



Adjustable Box Precision Intracoronal Instructions

Screw adjustable retention intracoronal precision attachment for effective retention of removable partial dentures.

Advantages:

- Gingival bevel on the male for easy patient insertion and removal--reduces wear potential.
- Retention is fully and easily adjustable by simply tightening or loosening the screw
- Female may be cast against with precious or semi precious alloy for easy fabrication.
- Vertical height may be reduced for short or close bite situations.
- Excellent external wall contact for guide plane stability.
- Male may be connected to the cast frame by acrylic resin, composite resin, bonding, or solder. Very easy techniques.
- Easy technique to incorporate male housing into cast chrome cobalt frame.
- System allows for conversion of fixed bridge to a removable partial denture if distal abutments are lost.

Be sure that the retaining abutments are large enough that an adequate internal box preparation may be completed to receive the attachment female.

The Adjustable Box is a rigid or non-moving connector. Multiple strong abutments and splinting is recommended, as forces are therefore directed to the abutments



Laboratory Procedures

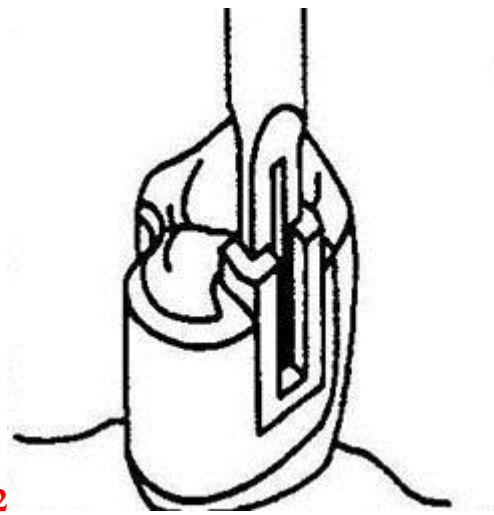
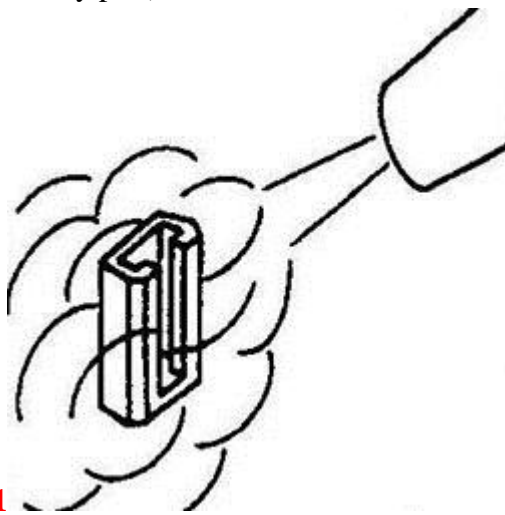
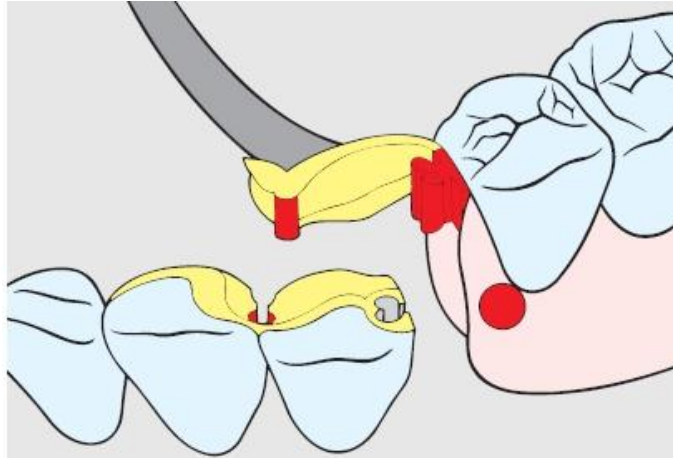
Crown and Bridge

For bilateral insertion and free-end dentures cast transversal connections such as plates in the upper, sublingual connectors in the lower jaw are used. It is important that these constructions are absolutely rigid (no springiness).

1. Determine the path of insertion of the removable prosthesis using a surveyor. A double tilt is recommended. In order to prevent overcontours on the crown, a box must be prepared in the abutment into which the female part of the slide attachment can be placed. The box preparation should be larger than the width and depth of the female part of the attachment (0.6 x 0.2 mm).
2. Wax the patterns for full coverage abutment crowns.
3. If a lingual bracing arm and/or mesial rest is to be incorporated into the removable prosthesis, prepare the recesses into the wax abutment patterns .

Most slide attachments used for partial dentures and prospectively planned bridgework must be protected against overload caused by leverage.

This is achieved by constructing a brace support (milled lingual section of primary crown with cast secondary part).

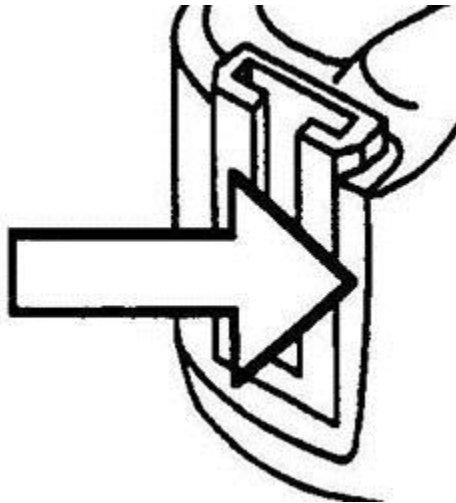


4. When using the Box attachment, cast with only precious or semi-precious alloys.

5. Thoroughly clean the female and remove any grease residue on the female with a steam cleaner (**FIG 1**).

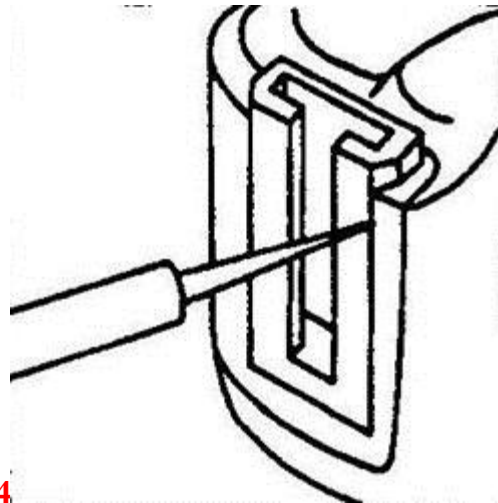
6. Position the female(s) in the wax abutment pattern(s) with the paralleling mandrel (**FIG 2**). The female attachments must be vertically parallel, in proper crown contour, and over the crest of the ridge.

The attachment female(s) also must be parallel to the path of insertion and as close as possible to the long axis of the abutment.



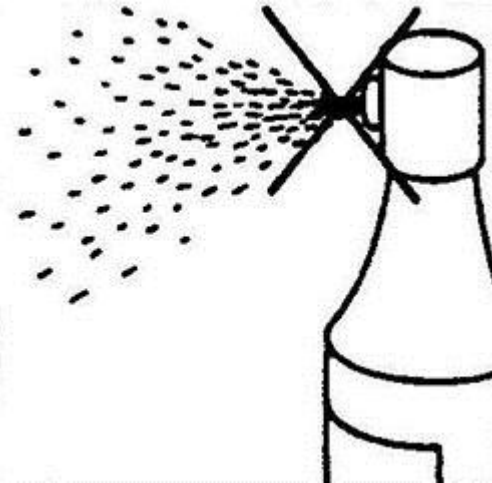
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7. Be sure to completely wax to the female. If the abutment crown is to be porcelain fused to metal, the porcelain needs to be fused to the cast alloy, not the alloy of the attachment female (**FIG 3**).



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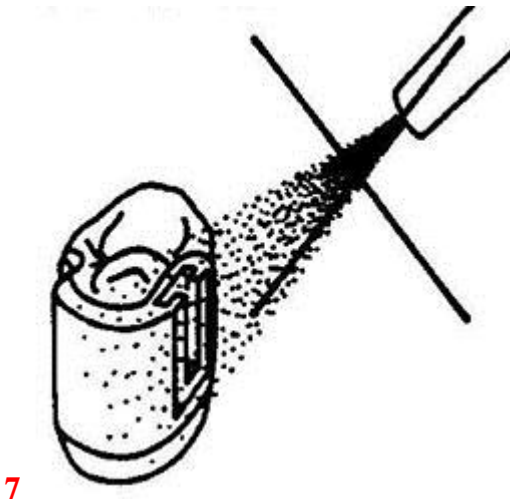
8. With a fine instrument, make a groove between the wax and the attachment female. This will prevent casting alloy flash on or in the female attachment (**FIG 4**). You may wish to paint the attachment female with Liquid Colloidal Graphite to act as an anti-flux.



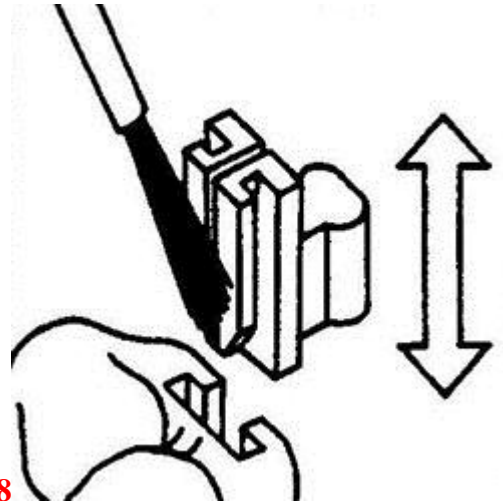
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9. Do not use wax conditioner or debubblizer as this will cause casting alloy flash on the attachment female (**FIG 5**).

10. Accurately sprue and invest the patterns ([Preci Roto System](#)). Do not exceed the female melting temperature of 1400-1490°C



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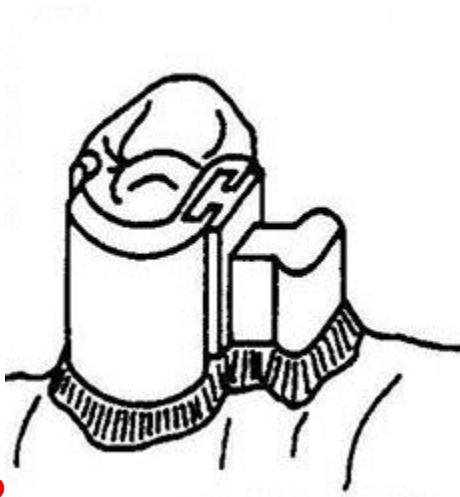
11. Carefully deinvest the casting and clean in an ultrasonic cleaner. Do NOT sandblast to remove investment from the female as this will oversize the inside of the attachment female. Shell blasting, brass or fiberglass pencils may be used to remove investment from the female (**FIG 7**).

12. The male attachment should now be checked for accurate fit with the female. Liquid Colloidal Graphite may be painted on the male attachment--and the male attachment repeatedly inserted and removed from the female to remove any minor discrepancies and assure a proper fit (**FIG 8**).

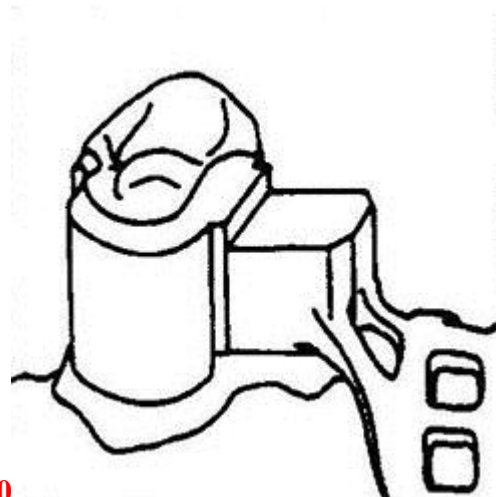
13. The completed abutment restorations are returned to the dentist for patient try in. The abutment restorations are picked up in an accurate new master impression in the material of choice and returned to the laboratory.

14. Prepare a new master cast.

Cast Frame and Acrylic (Removable)



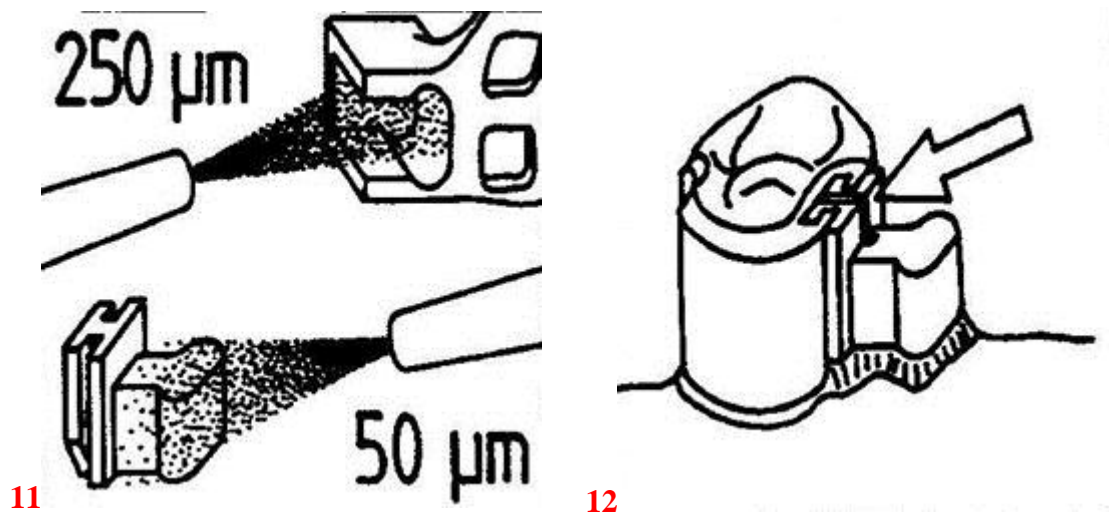
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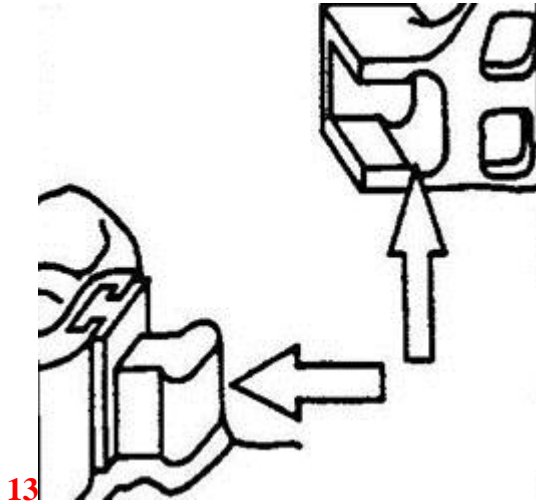
16. Place the metal male into the female on the master cast. Block out all undercuts (**FIG 9**), and prepare model for duplication and preparation of refractory cast.
17. Use an accurate duplicating material and pour up refractory cast. (**FIG 10**).
18. Wax, cast and finish the frame, leaving space for the male inside the framework.

Laboratory Direct Bonding of the Attachment Male to the Cast Frame



19. Sandblast the framework receptacle and the retention area of the attachment male with clean aluminum oxide (**FIG 11**). Clean the sandblasted areas with a steam cleaner or distilled water in an ultrasonic cleaner, or clean with a stiff tooth brush and water.
20. Seat the male attachment into the female on the master cast. Block out openings and undercuts with latex rubber or silicone (rubber sep) (**FIG 12**).

The walls must have a minimal thickness of 0.5 mm in order to avoid a deformation of the female part.



21. Mix a small amount of **CEKA SITE** (anaerobic composite bonding resin that sets in the absence of air) following instructions. Apply CEKA SITE to the framework receptacle and the retention area of the attachment male (**FIG 13**). Seat cast frame over the attachment male on the master cast and allow a full 5 minutes for the CEKA SITE to set. Any excess CEKA SITE may be cleaned away with a brush after removal of the cast frame from the master cast. Another alternative is to connect the precious metal attachment male to the cast frame with solder.

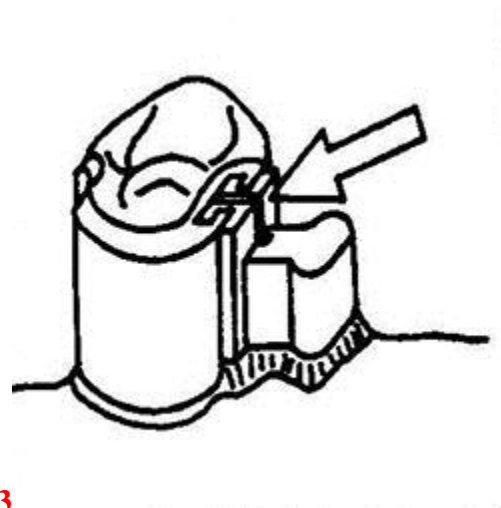
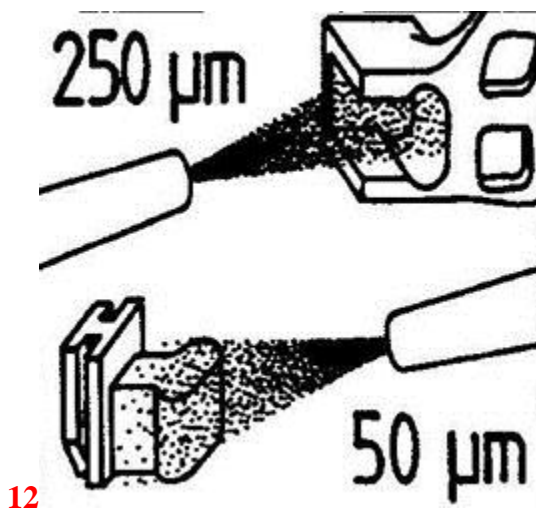
22. If an occlusal rim technique is to be utilized, complete at this time.

23. Complete the wax set up on the cast frame. Send to the dentist for try in and approval.

24. Process and finish the acrylic resin base in the technique of choice. The male attachment should be covered with Vaseline® or rubber prior to processing. This will protect it from any flash or excess acrylic resin.

Bonding or Resin Pick Up in the Laboratory or Chairside by the Dentist

The acrylic resin is processed and finished on the cast frame without the attachment male bonded or soldered into the cast frame.



The cast frame receptacle and retention area of the attachment male are sandblasted with clean aluminum oxide (**FIG 12**). Clean the sandblasted areas with a steam cleaner or distilled water in an ultrasonic cleaner, or a clean stiff toothbrush and water.

The attachment male is seated in the female on the master cast for laboratory bonding or resin pick up. The attachment male is seated in the female in the mouth for dentist chairside bonding or pick up. Block out the openings and undercuts with latex rubber or silicone (rubber sep) (**FIG 13**).



The attachment male is now bonded into the prosthesis with CEKA SITE as outlined in step #22. An alternative would be to pick up the attachment male using self cure (**FIG 14**).