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CE

AirJet

Powder Jet Handpiece

Operation Instructions

(Applies to: AirJet 1, AirJet 1S, AirJet 2)

Voldent Medical Technology Co., Ltd.

INTRODUCTION

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Thank you for buying a new VOLDENT AirJet product. It is a handheld dental device which is powered by a dental unit and jets the sandblasting powder on the surface of patient's teeth.

Features of AirJet:
- This product can perform supragingival and periodontal sandblasting, all-round plaque removal and periodontal treatment.
- Anti-suction design, prevent powder and moisture from being sucked back, prevent cross infection and connector of dental unit cable pollution.
- Air flow adjustment function to meet the requirements of clinical use.
- The product is compact and lightweight, ergonomically designed, more comfortable to hold which relieves fatigue.

CONFIGURATION

AirJet 2 Structure and Accessories:

1 Subgingival sandblasting handpiece
2 Main body
3 Powder chamber cap
4 Short cleaning needle
5 Long cleaning needle
6 Cleaning spray nozzle
7 Small seal ring
8 Powder chamber seal ring
9 Cleaning brush
10 Periodontal sandblasting handpiece
11 Periodontal nozzle cap
12 Periodontal nozzle
13 Periodontal nozzle wrench
14 Power gear adjustment knob

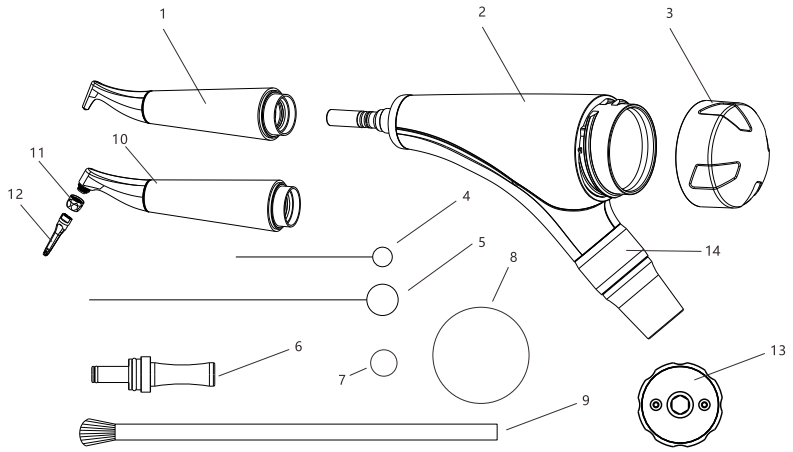

Fig. 1 AirJet 2 Structure and Accessories

ENVIRONMENTAL PROTECTION

The device does not contain harmful ingredients and can be disposed of and destroyed in accordance with relevant local regulations.

AFTER-SALE SERVICE

After this product is sold, if it cannot work normally due to quality problems, please contact the local dealer or the company with the warranty card for replacement or repair. Damages due to non-adherence to the operation instructions or wear out of parts are excluded from warranty.

The warranty of your product will be cancelled if you try to open it.

SYMBOLS

Trademark	Trademark	Manufacturer	Date of Manufacture
Read Instructions	Caution!	Serial Number	Valid Period
Sterilizable in a steam sterilizer (autoclave) at the temperature specified	Water-disinfector for thermal disinfection	Not autoclavable, thermal disinfection not allowed	CE Mark
Humidity Limitation	Atmospheric Pressure Limitation	Temperature Limitation	Medical Device

Preventive measures
-The storage environment should be clean and should be disinfected regularly.
-Product storage must be batched, marked and documented.

TRANSPORTATION

1. Excessive impact and shake should be prevented in the transportation. Lay it carefully and lightly and don't invert it.
2. It should not be mixed with dangerous goods during transportation.
3. Avoid sun, rain and snow during transportation.

MAINTENANCE

1. At the end of each day, use long and short needles to clean up each pipeline of the equipment.
2. Replace the powder chamber cap seal ring, seal ring 1 and seal ring 2 every 6 months.
3. Ultrasonic cleaning of the handpiece with hot water soak once a week.

TROUBLESHOOTING

Type of Problem	Solutions
No powder / air jet coming from the unit	The interior of the handpiece is clogged: Unscrew the chamber cap (the powder could be ejected), empty the camber, clean the air inlet and outlet pipe with the long and short cleaning needles. Turn off the water supply, keep the device running, blow the remaining water and powder in the tubes with dry compressed air. The handpiece is clogged: Clean the tube in the handpiece with the long cleaning needle, clean the spray nozzle with the short needle. Connect the handpiece to the cleaning spray nozzle, then connect the nozzle to the hose of dental unit. Keep the aire running for at least 10 seconds to throughly clean the handpiece inner pipe. Clean the whole handpiece by hot water ultrasonic cleaning. Dry the handpiece after cleaning.
Water comes into the powder chamber	Check the connector of dental unit hose and quick connector. Replace the seal ring if necessary.
Water leakage from the connection between main body and handpiece	Replace the seal ring 1 and 2.
Air or powder leakage from the chamber cap	Check the seal and the cleanliness of the thread on the powder chamber and on the cap. Replace the seal ring if necessary.
Weak air and powder jet, low cleaning efficiency	Refill or change the powder. Clean the handpiece and all the relevant tubes.

In case of any fault that could not be solved by the above methods, please contact your dealer or the nearest service center or dealer.

AirJet 1 and 1S Structure and Accessories:

1 Subgingival sandblasting handpiece
2 Main body
3 Powder chamber cap
4 Short cleaning needle
5 Long cleaning needle
6 Cleaning spray nozzle
7 Small seal ring
8 Powder chamber seal ring
9 Cleaning brush

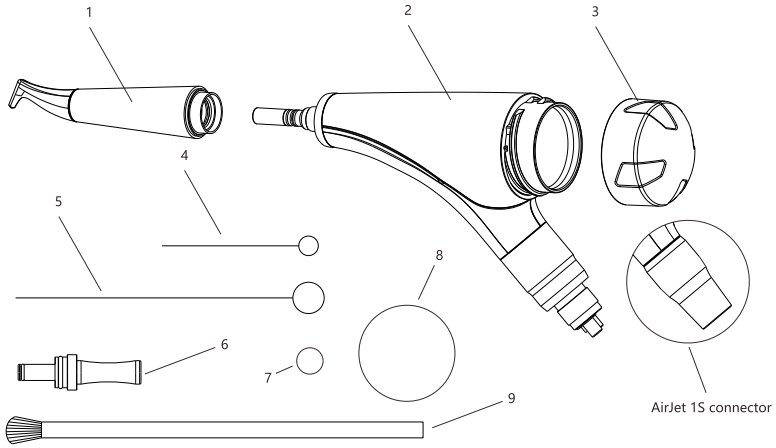

Fig. 2 AirJet 1 and 1S Structure and Accessories

PERFORMANCE, STRUCTURE AND COMPOSITION

The product consists of a main body, a sandblasting handpiece, a tail connector, and a powder chamber.

SCOPE OF APPLICATION

The product can be used with prophylaxis powder to remove supragingival and periodontal plaque, soft tartar and stains on the teeth surface.
Recommended prophylaxis powder for supragingival scaling: sodium bicarbonate, glycine, erythritol, mesh number between 80~250. Recommended dental Power Jet Handpiece for periodontal scaling: glycine, erythritol, with a mesh number of more than 500.

CONTRA-INDICATION

Patients suffering from chronic bronchitis or asthma must not, under any circumstances, be treated by this product. The jet of air and powder could cause respiratory difficulties.

TECHNICAL DATA

Water input pressure	0.7bar~2.2bar(70~220kPa)
Air input pressure	3.5bar~4.5bar(350~450kPa)
Water flow	50~80ml/min
Operating conditions	10℃~40℃ Relative Humidity: 30%~75% Air Pressure: 50kPa~106kPa
Storage and transport Conditions	-10℃~40℃ Relative Humidity: 10%~95% Air Pressure: 50kPa~106kPa
Manufacturing Date	See the packing
Life time	5 years

APPLICATIONS

- Remove subgingival plague for placing sealants.
- Removes periodontal plaque and prevents periodontitis.
- Surface Preparation prior for bonding/cementation of inlays onlays, crowns and veneers.
- Surface preparation prior to placing composite restorations.
- Cleaning prior to bonding orthodontic brackets.
- Effectively remove plaque and stain for orthodontic patients.
- Cleaning implant fixture.
- Remove stain for shade determination.
- Remove plague prior to fluoride treatment.
- Polishing on the surface of teeth after scaling treatment by piezo scaler.

PRECAUTIONS ⚠

Please read the following warnings to avoid potential injury to people or damage to the device.
- This product must be used only by trained and qualified person.
- Do not use this device to the following patients:
1. Patients with respiratory illness.
2. Patients have injury in mucous membrane of more than 3mm pocket depth. (Due to long time jetting near the soft tissues or the salivary gland, powder can be introduced into the injury. In extremely rare cases, this would increase the risk of emphysema.)
3. Patients with grave ulcers or mucosal inflammation in the mouth or in digestive organs.
4. Patients with pulmonary ventilation disorder or liver dysfunction or heart dysfunction.
5. Patients with allergies.
6. Patients who wear contact lenses.
7. Patients who need to limit sodium intake, Hypernatremia, Poisoned during pregnancy, Kidney deficiency, Chronic respiratory disease, Chronic diarrhea).
- During the operation, the operator should wear protective glasses and protective masks throughout the process, Patients should wear protective glasses
- It is recommended to use a suction device to suck off excess powder during operation.
- If the powder gets into the glasses accidentally, please rinse immediately with plenty of water and consult an ophthalmologist.
- Do not aim the nozzle directly at fillings, crowns or dentures, as this may cause damage to these restorations.
- This device can only be used by dentists or professional operators.

2. Handpiece and body cleaning
- Remove the handpiece, insert the cleaning nozzle into the handpiece until a "click" sound, ensure the cleaning nozzle is securely fastened. Use the 3 way syringe to blow air inside the handpiece by the cleaning nozzle, keep the air running for 3~5 seconds to thoroughly clean the handpiece tubes. (See figure 12)

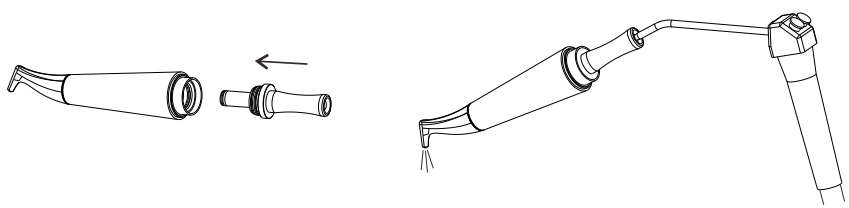

Figure 12 Handpiece cleaning

- Wash the powder chamber cap, cap ring, cap dome and handpiece with distilled or deionized water.
- Clean the threads of the powder chamber, body surface and handpiece surface with alcohol (ethanol, isopropanol).
- If the nozzle is clogged, use a thru-needle to unblock.

PACKING

Enclose the handpiece in a sterilization bag and seal the bag.

STERILIZE

Sterilize the handpiece at up to 135℃ in the autoclave. (134℃, 20 minutes or 132℃, 15 minutes)

CAUTIONS ⚠

1. Only the handpiece can be autoclavable under high temperature and pressure.
2. Make sure that there is no chemical liquid attached on the handpiece surface and the handpiece is completely dry before sterilization.
3. Do not clean or scour this device by high acidity cleanser or disinfectant.
4. Submerge only the handpiece in a disinfectant bath. Do not submerge the unit in a disinfectant bath.
5. It must be sterilized before the first use and after each patient uses it.
6. Clean up within 30 minutes after treatment, high temperature and high pressure sterilization treatment should be taken place within 2 hours after cleaning.

STORAGE, TRANSPORTATION AND MAINTENANCE

STORAGE

1. Excessive impact and shake should be prevented in the transportation. Lay it carefully and lightly and don't invert it.
2. Do not put it with other dangerous goods together during transportation.
3. This device should be stored in an environment with a relative humidity of 10% to 95%, an atmospheric pressure of 50kPa to 106kPa, and a temperature of -10°C to +40°C.
4. After sterilization, the product should be packaged in a medical sterilization bag or a clean airtight container and stored in a special storage cabinet. Retention must not exceed 7 days. If it is exceeded, it should be reprocessed before use.

2. After filling the powder, please spray it in the outer container for 1~3 seconds in advance to ensure that the air and water can be sprayed evenly before treating the patient.
3. Generally, the powder jet handpiece is held in a pen-holding position.
4. When using the device to perform normal periodontal scaling, it is recommended to use the nozzle to remove the plaque from the periodontal pocket of 1~3mm below the gingival, and perform up and down lifting and scaling during use. (See Figure 10)
5. Scaling is recommended for less than 5 seconds for each periodontal pocket site.
6. Before use, please make sure that the water channel of the handpiece is unobstructed. When cleaning teeth, adjust the water volume and air pressure of the main unit to an appropriate gear according to the conditions of dental plaque or pigment; do not stay for too long in one part when cleaning teeth.

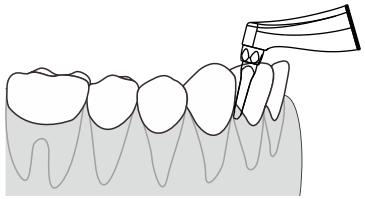

Figure 10 Periodontal sandblasting operation

⚠ It is forbidden to pull out the tail plug when the device is working;
For periodontal scaling, use only periodontal prophylaxis powder.
The periodontal nozzle is a disposable non-sterile product and must be disinfected with medical alcohol before use.

INSTRUCTIONS OF MAIN COMPONENTS

1. Handpiece: the nozzle on the handpiece can be rotated and pulled out. In the case of blockage, the user can rotate the nozzle to loosen it first, then pull out the nozzle, and then use a needle to unblock it, which can be sterilized by high temperature.
2. Powder chamber: used for containing prophylaxis powder.
3. Nozzle: single use only

CLEANING, DISINFECTING AND STERILIZE

CLEANING

1. Powder cleaning (See figure 11)
- Uncover the chamber cap, empty the powder chamber.
- Keep operating the unit after shutting off the water supply. Use compressed air to blow out the remaining water and powder in the pipe.
- Blow out the remaining powder in the chamber and connector with dry compressed air.

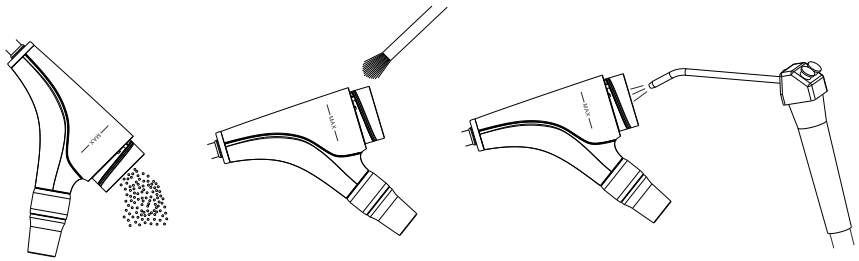

Figure 11 Powder cleaning

INSTALLATION AND USE

INSTALLATION

1. Setting up external dental equipment:
Water supply system:
- Pressure： 0.7bar~2.2bar(70~220kPa)
- Temperature: up to 40°C
Air supply pressure:
- Adjust the air supply pressure to the external dental equipment to obtain the air supply pressure of 3.5bar to 4.5bar (350 to 450kPa).

⚠ Excessive air pressure will cause cracks or ruptures in the powder chamber and powder chamber cover, and even cause human injury.

2. Installation and connection

Connection between power jet handpiece and quick connector:
Use the 3-way syringe to dry the power jet handpiece tail connector and the quick connector.
AirJet 1S and 2: directly insert the quick connector into the Power Jet Handpiece tail connector, and then tighten the quick connector. (See Figure 3)
AirJet 1: directly insert the quick connector into the Power Jet Handpiece tail connector, and then tighten the quick connector. (See Figure 4)

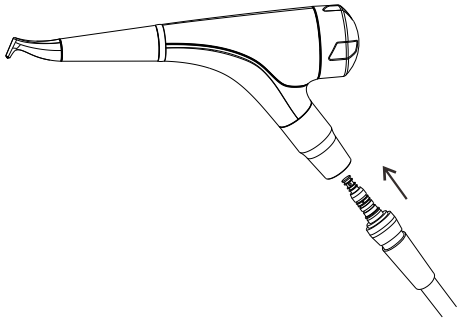

Fig. 3 Connection method of AirJet 1S and 2

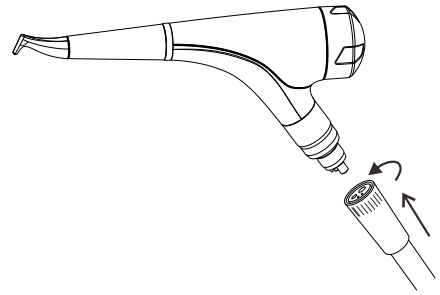

Fig. 4 Connection method of AirJet 1

⚠ Before installing the device, please ensure that the quick connector, power jet handpiece, powder chamber, powder chamber cap, tail connector, air inlet pipe and air outlet pipe in the powder chamber are completely dry. Drying can be done with a 3-way syringe.

Connection between power jet handpiece and quick connector:
After drying the inside of the handpiece and the connector of the main body, directly insert the handpiece into the interface of the main body. (See Figure 5)

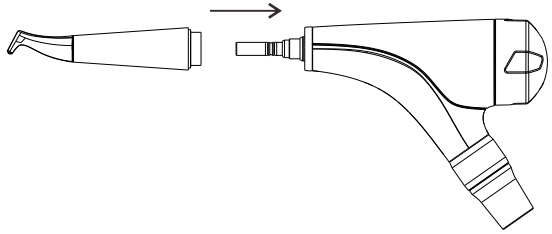

Fig. 5 Connect the handpiece to the main body

Adjust the water flow:
Before loading the prophylaxis powder, adjust the water flow so that the power jet handpiece gets an even amount of water.

Load prophylaxis powder:
After connecting the Power Jet Handpiece, unscrew the powder chamber cover of the Power Jet Handpiece, put the prophylaxis powder into the chamber, clean the powder at the thread position of the chamber cover, and then tighten the chamber cover. (See Figure 6)

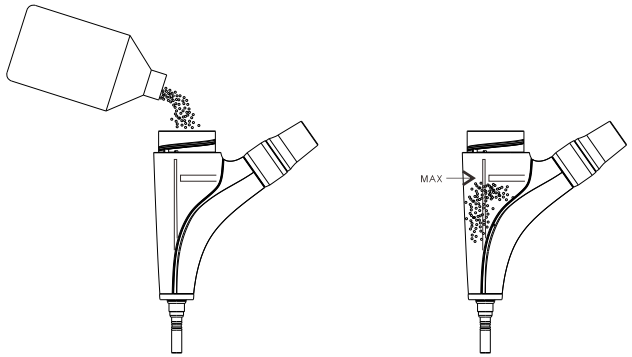

Figure 6 Prophylaxis powder filling

⚠ **Please use only powder provided or recommended by VOLDENT.**
Make sure the powder chamber is absolutely dry.
Do not go over the 'MAX' limited.
The opening of air inlet and outlet pipe should not be covered by powder.
Clean the threads of the powder chamber before screwing on the cap.
Do not shake the device as this could cause the powder to clog the tubes.

Connection between power jet handpiece and quick connector:
After drying the inside of the handpiece and the connector of the main body, directly insert the handpiece into the interface of the main body. (See Figure 5)

FUNCTION AND USE

AIR VOLUME SWITCH OPERATION (for AirJet 2 only)

The air volume of the power jet handpiece has two gears. Rotate the air volume adjustment switch to switch between gears. (See Figure 7)
▬ – Supragingival sandblasting (right)
▬ – Periodontal sandblasting (left)

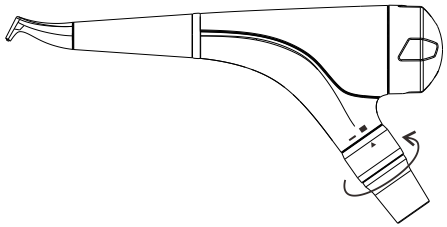

Figure 7 Gear switching

SUPRAGINGIVAL SCALING FEATURES AND REQUIREMENTS

1. Setting water and air
You can modulate the result according to the adjustments:
- Increasing the air pressure increases the cleaning effect and reduces the polishing effect.
- Increasing the water flow rate increases the polishing effect and reduces the cleaning effect.
2. Wear a face mask and eye protection
- Patients should wear goggles at all times to prevent powder from entering the eyes.
- Operators should wear goggles and protective masks throughout the process to prevent bacteria, viruses or sandblasting powder from being inhaled
3. Treatment
- Place absorbent cotton rolls under the lips to prevent the powder from being brought into the patient's saliva and effectively protect the gums.
- Use the high-speed evacuator of your dental unit to evacuate the air and powder mixture deviated by the treated tooth.
- The evacuator must be handled by the same operator.
- Do not direct the nozzle directly towards to the surface of teeth. Respect a distance of 3 to 5mm. Vary the angle between nozzle and tooth from 30 to 60 degrees. (See Figure 8)
- After the treatment, polish the teeth surfaces by setting the water flow rate to the maximum.

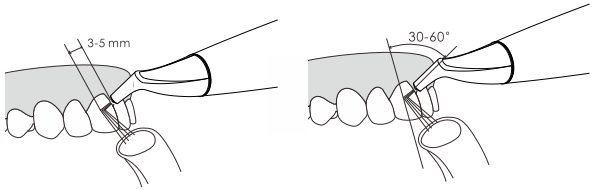

Figure 8 Subgingival Sandblasting

⚠ **The air powder jet is powerful. It can cause injury to the gums or an emphysema caused by the introductions of air into the soft tissue spaces. Do not direct the nozzle directly at the gum tissue or into the gingival sulcus.**

⚠ **After the treatment, the keratin and protein layer on the tooth surface are completely removed, the teeth do not have any natural protection with respect to coloring. Tell you patient that during 2 to 3 hours following treatment, he should neither smoke, nor consume food or drinks which could strongly color the teeth (tea, coffee...).**

PERIONDONTAL SCALING FEATURES AND REQUIREMENTS

1. Install the periodontal nozzle before use, take the nozzle and assemble it to the top of the handpiece according to the positioning direction, then use the wrench to lock the locking cap to the nozzle. (See Figure 9)
- During installing the periodontal nozzle, pay attention to the installation direction. The nozzle has a protruding edge for positioning to prevent the nozzle from being installed in reverse, the base will not match;
- After inserting the nozzle in the correct direction, screw on the locking cap, use a wrench to lock the nozzle locking cap, and remove the wrench after locking.

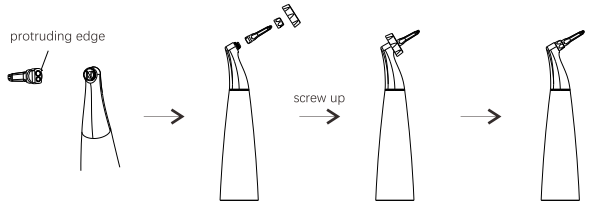

Figure 9 Installation of Periodontal Nozzle