

The TRIAD ARTICULATOR WINTER 2022

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Current Laboratory News

RESTORATIVE SPACE FOR LOCATORS – HOW MUCH IS ENOUGH?

By Doug Benting on November 5, 2021

Vertical Height Considerations

The lingering thought is this: If 8.5mm of restorative space is the minimum requirement, is it reasonable to assume that is enough, and move forward with treatment? How does more restorative space help us?

Let's say 12mm is at the top of the range for the minimum space needed. What about 15mm? What are the risks associated with 8.5mm, and the risks associated with 15mm?

The first consideration relates to what it is that we are measuring—the starting and ending points of the measurement. Let's assume that we are working with a Straumann Bone Level implant where the restorative platform is level with the alveolar bone. We will begin the measurement at this point.

The thickness of soft tissue in a hypothetical example is 2mm. The recommended thickness of acrylic around the metal Locator housing is 2mm

The combination of the Locator abutment (1mm above tissue), the locator housing and attachment (2.25mm) along with a space between the attachment & abutment to accommodate for movement (1mm) equals 4.25mm. The restorative space measurement required to embed the Locator components in the acrylic denture base adds up to 8.25mm. The 8.5mm measurement as a “minimum” for restorative space works well for a 2-implant retained overdenture where the attachments are embedded in acrylic and positioned lingual to the denture teeth in the anterior segment.



Photographs Are
Compliments of Spear

What about a scenario where the denture tooth is positioned over the attachment components?

It's possible for the visible labial aspect of the tooth to overlap the attachment components while maintaining 2mm of acrylic horizontally. The lingual height of the denture tooth that accommodates for some overlay of acrylic resin onto the surface, for example, is 3mm. When the denture tooth is included in the vertical space measurements, now the distance is 11.25mm to the crest of the alveolar bone or in this scenario the restorative platform of the dental implant.

Think about the cross section of a denture tooth positioned over the attachment components. A posterior tooth, premolar or molar, works well with a 3mm lingual tooth height providing surface area for acrylic to overlap the denture tooth approximately 1mm—leaving 2mm of the tooth exposed relative to the denture base.

Contrast this with an anterior tooth, where 2mm of exposed tooth on the lingual or palatal aspect will result in a bulky contour leading up to the incisal edge. When the goal is to simulate a more natural contour, additional restorative space is needed in the anterior segment where 3mm of lingual tooth height may not be enough.

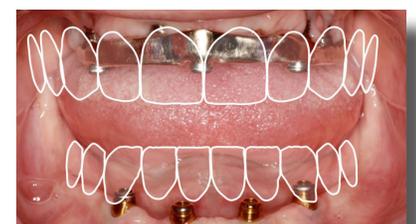
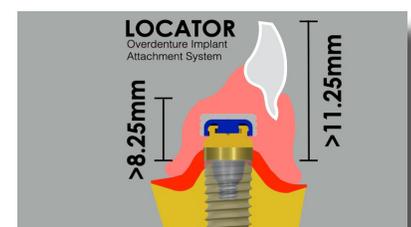
All the above scenarios relate to Locator abutments connected directly to the dental implant fixture. Adding a connecting bar,

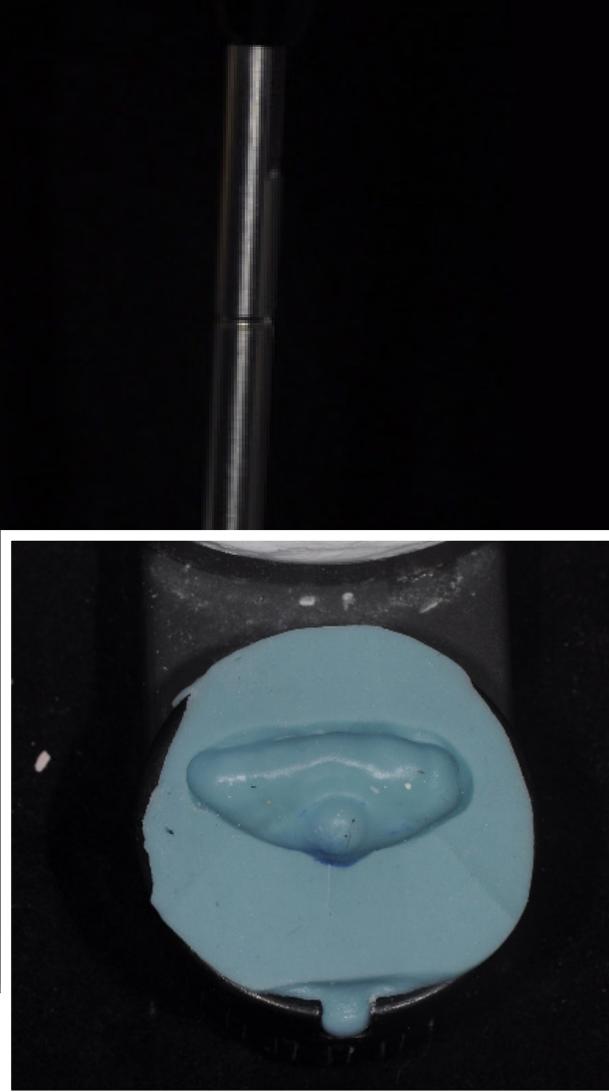
making use of the Locator attachment system, will increase the vertical space requirements. The height of the bar must also include the desired space between the bar and the soft tissues to facilitate cleansability.

Horizontal Space Considerations

Overdenture design incorporates the support of the extra oral soft tissues while at rest as well as during facial expression. The extra oral landmarks that help determine tooth position are dependent on an understanding of the soft tissue support provided by the overdenture.

For More Questions and to Learn More Please Visit: <https://www.speareducation.com/spear-review/2021/10/restorative-space-for-locators-how-much>





THE IMPORTANCE AND STRATEGY BEHIND CUSTOM INCISAL GUIDE TABLES

By Jeffrey Bonk on November 29, 2021

Restoration of natural teeth and implants to proper form and function is integral to our patient treatment success. The objective is to maintain physiologic integrity in harmonious relationship with adjacent hard and soft tissues.

The goal of complex restorative treatment is to attain:

- Freedom from disease in all masticatory structures
- Maintain a healthy periodontium

Obtain stable TMJs

- Create a stable occlusion
- Maintain healthy teeth (and implants, as needed)
- Create optimal esthetics
- Provide comfortable and smooth function

These goals for restorative dentistry are important to gain predictable results that will last a long period for our patients. Individually, each contributes to the overall restoration success. However, the functional component represents a critical piece to the puzzle of rehabilitating complex and dysfunctional presentation. Proper function is crucial to a stable long-term result.

Establishing and managing anterior guidance during functional movements is a key aspect for attaining this success — and custom anterior guide tables are instrumental in this regard.

Schyuler's Principles of Occlusal Dynamics

The term dates to 1953, when Dr. Clyde Schyuler introduced the concept of anterior guidance. The principles of occlusal dynamics that he embraced are still valid and applied today. When applied to dental restorations, these principles help to create occlusal stability and functional success.

- Schyuler's principles are:
1. Static coordinated occlusal contacts of the maximum number of teeth when the mandible is in centric relation
 2. Anterior guidance in harmony with lateral eccentric position on the working side
 3. Disclusion of all posterior teeth in protrusion
 4. Disclusion of all non-working inclines in lateral excursions
 5. Group function (as needed) of working side inclines in lateral excursions

Schyuler espoused the importance of managing tooth contacts during functional (dynamic) movements. Many other researchers have also advocated the use and importance of anterior guidance in restorative dentistry. Developing occlusions without attention to these principles leads to potential failure. Anterior guidance

was Schyuler's key to success — and are the “tool” that is used to achieve these predictable results.

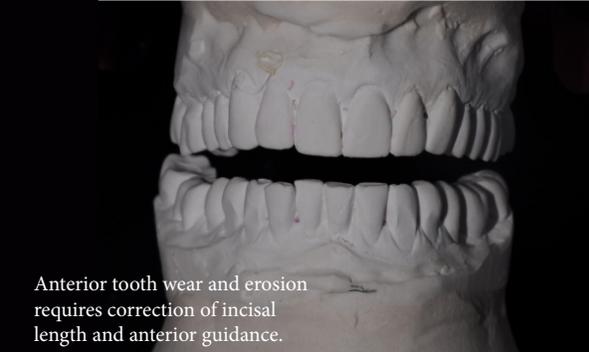
The Value of Anterior Guide Tables For Restoring Anterior Teeth

We know the importance and value of anterior guidance — the goal is to disclude the posterior teeth in lateral functional movements. Whether canine contact or group function is utilized depends on the stability of the teeth and periodontium for each individual situation.

In restoring anterior teeth, the decision must be made to either maintain the existing guidance patterns or change the anterior guidance to create stability. Anterior guide tables are utilized for these changes.

Incisal guide tables are fabricated from face-bow mounted models of natural teeth or provisionals. Excursions are traced from the centric position outward to maximum lateral (eccentric) position on the semi-adjustable articulator.

Typically, an acrylic material is utilized for the incisal guide pin to trace the lateral movements and create the guidance patterns. Alternatively, a laboratory putty may be substituted as the tracing medium.



Anterior tooth wear and erosion requires correction of incisal length and anterior guidance.

The tracing pattern/process moves the guide pin through the “doughy” material until it completely sets. This tracing provides a replica of the lingual and incisal contours. When the dental technician then mounts the prepared teeth models, the final restorative contours may ideally be formed by the technician using the custom incisal guide table as a reference.

Changing Incisal Guidance Patterns

When restoring anterior teeth to correct esthetics and function, provisionalization is critical. Establishing proper shapes, contours, and functional surfaces are key components of provisionals. These changes can and will direct and alter the guidance that subsequently occurs.

The provisionals “test-drive” the esthetic and functional change. Correction and alteration of the provisional contours affects the guidance and tooth-to-tooth relationships. Once these contours are acceptable, casts of these tooth shapes are obtained, and duplication of these contours can be established by fabricating the incisal guide table. This customized “pathway device” helps the dental technician establish the same ceramic/metal contours of the final restorations.

Maintaining Existing Guidance or slope

Sometimes it is important to maintain the anterior guidance contours, which may be necessary for patients that require restoration of a worn dentition. Patients with excessive wear patterns may not be able to tolerate a steepened anterior guidance pattern — an inadvertent increase in steepness could result in premature ceramic restoration fracture, tooth mobility, or another catastrophic event.



Tooth wear - crossover pattern. Worn contour slopes incorporated into the incisal guide table.

To avoid these situations, it is necessary to “duplicate” the existing guidance pathways of the worn dentition so as not to steepen the anterior guidance. This process is accomplished by mounting models (via face-bow transfer on a semi-adjustable articulator) of the patients existing worn teeth.

An incisal guide table is fabricated by tracing the worn tooth patterns in excursive directions. Once the custom guide table is fabricated, the diagnostic wax-up is completed using this guide table as a reference to the slopes and angles of disclusion represented from the worn dentition and wear patterns.

By using this approach, the new provisional restorations may be fabricated in the existing guidance contours. This technique will allow for better control and predictability as the restorative process proceeds.

As a reference, this thought process and technique are well outlined and thoroughly discussed in our Worn Dentition campus workshop and Treating the Worn Dentition online seminar.

Achieving predictability with anterior guide tables

I hope this discussion and explanations provide some insight into the importance and use of incisal guide tables. The Spear online platform contains additional information about the use and fabrication of these guide tables — additionally, you can utilize your dental laboratory technicians as a valuable source of information and understanding.

Restoration of debilitated dentitions can be very challenging — there is significant complexity to re-establishing proper function and stability in these cases. The use and application of incisal guide tables reduce some of the anxiety associated with the restorative process.

These devices provide reference, guidance, and predictability for the outcome. I encourage you to learn how to utilize and implement these guide tables into routine restorative practice.



Incisal guide table fabricated from incisal edge corrections and new diagnostic wax-up.



Excessive tooth wear in a 21 year old patient.



Developing wax-up from incisal guide table to correspond with existing wear patterns.



Final emax ceramic restorations incorporating wear patterns, made from incisal guide table of pre-existing teeth.

Congratulations to



Matthew Martin, our Technical Director, was recognized for his 45 years of dedicated service as a Certified Dental Technician at the National Association of Dental Laboratories Vision 21 Meeting in Las Vegas! January 21, 2022



Congratulations to Nancy Lowe and Larry Athan on their Retirement! The Triad Team will miss you both dearly! And congratulations to Jennie Spease on her 15 Years here at Triad!

UPCOMING EVENTS



February 8th
Triad's Spear Study Club



February 24th-26th
LMT Lab Day Chicago Meeting



March 8th
Triad's Spear Study Club

CHECK OUT OUR MOST RECENT WORK!



Fixed Detachable Zirconia Hybrid Multi Layer Bridge with Added Gingival Display

Thank You.

As our Laboratory continues to grow, we are thankful for all of our clients that have placed their trust and confidence in us over the years! We are honored to be part of your Restorative Team. A sincere thank you for making 2021 a great year!

