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English

NSK

Lubrication Free Air Turbine Handpiece with Water Spray

PRESTO AQUA II

OPERATION MANUAL

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

Powerful Partners®



OM-T0286E 001

MADE IN JAPAN CE

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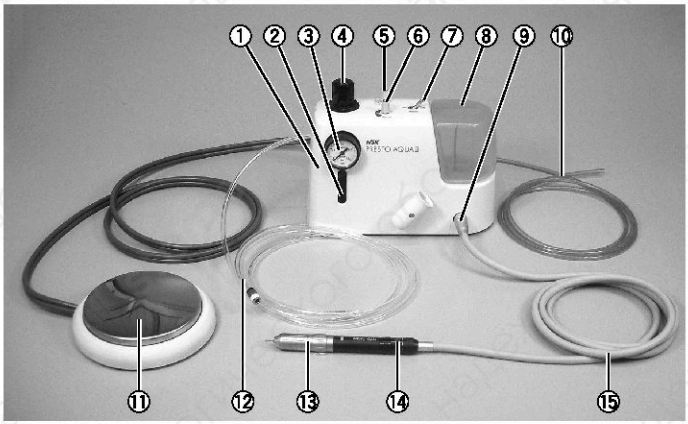
Thank you for purchasing the PRESTO AQUA II.
Please read this instruction manual carefully, and file store it in a place where it can be easily accessed for future reference.

⚠ Caution

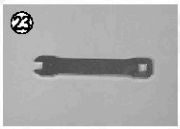
- PRESTO AQUA II is a handpiece used in dental laboratory work for cutting while preventing heat when performing fine work on porcelain teeth, porcelain and ceramics. Do not use for other applications.
- When cutting, wear safety glasses, and use a grinding box and vacuum for safety.
- Do not modify or disassemble unnecessarily. Otherwise, performance and safety may be seriously affected. Please ask your PRESTO AQUA II dealer whenever repairs are required.
- Do not drop the handpiece and unit. Make sure to put the unit on a horizontal and stable surface.
- Observe the permissible speeds the manufacturer or dealer designates for the bur. Otherwise, you may be injured by scattering and breaking up of the bur.
- Do not use burs which are oscillating or bent or damaged and of which shank portions are worn. Otherwise, you may be injured by scattering and breaking up of the bur.
- Do not turn the chuck release ring during rotation of the handpiece. Otherwise, the handpiece will be broken.
- Never supply lubricant to the handpiece. It uses a grease filled bearing and additional lubrication may cause failures.
- Pay careful attention to rattling, vibrations, sounds and temperature (heating), and inspect by rotating in advance before starting use. Immediately ask your dealer for repair work if any irregularities are sensed.
- The proper air pressure is 0.25~0.35MPa. Pressure exceeding the value may lead to premature failure of the bearing because of excessive increases in speeds.
- Extract water if water drips or contaminants are found on the filter of the unit.
- Always clean the shank of the bur you are going to mount. Contaminant deposits in the chuck may lead to oscillating of the bur and breakage of the chuck.
- Install the cutting bur or test bur even when not in use.
- Operational control, maintenance and inspection is the responsibility of each user.

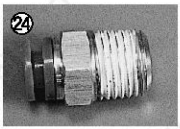
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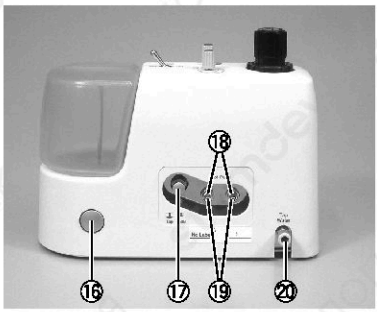
1.Name of Each Portion















① PRESTO AQUA II Control Unit
② Filter Inspection Window
③ Pressure Gauge
④ Regulator Knob
⑤ Chip Air Adjustment Knob
⑥ Water Adjustment Knob
⑦ Water ON/OFF Switch
⑧ Water Supply Bottle
⑨ Handpiece Connector
⑩ Water Filter Set
⑪ Foot Pedal
⑫ Plumbing Hose
⑬ PRESTO AQUA Handpiece
⑭ Coupling Joint
⑮ Handpiece Hose
⑯ Bottle Attaching/Detaching Switch
⑰ Water Mode Select Switch
⑱ Foot Pedal Connector
⑲ Hose Stopper
⑳ Water Connector
㉑ Plumbing Connector
㉒ Bur-inserting Wrench
㉓ Rotor Shaft Nut Wrench
㉔ Air Supply Connector
㉕ Chuck Release Ring
㉖ Cartridge
㉗ Cartridge retainer

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2. Specifications

Speed	320,000min^{-1}
Proper Air Supply Pressure	0.25~0.3MPa
Handpiece Dimensions	ø16.6 (D) X136.6 (H) mm
Handpiece Weight	104g (including coupling joint)
Control Unit Dimensions	W235XD139XH182 (mm)
Control Unit Weight	1.9kg

3. Installation Procedures of Each Portion

(1) Installation of Plumbing Hose

Push the plumbing hose into the plumbing connector located at the regulator on the left-hand side of the control unit until it is securely set to make connection as shown in Fig. 1. Check if the hose is securely installed by slightly tugging it after connection. Connect the other end of the plumbing hose to the air line. At this time, use the attached connector if necessary.

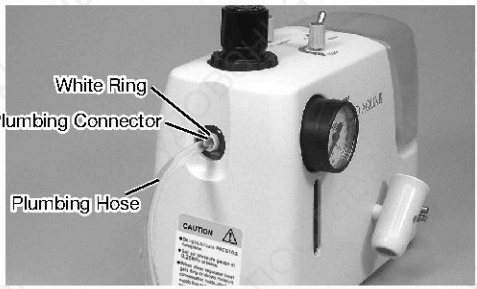


Fig.1

⚠ Caution

- **Push the plumbing hose into the connector until it is securely set. Otherwise, air may leak.**
- **Pushing the white ring, on the plumbing connector, gently remove the tube.**

(2) Installation of Foot Pedal

Loosen and remove the hose stoppers (two) from the foot pedal connectors on the back of the control unit, and insert them into the foot pedal hoses. At this time, insert the hose stoppers so that their screws come outside (control unit side).

Insert the "1"-marked end of each hose according to the instructions on the label. After insertion of both hoses, securely tighten the hose stoppers. (Fig.2)

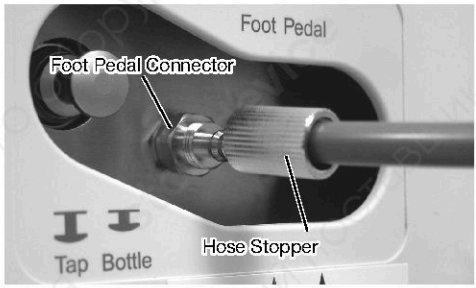


Fig.2

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(3) Installation of Handpiece

Install the handpiece hose to the handpiece connector on the front face of the unit. (Fig.3)
Install the handpiece hose to the coupling joint. (Fig.4)
And then, install the handpiece by pulling the ring of the coupling joint. (Fig.5)

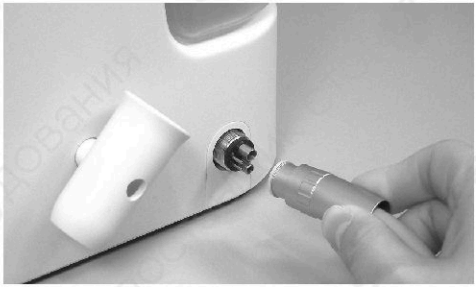


Fig.3

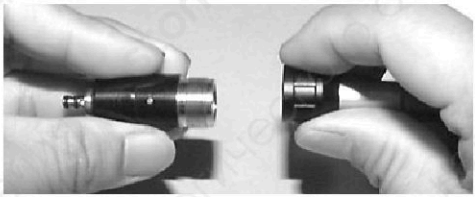


Fig.4



Fig.5

(4) Installation and Removal of Water Supply Bottle

<Installation>

Push in the bottle attaching/detaching switch on the back of the control unit until it is locked. (Fig. 6) Insert the water supply bottle from above, and push it in until the bottle attaching/detaching switch returns properly. Check to see if the water supply bottle is securely installed by pulling it upward.

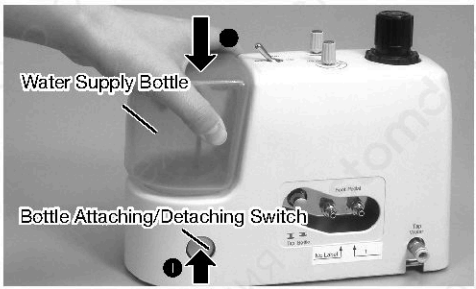


Fig.6

⚠ Caution

Check to see if the bottle attaching/detaching switch has returned properly and the water supply bottle is securely installed. Otherwise, water and air may leak, and the water supply bottle may pop out.

<Removal>

Holding the water supply bottle, push in the bottle attaching/detaching switch until it is locked, and as it is pushed in, while holding the control unit, pull out the water supply bottle upward. (Fig.7)

⚠ Caution

After use, if water is low in the water supply bottle, the water supply bottle may pop out; therefore, the bottle attaching/detaching switch should be pressed as the water supply bottle is held.

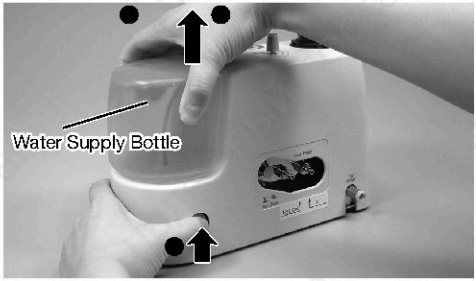


Fig.7

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(5) Installation and Removal of the Water Supply Bottle Cap

<Installation>

Check the packing inside the water supply bottle cap for misalignment or detachment, and then close the water supply bottle cap. (FIG.8)

<Removal>

Before opening the water supply bottle cap, be sure to press the bleeder button to release the pressure in the water supply bottle. (Fig. 9) Check that the pressure is completely released, and then open the water supply bottle cap.

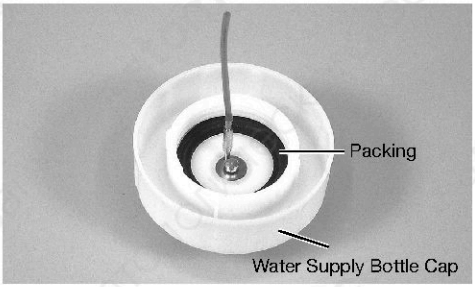


Fig.8

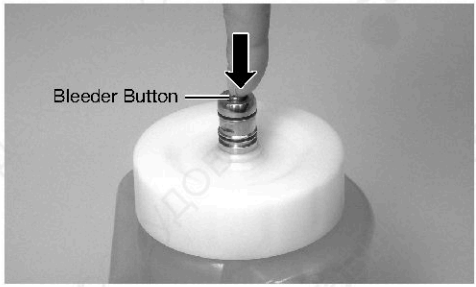


Fig.9

(6) Installation and Removal of Water Filter Set (Use of City Water)

Push the hose of the water filter set (the side of the water filter with a case) into the tap water connector on the back of the control unit until it is securely set to make connection as shown in Fig. 10. Check if the hose is securely installed by slightly tugging it after connection.

Connect the other end of the hose to the tap water line.

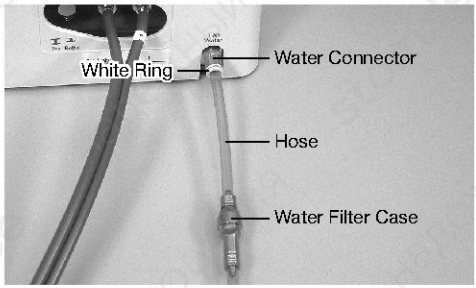


Fig.10

⚠ Caution

- **Push the hose of the water filter set into the tap water connector until it is securely set. Otherwise, water may leak.**
- **Pushing the white ring, on the water connector, gently remove the tube.**

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4. Operational Procedures of Control Unit

(1) Set the Drive Air Pressure

Supply air, and adjust to 0.3MPa by pulling the regulator knob upward and turning.
When adjustment is made, push the knob down to lock.

(2) Set the Water Supply

For use with water supplied, set the water ON/OFF switch to the ON side.
<Use of Water Supply Bottle>
Push the water mode select switch until it stops. (Fig.11)
<Use of City Water>
Pull the water mode select switch until it stops. (Fig. 11) Open the main cock of the tap water.

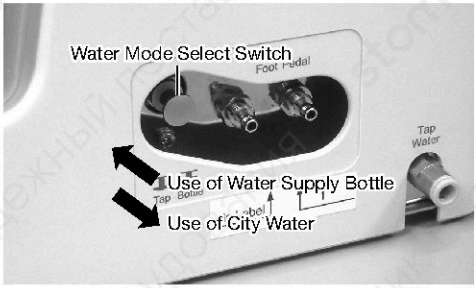


Fig.11

Caution

Properly set the water mode select switch because if it is stopped at an intermediate position, air is released structurally.

(3) Operation

Stepping on the foot pedal starts rotation. If the water ON/OFF switch is set to the ON side, water supply is also started.

(4) Adjustment of the Amount of Water Supplied (when water supply is used)

Check the amount of water supplied, and adjust the amount of water supplied with the water adjustment knob.

Caution

- **When tap water is used, the water pressure may differ according to the installation location, resulting in changes in the amount of water supplied; therefore, adjustment should be made in each case.**
- **Leaving this product for a long time after using it with the water volume controlled may cause air ingress in the hose, and could result in a slow start of water flow. In this case, turn the water on full blast and adjust the water volume as you like.**

(5) Adjustment of chip air (when water supply is used)

Check the spraying condition, and adjust the amount of chip air with the chip air adjustment knob.
Increasing the chip air results in a mist state, and decreasing it results in a straight-line state.

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(6)For Finishing Work

After completion of operation, close the main air cock.

<Use of City Water>

Close the main cock of the tap water.

5. Operational Procedures of Handpiece

(1) As the chuck of the PRESTO AQUA handpiece is a push-in type, set FG burs of ø1.6mm and push in as shown in Fig.12

Push in the bur of which the end is tapered by using the designated bur-inserting wrench as shown in Fig.13.

(2) When removing the bur, it can be removed by turning the chuck release ring in the direction of the arrow in Fig.14.

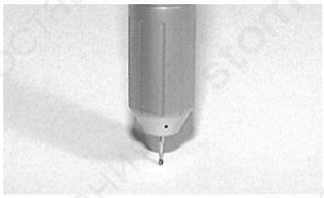


Fig.12

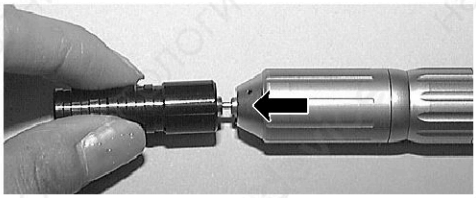


Fig.13



Fig.14

6. Replacement Procedures of Cartridge

① Loosen the cartridge retainer by turning it, in the direction shown in Fig.14.

② Hold the bur and pull out the cartridge toward the front. (Fig.16) At this time, the O-ring placed on the rear bearing may remain in the body. Make sure to remove the O-ring. Before inserting a new cartridge, clean the head interior.

③ When mounting a new cartridge, align the position of the pipe for water and chips, and the positioning pin with the hole of the nose hood of the cartridge and push in straight. (Fig.17)

④ Finally, tighten the cartridge retainer securely.

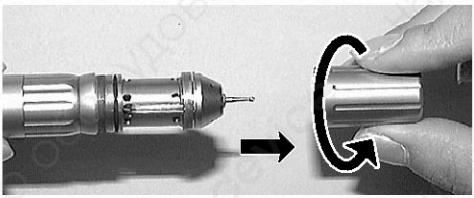


Fig.15

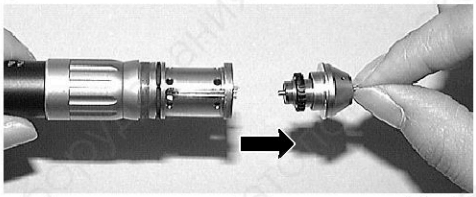


Fig.16

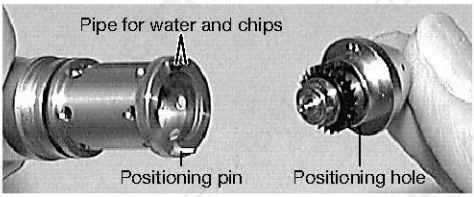


Fig.17

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7. Replacement or Cleaning Procedures of Chuck

(1) Removal of Chuck

① Remove the cartridge with a bur or dummy bur as it is being installed. (6.Replacement Procedures of Cartridge)

② Hold the rotor with two fingers as shown in Fig.18.
Mount the wrench provided on the rotor nut located on the top of rotor shaft and turn counterclockwise.
(Either side of wrench can be used.)

③ When the rotor nut is loose, push out the chuck carefully with the dummy bur or the shank of the bur from the back of the cartridge, the Guide-bush and the chuck will come out. (Fig.19)

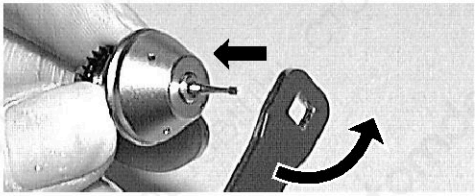


Fig.18

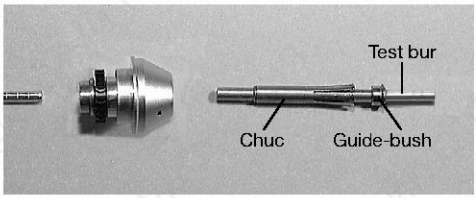


Fig.19

⚠ Caution

As the Guide-bush is a very small part, be careful not to lose it.

- When cleaning the chuck, clean it sufficiently with ultrasonic cleaner etc. Blow oil spray to the inside of the rotor shaft and clean thoroughly.

⚠ Notice

Remove the chuck and clean once a week.

(2) Installation of a New Chuck

① Apply oil thinly on the surface of the new chuck or the chuck after cleaning, insert the test bur and push into the rotor shaft. (Fig.20)

② Set the longer one of the guides of the guide bush on the end of the rotor shaft first along the test bur. (Fig.21)

③ Finally insert the rotor shaft nut along the test bur, and firmly tighten it with a wrench while holding the rotor. (Fig.22)

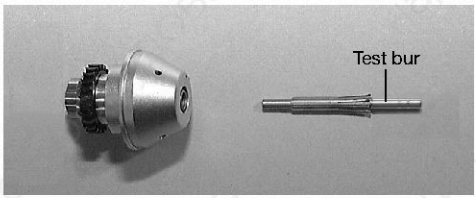


Fig.20

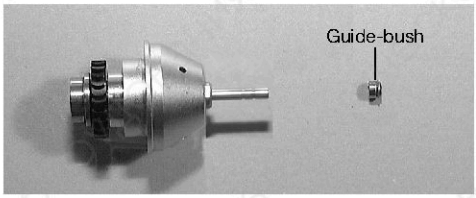


Fig.21

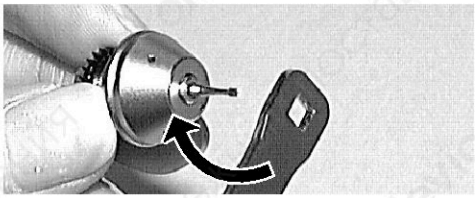


Fig.22

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8. Maintenance of Unit

(1) Draining the filter

Check the filter bowl from the filter inspection window, and if there is an accumulation of water, insert fingers from the bottom, and turn the drain cock in the direction of the arrow to drain water from the filter. (Fig. 23) After draining, securely tighten the drain cock by turning it in the reverse direction.



Fig.23

(2) Changing O-ring

(Use of Water Supply Bottle)

Remove the two O-rings at the bottle joint with a pointed tool, and mount a new nose into the grooves. (Fig.24)

※ Optional O-ring : Order No.Y900-327

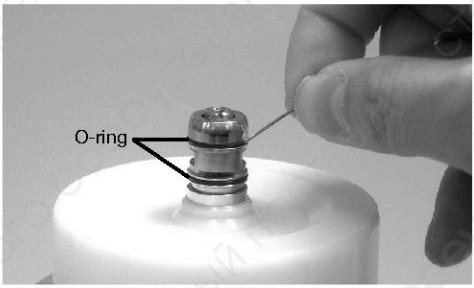


Fig.24

(3) Changing Water Filter

(Use of City Water)

① Close the water valve of the dental unit to which PRESTO AQUA II is connected. Mount two (5x8) spanner wrenches as shown in Fig.25, and turn in the direction shown. When the water tube becomes twisted as a result of this, relieve the twisting by turning it, as its end on the control unit side is free to turn.

② When the water filter case is separated, the water filter can be removed as shown in Fig.26.Replace with a new one and reassemble the filter in the reverse order. (Fig.26)

※ Water Filter : Order No. U387-042

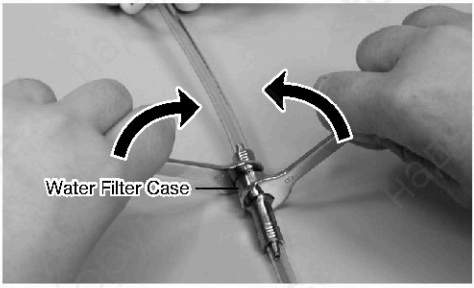


Fig.25

⚠ Caution

Assemble the water filter in the correct direction as shown in Fig.26.

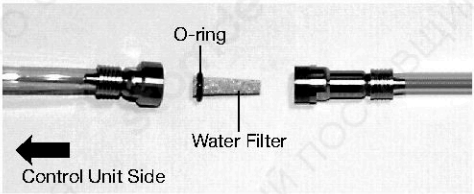


Fig.26

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9. Optional Accessories

Part No.	Description
Y900-327	O-ring set (2 pcs.)
U387-042	Water Filter
Z308-060	Wall Hanging Bracket Set

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NAKANISHI INC.
www.nsk-inc.com
700 Shimohinata Kanuma-shi
Tochigi 322-8666,
Japan

NSK Europe GmbH EC REP
www.nsk-europe.de
Elly-Beinhorn-Strasse 8
65760 Eschborn
Germany

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