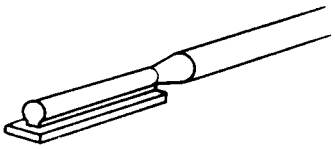
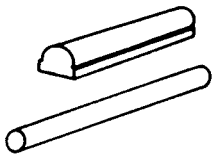
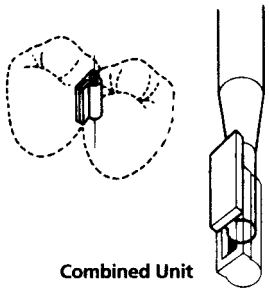
TUBE LOCK



Male Plastic Pattern



Female Plastic Pattern with Ceramic Rod



Combined Unit

Summary

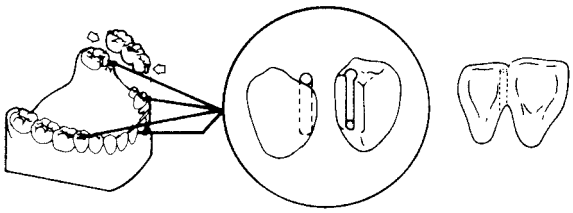
- Intracoronal semi-precision rod and tube attachment
- Frictional retention, not adjustable
- Plastic pattern male and female
- Can be fabricated for independent cementation of bridge segments or for their independent removal if ever necessary
- Ceramic rod prevents miscasts due to air bubbles trapped in tube
- Interproximal plates aid stability

Fixation: Male - cast as part of crown or pontic pattern
Female - cast as part of crown pattern

Minimum Space Required:			
	Height	**Width**	**Prep depth**
Small Tube Lock	2.0mm	1.8mm	1.6mm
Large Tube Lock	2.0mm	2.0mm	1.9mm

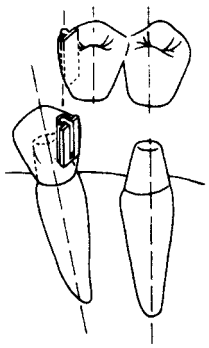
Indications

- Segmented construction of fixed partial dentures
- Accommodation of divergent abutments in fixed partial dentures
- Removable periodontal splints
- Auxiliary connector for the stabilization of precision attachment retained removable partial dentures

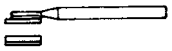
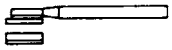


Contraindications

- Need for a truly rigid connector
- Inadequate space for setting the attachment
- Not suitable as the main attachment of a removable partial denture



ATTACHMENT DESCRIPTION

Order Number	Scale	Length	Female Cylinder External Diameter	Male Rod Diameter
	1:1			
821005 (Small)		6mm	1.6mm	0.9mm
821010 (Large)		6mm	1.9mm	1.2mm

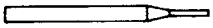
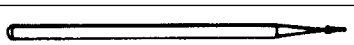
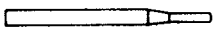
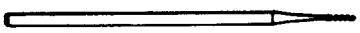
Order Numbers

Item	Number
Small Tube Lock *2 attachments per pkg. with ceramic rods*	821005
Large Tube Lock *2 attachments per pkg. with ceramic rods)*	821010
Small Tube Lock females, 4	821045
Small Tube Lock males, 4	821040
Large Tube Lock females, 4	821080
Large Tube Lock males, 4	821075
Ceramic rods	
Small, 4	821035
Large, 4	821070

Kits

Item	Number
Tube Lock Kit *4 small and 2 large attachments with ceramic rods, plus 1 small reamer, 1 large reamer, 1 small mandrel, and 1 large mandrel*	821001

TOOLS LIST

Item		Number
Small Paralleling Mandrel		821015
Small Bur		821020
Small Reamer		821025
Large Paralleling Mandrel		821050
Large Bur		821055
Large Reamer		821060

FABRICATION INSTRUCTIONS

Prior to fabrication one must determine if a positive stop or open gingival floor in the female is desired. The following factors may aid in that determination:

A. A closed gingival floor serves as a positive stop for the male attachment.[a]
   1. This is mandatory when the male is in a pontic to keep the pontic from possibly becoming tissue borne (Fig. 1).
   2. This would be desired when maximum rigidity is necessary.

B. An open gingival floor on the female of a rod and tube connector eliminates the positive stop and would allow:[b]
   1. Any segment of a fixed bridge or splint to be removed independently of the other segments (Fig. 2). Thus, the possible loss or servicing of an abutment would not require replacement of the entire restoration.
   2. Slight independent vertical mobility of the segments or units of the bridge or splint. Since natural teeth move slightly during function, some operators seek to maintain as much of this movement as possible for continued stimulation of the periodontal structures. Stability is maintained through contact of the interproximal plates of the attachment.

[a] If a positive stop is desired, the female is not altered.

[b] If an open gingival floor is indicated, simply remove the gingival floor of the female with a sharp blade prior to fabrication. Insert the male to be sure the plastic female was not deformed when the gingival floor was removed.

Another, possibly more accurate, method would be to leave the female unaltered through the casting phase. Then use metal finishing tools to open the embrasure. In the process the gingival floor of the female would be removed. Be certain, when placing the female, that the male will be able to pass through the gingival of the female without hitting the margin of the crown.

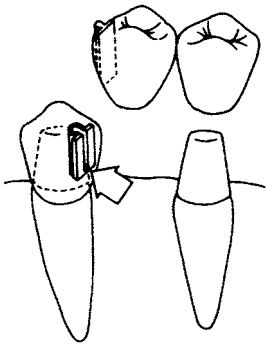
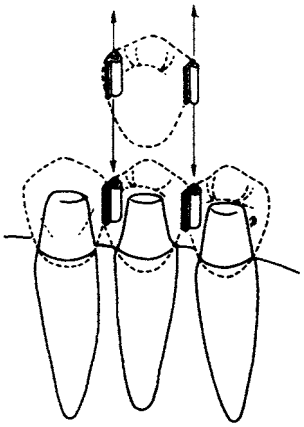


Fig. 1



"Independent seating or removal"

Fig. 2

Assembly

1. The crowns are waxed to full contour.

2. The position of the attachment must be parallel with the path of insertion of the crowns (Fig. 3).

3. Enough wax is removed to create room for the female. The female is positioned into the wax pattern parallel to the path of insertion of the adjacent crown (Fig. 4). The metal paralleling mandrel must be used for maximum accuracy. The plastic shank of the male is not intended for use as a paralleling mandrel.

4. The male is placed into the female, then waxed into the adjacent crown (Fig. 5). The shank of the male is removed, but it is not necessary to reduce the attachment into occlusal harmony prior to casting.

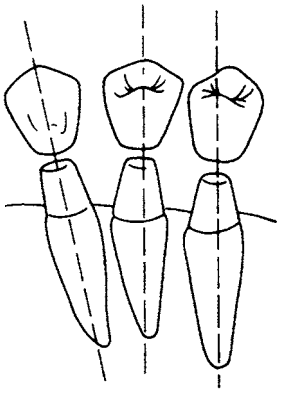


Fig. 3

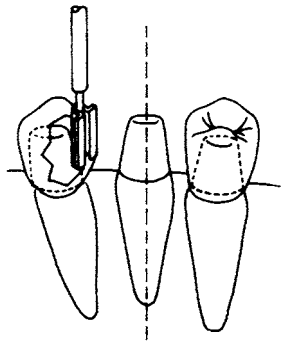


Fig. 4

5. Before investing the waxed crowns, the ceramic rod supplied with the attachment is inserted into the female. By taking the place of investment the ceramic rod insures that no air bubbles are trapped in the female, preserving its accuracy. A small amount of sticky wax should be used to secure the ceramic rod to the occlusal of the female (Fig. 6). This will maintain the position of the ceramic rod during investment procedures.

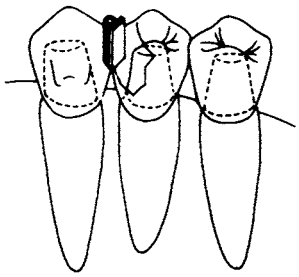


Fig. 5

6. The crowns are invested and cast. Burnout for plastic components requires two stages:

    1. Slow rate of temperature rise to 600°F (316°C) and hold for 30 minutes. This assures a clean and complete burnout of the plastic piece.
    2. Complete the burnout procedure by following your alloy manufacturer's instructions.

7. Once cast, the ceramic rod can be removed chemically with hydrofluoric acid in an ultrasonic unit or with a hydrofluoric acid substitute. These work faster when heated. However, do not use these chemicals with non-precious alloys. As an alternative, an airbrush with an abrasive recommended for use with the casting alloy can be used to remove the ceramic rod. But care must be taken not to oversize the female. High noble alloys are more susceptible to this than non-precious metals.

    Any flash or debris left in the female is removed with the reamer. When using non-precious or relatively hard alloys use the carbide bur instead of the reamer. The use of either of these instruments will facilitate a proper fit of the male and female units. However, caution should be exercised not to oversize the female.

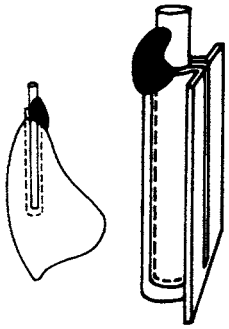


Fig. 6

8. If the fit of the attachment is too tight, lightly polish the male with Tripoli or rouge on a soft bristle brush. DO NOT use a rubber wheel. The use of Liquid Graphite (order no. 801656) will also help with fitting of these parts. Paint a thin coat of Liquid Graphite on the male and dry it with a gentle stream of air. Work the attachment components together until they fit.

9. Upon final insertion, only the crowns need be cemented, not the attachment. This will facilitate separation if ever necessary.