

# DALLA BONA

## Summary

### Cylindrical Dalla Bona

- Rigid precision attachment.
- Radicular telescopic stud.
- Adjustable frictional retention.
- Gold alloy male (Elitor) and female (OSV).

Fixation: Male - soldered to cast root coping.  
 Female - polymerized into denture acrylic.

### Spherical Dalla Bona

- Resilient precision attachment.
- Radicular ball and socket joint.
- Adjustable frictional retention.
- Gold alloy (Elitor) male and female.
- Fabricated using removable spacer for vertical and universal hinge movement.

Fixation: Male - soldered to cast root coping.  
 Female - polymerized into denture acrylic.



#### CYLINDRICAL RIGID

Female:  
 In OSV Alloy



#### PVC Ring

(Remains on female)



#### Male in Elitor Alloy



#### SPHERICAL RESILIENT

(Vertical Resiliency with Hinging)

Female:  
 In Elitor Alloy



#### PVC Ring

(Remains on female)



#### Spacing Ring

(Only for Fabrication)



#### Male in Elitor Alloy

### Minimum Space Required:

	Height*	FC width	Prep depth	RC width
Cylindrical Rigid	5.0mm	3.1 mm	N/A	5.7mm
Spherical Resilient	5.8mm	3.1 mm	N/A	5.4mm

+Add 1.0mm for patients with habitually strong bites.

## Indications

- Overdentures or removable partial dentures.
- Can be used in combination with other intracoronal or extracoronal attachments with the same functional characteristics.

## Contraindications

- Insufficient arch space for placement and function of the attachment.
- Inadequate periodontal support.



**ATTACHMENT DESCRIPTION**

Attachment	Order Number	Overall Height	Female Diameter
Dalla Bona, Cylindrical Rigid Female	801178	3.2mm	3.7mm
Male	801179		
	801180		
Dalla Bona, Spherical-Resilient Vertical movement 0.4mm, with hinging Female	801187	4.0mm	3.4mm
Male	801188		
	801189		



**CYLINDRICAL RIGID**

Female:  
In OSV Alloy



**PVC Ring**  
(Remains on female)



**Male in Elitor Alloy**

**TOOLS LIST**

Item	Number
Paralleling mandrel	801183
Processing jig	801182
PVC ring	801181

PVC ring allows the female lamellae to function in the denture base acrylic.



**SPHERICAL RESILIENT**

(Vertical Resiliency with Hinging)  
Female:  
In Elitor Alloy



**PVC Ring**  
(Remains on female)



**Spacing Ring**  
(Only for Fabrication)



**Male in Elitor Alloy**



**FABRICATION INSTRUCTIONS**

**Soldering the Spherical Male (Not the cylindrical male.)**

1. Wax the copings with a flat occlusal surface approximately perpendicular to the line of insertion. Cast copings in any hard alloy. Set all copings on the model and grind the occlusal surfaces keeping them flat and parallel (Fig. 1). (For greatest possible accuracy you can use a milling machine; however, that really isn't necessary.) After grinding, use a caliper to measure coping thickness. (Note thickness for reference in Step 6.)
2. Cut several grooves in the flattened occlusal surface just slightly larger than the base of the attachment (Fig. 2). These grooves will create flow channels for the solder and result in a strong solder joint.
3. Paint antflux around the periphery of the coping, and a small amount of Sigma-Low Flux in the area to receive the attachment (Fig. 3). Heat the coping to dry the flux.
4. Using a thin pair of tweezers, grip the coping by the post and hold it in the reducing portion of the Bunsen burner flame (Fig. 4). The tweezers must be thin otherwise they will act as a heat sink and prevent the coping from heating properly. Flow a small piece of Stern 585 solder into the center of the coping.
5. Grind the soldered surface flat using an aluminum oxide stone. The occlusal surfaces must be approximately parallel.
6. Measure the coping and compare with the measurement in Step 1 to be certain that there is a 0.2mm to 0.3mm thickness of solder.
7. Add a little more Sigma Low Flux on the presoldered surface.
8. Position the male on the presoldered coping surface. The male should be positioned slightly to the lingual to allow room for the denture teeth. Place the assembly in the reducing portion of the Bunsen burner flame until the solder flows (Fig. 5).
9. Pickle in warm sulfuric acid or in an acid substitute. Polish the coping, being careful not to touch the male with the wheel. Polish the attachment using the Sterngold fiber-glass attachment brush.
10. Harden the attachment male before sending to the dentist by heat soaking the coping/attachment male assembly in the porcelain furnace for 15 minutes at 750°F (400°C). Allow to cool in air.



Fig. 1

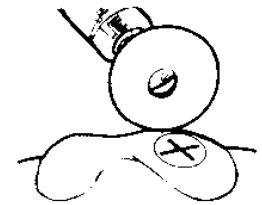


Fig. 2

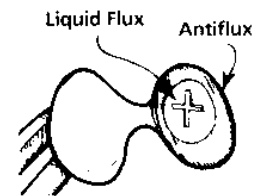


Fig. 3

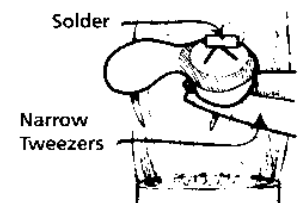


Fig. 4

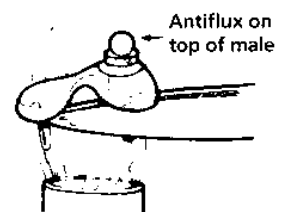


Fig. 5

**Soldering the Cylindrical Male**

Because of the male's vertical precision walls, parallelism is much more important for the cylindrical Dalla Bona male than for the spherical male.

1. Wax the copings with a flat occlusal surface approximately perpendicular to the line of insertion. Cast coping in any hard alloy.



2. After finishing, cut an "X" on the flattened occlusal surface (toward the lingual to allow room for the denture teeth) to create solder channels where the attachment will be mounted (Fig. 6).
3. Insert male into paralleling mandrel. Seat copings on model, and using a parallelometer, position the male about 0.3mm above the "X" on the coping. Sticky wax the male in place. Take care that no wax flows on the top of the base.
4. Wax a strip of 14-gauge sprue wax around the base of the attachment (Fig. 7). Do not get any wax on the top of the attachment base. When boiled out the wax will create a channel for even heating. Invest in soldering investment.
5. When the investment has set, boil out, flux lightly and trim the investment block as small as possible (Fig. 8). Dry out completely in a burnout furnace at 1200°F (650°C).
6. Lightly flux the coping again using Sigma-Low Flux and solder with a low fusing solder such as 585.
7. Pickle in warm sulfuric acid or acid substitute for 5 minutes to remove oxides. Polish the coping being careful not to touch the male with wheel. Polish the attachment using Sterngold fiberglass attachment brush.
8. Harden the attachment male before sending to the dentist by heat soaking the coping/attachment male assembly in the porcelain furnace for 15 minutes at 750°F (400°C). Allow to cool in air.

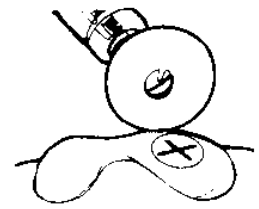


Fig. 6

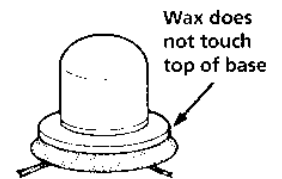


Fig. 7

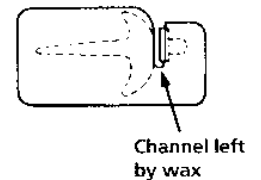


Fig. 8

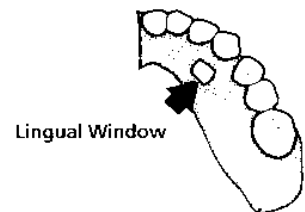


Fig. 9



Fig. 10

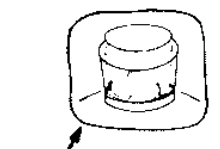


Fig. 11

**Placing the Dalla Bona Female**

Note: The Dalla Bona female is prehardened and tempered. Never solder it to a cast framework because soldering will destroy the female's metallurgical qualities - making it non-retentive.

**Connecting the female in the operatory**

1. Copings with soldered males, along with the prosthesis and separate females, are delivered to the dentist. The prosthesis is relieved over the abutments to accommodate the females. Cement copings in place.
2. Using a #6 bur, cut a small window in the lingual flange by each abutment into the relieved area (Fig. 9). This window will allow you to see that the female is not touching the denture. During the mounting, the window will allow excess acrylic to escape.
3. For resilient applications only:  
Cut several wedges out of the aluminum spacer ring to allow it to conform to the coping without overlapping itself. Contour the ring over the coping, and trim excess aluminum to the outer dimension of the coping (Fig. 10). Do not overlap the ring on the coping. Three to four thicknesses of X-ray film foil backing may be used instead.
4. Block out undercuts around the coping.
5. Coat the inside of the females with petroleum jelly and seat them on the males. Insert the overdenture. Use the lingual window to check that the overdenture is not touching the attachment assembly (Fig. 11).



6. The PVC ring must remain in position around the female. Paint cold cure acrylic into and around the female's 360° undercut (Fig. 12). Paint acrylic on the top and sides of the female.
7. Place acrylic into the recesses in the prosthesis, insert the overdenture and have the patient close into passive occlusion until the resin sets. Do not allow the patient to displace the tissue under the denture base by biting too hard. Excess resin will escape through the window in the flange. Remove the excess resin and spacer, but leave PVC ring in place.

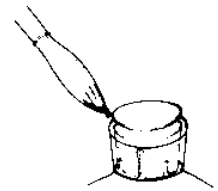


Fig. 12

**Processing the female in the laboratory**

1. After the copings with soldered males are delivered, the dentist takes a full arch impression drawing the coping assembly off in the impression.
 

Note: Be sure to use an impression material and technique that creates a passive impression of the tissue. Otherwise the model will be inaccurate and the female will not be in the proper relationship to the male when the prosthesis is seating in the mouth.
2. Pour a working cast incorporating the copings in the model.
3. Wax the denture base and set the teeth.
4. Flask and boil out. Separate the flask. If the case is to be resilient, place spacer a ring over the male and contour it to the coping. It may be necessary to cut several wedge-shaped pieces from the ring before it will lie smoothly.
5. Insert petroleum jelly into the female and seat it on the male. Block out undercuts with Rubber Sep.
6. Process using a split flask or pour technique.
7. Deflask, finish and polish.

**SERVICING**

The retention may be increased by gently pressing the female retention lamellae in using any narrow blade instrument. If wear occurs, the female may be removed from the resin by the application of heat. A new female may be picked up in the mouth in the prosthesis with self-curing resin, or processed in place by the laboratory.

**Relining**

Fill the female with petroleum jelly. Take the final wash impression and insert the processing jig into the female in the prosthesis. Pour the processing model and reline the prosthesis as usual.



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