

Dental High Speed Air Turbine Handpiece

Please read this operation manual carefully and save for future reference.

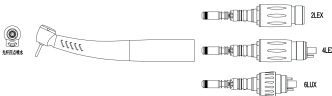
NO.19/12/2019 NKS4-Z35

I. Product

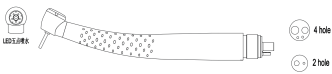
Dental high speed dental air turbine handpiece

II. Model

K9 - High speed fiber optic coupling handpiece series



X7 - High speed generator handpiece series



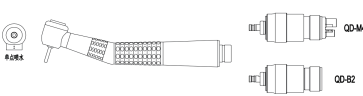
K1 - High speed push button 4 hole handpiece series



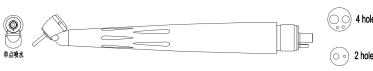
X3 - High speed wrench type 4 hole handpiece series



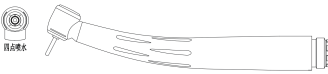
N8 - High speed coupling handpiece series



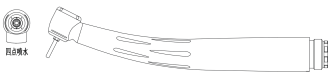
N5 - High speed 45° handpiece series



K6 - High speed push button 2 hole handpiece series



X2 - High speed wrench type 2 hole handpiece series



III. Parameter & Performance

	K9	K7	X3	X2	K1	K6	N8	N5
Head	Super torque (T) / Standard (S) / Mini (M)							Mini (M)
Angle	19.5-20°	20°						
Chuck type	Push button / Wrench type							
Spray	4 points spray							Single
Holes	M6	M4 / B2	M4	B2	M4	B2	M4 / B2	M4 / B2
Illumination	Fiber optic	LED	/	/	/	/	/	/
Voltage	3.0~3.2V DC	/	/	/	/	/	/	/
Body material	Copper with chromium plating or titanium plating							
Connection	Coupling	/	/	/	/	/	Coupling	/
Bur size	φ1.59 ~ φ1.60mm × 16mm-21mm (diameter × length)							
Air pressure	0.20 ~ 0.25Mpa (M6/M4/B2)							
Speed	T: ≥300,000rpm; S: ≥360,000rpm; M: ≥400,000rpm							
Water supply	95 ml/min (250Kpa); 95 ml/min (300Kpa); 95 ml/min (400Kpa)							
Air consumption	42 NL/min (250Kpa); 51 NL/min (300Kpa); 72 NL/min (400Kpa)							

IV. Main Structure

Cartridge, body, couling

V. Application

This product is for dentists to use in diagnosis, treatment and operation.

VI. Intended Use

1. Please read the instructions seriously, and operate the handpiece accordingly.
2. High speed turbine handpieces are intended for removing carious material, excess filling material, cavity and crown reparation, finishing tooth preparations and restorations, root canal preparations and polishing teeth. This model is specialized applied for oral therapy, others should be fully forbidden.
3. Users' qualification: this product is only to be used by qualified and professional person. Improper use could cause damage to the handpiece, and cause injury to the patient etc. It is low-speed dental handpiece, safety is the first, be careful to use.

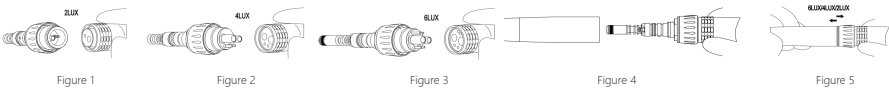
VII. Attention

1. This product is specially for dental drilling and polishing with high speed burs. Please don't use it for other purpose.
2. This high speed air turbine handpiece is not allowed to be operated in medical device which is not conform to the medical device directive.
3. Please test the product before operating. Stop using the product when any damage,abnormal noise or heating detected.
4. Check vibration, noise and overheating outside the patient's mouth before operting. If any abnormalities are detected, contact authorized local dealer for professional service.
5. Please stop using the handpiece when any abnormalities is detected during operation.
6. This product rotates with very high speed, please pay attention to safety, and do not touch a rotating bur.
7. Damaged cartridge may generate high level dB, and may cause damage to hearing.
8. Please use qualified burs. Do not use bent, worn, damaged or non-concentric burs.Otherwise, it may cause broken accident, and even injury.
9. Using unqualified burs will cause serious damage to cartridge.
10. Do not exceed the bur speed recommended by bur manufacturer.
11. Please keep the bur chuck clean, in order to avoid losing of chuck power or vibration cause by dirt.
12. Please keep the handpiece inside parts dry, in order to keep the product in good condition.
13. Do not replace burs before the handpiece is totally stopped.
14. Do not press the button when the handpiece is rotating.
15. Do not operate the handpiece without burs or tools, otherwise, serious damage will be caused.
16. Please avoid hitting or dropping the handpiece.

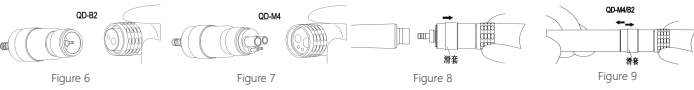
VIII. Connect and disconnect of handpiece coupler

1. Connection

- a. Screw the coupler(2 holes / 4 holes / 6 holes) to the handpiece tubing, insert the coupler to the handpiece directly and lock it. (e.g. Figure 1, Figure 2, Figure 3, Figure 4, Figure 5)



- b. Screw the 2 holes / 4 holes connector to the handpiece tubing, and then insert coupler to the handpiece, pull the sleeve backward first and push the coupler forward and lock it. (e.g. Figure 6, Figure 7, Figure 8, Figure 9).



2. Disconnection

- a. Pull the coupler out of the handpiece directly, or pull the sleeve backward first and then pull the coupler out of the handpiece. (e.g. Figure 4, Figure 7)

IX. Connect and disconnect of handpiece and tubing

1. Connection

Put the B2 / M4 handpiece into the corresponding tubing and screw it tightly.

2. Disconnection

Loose the screw and pull out the handpiece

Warning: Do not connect or disconnect the handpiece when it is rotating! handpiece must be fixed before operating.

X.Insert/Remove the burs

1. Push type

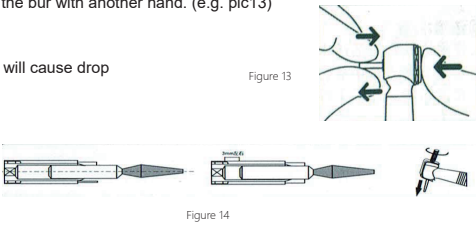
- a. Put the bur into the chuck hole (about 2-4mm), press the cap, and push the bur inside untill the end.
- b. Try to pull out the bur to check if it is fixed.
- c. Turn the bur with hand to check if it rotates well.
- d. While removing the bur, press the cap first, and then take out the bur with another hand. (e.g. pic13)

Warning:

1. Only use qualified burs.
2. Do not press the cap when handpiece is rotating, otherwise it will cause drop of bur or overheating to the cap!

2. key type

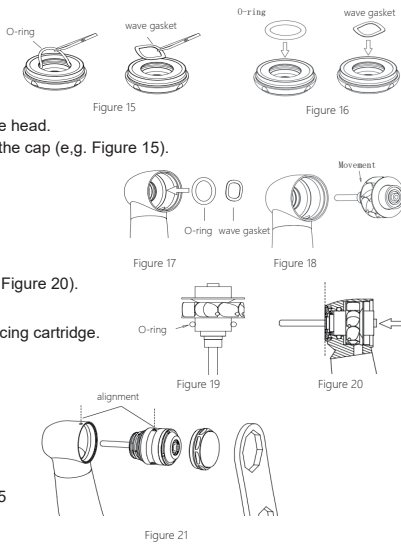
- a. Pull the handle of wrench backward, and fix the wrench to the handpiece head.
- b. Put the axle into the square hole of handpiece head, turn the handle clockwise to lock the bur, anti-clockwise to unlock the bur;
- c. please check the bur after locking it. (e.g. pic14)



XI.Cartridge replacement

1. Open cartridge

- a. Insert the testing bur inside.
- b. Unsrew the cap with cap wrench.
- c. Push the bur to take out the cartridge, O-ring and wave gasket from the head.
- d. Take out the O-ring with tweezers, and take out the wave gasket from the cap (e.g. Figure 15).
- e. Spray oil to the head and clean.
- f. Replace the new O-ring and wave gasket (e.g. Figure 16).
- g. Put the new O-ring and spring pad into head (e.g. Figure 17).
- h. Make sure the O-ring is put inside the head correctly (e.g. Figure 19).
- i. Put the cartridge into head carefully (e.g. Figure 18).
- j. Put the cartridge to the end, until the cartridge aline with the head (e.g. Figure 20).
- k. Screw the cap with wrench.



Attention: please take out the old O-ring and wave gasket, when replacing cartridge.

2. Closed cartridge

- a. Insert the testing bur inside.
- b. Unsrew the cap with cap wrench.
- c. Push the bur to take out the cartridge.
- d. Clean the handpiece head.
- e. Wipe the lubrication oil from the head.
- f. Repalce new cartridge into the head follow the indication from Figure 25
- g. Screw the cap with wrench.

XII. Contraindication

Hemophiliacs, cardiac, pregnant women and infant should be used with caution.

XIII. Maintenance Method

After the treatment, be sure to perform the maintenance below.

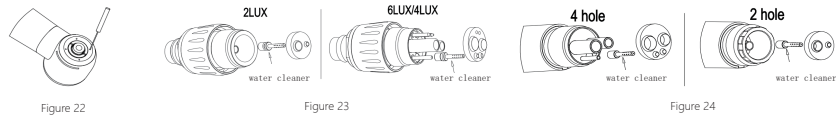
This symbol on you product means that the product can be autoclavable up to Max.135 C .

1. Preparation

- a. Remove the bur form the chuck.
- b. In order to maximize the sterilize performance, the maintenance must be perform soon after every surgery within the day, better no more than 1day.

2. Clean water and air tube

- a. Use the needle to clean the spray hole inside and outside, in order to remove the dirt.
- b. Use a 50ml syringe to inject at least 400ml (8 times) 75% Ethyl Alcohol into the channel of the motor.
- c. Use a high-pressure water guns to flush the channel of the handpiece with purified water for at least 3 mins.
- d. Use a 50ml syringe to inject at least 400ml (8 times) air into the channel of the handpiece.
- e. Take out the rubber pad, then take out the filter with tweezers, clean the dirt with three way syringe or change the water cleaner.



3. External surface cleaning

- a. Rinse the handpiece with flowing water and brush for 3 minutes, remove dirt and debris from the surface, and clean the external surface of the handpiece three times with non-dust cloth soaked in 75% alcohol the dirt.
- b. Do not put the handpiece into any liquid to clean the surface, it might damage the bearings inside.

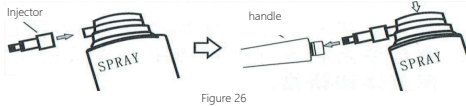


Separately place according to different departments, isolatedly deliver to the supply room.

5. Lubrication

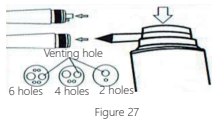
Lubrication for handpiece with coupler

- a. Disconnect the coupler, put the corresponded injector to the spray can, insert the injector inside the handpiece and spray oil inside, keep the oil bottle uprise when spraying.
- b. Put the handpiece head downward.
- c. Stop spraying when the oil comes out from the head (e.g. Figure 26).
- d. Clean the handpiece head.



Lubrication for normal handpiece

- a. Take out the handpiece from tubing, spray oil to the air-in hole, keep the oil bottle uprise when spraying.
- b. Put the handpiece head downward.
- c. Stop spraying when oil comes out from the head. (e.g. Figure 27)



Attention: Repeat the whole process when there isn't any new dirt coming out from the head!

Lubrication for the cartridge

Cartridge and spindle also need to be lubricated as well, avoid getting dirt and corrosion to the bearing (e.g. Figure 28).



Attention: It is recommended to spray the oil before and after sterilization! Before sterilization, please clean, disinfect and lubricate handpiece!

7. Sterilization

Autoclave sterilization is recommended.

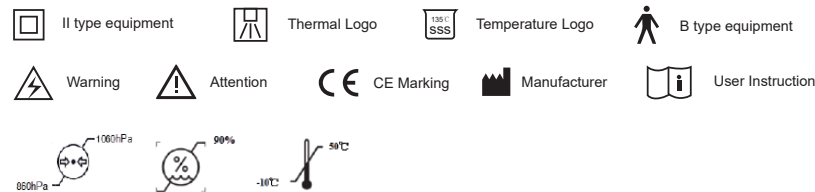
Sterilization is required first time you use and after each patient as noted below.

Autoclave procedure

- a. Insert the handpiece into an autoclave pouch and seal the pouch, mark the date of sterilization and the valid date.
- b. Autoclavable up to a max. 135 C (±2 C)
- Pressure:198 kPa ~ 205 kPa
- Sterilization Time: 3 minutes
- Drying Time: 16 minutes
- c. The maximum reprocessing time: 200 times.

XIV. Transport and Storage

- 1. Temperature of storage: -10℃ to + 55℃
- 2. Humidity of storage: ≤93%
- 3. Temperature of operating: +10℃ to + 40℃
- 4. Air humidity of operating: ≤80%



XV. Warranty

We provide 1 year warranty service to the product, for material or product structure problems (bearing and other consumable parts are excluded). Other damages are not covered by this warranty. The factory has no responsibility to the following conditions:

- 1. The handpiece is not installed according to this instruction. The handpiece falls down or is artificially damaged.
- 2. Abnormal chemical, electrical damage. Or the handpiece falls down or is artificially damaged.
- 3. Over use or use this product for other purpose.
- 4. Abnormal air/water connection.
- 5. Damage caused by improper use, storing or maintaining.
- 6. Improper operation or unqualified person conduct unqualified repair to the handpiece.

XVI. Statement

All data, picture and parameter in this instruction are only for reference. Manufacturer reserves the right to change without change this.

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