Switzerland's E.M.S. Electro Medical Systems wants to demonstrate how treatment with an ultrasonic scaler can be enhanced even more with the brand new Piezon Master 700. EMS points to the special refinements of integrated i.Piezont technology.

It is designed to assure smooth interaction between the original Piezon handpieces and the EMS Swiss instruments made of biocompatible surgical steel to ensure the best possible patient comfort. EMS says that the i.Piezon module assures instrument movements that are perfectly aligned with the tooth surface, and vibrate 32,000 times per second to make it extremely effective. The intelligent feedback control minimizes damage to the tooth substance.

The result is a uniquely smooth tooth surface and a maximum of soft-tissue protection. As EMS says, this is the formula for incomparable precision and therapy that is practically painless thanks to optimum instrument movements. The balanced Piezon handpieces show how substantially improved illumination of the oral cavity can be achieved with the six LEDs arranged around the tip of the handpiece.

The seamless housing of the Piezon Master 700 has an aesthetic, ergonomic and hygienic design that promises a high degree of operator comfort. The touch panel can be rapidly and precisely operated by simply touching the self-explanatory operating elements or tapping on the desired action. This enables the system to meet all the requirements in respect to ease of use and especially hygiene. The two replacement bottles with a capacity of 550 ml or 500 ml for holding various antiseptic solutions are resistant to UV radiation and can be replaced easily and quickly thanks to their snap-shut cap.

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The EMS promise: painless ultrasonic therapy

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Laboratory communication

Is it possible to achieve minimal to no adjustment bonding appointments?

By Bob Clark, CDT, LVIM

Adjustment-free appointments are actually possible and can be routine. Delivering veneers, inlays, onlays, crowns, bridges and partial dentures with very little or no proximal and occlusal adjustment can be common when a laboratory adheres to a strict protocol of die handling and die spacing, and has a firm understanding of how to properly equilibrate correctly mounted stone models and understand solid model verification.

Basic cusp to fossa occlusion occurs when cusp inclines on posterior teeth do not touch other posterior inclines. Cusp tips must hit static stops in central fossa.

In laboratory model equilibration there is nothing more than the removal of all incline interferences and allowing cusp tips to occlude at 90-degree angles to opposing marginal ridges and central fossa. Anterior guidance should allow complete freedom from maximum intercuspation, immediately with lateral guidance on the canines. This will not activate the elevator muscles, therefore decreasing any chances of TMD.

Equilibrating mounted casts is crucial to achieving adjustment-free delivery appointments. Less than 1 percent of technicians understand why we need to, much less, how to perform this task. Because of this, the following are common techniques used to try to achieve adjustment-free cmentation appointments:

• Placing metal foil under the working die to create a space. If too much foil is used, the crown may be shy of occlusion.
• Pushing die up so crown appears out of occlusion. The model, after all, dentists do not want to adjust occlusion, so just leave it out of contact altogether.

The flaw with both of these techniques is there is no way to gauge how much to leave the crown out of occlusion so it is correct in the mouth.

These techniques can never be exactly correct, and they both create problems for proximal contacts because they raise the proximal contact up, which makes the proximal contact shy at the delivery appointment.

This also creates an unstable situation because that tooth can now drift either mesially or distally, creating possible occlusal interferences.

The only way to have predictable, adjustment-free delivery appointments is to correctly equilibrate the accurately mounted working casts. This will take a trained technician approximately five to six minutes per case.

This technique should be used for all restorations whether Enamel, Engine, LAVA, Cristalab, Belle-Glass, Implants, PFM, etc.

It can also be used on all partial denture cases. Anything involving natural teeth, from full-arch impressions or double bite trays — this technique should be employed, always!

An example of model equilibration for a #30

1) Opposing model and working models are both poured in liquid/powder ratio measured die stone. (Crucial!)
2) After mounting accurately, verify the mounting. Bite should not be taken with base plate wax but with a polyvinyl bite material that can be trimmed to allow only cusp tip show through. Use double-sided, Exac-ta-film red/black or double sides, 19-micron thickness, use black for centric, tap models together. Notice not all teeth are in contact.
3) Initial incline contacts should be removed. Do not ever remove cusp tips. Remove only inclines, as would be done for intraoral equilibration.
4a) A black dot stable holding contact should be found in the fossa of adjacent teeth, #31 and #29 in this example.
4b) We safely remove approximate 5 degrees off of canine disclusion to further “shallow” the guidance to ensure no posterior interferences. Posterior interferences must then be rechecked. Remember: the key is that lateral equilibration will not change the vertical dimension, only shallow the disclusion, further ensuring no posterior interferences.
4c) With the red side of Exac-ta-film, move models laterally and remove all red marks except those on canines, without removing black holding contacts on posterior teeth. The goal is to have black dots on all posterior teeth and red marks on the anterior teeth.
4b) At Williams Dental Laboratory, we go one step further to absolutely ensure no posterior interferences. We know all healthy teeth intrude into their periodontal ligament and move laterally. In this example, imagine the canine will move laterally 56 to 75 microns in a clinching lateral force.
4c) We safely remove approximately 5 degrees off of canine disclusion to further “shallow” the guidance to ensure no posterior interferences.

Now, and not until now, are the models ready to be utilized as an accurate portrayal of the mouth.

This system, along with the use of a solid proximal contact model and soft-tissue model, should be employed on all cases in the laboratory regardless of material choice.

Photo/Provided by Williams Dental Lab

About the author

Bob Clark, CDT, LVIM, is the first and only lab technician in the world to receive mastership status with LVI. He is co-owner of Williams Dental Laboratory, a small family-operated, full-service lab located in Gilroy, Calif.

He and his team have been working and training with LVI dentists for many years. Clark may be reached at (800) 715-5590 or bob@williamsdentallab.com.