

A New Fast and Simple Border Molding Process for Complete Dentures Using a Compound Stick Gun

Chan Park, DDS, MSD¹/Hong-So Yang, DDS, PhD²/Hyun-Pil Lim, DDS, PhD³/
Kwi-Dug Yun, DDS, PhD³/Gye-Jeong Oh, PhD⁴/Sang-Won Park, DDS, PhD²

This article describes the use of a newly invented compound stick gun to take impressions for complete denture. The border molding process involves loading the modeling compound in an electric heating device and applying an even thickness of compound on the flange of a custom tray at a proper temperature without hot water tempering. This method provides a quicker and easier border molding process alternative to conventional techniques. *Int J Prosthodont* 2016;29:559–560. doi: 10.11607/ijp.4891

The goal of impression taking is maximum possible extension over all tissue capable of supporting a denture while avoiding impinging on movable tissue during normal functional movement.¹ A commonly used method in complete denture impression taking is to fabricate a custom tray and apply impression compound in sections around the borders of the tray.

Impression compound is a thermoplastic material, and sticks are commonly used for border molding.² Modeling compound has a very low thermal conductivity and is acceptably soft between approximately 49°C (120°F) and 60°C (140°F). For the conventional border molding procedure, a direct flame is used for thorough softening. The compound sticks should be moved over the flame but should not be allowed to boil.³ Once the compound is added to a flange area of the impression tray, the material is tempered in the hot water bath for approximately 5 to 8 seconds.¹ Immersion in a hot water bath provides an acceptable but minimal working time. Because of the minimal working time and difficult handling of modeling compound, it has been recommended that border molding using modeling compound be completed in multiple reasonably small areas.³

A compound stick gun is fabricated for an automatic, thorough heating of the compound. This device can apply the stick compound with suitable viscosity for border molding. It has several advantages compared with the multisectional procedure; for example, it is easy to apply an even 2- to 3-mm thickness of modeling compound on the buccal or lingual flange area of the custom tray at once. The hot water bath is not needed for tempering because the compound stick gun does not use direct flame, lengthening the working time. The border molding technique with stick compound saves time and equipment and is easy to learn. Repeated adding, tempering, and ice cooling of the compound is not required. If compound molded border areas need correction, border molding can be repeated following the conventional procedure. Because the gun has three temperature options (50°C, 60°C, and 70°C), doctors are able to use stick compounds from different companies.

An extended border of an impression tray may be molded at one time, as with heavy-bodied vinyl polysiloxane. Border molding in a jaw must usually be done twice because of the amount of compound in a stick: the buccal and labial border are molded at once with the posterior extent of the tray in the maxillary arch, followed by the buccal or labial border and lingual flange of the tray in the mandibular arch.

Technique

A custom tray is first fabricated from a preliminary cast. Next, the modeling compound stick (Kerr) is inserted in the compound gun (HWDMMGG-2013, Hummer) (Figs 1a and 1b). The electronic power on the gun is connected and the temperature selected (button 3, 70°C, is suitable for Kerr impression compound) (Fig 1c). When the red light stops flashing, the gun is sufficiently heated to discharge the melted modeling compound. The molten compound is then

¹Graduate Student, Department of Prosthodontics, School of Dentistry, Chonnam National University, Gwangju, Korea.

²Professor, Department of Prosthodontics, School of Dentistry, Chonnam National University, Gwangju, Korea.

³Associate Professor, Department of Prosthodontics, School of Dentistry, Chonnam National University, Gwangju, Korea.

⁴Research Professor, RIS Foundation for Advanced Biomaterials, School of Dentistry, Chonnam National University, Buk-gu, Gwangju, Korea.

Correspondence to: Prof Sang-Won Park, Department of Prosthodontics, School of Dentistry, Chonnam National University, 33 Yongbong-ro, Buk-gu, Gwangju, 500-757, Korea.
Fax: +82-62-530-5639. Email: psw320@jnu.ac.kr

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Fig 1 Automatic compound stick gun. **(a)** External profile. **(b)** Insertion of modeling compound sticks. **(c)** Selection of a temperature option.



Fig 2 An even thickness of 2 to 3 mm modeling compound is applied on all buccal flange areas of the custom tray at once. **(a)** Applying the molten stick impression compound to the buccal border of the tray. **(b)** Finished buccal border molding.



Fig 3 Posterior extent of the border molding. **(a)** Applying stick impression compound to the custom tray. **(b)** Completed border molding.

applied on all of the buccal border of the custom tray with no hot water tempering needed (Figs 2a and 3a). Border molding for maxillary impression is completed in two procedures (Figs 2b and 3b).

Conclusions

This technique using a new device can make the border-molding procedure faster and simpler. It provides comfort to the dentist and the patient.

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