The story of Munce Discovery Burs

By C. John Munce, DDS, FICD

From the time I completed my residency in 1988, and even into the early 2000s, no long/stiff/narrow-shafted troughing bur existed. To meet this ongoing need for a troughing bur, I began modifying the shafts of existing latch-type, slow-speed round carbide burs by necking them down at the chairside as needed for a specific clinical case (Figs. 1 and 2).

At the pre-session meeting of the 2005 AAE Annual Session in Dallas with nearly 1,000 endodontists in the room, I demonstrated in clinical videos how these unique long/stiff/narrow-shafted round troughing burs were made at the chairside using both high- and slow-speed handpieces operating simultaneously from the same foot control in right and left hands to “hand-mill” the shaft to a 1 mm diameter, and I suggested that colleagues should do the same.

To ensure interested colleagues would be able to see and test these fledgling troughing burs, and then make the burs themselves as demonstrated, I had 1,000 of them manufactured (Fig. 3) and handed to attendees as they exited the hall.

To that point, it had never been my intent to venture into the bur design and manufacturing arena, but during the next year, at meetings, in phone conversations or in other encounters, I was told by colleagues who had been at that meeting in Dallas that they still had that sample bur, and sometimes they would pull it from a pocket to prove it.

They would explain how they jealously guarded the bur from clinical staff members on the fear that it could be misplaced, leaving them seriously handicapped, and they begged me to manufacture these burs for them because, they confessed, they were never going to make them at the chairside as I had demonstrated in Dallas.

I already had a small clinical products company, CJM Engineering, which manufactured and distributed the Root Canal Projectors (no longer available), and so, in early 2006, after trying to literally “give” the troughing bur idea to several bur manufacturing companies without success — in one instance, the new products committee of a large dental bur company concluded there was simply no market for such a bur — I decided to begin manufacturing and distributing these burs myself through CJM Engineering (Fig. 4), still the manufacturer and exclusive worldwide distributor of Munce Discovery Burs today.

Below is a rough timeline of the introduction of significant features of the Munce Discovery Bur line since its inception. Each of the modifications was born of my own experience in applying these burs in diverse clinical circumstances and of the freely offered — and fully appreciated — suggestions and requests for modifications from colleagues.

2006
- A knowledgeable friend in the dental instrument manufacturing business, Lonnie Graybill of Integra-Miltex, coined the name, Munce Discovery Burs, and it stuck.
- The Munce Discovery Bur line started with 34-mm-long burs only, and in only four head sizes: #1/2, #1, #2 and #4 (Fig. 4).

Here in New Orleans
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2007
- At that time, we only produced the 1 mm diameter shaft on all four head sizes.

2008
- We added the 31-mm-long Shallow Troughers to the line.
- To distinguish the two different lengths, we began referring to the burs as Munce Discovery Bur Deep and Shallow Troughers.
- We added our tiniest head size, #1/4, (with a head diameter equal to tip of a 550 K-file), and a #3 head size, to both Deep and Shallow bur lines.
- We added 3 mm “sounding” rings on the Deeps.
- We also introduced the 31-mm-long #6 Endodontic Cariesectomy Bur.
- Although “troughing” as an endo-specific operation associated with ultrasonic tips was already beginning to develop its own vocabulary within the endodontic community, the specific ver-
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To facilitate deeper exploration and shaft-parallel cement-line dissection (Fig. 7), we reduced the shaft-diameter to 0.7 mm on the last 10 mm of the three smallest head sizes — #1/4, #1/8 & #1/16 — in both deeps and shallows (Fig. 8). Although 0.7 mm is very narrow, the specific geometry we designed into this change maintains the trademark stiffness of the shaft and facilitates cement-line dissection around posts and silver points while the shaft of the bur is virtually parallel to the long axis of the post or silver point. Shaft-parallel cement-line dissection is completely impossible with 2.35-mm-diameter shafts of standard slow-speed burs.

2015

A cotton plier-insertion ledge (Fig. 8) was added at the transition from the 2.35-mm-diameter portion of the shaft to the 1-mm-diameter portion to facilitate ease of insertion of the bur into the spinning handpiece while protecting the color band from abrasion because of slippage of the cotton plier, which would otherwise occur.

We also significantly modified the head geometry to allow the bur to be more effective in planing operations on dentin walls (Fig. 8). In particular, this new design prevents catching on the outer-stroke when planing, reducing the risk of ledging and perforation.

2017

We continue to resist the suggestion by some to downgrade this unique specialized bur from a carbide-tipped bur to a stainless-steel bur in order to reduce costs on the expectation of perhaps increasing sales volume. Our view is that this would be a shortsighted strategy that would lead to an inefficient instrument, subsequently substandard clinical results and dissatisfied clinicians.

From necessity, to idea, to sketch-on-a-napkin, then invention, technical drawing, prototyping, tweaking, bench-testing, collegial input, tweaking some more, manufacturing, marketing and worldwide distribution — to mention just some of the many steps involved — through all of these phases, CJM Engineering is not a bur company; we’re a ‘help clinicians save people’s natural dentition’ company — full stop. So now you know the drill even better than before, and we invite you to drop by booth No. 518 at AAE17 for a look at — and feel of — the prototype of our new Super Shallow TruGrit™ Trough Refiner™ (Fig. 9), inspired by you and other colleagues from around the globe. Though it’s not available for sale yet, it will be very soon, and once in full production, we hope you’ll take it to the chair, and give it a whirl.