



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

0197

Thank you for purchasing the SGR-E. The SGR-E Micro Reciprocating Saw Handpiece is designed for resection or amputation of bone with 1.8mm stroke of reciprocating blades in axial direction. Please read this operation manual prior to use for safety and keep this within user's reach.



Caution

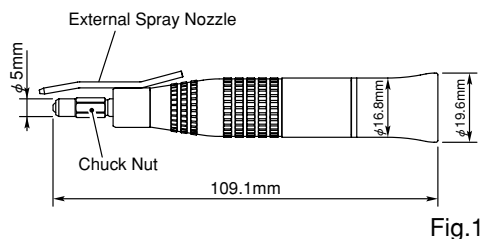
- Place the most priority of the patient's safety.
- For professional use only. Do not make wrong use of the handpiece.
- Do not disassemble, nor alter the handpiece.
- If any abnormalities are found in use, stop using immediately and contact your dealer.
- Check the blade tightness, vibration, noise and overheating before each use. If any abnormalities are found, stop using immediately and contact your dealer.
- Do not drop, hit, or subject to excessive shock.
- Do not exceed the motor speed of 30,000rpm.
- Stop operation for 2 minutes after continuous use for 2 minutes approximately.
- Do not use the handpiece without mounting saw blade.
- Sterilization in an autoclave is recommended before each patient.
- Never move the chuck nut during use. It can cause injury.
- Be sure to replace the saw blade after the motor completely stops rotation. Do not tighten and /or loosen the blade excessively.
- Be sure to replace the handpiece after removing the blade.
- Be sure to replace the handpiece after the motor completely stops rotation.
- After use, be sure to keep the handpiece after cleaning, lubrication, and sterilization. If the blood is left on the handpiece, it can be clotted causing rusty.
- Make sure that the blade is removed before cleaning, lubrication, sterilization, carrying and/or storage.
- Only connect with the standard motor according to ISO 3964.
- Always use NSK reciprocating blades (option).

1. Features

- It can be connected with E-type motor according to ISO 3964.
- The built-in 3:1 speed reducer provides a high torque.
- The chuck nut securely grips the blade.
- Three types of NSK reciprocating blades (option) are available. U-cut hub can prevent dislocation of the pivotal point and allows better cutting.
- Irrigation tube can be equipped with external spray nozzle.
- It is repeatedly autoclavable at 135°C.

2. Component Names, Dimensions, and Specifications

Model	SGR-E
Transmission Ratio	3:1 (Speed reduction)
Maximum allowable motor speed	30,000rpm
Maximum reciprocating frequency	Approx. 8,300 strokes
Stroke Length	1.8mm (Axial direction)
Spray System	External Spray Nozzle
Weight	98g



Accessories

- Spanner Wrench(5×8) 1 pc.
- External Spray Nozzle 1 pc.

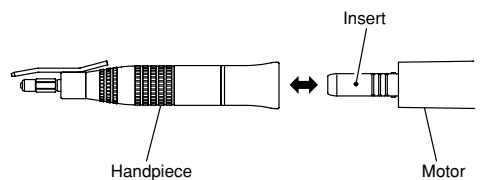
Items required

- NSK Reciprocating blades (Refer to section 5. Saw Blades (option)).

3. Connection of Handpiece and Motor

Connect to E-type motor according to ISO 3964.

- (1) To Connect Handpiece and Motor
Insert the handpiece in the motor straightly. (Fig.2)



Caution

Check connection by pushing and pulling the handpiece and motor.

- (2) To remove Handpiece from Motor
Hold the handpiece and motor, and pull the handpiece from the motor in axial direction. (Fig.2)



Caution

- Note that only E-type motor according to ISO 3964 can be connected.
- Connect and/or remove the handpiece without mounting the blade.
- Connect and/or remove the handpiece after the motor stops rotation completely.

4. Mount/Removal of Blade

Mount the NSK reciprocating blade SGR-1, SGR-2, or SGR-3 (option).

(1) To mount Blade

Loosen the chuck nut approximately 2-3 turns by hand. Align the blade and the chuck slit and insert the blade until it stops inmost. Tighten the chuck nut with the spanner wrench provided. (Fig.3)

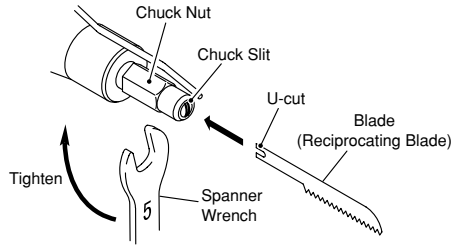


Fig.3



Caution

Check tightness of the blade by running motor before use.

(2) To remove Blade

Gently loosen the chuck nut with the spanner wrench provided. Loosen another 2-3 turns by hand and pull the blade straightly. Tighten the chuck nut lightly after removal. (Fig.4)

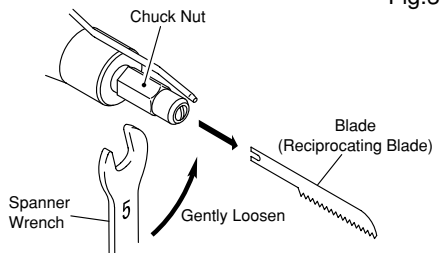


Fig.4



Caution

- Always use the NSK reciprocating blades (option).
- Mount/remove the blade after the motor stops rotation completely.
- Do not tighten/ loosen the chuck nut excessively.
- Do not tighten/loosen the chuck nut with tools other than the spanner wrench provided.

5. Saw Blades (option)

NSK reciprocating blades SGR-1, SGR-2, and SGR-3 are available. See table at right for blade lengths.

Product Name	Product	Code
SGR-1 (10 pc./case)	11mm Cutting thickness 0.35mm	Y900-072
SGR-2 (10 pc./case)	20mm Cutting thickness 0.35mm	Y900-073
SGR-3 (10 pc./case)	30mm Cutting thickness 0.35mm	Y900-074

Fig.5

6. Lubrication

Apply PANA SPRAY after each use and before autoclaving.(Fig.6)

- ①Insert E-type spray nozzle approximately 10 turns onto the PANA SPRAY.
- ②Remove the blade from the handpiece.
- ③Shake the can 3-4 times to well mix the lubricant and propellant.
- ④Insert the E-type spray nozzle in the rear of the handpiece and spray for approximately 2-3 seconds until the oil leaks from the chuck.

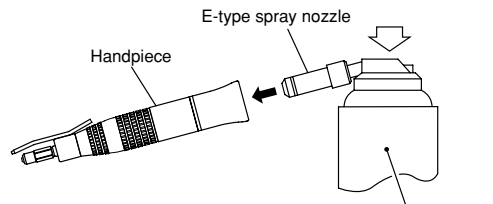


Fig.6



Caution

- Be sure to hold the handpiece firmly to prevent the handpiece from slipping out by the spray pressure when lubricating.
- Keep the PANA SPRAY can upright.

7. Sterilization

Autoclaving is strongly recommended.

■Autoclaving method

- ①Remove the blade from the handpiece. Brush off the external dirt on the handpiece and chuck with the brush (Do not use metal brush.) and clean the handpiece with cloth soaked in alcohol.
- ②Spray PANA SPRAY. (Refer to section 6. Lubrication.)
- ③Place in the sterile packing and seal.
- ④Autoclave at 132°C for 15 minutes.



Caution

- Skip dry cycle if it exceeds 135°C.
- When autoclaving, place the handpiece on the upper or middle chamber since the lower chamber is close to heater and it can exceed the specified temperature in a place.

8. Warranty

NSK warrants its products to be free from defects in material and workmanship only. Trouble causes shall be determined by NSK. This warranty is voided if products are carelessly used or improperly maintained. Replacement parts are available for 7 years after discontinuance of the product.

* Specifications may be changed without notice.

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