

# iJet / iJet S

## Powder Jet Handpiece Operation Instructions

Thank you for buying a new iJet 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.

This product functions with the power which recommended by REFINE company. This product removes dental plaque, soft deposits and surface stains from pits, grooves, interproximal spaces or smooth surfaces of the teeth.

### MODEL

MODEL	CONNECTOR	HANDPIECE
iJet	M4 4holes	Supragingival nozzle, detachable, sterilizable
iJet S	KAVO Multiflex	Supragingival nozzle, detachable, sterilizable

### COMPONENTES

- Handpiece
- Powder chamber cap
- Body
- Connector
- Nozzle
- Cap ring
- Cap dome
- Powder chamber seal ring
- Powder chamber
- Air inlet pipe
- Air outlet pipe
- Seal O-ring 1
- Seal O-ring 2
- Long cleaning needle
- Short cleaning needle
- Cleaning spray nozzle

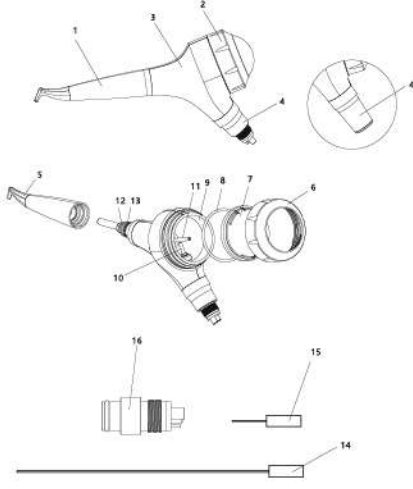


Figure 1 Product Component Diagram

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### APPLICATIONS

- Remove plaque for placement of sealants.
- Surface Preparation prior for bonding/cementation of inlays inlays, 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 plaque prior to fluoride treatment.
- Polishing on the surface of teeth after scaling treatment by piezo scaler.

### 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.

### 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.

### PACKING LIST

- |                              |                           |
|------------------------------|---------------------------|
| 1 x iJet / iJet S main unit  | 1 x Long cleaning needle  |
| 1 x Powder chamber seal ring | 1 x Short cleaning needle |
| 1 x Seal O-ring 1            | 1 x Cleaning spray nozzle |
| 1 x Seal O-ring 2            |                           |

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### INSTALLATION AND SET UP

- Before installation, make sure the quick connector or the hose of dental unit, handpiece, powder chamber, powder chamber cap, air inlet and outlet pipe completely dry. 3-ways sprayer can be used for drying.

1. Connecting to quick connector or dental unit hose. (Figure 2)

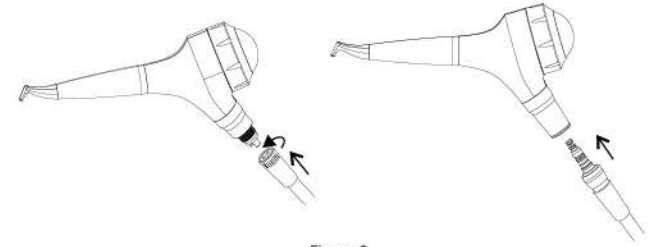
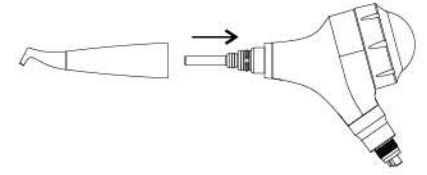


Figure 2

2. Connecting the handpiece to the body. (Figure 2)



(Figure 2)

3. Setting the water flow  
Set the water flow rate to obtain a uniform spray before using the unit for the first time while the powder chamber is empty.

4. Filling the powder chamber  
 Please use only powder provided or recommended by REFINE. 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.

### OPERATING

- Use only dry, clean and oil-free air.

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

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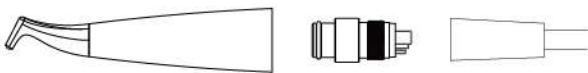
3. Treatment
  - Place absorbent cotton rolls under the lips to prevent the powder from being brought into the patient's saliva and effectively protect the gums.
  - Use the high-speed evacuator of your dental unit to evacuate the air and powder mixture deviated by the treated tooth.
  - The evacuator must be handled by the same operator.
  - Do not direct the nozzle directly towards the surface of teeth. Respect a distance of 3 to 5mm. Vary the angle between nozzle and tooth from 30 to 60 degrees.
  - After the treatment, polish the teeth surfaces by setting the water flow rate to the maximum.

- 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...).

### CLEANING AND DISINFECTING

1. Uncover the chamber cap, empty the powder chamber.
2. Keep operating the unit after shutting off the water supply. Use compressed air to blow out the remaining water and powder in the pipe.
3. Blow out the remaining powder in the chamber and connector with dry compressed air.
4. Remove the handpiece, connect the handpiece to the cleaning spray nozzle, the connect the nozzle to the hose of dental unit. Keep the air running for at least 10 seconds to thoroughly clean the handpiece tubes. (Figure 4)



(Figure 4)

5. Wash the powder chamber cap, cap ring, cap dome and handpiece with distilled or deionized water.
6. Clean the threads of the powder chamber, body surface and handpiece surface with alcohol (ethanol, isopropanol).
7. Enclose the handpiece in a sterilization bag and seal the bag.
8. Sterilize the handpiece at up to 135°C in the autoclave. (121°C, 20 minutes or 132°C, 15 minutes)

### CAUTIONS

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

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### MAINTENANCE

1. Clean the pipes of the device with long and short cleaning needles at the end of the working day.
2. The powder chamber seal ring, seal O-ring 1 and O-ring 2 need to replaced every 6 months.
3. Make sure the handpiece is cleaned by hot water ultrasonic cleaning once a week to avoid clog.

### WARRANTY

The warranty will be valid for 1 year from the date of purchasing. 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		Serial Number		Production Date
	Read Instructions		Manufacturer		Valid Period
	Thermal Disinfection		Sterilizable at up to 135°C in the autoclave		Caution!
	Atmospheric pressure		Temperature Limitation		Humidity Limitation

### TECHNICAL DATA

Model	iJet / iJet S
Classification 93/42 EEC	Class II a
Service Pressure to the turbine connection: Water	0.7-0.22MPa, 50-80ml/min
Service Pressure to the turbine connection: Air	0.35-0.45MPa (3.5-4.5bar)
Net Weight	Approx. 0.16kg
Operating Conditions	10°C-40°C Relative Humidity: 30%-75% Air Pressure: 500hPa-1060hPa
Storage and transport conditions	-10°C-40°C Relative Humidity: 10%-95% Air Pressure: 500hPa-1060hPa
Manufacturing Date	See the packing
Life time	7 years

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### 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 chamber, 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 cleaning needle, connect the handpiece to the cleaning spray nozzle, then connect the nozzle to the hose of dental unit. Keep the air running for at least 10 seconds to thoroughly clean the handpiece tubes. 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 handpiece and body	Replace the seal O-ring 1 and O-ring 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 O-ring if necessary.
Weak air and powder jet, low cleaning efficiency	Refill or change the powder. Clean the handpiece and all the relevant tubes.

### Manufacturer Information

#### Guilin Refine Medical Instrument Co., Ltd.

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Website: http://www.refine-med.com  
Manufacturing Date: See the labels on the package  
Validity Period: 5 years

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