CE 0402

Viking Abrasives AB
Kanalv. 3A
194 61 Upplands Väsby
Sweden
Company Reg. 556815-0337

INSTRUCTIONS FOR USE - Safety Procedures and Cleaning

Latest update: 2023-12-15

Product Group: Diamond, carbide, steel and *ceramic drills

Intended Use: The drill is designed to fit in a handpiece and is intended to cut through hard structures in the mouth, e.g., teeth or bone. It can also be used to shape teeth for the application of artificial teeth.

Product Group: Polishers, including mounted stones.

Intended Use: The polishers are developed for their specific application area (remove, smooth, and high-gloss polish). Generally, polishing is carried out in several consecutive steps to achieve the final result.

By following the instructions, the durability of the instrument is extended, and unwanted side effects are avoided.

Drills, Polishers

1. General Instruction

- Use the instrument only with a handpiece intended for dental drills.
- Follow the instructions for the handpiece to secure the instrument.
- Ensure that the instrument sits straight and firmly in the handpiece.
- Test running the instrument in the handpiece before working on the patient.
- Check the recommended speed (see table in this instruction at bottom) for the tool, and if the speed cannot be achieved, the tool must be replaced.
- We recommend using safety glasses during operation.
- The instrument is not sterile in the packaging and must be sterilized before use according to this instruction.

2. Contamination and Storage

- Store the instrument dry and dark. After the packaging is removed, contamination and mechanical damage must be avoided.
- Instruments stored moistly can rust or corrode.

3. Inspection

- Visually inspect the instrument to detect damage or wear. Discard damaged or worn instruments.

4. General Cleaning

- Only use washing machines intended for cleaning rotating instruments and follow the instructions that come with the washing machine.
- The instruments can be cleaned and sterilized repeatedly. When it should be replaced is determined by wear due to use.

5. Preparation for Cleaning

- **Drills** can be damaged by alkaline and acidic cleaning agents. Always use pH-neutral cleaning agents or solutions.
- Remove all packaging before cleaning and sterilization.
- Contaminated drills should always be handled with gloves, and eye protection should be used.
- **Polishers** can be destroyed by alkaline and acidic cleaning agents. Always use pH-neutral cleaning agents or solutions.
- Remove all packaging before cleaning and sterilization.
- Contaminated polishers should always be handled with gloves, and eye protection should be used.
- Place polishers in cold water for 5 minutes immediately after use.

6. Manual Cleaning

- **Drills** - Rinse the drill (and drill stand) under cold running water for at least 1 minute.
- Prepare a bath with pH-neutral cleaning agent. Follow the instructions from the manufacturer of the cleaning agent.
- Immerse the drill (and drill stand) and soak for at least 10 minutes.
- After soaking, still submerged, brush the drills gently. Brush away from the body and avoid splashing contamination.
- Rinse the drill under cold running water for at least 1 minute.

- Visually inspect and repeat if the drill is not clean from contamination.
- **Polishers** - Rinse thoroughly under running water and remove contamination (e.g., with a nylon brush).
- Clean and disinfect with a suitable solution in an ultrasonic bath at 40°C.
- Once cleaning is complete, rinse polishers thoroughly under running water.
- Visually check that there is no contamination left. If so, cleaning and disinfection must be repeated.

7. Automatic Cleaning

- **Drills** - Prepare a bath with pH-neutral cleaning agent. Follow the instructions from the manufacturer of the cleaning agent.
- Place the drill in the designated drill stand and place it in an ultrasonic bath, steam autoclave, or washing machine.
- Immerse the drill in the solution and clean for at least 15 minutes.
- Rinse the drill under cold running water for at least 1 minute.
- Check that there is no contamination left, otherwise repeat the cleaning.
- **Polishers** - Use thermal disinfection: Manufacturer's specifications according to DIN EN ISO 15883. Cleaning programme according to the manufacturer's user instructions.
- Use a solution suitable for rubber and silicone polishers according to the disinfection manufacturer's instructions. Be sure to follow the manufacturer's exposure times and recommended concentration of the solution.
- Cleaning time: Ultrasonic bath 2 min. Washing machine 10 min.

8. Drying

- Dry the instrument with a lint-free cloth or preferably with compressed air.

9. Sterilization

- **Drills** - Only use certified autoclaves.
- Sterilization temperature: 134°C
- Nominal pressure: 2.2
- Sterilization time: 5 min after temperature and pressure have been reached.
- **Polishers** - Use a solution suitable for rubber and silicone polishers according to the disinfection manufacturer's instructions. Be sure to follow the manufacturer's exposure times and recommended concentration of the solution.
- Thermal disinfection in a steam sterilizer can be done both with sterilization bags or without a protection system, use racks or trays.
- Thermal disinfection in a steam sterilizer with 3 pre-vacuum pulses, 134°C for 3 min, and 1 min drying time.

10. Additional Information on Cleaning and Sterilization

- Ensure that the maximum number of instruments does not exceed the autoclave manufacturer's instructions.
- Certified ultrasonic baths can be used with permitted cleaning agents.
- Always follow the instruction for use from both the equipment manufacturer and the cleaning agent.

11. Recommended Rotational Speed (RPM)

- **Drills** - The maximum speed is determined not only by physical parameters but also by how much vibration there is. Therefore, never exceed the maximum recommended speed. If exceeded, the patient and/or the instrument may be damaged. The minimum speed is limited by the effectiveness of the treatment. Below this speed, the instrument will not function as optimally as possible.
- See recommended speeds in the table below.
- **Polishers** - The maximum speed is determined not only by physical parameters but also by how much vibration there is. Therefore, never exceed the maximum recommended speed. If exceeded, the patient and/or the instrument may be damaged. The minimum speed is limited by the effectiveness of the treatment. Below this speed, the instrument will not function as optimally as possible.
- The recommended speed varies from polisher to polisher, always read the packaging to see the recommended speed.

12. Recommended Pressure

- **Drills** - The pressure should be a maximum of 0.3-2N.
- Remove material carefully and without pressure. Choose contact pressure (max 0.3 - 2 N) so that the speed does not noticeably decrease. The dosage of contact pressure (gentle work) is crucial for workflow and success in material removal. Avoid twisting and bending the instrument (increased risk of fracture).
- Using the recommended pressure will ensure the drill retains its shape and will not damage the bearings in the handpiece.
- Exceeding the pressure can lead to excessive heat generation and potential damage to the instrument.
- **Polishers** - Always avoid too much pressure.
- Exceeding the pressure may lead to heat generation that becomes too high and the instrument can be damaged.
- Exceeding the pressure may lead to heat generation that becomes too high, resulting in the pulp possibly being damaged, and irregularities can appear on the surface being polished.

13. General Guidelines

- Drills with a large circumference require lower rotational speeds.
- Long drills require less pressure.

14. Cooling

- Adequate cooling must be used with air/water (at least 50 ml per minute).
- With proper cooling, overheating of teeth and tools is avoided.
- FG instruments longer than 22 mm and with a head diameter exceeding 2 mm require extra cooling.
- Insufficient cooling can cause permanent damage to the tooth and tissue.

15. Lifespan/Damaged Drills

- The lifespan is shortened if the drill loses diamond grains or becomes deformed.
- Do not use a drill with a distorted shaft (vibration may occur).
- Do not use a drill that shows signs of corrosion.
- Do not use a drill with a broken tip.

Recommended RPM

Diameter of working part	Max RPM	Recommended RPM
007-010	450.000	100.000 - 220.000
012-014	450.000	70.000 - 220.000
016-018	450.000	55.000 - 160.000
021-023	300.000	40.000 - 120.000
025-027	160.000	35.000 - 110.000
029-031	140.000	30.000 - 95.000
033-040	120.000	25.000 - 75.000
042-050	95.000	15.000 - 60.000
055-070	60.000	12.000 - 40.000
080-100	45.000	10.000 - 20.000

*Ceramic Dental burs - CERA

Recommended speed: 1,000-1,500 RPM.

Use a nylon brush for cleaning. A metal brush can create black friction marks on the bur.