

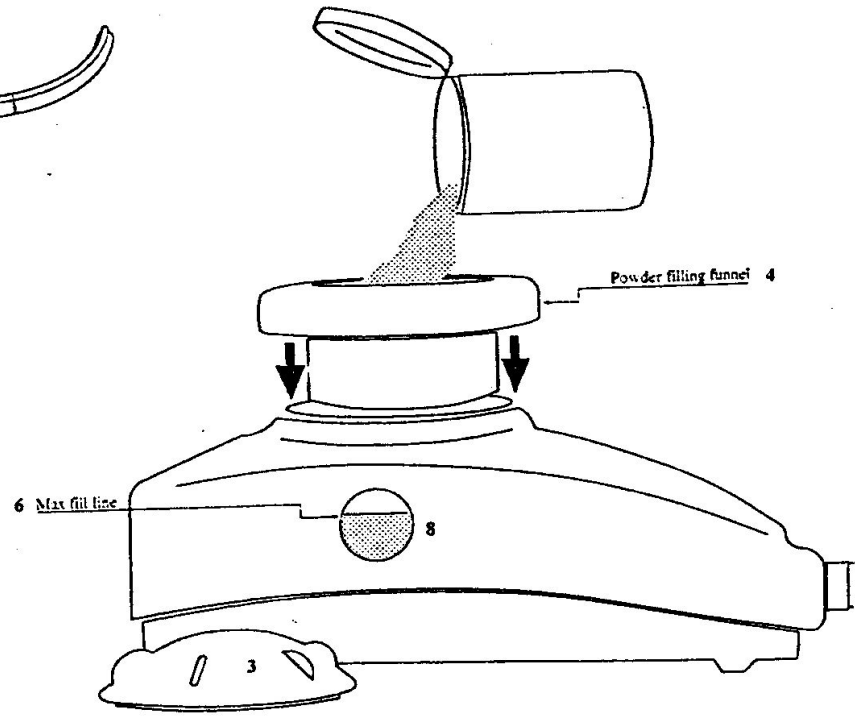
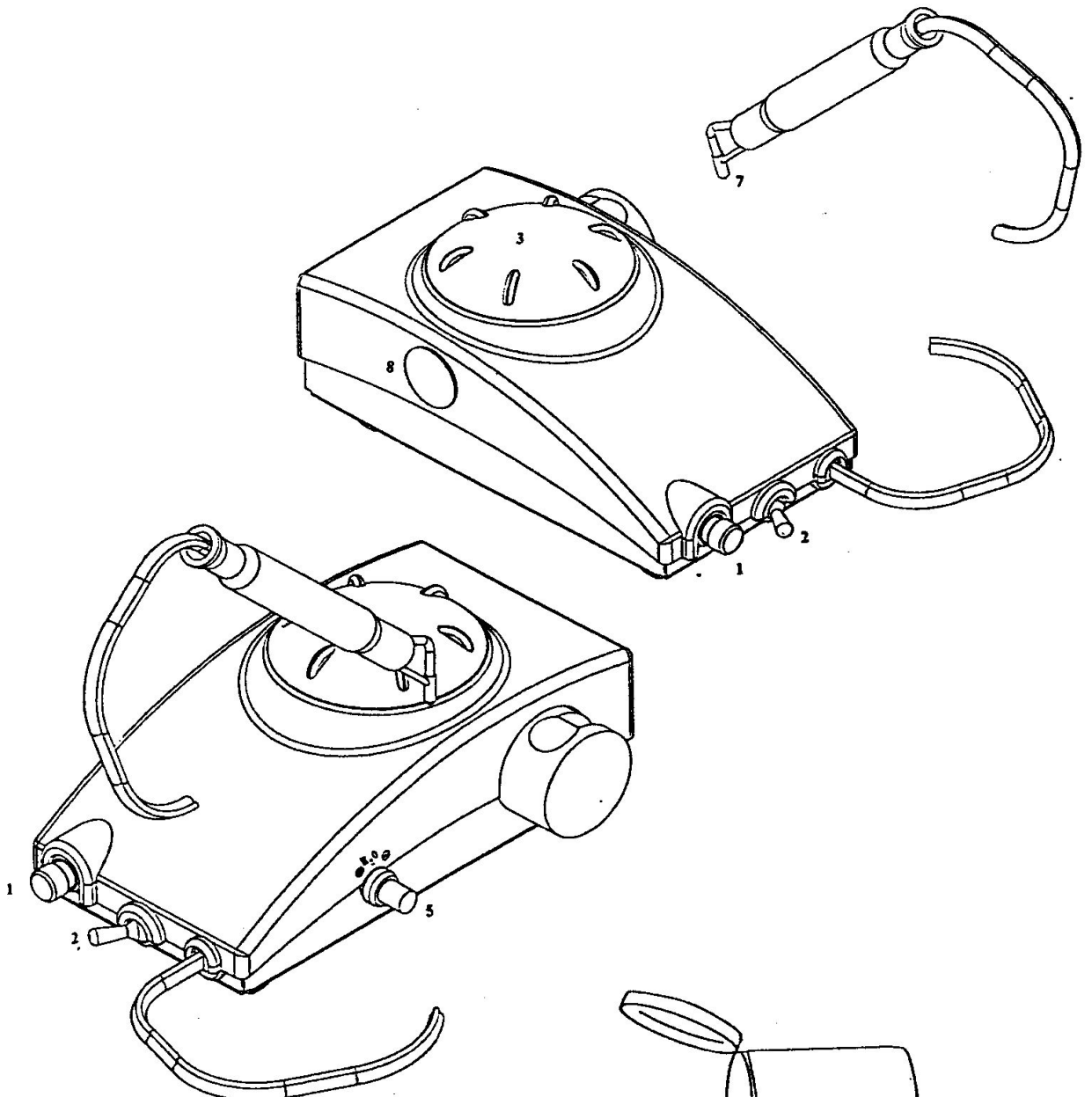


DEL DENT Ltd.

JETPOLISHER 2000™
AIRPOLISHING UNIT

with the H.S.T.® polishing system

OPERATING INSTRUCTIONS



JETPOLISHER 2000™

Your **JETPOLISHER 2000** airpolishing unit incorporating the **H.S.T.™** Homogenous Stream Technology polishing system represents the very latest in air abrasive polishing technology and incorporates many advanced features that will provide many years of trouble free, efficient operation **U.S. Federal law restricts this device to sale by or on order of a dentist**

Among the advanced design features are the following:

- Self-cleaning/non clogging head
- Homogenous mixture
- Atomised rinsing mode
- Separate air and water controls
- Lower pressure for safer cleaning
- Easy view powder chamber No need for routine maintenance



Attention: refer to accompanying documents

Routine polishing

APPLICATIONS

Airpolishing has been shown to be harmless to intact enamel, and can save up to a 50% of time needed to remove heavy stain or for routine polishing after sealing, as compared to a regular prophyl cup or brush method.

Pre-etching or Bleaching

The **JETPOLISHER 2000** is the method of choice for pre-treatment of enamel prior to etching or bonding in cosmetic dentistry. Difficult to reach areas, such as interproximally where crowding exists, can be cleaned effectively to ensure a good bond. Prior to bleaching, the enamel surface should be thoroughly cleaned with the **JETPOLISHER 2000**.

Fissure sealing

The long term success of fissure sealing to some extent depends on the surface area of the bond, and the deeper the fissure 5 cleaned of plaque, the greater the penetration of the bonding material. The **JETPOLISHER 2000** can clean these areas more efficiently than conventional methods and leaves no residue.

Orthodontics

There is no substitute for the **JETPOLISHER 2000** method for cleaning around fixed orthodontic appliances, especially in mouths where optimum oral hygiene is not being maintained. Prior to bonding of bands and brackets, the enamel surface can be thoroughly cleaned with the **JETPOLISHER 2000** to effect a reliable bond. The surface should be rinsed twice before etching.

Cement removal Implantology

Residual particles of temporary cement can easily be removed with the **JETPOLISHER 2000** to ensure accurate seating of restorations. Independent research has shown that airpolishing with the **JETPOLISHER 2000** causes no damage to titanium implant surfaces. The jetpolisher 2000 is FDA cleared for "Cleaning around implants under dentures"



INSTALLATION

The slow or high speed handpiece cable connector on the dental unit is firmly pushed onto the connector (1) on the front of the **JETPOLISHER 2000** and screwed home fully 50 as to eliminate air and water leaks and prevent cross - transfer of water to the air me that will result in clogging of the system. The powder chamber cap (3) is unscrewed and removed. Using the special funnel provided (4), ensure that the amount of powder in the powder chamber does not go above the maximum level indicator line (6). If overfilled the efficiency of the unit will be impaired and can result in clogging of the system. Replace the powder chamber cap and screw down firmly. The mode selector switch (2) is switched to the rinsing mode position. It is important that at the beginning and end of each treatment period the unit is operated for a few moments in the rinse mode in order to flush out any residual powder from the tubing. The water control knob (5) is rotated two full turns from the fully closed position. Ensure that the water and air supply controls on the dental unit are open and will deliver air and water to the handpiece cable being used to operate the **JETPOLISHER 2000**. A minimum air pressure of 30 p.s.i. (2.0Kg/sq.cm.) is needed to operate the **JETPOLISHER 2000**.

Applying foot pressure to the foot control of the dental unit will activate the rinsing mode of the **JETPOLISHER 2000**.

In this rinsing mode, air and water only will be emitted from the nozzle (7). Observation of the powder view chamber (8) located on the side of the unit will show that the powder remains stationary. This indicates that powder is not being delivered to the head and the unit can be used for rinsing in this mode. When pressure is removed from the foot control, a short delay ensures that the head is thoroughly flushed with air alone to prevent irritating

clogging. **Important:** Dental units with automatic oiler systems for low speed handpieces need to be bypassed or eliminated. Ask your full service dealer if you are not sure if your unit is equipped with this feature. A clean dry air supply is required to prevent clogging.

Powder

Only airpolishing powder consisting of specially formulated sodium bicarbonate, such as JETSTREAM POWDER may be used in your JETPOLISHER 2000 unit because it is specially formulated for this purpose.

Shake the powder prior to refilling unit and always store powder with lid secured to prevent caking. Fresh powder should be used if the unit has not been in use for a few days. Important: Always use the special funnel (4) provided to prevent spilling of powder inside the unit during filling. **Do not fill with powder above the bottom edge of the funnel.**

The "Finger-tip Test"

△ CORRECT ADJUSTMENT FOR POLISHING

The mode selector switch (2) is pushed into the polishing mode position. Activation of the unit by pressure on the foot control in this mode will result in powder being delivered to the spray head and powder turbulence being observed in the viewing chamber (8). This stream of air and powder is mixed with the water stream and results in a patented homogenous stream of air, water and powder. (H.S.T.®polishing system) unique to the JETPOLISHER 2000, being emitted from the nozzle.

The correct mixture of air, water and powder results in a spray with minimum scatter and most economical use of powder, and is achieved as follows: The water control knob (5) is fully opened, the nozzle is held approximately 1 cm (3/8") from the finger tip (fig. 1) and while maintaining constant pressure on the foot control, the water control knob (5) is turned slowly so as to reduce the amount of water in the stream.

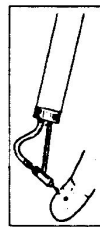


Fig. 1

A point will be reached when a spot of powder begins to collect on the fingertip. At this critical point not quite enough water is present in the stream. While maintaining pressure all the time on the foot control, the water control knob (5) is turned slowly in the other direction so as to increase the water flow a little

in order that the spot of powder on the fingertip just disappears. The JETPOLISHER 2000 is now correctly balanced and will polish with optimum efficiency and minimum wastage of powder.

The optional 'Booster' handpiece is designed to efficiently remove heavy stain. When changing to the 'Booster' handpiece the water control may require adjustment. Note that more powder is used when using the 'Booster' handpiece.

When polishing is completed, the mode selector switch (2) should always be returned to the rinsing mode position and the unit activated for a few moments to thoroughly flush the unit. This mode is used for rinsing the patient's mouth.

Unlike most other airpolishing units, the JETPOLISHER 2000 needs no routine monthly maintenance in the dental office. The unit has been designed without pinch valves and the use of wide bore tubing has meant that the unit does not need to be opened routinely for servicing.

A clean air supply from your unit is essential to ensure trouble free function of the JETPOLISHER 2000. Any external water or air filters that have been fitted to your unit on the advice of your service man should be examined periodically to ensure that they are still efficient. Any water that has collected in the filter should be bled and cartridges cleaned or replaced as required.

The handpiece must be autoclaved at 134°C for 7 minutes at 2.2 Bar after every use. Disconnect the tubing coupling (B) by

unscrewing. The handpiece (A) together with the transparent head tube (C) can then be removed. As variations may occur in the heat intensity at different positions of the autoclave, we recommend placing these parts centrally on a shelf that is not located too close to the autoclave heating element.

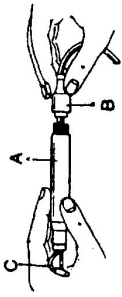
The spray head tubing (C) must be replaced after every patient, but can be autoclaved with the handpiece. Failure to replace this tubing after every treatment session between patients can result in a hole forming in the tube from the abrasive stream. This will result in leakage of air/abrasive, which will reduce cleaning efficiency and can result in soft tissue trauma.

After numerous repeated cycles some change in the color of the handpiece material may be noted. This will in no way affect the function of the unit.

'Booster' handpiece

No need for routine maintenance

△ Sterilising the handpiece



Should any clogging occur in the head or its transparent tube, this can be easily handled by disconnecting the handpiece components and cleaning the tubing and nozzle with a fine wire or reamer or by placing the components in a small quantity of warm water in an ultrasonic bath.

Fig. 2



CORRECT

Fig. 3



INCORRECT

Operating technique

In Fig. 2 the head is angulated so that the stream is directed away from the gingiva. Only the rebound spray is allowed to approach the gingival margin.

In Fig. 3 the stream can be seen being directed towards the gingival sulcus - **THIS IS INCORRECT**. Care must be taken at all times not to direct the spray towards the lips and cheeks, or other oral soft tissues. This can cause soft tissue abrasion and mild bleeding, but is claimed to be of no clinical significance and usually heals uneventfully in a few days.

WARNING

The spray should never be directed into the gingival sulcus or onto the gingival margin, as this can result in unnecessary abrasion of the gingival tissues and / or extension of the periodontal pocketing with associated sequelae. Gauze or sponges should be placed strategically to protect the soft tissues during spraying.

When spraying the palatal surfaces of maxillary teeth or lingual surfaces of mandibular teeth, gauze or sponge should be placed to protect the lips or cheeks from inadvertent spray. The lingual surfaces should similarly be protected when spraying facial or buccal surfaces. Always apply a liberal smear of lubricating jelly around and inside the lips and cheeks prior to airpolishing, and re-apply periodically during treatment as necessary.

The handpiece tip should be held 3-5 mm from the tooth surface. The angle of inclination of the tip varies with the position of the tooth in the mouth and the surface being cleaned.

The ideal position will soon become apparent after a short period of use. It is recommended to use direct vision where possible with the patient's head tilted in the required position.

The recommended technique is for gentle manipulation of the lips and cheeks to form a "shield" rather than retraction. This, together with a strategically located suction tube, will reduce spray emitted from the mouth, reduce soft tissue abrasion and make the procedure more comfortable for the patient.

In addition, a small funnel attached to a suction tube and held close to the mouth by the patient or chairside assistant, is very useful in substantially reducing the amount of spray around the working area. If placed correctly for each area that is being treated - this is learned by clinical experience - it does not interfere with operator vision or suction by the chairside assistant. Research has shown that a 1 minute rinse with a 0.2 % chlorhexidine gluconate mouth rinse by the patient prior to treatment will reduce airborne oral bacteria to insignificant clinical levels. (Worrall et.al., Br.Dent.j. 163:118-119).

PRECAUTIONS FOR USE

Some patients will notice a salty taste during treatment. Air abrasive polishing may damage composite restorations.

IMPORTANT

Patients on an a sodium restricted diet or having respiratory problems, or patients with renal insufficiency, chronic diarrhea, or on long term steroid or diuretic therapy, should consult their physician before having treatment with the jetpolisher. Patients should not wear contact lenses, or should be supplied with a close fitting eye shield. The spray head tip should be moved in short backwards and forwards strokes on the surface to be cleaned. As the gingival margin is approached, the tip should be angulated so as to direct the stream from a gingival direction onto the tooth so as to avoid direct impingement of the stream onto the gingival margin, oral soft tissues or into periodontal pockets. See Fig. 2 and Fig. 3.

WARNING

Caution should be exercised when using the JETPOLISHER 2000 around Dental Implants. Clinical consideration must be given to the type of surface coating of the implants being treated, and to maintaining the health of the peri-implant soft tissues.

At the end of each working day the JETPOLISHER 2000 should be disconnected from the air and water supplies, and the threads on the powder chamber lid and container cleaned to prevent caking of powder. **The spray head transparent tubing should be replaced after every patient.**



**TROUBLE SHOOTING GUIDE -
SYMPTOM 1
PRESSURE ON FOOT CONTROL DOES
NOT ACTIVATE THE
JETPOLISHER 2000**

Possible Cause	Test Procedure	Corrective Action
1. JETPOLISHER 2000 not connected to dental unit (air motor/turbine cable)	Press foot control firmly. If still not working, check connection of JETPOLISHER 2000 to dental unit.	Disconnect connection of JETPOLISHER 2000 to dental unit and reconnect ensuring the connector is screwed home fully.
2. Dental unit not delivering air to JETPOLISHER 2000 .	Check air supply to dental unit. Open valves as necessary. Check compressor is functioning correctly.	Disconnect JETPOLISHER 2000 . Check that foot control depression delivers air & water to dental handpiece connection tube - if not, possible malfunction of dental unit or foot switch, repair as necessary.
3. Inadequate pressure	Check air pressure to and from unit. Air supply to JETPOLISHER 2000 should be adequate to run a dental handpiece (turbine or air motor). Check for air leaks. Check JETPOLISHER 2000 handpiece is firmly connected to air & water tubes.	Air pressure is checked with turbine or air-motor connected to dental unit, and pressure is adjusted to that needed to run handpiece efficiently. Remove turbine/air-motor and connect handpiece tubing to JETPOLISHER 2000 . Test again.
4. Air tube leaking or not connected adequately.	Check for air leaks.	Replace as necessary. Connect tubing to JETPOLISHER 2000 handpiece firmly if it is not attached.
5. Blocked nozzle.	Disconnect JETPOLISHER 2000 handpiece, check that air is reaching the head.	If not, disconnect handpiece components and clean nozzle thoroughly with a small reamer and flush with water and dry before reconnecting. Handpiece components should be cleaned in an ultrasonic bath and dried before reassembly. Replace powder in powder chamber with fresh powder. Check air flow to JETPOLISHER 2000 via connector and air flow to JETPOLISHER 2000 nozzle.
6. Kinked or bent transparent air tube on head.	Changes or shorten as indicated.	
7. The water supply to the JETPOLISHER 2000 nozzle is controlled by the air supply. Therefore failure of the air supply will automatically shut		

Possible Cause **Test Procedure** **Corrective Action**

down the water to the **JETPOLISHER 2000** head.

**SYMPTOM 2
PRESSURE ON FOOT CONTROL SUPPLIES AIR BUT NOT
WATER**

Possible Cause	Test Procedure	Corrective Action
1. Water valve closed	Check position of water valve.	Open water valve fully to ensure water flow, and then adjust correct mixture as in operating instructions
2. Dental unit not supplying water	Disconnect JETPOLISHER 2000 from dental unit. Check that water is delivered to connector by depressing the foot control.	Correct failure of water supply to and from dental unit (call service person)
3. Faulty air supply causes shut down of water delivery to JETPOLISHER 2000 head	Check adequate air supply.	Correct as previous section. Symptom 1(8).
4. Too high air supply pressure in JETPOLISHER 2000 head Will interfere with mixing of Water in the head.	Check water is reaching the connector as described above. The JETPOLISHER 2000 unit requires service by your authorised service person.	Open the JETPOLISHER 2000 by releasing the 2 retaining screws on the rear. Remove powder bottle cap to allow removal of cover. Fit special gauge cap and when depressing the foot control with intensity valve in max. position, adjust internal air regulator (with knurled head) mounted vertically on junction block. Gauge cap should record 32-38 p.s.i. (2.5 Atm) This procedure must only be carried out by an authorised service agent.
5. Water supply tubing leaking or kinked.	Check for leaks. Check for kinks.	Correct as indicated.

**SYMPTOM 3
JETPOLISHER 2000 NOT CLEANING EFFICIENTLY**

Possible Cause	Test Procedure	Corrective Action
Panel mode switch not in polishing mode.	No air is reaching the powder bottle system. This can be confirmed by observing no	Switch into polishing mode position. Depress foot control to confirm

ENGLISH

Possible Cause	Test Procedure	Corrective Action
	turbulence in the powder bottle when the foot control is depressed and mode switch in polishing mode.	turbulence in the powder chamber via the viewing window.
2. No powder or inadequate powder in powder chamber.	Observe powder level in powder chamber. When powder level reaches 1/2 to 3/4 cm level it is time to refill.	Add powder to powder bottle. ENSURE not to overfill above the indicator mark on view window. Approximately 1 powder sachet is adequate.
3 Too much powder.	Check that air inlet tube (downward directed tube) is not occluded by powder. Adequate distance is needed to ensure good turbulence of powder.	Without depressing foot control unscrew powder chamber cap and remove excess powder to fill-line indicator level. Replace cap and depress foot control. With mode switch in polishing position turbulence of the powder should be observed.

**SYMPTOM 4
NO POWDER FLOWING FROM NOZZLE**

Possible Cause	Test Procedure	Corrective Action
1. Air leaks.	Ensure powder bottle cap firmly closed. Close water valve fully on front panel. Depress foot control with mode switch in polishing mode position and observe if powder collects on the fingertip held at right-angles at approx. 1 cm from the nozzle.	Check all air connections both inside JETPOLISHER 2000 and handpiece connections. Correct leaking connections. Check if a hole has formed in the transparent tubing of head and replace if necessary.
2. Blocked head.	Disconnect head from handpiece tubing and check for powder blockage in inlet air tube to head, in nozzle and in transparent air tube.	Remove transparent air tube. Using a fine reamer or wire, clear the blockage and rinse the head well with water. Dry thoroughly with compressed air. Renew transparent air tube. Disconnect handpiece components and dean in an ultrasonic bath. Ensure free flow of powder from the disconnected end of the handpiece air tube prior to reassembling the handpiece.
3. Blockage in air/powder system.	With handpiece removed and water valve closed depress foot control and check if powder flows from the disconnected end of the handpiece air	If not, check each section of the system for leakages according to the following order. Invert the JETPOLISHER 2000 to check if powder is free flowing. If powder is caked or lumpy, the whole system needs to be cleaned as will be described under "Damp Powder"

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Possible Cause	Test Procedure	Corrective Action
	tube.	below. Disconnect the handpiece air tube from the junction block inside the unit. Check if powder flows from the junction block when the unit is activated in the polishing mode. If so the blockage is in the handpiece tubing which should be checked for kinks and flushed thoroughly with compressed air. If no powder flows, disconnect air tube from powder bottle outlet tube (air inlet tube in bottle is directed downward, outlet tube inside bottle is horizontal). Check if powder flows form outlet tube. This indicates that the blockage is in the junction block and can be cleared with compressed air flushing and drying. If no powder flows from the outlet tube, the blockage is in the inlet or outlet tube of the powder bottle. In such a case, empty the powder bottle of all powder. Disconnect the powder bottle from the base of the unit by releasing the two screws underneath the unit. Rinse the bottle thoroughly and use compressed air to thoroughly clear the inlet and outlet tubes. Flush thoroughly with water and dry carefully. Check all other air tubes and the junction block before reassembling the powder bottle.
4. Damp powder.	The powder should remain finely granular and free flowing. If water gets into the powder chamber (damp air supply) the result will be lumpy and not free flowing powder. (connector not screwed home fully)	Check for turbulence in powder chamber when unit is functioning in polishing mode. No turbulence indicates no air entering or exiting the bottle or the powder is clogged due to dampness. Thoroughly remove all powder and carefully flush all air systems as in c) above, before placing new powder. Check air supply is DRY. Ensure that the connector from the dental unit to the JETPOLISHER 2000 is screwed home fully to prevent cross transfer of water from water line to air line.
5. Unit is not adjusted for homogeneous stream.	See operational manual.	Apply finger tip test for correct adjustment
6. Too much water in stream.	See operational manual.	Apply finger tip test.

Possible Cause	Test Procedure	Corrective Action
in stream.		
7. Nozzle held too far from surface to be cleaned.	See operational manual.	
8. Inadequate air pressure.	See previous section on air pressure adjustment.	

ENSURE THAT THE CONNECTOR FROM THE DENTAL UNIT TO THE JETPOLISHER IS SCREWED HOME FULLY TO PREVENT CROSS TRANSFER OF WATER FROM WATER TO AIR LINE.

CE DECLARATION

This unit meets the provisions of the Council Directive 93/42/EEC concerning medical devices. This product is designed to be used by Dentists or Dental Hygienists for polishing teeth. Therefore is in class IIa according to Rule 9 in Annex IX of the Medical Device Directive and is marked CE 0344.

CONTENTS

- * JETPOLISHER 2000 unit with autoclavable handpiece
- * Handpiece holder
- * Connector
- * Packet of replacement Spray Head Tubes (set of 6)
- * Airpolishing powder (sample)
- * Instructions

SPECIFICATIONS

Dimensions (including hand piece holder and connector)
 Height: 90mm
 Width: 130mm
 Depth: 210mm
 Weight including packaging: 1.75kg
 Weight net: 1.1 kg
 Air: 0.3 Mpa - 0.7 Mpa
 30 - 90 Psi
 Water: 0.2 Mpa - 0.6 Mpa
 30 - 90 Psi

ACCESSORIES

Packet of replacement Spray Head Tubes -50 pieces Item No. 509550
 Jetstream Airpolishing powder 4 x 250gm.Tubs. Item No. 500004
 Additional JETPOLISHER 2000 autoclavable handpiece Item No. 509020
 Booster Handpiece Item No. 509111

LIMITED WARRANTY

Deldent Ltd. will replace or refund the purchase price of any of its products that are proven to be defective within 30 days of purchase date. Replacement of defective goods or refund of purchase price shall be the exclusive remedy of the user. Deldent Ltd. will not be liable for any economic, incidental or consequential loss or damage that arises out of use of or the inability to use its products, or normal wear and tear. The limited warranty is in lieu of all other warranties, expressed or implied, and shall be void if the product is improperly stored or used. There are no implied warranties of merchantability, fitness for a particular purpose, or otherwise. Before using this product, the user shall determine whether it is suitable for the intended use, and the user shall assume all risk and liability associated therewith.

This warranty does not cover blockage of the nozzle, handpiece or the airpolishing system. Blockage can result from failure to follow the operating instructions, by a moist air supply, incorrect installation or operating procedures.

If the package has been opened it may not be returned for a credit. If the product has been operated and it is defective, please ensure that it is returned in its original packaging, complete with all components, accessories, operating instructions, and a copy of the purchase invoice. The product will be replaced or repaired at the sole discretion of the manufacturer and in accordance with the manufacturers warranty.



Attention: refer to accompanying documents