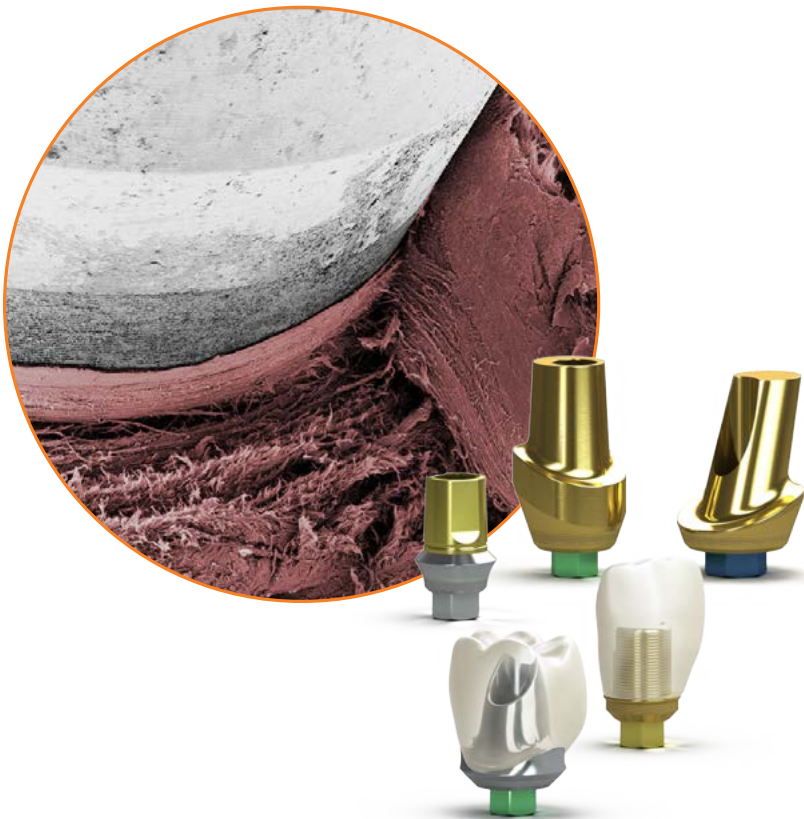


handling of Laser-Lok[®] abutments



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clinical handling of Laser-Lok abutments when previous Laser-Lok components have been used

Published research has demonstrated that Laser-Lok surface technology on prosthetic abutments establishes a biologic seal of connective tissue fibers that protects and maintains the crestal bone and reduces pocket depth.^{1,2,3,4} Use this first technique to place a final abutment with Laser-Lok when healing abutments with Laser-Lok and/or temporary abutments with Laser-Lok have been used.

! Important: For ideal results, Laser-Lok components should be used throughout the healing, temporization and final abutment phases. When a Laser-Lok component is temporarily removed for impression making or other restorative procedures, keep the removed Laser-Lok component in sterile saline until reinserting into the site.

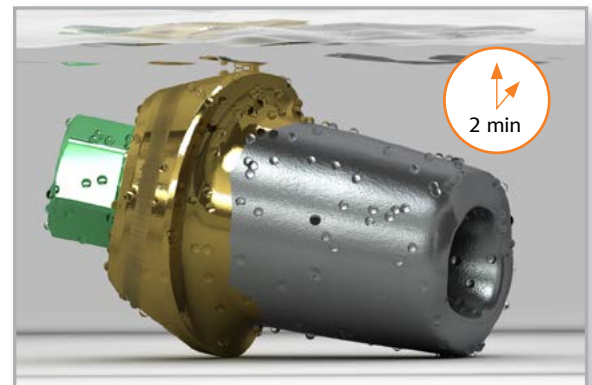


component options

- prepared Laser-Lok abutment
- .050" (1.25mm) hex driver
- torque wrench
- cover cap

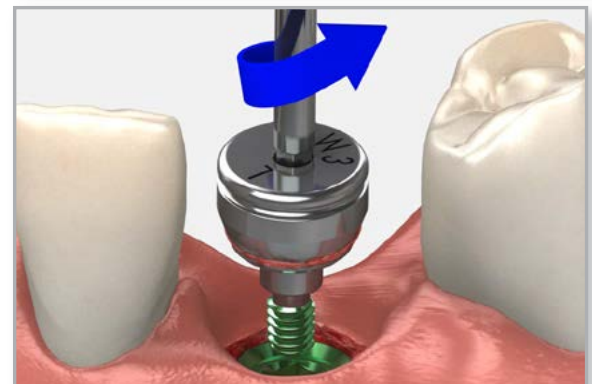
1 Prepare abutment

Clean and sterilize the modified Laser-Lok abutment. Ultrasonically clean the Laser-Lok abutment with Enzymax or an equivalent for a minimum of two minutes. Place the abutment in an approved sterilization bag or wrap and run through a qualified sterilization cycle.



2 Remove healing abutment

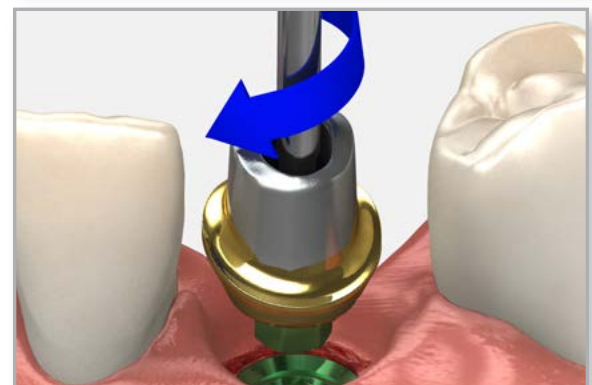
Remove the Laser-Lok healing abutment or Laser-Lok temporary with an .050" (1.25mm) hex driver. Make sure the prosthetic platform is free of bone and soft tissue.



3 Seat the abutment and cement the crown

Seat the final Laser-Lok abutment according to normal clinical procedures. Take an x-ray to ensure the abutment is completely seated prior to applying final torque to the abutment screw. Refer to the **cement-retained single crowns using cementable abutments** module for additional information.

For ideal results, care must be taken to keep excess cement from covering the Laser-Lok zone and blocking cells from forming an attachment. Refer to the **crown cementation technique** module for more information.





clinical handling of Laser-Lok abutments when previous Laser-Lok components have not been used

Use this second technique to place a final abutment **with Laser-Lok** when healing abutments **without Laser-Lok** and temporary abutments **without Laser-Lok** have been used.

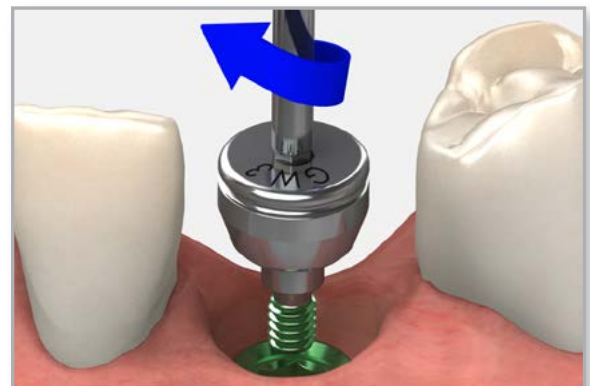


- component options
- prepared Laser-Lok abutment
 - .050" (1.25mm) hex driver
 - torque wrench
 - tissue groomer

1 Remove healing abutment

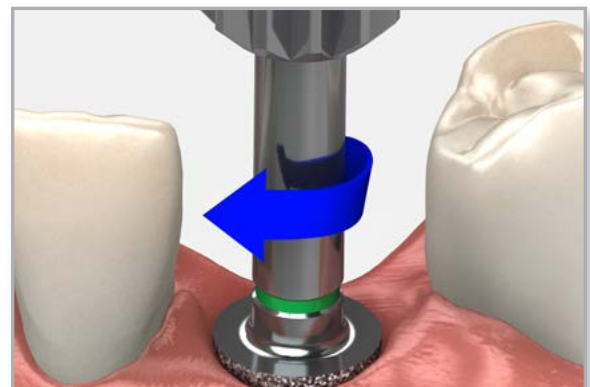
Remove the healing abutment or temporary prosthesis without Laser-Lok using an .050" (1.25mm) hex driver. Make sure the prosthetic platform is free of bone and soft tissue.

Clean and sterilize the modified Laser-Lok abutment as shown on the previous page.



2 use a tissue groomer to abrade tissue

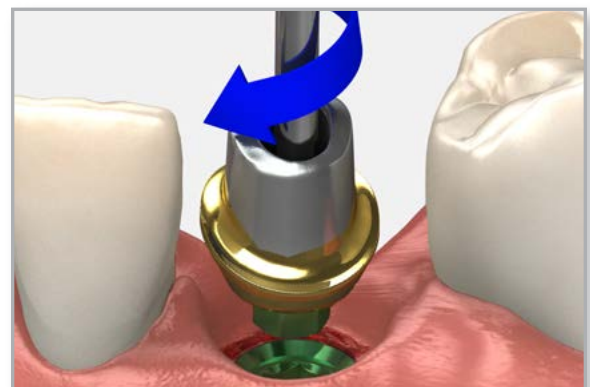
Fully seat the tissue groomer inside the implant hex to protect the connection. Turn the groomer by hand to lightly abrade the soft tissue just above the implant prosthetic platform. This will create some light bleeding, which is necessary for tissue to attach to the Laser-Lok surface.



3 seat the abutment and crown

Seat the modified Laser-Lok abutment according to normal clinical procedures. Take an x-ray to ensure the abutment is completely seated prior to applying final torque to the abutment screw. Refer to the **cement-retained single crowns using cementable abutments** module for additional information.

For ideal results, care must be taken to keep excess cement from covering the Laser-Lok zone and blocking cells from forming an attachment. Refer to **crown cementation technique** module for more information.





laboratory handling of stock Laser-Lok abutments

When Laser-Lok abutments require laboratory modification, it is important that care be taken to protect the Laser-Lok surface from laboratory contamination and damage. Following these steps will help ensure the surface maintains its ideal characteristics for soft tissue attachment.

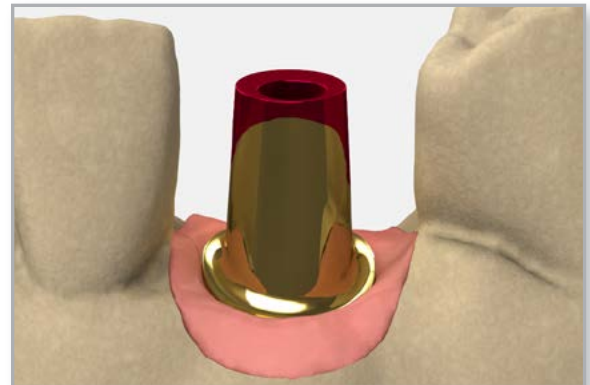


component options

- Laser-Lok esthetic abutments
- Laser-Lok protective sleeves
- .050" (1.25mm) hex driver

1 lab step – select and mark the abutment

Select the appropriate Laser-Lok abutment for the model based on normal laboratory procedures. Evaluate and mark height, angulation, and for tissue contour.



2 lab step – modify the abutment

Place the marked abutment onto the end of the Laser-Lok protective sleeve that best covers the Laser-Lok zone and modify as per normal laboratory procedures. Proceed with normal laboratory procedures for crown fabrication. Refer to the [cement-retained single crowns using cementable abutments](#) module for additional information.



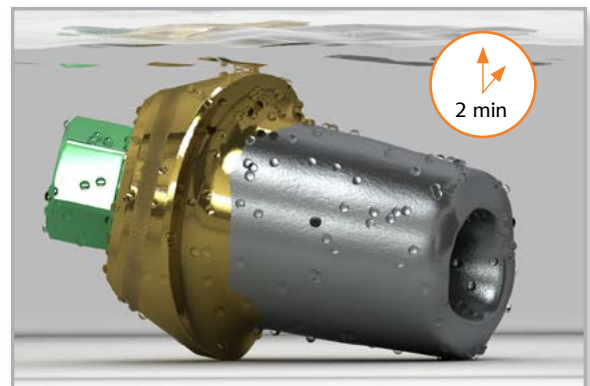
Important:

The Laser-Lok microchannels begin at the base of the abutment and extend approximately 1 mm from the bottom of the abutment. Care must be taken not to modify or damage the Laser-Lok surface while preparing the abutment.

3 lab step – abutment cleaning

After the Laser-Lok abutment has been handled/or modified, it must be ultrasonically cleaned to remove particulate created during abutment preparation.

Ultrasonically clean the abutment with Enzymax or an equivalent for a minimum of two minutes. Return the abutment to the clinician for sterilization.





laboratory handling of Laser-Lok Ti base abutments

Use this technique when fabricating a custom zirconia coping for the Laser-Lok Ti base abutment. Normal laboratory procedures should be used to fabricate the custom zirconia coping.

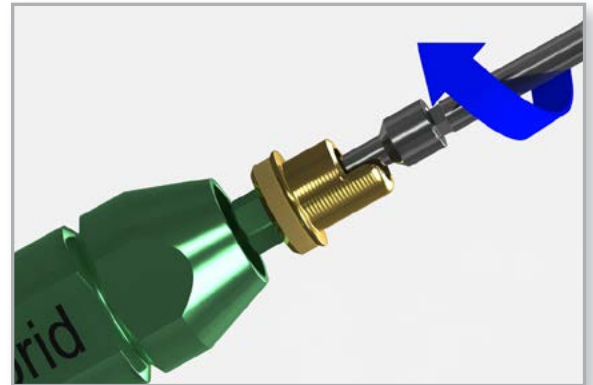


component options

- Laser-Lok Ti base abutments
- Laser-Lok protective sleeves

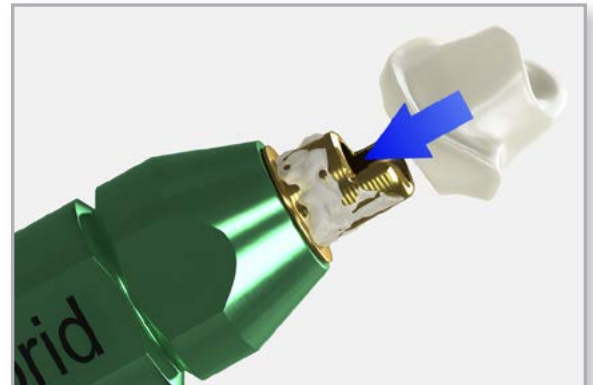
1 lab step – attach abutment to protective sleeve

After fabricating the custom zirconia coping, place the Laser-Lok Ti base abutment onto the hybrid side of the Laser-Lok protective sleeve using an .050" (1.25) hex driver. This will protect the Laser-Lok zone from cement contamination when cementing the custom coping.



2 lab step – custom abutment cementation

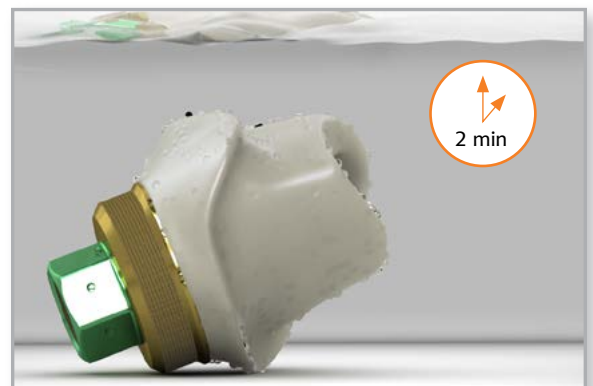
After verification of fit, use the zirconia supplier's recommended bonding agent to affix the restoration to the abutment. Proceed with normal laboratory procedures for crown fabrication. Refer to the [cement-retained single crowns using cementable abutments](#) module for additional information.



3 lab step – abutment cleaning

After a Laser-Lok abutment has been handled/or modified, it must be ultrasonically cleaned to remove particulate created during abutment preparation.

Ultrasonically clean the abutment with Enzymax or an equivalent for a minimum of two minutes. Return the abutment and crown to the clinician for sterilization.





laboratory handling of Laser-Lok Custom Ti abutments

Use this technique when fabricating a custom abutment from the Laser-Lok Custom Ti abutment. Normal laboratory/milling center procedures should be used to fabricate the custom titanium abutment.

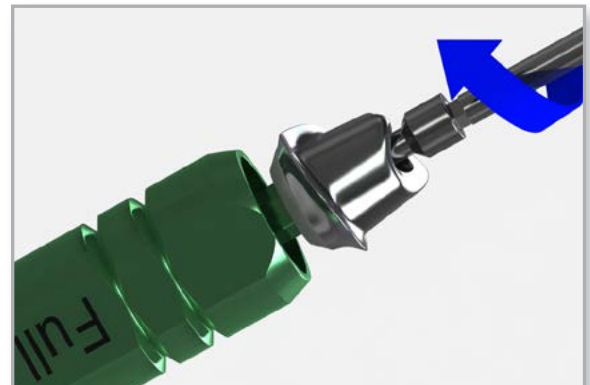


component options

- Laser-Lok Custom Ti abutments
- Laser-Lok protective sleeves

1 lab step – attach abutment to protective sleeve

After modifying the Laser-Lok Custom Ti abutment, attach it to the Laser-Lok protective sleeve on the “Full Ti” end using an .050” (1.25mm) hex driver to protect the Laser-Lok during handling and polishing.



2 lab step – polish abutment

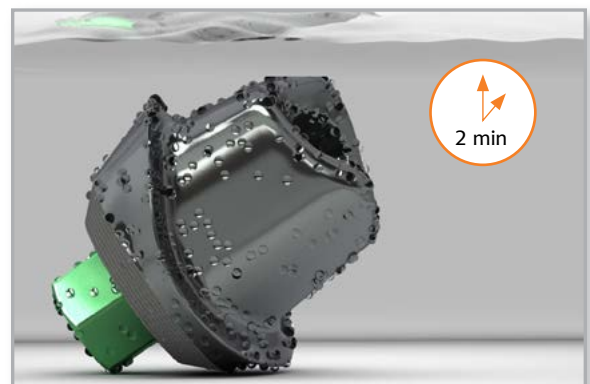
Finish and polish using normal laboratory procedures. Proceed with normal procedures for crown fabrication. Refer to the [cement-retained single crowns using cementable abutments](#) module for additional information.



3 lab step – abutment cleaning

After the Laser-Lok abutment has been handled/or modified, it must be ultrasonically cleaned to remove particulate created during abutment preparation.

Ultrasonically clean the abutment with Enzymax or an equivalent for a minimum of two minutes. Return the abutment and crown to the clinician for sterilization.



1. Maintaining inter-implant crestal bone height via a combined platform-switched, Laser-Lok® implant/abutment system: A proof-of-principle canine study. M Nevins, ML Nevins, L Gobatto, HJ Lee, CW Wang, DM Kim. Int J Periodontics Restorative Dent, Volume 33, Number 3, 2013. p. 261-267.
2. Connective tissue attachment to laser microgrooved abutments: A human histologic case report. M Nevins, M Camelo, ML Nevins, P Schubach, DM Kim. Int J Periodontics Restorative Dent, Volume 32, Number 4, 2012. p. 384-392.
3. The impact of dis-/reconnection of laser microgrooved and machined implant abutments on soft- and hard-tissue healing. Ighhaut G, Becker K, Golubovic V, Schliephake H, Mihatovic I. Clin Oral Implants Res. 2013 Apr;24(4):391-7.
4. Clinical evaluation of laser microtexturing for soft tissue and bone attachment to dental implants. GE Pecora, R Ceccarelli, M Bonelli, H Alexander, JL Ricci. Implant Dentistry. Volume 18(1), February 2009, pp. 57-66.

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