

A CLINICAL APPLICATION OF BITE COMPOUND

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Study casts should be mounted on an articulator in harmony with the patient's occlusal plane to reproduce correct centric occlusion and eccentric occlusal relationships.

It is absolutely essential that accurate inter-occlusal centric relation records be used to mount study casts on either adjustable or semi-adjustable articulators.

The several types of impression materials, such as plaster, wax, zinc oxide-eugenol paste, compound, or self curing resin, have been traditionally recommended and used for this procedure. However, this procedure has always been a problem because of the

disadvantage of having to wait for the recording material to set completely. Inherent disadvantages of various materials used make centric records difficult to record and are frequently inaccurate.

The method¹ illustrated here is an altered technique of the Lucia^{2, 3} method with a different type of compound which is injected into the inter-occlusal space with the mandible retained in its terminal hinge position by an incisal stop⁴.

The compound to be used has been especially modified from regular impression compound for this purpose. It has a flow factor of 96.1% at 45°C and nearly zero at 36°C⁵.



① Bite compound and disposable plastic syringe.



② Place a bite compound stick which is slightly shorter than the length of syringe into the syringe and place the syringe and small piece of bite compound in the compound heater for uniform tempering at 45°C-50°C.



③ Place the small piece of bite compound over the mandibular central incisors and guide the patient back into terminal hinge position. Carefully guide the mandible in its terminal hinge position in a closing movement until the teeth do not quite contact.



④ The incisal index should maintain a stable interocclusal space in an opening in first premolar area of not more than 3 mm (No maxillary and mandibular teeth should not be in contact in this position).



5 When the bite compound is ready for injection, it will flow gradually through the tip of the syringe. Cut off about 4 - 5 mm of the syringe tip to allow easier injection of bite compound.

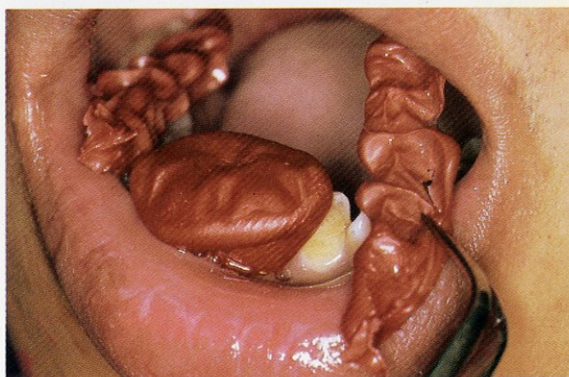


6 Place the centric stop into position. Have the patient close until the maxillary central incisors firmly contact the centric stop and inject bite compound into the interocclusal space between maxillary and mandibular posterior teeth. Injection of the compound should be made with the tip of the syringe held at a 45° angle to the maxillary occlusal surfaces. Repeat the same injection on the other side. The compound records should not be extended into gingival embrasure areas.

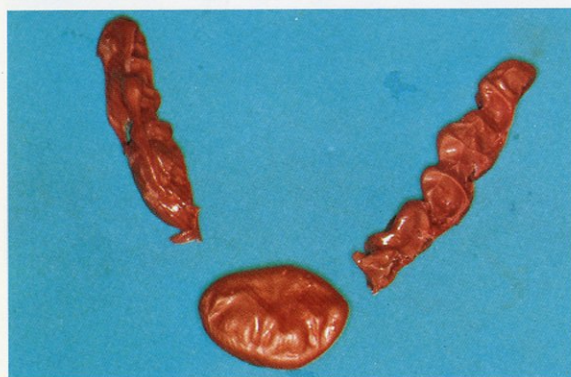
An excess of bite compound can be pushed away from undercut areas as well as edentulous areas with a cement mixing spatula before cooling the material with an air syringe.



7 Make an identification mark on the record with a sharp instrument to facilitate location of the record on the cast prior to mounting.



8 When the bite compound has set, remove the completed interocclusal record and centric stop with a cotton forceps. The interocclusal records should be handled carefully to avoid distortion and breakage.



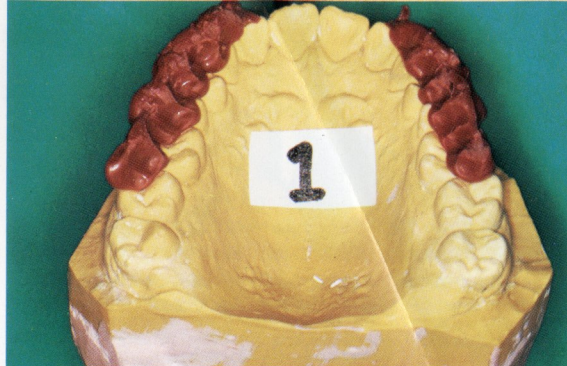
9 An occlusal view of a completed centric record with the anterior stop.



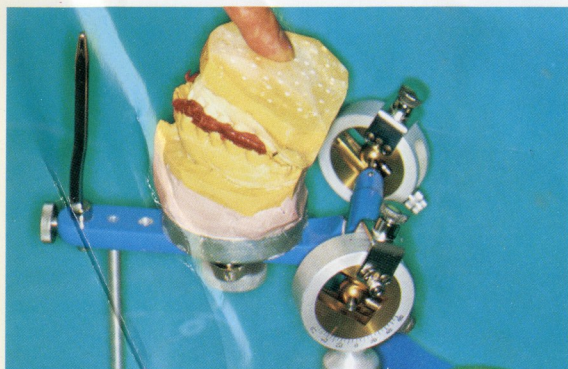
10 Any desired number of centric records (one for mounting, the others for checking the mounting) can be made.



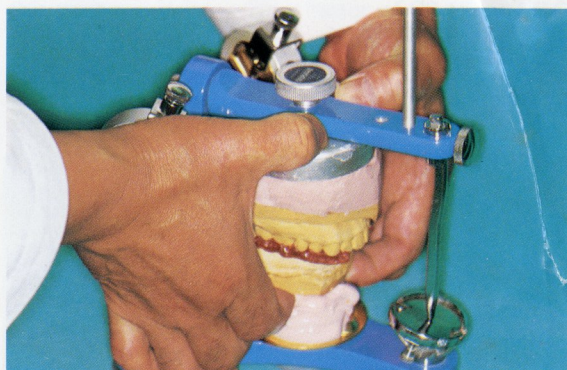
11 Any excess allowed to flow onto the facial or lingual surfaces should be trimmed off with a sharp knife.



12 Place the No. 1 record onto the maxillary cast. Check the accuracy of records with the No. 2 and No. 3 records.



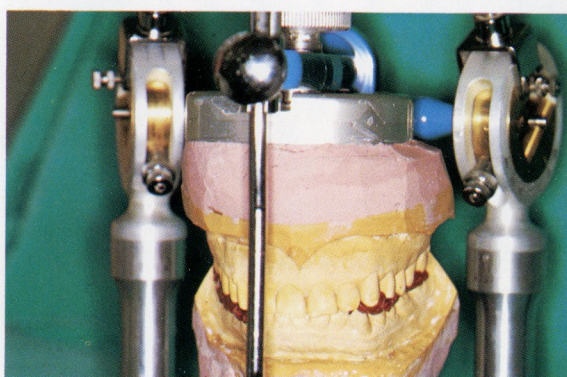
13 Adjust the incisal pin to a proper position (a 5 mm opening for a Dentatus Articulator). Place the mandibular cast onto the centric records and be certain that the teeth are fully seated by means of a firm uniform pressure with an index finger. Check to ensure that the casts are stable (i.e. records are stable with no rocking and no soft tissue contact). If the mandibular cast is not stable in this position, the accuracy of records and/or the casts should be questioned.



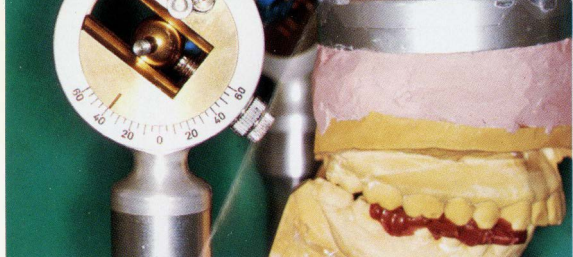
14 Hold the casts together with fingers. If the fingers touch the lower mounting plate, the cast must be trimmed. After the plaster has set, the accuracy of the mounting must be verified to assure that the mounting from the record used is accurate.



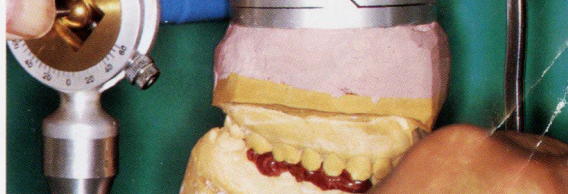
15 Replace the No. 3 record on the maxillary cast in same manner which has been shown in Fig. 11, 12. Raise the incisal pin, loosen the condyle locks and hold maxillary casts and bite record together with fingers. Close the articulator bringing the maxillary and mandibular casts into the record.



16 Examine the fit of the split casts carefully.



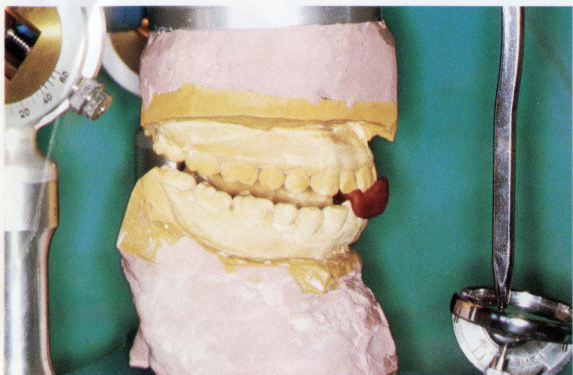
17 If check records (No. 2, No. 3) produce the same result as the original centric record (No. 1), the condylar spheres on both sides will be in simultaneous contact with the anterior stops and the split casts will fit precisely.



18 If the correct mounting in terminal hinge relation is not obtained and proven, the articulator and the split cast will not fit together accurately. Either one or both sides of the condylar sphere will not contact the anterior stop. In checking the casts, there may be several possible reasons why the split casts do not check, including the following:

- a The mandibular cast was not mounted properly.
- b The centric record was incorrect (i.e. not recorded in the terminal hinge position or it was distorted)
- c An inaccurate mandibular cast.

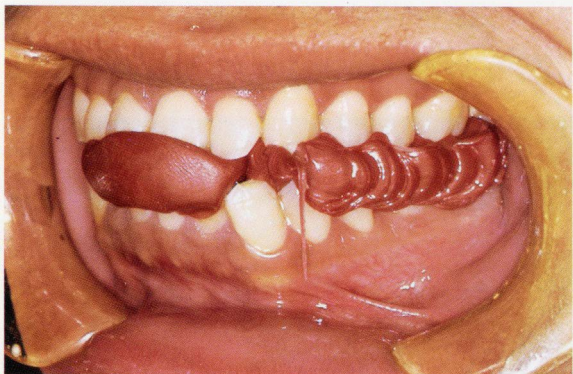
Any variation between these records (No. 1, 2, 3) would indicate an error which must be corrected at this point by making a No. 4 record in order to prove the accuracy of the mounting.



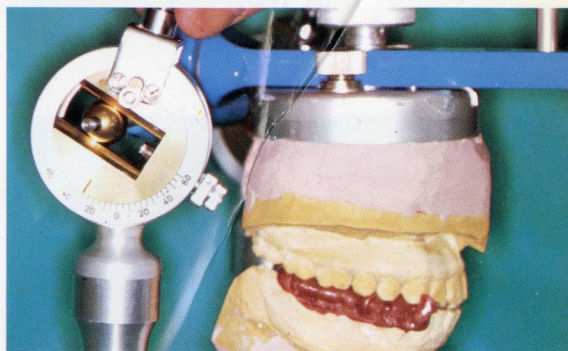
19 Protrusive record ⁶. Adjust the articulator to a straight 5 mm protrusive position, or in an incisal edge to edge relationship. Place a small amount of bite compound onto mandibular cast incisors and close the articulator into the protruded position until approximately 2 mm of space remains between the posterior teeth.



20 Place the index on the patient's teeth and close lightly into the index in the protruded position. Train the patient to bite into the protruded position before injecting bite compound.



21 Repeat the injection procedure shown and described in Fig. 6, 7, and 8.



22 Place the trimmed protrusive record between the casts on the articulator and adjust the condylar angle. (Setting the articulator using lateral records is not included in this discussion).