Guidelines for Dental Work Models

Checklist for Work Models

- ❑ Stone work models are preferred over plaster for appliance construction procedures and are less likely to break during shipping
- ❑ Models should be mounted on articulator plates with mounting stone (such as Whip Mix) and scored with deep cross-cut indentations for added support during the digital fabrication process
- ❑ The patient's name should be recorded on the bottom of both the upper and lower model or on the side of the mounting stone
- ❑ Minimal chips, bubbles, or porosity on the occlusal surface
- ❑ No narrowing or pinched appearance of incisal, buccal, or lingual cusps
- ❑ A wax construction bite should be included to check mounting or facilitate correct mounting

havenortho
ORTHODONTIC LABORATORY
havenortho.com lab@havenortho.com

Guidelines for Dental Work Models

Dental work models are a vital component of fabricating an accurate, well-fitting appliance. It is not necessary to follow detailed model trimming procedures. Most work models require minimal base size. The models must replicate the arch size and are approximately 10mm thick. Several plaster and stone gypsum products are available. Dental stone is preferred for most appliance fabrication procedures.

Step 1: Preparing the Impressions

Check the impressions for distortions. Cut excess impression material from the back areas of the tray, leaving at least 2-3mm of material behind the last tooth on each side of the arch.

Step 2: Preparing the Stone

Prepare the stone mix by following the proper ratio of water to powder recommended by the manufacturer. After measuring, place the water into a mixing cup, followed by the stone. Spatulate the mix by hand for 20 seconds, and then place it into a vacuum spatulator for approximately 30 seconds, eliminating porosity in the mix (A). If you do not have a vacuum spatulator, mix in a flexible vinyl bowl while seated on a vibrator. Once the water and stone are combined, continue mixing slowly to avoid over aerating.

A

Step 3: Remove Bubbles

After vacuum spatulating or mixing, place the mixing cup on a vibrator to remove any remaining bubbles, while still applying the vacuum.

Step 4: Applying Stone to the Impression and Pouring the Model Base

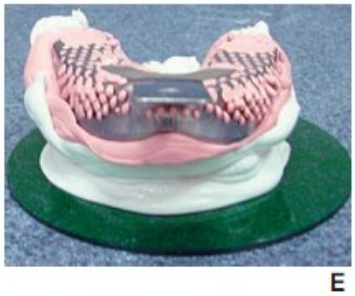
With a spatula, apply a small amount of stone to the back of one side of the impression (B). Vibrate this material throughout the impression, making sure air is not trapped as the stone flows. Apply more stone to the mold while vibrating, until the impression is full (C).

Using a flat plastic disc (a disc of biocryl material works well), place a heaping pile of stone in the center of the disc and add extra stone mixture to the impression (D). Invert the impression tray onto the stone mixture to combine (E).

B

C

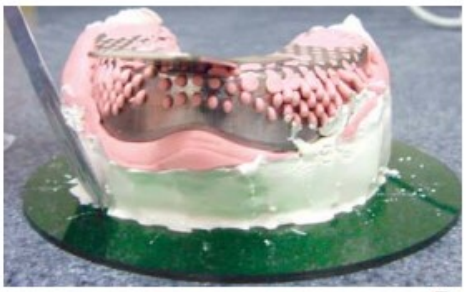
D



E

havenortho
ORTHODONTIC LABORATORY
havenortho.com lab@havenortho.com

Using a spatula, form the base of the model by contouring the corners around the impression tray (F). A proper stone mixing consistency assures easy contouring and a strong, solid model base.



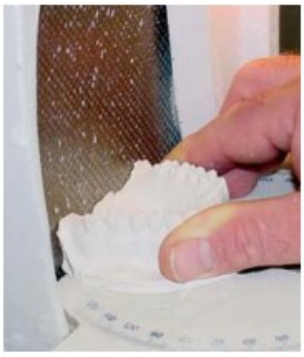
F

Step 5: Setting Time & Removal

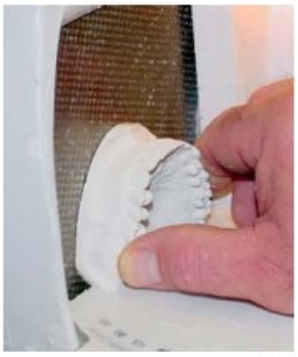
The stone mixture should set for approximately 1 hour to obtain maximum strength. Remove the impressions carefully to prevent breakage. *Caution: If alginate material was used for the impressions, do not allow it to dry out. The alginate will become stiff causing model breakage upon removal.*

Step 6: Trimming

Once the impression tray has been removed, trim the model base using a dual or single wheel trimmer. Trim the base of the model to 10mm thickness from the bottom and within 3-5mm of the anatomical contours around the perimeter of the model (G & H). Do not trim too closely to the dentition or tissue and pay close attention to flared teeth. With a #7 laboratory knife, remove bubbles from the occlusal surface and excess stone from the back of the model. This allows the models to interdigitate and provides an accurate fit within the bite registration without interference.



G



H

Packing Work Models for the Laboratory

Record the patient's name on the bottom of both the upper and lower models. Double wrap mounted models to protect the occlusal surfaces. Place the excess wrapping material over the occlusal surfaces and place in the box with the occlusal side facing up. Do not wrap the upper and lower arch together in occlusion or with the wax bite in place. Pack all voids in the box so there is no movement of the contents during shipping. Package bite registration separately.

havenortho
ORTHODONTIC LABORATORY
havenortho.com lab@havenortho.com