



Dental Turbine Handpiece Instruction Manual

Please read the manual carefully before use

GUILIN WOODPECKER MEDICAL INSTRUMENT CO., LTD.

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1 Product introduction

Intended use: For dental clamping of cutting tools for molar surgery.

1.1 Product profile

Dental turbine handpiece is driven by compressed gas of high-speed rotation, which stimulating the specific features of the bur, drilling, grinding and other operations on teeth. Main characteristics:

- a.Variety of head size design, suitable for the requirements of different therapeutic areas.
- b.Newest designed handpiece head angle, better operation visual and angle, improve working efficiency.
- c.High precision of cartridge, low radial beat when highly running, low noise, high efficiency of cutting.
- d.Newest handpiece design, easy cleaning.
- e.Handpiece and bur key can be autoclaved with high temperature.

1.2 Type

HL11 -M4, HL11-B2, HP11-M4, HP11-B2, HP13-M4,

HP13-B2, HP33-M4, HP33-B2, HP33Q-M4, HP33F-M4.

1.3 Components

The components of the equipment are listed in the packing list.

1.4 Structure and components

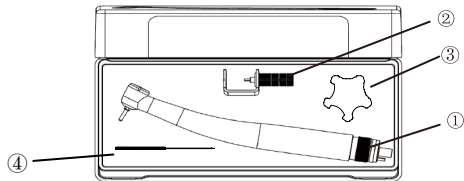
1.4.1 This equipment is mainly composed by cartridge, head and handpiece.

1.4.2 Picture of handpiece and main spare parts

Note: ①.handpiece ②.Bur key (only for the wrench type) ③.Cap spanner ④.Cleaning needle

1.5 Scope of application .

Using the dental gripping high speed bur for drilling, grinding and other surgery.



picture 1

1.6 Contraindication

1.6.1 The homophile patients are forbidden to use this equipment.

1.6.2 The patients with heart pacemaker are forbidden to use this equipment.

1.6.3 The doctors with heart pacemaker are forbidden to use this equipment.

1.6.4 The heart disease patient, pregnant woman and children should be cautious to use this equipment.

1.7 Cautions

1.7.1 Before using this equipment, please read every article of this instruction carefully.

1.7.2 This equipment is special manufactured for dental prevention and treatment, could not be used for other purpose.

1.7.3 This equipment is high speed rotating handpiece, please be careful when operating.

1.7.4 This equipment could only be used by professional dentists.

1.7.5 It is prohibited to bump and fall when operating.

1.7.6 Do please lock the bur and back cap before operation.

1.8 Main technical specifications

Type	Air pressure (kgf/cm ²)	speed (r/min)	Noise(dB)	Chuck type	Head size	Water spray	Remark
HL11-M4 HL11-B2	2.0-2.2	370000~450000	<70	Wrench type	standard	single	—
HP11-M4 HP11-B2	2.0-2.2	370000~450000	<70	Push-button	standard	single	—
HP13-M4 HP13-B2	2.5-2.7	320000~400000	<70	Push-button	super	single	—

Type	Air pressure (kgf/cm ²)	speed (r/min)	Noise(dB)	Chuck type	Head size	Water spray	Remark
HP33-M4 HP33-B2	2.5-2.7	280000~400000	<70	Push-button	super	triple	—
HP33Q-M4	2.5-2.7	330000~400000	<70	Push-button	super	triple	With Kavo connector
HP33F-M4	2.5-2.7	330000~400000	<70	Push-button	super	triple	optical fiber

Note: 1. "B2" means two-hole connector, "M4" means four-hole connector.

2. The gas consumption of each model in recommended operating pressure is $\leq 35\text{L}/\text{min}$.

3. When water pressure is $0.05\sim 0.20\text{MPa}$ ($0.5\sim 2.0\text{kgf}/\text{cm}^2$), flow is greater than $50\text{mL}/\text{min}$.

4. When air pressure is $0.15\sim 0.25\text{MPa}$ ($1.5\sim 2.5\text{kgf}/\text{cm}^2$)~flow is greater than $1.5\text{NL}/\text{min}$.

1.9 Working condition

1.9.1 Environment temperature: $+5^{\circ}\text{C} \sim +40^{\circ}\text{C}$

1.9.2 Relative humidity: $30\% \sim 75\%$

1.9.3 Atmospheric pressure: $70\text{kPa} \sim 106\text{kPa}$

2 Manual instruction

2.1 Regarding the bur

2.1.1 Do not use disqualification bur.

2.1.2 Diameter handpiece of bur is $\Phi 1.59\text{-}\Phi 1.60\text{mm}$, in conformity with ISO international standard.

2.1.3 Do not use the bur which is bended, defect, injured.

2.1.4 Please keep the bur clean. The dirt will stock in the hole of spring of handpiece, result in loosing and abnormal wear of the chuck.

2.1.5 Do not use short bur (mini bur) on standard handpiece, otherwise the bur will drop off because of carelessness.

2.1.6 Do not use long bur on mini handpiece, otherwise the bearing will damage because of overload of head.

2.1.7 Before operation, know well the rotation speed and specification whether in conformity with this handpiece.

2.2 Install and uninstall of the bur (wrench type handpiece)

2.2.1 Pull the head of bur key back, make it cover the head of handpiece. (picture 2)

2.2.2 Forward the bur key, make the tip into the hole and lock, anti-clockwise 1/4 rotation(avoid over rotation), then bur is unlock, take it out.

2.2.3 While installing the bur, clockwise rotation, screw tight. (Picture 3)

2.3 Install and uninstall of the bur. (push-botton type handpiece): press the back cup, you can get

out the bur (picture 4)



picture 2



picture 3



picture 4

2.4 Enter the bur into the end, otherwise the bur will drop off, and lead to unbalance load of the cartridge and accelerated the damage of the bearing.

2.5 Handpiece and handpiece tube connection

2.5.1 Handpiece and handpiece tube connection(without quick connector): connect the inlet tube, water

inlet, turn back tube and atomization tube of handpiece interface to the handpiece tube. To tighten the thread direction of rotation

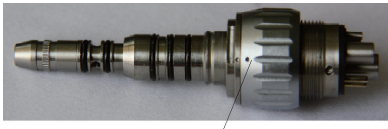
2.5.2 Handpiece and handpiece tube connection(with quick connector): connect the inlet tube, water inlet, turn back tube and atomization tube of quick connector interface to the handpiece tube. Fix the quick connector with the wrench, To tighten the thread direction of rotation

2.5.3 Installation and use for quick connector.

A) Remove the quick connector, clench the handpiece and quick connector, and pull back

B) Install the quick connector, press the quick connector to the handpiece, check the handpiece before operating in the patient's month.

C) Control of atomization: two transferred to the same straight line is the largest, Adjust to the right the water flow slowly decreases until stop.



Water flow reaches the maximum when the two points in the same line

2.6 Cautions

2.6.1 The operator of dental handpiece must be with professional training, and familiar with the relative usage information.

2.6.2 Gripping part of bur could not be too short, otherwise it will lead to unbalance load of the cartridge and accelerated the damage of the bearing.

2.6.3 Don't operate the handpiece when there is no bur or standard stick on it, otherwise the head of chuck will be threw out because of the anti-force, and damage the bearing.

2.6.4 Please don't press the cover until the handpiece is totally stopped.

2.6.5 Please do the pre-operation inspection outside patients oral before operating. If there is abnormal phenomenon like loose, vibrating, noisy or fever, please stop it and contact the manufacturer or its authorized maintenance center.

2.6.6 Damaged handpiece cartridge might probably cause high noisy, and damage the hearing if long-time use, please replace it timely.

2.6.7 Please use the standard bur, handpiece size is 1.59-1.60mm, should in conformity with the third rule of ISO1797 standard, max length is 25mm, in conformity with ISO6360-1 standard. It might lead to the accident like sudden snapped, throw out etc., if the bur is bended, flaw, variant, damage and inconformity, cause hurt and damage the handpiece.

2.6.8 Install the bur or the standard stick on the handpiece, even it is not in use.

2.6.9 Please don't install or un-install the bur or handpiece until the machine is totally stopped.

2.6.10 The pressure and flow of the air and water source must meet the requirement of this machine.

2.6.11 Use the dry, clean compressed air to make sure the working life of the handpiece, maintenance the air compressor, air and water filter system regularly to ensure the quality of compressed air and water. Use unfiltered water might lead to block of pipeline joint and earlier damage of atomizing.

2.6.12 This machine could not be used in easy exploded environment, such as anesthetic gas.

3 Cleaning, Disinfection and Sterilization

This Manual is only applicable to the reprocess of high speed turbine handpiece manufactured by Guilin Woodpecker Medical Instrument Co., Ltd.

Note:

1. Before use, please carefully read the Instruction Manual of handpiece.
2. Before first use, please must clean and sterilize the handpiece.

Warnings

The use of ultrasound cleaning device and strong cleaning and disinfection fluids (alkaline pH>9 or acid pH <5) can reduce the life span of products. The manufacturer takes no responsibility in such cases.

The products may not be exposed to temperature above 138 °C.

This device shall not be exposed to high temperature above 138 °C.

3.1 Processing limit

The products have been designed for a large number of sterilization cycles. The materials used in manufacture were selected accordingly. However with every renewed preparation for use, thermal and chemical stresses will result in ageing of the products. The allowed maximum times of sterilization for handpiece is 600 times. The allowed maximum times of sterilization for the bur key is 1000 times.

3.2 Initial processing

3.2.1 Processing principles

It is only possible to carry out effective sterilization after the completion of effective cleaning and disinfection. Please ensure that, as part of your responsibility for the sterility of products during use, only sufficiently validated equipment and product-specific procedures are used for cleaning/disinfection and sterilization, and that the validated parameters are adhered to during every cycle.

Please also observe the applicable legal requirements in your country as well as the hygiene regulations of the hospital or clinic, especially with regard to the additional requirements for the inactivation of prions.

3.2.2 Post-operative treatment

The post-operative treatment must be carried out immediately, no later than 30 minutes after the completion of the operation. The steps are as follows:

1. Remove the handpiece from the comprehensive dental treatment instrument, and rinse away the dirt on

- the surface of handpiece with pure water (or distilled water/deionized water);
2. Dry the handpiece with a clean, soft cloth and place it in a clean tray.

Cautions

1. The water used here must be pure water, distilled water or deionized water.

3.2.3 Preparation before cleaning

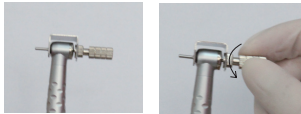
Steps:

Tools: Bur key(only for the wrench type), tray, soft brush, clean and dry soft cloth.

1. Use the bur key provided by Guilin Woodpecker Medical Instrument Co., Ltd to remove the bur from handpiece and put it into the tray.
2. Use a clean soft brush to carefully brush the screw thread, head and back cover of the handpiece until the dirt on surface is not visible. Then use soft cloth to dry the handpiece and accessories and put them into a clean tray. The cleaning agent can be pure water, distilled water or deionized water.

Disassembling steps:

For the wrench type: install the bur key into the head and than turn the handle ,get the bur out.



For the push button type: one hand press the back cover,another hand pull the bur out.



3.3 Cleaning

The cleaning should be performed no later than 24 hours after the operation.

The cleaning can be divided into automated cleaning and manual cleaning. Automated cleaning is preferred if conditions permit.

3.3.1 Automated cleaning

- The cleaner is proved to be valid by CE certification in accordance with EN ISO 15883.
- There should be a flushing connector connected to the inner cavity of the product.
- The cleaning procedure is suitable for the handle, the flushing period is sufficient, and ultrasonic cleaning is prohibited.

It is recommended to use a washer-disinfector in accordance with EN ISO 15883. For the specific procedure, please refer to the automated disinfection section in the next section "Disinfection".

Precautions:

1. The cleaning agent does not have to be pure water. It can be distilled water, deionized water or multi-enzyme. But please ensure that the selected cleaning agent is compatible with the handpiece.
2. In washing stage, the water temperature should not exceed 45 °C, otherwise the protein will solidify and it would be difficult to remove.
3. After cleaning, the chemical residue should be less than 10 mg/L.

3.4 Disinfection

Disinfection must be performed no later than 2 hours after the cleaning phase. Automated disinfection is preferred if conditions permit.

Automated disinfection-Washer-disinfector

The washer-disinfector is proved to be valid by CE certification in accordance with EN ISO 15883. Use high temperature disinfection function. The temperature does not exceed 134 ° C, and the disinfection under the temperature cannot exceed 20 minutes.

The disinfection cycle is in accordance with the disinfection cycle in EN ISO 15883.

Cleaning and disinfecting steps by using Washer-disinfector

1. Carefully place the handpieces in the disinfection basket. Fastening of the handpieces if only permissible if they are freely moveable in the fixture. The handpieces are not permitted to make contact with one another.
2. Use a suitable rinsing adaptor, and connect the internal water lines to the rinsing connection of the washer-disinfector.
3. Start the program.
4. After the program is finished, remove the handpieces from the washer-disinfector, inspect (refer to section "Inspection and Maintenance") and packaging (refer to chapter "Packaging"). Dry the handpiece repeatedly if necessary (refer to section "Drying").

Precautions:

1. Before use, you must carefully read the operating instructions provided by the equipment manufacturer to familiarize yourself with the disinfection process and precautions.
2. With this equipment, cleaning, disinfection and drying will be carried out together.
3. Cleaning: (a) The cleaning procedure should be suitable for the handpiece to be treated. The flushing period should be sufficient (5-10 minutes). (b) In the washing stage, the water temperature should not exceed 45 °C, otherwise the protein will solidify and it is difficult to remove. (c) The solution used can be pure water, distilled water, deionized water or multi-enzyme solution, etc., and only freshly prepared solutions can be used. (d) During the use of cleaner, the concentration and time provided by manufacturer shall be obeyed. The used cleaner is neodisher MediZym (Dr. Weigert).
4. Disinfection: (a) Direct use after disinfection: temperature (> 90 degrees C), time (> 5 minutes) or A0 (> 3000), continue sterilization after disinfection and reuse: temperature (> 90 degrees C), time (> 1 minutes) or A0 (> 600) (b) The disinfection temperature used here is 93 degrees C, time is 2.5 minutes, A0 > 3000.

5. Only distilled or deionized water with a small amount of microorganisms (<10 cfu/ml) can be used for all rinsing steps. (For example, pure water that is in accordance with the European Pharmacopoeia or the United States Pharmacopoeia).
6. After cleaning and disinfection, the chemical residue should be less than 10 mg/L.
7. The air used for drying must be filtered by HEPA.
8. Regularly repair and inspect the disinfectant.

3.5 Drying

If your cleaning and disinfection process does not have an automatic drying function, dry it after cleaning and disinfection.

1. Spread a clean white paper (white cloth) on the flat table, point the handpiece against the white paper (white cloth), and then dry the handpiece with filtered dry compressed air (maximum pressure 3 bar). Until no liquid is sprayed onto the white paper (white cloth), the handpiece drying is completed.

2. It can also be dried directly in a medical drying cabinet (or oven). The recommended drying temperature is 80°C~120°C and the time should be 15~40 minutes.

Precautions:

1. The drying of product must be performed in a clean place.
2. The drying temperature should not exceed 138 °C;
3. The equipment used should be inspected and maintained regularly.

3.6 Inspection and maintenance

In this chapter, we only check the appearance of the handle.

1. Check the handpiece. If there is still visible stain on the handpiece after cleaning/disinfection, the entire cleaning/disinfection process must be repeated.
2. Check the handpiece. If it is obviously damaged, smashed, detached, corroded or bent, it must be scrapped and not allowed to continue to be used.

3. Check the handpiece. If the accessories are found to be damaged, please replace it before use. And the new accessories for replacement must be cleaned, disinfected and dried.
4. If the service time (number of times) of the handpiece reaches the specified service life (number of times), please replace it in time.

3.7 Injection

Oil lubrication of sterilized and dried products.

The nozzle of cleaning lubricant is aligned with the air intake hole at the end of the mobile phone to inject oil for 1-2 seconds.



3.8 Packaging

The disinfected and dried handpieces and their accessories are assembled and quickly packaged in a medical sterilization bag (or special holder, sterile box).

Precautions:

1. The package used conforms to ISO 11607;
2. It can withstand high temperature of 138 °C and has sufficient steam permeability;

3. The packaging environment and related tools must be cleaned regularly to ensure cleanliness and prevent the introduction of contaminants;
4. Avoid contact with parts of different metals when packaging.

3.9 Sterilization

Use only the following steam sterilization procedures (fractional pre-vacuum procedure*) for sterilization, and other sterilization procedures are prohibited:

1. The steam sterilizer complies with EN13060 or is certified according to EN 285 to comply with EN ISO 17665;
2. The highest sterilization temperature is 138 ° C;
3. The sterilization time is at least 4 minutes at a temperature of 132 ° C / 134 ° C and a pressure of 2.0 bar ~ 2.3 bars.
4. Allow a maximum sterilization time of 20 minutes at 134 °C.

Verification of the fundamental suitability of the products for effective steam sterilization was provided by a verified testing laboratory.

Precautions:

1. Only products that have been effectively cleaned and disinfected are allowed to be sterilized;
2. Before using the sterilizer for sterilization, read the Instruction Manual provided by the equipment manufacturer and follow the instructions.
3. Do not use hot air sterilization and radiation sterilization as this may result in damage to the product;
4. Please use the recommended sterilization procedures for sterilization. It is not recommended to sterilize with other sterilization procedures such as ethylene oxide, formaldehyde and low temperature plasma sterilization. The manufacturer assumes no responsibility for the procedures that have not been recommended. If you use the sterilization procedures that have not been recommended, please adhere to related effective standards and verify the suitability and effectiveness.

*Fractional pre-vacuum procedure = steam sterilization with repetitive pre-vacuum. The procedure used here is to perform steam sterilization through three pre-vacuums.

4 Maintenance

4.1 The handpiece should be filled oil to lubricate while after be used or before high-temperature sterilization or after every 30minutes continuing used.

Method of injection: take off the handpiece, align to the air intake of the handpiece, compress it and inject, keep the tanks uprights.

4.2 The replacement of the Cartridge (collet)

4.2.1 Take off the old cartridge

Insert a standard rod (included) to the hole of the cartridge chuck, then anticlockwise the cap by cap spanner, and you can take it off and disinfect it.

Push the standard rod with the direction of cartridge, then the cartridge can be taken off. (picture 5)

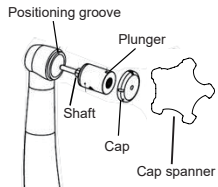
4.2.2 Install the new cartridge

Put the pin side of the cartridge into the head cavity of the handpiece, and align the plungers of the cartridge to the positioning groove of the head cavity, the press it gently. (picture 6)

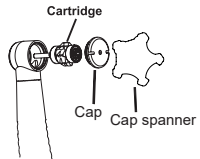
Put the pin side of the cartridge into the head cavity of the handpiece, and gently press it to the right position. Then align the cap and the thread of the handpiece's head, slowly screw the cap, and tighten it with cap spanner.(picture 7)

Notice

The thread of the cap and the head is extremely meticulous, please don't insert the wrench at the beginning, avoiding damage the thread.



picture 6



picture 7

5 Trouble shooting

Fault	Possible cause	Solutions
noisy, speed and cutting power is decreased significantly or the handpiece cannot rotate.	the bearing is damaged	replace the bearing
the handpiece does not spray	the spraying hole is blocked	clean the spraying hole.
the handpiece leaks	the O ring or the gasket is aging.	replace the old parts
voice is normal, speed is low	the air pressure is low.	calibrate the working air pressure

Fault	Possible cause	Solutions
cannot hold the bur, or the bur cannot be installed.	the bur is non-standard or the holder is damaged .	replace the bur.
the bur is swing, cutting power is weak.	the O ring of head is aging or the bearing is damaged.	replace the defective parts.
Poor atomization	The atomization water outlet and air outlet are blocked.	Use cleaning needle to clean.

If the trouble still can't be solved, please contact with the local distributors or our company.

6 Storage, transportation condition

6.1 Storage, transportation condition

6.1.1 Environment temperature: $-20^{\circ}\text{C}\sim+55^{\circ}\text{C}$

6.1.2 Relative temperature: 10%~93%

6.1.3 Atmosphere pressure: 70kPa~106kPa

6.2 This equipment should be stored in the pure environment of dry, away from acid, alkalis and other harmful chemicals and gas.

7 Environment protection

Please dispose according to the local laws.

8 After service

If the equipment can't work as normal since of the quality, please contact with the local distributors or our company.

9 Symbol instruction



Manufacturer



Date of manufacture



Follow Instructions for Use



Caution



Used indoor only



Temperature for storage $-20^{\circ}\text{C} \sim +50^{\circ}\text{C}$



Atmospheric pressure for storage
 $70\text{kPa} \sim 106\text{kPa}$



Do not run the handpiece when bur or bar is not tightened.



The product compliance the WEEE directive



Sterilizable up to the temperature specified



Humidity for storage $10\% \sim 93\%$



Do not exceed 0.25MPa ($2.5\text{kgf}/\text{cm}^2$) during operation.



Do not use disinfectant with acetone, chloride etc. Do not immerse the handpiece into disinfectant.



CE marked product



Lubricate the handpiece.

10. European authorized representative



MedNet EC-Rep GmbH
Borkstrasse 10 · 48163 Muenster · Germany

11 Special instruction

We reserve the rights to change the design of the equipment, the technique, fittings, the instruction manual and the content of the original packing list at any time without notice. All pictures are only for reference. The final interpretation rights belong to GUILIN WOODPECKER MEDICAL INSTRUMENT CO., LTD.



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