4.3 Installation and removal of handpiece	9
5. Use Interface	10
5.1 Host operation panel	10
5.2 Screen display	10
5.3 Terms and definition	11
6. Setting	12
6.1 Set mode parameter	12
7. Operation	14
8. Cleaning, Disinfection and Sterilization	15
8.1 Foreword	15
8.2 General recommendations	15
8.3 Autoclavable Components	15
8.4 Disinfection Components	19
9. Error warnings	20
10. Troubleshooting	21
11. Technical Data	22
12. EMC Tables	23
13. Warranty	29
14. Statement	30

1. Scope of MotorTurbo




















1.1 Parts Identification

	<p>① Host</p> <p>② Motor</p> <p>③ Power cable</p> <p>④ Adapter</p> <p>⑤ Motor disinfection front plug</p> <p>⑥ Motor disinfection back plug</p>
	<p>Note: This product does not contain Contra-angle handpiece</p>

1.2 Components and Accessories

<p>Host (1pcs)</p> 	<p>Motor (1pcs)</p> 	<p>Power cable (1pcs)</p> 
<p>Power Adapter (1pcs)</p> 	<p>Motor disinfection front plug (1pcs)</p> 	<p>Motor disinfection back plug(1pcs)</p> 
<p>O-ring (3pcs)</p> 	<p>Warranty card (1pcs)</p>	<p>USER MANUAL (1pcs)</p>
<p>Certificate (1pcs)</p>	<p>/</p>	<p>/</p>

2. Symbols used in the User Manual

 WARNING	If the instructions are not followed properly, operation may lead to hazards for the product or the user/patient.
 NOTE	Additional information, explanation of operation and performance.
	Serial number
	Catalogue number
	Manufacturer
	Date of manufacture
	Batch number
	Safety class II device
	Type B applied part
	Direct current
	Dispose of in accordance with the WEEE directive
	Keep dry
	Sterilizable in a steam sterilizer (autoclave) at the temperature specified
	Temperature limitation
	Relative humidity limitation
	Atmospheric pressure limitation
	Manufacturer's LOGO
	Consult instructions for use
	Washer-disinfector for thermal disinfection

3. Before Use

3.1 Intended Use

Use to provide the driving force for dental handpieces for dental surgery.

This device must only be used in hospital environments, clinics or dental offices by qualified dental personnel and not used in the oxygen-rich environment.

3.2 Contraindications

The MotorTurbo is contraindicated in cases where patient/user carry medical implants such as pace makers or cochlear implants etc.

Do not use the device for implants or other non-endodontic dental procedures.

Safety and effectiveness have not been established in pregnant women and children.



WARNING

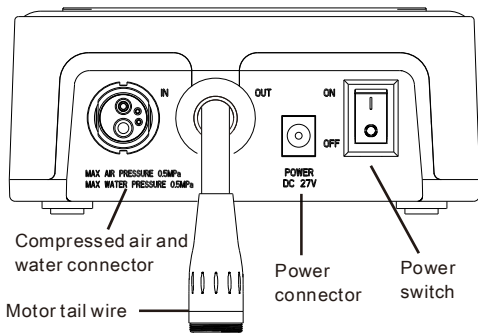
Read the following warnings before use:

1. The device must not be placed in humid surroundings or anywhere where it can come into contact with any type of liquids.
2. Do not expose the device to direct or indirect heat sources. The device must be operated and stored in a safe environment.
3. Do not use the equipment in the presence of free oxygen, anesthetic gas or combustible materials. The equipment must be operated, used and stored in a safe environment.
4. The device requires special precautions with regard to electromagnetic compatibility (EMC) and must be installed and operated in strict compliance with the EMC information. In particular, do not use the device in the vicinity of fluorescent lamps, radio transmitters, remote controls and do not use this system near the active Surgical Equipment and the RF shielded room of an ME SYSTEM for magnetic resonance imaging, where the intensity of EM DISTURBANCES is high. Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the MotorTurbo, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.
5. Please do not use or store this equipment at high temperature. Please pay attention to the use and storage conditions.
6. Never open or repair the device yourself, otherwise, void the warranty.

7. If irregularities occur in the device during treatment, switch it off. Contact the agency.
8. Please use the original power adapter.
9. Do not dismount the motor or contra angle during the operation of the main engine, otherwise the contra angle and motor will be damaged.
10. Turn off the power switch After each use.
11. Heavy hit, such as falling , will cause damage to the dental low-voltage electric motor.
12. Do not use accessories from other companies, otherwise the product may be damaged. Our company will not be responsible for any problems with the use of accessories outside of our company.

4. Install and disassemble the MotorTurbo

4.1 Connect the host



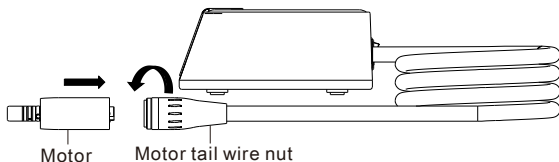
Open the package, please make sure if the product contains all accessories according to the packing list, and place the host on a stable surface.

Connect the Compressed air and water connector to the handpiece four-hole connector of dental unit, and tighten the nut.

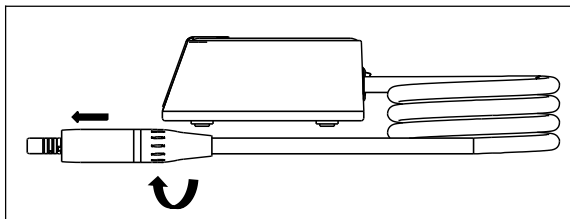
Connect the power adapter to the power connector, and connect the power cable to power adapter, then connect the power cable plug into a power source that meets the requirements (refer to 11. Technical Specifications).

4.2 Installation and removal of motor

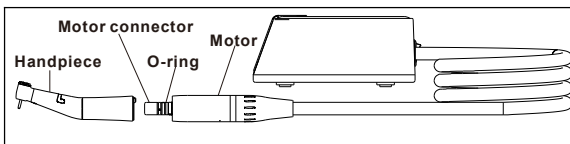
Motor installation: align the motor tail wire nut with the motor, and then tighten the motor tail wire nut.



Motor removal: Unscrew and separate the motor tail line nut, and gently disassemble the motor.



4.3 Installation and removal of handpiece



Align the dental handpiece positioning block and the motor groove, insert the motor connector directly into the handpiece, and can hear a "click" sound, indicate a successful connection.

When remove the handpiece, pull the dental handpiece parallel from the motor.

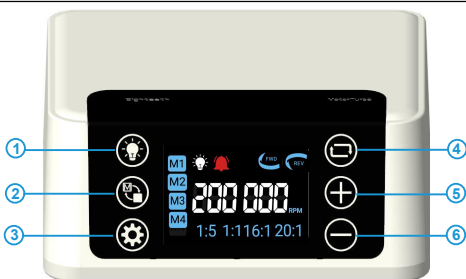


WARNING

1. Before install the handpiece, make sure that the O-ring on the motor connector is lubricated. If there is no lubricant, please spray lubricant(special lubricant for the handpiece) to ensure that the O-ring is lubricated.
- 2.If the O-ring is severely worn or damaged, please replace it with a new one to prevent water and air leakage.
- 3.When assemble O-ring, first assemble the outer O-ring, and then assemble the inner O-ring in sequence.
- 4.After connecting the handpiece to the motor, gently pull the handpiece to ensure that it is firmly installed.

5. Use Interface

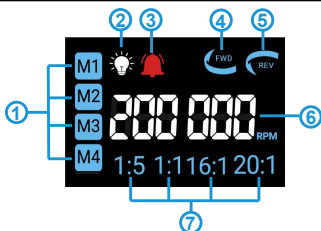
5.1 Host operation panel



There are 6 touch buttons on the host operation panel , their functions and uses are as follows:

- ① **LED light button** : shortly press to switch the motor LED light state
- ② **Working mode button** : Shortly press to switch working mode (M1-M4)
- ③ **Handpiece transmission ratio button** : long press for 2 to 3 seconds to set the handpiece transmission ratio in each working mode
- ④ **Rotation direction button**: short press to switch the motor forward/reverse (the host will have a continuous and slow "di, di" sound when reversing)
- ⑤ **Rotation speed increase button**: increase the motor output speed, short press for a single step, along press for rapid adjustment
- ⑥ **Speed reduction button**: Reduce the motor output speed, short press for a single step, along press for rapid adjustment

5.2 Screen display



The picture shows the host screen display interface, the meaning of each symbol is as follows:

- ① **working mode**: There are four working modes for users to choose

(M1, M2, M3, M4). Users can set four common working modes according to their habits. The speed, handpiece transmission ratio, rotation direction and LED status of each working mode can be set individually. It can save automatically after each setting completed. And when open the machine next time, the working mode will be set as last shutdown.

② **LED state** : There are three states: off, half-light, and high-light. The state of the LED light will be displayed as the high-light state by default each time it is turned on;

③ **Fault light**: when the fault light is on, it indicates that the machine is malfunctioning. At this time, you need to check the status of the machine. The fault light is off under normal conditions.

④ **Motor forward**: indicates that the motor is rotating forward in the current working mode ;

⑤ **Motor reversal**: indicates the motor is reversing in the current working mode ;

⑥ **Dental handpiece output speed**: indicates the current output speed of the dental handpiece. The range of rotation speeds that can be set for dental handpiece with different transmission ratios is different.

⑦ **Handpiece transmission ratio**: indicates the gear transmission ratio of the currently driven dental handpiece. There are four kinds handpiece transmission ratios (1:5, 1:1, 16:1, 20:1), please select the corresponding parameters according to the handpiece transmission ratio (make sure that the handpiece transmission ratio is consistent with the set handpiece transmission ratio), to avoid damaging the dental handpiece

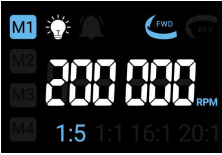






5.3 Terms and definition

Fwd/Fw	Forward (Clockwise rotation)
Rev/Rv	Reverse (Counter clockwise rotation)
RPM	Revolutions Per minute
Working mode	Such as M1-M4
Handpiece transmission ratio	The gear transmission ratio of the handpiece, such as: 1:5 for increasing speed, 1:1 for constant speed, 16:1 for deceleration, and 20:1 for deceleration.

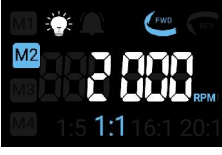






6. Setting

6.1 Set mode parameter

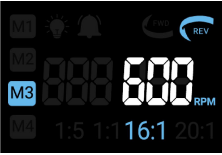






M1 mode parameter setting (connected to a handpiece with a transmission ratio of 1:5)

	Set the working mode M1	
	Set the transmission ratio 1:5	
	Set rotation direction FWD	
	Set LED light status highlighted	
	Set rotation 200000RPM (rotation range: 10000RPM - 200000RPM , step value is 5000RPM)	 

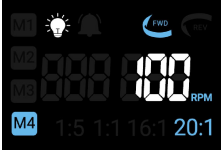






M2 mode parameter setting (connected to a handpiece with a transmission ratio of 1:1)

	Set the working mode M2	
	Set the transmission ratio 1:5	
	Set rotation direction FWD	
	Set LED light status highlighted	
	Set rotation 2000RPM (rotation range: 2000RPM - 40000RPM , step value is 1000RPM)	 

M3 mode parameter setting (connected to a handpiece with a transmission ratio of 16:1)

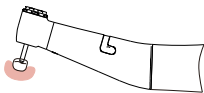
	Set the working mode M3	
	Set the transmission ratio 16:1	
	Set rotation direction REV	
	Set LED light status OFF	
	Set rotation 600RPM (rotation range: 100RPM - 2500RPM , step value is 100RPM)	 

M4 mode parameter setting (connected to a handpiece with a transmission ratio of 20:1)

	Set the working mode M4	
	Set the transmission ratio 20:1	
	Set rotation direction FWD	
	Set LED light status highlighted	
	Set rotation 100RPM (rotation range: 100RPM - 2000RPM , step value is 100RPM)	 

Note: The above is only an example of setting the parameters of each working mode. Users can set the transmission ratio, rotation direction, LED light status, speed under each working mode according to their own needs. The steps are the same as above.

7.Operation



Install the product correctly according to the product installation steps;

Turn on the power switch on the back of the host and enter the standby state;

In the standby state, electing a working mode and setting the parameters, start the dental low-voltage electric motor by stepping on the foot switch of dental treatment machine.



WARNING

1. Before using the device for the first time, make sure that foot switch of dental treatment machine calibration has been carried out.
2. Before using it for treatment, please try it outside the oral cavity to make sure that there is no problem with the function of the device.
3. Before starting the equipment, please confirm that the transmission ratio of the handpiece is the same as the transmission ratio of selected working mode , otherwise the handpiece may be damaged.
4. Check the handpiece if it spray normally. If the spray is abnormal, stop using it.
5. Do not press the button of the back cover of the handpiece during treatment, otherwise the equipment will be damaged, and even bur flying, which may hurt the patient.

8.Cleaning, Disinfection and Sterilization

8.1 Foreword


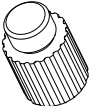

For hygiene and sanitary safety purpose, the components (motor, Motor disinfection front plug and Motor disinfection back plug) must be cleaned, disinfected and sterilized before each usage to prevent any contamination. This concerns the first use as well as the subsequent uses. Comply with your national guidelines, standards and requirements for cleaning, disinfection and sterilization. Reprocessing procedures have only limited implications to this dental device. The limitation of the numbers of reprocessing procedures is therefore determined by the function / wear of the device. From the processing side there is no maximum number of allowable reprocessing. The device should no longer be reused in case of signs of material degradation.

In case of damage the device should be reprocessed before sending back to the manufacturer for repair.

8.2 General recommendations

- The user is responsible for the sterility of the product for the first cycle and each further usage as well as for the usage of damaged or dirty instruments, where applicable after sterility.
- For your own safety, please wear personal protective equipment (gloves, safety glasses, etc.).
- Use only a disinfecting solution which is approved for its efficacy (VAH/DGHM-listing, CE marking, and FDA approval) and in accordance with the DFU of the disinfecting solution manufacturer.
- The water quality has to be convenient to the local regulations especially for the last rinsing step or with a washer-disinfector.
- Thoroughly clean and wash the components before autoclaving.
- Do not lubricate the motor.
- Do not clean the contra angle with an ultrasonic cleaning device.
- Do not use bleach or chloride disinfectant materials.

8.3 Autoclavable Components

Autoclavable Components		
<p>Motor</p> 	<p>Front plug</p> 	<p>Back plug</p> 

**WARNING**

1. Only the components above can be autoclaved.
2. Before first use and after each use, sterilize the above components.

Reprocessing Instructions

Preparation at the Point of Use: Disconnect the motor from the host. Refer to "Chapter 4-Installation and removal of motor" of this manual for disassembly instructions. Remove gross contaminations from the motor surface with a cloth, which dipped in cold water (<40°C) immediately after use. Don't use a fixating detergent or hot water (>40°C) as this can cause the fixation of residuals which may influence the result of the reprocessing process.

**WARNING**

Do not submerge the motor or wipe it with any of the following functional water (acidic electrolyzed water, strong alkaline solution, or ozone water), medical agents (glutaral, etc.), or any other special types of water or commercial cleaning liquids. Such liquids may result in metal corrosion and adhesion of the residual medical agents to the components.

Do not rinse the motor with water, to prevent water from entering the motor

Transportation:

Safe storage and transportation to the reprocess- ing area to avoid any damage and contaminate on to the environment.

Pre-Cleaning:

Wipe the motor surface with cloth dipped in clean water

Do a manual pre-cleaning, until the components are visually clean.

Cleaning:

To prevent water from entering the motor, manual cleaning is recommended.

More than 5 times wipe the motor surface with a soft cloth, that is dipped in clean water

**WARNING**

1. Do not rinse the motor with water, to prevent water from entering the motor
2. Do not submerge motor with any liquid.

Disinfection:

Automated Thermal Disinfection in disinfector under consideration of national requirements in regards to A0 value (see EN ISO 15883).

A disinfection cycle of 5 min disinfection at 93°C has been validated for the device to achieve an A0 value of 3000.

After manual cleaning, the instruments should be automated disinfected or sterilized immediately. A manual disinfection is not recommended.

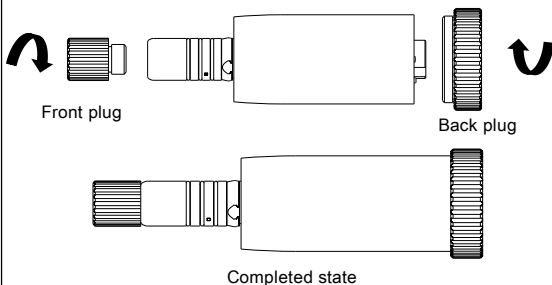
Drying:

Automated Drying:

Drying of outside of instrument through drying cycle of washer/disinfector. If needed, additional manual drying can be performed through lint free towel. Insufflate cavities of instruments by using sterile compressed air.

Disinfection plug installation:

To prevent the steam from entering the motor, please screw the disinfection front and back plug to motor two side before sterilization. Refer to the figure below:



WARNING

1. Be sure to screw the plug to the motor before sterilization, or it will reduce the life of motor

Packaging:

Pack the instruments in an appropriate packaging material for sterilization.



WARNING

1. Check the validity period of pouch given by the manufacturer to determine the shelf life.
2. Use pouches which resist to a temperature up to 141°C and in accordance with EN ISO 11607.
3. Do not lubricate the motor.
4. Check the disinfection plugs are screwed before packaging.

Sterilization:

Sterilization of instruments by applying a fractionated pre-vacuum

steam sterilization process (according to EN 285/EN 13060/EN ISO 17665) under consideration of the respective country requirements.
Minimum requirements: 3 min at 134 °C (in EU: 5 min at 134 °C)
Maximum sterilization temperature: 137°C

Flash sterilization is not allowed on lumen instruments!

**WARNING**

1. Use only approved autoclave devices according to EN 13060 or EN 285.
2. Use a validated sterilization procedure according to EN ISO 17665.
3. Respect the maintenance procedure of the autoclave device given by the manufacturer.
4. Use only this recommended sterilization procedure.
5. Control the efficiency (packaging integrity, no humidity, color change of sterilization indicators, physicochemical integrators, digital records of cycles parameters).
6. Wait for cooling before touching.

Storage:

Storage of sterilized instruments in a dry, clean and dust free environment at modest temperatures, refer to label and instructions for use.

**WARNING**

1. Sterility cannot be guaranteed if packaging is open, damaged or wet.
2. Check the packaging and the contra angle before using it (packaging integrity, no humidity and validity period).

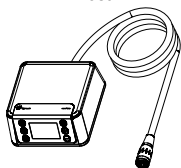
**NOTE**

The instructions provided above have been validated by the manufacturer of the medical device as being capable of preparing a medical device for use. It remains the responsibility of the processor to ensure that the processing, as actually performed using equipment, materials and personnel in the processing facility, achieves the desired result. This requires verification and/or validation and routine monitoring of the process. Likewise, any deviation by the processor from the instructions provided should be properly evaluated for effectiveness and potential adverse consequences.

8.4 Disinfection Components

Disinfection components

Host



Power cable



Adapter

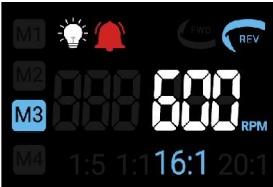


Wipe all the surfaces with a cloth lightly moistened with Ethanol for Disinfection (Ethanol 70 to 80vol%) at least 2min, repeat for 5 times.

**NOTE**

1. Do not use disinfectants other than alcohol for disinfection.
2. Do not use excessive alcohol to prevent alcohol from seeping into the parts and damaging the internal parts.
3. Disinfect before and after each use.

9.Error warnings



When the When input air source pressure more than 0.5MPa, the fault light will highlight. At this time, though operate the control foot switch, the host will not work. Adjust the input pressure to the range of 0.25-0.5MPa. If the fault light is still on, please contact your local dealer.

When the motor drive fails, the fault light will be on, please contact your local dealer for repair, do not disassemble the machine to repair it yourself.

10.Troubleshooting

When trouble is found, check the following points before contacting your distributor. If none of these are applicable or the trouble is not remedied even after action has been taken, the product may have failed. Contact your distributor.

Problem	Cause	Solution
Can not power on	Wrong power adapter is used	Please use the original power adapter
	The power adapter is not plugged into the socket	Please check the connection
	The socket is not energized	Please check the connection
The motor does not rotate	The compressed air pressure is too low or the air resource is not open	Check whether the air source is open and adjust the air pressure between 0.25MPa -0.5MPa
	Handpiece stuck	Pull out the handpiece and check whether the motor rotates. If it can rotate normally, please clean or repair the handpiece
	The control foot switch of dental treatment machine has problem	Check whether the control foot switch can control the water and air source of the dental treatment machine

11. Technical Data

Manufacturer	Changzhou Sifary Medical Technology Co., Ltd
Model	MotorTurbo
Power adapter input	AC 100 ~ 240V , 50/60Hz 1.5A
Power adapter output	27V $\overline{\text{---}}$ 2.5A
Cooling air flow	$\leq 40\text{L/min}$ (0.25MPa-0.5MPa)
Spray air flow	$\geq 1.5\text{L/min}$ (0.25MPa-0.5MPa)
Spray water flow	$\geq 50\text{mL/min}$ (0.2MPa-0.5MPa)
Frequency	50/60Hz , $\pm 1\text{Hz}$
Speed range	2000-40000RPM , $\pm 10\%$
Torque	$> 1\text{N}\cdot\text{cm}$
Handpiece connector type	Comply with YY 1012:2004 handpiece requirements
Light	White LED
Type of protection against electrical shock	Class II and internally powered equipment
Applied part	B
Operation mode	Intermittent operation, working for 5 minutes / stopping for 2 minutes
Ingress Protection	IPX0
Operation conditions	Use: in enclosed spaces Ambient temperature: $5^{\circ}\text{C} \sim 40^{\circ}\text{C}$ Relative humidity: $< 80\%$ Operating altitude $< 3000\text{m}$ above sea level
Transport and storage conditions	Ambient temperature: $-20^{\circ}\text{C} \sim +55^{\circ}\text{C}$ Relative humidity: $20\% \sim 80\%$ Atmospheric pressure: $70\text{kPa} \sim 106\text{kPa}$

12.EMC Tables

Guidance and manufacturer's declaration - electromagnetic emissions			
The MotorTurbo is intended for use in the electromagnetic environment specified below. The customer or the user of the MotorTurbo should assure that it is used in such an environment.			
Emissions test	Compliance	Electromagnetic environment guidance	
RF emissions CISPR 11	Group 1	The MotorTurbo 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.	
RF emissions CISPR 11	Class B	The MotorTurbo is suitable for use in all establishments, including domestic establishments and those directly connected to the public low voltage power supply network that supplies buildings used for domestic purposes.	
Harmonic emissions IEC61000-3-2	Class A		
Voltage fluctuations/flicker emissions IEC 61000-3-3	Complies		

Guidance and manufacturer's declaration – electromagnetic immunity			
The MotorTurbo is intended for use in the electromagnetic environment specified below. The customer or the user of the MotorTurbo should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance

Electrostatic discharge (ESD) IEC 61000-4-2	+/- 8 kV contact +/- 2 kV, +/- 4 kV, +/- 8 kV, +/- 15 kV air	+/- 8 kV contact +/- 2 kV, +/- 4 kV, +/- 8 kV, +/- 15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transients/bursts IEC 61000-4-4	± 2 kV 100 kHz repetition frequency	± 2 kV 100 kHz repetition frequency	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	Line to line: ± 0.5 kV, ± 1 kV	Line to line: ± 0.5 kV, ± 1 kV	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips IEC 61000-4-11	0% UT; 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315° 0% UT; 1 cycle and 70% UT; 25/30 cycles sine phase at 0°	0% UT; 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315° 0% UT; 1 cycle and 70% UT; 25/30 cycles sine phase at 0°	Mains power quality should be that of a typical commercial or hospital environment. If the user of devices require continued operation during power mains interruptions, it is recommended that devices be powered from an
Voltage interruptions IEC 61000-4-11	0% UT; 250/300 cycle	0% UT; 250/300 cycle	

			uninterruptible power supply or a battery
Rated Power frequency magnetic field IEC 61000-4-8	30 A/m 50Hz or 60Hz	30 A/m 50Hz or 60Hz	Power frequency magnetic field should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Note: UT: rated voltage(s); E.g. 25/30 cycles means 25 cycles at 50Hz or 30 cycles at 60Hz			

Guidance and manufacturer's declaration – electromagnetic immunity

The **MotorTurbo** is intended for use in the electromagnetic environment specified below. The customer or the user of the **MotorTurbo** should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted disturbances induced by RF fields IEC 61000-4-6	3 V 0.15 MHz – 80 MHz, 6 V in ISM bands between 0.15 MHz and 80 MHz, 80 % AM at 1 kHz	3 V	Portable and mobile RF communications equipment should be used no closer to any part of the MotorTurbo , including cables, than the recommended separation distance calculated from the equation applicable to the frequency
Radiated RF EM fields IEC 61000-4-3	3 V/m, 80 MHz – 2,7 GHz, 80 % AM at 1 kHz	3V/m	
Proximity fields from RF	See the RF wireless	Complies	

wireless communicate-on equipment IEC 61000-4-3	communicate-on equipment table in "Recommended minimum separation distances"		of the transmitter. Recommended minimum separation distances See the RF wireless communication equipment table in "Recommended minimum separation distances"
----------------------------------------------------------	------------------------------------------------------------------------------------------------	--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Recommended minimum separation distances

Nowadays, many RF wireless equipments have been used in various healthcare locations where medical equipment and/or systems are used. When they are used in close proximity to medical equipment and/or systems, the medical equipment and/or systems' basic safety and essential performance may be affected. The **MotorTurbo** has been tested with the immunity test level in the below table and meet the related requirements of IEC 60601-1-2:2014. The customer and/or user should help keep a minimum distance between RF wireless communications equipments and the **MotorTurbo** as recommended below.

Test frequency (MHz)	Band (MHz)	Service	Modulation	Maximum power (W)	Distance (m)	Immunity test level (V/m)
385	380-390	TETRA 400	Pulse modulation 18Hz	1.8	0.3	27
450	430-470	GMRS 460 FRS 460	FM ± 5 kHz deviation	2	0.3	28

			1 kHz sine			
710	704-787	LTE Band 13, 17	Pulse modu- lation 217Hz	0.2	0.3	9
745						
780						
810	800-960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modu- lation 18Hz	2	0.3	28
870						
930						
1720	1700-1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modu- lation 217Hz	2	0.3	28
1845						
1970						
2450	2400-2570	Blueto oth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modu- lation 217Hz	2	0.3	28
5240	5100-5800	WLAN 802.11 a/n	Pulse modu- lation 217Hz	0.2	0.3	9
5500						
5785						



WARNING

1. Use of accessories and cables other than those specified or provided by the manufacturer of **MotorTurbo** could result in increased electromagnetic emissions or decreased electromagnetic immunity of **MotorTurbo** and result in improper operation.

Cable information:

Cable Name	Cable Length (m)	Shielded or not	Remark
Adapter output Cable	1	No	/
Power cable	1.5	No	/
Motor tail cable	2	No	/

2. Use of **MotorTurbo** adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, **MotorTurbo** and the other equipment should be observed to verify that they are operating normally.

13.Warranty

1. **MotorTurbo** is warranted against manufacturing errors and defects in materials, and the warranty period is 12 months starting from the day of delivery to the customer.
2. **MotorTurbo** should be repaired by the equipment technology department of Changzhou Sifary Medical Technology Co., Ltd. or maintenance service partners authorized by Changzhou Sifary Medical Technology Co., Ltd. Do not provide circuit diagram, bill of material, legends, calibration rules, and other maintenance materials to other organizations.
3. Should the quality assurance complaint be reasonable, Changzhou Sifary Medical Technology Co., Ltd. Equipment Technology Department or maintenance service partner authorized by Changzhou Sifary Medical Technology Co., Ltd shall provide repairing service as soon as possible.
4. Should the damage be proved to be caused by the user's negligence in daily maintenance, warranty is then voided.
5. Changzhou Sifary Medical Technology Co., Ltd reserves the right to analyze and determine the cause of any problem.

14.Statement

Service Life

The service life of **MotorTurbo** series products is 5 years.

Maintenance

MANUFACTURER will provide circuit diagrams, component part lists, descriptions, calibration instructions to assist to SERVICE PERSONNEL in parts repair.

Disposal

The package should be recycled. Metal parts of the device are disposed as scrap metal. Synthetic materials, electrical components, and printed circuit boards are disposed as electrical scrap. Please deal with them according to the local environmental protection laws and regulation.

Rights

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



Changzhou Sifary Medical Technology Co., Ltd

Add: NO.99, Qingyang Road, Xuejia County, Xinbei District,
Changzhou City, 213000 Jiangsu, P.R. China

Tel: +86-0519-85962691

Fax: +86-0519-85962691

Email: ivy@sifary.com

Web: www.sifary.com