



Lubrication Free Air Turbine Handpiece with Water Spray

PRESTO AQUA LUX

PRESTO AQUA LUX

OPERATION MANUAL

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



Powerful Partners®



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MADE IN JAPAN





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PRESTO AQUA LUX

OPERATION MANUAL



Thank you for purchasing the PRESTO AQUA LUX. Please read this operating manual carefully, and file for future reference.

⚠ Cautions for handling and operation

- Read these safety cautions thoroughly before use and operate the product properly. These indicators are to allow you to use the product safely, prevent danger and harm to you and others.
- These are classified by degree of danger, damage and seriousness. All indicators concern safety, be sure to follow them.

Classification	Degree of Danger or Danger and Seriousness
⚠ WARNING	Explains an instruction where personal injury or physical damage may occur.
⚠ CAUTION	Explains an instruction where minor to medium injury or physical damage may occur.
⚠ NOTICE	Explains an instruction that should be observed for safety reasons.

⚠ CAUTION

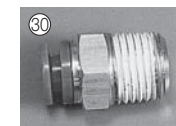
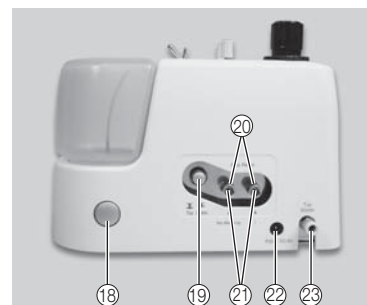
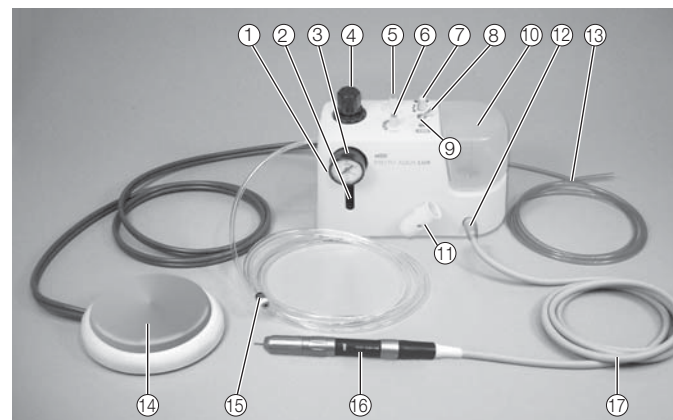
- PRESTO AQUA LUX is a handpiece used in dental laboratories for cutting without heat generation when performing fine work on porcelain teeth, porcelain, and ceramics. Do not use for other applications.
- Do not modify or disassemble as performance and safety may be seriously affected. Contact your dealer for repairs and/or service.
- Take care not to drop the handpiece or Control Unit. Make sure the unit is situated on a flat and stable surface.
- Observe the permissible bur speeds as recommended by the manufacturer. Failure to do so may result in damage or injury.
- Do not use oscillating, bent, worn or damaged burs as they may fracture and cause injury.
- Do not turn the Chuck Release Ring whilst the handpiece is running as this may damage the mechanism.
- Never lubricate the handpiece, it uses a grease filled bearing and additional lubrication may cause damage.
- Pay careful attention to rattling, vibration, noise and heat. Check for any irregularities by running handpiece before use. Contact your dealer immediately if any abnormalities are noticed
- The optimum air pressure is 0.25~0.3MPa. Using higher pressure may cause excessive rotation speeds leading to premature bearing failure.
- Remove any water or debris found in the filter of the Control Unit.
- Always use clean, dry burs. Contamination, deposits or debris in the chuck can lead to failure of the mechanism.
- Insert bur even when handpiece is not in use.
- User is responsible for operation, maintenance and safety.
- Do not wash, wipe or submerge the handpiece in any highly acidic or corrosive liquids.
- Do not use this Control Unit or turbine in the room of the farmable gas.
- Do not use this Control Unit around the equipment that the remarkably electric noise occurs. It may cause a malfunction or breakdown.
- Install the Control Unit that cutting oil or water do not hang in it. It may cause malfunction or short circuit.
- Wear protection glass, glove, ear piece and dust mask for your safety.
- Place equipment so that the power supply cord can be swiftly pulled out in case of emergency.

⚠ NOTICE

Do not power off the Control Unit until turbine is completely stopped.

	Temperature	Humidity
Use	0 ~ 40°C (32 ~ 104°F)	Between 30 ~ 75%
Storage	-10 ~ 60°C (14 ~ 140°F)	Between 10 ~ 85%

1. Part Names



- | | |
|--|-------------------------------------|
| ① PRESTO AQUA LUX Control Unit | ⑰ Coupling Hose (PR-AQL-Hose) |
| ② Filter Inspection Window | ⑱ Bottle Attaching/Detaching Button |
| ③ Pressure Gauge | ⑲ Water Mode Select Switch |
| ④ Regulator Knob | ⑳ Foot Control Connector |
| ⑤ Chip Air Adjustment Knob | ㉑ Hose Stopper |
| ⑥ Water Adjustment Knob | ㉒ AC Cord Connector |
| ⑦ LED Light Adjustment Knob | ㉓ Tap Water Connector |
| ⑧ Water ON/OFF Switch | ㉔ Water Tubing Connector |
| ⑨ LED ON/OFF Switch | ㉕ Cartridge |
| ⑩ Bottle Set | ㉖ Cartridge Retainer |
| ⑪ Handpiece Holder | ㉗ Chuck Release Ring |
| ⑫ Handpiece Tubing Connector | ㉘ Bur-inserting Tool |
| ⑬ Water Tubing | ㉙ Chuck Wrench |
| ⑭ Foot Control | ㉚ Air Supply Connector |
| ⑮ Water Filter Set | ㉛ AC Adaptor (PR-AQL) |
| ⑯ PRESTO AQUA LUX Handpiece (PRA-LUX-HP) | ㉜ Handpiece Stand |

2. Specifications

Control Unit

Model	NE272
LED Power Range	3.5Vdc 0.7A
Control Unit Dimensions	W235XD139XH182 (mm)
Power Supply	5Vdc
Air Volume	30 ~ 40 L/min (0.25 ~ 0.3 MPa)
Water Pressure	0.1 ~ 0.3 MPa
Water Volume	0 ~ 45L/min
Water Tempter	0 ~ 40 °C

Handpiece

Speed	320.000min ⁻¹
Proper Air Supply Pressure	0.25~0.3MPa
Handpiece Dimensions	ø16.6 X104 (H) mm

AC Adaptor

Model	NE271
Power/Voltage	100 ~ 240 Vac 50 ~ 60 Hz 0.4A

3. Installation Procedures for Each Part

(1) Installation Procedures for Each Part

Push the plumbing hose into the Plumbing Connector located at the regulator on the left-hand side of the Control Unit. Connect Plumbing Hose and Control Unit 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 AC Power Supply

Insert the AC Adaptor into Power connector firmly.

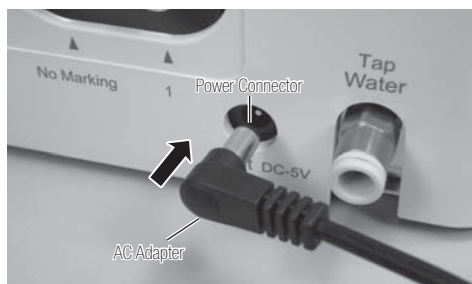


Fig.2

(3) Installation of Foot Control

Loosen and remove the Hose Stoppers (two) from the Foot Control Connectors on the back of the Control Unit, and insert them into Foot Control Connector the Foot Control 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.3)



Fig. 3

(4) Installation of Handpiece

Connect the Handpiece Hose to the Handpiece Connector on the front of the Control Unit (Fig.3). Attach the handpiece to the Coupling Hose by pulling back the sleeve of the Coupling Hose insert the handpiece and release the sleeve. (Fig.5)

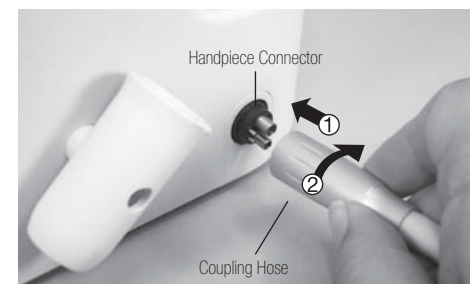


Fig. 4



Fig. 5

(5) Installation and Removal of Water Supply Bottle

<Installation>

Press the Bottle Attaching/Detaching release button on the back of the Control Unit until it engages and is locked. (Fig. 6) Insert the Water Supply Bottle from above and push downwards until the Bottle Attaching/Detaching release button returns to its original position. Check to see if the water supply bottle is securely held in place pull it upwards.



Fig. 6

CAUTION

Check to see if the Bottle Attaching/Detaching release button has returned to its original position and the Water Supply Bottle is securely held in place. If it is not securely held in place water and air may leak, and the Water Supply Bottle may pop out.

<Removal>

Holding the Water Supply Bottle, press the Bottle Attaching/Detaching release button until it is locked, keep pressing Attaching/Detaching release button while holding the Control Unit and pull Water Supply Bottle upwards. (Fig. 7)

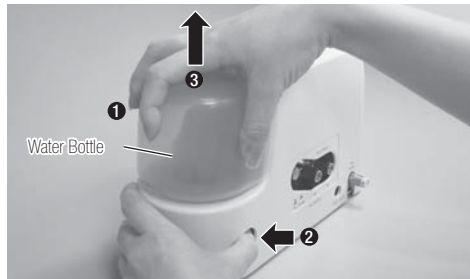


Fig. 7

CAUTION

After use, if water is low in the Water Supply Bottle, the Water Supply Bottle may pop out while pressing the release button; therefore you must make sure the Water Supply Bottle is held securely when pressing the release button.

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

<Installation>

Check the seal inside the Water Supply Bottle Cap for misalignment or detachment before closing 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 before opening the Water Supply Bottle Cap.

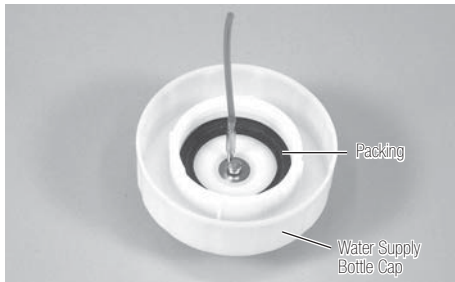


Fig. 8



Fig. 9

(7) Installation and Removal of Water Filter Set (Use of Main Water)

Push the hose of the water filter set (the end with the water filter) into the tap water connector on the back of the Control Unit until it is securely held in place as shown in Fig. 10. Check if the hose is securely held in place by slightly tugging it after connection. Connect the other end of the hose to the tap water line.

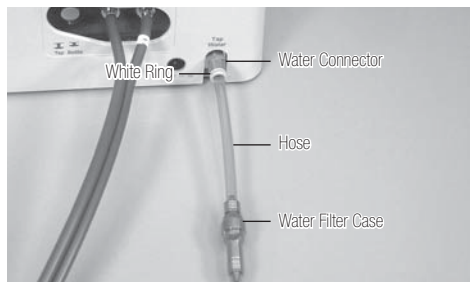


Fig. 10

CAUTION

To disconnect push the white ring on the water connector towards the control unit and gently pull the tube out of the connector.

4. Operational Procedures of Control Unit

(1) Set the Drive Air Pressure

Connect to compressed air supply air and adjust to 0.3MPa by pulling the Chip Air Adjustment Knob upward and turn in the desired direction. When adjusted correctly push the knob down to lock.

(2) Set the Water Supply

Depending on the water supply you must set the Water ON/OFF switch in the correct position by pulling outwards or pushing inwards.

<Use of Water Supply Bottle>

Push the Water Mode Select Switch inwards until it stops. (Fig. 11).

<Use of Tap Water>

Pull the Water Mode Select Switch outwards until it stops. (Fig. 11) Open the main cock of the tap water.



Fig. 11

CAUTION

Properly set the Water Mode Select Switch in the ON/OFF position. If the switch is not in the correct position air may enter the system.

(3) Operation

Depressing the Foot Control starts operation. 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 and adjust the volume with the Water Adjustment Knob.

CAUTION

- When Tap water is used, the water pressure may differ depending on the location, resulting in varying water supply; therefore adjustments may be necessary.
- Leaving this product for a long time after using it with fine water mist may cause air ingress in the handpiece hose. This could result in a slow down the water flow when starting up the handpiece. In this case, turn the water volume up fully to clear the line and reduce again as necessary.

(5) Adjustment of Chip Air (when water supply is used)

Check the spray condition and adjust the amount of Chip Air with the Chip Air Adjustment Knob. Increasing the chip air results in water turning from jet to spray and finally to fine mist. Decreasing the Chip Air has the reverse effect.

(6) LED ON/OFF

LED switch is turned 'ON' it will illuminate once the Foot Control is depressed.

(7) LED Light Adjustment Knob

Check the LED light condition and adjust the amount of light with the LED Light Adjustmen Knob.

(8) After Operation

After completion of operation always close the main air cock.

5. Operational Procedures of Handpiece

- (1) The chuck of the PRESTO AQUA LUX handpiece is a push-in chuck. Align FG burs with $\varnothing 1.6\text{mm}$ shaft diameter with chuck and push in as shown in Fig.12 Push the bur in by using the designated bur-inserting tool as shown in Fig.13.
- (2) To remove the bur turns the Chuck Release Ring in the direction of the arrow in Fig.14.



Fig. 12

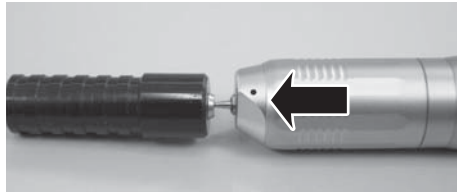


Fig. 13

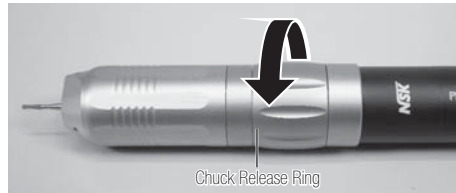


Fig. 14

6. Replacement Procedures of Cartridge

- (1) Loosen the cartridge retainer by turning it in the direction shown in Fig.15.
- (2) Hold the bur and pull to take out the cartridge toward the front. (Fig.16) At this time, the O-ring placed on therear bearing may remain in the body. Make sure to remove the O-ring. Before inserting a new cartridge, clean the head interior.
- (3) When fitting a new cartridge, align the water and chip air pipes as well as the positioning pin with the holes in the nose hood of the cartridge and push in straight. (Fig.17)
- (4) Finally, tighten the cartridge retainer securely.

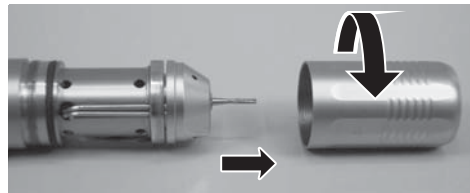


Fig. 15

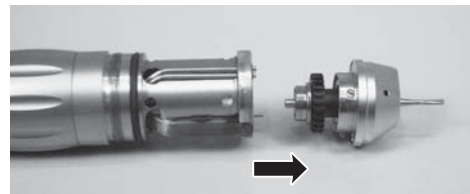


Fig. 16

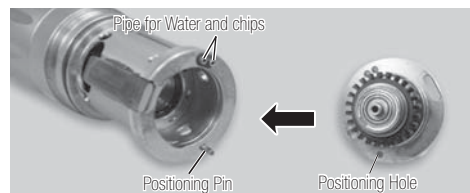


Fig. 17

CAUTION

Do ensure care when handling the disassembled handpiece, Fiber Optic an easaly dammage.

7. Replacement or Cleaning Procedures of Chuck

(1) Removal of Chuck

- 1) Remove the cartridge with a bur or bur blank.
- 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 the rotor shaft and turn counterclockwise (either side of the wrench can be used.)
- 3) When the Rotor Nut is loose, push out the chuck carefully with the bur blank or the shank of the bur from the back of the cartridge, the guide-bush and the chuck will come out. (Fig. 19)

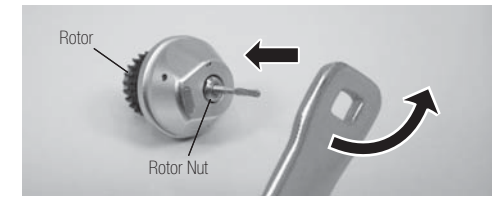


Fig. 18

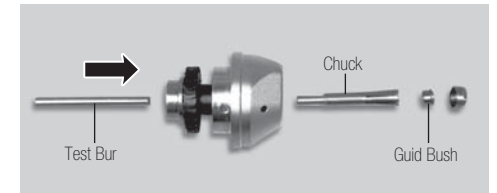


Fig. 19

CAUTION

The guide-bush is a very small part and can easily be lost. Please pay attention.

- To clean the chuck places it in an ultrasonic bath. Blow oil spray into the inside of the rotor shaft and clean thoroughly.

NOTICE

Remove the chuck and clean once a week.

(2) Chuck assembly or replacement

- 1) Apply oil thinly on the surface of the chuck, insert the bur blank and push into the rotor shaft. (Fig.20)
- 2) Insert straight long side of guide-bush toward the Cartridge side. (Fig. 21)
- 3) Finally insert the rotor shaft nut along the test blank and firmly tighten it with the rotor shaft nut wrench while holding the rotor. (Fig.22)

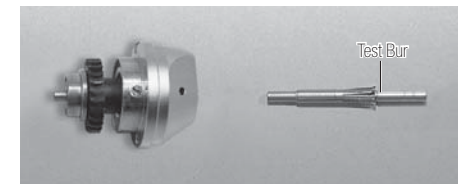


Fig. 20



Fig. 21

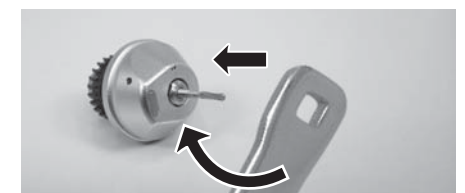


Fig. 22

8. Maintenance

(1) Draining the filter

Check the filter bowl from the filter inspection window to see if there is an accumulation of water. If there is water in the filter insert drain by turning the drain cock in the direction of the arrow as shown in Fig. 23. After draining, securely tighten the drain cock.

Nach dem Entleeren des Filters den Ablaufhahn wieder in die entgegengesetzte Richtung drehen und fest anziehen.



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 insert new O-rings into the grooves. (Fig. 24).

* Optional O-ring : Order No.Y900327

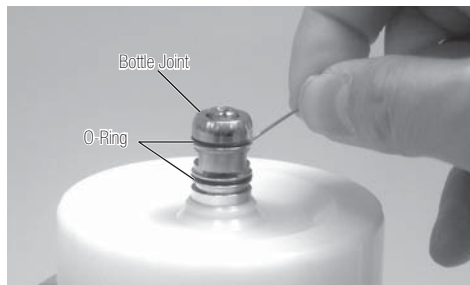


Fig. 24

(3) Changing Water Filter (Use of Tap Water)

1) Turn off the water supply to which PRESTO AQUA LUX is connected. Use two (5x8) spanners as shown in Fig.24 and turn in the direction as shown. Should the water tube becomes twisted as a result of this, relieve the twisting by releasing the spanners and make sure the tube between the water filter and the unit is straight.

2) When the Water Filter Case is apart the water filter can be removed as shown in Fig.25. Replace with a new water filter and reassemble the filter in the reverse order.

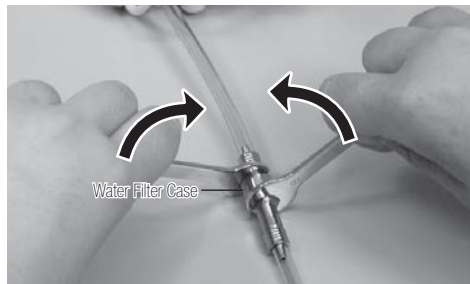


Fig. 25

* Water Filter : Order Code U387042

CAUTION

Assemble the Water Filter in the correct direction as shown in Fig.26.

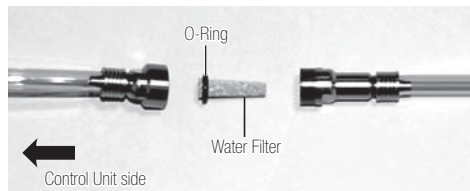


Fig. 26