



**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 this MicroCether. 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 backflashing can pressurize the abrasive jar and cause it to pop off even for. For this reason, backflashing should always be done in a safe receptacle.  
 Use recommended operations to avoid debris 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.

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

**INSTALLATION**  
 The MicroCether requires compressed air of 40 to 100 psi (2.6 to 6.6 bar) at 1 cfm (30 cfm). There is a significant reduction in sandblasting action if the pressure of the compressed air is low. Bottled gas such as CO<sub>2</sub> or highly compressed air can be used with a regulator. **Oxygen, flammable, or toxic gases should not be used.** Dehydrated air is not permitted; however, large particles in the air line can plug up the MicroCether. A water trap filter is recommended. **Do not use Teflon tape to seal pipe joints.**

**HOOK UP KITS**  
 Kit 1: Quick disconnect. This kit allows 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.  
 Kit 2: High speed handpiece line adapters: Allow easy connection to a Hole, 2-Hole, 4-Hole, 6-Hole and Siemens-Sirona Quick Couplers and EMS. Please note that reservoir pressure may be low, without rethreading.

**HOOK UP IN OPERATORY**  
 Using the quick disconnect kit:  
 1. Locate the air pressure supply line close to the desired work area.  
 2. Turn on air. Cut the air line and install the fitting.  
 3. The female disconnect part of the fitting connects automatically to the MicroCether II and IIA.  
 4. Install the male end of the quick disconnect onto the MicroCether II.  
 The MicroCether CD includes a rear adapter for a direct connection to a high speed handpiece line.  
 5. If the air supply line has a quick compressor to the chamber cut it out. 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 will be used for the compressed air connector. The valve or cone assembly may be unsecured so a tube may be installed. Adapters are available with a female quick disconnect fitting or without a quick disconnect.  
 1. Connect the MicroCether to the quick disconnect kit.  
 2. Turn on the MicroCether so the filter three-quarters full with clean, dry abrasive. Abrasive should flow freely as the jar is rotated. Most abrasive will collect to itself. Abrasives are very hygroscopic and should be kept in tightly sealed containers.

**General abrasive uses are:**  
**Aluminum Oxide, 50 micron, white**  
 General 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).  
**Micrograph 8, white**  
 Clean removal. Pit and fissure preparation. Sodium Bicarbonate, Flavored.  
**SA-85**  
 Remove resin paste without enamel erosion.  
**Glass Beads, 90 micron, white**  
 Gain texture. Wetting metal surfaces to improve brightness. Clean dentures. *Not for bonding or intraoral use.*

**OPERATION**  
 The MicroCether 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. There is minimal backflashing and negligible after air effects.  
 Nozzles are changed by unscrewing the collar completely. It is important to remove abrasive from the threads, collar and mating surfaces prior to reassembly.

**SAFETY**  
 Do not spray into gingiva for risk of an embolism.  
 ■ Protect eyes, nose & optical equipment.  
 ■ Have patient hold breath during intraoral spray, or use rubber dam.  
 ■ Clinician eye 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.  
 ■ Crows, bridges, ponts, and other restorations roughened for maximum bond.  
 ■ Tighten loose assembly; check for wear or missing o-rings.  
 ■ Intraoral porcelain repair and acrylic refacing.  
 ■ Orthodontic bands and brackets roughening and cement removal for reuse.  
 ■ Denture repairs.

**STERILIZATION**  
 When used intraorally, a plastic sleeve should be placed over the MicroCether, 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 MicroCether 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 prevent abrasive from the internal components of the MicroCether. Failure to do this may result in clogging.  
 Note: Remove jar and white filter from jar cap prior to sterilization. Replace filter before operating unit again. Filter is removed and reinstalled by pushing with thumb.

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**Problem**  
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**IMPORTANT:** A loose collar will cause the MicroCether to malfunction and can result in the abrasive jar bursting or popping off.  
*Air flow not upward or an abrasive flow.*  
 ■ Back flush by placing finger on nozzle and depressing the finger button very briefly.  
 ■ Check abrasive fill, or for most or empty abrasive jar.  
 ■ Tighten nozzle assembly; check for wear or missing o-rings.  
 ■ Worn nozzle: replace carbide or entire nozzle assembly.  
 ■ Check air pressure.  
 ■ Remove nozzle, clear possible plugs by blowing air backwards into carbide tip (convenient air source is center port in handpiece body).  
*Limited air flow.*  
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*Carbide tip replacement.*  
 When carbide tip is greatly reduced performance (annual replacement with new one is recommended). For 304 carbon steel tip: unscrew and replace with a new tip. The smallest tip, 032 will work in place and should be replaced for replacement.  
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*Filter Replacement*  
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Symbol	Definition	Symbol	Definition
REF	Reference number	LOT	Lot number
Use by	Use by	Manufacturer	Manufacturer
RxOnly	Caution: Federal law restricts this device to sale by or on the order of a dentist.	CE	European Community Authorized Representative
CE 0086	European Mark of Conformity	Icon	Consult instructions for use

**DEFINITIONS OF SYMBOLS**  
 The following symbols may appear on the product packaging or labeling.

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 When carbide tip is greatly reduced performance (annual replacement with new one is recommended). For 304 carbon steel tip: unscrew and replace with a new tip. The smallest tip, 032 will work in place and should be replaced for replacement.  
 Replace according to chart.  
*Filter Replacement*  
 Filter pushes in and out of jar cap. (See illustration to right).

Model Type	Component	Sterilization Procedure
MicroCether II	Nozzle	Autoclave at 132°C (269°F) for 15 minutes.
MicroCether II	Body	If required, the MicroCether 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 MicroCether thoroughly with clean water prior to use.
MicroCether IIA	Nozzle	Autoclave at 132°C (269°F) for 15 minutes.
MicroCether IIA	Body	Autoclave at 132°C (269°F) for 15 minutes.

**TROUBLE SHOOTING / MAINTENANCE**  
**Problem**  
**Recommended Corrective Action**  
**IMPORTANT:** A loose collar will cause the MicroCether to malfunction and can result in the abrasive jar bursting or popping off.  
*Air flow not upward or an abrasive flow.*  
 ■ Back flush by placing finger on nozzle and depressing the finger button very briefly.  
 ■ Check abrasive fill, or for most or empty abrasive jar.  
 ■ Tighten nozzle assembly; check for wear or missing o-rings.  
 ■ Worn nozzle: replace carbide or entire nozzle assembly.

