

# USING THE LUCIA JIG

## TO TAKE AN ACCURATE & RELIABLE CENTRIC RELATION BITE REGISTRATION

THE LUCIA JIG HELPS OBTAIN CENTRIC RELATION BY DEPROGRAMMING MUSCLES AND ALLOWING THE CONDYLES TO SEAT IN THE MOST SUPERIOR POSITION

The method described in this instructional guide features the Lucia Jig. Used by many dental clinicians, the Lucia Jig is simple, reliable, reproducible, and comfortable for patients. Frank Spear, DDS, MSD, uses this technique in his clinical practice and teaches it in his courses.

An accurate bite registration is critical for the Laboratory to correctly fabricate an appliance requiring occlusal coverage. It will reduce initial trimming and fitting adjustments and save considerable chair time when seating the appliance.



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DENTAL TECHNOLOGIES

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STANDARD



CLASS II

*"It separates the posterior teeth, and by separating the posterior teeth it allows the lateral pterygoid to release, and when the lateral pterygoid releases, the condyle seats...it's that simple," explains Dr. Spear.*

For this procedure, ACU-flow™ is used. It is a syringeable poly vinyl siloxane material with a 15 second working time, 45 second intraoral setting time, and a maximum total cure time of 1 minute. Once set, it is extremely hard without being brittle, trims like acrylic, and remains dimensionally stable making it ideal to send to the Lab

Selecting the right Lucia Jig is based on the vertical opening of the posterior teeth. Use the standard (Class I) jig to determine the vertical opening. If there are several millimeters (more than 2.5mm) between the posterior teeth, use the Class II jig to reduce the vertical opening.

For patients with very irregular mandibular incisors, use the Lucia Jig on the lower incisors. It will function in the same way against the maxillary incisors.

**STEP 1:**

Paint the curved surface of the jig with a small amount of silicone tray adhesive (A).

**STEP 2:**

Dispense ACU-flow™ material into the curved portion of the jig (B).

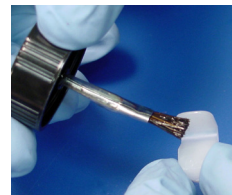
**STEP 3:**

Place the jig on the upper centrals and place the Whale Tail directly beneath the jig (C). Ask the patient to bite down and hold (D). The Whale Tail levels and orients the jig to the occlusal plane. It parallels the jig with the occlusal plane anteriorly and posteriorly and in a right and left direction as well. Allow to set - approximately 45 seconds.

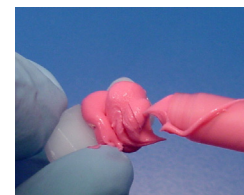
**STEP 4:**

Once hard, remove the jig and the Whale Tail (E) and trim off the excess material with a lab knife. Remove any material extending over the edges of the jig (F). Place it back on the patient's upper centrals. Ask the patient to bite down onto the jig, slide forward, slide back, and squeeze (G). Repeat. Ask the patient if he or she feels any tenderness or tension. If the answer is no, the pterygoid is relaxed and the joint can support load comfortably.

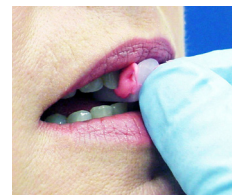
If the answer is yes, the patient may require an additional period of time (possibly up to 20 minutes) to allow the pterygoid to relax and the condyles to seat. If after that period of time, the discomfort persists, a joint problem may be indicated.



A



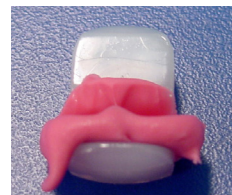
B



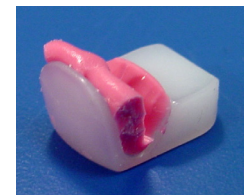
C



D



E



F

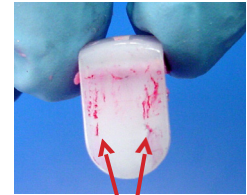


G

**STEP 5:**

Using red articulating paper, confirm that the lower centrals are contacting the jig evenly. Place the red articulating paper between the jig and the lower centrals. Ask the patient to slide the lower incisors forward and back several times marking the jig (**H**).

Remove the jig. If the lines are on both edges or on the center of the jig, proceed to the next step (**I**). If the line is only on one side of the jig, it will need to be beveled slightly with an acrylic bur. Repeat step 5.

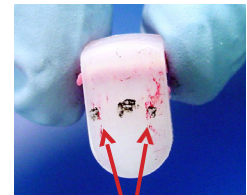
**H****I**

*Lines appear on both edges*

**STEP 6:**

To determine the patient's most retruded position, place the jig back on the patient's centrals. Ask the patient to bite down, slide forward, back, and squeeze. Repeat and hold. Ask the patient to open slightly, place black articulating paper between the jig and the lower centrals and ask the patient to tap three times (**J**).

The most retruded point of contact of the lower incisors has now been marked in black on the jig (**K**). When the bite record is taken, if the patient's lower centrals are touching those marks, you can be confident that the patient is in centric relation.

**J****K**

*Patient's most retruded position*

**STEP 7:**

Dry the teeth well with dental gauze, this prevents the bite registration material from sliding down the patient's throat. With the Lucia Jig in place, ask the patient to open and inject an ample amount of the registration material starting on the second molars and work up to at least the cuspids on both sides (**L**).

Ask the patient to slowly close onto the marks and squeeze (**M**). The patient must squeeze firmly to seat the condyle by using the masseter, temporalis, and medial pterygoid muscles. If the patient's lower incisors are on the most posterior marks on the jig, you know the patient has closed into the correct position.

**L****M****STEP 8:**

Once the registration material is hard, ask the patient to open and remove the Lucia Jig and bite registration material. The bite records should have very good palatal cusp and buccal cusp recordings of the maxillary teeth and buccal cusp recordings of the mandibular teeth (**N**). The bite records are ready for trimming.

**N**

## TRIMMING INSTRUCTIONS

Trimming the silicone bite records is an important step to ensure an accurate fit on the model. Trimming eliminates all the interferences so there is no movement once the models are seated into the bite record.

### STEP 1:

With a lab knife or diamond disc, trim any material that extends distal to the second molar **(A)**.

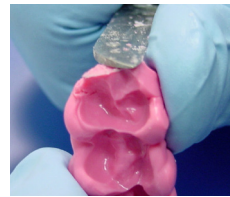
### STEP 2:

With a 1.5 inch fine sandpaper arbor, shorten the flanges of the records to approximately 1.5mm cusp depth **(B)**.

### STEP 3:

With the round end of an acrylic bur, remove the marginal ridge detail and the depths of the fossa. There should only be the cusp tips left, no anatomy or marginal ridges **(C)**.

When the silicone is properly trimmed, the bite will seat perfectly and there will be no rocking or movement of the model **(D)**.



A



B



C



D



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