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## Contact

### Do you have a problem...

...using a particular denture material or technique? Robert Kreyer may be able to help you find a solution. He welcomes your questions and comments.

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## Kreyer Q&A

Robert Kreyer answers question posed by a DLP reader concerning the boil-out time for flaked dentures online at [dentalproducts.net](http://dentalproducts.net). Just click on the Dental Lab Products logo.



# Personalized processed denture bases

**C**omplete denture prosthetics incorporates certain materials and techniques for the fabrication of baseplates, which doesn't allow the clinician to evaluate the fit of a denture until after it is processed at the final delivery appointment. The denture base provides stability and support, which is the foundation for re-establishing lost tissue and teeth. In this article, I will explain why it's more accurate to build this foundation first with a processed base, then evaluate the fit, before proceeding to reconstruct the gingival contours, anterior tooth arrangement, and posterior occlusion with a bio-functional approach to prosthetics.

The fit and stability of baseplates have a direct relation to establishing accurate records during the occlusal registration appointment. The processed base allows the clinician to evaluate the fit, stability, and border extensions during treatment. In turn, this enables the clinician to develop accurate occlusal records during the registration appointment and to evaluate vertical dimension with phonetic drills during the try-in appointment.

Prosthetic techniques for fabricating the master model and constructing baseplates for recording centric relation and vertical dimension of occlusion require blocking out undercuts on the stone master models. The block-out technique provides the technician with a baseplate that will fit the mas-

## The pros and cons

### Advantages:

- Processed baseplate retention and stability makes it easier to record an accurate maxillo-mandibular relationship.
- Record transfer errors are reduced since the bases fit the master PVS models exactly as they fit the edentulous ridge.
- Denture retention and stability can be evaluated during treatment and before the denture is processed.
- The dentist can evaluate vertical dimension with phonetic drills during the wax try-in appointment.
- Prosthetic treatment becomes predictable at the delivery appointment.

### Disadvantages:

- There is an increase in time and labor for the technician. Thus, the lab cost for the processed bases and personalized denture is higher; although this increased cost to the clinician is offset by decreased chair time during treatment and post-insertion adjustments.

ter model without the base material locking into the retentive undercuts. This blocking out of the mucosal support surface will affect the fit and stability of a denture base.

With the advent of modern polyvinylsiloxane (PVS) materials, we are able to fabricate an edentulous tissue master model that enables the technician to seat the baseplate on a master model without blocking out the undercuts. The following personalized processed base technique uses PVS materials to increase efficiency while providing consistency and predictability to the prosthetic dental team.

## Phase 1: Impression Processing

1. Box and pour the master edentulous impression in gypsum according to the manufacturer's instructions.
2. Before waxing a baseplate, evaluate the master model to make sure the anatomical landmarks and biofunctional borders have been captured in the impression. The proper horizontal border should be evident in the master model, surrounded by a land area.
3. Check the models for any positive or negative bubbles and voids. (Figs. 1, 2, and 3).

At this point, the dental technician either must decide to proceed with the processed baseplate or call the clinician if there are concerns that would affect any technical or clinical procedures during treatment

## STEP-BY-STEP PROCEDURE FOR PROCESSING PERSONALIZED DENTURE BASES

**Phase 1**  
**Impression**

**Fig. 1** Before waxing a baseplate, the master model should be evaluated.

**Fig. 2** A PVS matrix of the palate duplicates the natural rugae and palatal contours.

**Fig. 3** The matrix shows the duplication of palatal contours.

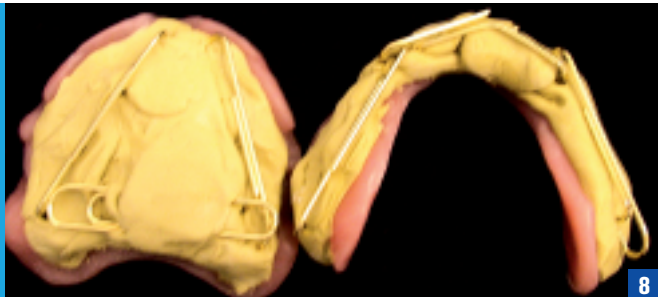
**Phase 2**  
**Waxing and Investing**

**Fig. 4** Vacuum form the maxillary PVS Sil-Tech Super palatal matrix with .020 clear stent material.

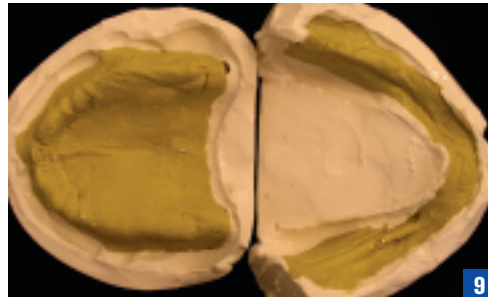
**Fig. 5** A thin layer of wax (1.5mm) is flowed into the palate and the stent is cut out and set in

**Fig. 6** The waxed processed baseplates are invested in the flasks.

**Fig. 7** The molds are separated and deflashed then trimmed.



**Fig. 8** Jumbo paper clips are placed into the silicone putty to retain the edentulous tissue model in the stone base.



**Fig. 9** The bases are poured, trimmed, and indexed for mounting procedures.



**Fig. 10** The final personalized processed baseplates.

### Phase 2: Waxing and Investing

1. At the first technical procedure, wax a baseplate using one sheet of modeling wax on the stone master cast.
2. Create an anatomical palate by taking an impression of the maxillary master model's palate with PVS and vacuum-form with an .020 clear stent material (**Fig. 4**). Flow a thin layer of baseplate wax into the palate, and then cut out a palatal stent and place it over the waxed baseplate (**Fig. 5**). This technique of using an anatomical stent provides the patient with a phonetically contoured palate.
3. Seal the stent to the master cast, and wax the remainder of the buccal and labial surface to achieve the final waxed processed baseplate for investing.
4. Invest the waxed edentulous cast in the injection flask according to the manufacturer's injection technique (**Fig. 6**).
5. Boil-out the mold and paint with an acrylic separating medium (See my article "Successful Separation Technique" in the April 2005 issue of DLP or online at [www.dentalproducts.net](http://www.dentalproducts.net)).
6. Inject the baseplate and process according to the manufacturer's instructions.
7. After the flask has cooled, separate and deflask the molds (**Fig. 7**).
8. Carefully remove the master model and separate from the processed base.
9. Once the processed base is cleaned and all the stone removed, trim the excess flash around the baseplate.
10. Finish the baseplate with pumice and polish with compounds.

It is very important to leave the entire horizontal and vertical peripheral border extension during finishing and polishing, thus replicating borders of the master impression. The clinician will evaluate the peripheral borders during the registration appointment and adjust if necessary.

### Phase 3: Finishing

1. Once the processed bases are completed, create the master edentulous tissue models with silicone putty.
2. Place jumbo paper clips into the silicone putty to retain the edentulous tissue model in the stone base (**Fig. 8**).
3. Pour, trim, and index the bases for mounting after the clinical occlusal registration records have been established (**Fig. 9**).

Personalized processed baseplates (**Fig. 10**) are seated into the mouth and evaluated for fit, comfort, and stabilization. This will create a positive psychological patient evaluation of your work and enhance treatment, since the baseplates are more retentive than the patient's existing dentures. **DLP**

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