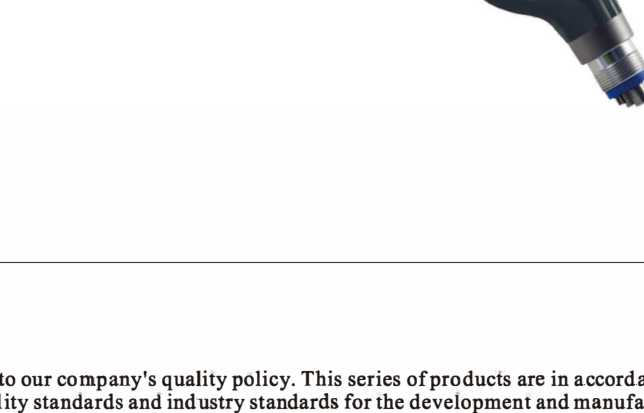


# Air Polishing System User' manual



## Introduction

Customer satisfaction is critical to our company's quality policy. This series of products are in accordance with the relevant legal requirements, quality standards and industry standards for the development and manufacture, and it passed the final test. For the safety of your patients and before you use it for the first time, please read the instructions. These instructions will describe how to use your product and how to ensure it work smoothly and effectively.

## Product Usage

It's always for cleaning teeth, removing calculus and tartar. Improper use may damage the air scalp machine and may result in a risk to the patient, the user and the third party.

## Applications

- Plaque removal for placement of sealants
- Surface preparation prior to bonding/cementation of inlays ,onlays,crowns and veneers
- Surface preparation prior to placing composite restorations
- Cleaning prior to bonding orthodontic brackets
- Effective plaque and stain removal for orthodontics patients
- Clean implant fixture prior to loading
- Stain removal for inaccessible parts of usual cleaning
- Plaque removal prior to fluoride treatment
- Plaque and stain removal prior to whitening procedure
- Surface polishing prior to regular cleaning.

## Contra-indication

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

## Features

- Even in high pressure , handpiece can have 360 degree free rotation ,offering a more considerate and flexible treatment.
- Stains and plaque can be efficiently cleaned by the free attached clean powder, which assures a relax and pleasant treatment to both the user and the patient

## Safety Precautions

- Please read the following warnings, precautions and operation instruction.
- This safety instructions are to avoid potential injury to people or damage to the device. According to the risk seriousness, safety instructions are classified as below.

- ⚠️ -This product must be used only by trained and qualified personnel(dentist or dental hygienist)
- 1.Those with respiratory illness
  - 2.Those in the treatment of more than 3 mm pocket depth or have injury in mucous membrane. Due to the 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.Those with grave ulcers in digestive in organs.
  - 4.Those with hepatic dysfunction.
  - 5.Those with lung or cardiac dysfunction.
  - 6.Those with damage or abnormality in oral cavity.
  - 7.Those with hyperemia ,hemorrhage,or inflammation in oral cavity.

- 8.Those that tend to develop inflammation or ulcers in oral mucous membrane.
- 9.Those with allergines.
- 10.Those with contact lense.
11. Depend on patient habitus, In extremely rare cases, it may cause allergy or stomatitis. In case of these symptoms, stop using this unit immediately.
- 12.Those that require restriction on sodium intake (patient with hypernatremia,pregnancy toxemia, kidney deficiency ,chronic respiratory disease or chronic diarrhea),Classic Cleaning Powder would cause the over-intake of sodium and deteriorate the disease.
- 13.Sodium hydroxide clean powder can cause excessive sodium intake leads to the deterioration of the situation of things

- User keeps wearing eye protection and a safety protection mask during treatment.
- Patient wears eye protection. Suck the filling powder during operation is recommended . In case of eye contact,clean your eyes with plenty of water and consult oculist immediately.
- Do not direct jet the powder toward margin of cementum,decral filed enamel, and lings, molars, and crowns etc.
- Application of Vaseline etc, on patient's lips before treatment will prevent them becoming dry and chapped.
- Excess recommended rated air pressure might result in cracks in the powder case and cap and cause injury
- Use only clean and dry compressed air. Moisture or oil in the air might cause solidification of the powder.
- Tighten the powder cap, Never take off the cap during treatment.
- Make sure all connection parts are absolutely dry before connecting the powder case.
- Use original powder only. In case of damage result from using powder of other manufacturers.
- All residual powder in the case must be discarded after the operation. Reuse the powder may cause clog.
- Make sure the powder bottle cap is promptly tightened after the fillings. Long time exposure may result in powder cack and cause clog.

## Operating the unit

- Patient is allowed to wash mouth as often as needed to avoid a long and continuous treatment;
- Do not impact or hit the case or the cap as this could cause scratch or crack;
- Do not disconnect the unit during operation,Do not tug the wire loop of the handpiece or break the connection while operation. Attempt to do so many cause the separation of the components and the powder;
- Only operate this unit under correct air pressure;
- Scour or blow dry all the internal and external components before operation.

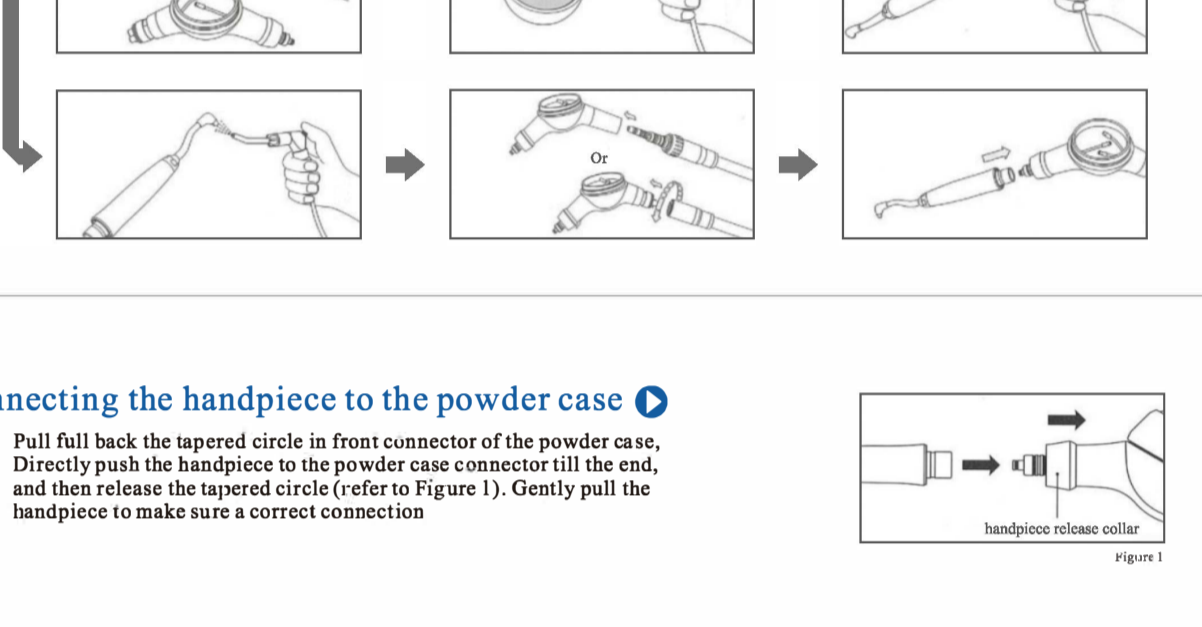
- Care should be exercised at all times to prevent powder from entering human mucous area (eg,eyes,nose etc.)
- Except mouth,Besides,use towel to protect factor use eye protection to prevent the powder from getting into eyes.
- The contact lenses of the patient should be taken off before treatment;
- Clean adhering chemical and oil etc. on the case and the cap, keep away from such items as they may cause fault to the unit.

## Air Pressure

- ⚠️ Set the air pressure of the hose connection to be 0.25-0.45mpa(2.5-4.5kg/cm<sup>2</sup>)  
Excess recommended rated air pressure might result in crack in the case and the cap, and the finally cause in jury.

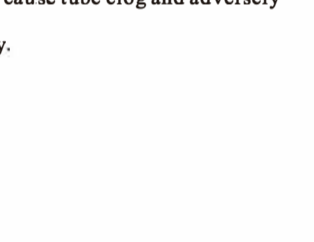
## Connecting the hose connector to the powder case

- ⚠️ Dry thoroughly the quick connector,handpiece,hose connector,end connector of the case, interior of the case, nozzle inside the case and the cap.  
kneep operating the unit after shutting off the water supply system to below residual out of the tubes.



## Connecting the handpiece to the powder case

- ⚠️ Pull full back the tapered circle in front connector of the powder case, Directly push the handpiece to the powder case connector till the end, and then release the tapered circle (refer to Figure 1). Gently pull the handpiece to make sure a correct connection



## Filling clean powder in the powder case

- Setting the optimal water flow rate  
•It is easier to set the water flow rate before using the unit for the first time while the powder case is empty, set the water flow rate from your handpiece to obtain a uniform spray.
- Filling the powder case  
•Make sure that the powder chamber is absolutely dry,Moisture can cause the powder to cack  
•Use only powder provided by our company . use powders from other manufacturers might cause tube clog and adversely affect its efficiency due to different powder size  
•Open the case cap prior to the otile ap.Fill in the powder,screw the bottle cap immediately.  
•Make sure the nozzle hole is not covered with powder before screwing on the cap.  
•Clean the threads of the case before screwing on the cap  
•Make sure the cap is tightened up;  
•Do not shake the device as this could cause the powder to clog the tubes.

## Using the unit

- Handing and setting water and compressed air  
Familiarize yourself with the use of the unit by cleaning a yellow coin or an extracted or an extracted tooth, you can modulate the result according to the adjustments.  
-Increasing the air pressure increase the cleaning effect and reduce the polishing effect.  
-Increasing the water flow rate increases the polishing effect and reduces the cleaning effect.  
Wear a mask and eye protection:  
•The contact lense or glasses the patient may get dirty during the treatment,we recommend to take them.  
•To limited the risk of bacterial or viral infections and inhalation of powder ,we recommend to the dentist and the hygienist to wear safety protection mask.

- The nozzle should never be pointed toward the patient before, during the after operation. Before treatment, the patient trine with mouth wash for at least 30 seconds,will greatly prevent the development of bacteria in the mouth during treatment Before the treatment, patients with a Vaseline-coated lips,After the patient will prevent the lips become and chapped during treatment. Cotton roll placed under the lip place a large swallow saliva with powder,separate lips and teeth and protect the gums.
- Treatment:  
•Position the pupm for sublingual asporation  
•The extraction in high-speed dental chair where deviating from the treatment to drain the excess powder and water mixture.  
•The handpiece and the high-speed evacuator must be handled by the same operator  
•Aim the nozzle at the evacuator inlet and jet for 2 to 3 seconds to varyify that the good liquidity of powder and water is used in dental surface.  
•When used the nozzle 3from the tooth surface to 5mm with an angle of 10 degrees to 80 degrees injection  
•During treatment ,make small circular motions Finally after the teratment polish all dental  
•Surface by setting the water flow rate to the maximum

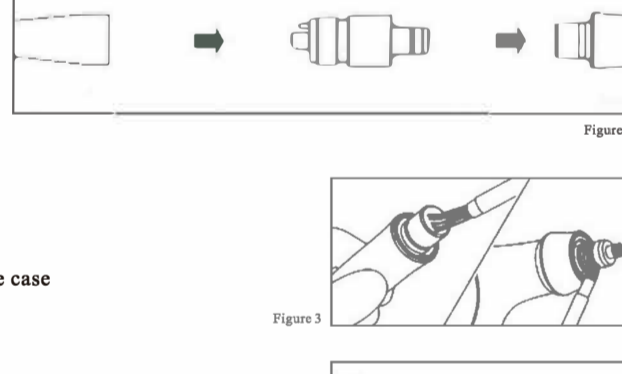
- ⚠️ After the treatment ,the teeth are clean and the dental cuticle is completely eliminated.It's reconstitution by salivary proteins requires between 2 and 3 hours. During this time, the teeth do not have any more natural protection with respect to coloring.  
•Tell your patient that during 2 to 3 hours following treatment ,he should neither smoke,nor consume food or drink which could strongly color the teeth (tea,coffee...)

- ⚠️ Release the pedal and wait until the spray stops  
•When removing the foot from the control pedal,the air/powder jet continues for a few more seconds,Take these seconds into account. You can also introduce the nozzle still in the patient mouth into the high-speed evacuator. •Let some time for the unit to decompress , with no risk of damaging patient mouth.

## Maintenance

- ⚠️ Powder disposal  
• Organic solvent adheres on the cap. It will result in cracks.  
• Powder case are a consumption item. It will deteriorate by ultraviolet rays,or by other environmental factors.  
• Clean thoroughly the case ,the cap,and their threads once a week. Check for cracks in the case and the cap.  
• If you notice cracks in the case or the cap,replace either of the items immediately,use the product under this situation may result in cap cracks,Debris of the cap may cause injury to user or patient.  
• Clean by ultrasound once a week to avoid clog.
- ⚠️ • In the case of any fault,please contact the authorized dealer for repair.  
• This unit must be stored in an absolute dry place.  
• Do not use any lubrication equipment. But the o-ring must be lubricated by the equipped sealing oil.  
1. Uncover the cap,Empty the powder chamber  
2.Keep operating the unit after shutting off the water supply system. Blow residual moisture and powder out of the tubes.  
3.Blow residual powder in the case with the dry compressed air.  
4.Scour saliva and other debris on the nozzle and handpiece head with alcohol-immersed soft cloth.

- Disconnecting the hose, powder case, handpiece and nozzle  
1. Screw the hose  
2.Pull back the tapered circle ,and take of the handpiece  
3.Install the blowing nozzle in the hose connector,and connect to the handpiece ,operate the unit without water supply for over 5 seconds.(Figure 2)



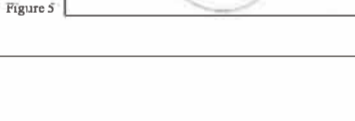
- ⚠️ Hang on the blew part during air-blowing

## Cleaning

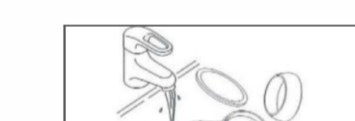
1. Clean the interior of the handpiece connector and the o-ring on the case connector with equipped cleaning brush (Figure 3).



- In case of the powder adherence on the o-ring ,take of the o-ring and clean it carefully as well as its groove (Figure 4)



- 2.Take of the rubber sealing ring ,and remove the plastic part of the cap (Figure 5)



- 3.Rinse the powder ,blowing on the case and the cap . (Figure 6)



- 4.Dry and assemble the powder cap(powder cap includes transparent cap,rubber sealing o-ring ,and the cap base)



- ⚠️ In case of powder residual in the case ,the powder would cack and might cause clog

## Lubrication

1. Dry the o-ring of the case connector. Drop the equipped sealing lube oil on the o-ring, and even up the oil by hand (Figure 7)



- 2.Sterilized in high temperature and high pressure

- ⚠️ If you omit to add the oil to the o-ring connecting the handpiece and the case, it may cause damage to the o-ring, difficult spin or leakage of the connection may occur.

## Cleaning and Disinfecting

- ☒ Submergence and Disinfecting  
Submerge only the handpiece in a disinfectant bath,Do not submerge the case and the cap in a disinfectant bath.

- ⚠️ Ultrasonic Cleaning  
Make sure the unit is cleaned by ultrasound once a week to avoid clog

1. Disassembling and cleaning.
2. Use equipped wrench to screw out the nozzle.
3. Clean the nozzle with hot water by ultrasound.
4. Blow water of all parts with dry compressed air after the cleaning .
5. Connect the tubes, Shut off the water supply system, Uncover the cap, Blow water out of the tubes.

- ⚠️ Dry thoroughly all the parts, especially the interior of the case

## Disinfecting

- Sterilization in high temperature and high pressure is recommend . This unit must be disinfected after the first use and each treatment.  
•All the components are able to be sterilized by high temperature and high pressure.

- Sterilization procedure:  
1. Disassembling and cleaning;  
2. Enclosed in a sterilization bag;  
3. Sterilizable at up to 135°C in the autoclave (autoclave for 20min,at 121 °C or 15min at 132°C)  
4.Keep the handle in the sterilization bags, until you open it, when using apart, reassemble the apparatus to remove the reverse order.

- \* According to EN13060 or EN ISO17655-1 requested, we suggest sterilization in high temperature and high pressure at 121 °C, at least more than 15 minutes.

- ⚠️ •Dry thoroughly all the parts before operation;  
•Take of the cap before sterilizing in high temperature and high pressure;  
•Sterilize the semitransparent part of the cap may cause damage;  
•Chemical liquid adhering on the unit while sterilization may cause damage to its coating or affect the internal parts.  
•Thus, be careful that chemical liquid should not be brought to the autoclave.  
•Temperature near the heater would exceed the given temperature in the autoclave. Do not place this unit near heat sources.  
•Do not clean or scour this unit by high acidity cleanser or disinfectant.

## Warranty

- The warranty will be valid for one year from the date of purchase of your product and accessories. 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 open it.

- Note: The manufacturer reserve the right to modify the technique, accessories , operating instructions or contents of the set without making any notification in advance.

## About the Symbols

SN	Serial number	♻️	Do not disposal for life rubbish
☑️	Maximum 135°C,autoclavable	⚠️	This product can be disinfected and disintected with a disinfectant heat
⚠️	Manufacture data	⚠️	Warning!the risk of injury

## Technical Data

Service Pressure to the turbine connection: WATER	0.7-2.2 bar (700-2200hps)with a service flow of 50-80 ml/min.
Service Pressure to the turbine connect: AIR	STATIC pressure 2.5-4.5bar (2500-4500hPa)
Service pressure to the air source	0.1 -0.5MPA (1 -5kgf/CM <sup>2</sup> )
Weight	About 0.160kg(accessories excluded)
operation conditions	Temperature: + 10-40°C, Humidity: 30-75%, Air pressure: 500-1060hPa
Storage and transport conditions	Temperature: -10-40°C, Humidity: 10-95%, Air pressure: 500-1060hPa

## Trouble shooting

Symptom	Check item	Probable Cause	Solution
NO powder/air jet coming from the device' nozzle	Disconnect the handpiece and the powder case .Press the foot control pedal, and operate with air supply only , powder /air jets from the turbine connection.  Disconnect the handpiece and the powder case .Press the foot control pedal, and operate with air supply only , powder/air jets from the turbine connection.	The interior of the handpiece is clogged  The tube of the powder case is clogged	Use equipped wrench to screw out the nozzle. Clean the nozzle with short cleaning gaeedle. Clean the nozzle connector and the handpiece connector with long cleaning needle. Whatever the results is clean the unit with hot water by ultrasound. Dry the unit thoroughly before next operation.  insert and rotate the cleaning needle to the front centre hole of the powder case.Clean the interior tube with long cleaning needle. Whatever the results is clean the unit with hot water by ultrasound. Dry the unit thoroughly before next operation.
Water leakage from the connection of the handpiece and the powder case	Check the o-ring on the connecting of the handpiece and powder case	o-ring is damaged	Replace the o-ring. Clean the o-ring surface and add sealing oil for lubrication.
Difficult in screwing the powder case and the handpiece	Check the o-ring on the connecting of the handpiece and powder case	Powder a ecumlates on the O-ring grooves. Difficult in screwing the powder case and the handpiece	Take of all the o-ring in the front connector of the powder case. Clean the powder on the o-ring surface and grooves with the equipped cleaning brush. Different type of connector makes different replacing method of the o-ring. Consult your dealer or ThreelI before the replacement

Symptom	Check item	Probable Cause	Solution
Air and powder exit from the nozzle, but are not in sufficient power	Powder partially cakes in the powder case.	Powder that has been left unused was used,he compressed air is mixed with water.	change some powder case  Check if the o-ring at the coupling end of the powder case is aging or damaged. Replace the o-ring if it is damaged. Different type of connector makes different replacing method of the o-ring. Consult your dealer or ThreelI before the replacement
	Powder partially cakes and clogs in the tube of the handpiece or the powder case.	Power partially solidifies in the tube of the powder case due to the moisture.	Drain away water by tuning on the drain valve of the air compressor and strainer. Verify the water less condition  Insert and rotate the short cleaning needle to the hole of case tube. Blow residual powder out of the powder case by the air gun. Whatever the result is, clean the unit with hot water by ultrasound. Dry the unit thoroughly before next operation.

In case of any fault that could not be solved by the above methods, please contact with your dealer