

## Tips from practicing dentists on using products to the best advantage

### Product Category

BURS, ALL TYPES

**Dentist:** Shalom Mehler, DMD

**Practice location:** Teaneck, NJ

**Type of practice:** General Practice

**Years in practice:** 29

**System/product to be**

**described:** Solo Diamond Single Patient-Use Burs

**Manufacturer:** Premier Dental Products Company

**Company Website:**

www.premusa.com

### Description of this product and its benefits to the dental patient:

Tooth preparation, both intracoronally for operative procedures and extracoronally for crown and bridge procedures, requires a rotary cutting instrument. The 2 main rotary cutting instruments, also known as burs, have tungsten carbide or diamond cutting surfaces.

Despite early evidence showing that the use of diamond burs to prepare teeth is associated with significantly less grinding energy compared with carbide burs, many clinicians still use carbide for simple operative procedures, perhaps unaware of the benefits of diamond burs.

In addition to the 2 main bur types, burs are also offered as either single-use or multiple-use. When burs are used multiple times, high-level sterilization as defined by the Centers for Disease Control and Prevention is required. Even when burs are scrubbed and autoclaved, they are difficult to sterilize. The



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Occupational Safety and Health Administration recommends that dental offices consider making burs a single-use disposable item, since they are difficult to clean and are degraded by the sterilization process.

Premier Dental Products has introduced Solo Diamond Single Patient-Use burs to provide presterilized rotary cutting instruments in individual pouches. Solo Diamonds are available in 97 unique shapes, with 144 stock keeping units total depending on bur grit. Not only are there numerous crown and bridge shapes and

**Figure 1:** Solo Diamond Single Patient-Use bur (Premier).

**Figure 2:** Buccal and lingual axial reduction is completed using a Solo Diamond flat-ended taper single-use bur.

**Figure 3:** The occlusal reduction and shaping is completed with a Solo Diamond single-use football diamond.

**Figure 4:** Occlusal view of the final crown preparation for tooth no. 30 before final impression.

sizes, Solo Diamond burs also are available in the most popular operative shapes: 330, 245, and 557. For both the crown and bridge shapes and the operative shapes, Solo Diamond burs are made using precision-machined blanks with a high-quality electroplating process to produce efficient grinding of tooth structure. Each bur is gamma-sterilized with validated 5-year pouch seal integrity to reduce cross-contamination.

### Step-by-step description of how this product is used with a patient:

A 60-year-old man sought treatment for a full-coverage monolithic zirconia crown on tooth no. 30. The tooth had previously undergone root canal therapy and a post and core resin build-up.

The first step in the preparation of tooth no. 30 for a zirconia crown was reducing the clinical crown in the buccal and lingual dimensions. This was accomplished by using a flat-

ended taper diamond bur (Solo Diamond 846KR016C) to create rounded internal line angles. Next, interproximal contacts were broken using a round end-taper diamond bur (Solo Diamond 850012C) followed by occlusal reduction and shaping using a football diamond bur (Solo Diamond 368T023C). Proper axial reduction for a monolithic zirconia crown should be approximately 1.0 millimeter and occlusal reduction should be 1.0 to 1.5 mm in the central fossa. This provided the laboratory with adequate reduction to create sufficient thickness of material for strength and esthetics, while allowing enough material for adjustment.

For the final preparation step, a circumferential bevel for tooth no. 30 was created using a flame diamond bur (Solo Diamond 862012C). This type of bevel can add 1.0 to 1.5 mm of additional tooth structure to provide needed ferule for resistance to lateral forces, especially in endodontically treated teeth.

After careful inspection to verify adequate shape, taper, and reduction of tooth no. 30, tissue management was completed to create retraction, drying, and hemostasis before obtaining a final impression. At the end of the procedure, because the Solo Diamonds burs were contaminated sharps, they were properly discarded in a red sharps container