

Easy Wax Setup Technique for Orthodontic Diagnosis

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Traditionally, diagnostic wax setups have been prepared by sawing the models through the root areas and separating the teeth by hand.¹⁻³ The teeth are then repositioned as desired and sealed in place with heated wax.⁴

This time-consuming technique can be simplified as follows:

Procedure

1. Take alginate impressions with good tooth detail (Fig. 1).

2. Carve the interproximal areas with a sharp knife (Fig. 2), and insert separators (made from old 13mm × 15mm x-ray film) into these areas with a curved How plier (Fig. 3).

3. Cut a sufficient quantity of dowel pins in half (Fig. 4).

4. Pour fast-setting plaster into each impression, filling it to about 3mm over the gingival margin. As the plaster sets, insert a half-pin into each tooth location (Fig. 5). This will provide enough root length for the teeth after they are separated.

5. Pour melted baseplate wax into each impres-



Fig. 1 Patient before treatment.



Fig. 2 Interproximal areas of impressions carved with sharp knife.



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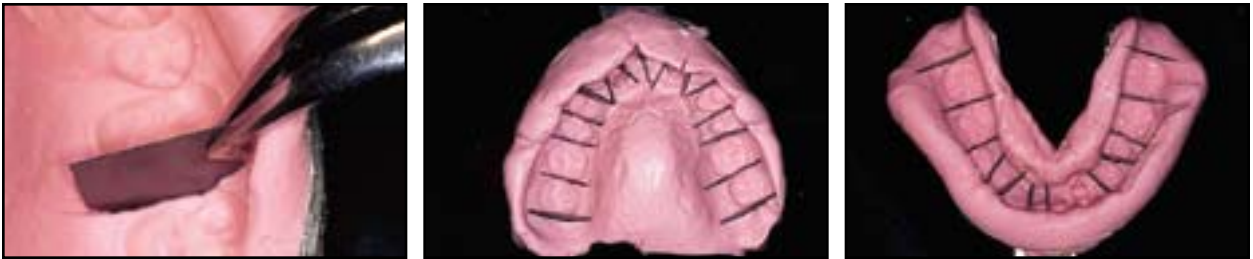


Fig. 3 Curved How plier used to insert separators made of x-ray film.

sion, completely covering the dies while allowing room for movement of the teeth. As wax flows into the dowel pins, it will grip the teeth securely. Insert three half-pins into the wax (Fig. 6) to stabilize it while the base plaster is poured. 6. Add enough fast-setting plaster over the hardened wax to completely cover the retention pins and to make an adequate base (Fig. 7A). While the base plaster sets, immerse the alginate impression in cool water to keep the heat from changing the shape of the wax.

7. When the plaster has set completely, remove the alginate impressions. Clean any excess alginate from the anatomical parts of the casts, and



Fig. 4 Dowel pins cut in half.

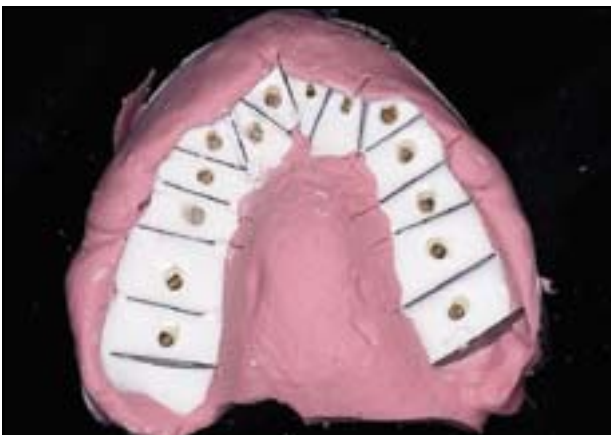


Fig. 5 Half-pins inserted into fast-setting plaster.

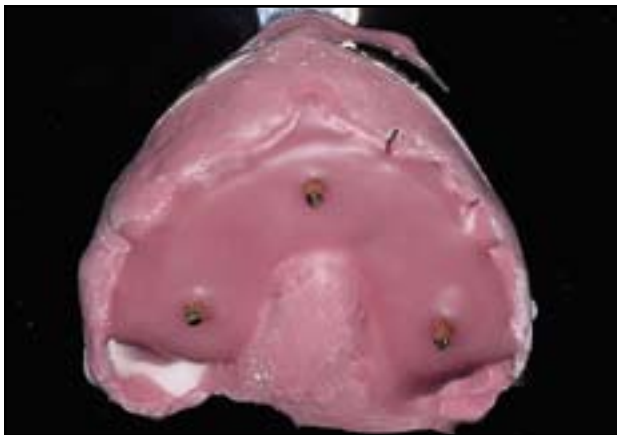


Fig. 6 Baseplate wax poured over impressions; three half-pins placed in each impression to stabilize wax.



Fig. 7 A. Pouring of base plaster. B. Setup casts after removal of impressions and separators.



Fig. 8 Diagnostic setup mounted on semi-adjustable articulator.

remove the separators. The casts are now ready for the diagnostic setup (Fig. 7B).

8. If desired, mount the casts on a semi-adjustable articulator such as Panadent,* using a centric bite registration and facebow (Fig. 8).

9. Number the teeth on the lingual or labial surfaces (depending on where the brackets are to be placed) with a pencil (Fig. 9). Trim the backs of the casts, using a wax bite to relate the maxillary and mandibular arches.

10. Arrange the individual teeth exactly as they should be in the mouth (Fig. 10). The roots will

*Panadent Corp., 22573 Barton Road, Grand Terrace, CA 92313.



Fig. 9 Teeth marked in pencil; backs of casts trimmed to relate maxillary and mandibular arches.

remain in the wax, but heating the dowel pins will make tooth movement easier (Fig. 11).

Discussion

This method is a modification of the technique proposed by Resnick,⁵ except that it can be used in almost all orthodontic cases, while Resnick's is limited to movement of a few teeth. Our technique has the following advantages:

- Only one alginate impression is needed.
- Arch width is precisely duplicated.

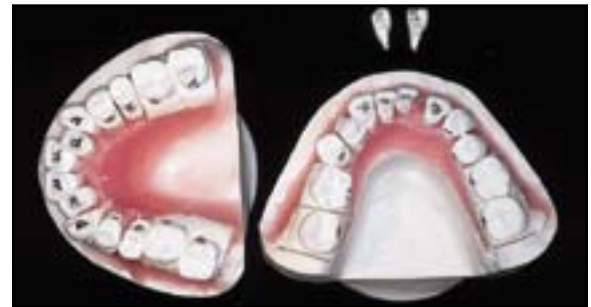


Fig. 10 Movement of individual teeth. In this case, mandibular right lateral incisor was extracted.



Fig. 11 Ideal setup finished by contouring gingival margins and smoothing wax base.

- A few teeth can be moved while the remainder are kept in position.
- No special clinical or laboratory tools, such as a plaster saw (with the accompanying plaster dust), wax instruments, or a flame, are required.
- Reusable separators are made from old x-ray film.
- Teeth can be moved easily by heating the dowel pins.
- Once the initial steps are accomplished by the assistant, the orthodontist can make the diagnostic setup in a matter of minutes.

A severely crowded segment must be removed as a block, as with the mandibular right anterior segment in this case. The teeth are then separated by conventional sawing before being repositioned.

If only a few teeth need to be moved, the

procedure can be further simplified by making dies and applying the wax to those teeth only. The remaining teeth can then be poured with the base of the cast as the last base plaster is added.⁵

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