

PRODUCT WATCH TECHNOLOGY EVANGELIST

Handpiece evolution

Innovations to this core piece of dental technology are making providing high-quality care easier and more convenient.

by DR. JOHN FLUCKE

ABOUT THE AUTHOR

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followed his passions for both dentistry and technology to become a respected speaker and clinical tester of the latest in dental technology, with a focus on things that provide better care and better experiences for patients. He blogs about technology and life at blog.denticle.com.

We've continued to see the evolution of the dental handpiece in the last few years. First it was the arrival of ProDrive (prodrivesystems.com) and the turbine replacement system that uses a triangular chuck and a triangular bur shank to increase efficiency of the cut as well as the quality of the marginal preparation.

Now we're seeing more advancements coming along that should provide further innovation into the world of high-speed rotary instrumentation.

These are technologies doctors should be paying particular attention to. There is no single device the doctor picks up more on a daily basis than the highspeed handpiece. Because of that, improvements in this category of equipment can be translated into less fatigue and less stress on the operator. That, of course, means the chances of repetitive stress injuries or career threatening disabilities are reduced.

The second reason is one I'm equally passionate about. As handpiece technology improves, it allows the doctor to provide a better service to the patient. Better margins, decreased patient stress and decreased treatment time can all be things the patient gains through improvements in rotary instrumentation.

Power and control

We're going to cover two devices in this article, and the first is the Midwest® Stylus™ ATC from DENTSPLY Midwest (stylusATC.com). The device was announced to the market in June 2010, but I'd been testing it for a little while before that. I was especially delighted when I asked, "Can I try and break it?" (because that's one of the things I do best) and Midwest responded with a resounding, "of course." Well here I sit more than a year later, and I can tell you I've been unsuccessful in that endeavor. I have found the Stylus ATC to be a workhorse and a definite plus for my dentistry.





The piece that fits the hand DENTSPLY Midwest's Stylus ATC (left) is a handpiece ready to provide the power, control and durability to meet the demands of a busy practice. However, as a back-up or for those extremely rough cutting tasks that beat up a handpiece, Azenic's DHP Disposable Highspeed Handpiece (above) is an ideal option to keep on hand.

The advantages come from two different components in the handpiece system. One is Speed-Sensing Intelligence (SSI). It is a sensor that has been added to the handpiece that provides information to a control box in the dental unit. SSI is an electronic brain that keeps the controller box constantly informed of the bur speed. When the bur begins to drop in rpms the controller box allows more air to the system, which keeps the bur spinning at its optimal rate. This happens without intervention by the operator. In fact you can't even tell it is happening. All you notice is smooth, predictable power and torque.

The second advantage is Superior Turbine Suspension (STS). This is a combination of o-rings that provide radial support with wave springs that provide axial support. What does this mean to the "non-handpiece geek?" In a nutshell it means you can really lean on the bur for different procedures without noticing the

bur moving or deflecting in the turbine. The result? Less chatter and a more concentric and "truer" cut.

When these two technologies are combined, they allow the Stylus ATC to run at 330,000 rpm without losing any torque or speed. The Stylus ATC has proven itself in my hands over the last several months. It exhibits power that is unexpected from an air driven handpiece and also has been incredibly durable. No turbine failures (one of my pet peeves) have occurred and all the handpieces are still performing as they did the day they came out of the box.

Convenience at hand

Now on to the next highspeed topic. Azenic (azenic.com) has brought something to the market that we haven't seen since the late 1980s...a disposable highspeed handpiece. Now before you ask, "Disposable?" let me tell you why.

Azenic is not attempting to tell you to replace your existing handpiece inventory with the DHP™ Disposable Highspeed Handpiece, not at all. In fact they are encouraging you to keep your expensive handpieces serviceable by letting their disposables do the heavy lifting of cutting through existing fixed prosthetics.

Personally, I think that's an idea worth considering. When you think of the tolerances highsPEEDS perform under, it makes sense to let a device that goes in the trash after the procedure take that abuse. If you think of the cost of replacement turbines, having a disposable option may work for you.

Also, for surgical extractions, the Azenic handpiece uses water coolant, but no chip air, so the odds of an air embolism are minimal.

There also is the case of a good backup. Good highsPEEDS are expensive, and if your office is trying to save money, then use disposables as your backup solution. If you are in a jam and need an extra handpiece, there is a great cost savings in using a disposable as opposed to a regular highspeed because Azenics retail for \$15 per unit.

Wrapping it up

I'm excited by these outside the box ideas in the world of rotary instrumentation. One of the things I fight against is the attitude of "but we've always done it this way." Take a closer look at the Midwest Stylus ATC and the Azenic DHP. I think you'll find that by coming at it from different angles, these companies may provide solutions to problems you've been battling. ●