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# CROSS-BITE occlusion set-up

**A posterior tooth arrangement** that distributes occlusal forces for increased stability during function is extremely important with complete denture prosthetics. In cross-bite denture cases, the residual ridges are resorbed so that the maxillary and mandibular crest of the ridge lines are inclined at an angle of less than 80° to the horizontal plane.

For such cases, it's important to use posterior teeth that have been tested to have a higher resistance to wear when the patient's bite force has been increased with a stable and retentive implant retained overdenture.

The Candulor Confyloform II posterior denture teeth (*www.geneva-dental.com*) used in this article are made of a nano-filled composite (NFC) a new material in removable prosthetics with excellent abrasion to to wear compared to all denture tooth materials used to date. The photos show Candulor's Condyloform II NFC posteriors with maxillary porcelain anteriors forming an exceptionally aesthetic and functional balance between the two materials.

01 Maxillo-mandibular inter-residual ridge relationships of the mounted models show the mandibular residual ridge crest opposing the maxillary residual ridge (**Fig. A**). When analyzing mounted edentulous models, we must determine if a cross-bite occlusal scheme is indicated.

## SOLUTION to cross-bite occlusion

Fig. A Determine if a cross-bite occlusal scheme is indicated by analyzing the inter-residual relationships of mounted edentulous models.

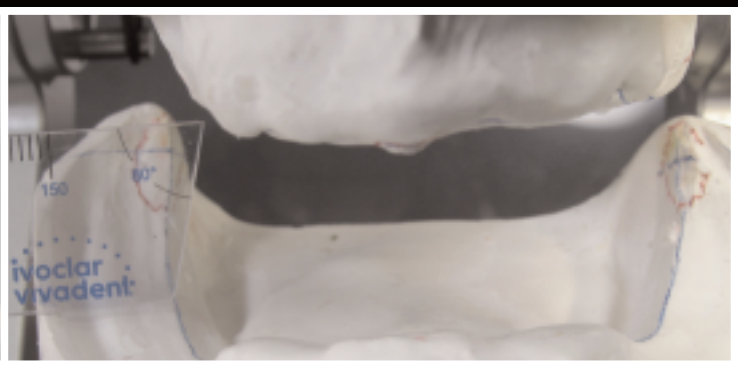


Fig. B The Blue Line ruler helps determine when an inter-residual ridge inclination is less than 80° to the horizontal plane.

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Fig. D The first pre-molar or bicuspid is positioned in a normal occlusal relationship.

Fig. E Start the cross-bite occlusion with a transitional tooth, such as the second pre-molar or bicuspid.

Fig. G Adjust and grind the mesio-buccal cusps as they transition into a cross-bite to establish grinding function.

Fig. H A facial view of this cross-bite relationship shows the placement of maxillary posteriors in relation to mandibular posteriors.

02 Using the Blue Line ruler (Ivoclar Vivadent; *www.ivoclarvivadent.us*) analyze the angle of residual ridge relationship. Whenever the inter-residual ridge inclination is less than 80° to the horizontal plane, a cross-bite relationship exists. Here, the inferior edge of the Blue Line ruler is placed on the crest of the mandibular residual ridge (**Fig. B**). The superior edge of Blue Line ruler at 80° does not touch the maxillary buccal ridge crest. Thus, an angle less than 80° exists.

03 After the mandibular teeth have been arranged and set, the cross-bite relationship becomes evident and is easily visualized (**Fig. C**). If the patient's maxillary right posteriors (left as you look at the set-up) are brought out to the buccal into a normal occlusal scheme, then occlusal forces will cause the palate to flex and create palatal fractures in the acrylic resin.

04 Position the first pre-molar or bicuspid in a normal occlusal relationship (**Fig. D**).

Fig. C The arranged and set mandibular teeth reveal a cross-bite relationship.

Fig. F The maxillary mesio-buccal cusp of the first molar must engage the central fossa of the mandibular first molar.

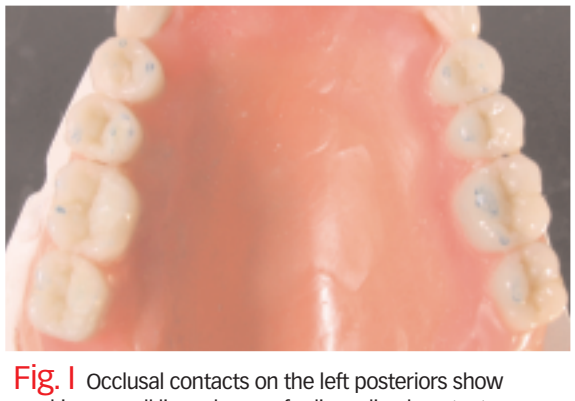

Fig. I Occlusal contacts on the left posteriors show markings on all lingual cusps for lingualized contact or occlusion. Buccal contacts on right molars in cross-bite.

05 To start the cross-bite occlusion, begin with a transitional tooth. In this case, the second pre-molar or bicuspid. Very slightly round off the buccal cusps of the maxillary second bicuspid. After placing the maxillary bicuspids, grind in a fossa in the buccal and lingual cusps of the mandibular second pre-molar so that the result is an occlusion that functions and directs forces properly (**Fig. E**).

06 With cross-bite occlusion situations in the molar region, care must be taken that the mesio-buccal cusp of the maxillary first molar takes over the function of the mesio-palatal or lingual cusp. The maxillary mesio-buccal cusp of the first molar must engage the central fossa of the mandibular first molar (**Fig. F**).

07 Adjust the mesio-buccal cusps as they transition into a cross-bite, grinding them down in such a way that a grinding (mortar-pestle) function is created. If there is enough posterior space distal to the first molar to allow the second maxillary molar to be placed, a second molar is placed so the mesio-buccal cusps are contacting the central fossa of the mandibular second molar (**Fig. G**).

08 A facial view of this cross-bite relationship after all posteriors have been arranged and set shows the placement of maxillary posteriors in relation to mandibular posteriors (**Fig. H**). To prevent cheek biting, a direct mesio-buccal cusp-to-cusp relationship must not exist. The maxillary mesio-buccal cusp must slightly overlap mandibular cusps with no buccal cusp contact. As the posterior teeth transition into a cross-bite, contacts are positioned on the buccal cusps of maxillary second pre-molars. The maxillary molars have no contact on palatal or lingual cusps as in a normal lingual contact or lingualized occlusal relationship.

09 Occlusal contacts show markings on the cross-bite occlusal surface as the second pre-molar transitions into cross-bite occlusal relationship (**Fig. I**). The posteriors on the patient's left (right as you look at the set-up) show markings on all lingual cusps for lingual contact or lingualized occlusion.

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## do you have a **PROBLEM...**

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