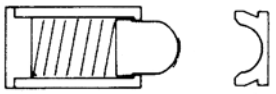
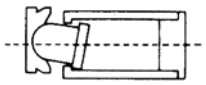
IC PLUNGER

Summary

- Precision spring operated plunger. Eliminates the need for a retentive buccal clasp arm.
- Distal extension removable partial dentures require a 180° bracing arm and occlusal rest for attachment stability - resulting in limited resiliency or hinge movement.
- At rest position the attachment is totally passive.
- All stainless steel.
- Does not require an abutment crown.
- Two sizes, anterior (small) and posterior (large).
- Long plunger versions for deeply undercut crown contours.



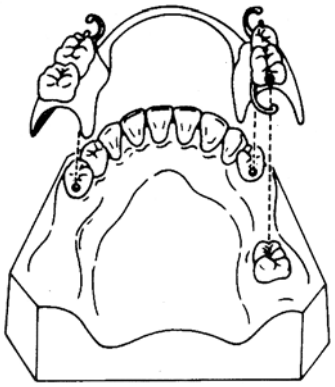
Male **Female**



Fixation: Male plunger and spring unit - polymerized into denture acrylic.
Female - Cemented into proximal surface of abutment tooth.

Minimum Space Required				
Anterior	**Height+**	**FC width**	**Prep depth**	**RC width**
short	4.Omm	2.Omm	0.8mm	4.Omm 6.Omm*
long	4.Omm	2.Omm	0.8mm	4.Omm 6.5mm*
Posterior	**Height+**	**FC width**	**Prep depth**	**RC width**
short	4.5mm	2.5mm	0.9mm	4.5mm 7.Omm*
long	4.5mm	2.5mm	0.9mm	4.5mm 7.5mm*

+ Add 1.Omm for patients with habitually strong bites.
* Removable Component length measured mesiodistally from the abutment.



For free end or bounded partial dentures

Indications

- Esthetic partial dentures (no buccal clasp required).
- Overdentures.
- Telescopic retentive element.
- Removable periodontal splints.

Contraindications

- Inadequate access for abutment preparation.
- Insufficient crown height gingival to the contour line.
- Not appropriate for distal extension saddle cases requiring a truly resilient attachment.

ATTACHMENT DESCRIPTION

Spring Loaded Retention Element.

Attachment	Order Number	Scale 1:1	Male Length (mm)	Male Ø (mm)	Plunger Length (mm)	Female Ø (mm)	Female Depth (mm)
Anterior (Small)	806001		5.2	2.0	1.0	2.0	0.8
Anterior (Extra Long Plunger)	806005		5.7	2.0	1.5	2.0	0.8
Female Only (Anterior)	806007					2.0	0.8
Posterior (Medium)	806010		6.2	2.5	1.25	2.5	0.85
Posterior (Extra Long Plunger)	806015		6.7	2.5	1.75	2.5	0.85
Female Only (Posterior)	806016					2.5	0.85

Order Numbers:

Item	Number
IC Anterior	806001
IC Anterior with long plunger	806005
IC Posterior	806010
IC Posterior with long plunger	806015
Female, anterior	806007
Male, anterior	806008
Male, anterior with long plunger	806009
Female, posterior	806016
Male, posterior	806017
Male, posterior with long plunger	806014

TOOLS LIST

Item	Number
IC Round Bur	806027

SELECTING THE PROPER IC ATTACHMENT

1. The use of only two IC attachments is usually recommended. More than two attachments may provide excessive retention.

2. Size of the IC attachment is governed by:

   a. The vertical height of the abutment. The female is positioned approximately 1mm below the height of contour (Fig. a). On short teeth the anterior attachment would be indicated.

   b. The proximal contour of the abutment.

   If the contour allows, use the short plunger IC attachments.

   If substantial undercuts are present due to a tilted tooth or a pronounced height of contour (Fig. b), utilize the long plunger IC attachments. These configurations have a longer plunger to engage the female more effectively in this instance. It may be necessary to reduce the proximal surface of the abutment tooth until the long IC attachments can be used.

Fig. a

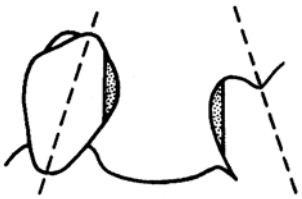


Fig. b

FABRICATION INSTRUCTIONS

Tooth Preparation

1. Examine the study model to determine path of insertion and the abutment tooth's height of contour (Fig. 1).

2. The female should be positioned over the ridge and centered on the long axis of the abutment tooth (Fig. 2); slightly below (1 mm) the height of contour (Fig. 3).

3. If a substantial undercut exists (Fig. 4) it may be necessary to utilize the long plunger IC attachments or to re-contour the proximal surface of the abutment tooth.

4. If access to the proper position of the female is difficult, then place the females slightly lingually (Fig. 5).

   Note: Using a pedodontic contra-angle may facilitate access due to their small size.

5. Begin the preparation with the IC round bur (Fig. 6).

6. Use a small inverted cone bur to enlarge the preparation to fit the IC female and provide slight undercuts for its cementation (Fig. 7).

Fig. 1

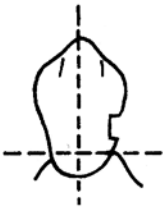


Fig. 2

Fig. 3

Fig. 4

Female Cementation

1. The female may be cemented with composite, polycarboxylate cement or resin cement. DO NOT USE ZINC-OXYPHOSPHATES OR ZOE CEMENTS as they have proven to be non-compatible with the IC alloy.

2. To simplify handling of the IC female during cementation heat some gutta percha and place it into the cavity of the female. With a warmed ball burnisher, pick up and seat the female in the preparation (Fig. 8).

Fig. 5

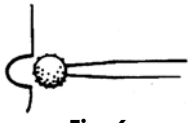


Fig. 6

3. Hold the female in place with a mylar strip until the cement sets.

4. When the female is seated properly there should not be any metal extensions beyond the tooth's contour (Fig. 9).

   Note: If the female is to be cemented into a cast crown, use an inverted cone bur by hand in the wax pattern to create a recess for the female. After casting, refine the recess and cement the female into the crown following steps 1-4 under Female Cementation.

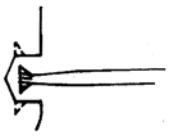


Fig. 7

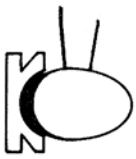


Fig. 8

Fig. 9

Partial Denture Fabrication

1. Prior to making the impression for the master model, adapt a small amount of impression material into the female (alginate is not recommended). Wipe off any excess material before seating the impression tray This will insure an accurate reproduction of the female in the model. The same technique should be followed when making the refractory model.

2. The IC attachment eliminates facial clasps. Retention is provided by the attachment. However, in free-end saddle situations the abutment tooth must have a 180 degree reciprocal action lingual clasp; (non-retentive) (Fig. 10). CAUTION: ONE OF THE THREE ILLUSTRATED BASIC DESIGNS IS NECESSARY TO MAINTAIN THE PROPER POSITION OF THE PLUNGER.

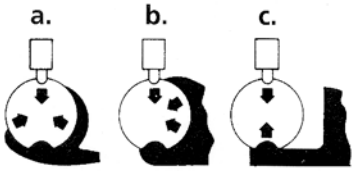


Fig. 10

3. Do not solder the male to the partial denture framework. The male should be retained and supported in the partial denture by acrylic resin only. However, the framework can be waxed to include support struts or a cradle (Fig. 11). Keep the area behind the male, and gingival to its posterior 1/4th, free from the framework. This will allow access for adjustments or repairs at a future time.

Fig. 11

4. If the framework design shown in Fig. 11 is desired, the following procedure is recommended:

   a. Prepare the master model for duplication, block out any undercuts from the female to the gingival tissue.

   b. Be sure to adapt a small amount of impression material into the female to insure its accurate reproduction in the refractory model. Make the impression.

   c. Pour the refractory model. On the refractory model create a wax cradle for the male. This may be done by positioning the male perpendicular to the female with the plunger of the male passively engaging the refractory representation of the female (no compression of the plunger). With the male in this position wax the cradle or a double "Y" shape as in Fig. 11. Remove the male from the wax pattern.

   d. Cast and finish the partial denture framework in a routine manner.

   e. Position the finished framework back on the master model.

   f. With the male in passive position and the plunger and undercuts blocked out, secure the male to the frame with self-curing acrylic. There should be no voids in the acrylic behind the male. Such voids could allow the male to slide away from the female.

   Note: This procedure may also be done by the dentist in the mouth.

g. Complete set-up and try in.

h. Prior to processing, block out the plunger of the male (Sterngold Rubber Sep).

i. Complete processing in a routine manner.

5. If the struts and loops (Fig. 11) are not to be fabricated, the following procedure is recommended:

   a. On the refractory model, the framework is waxed such that the area gingival to and behind the intended position of the male is free from framework construction.

   b. The frame is cast and finished in a routine manner.

   c. With the finished frame on the master model, position the male perpendicular to the female with the plunger of the male passively engaging the female (no compression of the plunger). With the male in this position, lute the plunger to the female with sticky wax. The sticky wax should also serve to block out the plunger area.

   d. Secure the male to the frame with self-curing acrylic. There should be no voids in the acrylic behind the male. Such voids could allow the male to slide away from the female.

   e. Complete set-up and try in.

   f. Block out the plunger of the male (Sterngold Rubber Sep).

   g. Complete processing in a routine manner.

REBASING

1. Petroleum jelly or a similar lubricant can be used over the male plunger to aid in insertion and removal.

2. When taking a routine wash impression guide the patient to a passive closure. When seated, the rest(s) should indicate the original passive position of the partial.

3. Remove any excess impression material from around the male plunger.

4. Block out the plunger (Sterngold Rubber Sep) prior to rebasing.

5. Rebase in a routine manner.

SERVICING

1. Retention adjustments or replacement of the male can be done by the laboratory or chairside.

2. Adjustments for retention are made by positioning the male forward to increase the retention or backwards to decrease the retention. This is done by removing the acrylic behind the male and repositioning the male as desired. Application of heat to the male, by using a heated instrument, will facilitate repositioning.

3. Fill the void behind the male with self-curing acrylic.

4. The same procedure is used when the male is to be replaced with a new male attachment.