

INSTRUCTIONS

MICROETCHER®

INTRAORAL SANDBLASTERS / DENTAL BONDING SYSTEM



- Hook up instructions
- Microetcher use
- Bonding techniques
- Intraoral use
- Maintenance instructions

Patented

RxOnly

NOTICE OF SAFETY & LIABILITY

For safety, read the instructions carefully before using this unit. The manufacturer, distributor, or retailer of this product can exercise no control over the use of the Microetcher. Therefore, the buyer or user shall assume full responsibility for any loss or injury. In all cases, original jurisdiction shall rest in San Diego County of the State of California.

SAFETY

Caution: Do not point the abrasive nozzle toward your face or eyes. Always wear safety glasses when using the unit outside of a closed cabinet. Note also that excessive backflushing can pressurize the abrasive jar and cause it to pop off or even burst. For this reason, backflushing should always be done in a safe receptacle.

We recommend that non intraoral sandblasting operations be done inside a dust cabinet. The cabinet should be equipped with a dust collection system to draw off the spent abrasive dust. Abrasive dust particles floating in the air can cause eye, nose, and throat problems, as well as damage to nearby machinery and optical instruments. Abrasive particles will scratch eye glasses! Protect the patient's eyes, glasses, and nose during intraoral procedures, and use high speed suction.

PRODUCT DESCRIPTION

MicroEtcher is a handheld dental sandblasting unit for intraoral sandblasting and dental lab applications. Surface area and surface reactivity are dramatically increased for maximum bonding. The MicroEtcher II and IIA have stainless steel construction and a replaceable carbide tip that rotates 360 degrees. The MicroEtcher IIA unit is fully autoclavable (except removable jar), and the MicroEtcher II has only an autoclavable nozzle.

INSTALLATION

The Microetcher requires compressed air of 40 to 100 psi (2.6 to 6.6 bars) at 1 cfm (30ccm/m). There is a significant reduction in sandblasting action as the pressure is reduced below 60 psi. Bottled gas such as CO₂ or highly compressed air can be used with a regulator. **Oxygen, flammable, or toxic gases must not be used.** Dehydrated air is not required; however, large particles in the air line can plug up the Microetcher. A water trap filter is recommended. **Do not use Teflon tape to seal pipe joints.**

HOOK UP KITS

1. Quick disconnect kits: These kits allow multiple connections in operatory and in the lab with a common connector. They are the preferred connection method due to the greater pressures generally available.
2. High speed handpiece line adaptors: Allow easy connection to 4-Hole, 2-Hole, Kavo & Siemens-Sirona Quick Couplers and EMS. Please note that pressures provided may be low, without readjusting.

HOOK UP IN OPERATORY

Using the quick disconnect kit:

1. Locate the air pressure supply line close to the desired work area.
2. Turn off air. Cut the air line and install the tee fitting.
3. The female disconnect part of the fitting contains the automatic shut off and may be panel mounted.
4. Install the male end of the quick disconnect onto the Microetcher line.
5. The Microetcher CD includes a rear adapter for a direct connection to a high speed handpiece line.

* If the air supply line from the compressor to the chairside cart is not 1/4" OD polyethylene tubing, special fittings are required. Danville Materials carries fittings for 1/4", 3/8", 1/2" copper and 3/8" polyethylene tubing.

HOOK UP IN LAB

A laboratory stop cock may be used for the compressed air connection. The valve or cone assembly may be unscrewed so a tee may be installed. Or adapters are available with a female quick disconnect fitting or without a quick disconnect.

OPTIONAL NOZZLES

| Nozzle Angles | Tip Sizes |
|---------------------------|--------------|
| 60° | .048 |
| Stainless Steel & Carbide | |
| 60° | .032* & .048 |
| Aluminum & Carbide | |

* For pit & fissure preps.

Patented nozzle design allows rotation in 360° and easy removal for autoclaving.

ABRASIVES

The jar on the Microetcher should be filled three-quarters full with clean, dry abrasive. Abrasive should flow freely as the jar is rotated. Moist abrasive will cling to itself. Abrasives are very hygroscopic and should be kept in tightly sealed containers.

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 nonmetallic surfaces. (Will not discolor porcelain or composites).

Microphrophy B, white Stain removal. Pit and fissure preparation. Sodium Bicarbonate, Flavored.

SA-85 Remove resin paste without enamel erosion.

Glass Beads, 90 micron, white Satin luster texturing metal surfaces to reduce brightness. Clean dentures. *Not for bonding or intraoral use.*

OPERATION

The Microetcher was designed to be held almost like a pencil, allowing the thumb to activate the finger button control. Hold the nozzle 2mm to 10mm from the surface. Sandblasting is most effective using continuous, overlapping sweeps rather than fast, erratic movements. A surface should appear evenly etched with a dull texture for optimal results. Excessive sandblasting will actually erode some surfaces such as porcelain.

Experiment on metal and glass. These will simulate both precious and nonprecious alloys and porcelain.

Nozzles are changed by unscrewing the collar completely. It is important to remove abrasive from the threads, collar and mating surfaces prior to reinstallation.

SAFETY

- Do not spray into gingiva for risk of air embolism.
- Protect eyes, nose & optical equipment.
- Have patient hold breath during intraoral spray, or use rubber dam.
- Clinical use which is not in accordance with the indicated uses listed in this manual should be avoided.

INDICATED USES

- Pit & fissure preparation.
- Tough stain removal from grooves.
- Crowns, bridges, posts and other restorations roughened for maximum bond.
- Existing amalgam, composite and porcelain can be etched intraorally.
- Intraoral porcelain repair and acrylic refacing.
- Orthodontic bonds and brackets roughening and cement removal for reuse.
- Denture repairs.

STERILIZATION

When used intraorally, a plastic sleeve should be placed over the Microetcher, piercing only the tip through the sleeve to limit direct patient contact to the tip. The nozzle should be sterilized prior to each use. Other portions of the Microetcher should be sterilized if patient contact or contamination is suspected.

PREPARATION FOR STERILIZATION

Prior to sterilization and while connected to the compressed air line, remove the abrasive jar from the pickup stem, and depress the finger button. Unscrew the nozzle and remove any debris. This will purge abrasive from the internal components of the Microetcher. Failure to do this may result in clogging.

Note: Remove clear jar and white filter from jar cap prior to sterilization. Replace filter before operating unit again. Filter is removed and reinstalled by pushing with fingers.

| Model Type | Component | Sterilization Procedure |
|---------------------------|------------------|---|
| <i>Microetcher II</i> | <i>Nozzle</i> | Autoclave at 132°C (269°F) for 15 minutes. |
| <i>Microetcher II</i> | <i>Body</i> | If required, the Microetcher body may be sterilized by complete immersion in an approved 3.2% glutaraldehyde solution such as Cidex or equivalent for the minimum time recommended by the manufacturer (10 hours). Following immersion, rinse the Microetcher thoroughly with clear water prior to use. |
| <i>Microetcher IIA/CD</i> | <i>Nozzle</i> | Autoclave at 132°C (269°F) for 15 minutes. |
| <i>Microetcher IIA/CD</i> | <i>Body</i> | Autoclave at 132°C (269°F) for 15 minutes. |

TROUBLESHOOTING/MAINTENANCE

Problem

Recommended Corrective Action

IMPORTANT: A loose collar will cause the Microetcher to malfunction and can result in the abrasive jar bursting or popping off.

Air flow but sporadic or no abrasive flow.

- Back flush by placing finger over the nozzle and depressing the finger button very briefly.
- Check abrasive fill, or for moist or lumpy abrasive.
- Tighten nozzle assembly; check for worn or missing o-rings.
- Worn nozzle; replace carbide or entire nozzle assembly.

Limited air flow.

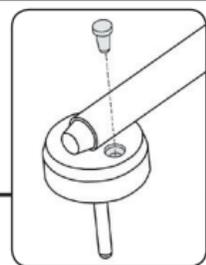
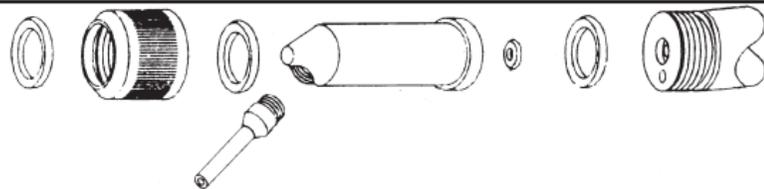
- Check air pressure.
- Remove nozzle, clear possible plugs by blowing air backwards into carbide tip (convenient air source is center port in handpiece body).

Carbide tip replacement.

Worn carbide tips result in greatly reduced performance (annual replacement with normal use is recommended). For .048 carbide tips simply unscrew and replace with a new tip. The smaller tips .032 are glued in place and should be returned for replacement.

O-ring replacement.

Replace according to chart.



Filter Replacement

Filter pushes in and out of jar cap. (See illustration to right)

DEFINITIONS OF SYMBOLS

The following symbols may appear on the product packaging or labeling.

| Symbol | Definition | Symbol | Definition |
|---|---|--|--|
|  | Reference number |  | Lot number |
|  | Use by |  | Manufacturer |
| RxOnly | Caution: Federal law restricts this device to sale by or on the order of a dentist. |  | European Community Authorized Representative |
|  | European Mark of Conformity |  | Consult instructions for use |

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