

 **DEL DENT Ltd.**

MINIBLASTER[®]

CLINICAL SANDBLASTER

◆ **USER INSTRUCTION GUIDE** ◆

Limpiador de arena clinico
para introducción en autoclave

Sableuse dentaire pouvant être
stérilisée dans un autoclave

Autoklavierbarer klinischer Sandstrahler

Autoclaveerbaar klinisch zandstraler

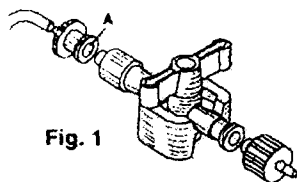


Fig. 1

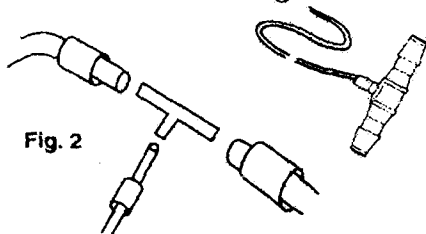


Fig. 2

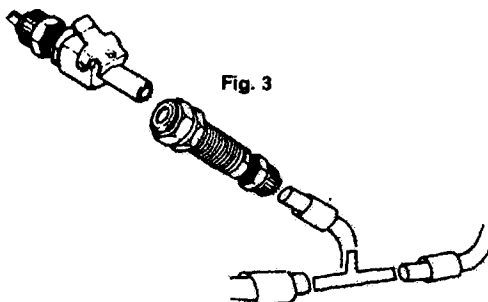


Fig. 3

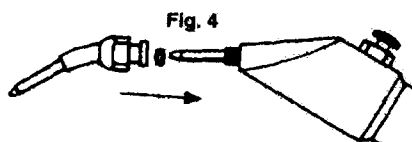


Fig. 4

"U.S. federal law restricts this device to sale by or on the order of a dentist"

INSTRUCTIONS FOR USE

Autoclavable Miniblaster TM

Hook-up instructions

Operation instructions

Bonding techniques

Maintenance

The **Miniblaster** is a safe, dependable, miniature sandblasting unit designed to deliver a narrow stream of abrasive and air.

The abrasive normally employed is Aluminum Oxide. It is absolutely essential that the abrasive powder be dry and free of lumps. Most abrasives may be restored by baking in an oven at 250 F for about one-half hour.

ABRASIVE SELECTION

General abrasive uses are: *Aluminum Oxide, 90 micron, tan*: Rapid removal of cements from metals. Preparation of metals for bonding. *Aluminum Oxide, 50 micron, white*: General bonding preparation of metallic and non-metallic surfaces. Will not discolor porcelain or composites.

Glass Beads – Satin luster texturizing metal surfaces to reduce brightness. Clean dentures. Not for bonding or intra-oral use.

Aluminum Oxide, 0.5 micron – Stain removal from composites. Use wet only.

Glass beads (of similar size) may be substituted for the Aluminum Oxide abrasive if the unit is to be used to clean metal surfaces and to give them a stain finish. For this application simply exchange the abrasive for glass beads. **(Do not use glass beads, however when preparing metal surfaces for bonding, welding, cementing or soldering or for intra-oral use).**

INSTALLATION

The **Miniblaster** is supplied with an in-line pressure stop-cock and plastic "T" fitting for ¼ inch polyethylene air tubing. It can be disconnected from the air supply for autoclaving

purposes or for transportation from one operatory to another by simply turning the stop-cock lever through 90 degrees (fig.1). The quick-disconnect luer fitting (A) can then be disconnected.

Additional outlets for installation in operatory, includes plastic "T" fitting for ¼ inch polyethylene air tube & 1/16 inch tubing and in-line stop-cock with luer fittings.

Hook-up in operatory

1. Locate the air pressure supply line. This is usually a ¼ inch polyethylene tube and carries unregulated air with an inlet pressure of 80-100 p.s.i.
2. Turn off the air supply.
3. Cut the air supply tube at a position close to the desired working area.
4. Thread the 2 wider tube-retaining sleeves supplied, onto the cut ends of the air tube and the narrow sleeve over the **Miniblaster** air line (fig.2)
5. Insert the wider ends of the supplied "T" fitting firmly and fully into the cut ends of the air tube.
6. Slide the retaining sleeves down over the tubes to secure them to the "T" fitting.
7. Attach the thin **Miniblaster** air supply line onto the remaining narrow fitting of the "T" fitting.
8. Slide the narrow retaining sleeve down over the tubing to secure it to the "T" fitting.


The stop-cock and luer fitting can now be used to cut-off the air supply before disconnecting the **Miniblaster** for autoclaving or transportation between operatories.

Alternatively, a Quick Connect Hook-Up (fig.3) may be used to install a male and female quick-disconnect system. In this system the "T" fitting is connected to a female quick disconnect. The female disconnect contains an automatic shut off when the male disconnect is removed. It contains locking nuts so that if desired it can be panel mounted.

Install the male quick disconnect supplied to the thin air supply-line of the **Miniblaster** (fig.3)

Special fittings other than for standard ¼ inch polyethylene tubing may be needed.

Please contact your supplier who can supply a whole range of fittings.

 **Note:** Teflon tape should not be used to secure fittings, as this can lead to blockages in the system.

INTRA-ORAL USE OF THE MINIBLASTER_____

SET UP

AIR SUPPLY. The **Miniblaster** requires a supply of compressed air (60-100 psi at 1 cfm). The device performs significantly less efficiently if the supply pressure is less than 60 psi.

A bottled gas supply such as nitrogen or highly compressed air can be used instead of a regular air compressor, provided that **a regulator that will regulate pressure to no more than 100 psi is fitted.**

Dehydrated air is not essential but a water trap filter should be fitted to the supply line to prevent large water particles in the air line from causing blockage of the system. An in-line filter capable of removing scale, rust or grit should be fitted.

OXYGEN, FLAMMABLE OR TOXIC GASSES MUST NOT BE USED.

Delicate instrumentation such as optical instruments or other instruments that could adversely be affected by airborne abrasives should not be located in the vicinity of the operating area. Alternatively, such instruments should be adequately covered. When not operating the **Miniblaster** intra-orally it is recommended to operate the unit in a suitable dust cabinet e.g. Henry Schein Dust-Collector™.

ENSURE THAT THE AIR SUPPLY TO THE MINIBLASTER IS REGULATED AT THE CORRECT PRESSURE MAX. 100 P.S.I.

OPERATION

ABRASIVE. The abrasive bottle should be filled approximately three-fourths full with 50 micron Aluminum Hydroxide powder. It is essential that the abrasive be free of dirt and foreign particles. Even small lumps can block the pick-up hole in the bottom of the stem. When about ½ cm of

abrasive powder remains in the powder reservoir, additional powder should be added to ensure optimum function of the unit.

Ensure that the abrasive pick-up tube is pushed down fully into the powder chamber.

CHECK THE PATIENT'S MEDICAL HISTORY TO ENSURE THAT THEY WILL NOT BE ADVERSELY AFFECTED BY POSSIBLE INHALATION OF THE AIRBORNE ABRASIVE.

In order to minimize this risk of inhalation of abrasive ensure that a good high volume evacuator system is available and can be placed close to the operating field or hand held by an assistant.

THE PATIENT, OPERATOR AND ASSISTANT SHOULD BE FITTED WITH EYE PROTECTIVE SHIELDS AND THE OPERATOR AND ASSISTANT, IN ADDITION, SHOULD WEAR A SUITABLE FACE MASK, DO NOT POINT THE ABRASIVE NOZZLE TOWARDS THE FACE OR EYES.

The area to be treated should be fully isolated from adjacent areas, and neighbouring soft tissues such as gingiva, cheeks, lips and tongue, shielded.

RUBBER DAM SHOULD BE USED TO ISOLATE THE AREA TO BE TREATED WHENEVER POSSIBLE.

A block out light-cured resin such as "L.C. Block-Out" or "Opal Dam" (from Ultradent Products Inc.) is useful for protecting adjacent surfaces when full rubber dam isolation cannot be achieved. In this case, additional suitable protection of the surrounding soft tissue should be ensured.

The **Miniblaster** is controlled directly by a finger-controlled valve located on the top of the unit. The finger-button controls the flow of air and consequently the amount of abrasive. Light finger pressure will result in a fine dusting action; a moderate pressure will give the full abrasive blast.

EXPERIMENT ON A COIN, STAINLESS STEEL, GLASS AND CERAMIC TILE TO BECOME FAMILIARISED WITH THE RESULTS OF THE WORKING CHARACTERISTICS ON DIFFERENT MATERIALS BEFORE ATTEMPTING TO WORK INTRA-ORALLY.

ALWAYS PLAN THE AREA TO BE ABRADED AND DO NOT APPLY PRESSURE TO THE CONTROL VALVE UNTIL THE

NOZZLE IS PLACED AND DIRECTED CORRECTLY TOWARDS THE AREA TO BE TREATED.

ALWAYS CHECK THAT THE NOZZLE IS TIGHTLY AND FULLY SCREWED INTO ITS SEATING BEFORE SANDBLASTING INTRA-ORALLY TO PREVENT THE NOZZLE FROM BECOMING DETACHED DURING FUNCTION.

The nozzle is held at a distance between 2-10mm and is moved in smooth overlapping sweeps over the area to be abraded.

TAKE CARE NOT TO DIRECT THE NOZZLE TOWARDS THE ADJACENT SOFT TISSUE OR RESTORATIONS THAT DO NOT NEED TO BE ABRADED.

MAINTENANCE

INSTRUCTIONS FOR AUTOCLAVING

1. Remove powder container.
2. Activate the **Miniblaster** by depressing the valve for a few seconds. This will flush the system of residual powder.
3. Seal nozzle with a rubber block to flush air back through the system while depressing the valve.
4. Close air supply to the **Miniblaster** and disconnect the unit from supply tube by unscrewing the rear retaining nut.
5. Autoclaving is normally carried out for a minimum of 7 minutes net at 134°C and 30-35 p.s.i. (2.2 atm.). Please refer to your autoclave instruction manual.
6. After autoclaving allow the unit to dry completely and then repeat steps 2 and 3 before re-attaching the powder bottle. This will ensure that the unit is thoroughly dry before introducing the powder.


RATCHET SYSTEM

The special ratchet system allows the operator to rotate the nozzle to achieve maximum access to different areas in the mouth. Whilst holding the handpiece in one hand gently pull the spray head forward with the other hand and rotate gently until the desired rotation is achieved. Release the tension and the position will be held by means of the small screw located in the ratchet system. The tightness of the ratchet system is

controlled by the degree of tension applied to the internal tubing by the rear circular retaining nut. An oval slot around the powder pick-up tube enables tension on the ratchet system to be adjusted. If the ratchet rotation system feels a little loose, the tension can be increased by sliding the powder pick-up tube with thumb pressure to the rear and tightening the rear circular nut to maintain the increased tension.

BACKFLUSHING

Should the abrasive feed lines become clogged for any reason, the system can be cleared in most cases by "backflushing".

 This is achieved as follows and **should be undertaken in a safe receptacle such as the Deldent Dust-Inn 2000™ dust cabinet and away from patient and staff.**

1. Remove the powder container by sliding it off the powder pick-up tube. Backflushing reverses the air supply back through the system and can result in powder container "popping off" or "exploding" due to the air pressure.
2. Place a rubber block or similar object firmly against the nozzle orifice.
3. Apply firm pressure on the control knob intermittently in short blasts. This action will force air back through the internal tubing system and normally remove any foreign particles or clumped powder lodged in the handpiece or pick-up tube.
4. If this does not solve the clogging problem, clear the nozzle with a fine stiff wire (0.026" diameter).

TROUBLE SHOOTING

AIR FLOW BUT NO ABRASIVE SPRAY

- I. Check the air pressure.
- II. Check the abrasive level for possible need of filling. If necessary, add additional abrasive.
- III. Backflush the system as described (see section maintenance).
- IV. Check for excessive amount of foreign particles in the abrasive.

- V. Check for non free-flowing moist abrasive. Moist abrasive can be dried by baking in an open pan or oven at 250 deg F for ½ hour.

RESTRICTED AIR FLOW

- I. Check the air pressure
- II. Check that in-line stop-cock if fitted is open.
- III. Check the nozzle for obstructing particles. The entire system may be backflushed. (See section headed "Backflushing").

AIR LEAKING AROUND THE RATCHET SYSTEM OR AROUND THE POWDER PICK-UP SYSTEM

If the O-ring of the rear retaining connector becomes worn or damaged this may lead to air leakage around the rear connector and along the inside of the unit. This air will then be felt escaping around the ratchet system and/or the powder pick-up tubing system. Simple replacement of this O-ring is normally all that is needed.

REPLACEMENT OF SPRAY NOZZLE


Clinical Sandblasting utilizes an abrasive powder which will in time, depending on usage, cause abrasion of the spray nozzle lumen which will result in a wider spray orifice and a wider spray angle. The spray nozzle has been designed to enable simple replacement by an authorised agent.

REPLACEMENT OF CONTROL VALVE

The finger control valve has been designed for reliable long term function and to withstand the harsh environment of repeated autoclaving. However, In the event that air leakage is experience around the control valve, or from the spray nozzle when the **Miniblaster** is not in use, or difficulty is experience in the function of the valve, replacement of the valve should be considered.

A valve replacement kit is available which includes a replacement valve complete with O rings and spring and instructions.


Alternatively replacement of the complete internal section, together with spray head and valve, may be indicated.

 **Valve replacement must only be undertaken by an authorised agent.**

INDICATIONS

Among clinical indications are the following:

1. Sandblasting of metal surfaces prior to cementation of crown and inlays, bridges, Maryland bridges.
2. Sandblasting to remove residual cement from crowns and bridges.
3. Sandblasting of porcelain and resin surfaces prior to bonding and replaces use of hydrofluoric acid for add-on repairs.
4. Sandblasting of orthodontic bands and brackets removes cement and composit and enhances bonding.
5. Acrylic facings can be restored by sandblasting and using a direct metal adhesive.
6. Sandblasting of endodontic posts prior to cementation.
7. Sandblasting of all surfaces to be bonded.

 **NOTE: THE MINIBLASTER SHOULD NOT BE USED FOR AMALGAM REMOVAL.**

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 the use of or the inability to use its products or normal wear and tear. This 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 or 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.

KIT CONTENTS

1. Miniblaster with abrasive reservoir.
2. Additional abrasive reservoir with abrasive sample.
3. Air Supply Line with in-line stop-cock.
4. Air Supply "T" connections.
5. Instructions.

OPTIONAL EXTRAS

Nozzle extension (Fig.4)	505130
Additional Hook-up kit	505129
Dust-Inn 2000 Dust Collecting Cabinet 115V	502900
Dust-Inn 2000 Dust Collecting Cabinet 230V	502600

SPECIFICATIONS

Weight 75 gm.
 Length 175mm. without supply tube.
 Height 70 mm. including powder chamber.
 Recommended pressure 80 -100 p.s.i.

CE DECLARATION (CE 0344)

This unit meets the provisions of the Council Directive 93/42/EEC concerning medical devices.

It is classified as a Class IIa device according to rule 9 of annex IX of the MDD.

Conformity assessment was according to Annex VII and is marked CE 0344



Attention: consult accompanying documents.