

 The EU directive 93/42/EEC was applied in the design and production of this medical device.

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Specifications are subject to change without notice.

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OPERATION MANUAL

NSK

  0197

Please read this Operation Manual carefully
before use, and file for future reference.

High Speed Air Turbine Handpiece

S-Max pico

S-Max pico



Powerful Partners®

MADE IN JAPAN

OM-T0393E 001

This product includes below Bur set (6 types, 1 piece each).

Model	PC1	PC2	PC3	PC4	PC5	PC6
Bur						
Max working length	16.5 mm	16.5 mm	17.5 mm	16.0 mm	14.0 mm	15.5 mm
Max working portion length	1.9 mm	0.4 mm	9.0 mm	7.0 mm	4.0 mm	6.0 mm
Working portion diameter	0.9 mm	0.6 mm	1.8 mm	1.3 mm	1.6 mm	1.1 mm
Grit	Standard	Fine	Coarse	Standard		

Spear Parts

PC1(3pcs): Order code Y1001817

PC2(3pcs): Order code Y1001818

PC3(3pcs): Order code Y1001819

PC4(3pcs): Order code Y1001820

PC5(3pcs): Order code Y1001821

PC6(3pcs): Order code Y1001822

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Intended to Use: This handpiece is designed only for dental treatment use.



CAUTION

- When operating the handpiece always consider the safety of the patient.
- Do not exceed maximum bur length.
- Check for vibration, noise and overheating outside the patient's oral cavity before use. If any abnormalities are found, stop using the Product immediately and contact authorized dealer.
- Should the handpiece function abnormally, cease operation immediately and return the handpiece to an dealer for repair.
- Depressing the Push-Button while the handpiece is rotating will result in OVERHEATING of the handpiece head. Special caution must be exercised during use to keep cheek tissue AWAY from the Push-Button of the handpiece. Contact with cheek tissue may cause the Push-Button to depress and burn injury to the patient may occur.
- Do not exceed the Air Pressure recommended specification below as bur breakage or wear may occur if it exceeds the Air Pressure.
- Do not allow any impact on to the handpiece . Do not drop the handpiece.
- Refer to the coupling manual before connecting it to the handpiece tubing.
- Do not attempt to disassemble the handpiece or tamper with the mechanism.
- NSK has not recommended the repair and disassembly of the cartridge without exception. Handpiece may perform abnormally (abnormal noise or abnormal vibration). Damage, failure or accidents are outside of our guarantee.
- Do not fixate the eyes of LED light. (pico BLED, pico WLED)
- If any abnormalities (dark, do not light on or flashing) are found for LED, stop using the product immediately and contact authorized dealer. (pico BLED, pico WLED)
- This product is classified as Class 1 LED Product. (pico BLED, pico WLED)
- Use the power source with the supply capability of 15W or less for LED lighting.

· Use a power source which meets the following requirements. (pico BLED, pico WLED)

1. The electricity supply of the power source is below 15W both under normal and single failure conditions.
2. The power source uses a SELV circuit for electricity supply.
3. The output voltage of the power source is within the range recommended by the manufacturer of this product.

1. Specification

Model	pico	pico KL / pico SL	pico BLED / pico WLED
Head Type	Miniature		
Rotation Speed	380,000 ~ 450,000 min ⁻¹		
Spray Type	Single Spray		
Chuck Type	Push Button Chuck		
Bur	ISO1797-1 Type3 Ø1.59~1.60mm Short Shank Bur/Super Short Shank Bur		
Bur Length	Minimum: 8.0 mm Maximum: 18.5 mm		
Maximum Bur Dimension	Ø 2.0 mm		
Air Supply	0.20MPa (2.0 kgf/cm ²)~0.25MPa (2.5 kgf/cm ²)	0.25MPa (2.5 kgf/cm ²)~0.30MPa (3.0 kgf/cm ²)	
Air Consumption	45 ± 5 NL/min		
Head Dimension x Hight	Ø 8.6 mm x 9.0 mm		
Optic	Glass Rod	White LED	
Voltage	-	AC/DC 3.3 ± 0.05 V	
Activate Voltage	-	3.0 - 4.0 V	

Model	pico	pico KL / pico SL	pico BLED / pico WLED
Consumption Current	-		0.38 Typical (3.3V)
Use Environment	Temperature : 0 – 40 °C, Humidity : 30 - 75% HR, Atmospheric Pessure : 700 - 1,060hPa		
Transportation and Storage Environment	Temperature : -10 – 50 °C, Humidity : 10 - 85% RH, Atmospheric Pessure : 500 - 1,060hPa		

Within this Operation Manual, Model will be written down as follows.

S-Max pico = pico, S-Max pico KL = pico KL, S-Max pico SL = pico SL, S-Max pico BLED = pico BLED, S-Max pico WLED = pico WLED

2. Insertion & Removal of the bur

CAUTION

- Fully depress the Push Button and insert the bur into the chuck until it is secure.
- Do not use carbide bur when the crown is removed. It may cause malfunction.
- Do not apply too much pressure to the bur. Bur may break or bent or difficult to remove. (Be sure to irrigate water. Cutting should be soft touch.)
- Do not use any bur longer that the NSK recommended Specification.
- Do not use bent, worn, damaged, or non-concentric burs. Such burs can cause damage to the handpiece.
- Do not exceed the bur speed recommended by the bur manufacturer.
- Always keep the bur shank clean. Entry of hard debris into the chuck via the bur shank could cause rotation slip and also prevent the bur from being securely located in the chuck.

- 2-1 To insert the Bur
- 1) Insert the bur until it stops.(①)
 - 2) Depress the Push Button.(②)
 - 3) Insert the bur into the chuck until it is stops.(③)
 - 4) Release the button.

- 2-2 To remove the Bur
Depress the Push Button and remove the bur.(② ④)

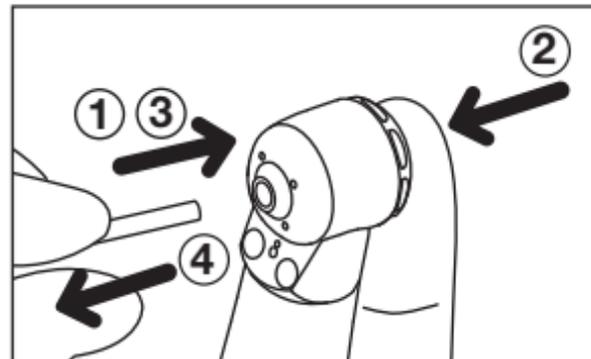


Fig. 1

3. Maintenances

3-1 Cleaning (Clean-Head System)

- 1) Scrub dirt and debris from the handpiece, and wipe clean with alcohol-immersed cotton swab or cloth. (Fig. 2) Do not use a wire brush.
- 2) Half fill a cup with clean water.
- 3) Rotate the handpiece and immerse half of the handpiece head.(Fig. 3)
- 4) Rotate and stop intermittently the handpiece about 2 to 3 seconds.(About 3 times)
- 5) By the function of the clean head system, the clean head hole can be washed.

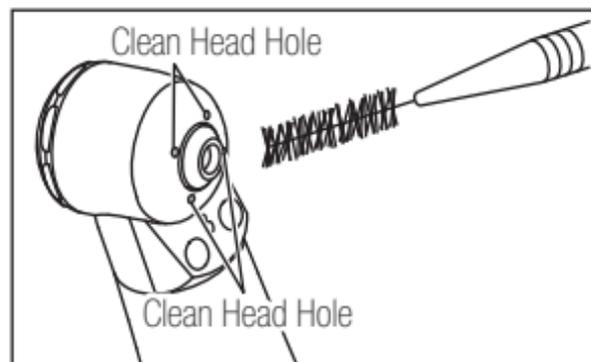


Fig. 2

- 6) Stop the handpiece and wipe it dry. If the dirt could not remove from the hole, remove the cartridge and clean it by brush.
- 7) Perform lubrication and sterilization. (3-5 Lubrication and Sterilization)

CAUTION

Use only clean water to maintain the Clean Head System.

3-2 Cleaning (Spray Port)

When spray nozzle are clogged, or spray does not exit evenly from three ports, clean the ports as follows:

- 1) Remove the bur from the chuck.
- 2) Take out the cleaning wire from the back end of the brush holder. Insert the wire straight into the spray ports with caution. **Do not forcibly insert the wire into the port.** Damaged or disoriented port could cause the spray diverge or directed away from the bur, and the cooling efficiency deteriorates.
- 3) After use, clean the cleaning wire. Push into the brush holder with the pointed end of the wire inward.

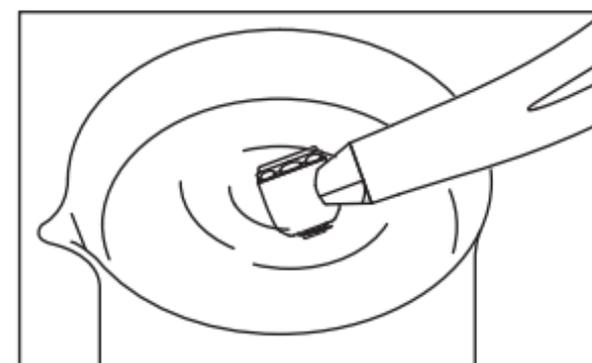


Fig. 3



Fig. 4

3-3 Cleaning (Handpiece)

 This handpiece can be washed via Thermo Disinfector.

Scrub dirt and debris from the handpiece, and wipe clean with alcohol-immersed cotton swab or cloth. Do not use a wire brush. Refer the manual of Thermo-Disinfector for performing it.

3-4 Cleaning (Optic)

Wipe clean the Glass Rod(Fig.5) with an alcohol-immersed cotton swab. Remove all debris and oil.

CAUTION

Do not use a sharp tool to clean the cellular glass optic rod. It could damage the glass and reduce the light transmission. If illumination becomes dim please contact dealer.

3-5 Lubrication and Sterilization

Refer to the Maintenance Guide **OM-Z0135E**.

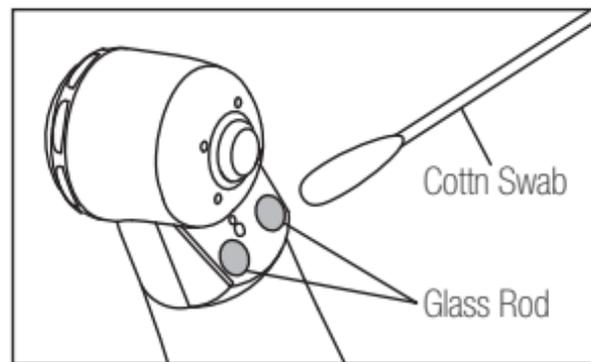


Fig. 5

4. Replacing the Cartridge

- 1) Insert a dummy bur into the chuck.
- 2) Unscrew the Head Cap by turning counter-clockwise and remove.
- 3) Push up the dummy bur upwards to remove Cartridge.
- 4) Clean the interior of the Head casing.
- 5) Insert the new Cartridge.
- 6) Replace the Head Cap and firmly screw into place.

* SX-PU03: Order Code P1140200

CAUTION

- Make sure that the O-Ring is removed, when removing the Cartridge. O-Ring might be remained in the Head, when removing the Cartridge. If there is a remained O-Ring, the new Cartridge can not be inserted properly.
- Use only NSK genuine cartridge. If you use other cartridge, specification may not be satisfied and we can not warranty of this situation.
- The head cap screw thread is very fine. To prevent damage to the thread always first tighten the handpiece head cap using fingers, then secure with the head cap wrench.
- Make sure that the O-ring (Fig. 6) is correctly located on the cartridge.

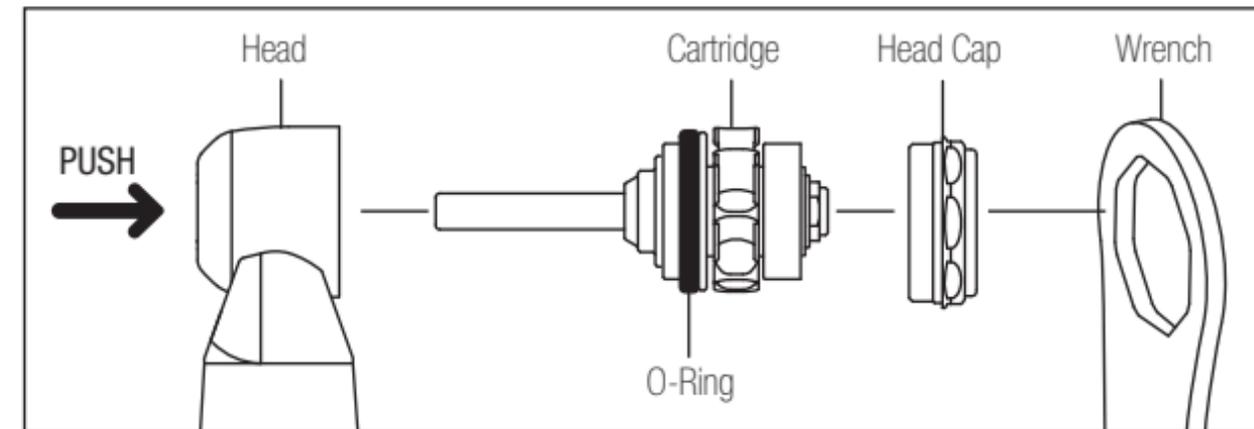


Fig. 6

5. Replacing the O-Rings (pico)

Replace the O-Rings if water is present in the exhaust air line. This is an indication of possible water leakage within the coupling. ALWAYS change the complete set of O-Rings.

- 1) Loosen and Remove the Taper Ring at the rear of the handpiece. (Fig.7)
- 2) Gently remove each O-Rings with your thumb. (Fig.8)
- 3) Insert the complete set of new O-Rings in the correct grooves.
- 4) Replace and firmly tighten the Taper Ring.

* PTL O-ring Set:
Order Code Y900580

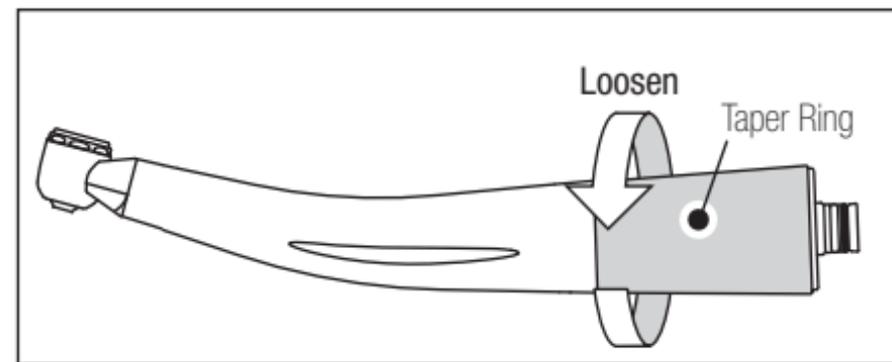


Fig. 7

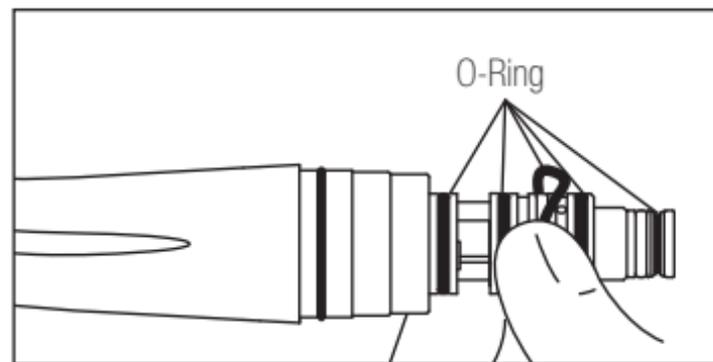


Fig.8

CAUTION

- Do not disassemble the Taper Ring except the O-ring changing.
- Make certain that the Taper Ring is firmly tightened. If the Taper Ring is loose water and air leakage could occur.

6. Non-Retraction Valve

A Non-Retraction Valve is equipped in the Coupling Joint, which shuts off the water retraction right at the handpiece head, to prevent oral fluids sucked into the water line.

NSK Coupling

Remove the back-end Gasket. Pull and remove the water tube, and replace the Non-Retraction Valve.

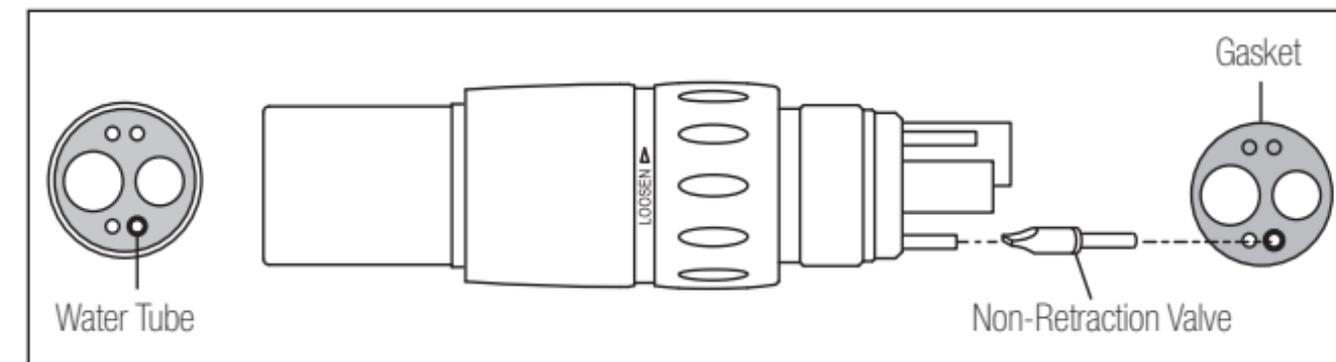


Fig. 9

pico BLED

- 1) Remove the handpiece from the coupling and loosen the Taper Ring to remove.(Fig.7)
- 2) Pull out the joint then remove the Non-Retraction Valve Pull out the old Non-Retraction Valve with thin stick.(Fig.10)
- 3) Insert New Non-Retraction Valve securely.
- 4) Mount the Joint into the handpiece. Make certain the pipe and joint together. (Fig.11)
- 5) Tighten the Taper Ring tight.

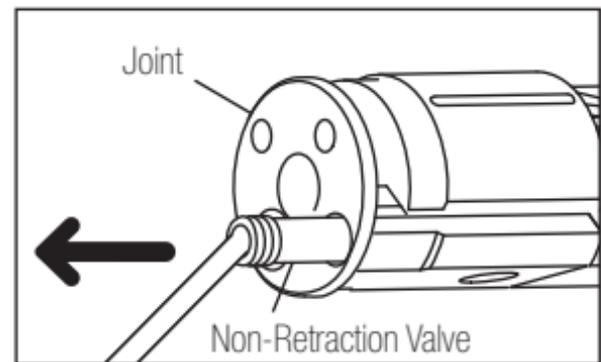


Fig. 10

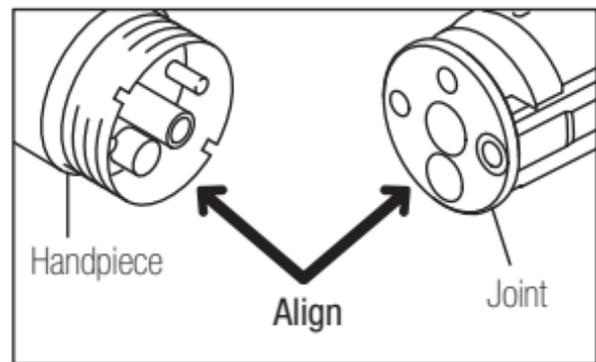


Fig. 11



CAUTION

Make certain that the Taper Ring is firmly tightened. If the Taper Ring is loose water and air leakage could occur.

7. Disposing product

Consult with dealer from whom you purchased it about waste disposal.