

# Clinical Tips for Improving 2D Lingual Treatment

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**W**e have routinely used 2D lingual brackets\* for the past five years. Our daily routine with this system has been greatly improved by the two simple techniques presented here. Each is easily implemented, without much expense or extra effort.

## Direct-Bonding Tweezers

After many years of indirect bonding, we have recently opted for a direct approach to save time and expense. The most difficult task after initial training is the correct measurement and marking of the slot position on each tooth surface. A specially designed gauge with a graphite marker is difficult to handle on the lingual aspect—impossible, in fact, under certain anatomical conditions.

This problem prompted us to create a modified lingual bracket-setting tweezer. We welded small posts to the inner surfaces of a standard right-angle-end bracket tweezer, measuring an exact distance of either 3mm, 4mm, or 5mm between the bracket slot and the angle of the instrument that rests on the incisal or occlusal ridge (Fig. 1).

These direct-bonding tweezers allow the precise transfer of the slot positions determined from the study cast without further measurements or markings. Accidental deviation of the vertical bracket position is prevented by the solid incisal or occlusal rest. The tweezers are now commercially available (Forestadent\* Nos. 501-0223-3, 24-4, 25-5) and are compatible with some other commonly used lingual brackets, including Evolution LT\*\* and In-Ovation L.\*\*\*

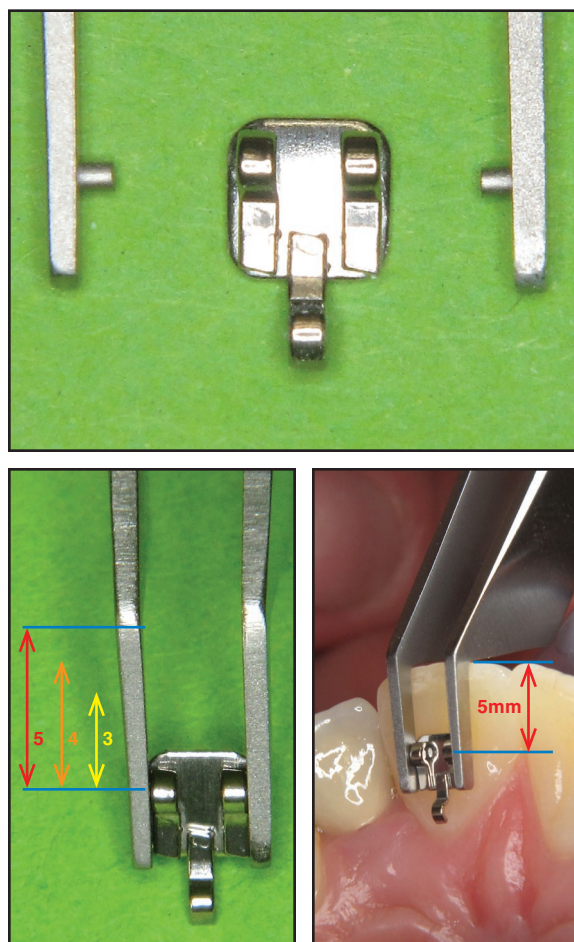
\*Forestadent USA, 2315 Weldon Parkway, St. Louis, MO 63146; www.forestadentusa.com. 2D is a registered trademark.

\*\*Trademark of Adenta USA, 81 Clover Road, Ivyland, PA 18974; www.adentausa.com.

\*\*\*Registered trademark of Dentsply GAC International, 355 Knickerbocker Ave., Bohemia, NY 11716; www.gacintl.com.

## Easy Lingual Wire Bending

Lingual wire bending is required when using the 2D bracket in combination with prefabricated wires. We have developed a way to customize the archwire with a simple twist of the wrist. Using the patient's previous wire as a template, we pre-



**Fig. 1** Modified lingual bracket-placement tweezers; horizontal posts engage bracket slots at 3mm, 4mm, or 5mm from angle of instrument.

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Dr. Ludwig



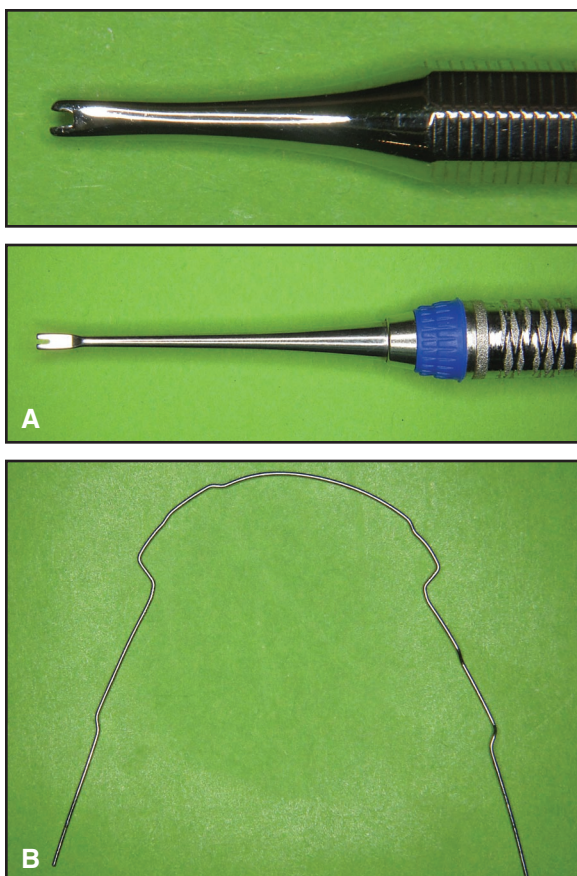
Dr. Glasl



Dr. Lisson



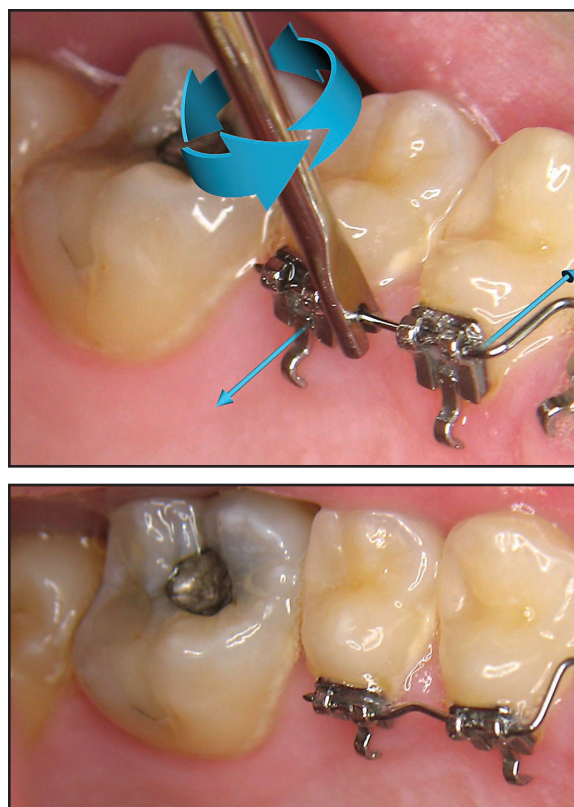
Dr. Kinzinger



**Fig. 2 A. “Archwire tuckers” suitable for most lingual cases. B. Archwire after several custom bends during treatment.**

form a round stainless steel or beta titanium wire, adding further bends as necessary after ligation by using a ligature director such as Forestadent’s No. 501-0833\* or a slender “archwire tucker” with long arms, such as Hu-Friedy’s Straight 020 Wire Applicator No. TK020S† (Fig. 2).

In-out bends as well as bends for intrusion or extrusion can be placed without removing the



**Fig. 3 Custom bending of .016" stainless steel archwire; “archwire tucker” applies in-out bend at desired site by twisting wire around its vertical axis.**

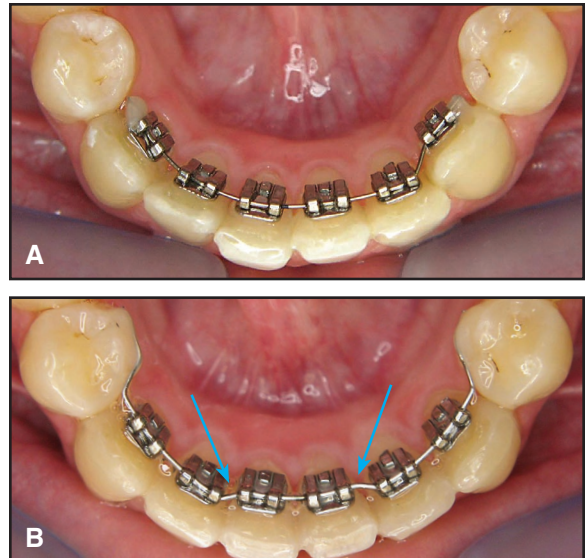
archwire (Figs. 3-6). The adjacent bracket should be secured with a Weingart plier designed for lingual use to ensure it is not debonded when the bending force is applied.

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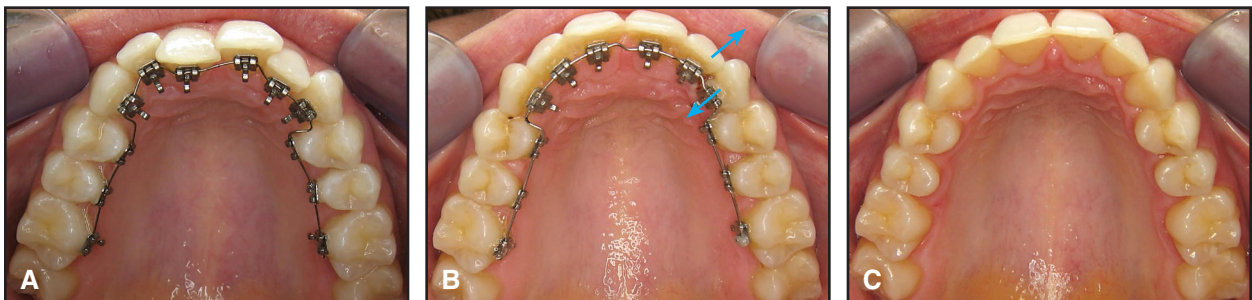
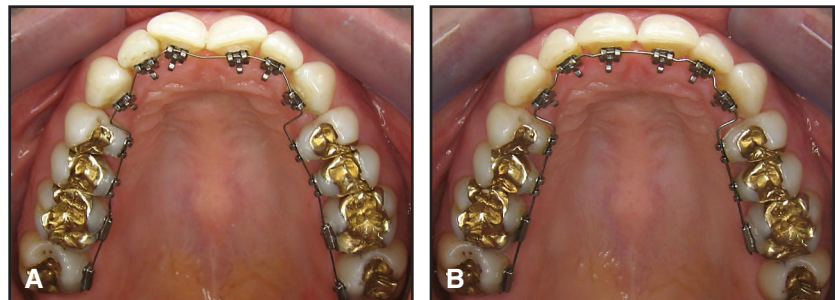
†Hu-Friedy, 3232 N. Rockwell, Chicago, IL 60618; [www.hu-friedy.com](http://www.hu-friedy.com).



**Fig. 4** A. Adult female patient with mild tertiary crowding of lower incisors after completion of craniofacial growth and previous orthodontic treatment. Anterior teeth bonded with 2D lingual brackets; segment of .012" nickel titanium prefabricated archwire placed as initial wire. B. Alignment achieved in three months of treatment using inset bends (blue arrows) placed in .016" stainless steel wire with archwire tucker.



**Fig. 5** A. Initial .012" nickel titanium archwire in adult female patient who requested esthetic treatment with 2D maxillary lingual brackets. B. After six months of treatment, .016" TMA $\ddagger$  finishing wire customized with archwire tucker to place steps for precise horizontal and vertical alignment.



**Fig. 6** A. 2D lingual brackets and prefabricated .012" nickel titanium archwire in adult male patient with upper anterior crowding. B. After initial alignment, .016" stainless steel wire placed to begin correction of pronounced rotation on left side; customization with archwire tucker produced required tooth movements without removal or changing of archwires. C. After six months of treatment and three months of retention.

$\ddagger$ Registered trademark of Ormco Corp., 1717 W. Collins Ave., Orange, CA 92867; [www.ormco.com](http://www.ormco.com).