

THE BEARING PRESS

Official Publication of the National Dental Handpiece Repair Association

Volume 1 – Issue 3

Extreme Handpiece Makeover – Part 3

In spite of significant technological advancements over the last ten years in handpiece design, dental professionals continue to experience recurring handpiece problems resulting from sterilization. Misconceptions abound throughout the dental field about exactly what goes wrong when a handpiece turbine fails. Closer examination may shed light on just what is happening inside your handpiece, and when an “extreme makeover” is called for. Today dental professionals have several options available to keep their handpieces going.

The Heart of the Matter

As the only moving part, the turbine is at the heart of most handpiece problems. A high-speed turbine contains two components: a chucking mechanism to hold the cutting instrument and a rotary system that spins the bur at speeds of 6,000 times per second when air pressure is supplied. The rotary system consists of an impeller, which “catches” drive air (similar to a water wheel), mounted on a spindle. The spindle rotates clockwise at high speeds, supported by two precision bearings and two o-rings.

These miniature bearings are the heart of the turbine. As reported in an extensive study conducted by the Dental Investigative Service (DIS) at Brooks Air Force Base in 1993, “...handpieces do not fail gradually because of decreased speed and power but,

rather, fail as a result of catastrophic failure of the turbine bearings.” The most critical element of these bearings is the retainer, or cage, that secures the ball bearings within the raceways. The cage becomes brittle as it is subjected to harsh sterilization environments. Upon failure, the bearing cage disintegrates, and the turbine will no longer rotate or generate power. You will most often see evidence of this final degradation when “black stuff” is expelled from the handpiece head during use or lubrication procedures. Additionally, the dentist may note that the bur will “stall out” when applied to tooth structure. Other symptoms of bearing failure will include: the bur no longer spinning concentrically; unacceptable vibration when the handpiece is activated; or unusually loud sounds emanating from the turbine.

Bearing technology has progressed a long way since the advent of routine sterilization. Improved cage materials and manufacturing processes have extended handpiece life, as witnessed by the longer warranties prevalent on the market today. Other design improvements offer the clinician the choice of maintenance-free handpieces. This is accomplished by saturating the bearing cage with a food grade, autoclaveable grease that



Three components—bearings, o-rings, and the spindle/impeller—are assembled to form the complete turbine (right).



gradually releases onto the ball bearings over time through use and sterilization. The bearings are really not “lubrication free.” They are “maintenance free” however as it is no longer necessary for the staff to apply lubricant. The latest innovation in dental bearing applications is a bearing cage coated with a layer of pure silver. According to a leading bearing manufacturer, the new silver composite retainers combine the lubricating capabilities of metallic silver, with a strength and ability to withstand repetitive autoclave cycles.

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WHAT'S INSIDE...

- Dental Facts
- Tips From Your Tech
- Family News

Our Mission

To improve our client's ability to deliver patient care by maintaining their powered instruments with exceptional service and integrity.

DENTAL FACTS

- The average person in the US drinks 576 soft drinks a year. The Academy of General Dentistry recommends that people use straws to minimize the contact between teeth and soft drinks.
- The category "dentists" is the 9th most frequently looked up category in the Yellow Pages by consumers in the U.S...per the Yellow Pages Association.® U.S. businesses spend \$14 billion a year advertising in the Yellow Pages.
- The American Academy of Cosmetic Dentistry's Give Back a Smile Program has donated over \$2.1 million in free dental treatments to women who suffered domestic violence. October is National Domestic Violence Awareness Month.
- 25% of adults in the U.S. have lost all of their teeth. This is an improvement from 33% ten years ago...per a study by the CDC & NIH.
- Researchers at Ohio State University College of Dentistry have discovered that giving children the antibiotic amoxicillin appears to significantly increase the risk of them developing dental fluorosis. The study is from the Archives of Pediatric and Adolescent Medicine.
- Consumers spent \$425 million on oral care products for pets in the U.S. last year. This category of products has increased 35% per year since 2000...per the market research firm Packaged Facts in N.Y.

—Courtesy of The Anaheim Group

TIPS FROM YOUR TECH

Very soon, your cell phone number will be released to telemarketers. To avoid those annoying and potentially expensive calls (yes, you will have to pay for them) be sure to register your cellular telephone number with the National Do Not Call List. Call 1-888-382-1222 from your phone to protect your number for the next five years. Or register at their website: <http://www.donotcall.gov/> (phone call takes 5 seconds)

Hey—there's more to life than just handpieces!

Makeover...

Continued from front page

What to do with a broken handpiece?

Once the retainer, or cage, breaks down the handpiece is no longer useable for patient treatment. At this point there are several options available to the dental staff when it comes to getting the highspeed handpiece repaired.



Bearing retainers are the heart of a handpiece bearing.

In the past, before routine sterilization, it was common to send the handpiece back to the original manufacturer to get the turbine replaced with a new one. This is typically very costly and may take weeks for the handpiece to be returned to the office. You could also elect to purchase a new turbine from the original manufacturer and install it in the handpiece yourself. This eliminates long down times, but still represents a major expense, and some models may be complicated to install.



A bearing retainer is shown here in three stages of its life—new (left), worn (center), and catastrophic failure (right).

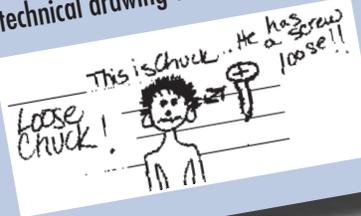
Similarly, you can purchase a new replacement turbine made by any number of companies other than the original handpiece manufacturer. These are referred to as "aftermarket" or "generic" turbines. They can be as much as one third the cost of a new original turbine. Although they are cheaper than original parts, the trade off comes in lack of quality, performance and longevity.

Having the turbine rebuilt by a local independent repair service instead of replacing it every time has become the choice of a growing number of dental offices. This option saves the doctor money, retains the performance characteristics of the original turbine, and is usually back to the office in one or two days.

In the next issue we will explore each of these repair options in greater detail.

A picture is worth a thousand words

Some dental assistants will do anything to get a shot at fame and fortune! This technical drawing was sent in by Kelly and Lori from Dr. Rick Chelemados' office in Novato, California.



Family News...



Lori, Glenn, Colby, Chase, and Carson navigate the Arkansas River in Colorado.

The Williams family was on the move this summer. We drove down to Lubbock, Texas on our annual pilgrimage to visit Lori's mother. After spending a week with Grandma we started our journey home.

Since we make this trip every summer (and every other Christmas) our family tradition is to take a different route home every year. We also try to visit as many National Parks as possible on the way home. This makes

our trip interesting and fun for the kids (even a little educational). This year we hit Capulin National Monument (an extinct volcano) in New Mexico on the way north to Colorado. In Colorado we visited the Royal Gorge, the highest suspension bridge in the US. Lori forced us all to go on a very scary helicopter ride down into the gorge! We then drove through the center of Colorado to the town of Buena Vista where we white water rafted the Arkansas River. Very fun! We traveled west to see the Black Canyon of the Gunnison NP and then turned north up to Utah and Dinosaur National Monument. Fascinating to see all those old fossils in one place. A quick trip across Utah (yeah right) and then home! 3,734 miles, three National Parks, 20 miles of white water, and lots of fun!

Handpiece Repair

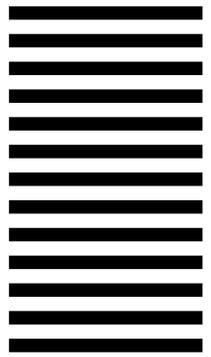
If you have a handpiece you need us to repair, simply cut out this convenient postage paid label. Tape the label securely to the outside of any box, enclose your handpiece with a business card, and give it to your mail carrier. We will receive your handpiece the next day and call you with an estimate.

Questions? Call 800-895-7111

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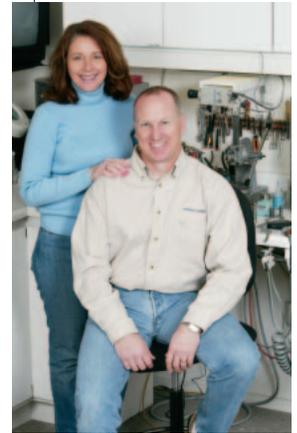
Handpiece Express is a family owned and operated business that repairs all brands of highspeed and lowspeed handpieces. We have been providing fast, personal handpiece repair to dentists throughout the Bay Area since 1994.

Glenn and Lori Williams started Handpiece Express after Glenn's experience as a manufacturer's representative for Star Dental. Over the last ten years we have serviced over 30,000 handpieces for hundreds of satisfied Bay Area dentists. We are dedicated to the concept of a convenient, local repair service with one day turnaround.

Handpiece Express maintains Honor Roll Member status in the Golden Gate Better Business Bureau. We are founding members of the National Dental Handpiece Repair Association, an organization of independent repair centers dedicated to ensuring quality standards for the industry to protect dental professionals. We subscribe to the NDHRA Code of Ethics and offer some of the longest warranties in the business.

We hope you enjoy our newsletter. We tried to provide some valuable information along with a little fun!

Thank you for the opportunity to earn your business...



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