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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 M

S-Max MT



Powerful Partners®

MADE IN JAPAN

OM-T0345E 001

Intended Use

This handpiece is designed only for dental treatment use.

CAUTION

- When operating the handpiece always consider the safety of the patient
- Do not attempt to disassemble the handpiece nor tamper with the mechanism.
- Check for vibration, noise and overheating outside the patient's mouth. If any abnormalities are found do not operate. Contact authorized dealer for service.
- Should the handpiece not function normally, cease operation immediately and return the handpiece to your authorised NSK Dealer for service.
- Depressing the chuck push button system while the bur is rotating could result in OVERHEATING of the handpiece head. Caution must be exercised during use to keep cheek tissue away from the chuck push button system. Contact with soft tissue may cause the push button to depress and burn injury to the patient may occur.
- Avoid impact on the handpiece. Do not drop the handpiece.
- Remove the bur only after the handpiece has completely stopped rotating.
- Do not use long surgical burs. Do not use burs longer than 26mm.

1. Performance Specifications

| Coupling Type | NSK Couplings | | | | KaVo® MULTiflex LUX® (For M500KL, M600KL) KaVo® MULTiflex® (For M500K, M600K) Sirona® Quick Coupling (For M500SL, M600SL) | | W&H® Roto Quick® (For M500WL, M600WL) Bien-Air® Unifix® (For M500BL, M600BL) | |
|-----------------------------|--|------------------------------|----------------------------------|------------------------------------|---|------------------------------|---|-----------------------------|
| | Model | M500L | M500 | M600L | M600 | M500KL/M500SL/M500WL/M500BL | M500K | M600KL/M600SL/M600WL/M600BL |
| Head Type | Miniature Head | | Standard Head | | Miniature Head | | Standard Head | |
| Rotation Speed | 380,000~450,000min ⁻¹ | | 360,000~430,000min ⁻¹ | | 380,000~450,000min ⁻¹ | | 360,000~430,000min ⁻¹ | |
| Drive Air Pressure | 0.20MPa (2.0kgf/cm ²) ~0.25MPa (2.5kgf/cm ²) | | | | 0.25MPa (2.5kgf/cm ²) ~0.3MPa (3.0kgf/cm ²) | | | |
| Chuck Type | Push Button Chuck | | | | | | | |
| Burs | Size: ISO1797-1 Type3 ø1.59~1.60mm | | | | | | | |
| | Friction Grip Short/Standard Shank | Friction Grip Standard Shank | | Friction Grip Short/Standard Shank | | Friction Grip Standard Shank | | |
| Celler Glass Rod | ○ | — | ○ | — | ○ | — | ○ | — |
| Head Size Diameter x Height | ø10.6 × 12.5mm | | ø12.1 × 13.5mm | | ø10.6 × 12.5mm | | ø12.1 × 13.5mm | |

2. Connection / Disconnection to the Coupling

First make sure the manufacturer's coupling is firmly attached to the handpiece tubing and the drive air pressure is correct.

CONNECTION (Fig.1)

To connect the handpiece to the coupling align the handpiece to the coupling and push together (per the coupling manufacturers instructions).

DISCONNECTION (Fig.1)

Release the handpiece from the coupling (per the coupling manufacturers instructions) and remove the handpiece.

NSK COUPLING : Pull back Connector Ring to release the handpiece.

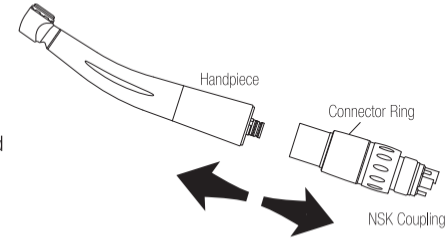


Fig. 1

3. Insertion & Removal of the bur

TO INSERT THE BUR (Fig. 2)

Depress the Push Button and insert the bur into the chuck until it is secure. Release the button.

TO REMOVE THE BUR (Fig. 3)

Stop the handpiece. Depress the Push Button firmly and remove the bur.

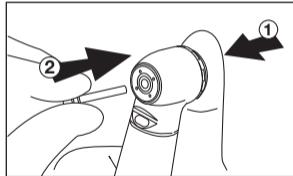


Fig. 2

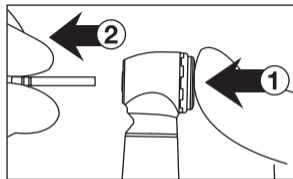


Fig. 3



CAUTION

Test that the bur is secure by gently pulling and pushing the bur without depressing the Push Button.

4. Information about burs

- Do not use non-standard burs. The ISO standard shank diameter is $\varnothing 1.59 - \varnothing 1.60$ mm.
- 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.
- Fully depress the Push Button and insert the bur into the chuck until it is secure.
- Do not use short shank burs in Standard Head handpieces.

5. Lubrication, Cleaning and Sterilization

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



All handpieces can be autoclavable up to Max.135°C.



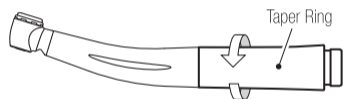
All handpieces can be cleaned and disinfected with a thermo disinfectant.

6. Replacing the optic illumination bulb (M500WL, M600WL, M500BL, M600BL Series)

Remove the handpiece from the coupling. Loosen and remove the Taper Ring. (Fig. 4). Pull out the joint then remove the bulb holder, then the bulb. Align the pins of the new bulb with the points in the bulb holder and insert the bulb. Place the bulb holder back into the joint. (Fig. 5).

Firmly tighten the Taper Ring.

Optional Bulb : TA Bulb (Pack of 3) Order No.Y900-132



* Figure shows M500WL, M600WL

Fig. 4

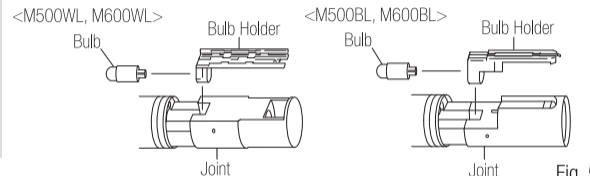


Fig. 5

CAUTION

- Do not touch the glass section of new bulb.
- Screw the taper ring tightly. A loose fitting taper ring could result in water and air leakage. It is easier to screw in the taper ring when the bulb holder is lightly pressed in by hand.

7. Replacing the O-rings (M500L, M500, M600L, M600 Series)

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. Remove the handpiece from the coupling. Loosen and remove the Taper Ring at the rear of the handpiece. (Fig. 4) Gently remove each O-ring with your thumb. Insert the complete set of new O-rings in the correct grooves. (Fig. 6). Replace and firmly tighten the Taper Ring.

Optional O-ring : PTL O-ring Set (Pack of 5) Order No.Y900-580

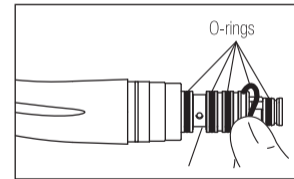


Fig. 6

CAUTION

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

8. Cleaning the cellular glass optic rod (M500L, M600L, M500KL, M600KL, M500SL, M600SL, M500WL, M600WL, M500BL, M600BL)

Wipe clean the cellular glass optic rod entry point (Fig. 7) and exit point (Fig. 8) with an alcohol-immersed cotton swab. Remove all debris and oil.

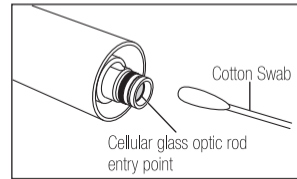


Fig. 7

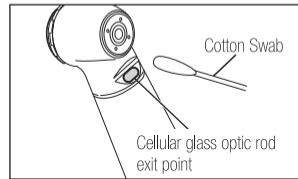


Fig. 8

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 your dealer.

9. Replacing the Turbine Cartridge

- (1) Remove the turbine cartridge from the handpiece
 - 1) Insert a bur into the chuck.
 - 2) Locate the head cap wrench tool on the head cap then turn the wrench counter-clockwise. Remove the cap.
 - 3) Use the bur to gently lever the entire turbine cartridge out of the head.
 - 4) Remove debris from inside the empty head.
- (2) Insert a new NSK turbine cartridge
 - 1) Gently insert the new NSK turbine cartridge into the head section, always making certain that the turbine cartridge locating pin is aligned in the slot inside the head.
 - 2) Use fingers to screw the head cap back into place and then use the cap wrench to further tighten until the cap is securely in place.

Optional Cartridge : SX-MU03 (Cartridge for Miniature head) Order No.P1001-250
SX-SU03 (Cartridge for Standard head) Order No.P1002-250

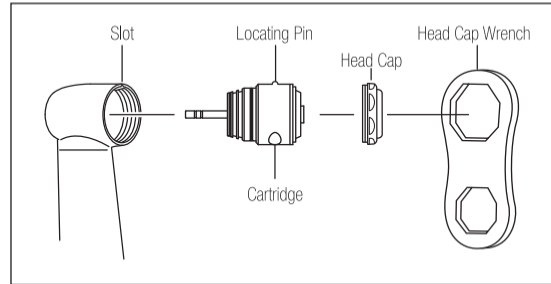


Fig. 9

⚠ CAUTION

- Use only the genuine NSK-manufactured turbine cartridge. Do not use repaired or re-built NSK turbine cartridge. Non-conformance to this shall immediately void the manufacturer's warranty, and the manufacturer shall have no liability to the user and the patient for any incident that may arise from use of such turbine cartridge.
- 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 two O-rings (Fig.10) are correctly located on the cartridge.

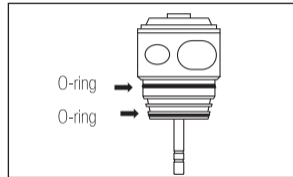


Fig. 10

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