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1. Product Description

EVO450 Design



- Omni-directional lighting system
- Stainless steel body and head
- Triple spray holes
- Push button
- Easy grip coating

※ Indications for Use: The EVO 450 series is the air-powered dental handpiece which is used by trained dental professionals for removal of carious material, cavities, crown preparations and as a surgical tool for impacted third molar removal and periodontal procedures.

2. Specifications

Model	450/450L	450K/450KL	450N/450NL	450S/450SL	450ST/450STL	450W/450WL	450B/450BL	450MW/450MWL	450MR/450MRL	450Y/450YL	450 5H	450 M4
Connection	TTBIO® EZclick	TTBIO® EZclick-K/ KaVo® MULTIflex®	TTBIO® EZclick-N/ NSK® PLT-CL®	Sirona® Quick Coupling	Star® Quick Coupling	W&H® Roto Quick	Bien-Air® Unifix®	MIDWEST® Quick Coupling	MORITA® Quick Coupling	Yoshida® Quick Coupling	Fixed backend	
Rotating speed (rpm)	> 350,000											
Bur size (mm) (diameter / length)	Ø1.59~1.60 / 25mm											
Driving air pressure (bar)	2.6~3.0											2.0~2.2
Recommended Driving Air Pressure (bar)	2.8											2.0
Spray Volume (ml/min)	>50											
Water pressure (bar)	0.8~2.0											
Head size(mm)	Ø10.5×H12.5											
Light system	Glass rod											-

L: light support

3. Safety Notes

1. Once handpiece is damaged (ie deformed caused by hit) or improperly used (ie sterilized above suggested temperature), be sure not to continue using it.
2. Before operation, always make sure the product and its accessories meet the specified requirements (ie drive air pressure, lubrication...etc).
3. Make sure that the supply of cooling air is dry, clean and uncontaminated according to ISO 7494-2. (CAUTION: Contaminated and moist cooling air can cause malfunctions)
4. Make sure air is not emitted in the direction of the bur.
5. Routinely monitor dental unit water quality to ensure microbial counts are below the levels for drinking water recommended by your local agency. The U.S. Centers for Disease Control and Prevention (CDC) recommends a level of <500 CFU/ml of heterotrophic water bacteria.
6. After each patient use, disinfect the tubing waterlines including the handpiece waterlines by flushing with cleaning water to prevent cross-contamination according to handpiece waterlines disinfection procedure of main dental unit.
7. Please contact our dealer or us with proof of purchase, whenever you have problems such as abnormal vibration, exceeding temperature or unusual noise...etc.
8. Avoid contact between the instrument head and soft tissue (risk of burning due to the press button heating up).

4. Installation

1. Quick Coupling :



Fig. 1 Install EZclick connector



Fig. 2 Rotate the connector to install



Fig. 3 Strip EZclick connector

To install or strip handpiece, please follow the steps illustrated from Fig. 1 to Fig. 3 (Please refer to the coupling manufacturers' instructions.)

2. Fixed backend :



Fig.4

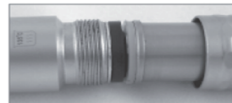


Fig.5



Fig.6

To install handpiece into ISO hose(*), please follow the steps illustrated from Fig.4 to Fig.6. Make sure the handpiece is connected to the hose tightly. If there is any leakage of water or air, please repeat this installation procedure.

*The holes hose is defined in accordance with ISO 9168 :2009

5. Changing Bur

1. Follow the arrowhead direction show in Fig.7 to take off or install the bur.
2. Put on protective gloves to reduce the risk of interactive infection, especially not to touch the used burs without proper protection.
3. Make sure bur is tightly secured before operation, otherwise risks of injury to doctors, patients or the third party could occur.
4. Do not press the button while bur is rotating, otherwise it could harm internal parts.
5. Only use ISO standard burs with shank diameter of .0628" - .0630" (1.595 mm-1.600mm) and an overall length of .9842"(25mm).
6. Do not use standard length or short shank burs with these handpieces, they can come out and injure the patient or be swallowed.
7. The water stream is designed to be delivered to the tip of a 25mm bur only. Using a bur of another size risks overheating the cutting area.

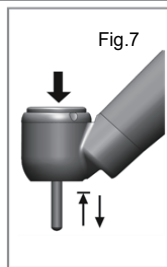


Fig.7

6. Replacement of Rotor

1. Please contact local dealers and let the technicians replace the rotor.
2. Do not use unsuitable rotors or spare parts, otherwise could damage the handpiece and result in severe consequence during treatment.

7. Cleaning

Cleaning for dental unit tubing

1. Internal cleaning waterlines must be conducted through the main dental unit by connecting to handpiece connector and follow the instruction for handpiece and hose waterlines disinfection of the main dental unit. (It is recommended to use Waterline Maintenance Tablets for main dental unit, it is the simple way to maintaining clean dental unit waterlines.)
2. Do not remove attached handpiece from the connecting cable during internal waterlines cleaning and disinfection procedure.
3. Hold the handpiece over the cuspidor or over a watertight container on main dental unit with sufficient capacity and press the purging key on the main dental unit. Setting time to clean and disinfect the waterlines base on manual instruction of main dental unit. (Fig.8)

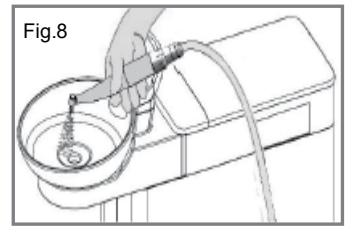


Fig.8

Cleaning for dental handpiece

1. If included, remove the cutter or grinder.
2. Using a soft-bristled brush, brush the external surfaces of the entire device under running (30±5°C) utility (tap) water.
3. If spray nozzle is blocked with debris clean the spray nozzle with the nozzle cleaner needle. (See Fig.9)
4. Prepare a detergent bath using a mild enzymatic detergent (such as Enzol®) per the vendor's recommendation of 1 oz/gal using warm tap water.
5. Using a lint-free cloth soaked in the detergent solution, wipe the devices thoroughly to remove any visible soil.
6. Use a soft bristled brush moistened with the prepared detergent to clean any remaining debris from the EVO 450 series handpiece. Brush device for 1 minute and 30 seconds.
7. Rinse the EVO 450 series handpiece under running tap water for 30 seconds.
8. Dry the EVO 450 series handpiece with a lint-free cloth.

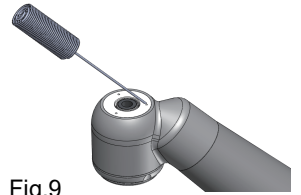


Fig.9

8. Lubrication and Maintenance

1. Be sure to lubricate the handpiece prior to sterilization.
2. Servicing with the Maxima XTEND Spray.
3. To lubricate EVO 450 series handpiece, put Spray Nozzle into nozzle of the lubrication oil can (Fig.10). Connect handpiece with the nozzle (Fig.11) and inject lubrication oil for 2~3 seconds.
4. To lubricate handpiece chucks, put Shaft Spray Nozzle into nozzle of the lubrication oil can and inject lubrication oil into the chuck (Fig.12) for 1 second. It's recommended to lubricate chuck at least once a week and then proceed step 2.
5. To lubricate 5H/M4 series handpiece, put Spindle Nozzle into nozzle of the lubrication oil can and inject the oil into drive air tube for 2~3 seconds (Fig.13).

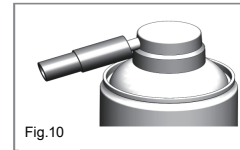


Fig.10

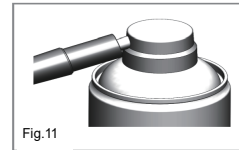


Fig.11

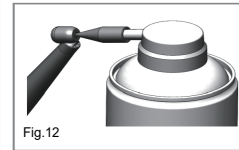


Fig.12

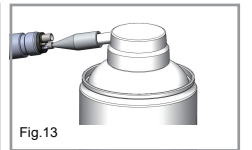


Fig.13

CAUTION: Never use dental handpiece lubricant that is not legally marketed; any unspecified oil not intended for lubricating handpieces could shorten the lifetime and harm human body.

9. Sterilization

1. The Handpiece must be placed into a sterilization pouch before sterilization.
2. The Handpiece is autoclavable with gravitation method for 15 minutes at 132°C. The drying time is 30 minutes.
3. Follow the sterilizer manufacturer's operating manual. Always use complete dry cycle of sterilizer and remove the Handpiece from the steam sterilizer after the sterilization cycle is complete.
4. Do not use chemical steam nor immerse handpiece or cartridge/rotor in disinfectant solution, otherwise could damage the handpiece and cause severe consequences.

10. Disclaimer

1. Information in this operation manual were carefully reviewed. We cannot assume any liability for any damage arising from improper use of the handpiece or from use of this manual.
2. Products are subject to change without notice.
3. Please refer to the bar code on the packing box for manufacturing and expiration date.

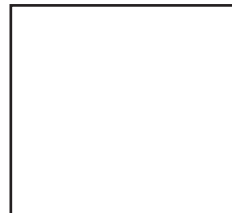
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CAUTION: U.S. Federal law restricts this device to sale by or on the order of a licensed dentist.

11. Quality and Service

All of our products have passed strict QC procedures before delivery. Please note that improper use or not using the recommended parts and accessories or modifying our products without our approval may shorten the lifetime of the product or cause damage. Please contact us or dealers with proof of purchase for consultation whenever you have any questions.

Dealer



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