

# New Carbide Design Enhances Bur Strength

*Written by Marty Jablow, DMD*

Recently, my assistant, in an effort to save money, ordered a bag of burs for the office. Shortly after we started to use these less expensive carbide burs, I noticed a big problem. They would constantly break. This continued breakage interrupted the procedure I was performing and was, in effect, costing me money as I was going through more burs. So I started doing some research on bur strength.

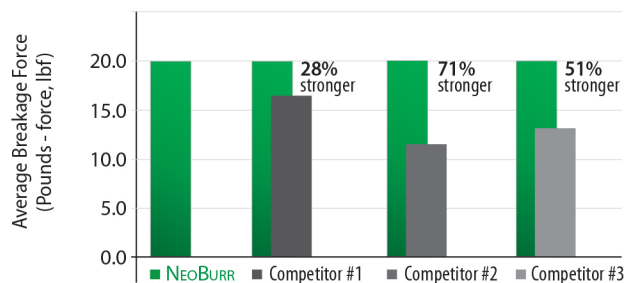
Carbide dental burs are subject to rigorous and strenuous forces. These forces are applied when cutting natural teeth and metal crowns, making the burs prone to breakage. Tungsten carbide burs are very hard but they are brittle. Broken burs are not just an interruption to the procedure but present a patient risk. When a bur breaks, there is the potential for the patient to aspirate the broken bur piece. Therefore, minimizing carbide bur breakage is important to me.

Carbide burs are made in two ways. One method is welding tungsten carbide to a stainless-steel shank. The other method is one where the bur is made from a single piece of tungsten carbide.



In doing my research, I came across the new Microcopy patent-pending Blended Neck, friction grip 557 bur. Microcopy has a long history of providing quality dental burs to the profession along with other innovative products. The Microcopy blended neck portion, or the section of the bur between the cutting head and the shank, is blended so there is no reduction in the neck width. This added width is within the ISO standard, so they fit perfectly into your air or electric hand piece. Removing the weld joint reduces the variance in breakage forces and the thickening of the neck increases the forces needed to break the bur.

So what does this mean in the real world? It means that you can put more force on the burs before they will break. Think about sectioning a failing bridge to extract an abutment. This is one of the most stressful situations a bur encounters. In many cases, it can take multiple burs to cut through the bridge. This bur breakage is expected, along with being frustrating and expensive. I have found in many cases that the blended neck bur has reduced the number of broken burs and, in some cases, would not break even while sectioning a bridge. Recently, I had to adjust the major connector an ill-fitting removable partial denture. Chrome cobalt is about the hardest material to which I will subject a bur. The bur easily adjusted the partial denture major connector and, in fact, I even attempted to break the bur on purpose and could not. This shows me the inherent strength of the 557 blended neck bur. The burs are sharp and cut well no matter what material I have tried to cut while resisting premature breakage.



In fact, a third-party blind comparative study of this new 557 bur against three of the top competitive burs showed the performance of the blended neck bur to be far superior. As the chart above illustrates, the blended neck 557 bur was up to 71% stronger than the competition. Whittled down, this means that the force needed to break the new blended neck bur is *on average* 50% stronger than competitive lines. That's reason enough to consider trying this bur in your practice.

The Microcopy blended neck bur is single-piece constructed. The blended neck optimizes the design of the friction grip 557 while remaining within the ISO specifications. Removing the weld joint reduces the variance in breakage forces and thickening the neck increases the force needed to break the bur. Microcopy's newly engineered blended neck carbide bur provides both of these features.