

CE The EU directive 93/42/EEC was applied in the design and production of this medical device.  
 0197

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

**Caution**

- When operating the handpiece always consider the safety of the patient.
- The handpiece is designed only for dental clinical use.
- Check the vibration, noise and overheating outside the patient's oral cavity before use. If any abnormalities are found, stop using immediately and contact your dealer.
- Should the handpiece function abnormally, cease operation immediately and return the handpiece to the dealer for repair.
- Do not attempt to disassemble the handpiece nor tamper with the mechanism.
- Do not drop the handpiece.
- Depressing the push-button while handpiece bur is in rotation 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 injury to the patient may occur.
- Do not connect or disconnect the handpiece until the drive motor has completely stopped.
- Do not use eccentric, worn or damaged burs.
- Always keep the bur shank clean. Entry of debris into the chuck could cause bur run-out, looseness and the bur could not be mounted inmost.
- Before use always confirm that the bur is correctly seated and locked into place.
- Do not exceed the bur manufacturer's recommended speed.
- Do not wipe with, or clean or immerse in, high acid water or sterilizing solutions.

**1. Specifications**

| Model          | Ti10L/Ti10LA                  | Ti10                          | Ti12L                         | Ti12                          |
|----------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Gear Ratio     | 16 : 1 Reduction              | 16 : 1 Reduction              | 10 : 1 Reduction              | 10 : 1 Reduction              |
| Rotation Speed | 40,000min <sup>-1</sup> (rpm) | 40,000min <sup>-1</sup> (rpm) | 40,000min <sup>-1</sup> (rpm) | 40,000min <sup>-1</sup> (rpm) |
| Bur Size       | ø2.35 latch bur               |                               | ø2.35 latch bur               |                               |
| Spray Type     | Single Spray                  | Single Spray                  | Single Spray                  | Single Spray                  |
| Optics         | Glass Rod Optic               | -                             | Glass Rod Optic               | -                             |

| Model          | Ti15L/Ti15LA                  | Ti15                          | Ti20L/Ti20LA                  | Ti20                          |
|----------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Gear Ratio     | 4 : 1 Reduction               | 4 : 1 Reduction               | 1 : 1 Drive                   | 1 : 1 Drive                   |
| Rotation Speed | 40,000min <sup>-1</sup> (rpm) | 40,000min <sup>-1</sup> (rpm) | 40,000min <sup>-1</sup> (rpm) | 40,000min <sup>-1</sup> (rpm) |
| Bur Size       | ø2.35 latch bur               |                               | ø1.6 FG bur                   |                               |
| Spray Type     | Single Spray                  | Single Spray                  | Single Spray                  | Single Spray                  |
| Optics         | Glass Rod Optic               | -                             | Glass Rod Optic               | -                             |

| Model          | Ti25L/Ti25LA                  | Ti25                          |
|----------------|-------------------------------|-------------------------------|
| Gear Ratio     | 1 : 1 Drive                   | 1 : 1 Drive                   |
| Rotation Speed | 40,000min <sup>-1</sup> (rpm) | 40,000min <sup>-1</sup> (rpm) |
| Bur Size       | ø2.35 latch bur               |                               |
| Spray Type     | Single Spray                  | Single Spray                  |
| Optics         | Glass Rod Optic               | -                             |

**2. Connecting / Disconnecting the motor and the handpiece.**

To connect the motor and the handpiece, align the positioning marks of the motor and the handpiece, and insert straightly. This procedure will also align the light receptacle and allow you to use illumination if your handpiece and motor are equipped for illumination. (Ti10/12/15/20/25L, Ti10/15/20/25LA) To disconnect, hold the front part of the motor and the back part of the handpiece, and pull out straightly.

**Caution**

Do not connect or disconnect the handpiece until the motor has completely stopped.

**3. Mounting and Removing Bur**

(1) Mounting

A) Ti10/12/15/25L, Ti10/15/25LA, Ti10/12/15/25 (Latch Bur)

Mount the handpiece to the micro-motor.

Insert the latch bur into the head. Lightly turn the bur with light push. (Fig. 1) When the bur engages with the latch mechanism, where the bur sinks, push it inward to click.

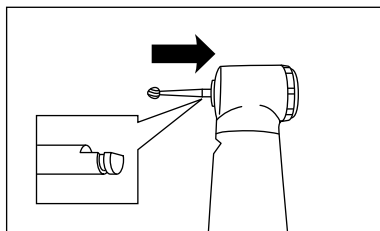


Fig. 1

**Caution**

After the bur is locked in place, lightly pull out the bur to make sure the bur is locked.

B) Ti20L, Ti20LA, Ti20 (FG bur)

Insert the bur into the chuck until it stops (3-4 mm depth).

Depress the push-button and insert further into the chuck until the bur stops. (Fig. 2)

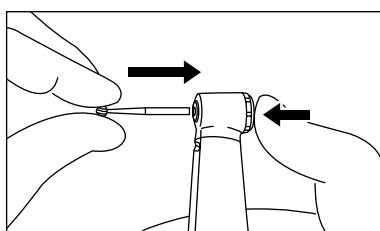


Fig. 2

**Caution**

After the bur is inserted, push and pull the bur to make sure that it is firmly in place. (Fig. 3) This action will further increase the bur retention force.

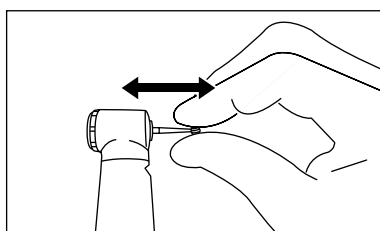


Fig. 3

- (2) Bur Removal  
Depress the push-button and pull out the bur. (Fig. 4)

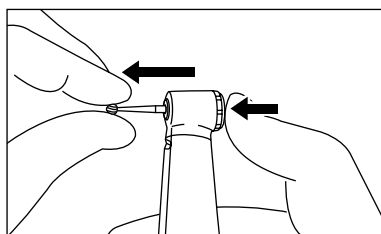


Fig. 4



### Caution

Make sure that the rotation is completely stopped when to depress the push-button and disengage the latch mechanism. Avoid accidental depression of the push-button during rotation. It would heat the push-button and could cause a burn.

## 4. Lubrication

Supply PANA SPRAY or/and Care3 Plus after each use and/or before autoclaving.

### ■ PANA SPRAY (fig. 5)

- ① Push E-type spray nozzle attachment over the PANA SPRAY nozzle until it firmly seats.
- ② Shake the can 3-4 times to well mix lubricant and propellant.
- ③ Insert the E-type spray nozzle in the rear of the handpiece and spray for approximately 2-3 seconds until the oil comes out of the handpiece head.

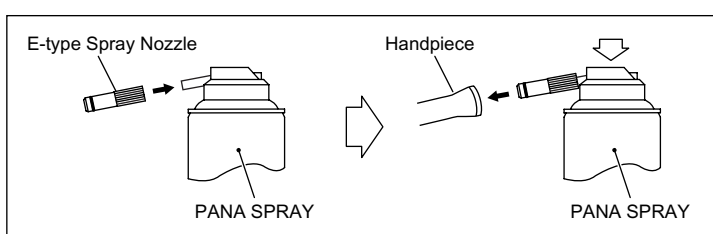


Fig. 5



### Caution

- Be sure to hold the handpiece firmly to prevent the handpiece from slipping out by the spray pressure when lubricating.
- Supply lubricant until it comes out of the handpiece head (for approx. 2 seconds).
- Keep the PANA SPRAY can upright.

### ■ Care3 Plus

NSK Care3 Plus automatic handpiece cleaning and lubrication system  
After connecting the handpiece to the correct adaptor, activate the Care3 System per the Care3 System instructions.

## 5. Cleaning and Sterilization



This handpiece can be washed via Thermo Disinfector.

Steam autoclave is recommended.

Sterilization required after each patient as noted below.

Autoclave Procedure :

- ① Scrub dirt and debris from the handpiece, and wipe clean with alcohol-immersed cotton swab or cloth. Do not use a wire brush.
- ② Lubricate with PANA SPRAY. Refer to 4. Lubrication.
- ③ Insert into an autoclave pouch. Seal the pouch.
- ④ Autoclavable up to a max. 135°C.  
ex.) Autoclave for 20 min. at 121°C, or 15 min. at 132°C.



### Caution

- In case the sterilizer chamber temperature could exceed 135°C during the dry cycle, skip the dry cycle.
- Always place the handpiece in the center or upper shelf of the chamber, as the local temperature at the bottom of chamber could rise beyond the set value.
- Do not heat or cool the handpiece quickly. Rapid change in temperature could break the glass rod give abnormal strain to other metals.

## 6. Cleaning Glass Rod Optic End (except Ti10/Ti12/Ti15/Ti20/Ti25)

In case the light had become dim, clean the glass rod optic end with an alcohol-soaked cotton swab. (Fig.6)

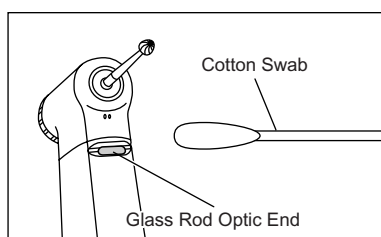


Fig. 6



### Caution

Do not use a pointed tool or sharp edges to clean the glass rod optic end. They may damage the mirror finish and reduce the light transmission efficiency. If the glass rod optic end has become damaged, send the handpiece to the NSK dealer for repair.

※ Specifications may be changed without notice.

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