

InPractice

Step by Step / Tech Profile

Directional Insight on Implant Attachment Solutions

Using Rhein83's guidelines and steps, many implant attachment issues can be resolved.

By Dennis Urban, CDT

Today's attachment and implant market can be confusing and overwhelming, ideally pertaining to cases that involve divergence issues and limitations on occlusal space. Poor placement of implants is an everyday occurrence in the world of dentistry and, most of the time, the stress and responsibility is placed on the dental technician to come up with solutions. This is exactly why communication is key between the dentist, periodontist, oral surgeon, and dental technician.

According to the American Dental Association, one implant survey shows that 1.5 million dental implants were placed in a recent year and that number continues to grow. Bone quality and bone volume are essential to a successful implant's long-term outcome. A clinically mobile implant is considered a failure. While early implant failures denote a lack of integration, divergence issues can also result in improper loading and clinical failure.

Fortunately, there are solutions to divergence issues. The Sphero Flex and Sphero Block attachment systems by Rhein83 can provide excellent results in compromised divergency situations. Sphero Flex can restore non-parallel implants with up to 43° of divergency. It has a 2.5-mm sphere, inclines 7.5° in all directions, and is considered "self-parallelizing." The directional rings ensure passive insertion and reduce trauma to implants. The Sphero Block is a

stationary ball abutment and can correct divergence up to 28°. The Sphero Flex and the Sphero Block are both customized to fit any implant. When space is a concern, the Sphero Block abutment can be ordered with a 1.8-mm or 2.5-mm sphere and is used with an elastic retentive cap.

The directional ring is chosen on the basis of the position of the implant. When the implants are parallel, the 0° ring is used. Upon the degree of divergence from the line of parallelism, apply a 7° or 14° ring. The reduction or elimination of off-axis stress on a divergent implant can make a world of difference on the success of the implant and the overdenture. Some roadblocks that could be faced when divergence on implant placement becomes an issue are path of insertion from the implant overdenture, compromised room for denture teeth, occlusal scheme limitations, and inadequate strength of the implant overdenture due to lack of room for denture base material.

The feedback from dentists who have delivered cases when the Rhein83 Sphero Flex and Sphero Block was used correctly in appropriate situations has been extremely positive. The bonus to this system is the elastic retentive cap. Using elastic retention, the function of Rhein83 attachments is extended. An example of processing the elastic caps intraorally can be seen in Figure 1 through Figure 6.

Because these caps are so elastic, it is possible to control the flexure. The

result is a resilient and shock-absorbing prosthesis. The resilience can be controlled due to the assortment of available retentive caps and their various elastic characteristics. The volume of the retentive area is increased because of the elastic memory or the cap (Table 1).

When curing elastic caps with directional rings on the model, a simple procedure is followed similar to the intraoral method. Keep in mind that prefabricated stainless-steel housings can be used; in fact, using these housings makes it much easier to change the caps. First screw the abutment on the model, then place the directional rings and rotate them until optimal parallelism is achieved. Lastly, place the elastic caps on the sphere and process with cold cure acrylic.

There are cases when divergence issues are too extreme and require the

removal of the implant. But when the degree of divergency falls within the guidelines and parameters of Sphero Block and Sphero Flex, functional results and long-term success are both achieved.

Dennis Urban, CDT, has worked in dental technology for 35 years and was the recipient of the 2007 NADL Excellence in Education award. He is currently the Technical Consultant and Removable Manager for Drake Precision Dental Laboratory in Charlotte, North Carolina.

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Fig 1.



Fig 2.

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Fig 1. Screw in the attachment with the proper height cuff.

Fig 2. Insert the directional rings under the spheres.

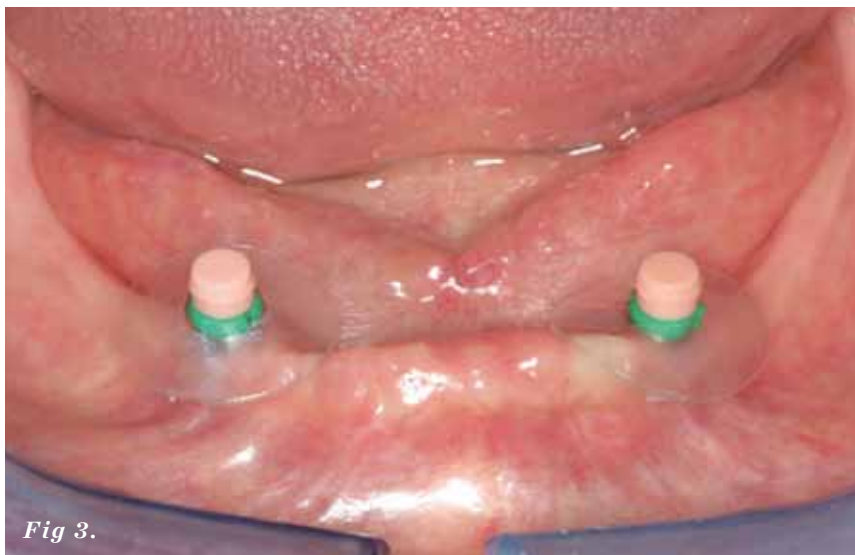


Fig 3.

Fig 4.

TABLE
Different Colors Correspond to Different Retention Degrees

Sizes Available: Normal and Micro









COLOR	CHARACTERISTICS	RETENTION Normal Micro	MAXIMUM SUGGESTED DURATION OF USE
 WHITE CAPS <i>Standard Retention</i>	<ul style="list-style-type: none"> Slightly elastic 	1,200 g - 1300 g 1,000 g - 1,100 g	12 months
 PINK CAPS <i>Soft Retention</i>	<ul style="list-style-type: none"> Elastic 	800 g - 950 g 750 g - 850 g	12 months
 YELLOW CAPS <i>Extra Soft Retention</i>	<ul style="list-style-type: none"> Very elastic 	500 g - 550 g 450 g - 500 g	12-24 months
 GREEN CAPS <i>Extremely Elastic Retention</i>	<ul style="list-style-type: none"> "Gummy" type A little bit hygroscopic, with a good adhesion on the sphere 	N/A	N/A
 GOLD CAPS <i>Slightly Elastic</i>	<ul style="list-style-type: none"> Used in overdenture protheses, where resilience and vertical movements are necessary 	450 g- 500 g 250 g - 300 g	N/A
 SILVER CAPS <i>Elastic and Gummy</i>	<ul style="list-style-type: none"> Used in overdenture protheses, where a vertical movement is necessary and a light initial retention is requested 	N/A	N/A
 BLACK CAPS	<ul style="list-style-type: none"> Caps used only for laboratory process (economic), any retention on the sphere 	N/A	N/A
 TITAN CAPS	<ul style="list-style-type: none"> Nylon caps with internal titanium ring Long duration and used in combination with prefabricated spheres, as titanium spheres, concave spheres, etc. 	N/A	N/A



Fig 5.

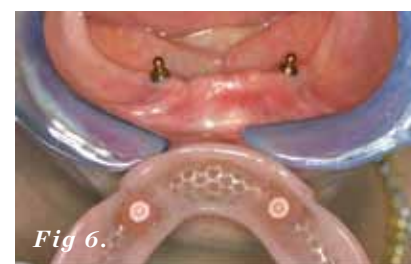


Fig 6.

Fig 3. Put the protective aluminum disc over the directional ring and then place the retentive cap.

Fig 4. Try the overdenture in the mouth to make sure the spaces for the attachments are large enough. Fill any spaces with self-curing resin and position the denture in the mouth.

Fig 5. When the resin has cured, remove the protective disc.

Fig 6. The finished prosthesis.