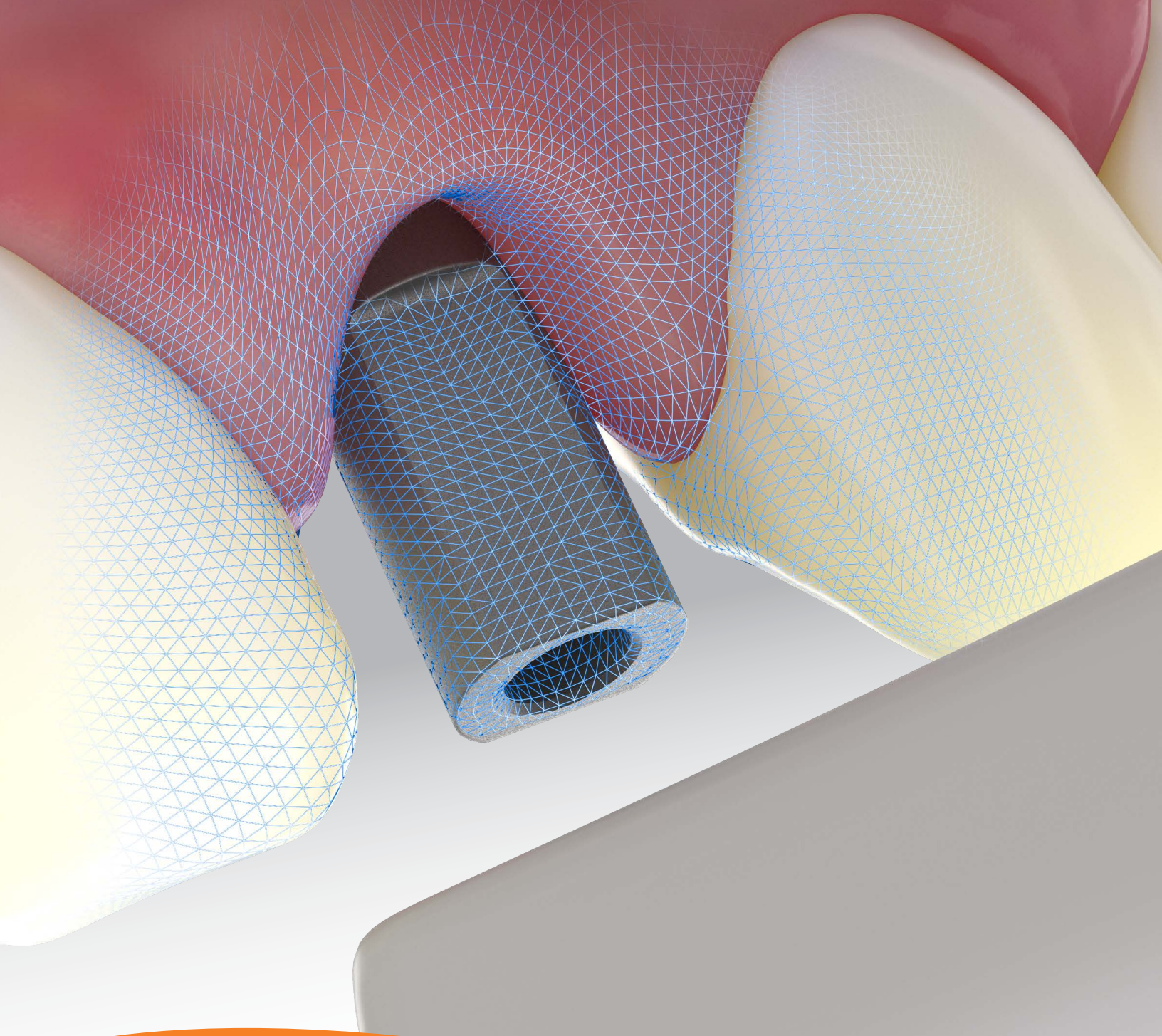

Prosthetic technique manual

BIOHORIZONS®

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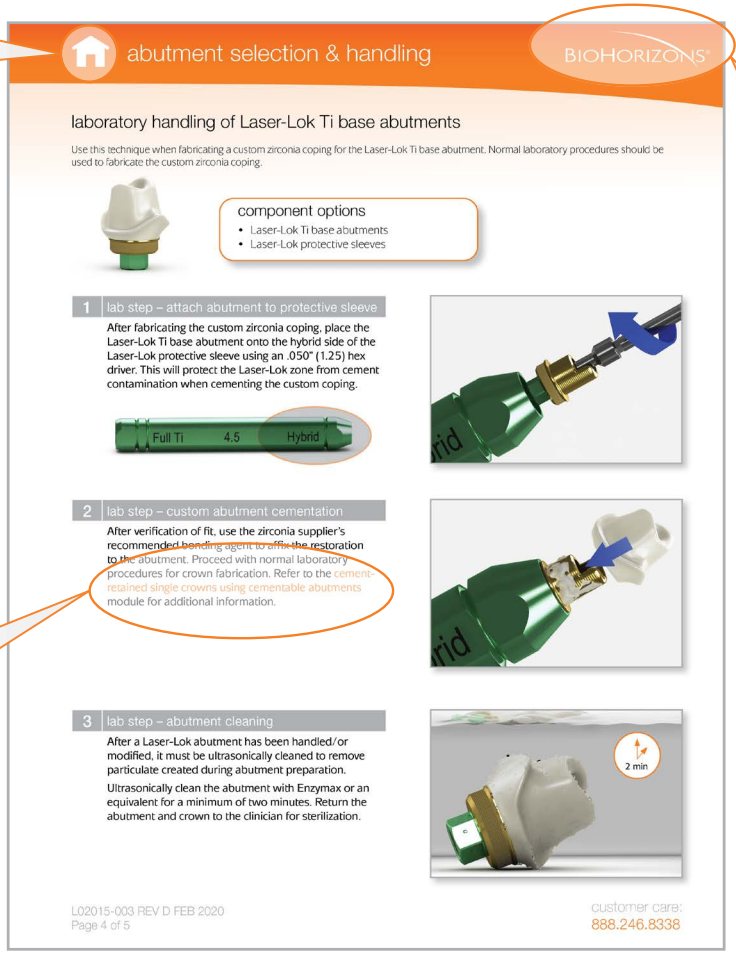
how to use this manual

This prosthetic manual has many features enabled to make it easier to navigate and shop for the prosthetic components that are needed for each technique. Below are some instructions to help you on your way to using one of the most advanced technique manuals in implant dentistry. This manual is separated into technique modules that are updated frequently to describe the most current protocols used in implant dentistry. For best results on a tablet device, use the iBook or Adobe Reader app.

At any time, you can jump back to the table of contents by clicking on the home icon located at the top of each page.



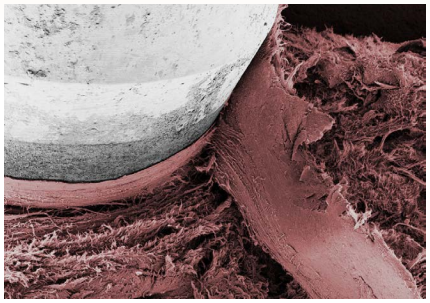
Click on module names in orange text to view additional content on the current topic.

Every page has a quick link to the BioHorizons website to browse the latest product information and continuing education courses.

Each prosthetic module can also be printed using Adobe Reader.

why choose BioHorizons prosthetics?

The BioHorizons abutment portfolio offers a wide range of solutions that combine industry leading technologies with cutting edge workflows to provide reliability and efficiency for the restorative process.



Laser-Lok microchannels

The establishment of a physical, connective tissue attachment to the Laser-Lok surface has generated an entirely new area of research and development: Laser-Lok applied to abutments. Through this research, the unique Laser-Lok surface has been shown to elicit a biologic response that includes the inhibition of epithelial downgrowth and the attachment of connective tissue.[1] Laser-Lok abutments can support peri-implant health around implants without Laser-Lok, and reduce the risk of peri-implantitis[2].

1. Connective tissue attachment to laser microgrooved abutments: A human histologic case report. M Nevins, M Camelo, ML Nevins, P Schupbach, DM Kim. Int J Periodontics Restorative Dent. Volume 32, Number 4, 2012. p. 384-392. R11032c

2. Influence of the width of keratinized tissue on the development and resolution of experimental peri- implant mucositis lesions in humans. F Schwarz, J Becker, S, Civale, D Sahin, T Iglhaut, G Iglhaut. Clin Oral Impl Res. 2018;29:576–582. R21007c

authentic connection

Using authentic BioHorizons parts will ensure a precision fit connection between the prosthetic component and implant, avoiding costly component failures that may occur from using third-party prosthetics. Authentic BioHorizons parts are color-coded for easy identification to match the mating implant.

advantages:

- lifetime warranty on all implants & prosthetics
- Spiralock® technology minimizes screw loosening
- precise mating geometries reduce prosthetic failures
- advanced design creates a better engineered connection
- color-coded prosthetic components match implant platforms

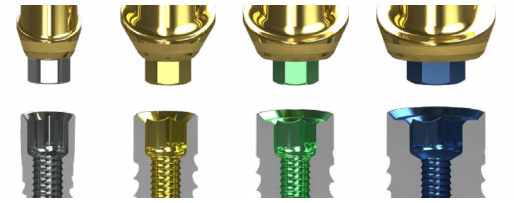
simple system identification

BioHorizons prosthetics include several features to simplify the restorative process. (1) color coding on all components; (2) laser marking on the healing abutments; and (3) emergence profile for soft tissue contour.

1 Color coding

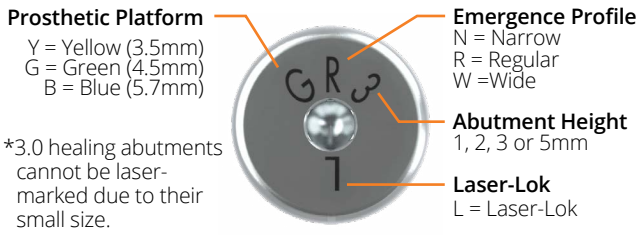
BioHorizons prosthetic components are color coded to match the BioHorizons implant prosthetic platforms.

Note: The 3.0 implant and prosthetic components maintain their natural titanium color to distinguish them from the other diameters.

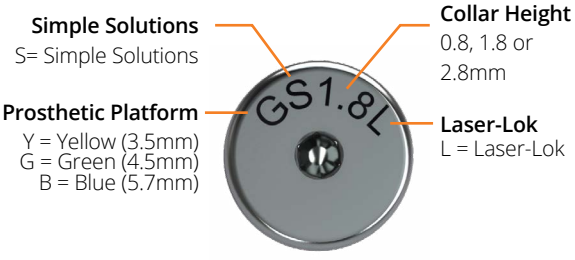


2 Laser marking

BioHorizons healing abutments are laser-marked for easy identification without having to remove them from the implant site. Laser marking describes the platform size, emergence profile, abutment height and Laser-Lok.

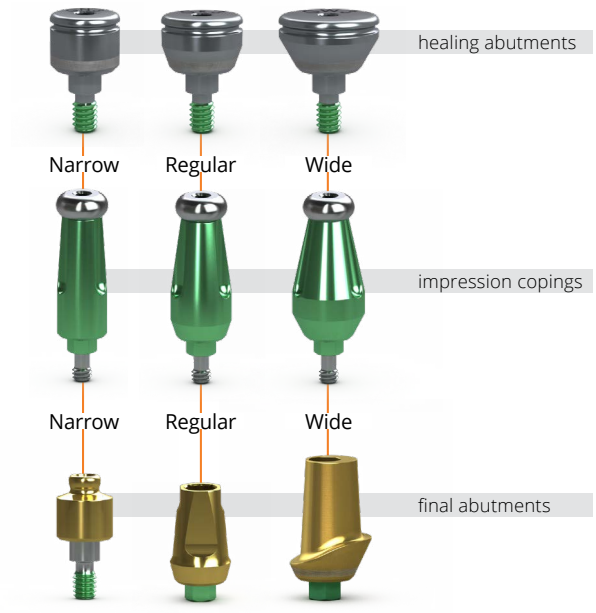


Simple Solutions healing abutments are differentiated by a slightly different coding scheme:



3 Emergence profile

It is important to use components with the same emergence profile throughout the restorative process. This will enable easy seating of prosthetic components, without soft tissue impingement, and will maximize esthetics.



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abutment types

Healing abutments

BioHorizons healing abutments are offered for every implant diameter, abutment emergence and collar height. Healing abutments are color coded and laser-marked for easy identification and are available with Laser-Lok.

Temporary abutments

Temporary abutments provide options for intermediate esthetic restorations, tissue contouring, and immediate function. BioHorizons offers a wide variety of temporary abutments for both screw-retained and cement-retained restorations.

Impression copings

BioHorizons impression copings are available in different types to meet every impression making preference.

Esthetic abutments

For anterior cases, BioHorizons esthetic abutments are designed to follow the scalloped gingiva and minimize the amount of modification. These abutments can be ordered with Laser-Lok to create a connective tissue attachment and maintain the crestal bone.

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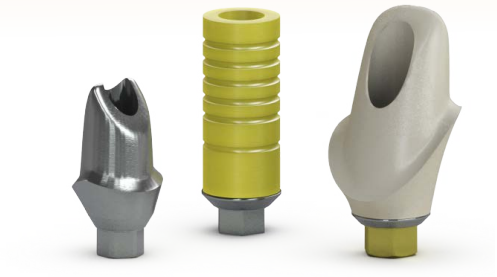
abutment types

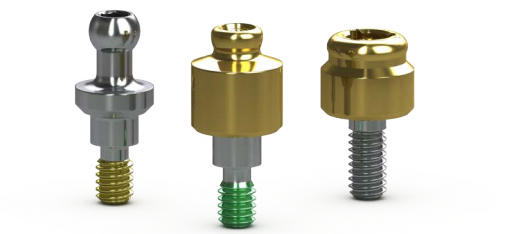


Custom abutments

For cases that require a precise, customized esthetic solution, BioHorizons custom abutments are the perfect choice. Offered in full titanium and hybrid zirconia, these abutments offer the precision fit of the BioHorizons connection but are milled to accurately meet the site conditions. Custom cast abutments are also available in hexed and non hexed.

Multi-unit abutments

The BioHorizons Multi-unit abutment system provides the tools to restore even compromised edentulous cases. With a wide variety of abutment angles, collar heights and platform diameters, no system offers better options for treating patients' individual needs. The Multi-unit abutment's intelligent design and restorative flexibility is matched only by its ease of use and surgical efficiency in immediate load situations.



Overdenture abutments

Overdenture abutments are often used with as few as two implants, making implant therapy affordable for many patients. OD Secure, Locator, or ball abutments are ideal for retaining dentures in both the maxilla and the mandible.

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prosthetic instrumentation

Prosthetic kit

The enhanced prosthetic instrument kit contains the basic instrumentation necessary to place BioHorizons prosthetic abutments and screws. The kit has spaces available for try-in abutments and optional instrumentation such as torque wrenches.

**some instruments shown are sold separately*

Torque wrenches

Precision torque wrenches are available to meet all prosthetic applications and preferences. From simple to fully adjustable or precision automatic, BioHorizons offers a full range of choices in torque wrench design and function.

Hex drivers

BioHorizons offers a wide variety of .050" hex drivers to use for installing and removing cover caps, healing abutments and prosthetic screws.

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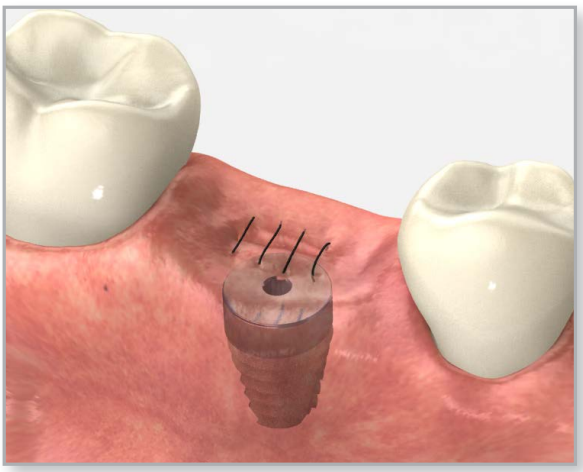
surgical options

Multiple surgical protocols are used to achieve the prosthetic outcome of choice. The technique selected may be dependent upon the volume and/or quality of bone, implant location and patient habits.

Two-stage or submerged surgery

In the two-stage surgical procedure, the implant is placed below the soft tissue to protect it from occlusal function, bacteria and external forces during osseointegration. A low profile cover cap is placed on the implant to protect the prosthetic platform from the ingress of soft tissue.

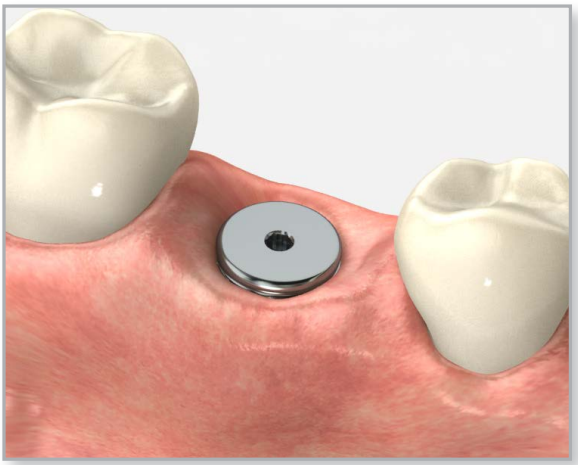
The implant is uncovered during a second surgical procedure and a healing abutment or temporary restoration is placed for soft tissue healing.



One stage or non-submerged surgery

In a one stage procedure, a healing abutment is placed at the time of implant placement.

The one stage protocol eliminates the need for a second surgery but exposes the implant to bacteria and some occlusal forces during early healing.



Immediate temporization

Placing a temporary prosthesis at the time of implant placement may be an option for some partially and totally edentulous patients.

A nonfunctional, immediate, temporary restoration in the partially edentulous patient may help develop ideal soft tissue profile in an esthetic area.

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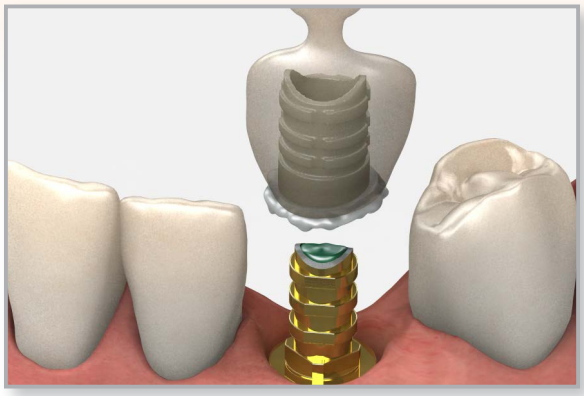
prosthetic options

Temporary restorations

Temporary restorations may be used at any stage of implant therapy. They can be placed on final abutments or on an abutment specifically designed for temporary restorations. Ideally designed temporaries provide predictable tissue contouring in esthetic areas and may be cement-retained or screw-retained.

See abutment selection guide for options.



Cement-retained restorations

Cement-retained implant restorations are very similar to crown & bridge restorations. A crown or bridge is cemented to a prepared implant abutment.

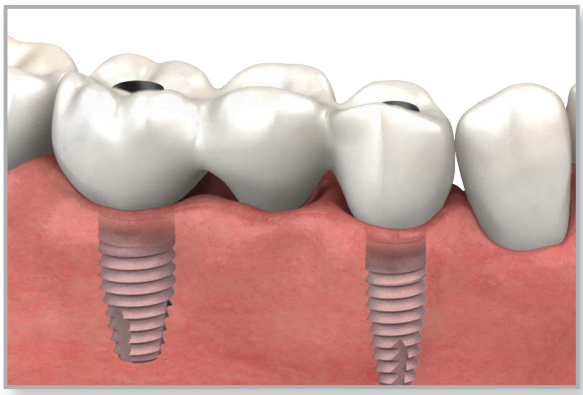
See abutment selection guide for options.

indications	advantages	limitations
• partially edentulous arch • totally edentulous arch	• esthetics • passive fit of restoration • ideal occlusion	• subgingival cement can irritate tissue & cause bone loss • excess cement can lead to peri-implantitis • lack of retrievability

Screw-retained, implant-level restorations

A screw-retained restoration is secured to the implant with screws that enter through the occlusal surface of the crown or bridge.

See abutment selection guide for options.



indications	advantages	limitations
• single or multiple-unit restorations • edentulous or partially edentulous arch • limited inter-arch space	• absence of cement • retrievability for hygiene	• screw access may compromise occlusion • screw access may compromise esthetics • limited when splinting divergent implants

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prosthetic options

Multi-unit abutment, screw-retained restorations

Multi-unit abutment, screw-retained restorations are used for hybrid type restorations or bar overdentures.

See abutment selection guide for options.

indications

- edentulous maxilla or mandible
- hybrid or fixed detachable restoration
- bar overdenture

advantages

- multiple prosthetic options
- retrievability for hygiene

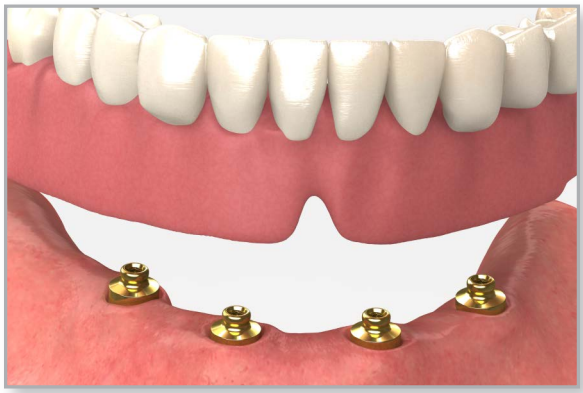
limitations

- requires inter-arch space to accommodate abutments and restoration

Overdenture restorations

Tissue-supported, implant-retained overdentures are an option for retaining a new or existing denture.

See abutment selection guide for options.



indications

- edentulous maxilla or mandible
- transitional restoration
- severe bone loss

advantages

- removable
- existing denture may be used
- low financial investment

limitations

- implant retained, tissue supported overdentures require periodic maintenance and relining to insure proper tissue support

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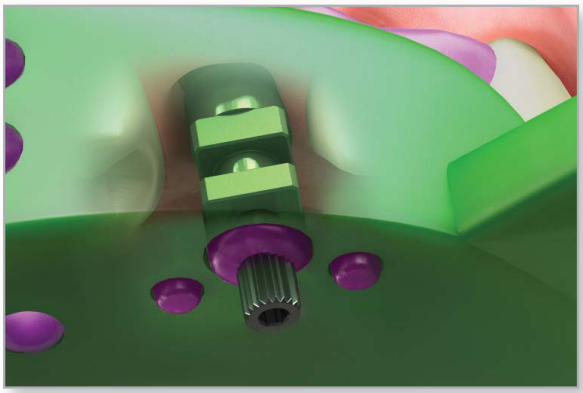
impression technique overview

There are four types of impression techniques utilized for implant prosthesis fabrication: open tray, closed tray, closed tray pick-up and traditional crown & bridge. The type of impression technique used is the clinician's choice.

Open tray technique using a direct pick-up coping



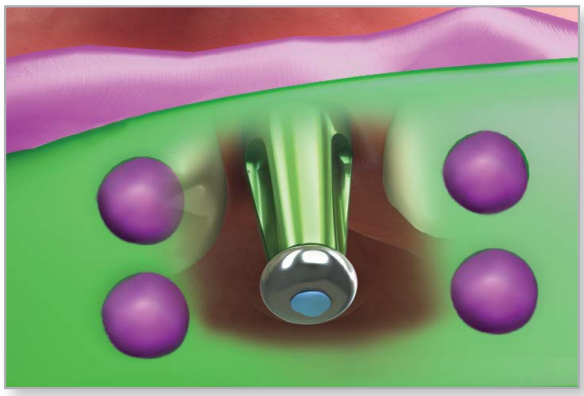
The open tray technique requires a custom tray or modified stock tray and picks up the impression coping in the impression. It records the implant location, hex orientation and soft tissue profile and is often considered the most accurate.

Impression copings to use with this technique:
- Direct pick-up copings available in hexed and non-hexed for implant level and non-hexed for Multi-unit abutment level.

For implant level, refer to the open tray technique using the direct pick-up coping module and the custom impression tray fabrication module. For Multi-unit abutment level, refer to the Multi-unit abutment open tray technique using the direct pick-up coping module.

indications	advantages	limitations
• single & multiple implants • splinted restorations	• high degree of accuracy • less likely for the tray to get locked on with divergent implants	• requires custom or modified stock tray • difficult in the posterior • difficult when insufficient intraoral access

Closed tray technique using an indirect transfer coping



The closed tray technique is similar to a traditional crown & bridge impression since a stock tray may be used and the impression coping is not picked up in the impression. It records the implant location, hex orientation and the soft tissue profile.

Impression copings to use with this technique:
- The 3inOne abutment (with a balltop screw) for regular emergence
- Scoop copings for narrow, regular and wide emergences
- Indirect transfer coping for Multi-unit abutments

For implant level, refer to the closed tray technique using the indirect transfer coping module. For Multi-unit abutment level, refer to the Multi-unit abutment closed tray technique using the indirect transfer coping module.

indications	advantages	limitations
• single implants • short-span bridge impressions • posterior implants with insufficient intraoral access	• similar to a traditional crown & bridge impression • stock impression tray may be used	• not recommended for multiple implants or divergent implants

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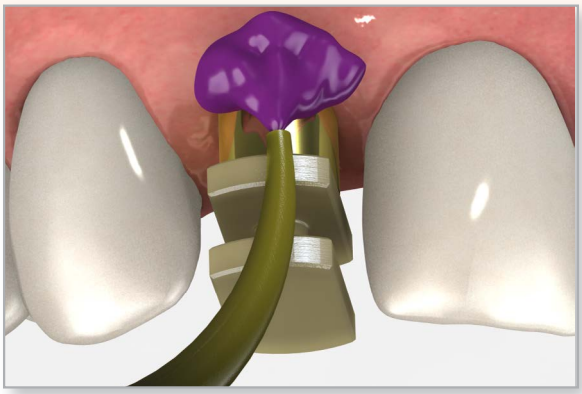
surgical and prosthetic options

Closed tray pick-up impression technique using a snap coping

This closed tray technique uses a stock tray but still retains the snap coping in the impression. It records the implant location, hex orientation and soft tissue profile.

Impression copings to use with this technique:
- The snap copings for narrow, regular and wide emergences
- The snap scan bodies for flexibility between traditional and digital impressions

For implant level, refer to the closed tray pick-up technique using the snap coping module.



indications
- single or multiple posterior implants
- splinted restorations

advantages
- simple technique
- high degree of accuracy
- minimal chair time required

limitations
- seating verification is recommended
- single patient use

Traditional crown and bridge impression

An impression is made of a prepared abutment to capture the abutment modification and margin preparation.

indications
- chairside preparation of abutment

advantages
- traditional impression method

limitations
- requires chairside preparation of abutment
- impression only records the prepared abutment
- no information on the implant platform or hex orientation is recorded

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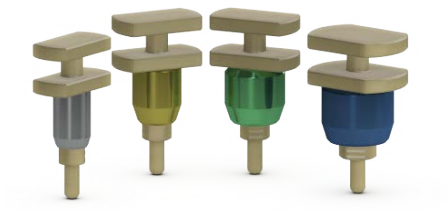
closed tray pick-up technique using the snap coping

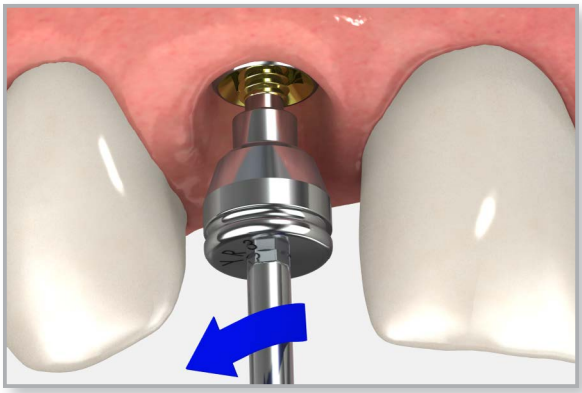
Use this technique to make a single or multiple-unit, implant-level impression for the fabrication of a working model utilizing a closed-tray, direct pick-up impression technique. Choose the emergence that matches the emergence of the healing abutment (narrow, regular or wide). This procedure creates a model that represents the exact position of the implant, the orientation of the hex and the soft tissue profile.



component options

- snap coping
- implant analog

1 Remove the healing abutment



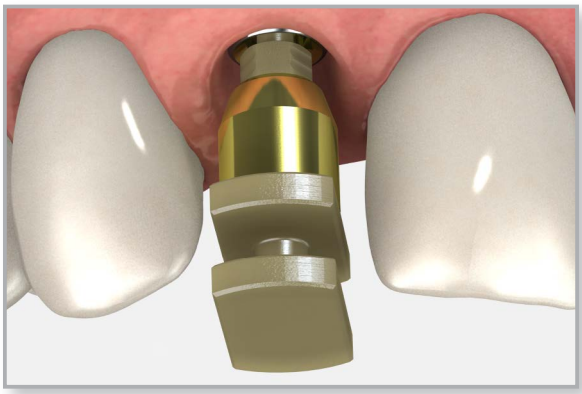
Remove the healing abutment using an .050" (1.25mm) hex driver. Confirm the implant prosthetic platform is free of any bone debris or soft tissue.

Important:
When a Laser-Lok healing abutment is temporarily removed for impression making or other restorative procedures, keep the removed Laser-Lok healing abutment in sterile saline until reinserting into the mouth.

Note:
The emergence of the impression coping should match the emergence of the healing abutment and the intended final abutment (narrow, regular or wide). If a custom cast abutment is planned, the final abutment emergence will be determined by the lab.

Helpful Hint:
When placing impression copings on multiple implants, remove one healing abutment at a time, replacing it immediately with the impression coping. This reduces the likelihood of soft tissue collapsing onto the implant. Work from the posterior to the anterior.

2 Place the impression coping



Snap the snap coping onto the implant.

If the snap coping is too tall it may be modified in height by removing the top flange. If the flanges prevent the coping from seating completely, the coping can be oriented with a different hex flat or the flanges can be modified slightly.

Take a radiograph along the long axis of the implant to ensure that the impression coping is seated completely into the hex of the implant.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

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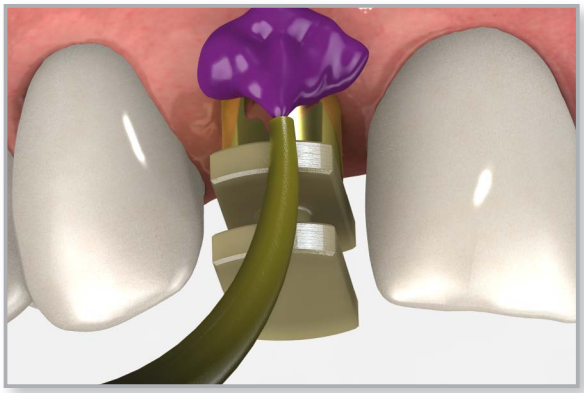
closed tray pick-up technique using the snap coping

3 Make a full-arch impression

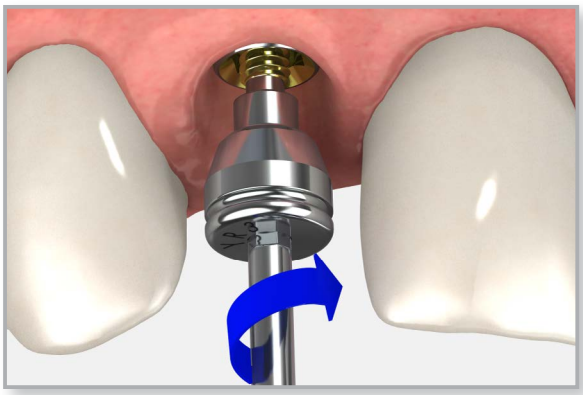
Syringe a medium or heavy body elastomeric impression material around and over the snap coping. Load the tray with impression material and make the impression.

After the impression material has set, remove the tray from the mouth. The snap coping will be picked up in the impression and remain embedded. Verify the impression material is completely adapted around the snap coping.



4 Replace healing abutments

Replace the healing abutment immediately to prevent soft tissue collapse over the implant.

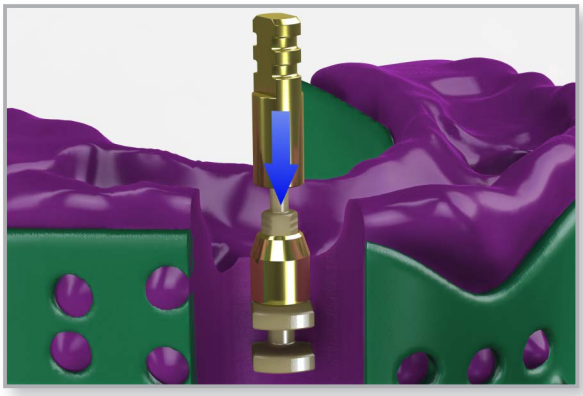


send to lab

- impression with embedded snap copings
- opposing model or impression
- implant analog
- prescription with lab instructions

5 Lab step - Assemble the analog

Snap the appropriate diameter implant analog to the snap copings in the impression.



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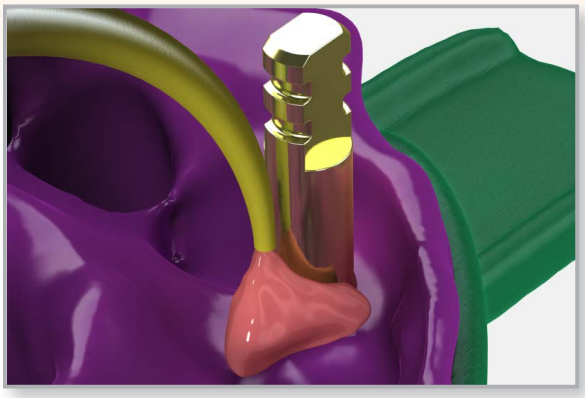
closed tray pick-up technique using the snap coping

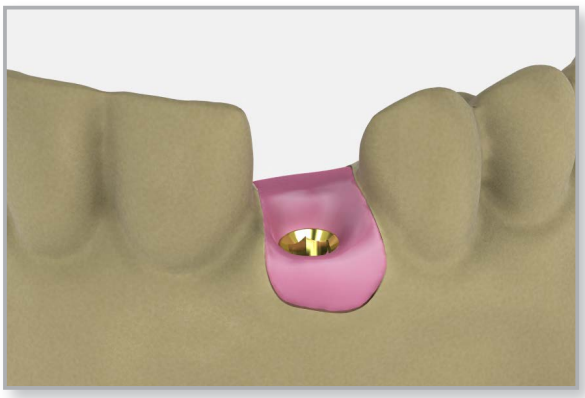
6 Lab step - Make a soft tissue model

Verify that the coping and analog assembly are properly snapped together. Apply lubricant where the soft tissue replica material is to be applied. Syringe a soft tissue replica material around the analog.



7 Lab step - Fabricate the stone model

Fabricate a working model in minimal expansion, high hardness die stone. Articulate according to normal laboratory procedures.



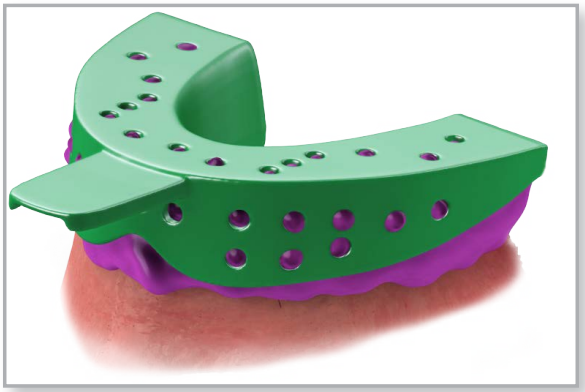
custom impression tray fabrication

A dimensionally accurate impression is one of the primary determinants for precise-fitting indirect restorations. A custom tray will provide dimensional accuracy and stability allowing a uniform thickness of impression material.
Use one of these techniques to fabricate a custom impression tray to improve the accuracy of the working model for implant-supported restorations.

option 1: starting with healing abutments

1 Make a full-arch impression

Make a full-arch impression of the healing abutments connected to the implants and the surrounding soft tissue. Send the impression to the laboratory for fabrication of a model and custom impression tray.



2 Lab step - Fabricate the stone model

Fabricate a working model in minimal-expansion, high-hardness die stone.

3 Lab step - Block out the space for the copings

Block out the area above the healing abutments on the working model with baseplate wax to allow adequate space for the direct pick-up impression copings.

The direct pick-up impression copings are 11mm in height. The depth of the tissue must be considered when blocking out the space for the copings on the working model.

4 Lab step - Fabricate the custom tray

Fabricate a custom impression tray following conventional laboratory procedures. Make holes in the custom tray above the area of the implant healing abutments so the direct impression coping screw will protrude through the tray.

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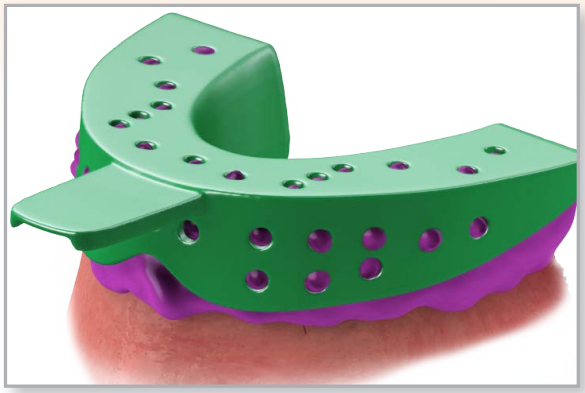
custom impression tray fabrication

option 2: starting with indirect copings

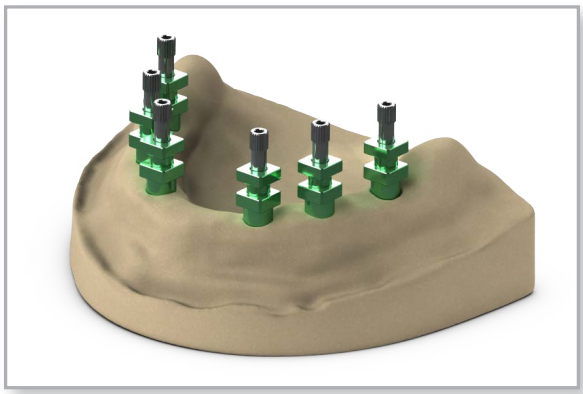
component options

- indirect scoop coping
- direct pick-up coping
- .050" (1.25mm) hex driver
- implant analog



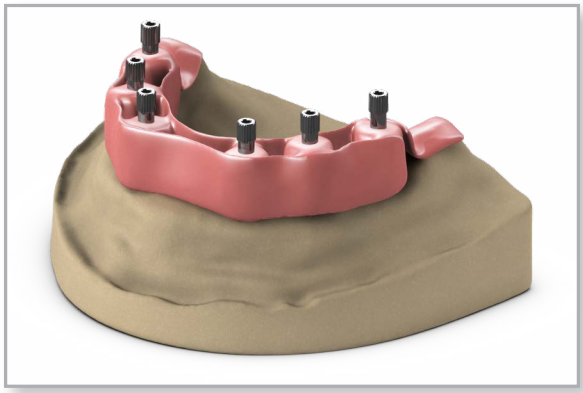
1 Make a full-arch impression

Make a full-arch implant-level impression using the closed tray technique using the indirect transfer coping module.



2 Lab step - Fabricate the stone model & place the copings

Fabricate a working model in minimal-expansion, high-hardness die stone. Place direct copings onto the analogs in the stone model that was made using the closed tray technique using the indirect transfer coping module.



3 Lab step - Place the wax spacer

Apply baseplate wax material around the copings extending far enough to the distal on each side to ensure an accurate intraoral seating along the retromolar pad.

4 Lab step - Fabricate the custom tray

Fabricate a custom impression tray around the baseplate wax following conventional laboratory procedures. Remove the coping screws and separate the tray from the model. Remove the wax and copings from the tray. Enlarge the screw access holes if necessary.

Confirm accuracy and return to clinician.

customer care:
888.246.8338

open tray technique using the direct pick-up coping

Use this technique to make a single or multiple-unit, implant-level impression for fabrication of a working model utilizing an open tray, direct pick-up method* when a narrow, regular, or wide emergence healing abutment was used. Choose the emergence that matches the emergence of the healing abutment that was used. The procedure creates a model that represents the exact position of the implant and the soft tissue profile.

* The direct pick-up impression may be made using a modified stock impression tray or a custom impression tray. Modify a stock impression tray by making holes in the occlusal surface of the tray in the same positions as the implants. See the custom impression tray fabrication module.

component options

- direct pick-up coping
- direct pick-up coping screw, long
- implant analog
- .050" (1.25mm) hex driver

1 Remove the healing abutment

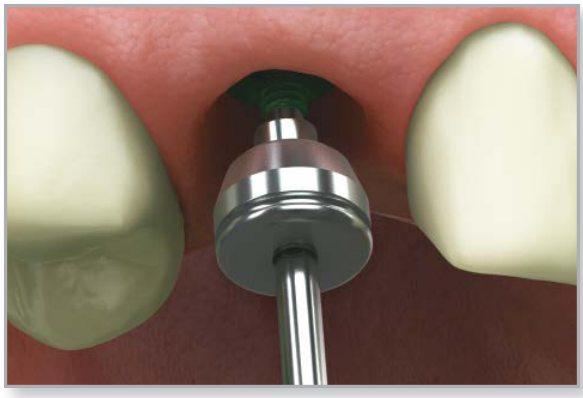
Remove the healing abutment using an .050" (1.25mm) hex driver. Confirm that the implant's prosthetic platform is free of any bone debris or soft tissue.

Note:
The emergence of a hexed impression coping should match the emergence of the healing abutment and the intended final abutment (narrow, regular or wide). If a custom cast abutment is planned, the emergence will be determined by the lab prescription.

Important:
Non-hexed direct pick-up copings may only be used for multiple-unit screw-retained restorations, i.e. bar overdentures, hybrids, and multiple-unit screw-retained bridge restorations.

Helpful Hint:
When placing impression copings on multiple implants, remove one healing abutment at a time, replacing it immediately with the impression coping. This reduces the likelihood of soft tissue collapsing onto the implant. Work from the posterior to the anterior.

Important:
When a Laser- Lok healing abutment is temporarily removed for impression making or other restorative procedures, keep the removed Laser-Lok healing abutment in sterile saline until reinserting into the site.



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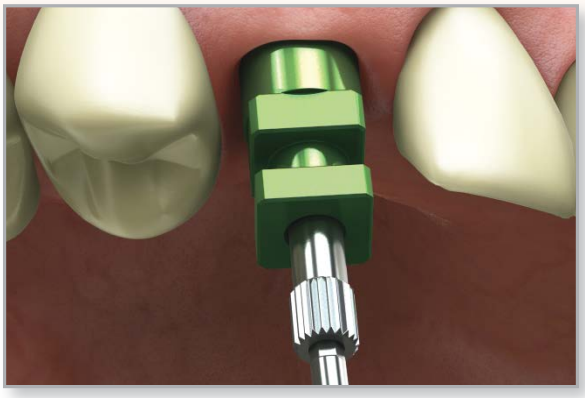
open tray technique using the direct pick-up coping

2 Place the impression coping

Place the appropriate diameter direct pick-up coping (hexed or non-hexed) on the implant body and retain using the corresponding direct pick-up coping screw. Hand tighten. These screws feature a knurled top to aid in manual insertion, as well as an .050" (1.25mm) hex access hole for insertion using the hex driver.

Take a radiograph along the long axis of the implant to ensure that the impression coping is seated completely into the hex of the implant.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

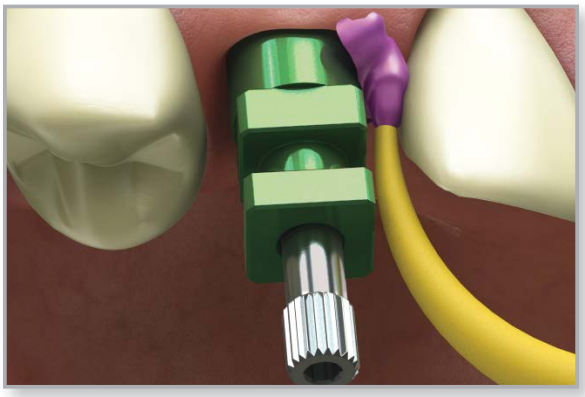


3 Make a full-arch impression

Try in the custom impression tray or modified stock tray to verify that the coping screw protrudes through the tray without interference.

Syringe a medium or heavy body elastomeric impression material around the coping body, leaving the screw exposed. Load the tray with impression material and make the impression.

Important:
Before the material sets, use your finger to wipe the impression material from the top of the screw so it is exposed for access.



4 Remove the coping screw and impression

After the impression material has set, remove the coping screws by hand or using an .050" (1.25mm) hex driver, and remove the tray from the mouth. Verify the impression material is completely adapted around the pick-up copings. Replace the healing abutment immediately to prevent soft tissue collapse over the implant.

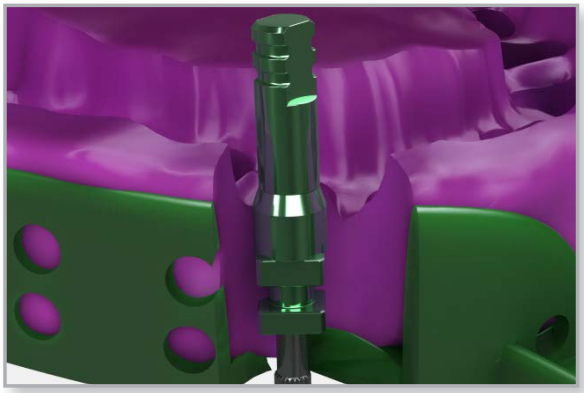
open tray technique using the direct pick-up coping

send to lab

- impression with direct pick-up coping embedded in impression
- coping screw
- bite registration
- opposing model or impression
- implant analog
- prescription with lab instructions

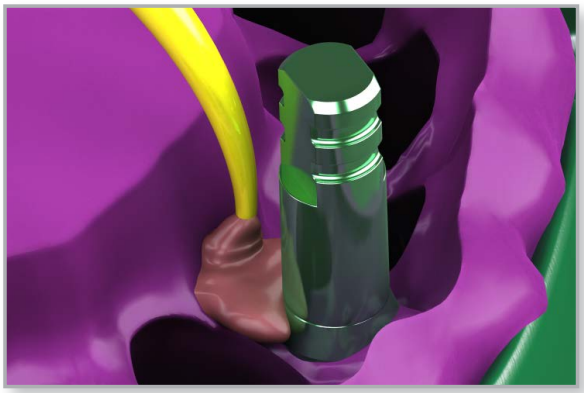
5 Lab step - Assemble the analog

Attach the appropriate diameter implant analog to the direct pick-up coping in the impression and insert the long coping screw through the access hole in the impression tray. Hand tighten.



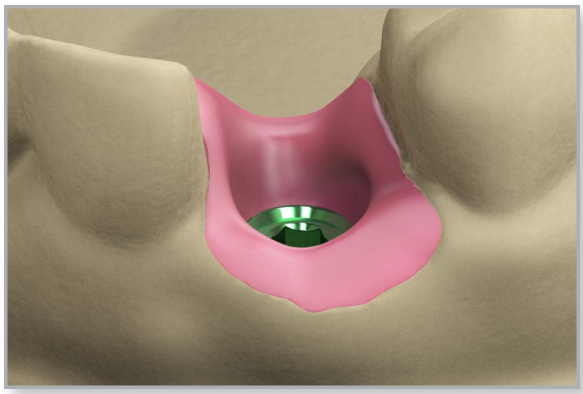
6 Lab step -Make a soft tissue model

Verify the coping and analog assembly are properly connected. Apply lubricant where the soft tissue replica material is to be applied. Syringe a soft tissue replica material around the analog.



7 Lab step -Fabricate the stone model

Fabricate a working model in minimal expansion, high hardness die stone. Articulate according to normal laboratory procedures.



fabricating a custom impression coping using the open tray technique

Use this technique to fabricate a customized open-tray direct pick-up* impression coping that transfers the soft tissue contour developed by a temporary restoration. This procedure will provide a model representing the position of the implant and hex orientation as well as the soft tissue contour.

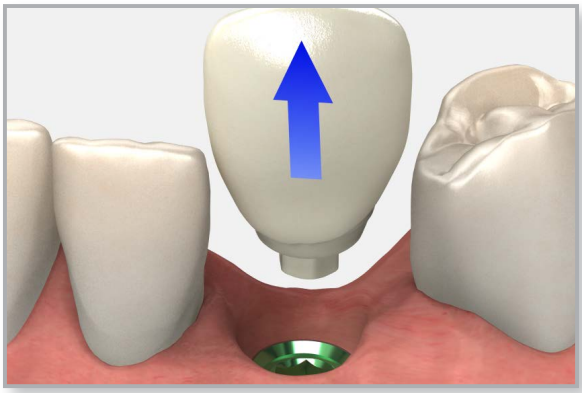
*The impression may be made using a modified stock impression tray or a custom impression tray. Modify a stock impression tray by making a hole in the occlusal surface of the tray in the same position as the implant. See the custom impression tray fabrication module.

component options

- direct pick-up, hexed, narrow coping
- implant analog
- .050" (1.25mm) hex driver

1 Remove the temporary

Remove the temporary prosthesis. Confirm the prosthetic platform is free of any bone debris or soft tissue.



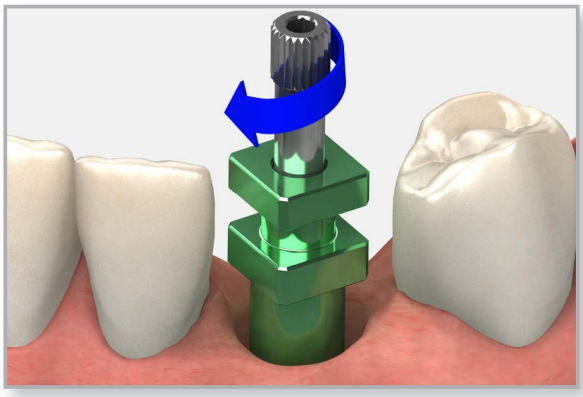
2 Place the impression coping

Place composite adhesive on a narrow emergence direct pick-up impression coping in the anticipated emergence profile area and light cure.

Seat the impression coping onto the implant using a direct pick-up coping screw. Hand tighten.

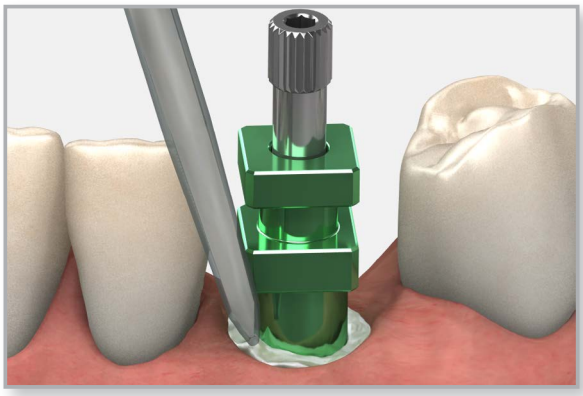
Take a radiograph along the long axis of the implant to ensure that the impression coping is seated completely onto the implant.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.



3 Inject and cure the composite

Inject a flowable light cure composite around the impression coping filling the contoured sulcus. Light cure the composite.



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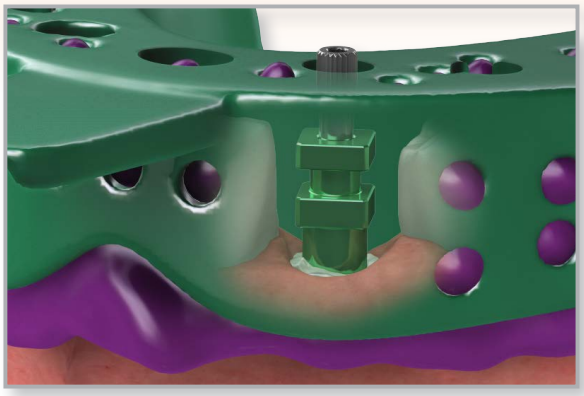
fabricating a custom impression coping using the open tray technique

4 Make a full-arch impression

Try in the custom impression tray or modified stock tray to verify that the coping screw protrudes through the access hole without interference.

Syringe a medium or heavy body elastomeric impression material around the custom impression coping body, leaving the screw exposed. Load the tray with impression material and make the impression.

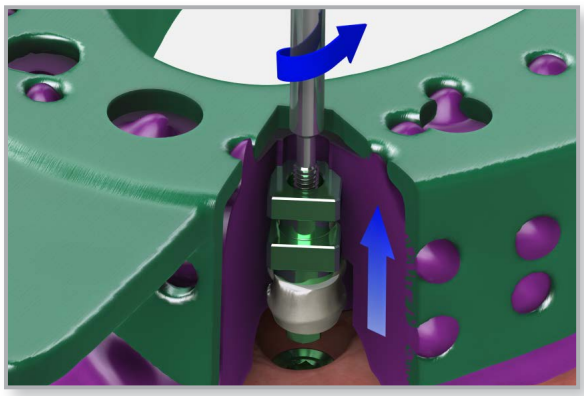
Before the material sets, use your finger to wipe the impression material from the top of the screws so they are exposed for access.



5 Remove the coping screw & impression

After the impression material has set, remove the coping screw by hand or by using an .050" (1.25mm) hex driver and remove the tray from the mouth. Verify that the impression material is completely adapted around the customized pick-up coping.

Replace the temporary prosthesis immediately to prevent the possibility of soft tissue collapsing onto the implant.

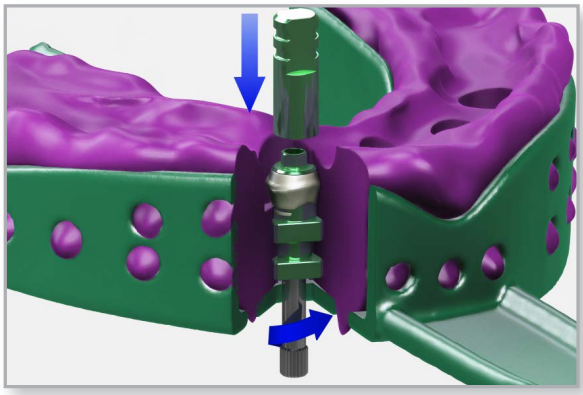


send to lab

- impression with coping inside
- coping screw
- implant analog
- bite registration
- opposing model or impression
- prescription with lab instructions

6 Lab step - Attach the analog

Attach the appropriate diameter implant analog to the customized direct pick-up coping in the impression and insert the coping screw through the access hole in the impression tray. Hand tighten.



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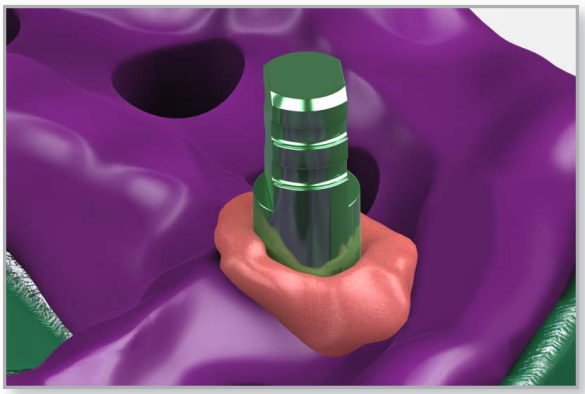
fabricating a custom impression coping using the open tray technique

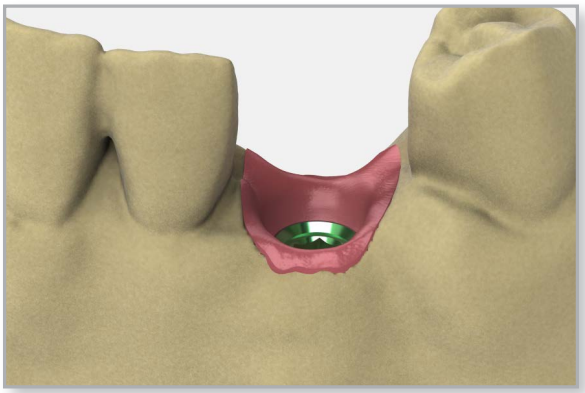
7 Lab step - Make a soft tissue model

Verify the coping and analog are properly connected. Apply lubricant where the soft tissue replica material is to be applied. Syringe a soft tissue replica material around the analog.



8 Lab step - Fabricate the stone model

Fabricate a working model in minimal expansion, high hardness, die stone. Articulate according to normal laboratory procedures.



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closed tray technique using the indirect transfer coping

Use this technique to make a single or multiple-unit, implant-level impression for fabrication of a working cast utilizing a closed-tray, indirect transfer method. Choose the emergence that matches the emergence of the healing abutment (narrow, regular or wide). This procedure creates a model that represents the exact position of the implant and the orientation of the hex and the soft tissue profile.

component options

- indirect scoop coping
- 3inOne abutment
- ball-top screw
- implant analog
- .050" (1.25mm) hex driver

1 Remove the healing abutment

Remove the healing abutment using an .050" (1.25mm) hex driver. Confirm the implant prosthetic platform is free of any bone debris or soft tissue.

Note:
The emergence of the impression coping should match the emergence of the healing abutment and the intended final abutment (narrow, regular or wide). If a custom cast abutment is planned, the final abutment emergence will be determined by the lab.

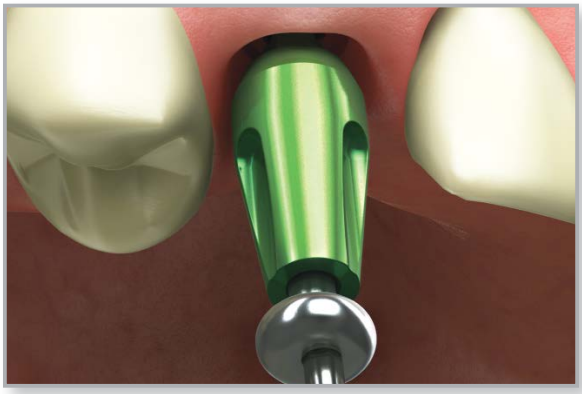
Helpful Hint:
When placing impression copings on multiple implants, remove one healing abutment at a time, replacing it immediately with the impression coping. This reduces the likelihood of soft tissue collapsing onto the implant. Work from the posterior to the anterior.

Important:
When a Laser- Lok healing abutment is temporarily removed for impression making or other restorative procedures, keep the removed Laser-Lok healing abutment in sterile saline until reinserting into the site.

2 Place the impression coping

Option A - Seat the indirect scoop coping and secure using the included screw. Hand tighten.
Option B - Seat the 3inOne abutment and secure using the ball-top screw. Hand tighten.
Take a radiograph along the long axis of the implant to ensure that the impression coping or 3inOne abutment is seated completely into the hex of the implant.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.



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closed tray technique using the indirect transfer coping

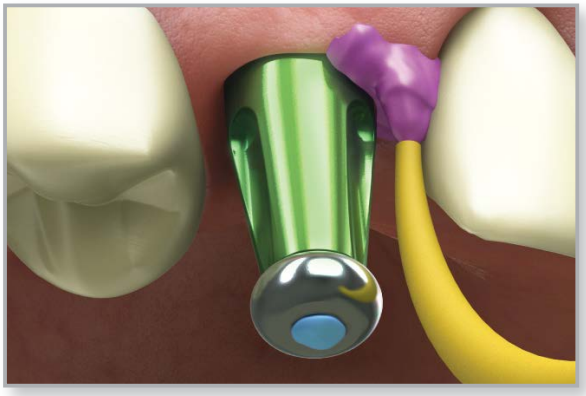
3 Block out the hex

Block out the hex hole on top of the indirect scoop coping screw or the ball top screw using a material of choice.

4 Make a full-arch impression

Syringe a medium or heavy body elastomeric impression material around and over the indirect scoop coping or the 3inOne abutment and ball top assembly. Load the tray with impression material and make the impression.

After the impression material has set, remove the tray from the mouth. The indirect scoop coping or 3inOne abutment/ ball top screw will remain in the mouth.



5 Remove the impression copings

Remove the indirect scoop coping or 3inOne abutment/ ball- top screw assembly and replace the healing abutment immediately to prevent soft tissue collapse over the implant.

Helpful Hint:
When removing impression copings on multiple implants, remove one at a time, replacing it immediately with a healing abutment. This reduces the likelihood of soft tissue collapse over the implant. Work from the anterior to posterior.

send to lab

- impression
- impression coping
  - indirect scoop coping with retaining screw
  - 3inOne abutment with ball top screw
- bite registration
- opposing model or impression
- implant analog
- prescription with lab instructions

Note:
If the 3inOne abutment is to be used as the final abutment, send the abutment screw that came with the 3inOne abutment to the lab.

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closed tray technique using the indirect transfer coping

6 Lab step - Assemble the analog

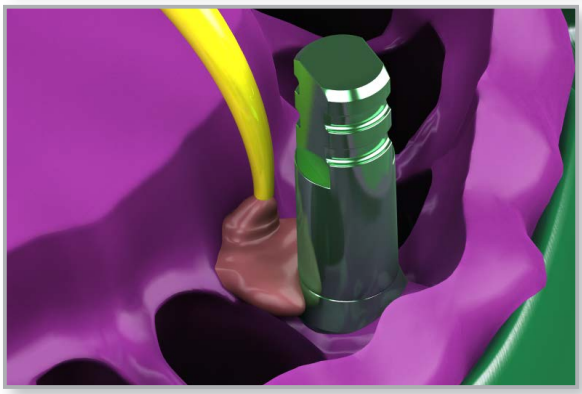
Option A - Attach the indirect scoop coping using the appropriate diameter implant analog using the coping screw.
Option B - Attach the 3inOne abutment using the appropriate diameter implant analog using the ball-top screw.

7 Lab step - Index the copings

Index the coping into the impression by inserting the coping assembly into the corresponding location in the impression.
Option A - orient the indirect scoop coping using the corresponding indices in the impression.
Option B - orient the 3inOne abutment using the long flat.

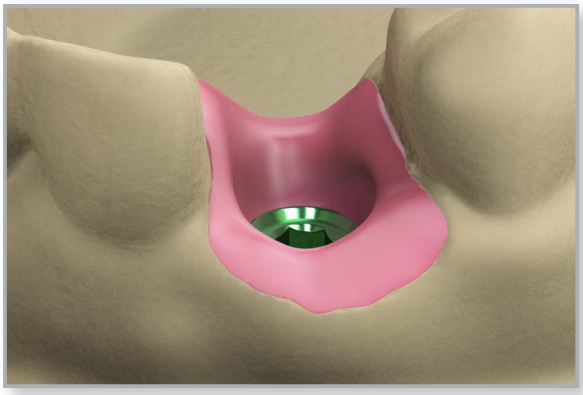
8 Lab step - Make a soft tissue model

Verify that the coping and analog assembly is seated properly and completely. Apply lubricant where the soft tissue replica material is to be applied. Syringe a soft tissue replica material around the analog.



9 Lab step - Fabricate the stone model

Fabricate a working model in minimal expansion, high hardness die stone. Articulate according to normal laboratory procedures.



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fabricating a custom impression coping using the closed tray technique

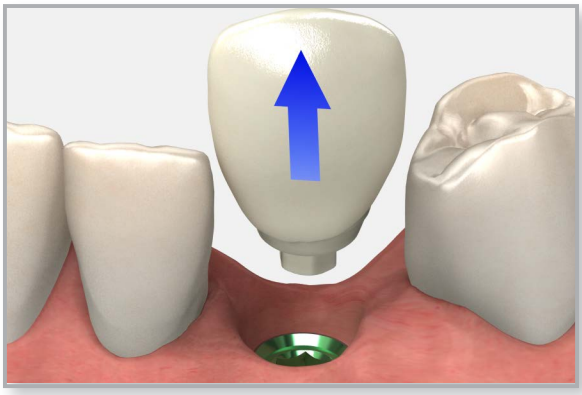
Use this technique to fabricate a customized, closed-tray, indirect impression coping that transfers the soft tissue contour developed by a temporary restoration. This procedure will provide a model representing the position of the implant and hex orientation as well as the soft tissue contour.

component options

- indirect scoop coping, narrow coping
- implant analog
- .050" (1.25mm) hex driver

1 Remove the temporary

Remove the temporary prosthesis. Confirm that the prosthetic platform is free of any bone debris or soft tissue.



2 Place the impression coping

Place composite adhesive on a narrow emergence closed tray impression coping in the anticipated emergence profile area and light cure.

Seat the impression coping onto the implant using the pre-assembled coping screw and an .050" (1.25mm) hex driver.

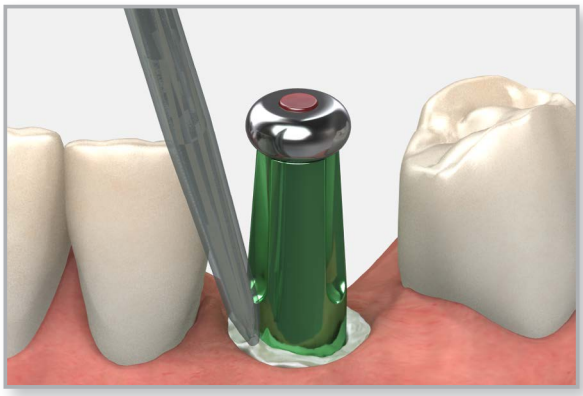
Take a radiograph along the long axis of the implant to ensure that the impression coping is seated completely onto the implant.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

3 Inject and cure the composite

Inject a flowable light cure composite around the impression coping filling the contoured sulcus. Light cure the composite.

Block out the hex hole on the top of the coping screw using a material of choice.



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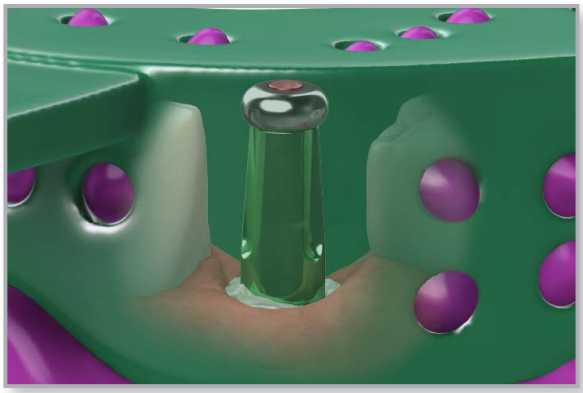
fabricating a custom impression coping using the closed tray technique

4 Make a full-arch impression

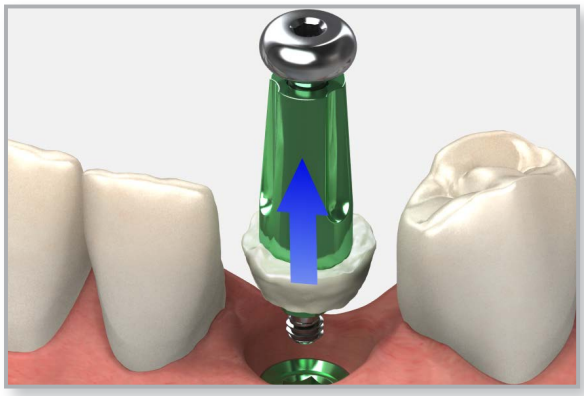
Syringe a medium or heavy body elastomeric impression material around the custom impression coping body. Load the tray with impression material and make an impression.



5 Remove the impression & coping

After the impression material has set, remove the tray from the mouth. The custom indirect transfer coping will remain in the mouth.

Remove the transfer coping and replace the temporary prosthesis immediately to prevent the possibility of soft tissue collapsing onto the implant.



send to lab

- impression
- custom indirect impression coping
- bite registration
- opposing model or impression
- implant analog
- prescription with lab instructions

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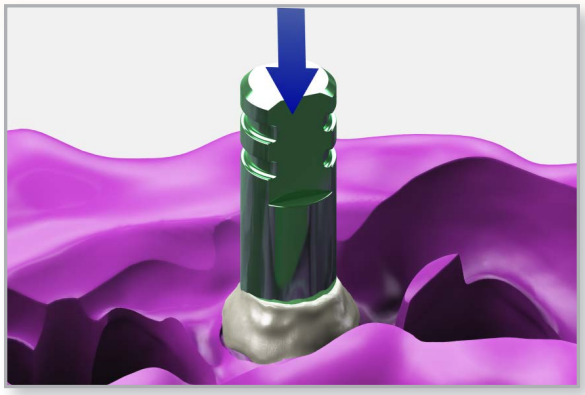
fabricating a custom impression coping using the closed tray technique

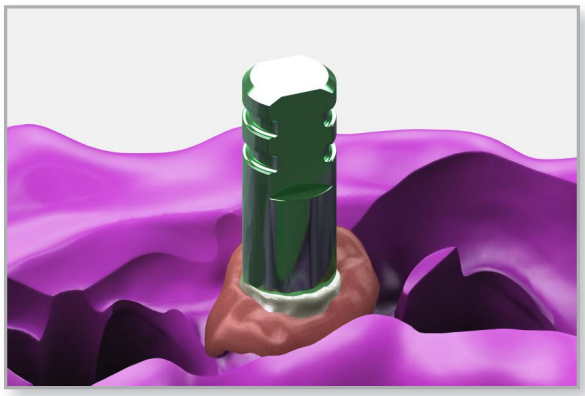
6 Lab step - Attach the analog to the coping

Attach the implant analog to the custom indirect transfer coping using an .050" (1.25mm) hex driver. Hand tighten. Insert the coping assembly into the corresponding location in the impression, ensuring that the grooves or temporary crown contour align with the corresponding indices in the impression.



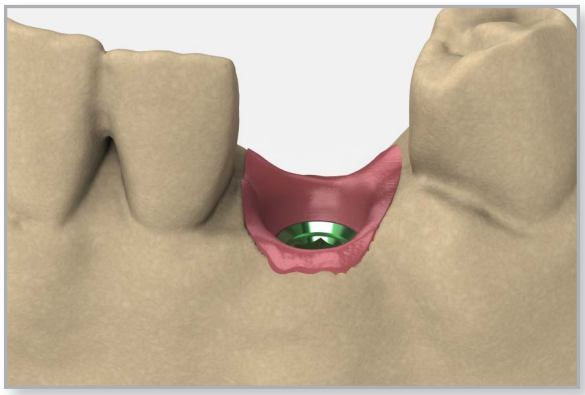
7 Lab step - Make a soft tissue model

Apply lubricant where the soft tissue replica material is to be applied. Syringe a soft tissue replica material around the analog.



8 Lab step - Fabricate the stone model

Fabricate a working model in minimal expansion, high hardness, die stone. Articulate according to normal laboratory procedures.



conventional crown and bridge impression technique

Use this technique if you have prepared and seated an abutment chair-side or if the patient presents to you with a modified abutment in place.

component options

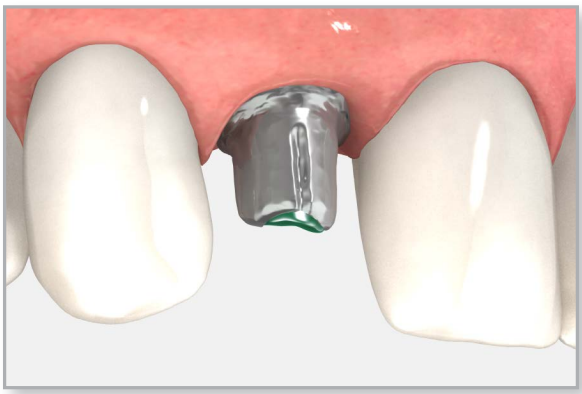
- .050" (1.25mm) hex driver
- torque wrench
- abutment clamp

1 Tighten the abutment screw

Tighten the abutment screw to 30 Ncm using a calibrated torque wrench and an .050" (1.25mm) hex driver. Counter-torque may be applied by grasping the abutment using an abutment clamp or hemostat.

2 Block out the screw hole

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access hole and fill the remaining channel with composite or another material of choice. This allows for easy access to the abutment screw in the future.



3 Make a full-arch impression

Make a full-arch impression using conventional crown and bridge impression techniques.

If the margin is subgingival, retraction cord may be necessary.

If the abutment has a zone of Laser-Lok, placing an appropriately sized, non-impregnated retraction cord below the margin before making an impression or cementing a restoration will minimize the risk of either material from contaminating the Laser-Lok zone.

customer care:
888.246.8338

conventional crown and bridge impression technique

4 Make a temporary

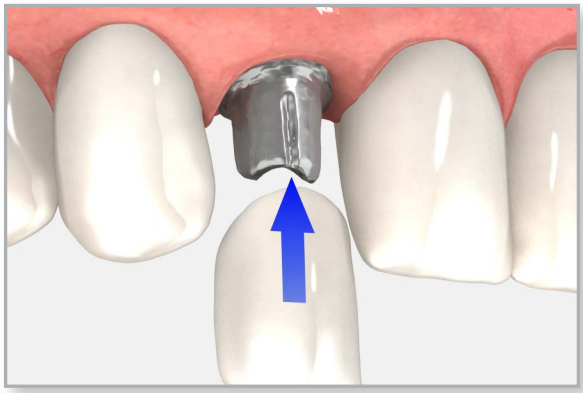
Fabricate a temporary restoration using the technique and a material of choice.

5 Cement the temporary

Place the temporary restoration onto the abutment prior to cementation. Check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making adjustments.

Important:
Cement the temporary following the crown cementation technique module.

Take an x-ray for temporary prosthesis delivery records.

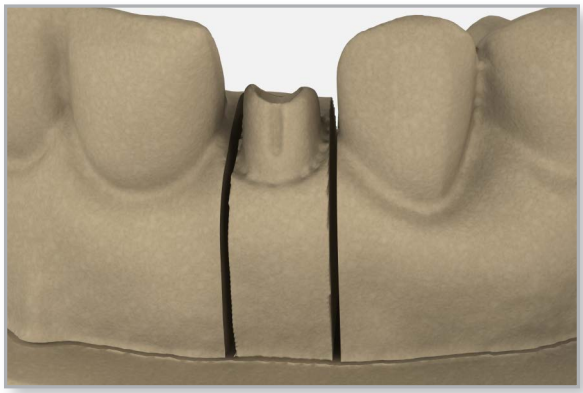


send to lab

- impression
- bite registration
- opposing model or impression
- prescription with lab instructions

6 Lab step - Fabricate the stone model

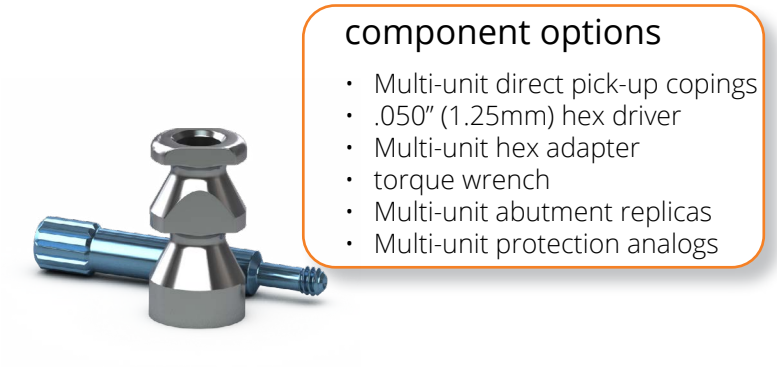
Fabricate a working model in minimal-expansion, high-hardness die stone. Articulate according to normal laboratory procedures.



Multi-unit abutment open tray technique using the direct pick-up coping

Use this technique to make an impression of Multi-unit abutments utilizing an open tray, direct pick-up method* for fabrication of a working model at the dental laboratory. This procedure creates a model that represents the exact position of the Multi-unit abutments and the soft tissue profile.

*The direct pick-up impression may be made with a modified stock impression tray or a custom impression tray. Modify a stock impression tray by making holes in the occlusal surface of the tray in the same positions as the implants.
Please see custom impression tray fabrication module for further instruction.



component options

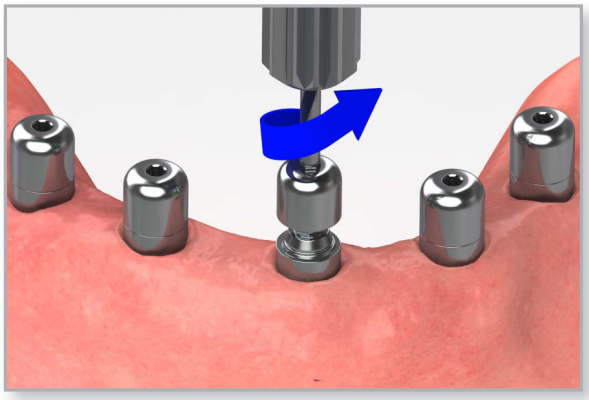
- Multi-unit direct pick-up copings
- .050" (1.25mm) hex driver
- Multi-unit hex adapter
- torque wrench
- Multi-unit abutment replicas
- Multi-unit protection analogs

1 Remove the cover caps or healing abutments

Option A - The patient presents with a provisional restoration in place.
Remove the provisional restoration with an .050" (1.25mm) hex driver. Confirm that the abutment prosthetic platform is free of any debris or soft tissue.

Option B - The patient presents with Multi-unit abutments and cover caps.
Remove the Multi-unit abutment cover caps with an .050" (1.25mm) hex driver. Confirm that the abutment prosthetic platform is free of any debris or soft tissue.

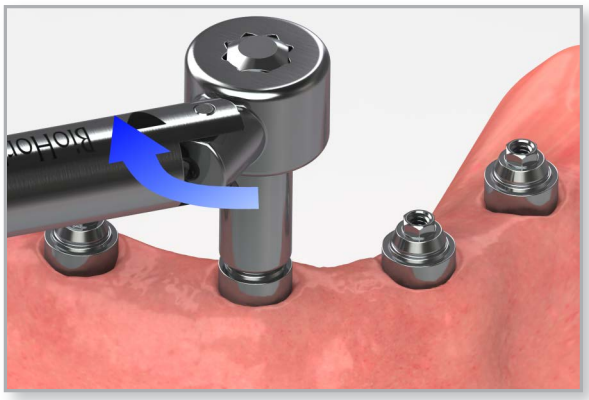
Option C - The patient presents with healing abutments.
Refer to Multi-unit abutment hybrid or fixed-detachable screw-retained restoration or Multi-unit abutment bar overdenture modules. After the abutments are seated, proceed with the steps in this technique.



Helpful Hint:
When making impressions of multiple units, remove the cover caps and place the impression copings working from the posterior to the anterior.

2 Tighten the Multi-unit abutments

Tighten the Multi-unit abutments or abutment screws (for angled Multi-unit abutments) to 30 Ncm using a calibrated torque wrench and the 4mm square Multi-unit hex adapter (straight Multi-unit abutments) or an .050" (1.25mm) hex driver (angled Multi-unit abutments).

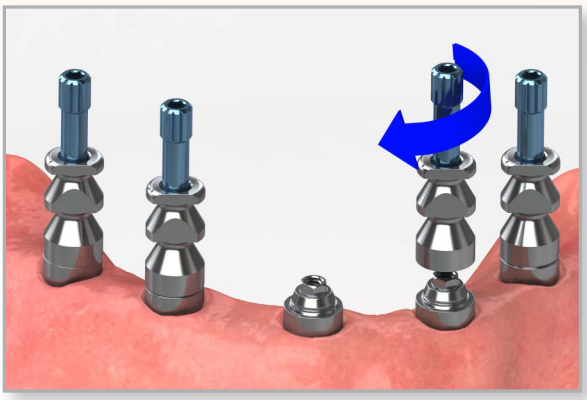


customer care:
888.246.8338

Multi-unit abutment open tray technique using the direct pick-up coping

3 Seat the direct pick-up copings

Place the Multi-unit direct pick-up copings onto the Multi-unit abutments using the long pick-up coping screw. Hand tighten.

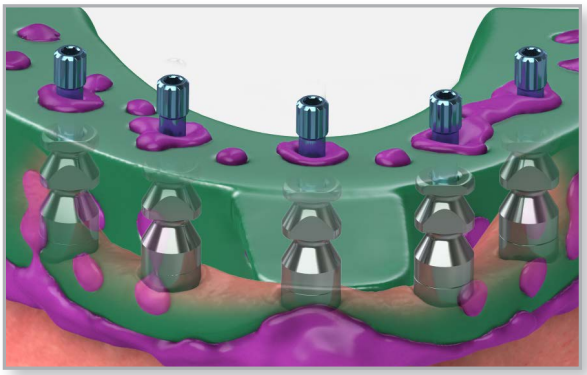


4 Make a full-arch impression

Try in the custom impression tray or modified stock tray to verify the coping screws protrude through without interference.

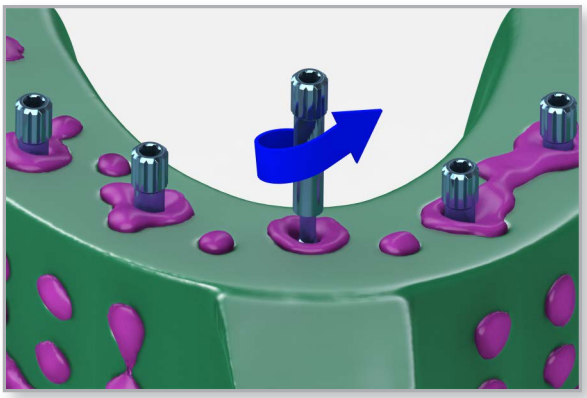
Syringe a medium or heavy body elastomeric impression material around the coping bodies, leaving the screws exposed. Load the tray with impression material and make the impression.

Before the material sets, use your finger to wipe the impression material from the top of the screws so they are exposed for access.



5 Remove the coping screw & impression

After the impression material has set, remove the coping screws by hand or with an .050" (1.25mm) hex driver, and remove the tray from the mouth. Verify the impression material is completely adapted around the pick-up copings. Replace the cover caps on the Multi-unit abutments.



send to lab

- impression with copings inside
- coping screws
- Multi-unit abutment replicas
- opposing model or impression
- bite registration
- prescription with lab instructions

customer care:
888.246.8338

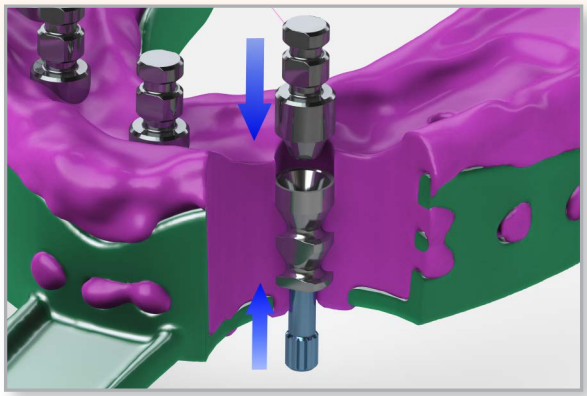
Multi-unit abutment open tray technique using the direct pick-up coping

6 Lab step - Attach the replicas to the copings

Attach the Multi-unit abutment replicas to the direct impression copings in the impression and insert the long, Multi-unit prosthetic screws through the access holes in the impression tray. Hand tighten the screws.

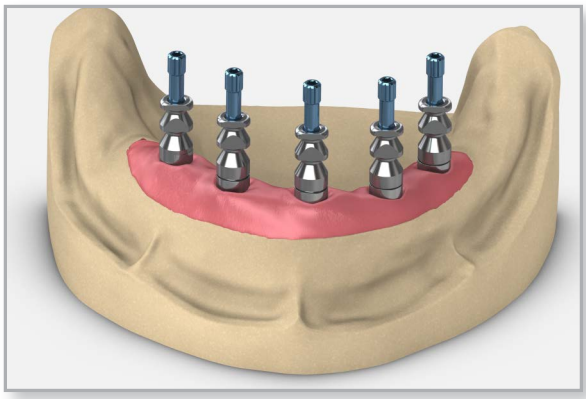
Use a soft tissue model material around the abutment replicas.

Verify proper replica seating and apply lubricant around the replicas where soft tissue needs to be added.



7 Lab step - Fabricate the stone model

Fabricate a working model in minimal expansion, high hardness die stone. Articulate using normal laboratory procedures.



Multi-unit abutment closed tray technique using the indirect transfer coping

Use this technique to make an impression of Multi-unit abutments utilizing a closed tray, indirect transfer method for fabrication of a working model at the dental laboratory. This procedure creates a model that represents the exact position of the Multi-unit abutments and the soft tissue profile.

component options

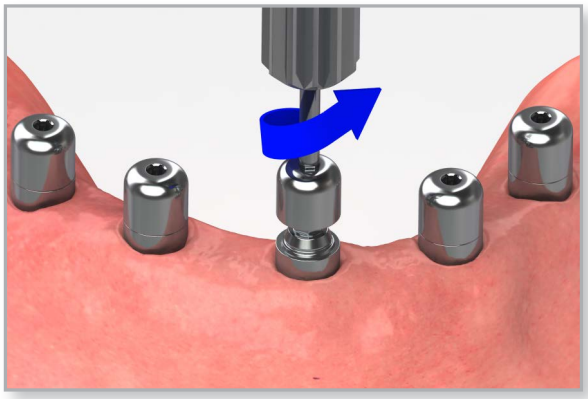
- Multi-unit indirect transfer copings
- .050" (1.25mm) hex driver
- Multi-unit hex adapter
- torque wrench
- Multi-unit abutment replicas
- Multi-unit protection analogs

1 Remove the cover caps or healing abutments

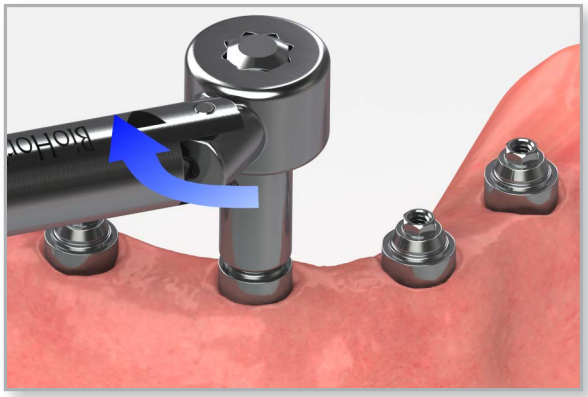
Option A - The patient presents with a provisional restoration in place.
Remove the provisional restoration with an .050" (1.25mm) hex driver. Confirm that the abutment prosthetic platform is free of any debris or soft tissue.

Option B - The patient presents with Multi-unit abutments and cover caps.
Remove the Multi-unit abutment cover caps with an .050" (1.25mm) hex driver. Confirm that the abutment prosthetic platform is free of any debris or soft tissue.

Option C - The patient presents with healing abutments.
Refer to Multi-unit abutment hybrid or fixed-detachable screw-retained restoration or Multi-unit abutment bar overdenture modules. After the abutments are seated, proceed with the steps in this technique.



Helpful Hint:
When making impressions of multiple units, remove the cover caps and place the impression copings working from the posterior to the anterior.



2 Tighten the Multi-unit abutments

Tighten the Multi-unit abutments or abutment screws (for angled Multi-unit abutments) to 30 Ncm using a calibrated torque wrench and the 4mm square Multi-unit hex adapter (straight Multi-unit abutments) or an .050" (1.25mm) hex driver (angled Multi-unit abutments).

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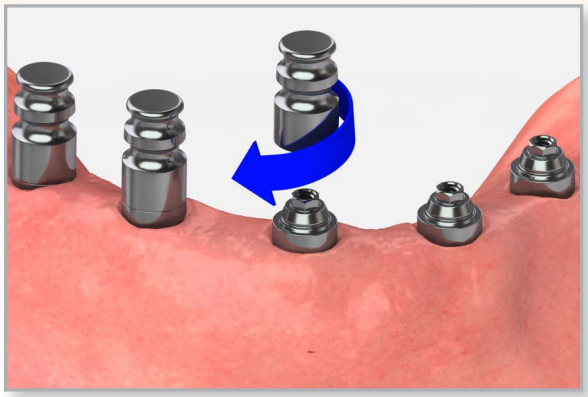
888.246.8338

Multi-unit abutment closed tray technique using the indirect transfer coping

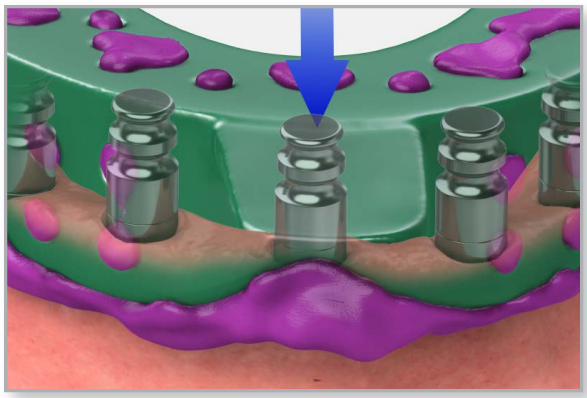
3 Seat the indirect transfer copings

Place the Multi-unit indirect transfer copings onto the Multi-unit abutments. Hand tighten.



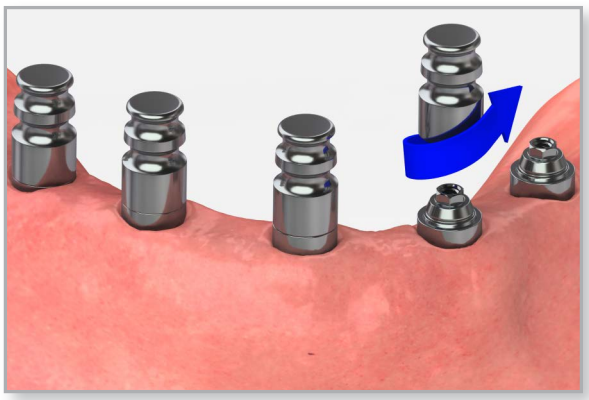
4 Make a full-arch impression

Syringe a medium or heavy body elastomeric impression material around the indirect copings. Load the tray with impression material and make the impression.



5 Remove the copings and impression

After the impression material has set, remove the tray from the mouth. The indirect transfer copings will remain in the mouth. Remove the indirect transfer copings from the Multi-unit abutments. Replace the cover caps on the Multi-unit abutments with an .050" (1.25mm) hex driver.



send to lab

- impression
- indirect impression copings
- Multi-unit abutment replicas
- opposing model or impression
- bite registration
- prescription with lab instructions

customer care:
888.246.8338

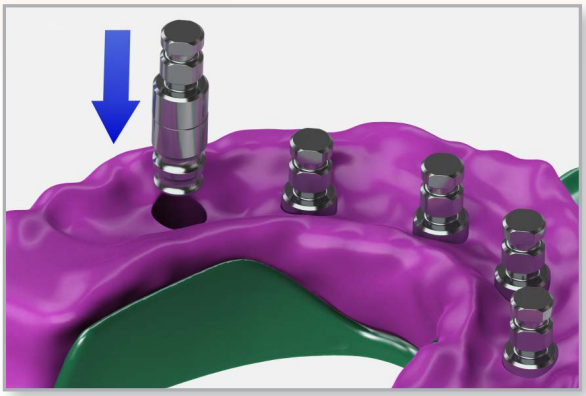
Multi-unit abutment closed tray technique using the indirect transfer coping

6 Lab step - Attach the replicas to the copings

Attach the Multi-unit abutment replicas to the indirect impression copings. Insert the assemblies into the impression.

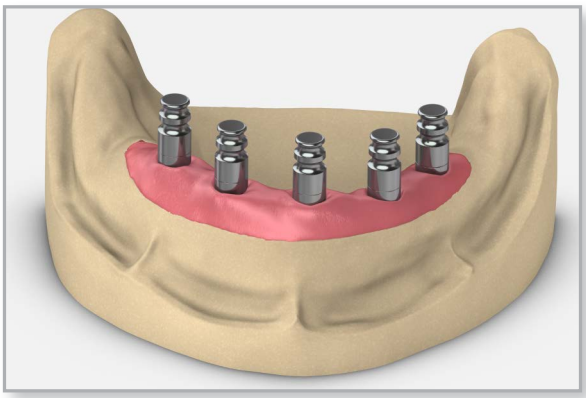
Use a soft tissue model material around the abutment replicas.

Verify proper replica seating and apply lubricant around the replicas where soft tissue needs to be added.



7 Lab step - Fabricate the stone model

Fabricate a working model in minimal expansion, high hardness die stone. Articulate using normal laboratory procedures.



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888.246.8338

OD Secure impression technique

Use this technique to make a full-arch impression of OD Secure abutments. This impression will be used to fabricate a new denture with OD Secure housing caps processed in the denture. OD Secure abutments are designed for use with overdentures or partial dentures retained in whole or in part by dental implants in the mandible or maxilla. OD Secure abutments are available in a variety of cuff heights for all of the internal implant platform sizes from 3.0mm to 5.7mm.

Note: Abutment cuff height should be selected to match the height of the gingival tissue. This will place the OD Secure connection 1.5mm above the tissue and allow the OD Secure housing cap to seat completely.

Important: Always measure the tissue at the highest point when selecting the appropriate OD Secure abutment cuff height.

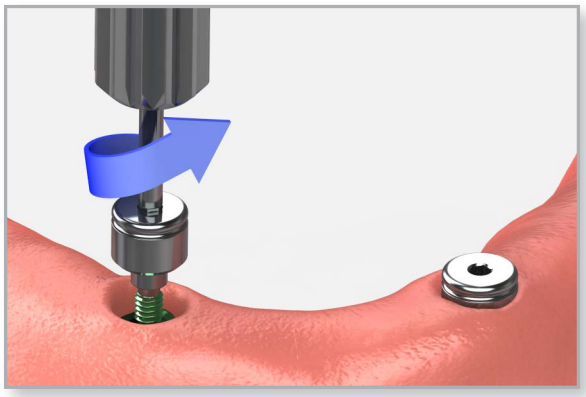
component options

- OD Secure abutment kit
- impression copings
- OD Secure analogs
- .050" (1.25mm) hex driver
- torque wrench

1 Remove the healing abutments

Remove the healing abutments using an .050" (1.25mm) hex driver. Confirm that the prosthetic platforms are free of any bone debris or soft tissue. Irrigate the internal connection of the implants and dry.

Helpful Hint:
When working with multiple implants, remove one healing abutment at a time, replacing it immediately with an OD Secure abutment. This prevents the possibility of soft tissue collapsing onto the implant.

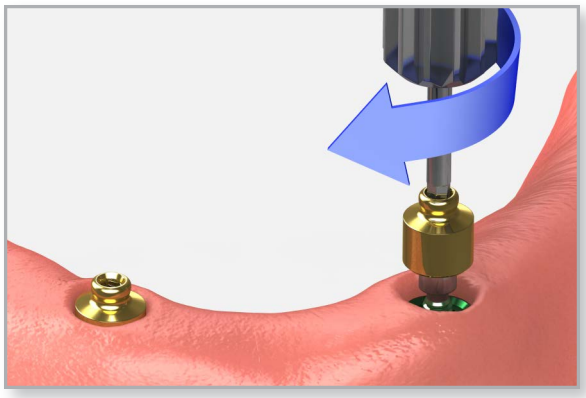


2 Place the abutments

Place the OD Secure abutment onto each implant using an .050" (1.25mm) hex driver. Hand tighten.

Take a radiograph along the long axis of the implants to ensure the abutments are seated completely onto the implant.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.



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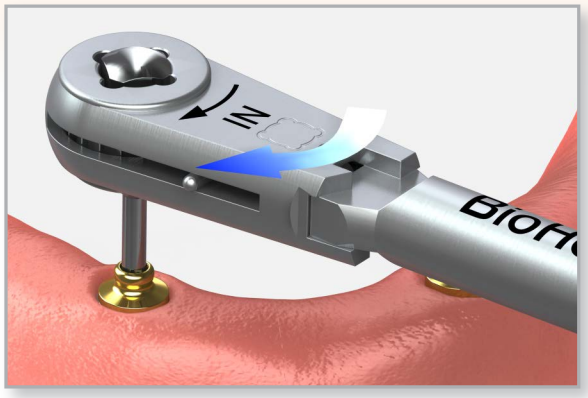
OD Secure impression technique

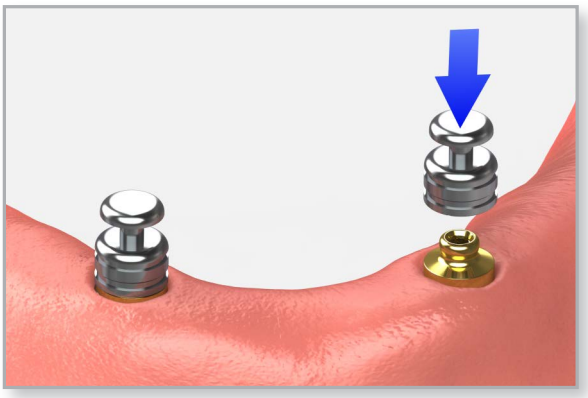
3 Tighten the abutments

Tighten each OD Secure abutment to 30 Ncm using a calibrated torque wrench and an .050" (1.25mm) hex driver.



4 Place the impression copings

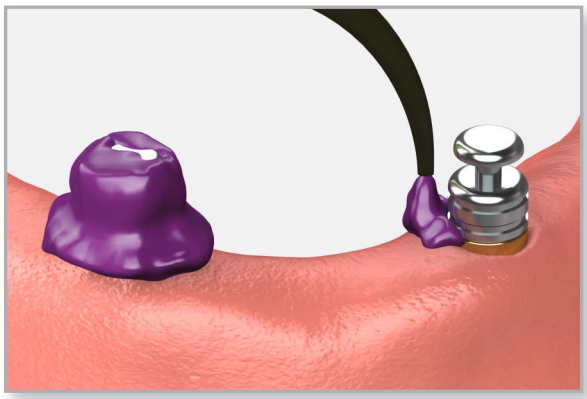
Snap an impression coping onto each OD secure abutment.



5 Make a full-arch impression

Syringe a medium or heavy-bodied elastomeric impression material around the impression copings. Make an impression to pick-up the impression copings and to record all soft tissue contours for the new denture fabrication. The impression copings will remain in the impression when it is removed.

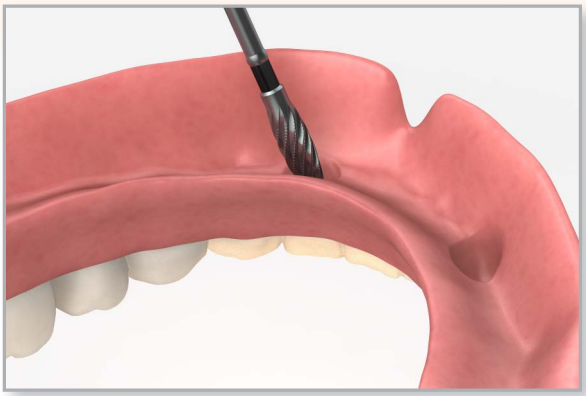
Note:
If a reline impression of an existing denture is being made, relieve the denture to accommodate the height of the OD Secure abutments and impression copings and proceed with steps 1 through 5.



OD Secure impression technique

6 Modify the existing denture

Relieve the existing denture to accommodate the height of the OD Secure abutments. A soft liner may be used to reline the denture and provide a limited degree of retention while the new denture is fabricated.



send to lab

- impression with impression copings imbedded
- OD Secure analogs
- processing packages
- bite registration
- opposing model or impression
- prescription with lab instructions

7 Lab step - Seat the analogs

Insert the OD Secure analogs in the corresponding location in the impression.

8 Lab step - Fabricate the stone model

Fabricate a working model and articulate according to normal laboratory procedures.

customer care:
888.246.8338

Locator® abutment impression technique

Use this technique to make a full-arch impression of Locator abutments. This impression will be used to fabricate a new denture with Locator denture caps processed in the denture. Locator implant abutments are designed for use with overdentures or partial dentures retained in whole or in part by dental implants in the mandible or maxilla. Locator abutments are available in a variety of cuff heights for all of the internal implant platform sizes from 3.0mm to 5.7mm.

Note: Abutment cuff height should be selected to match the height of the gingival tissue. This will place the Locator connection 1.8mm above the tissue and allow the Locator male to seat completely.

Important: Always measure the tissue at the highest point when selecting the appropriate Locator abutment cuff height.

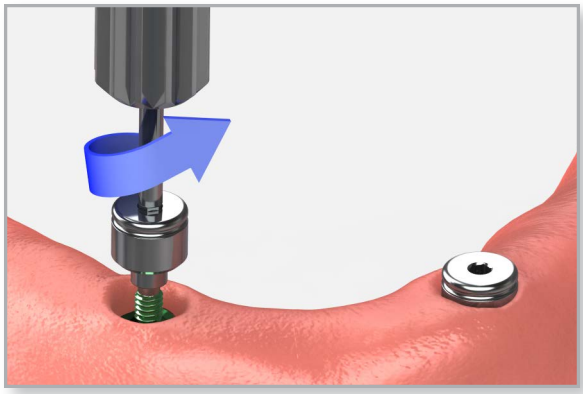
component options

- Locator abutments
- Locator core tool
- Locator impression copings
- Locator female analogs
- Locator abutment holders
- square drive tool
- .050" (1.25mm) hex driver
- torque wrench
- male processing package

1 Remove the healing abutments

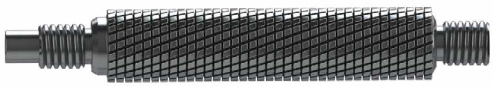
Remove the healing abutments using an .050" (1.25mm) hex driver. Confirm that the prosthetic platforms are free of any bone debris or soft tissue. Irrigate the internal connection of the implants and dry.

Helpful Hint:
When working with multiple implants, remove one healing abutment at a time, replacing it immediately with a Locator abutment. This prevents the possibility of soft tissue collapsing onto the implant.

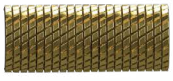


Locator core tool instructions

Male retention insert removal tool
For removing the male retention inserts from the metal housing



Male retention insert tool
For placing the male retention inserts into the metal housing



Hand driver
For hand tightening the Locator abutment

Locator abutment holder
For retaining and delivering the Locator abutment using the hand driver portion of the core tool.

customer care:
888.246.8338

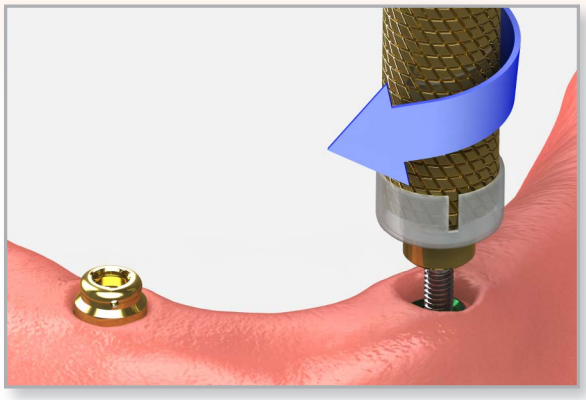
Locator abutment impression technique

2 Place the abutments

Place the Locator abutment onto each implant using the Locator hand driver with a Locator abutment holder. Hand tighten.

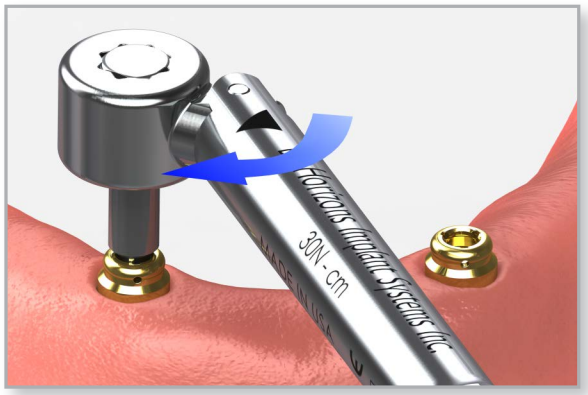
Take a radiograph along the long axis of the implants to ensure the abutments are seated completely onto the implant.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.



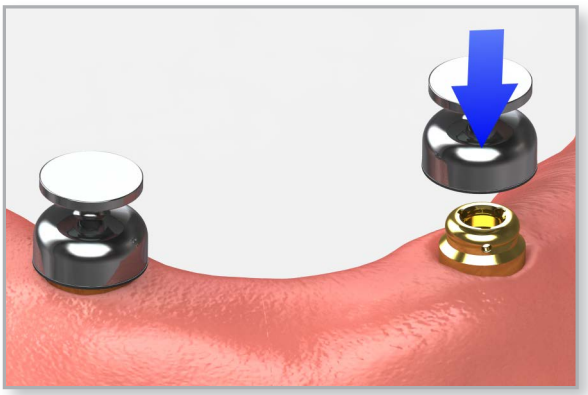
3 Tighten the abutments

Tighten each Locator abutment to 30 Ncm using a calibrated torque wrench and a Locator square drive tool. Alternatively, use an .050" (1.25mm) hex driver inserted into the core tool hand driver.



4 Place the impression copings

Snap an impression coping onto each Locator abutment.

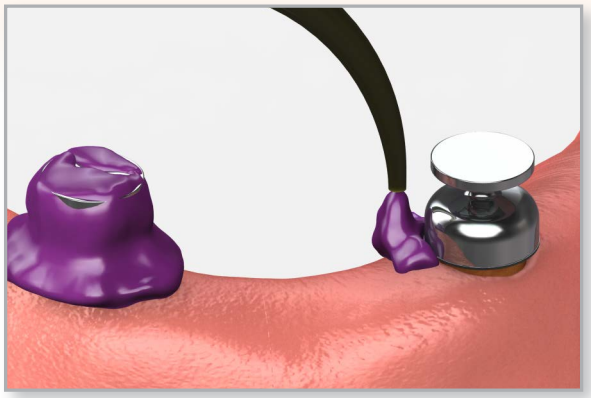


Locator abutment impression technique

5 Make a full-arch impression

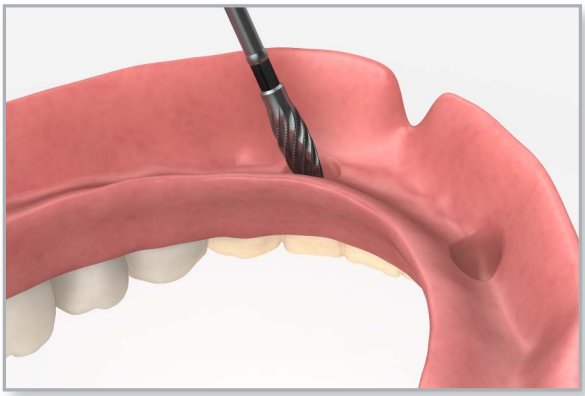
Syringe a medium or heavy-bodied elastomeric impression material around the impression copings. Make an impression to pick-up the impression copings and to record all soft tissue contours for the new denture fabrication. The impression copings will remain in the impression when it is removed.

Note:
If a reline impression of an existing denture is being made, relieve the denture to accommodate the height of the Locator abutments and impression copings and proceed with steps 1 through 5.



6 Modify the existing denture

Relieve the existing denture to accommodate the height of the Locator abutments. A soft liner may be used to reline the denture and provide a limited degree of retention while the new denture is fabricated.

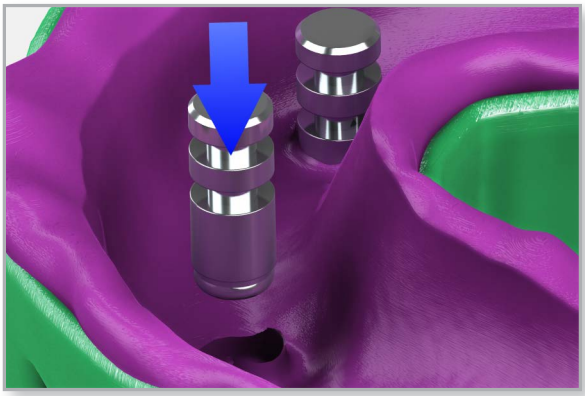


send to lab

- impression with impression copings imbedded
- Locator female analogs
- male processing packages
- bite registration
- opposing model or impression
- prescription with lab instructions

7 Lab step - Seat the analogs

Insert the Locator female analogs in the corresponding location in the impression.



Locator abutment impression technique

8 Lab step - Fabricate the stone model

Fabricate a working model and articulate according to normal laboratory procedures.

customer care:
888.246.8338

ball abutment impression technique

Use this technique to make an impression of ball abutments for the fabrication of a new or relined denture with the retentive caps of choice (ball abutment set or O-ring attachment set) processed in the denture. Ball abutments are available in 1mm, 3mm and 5mm collar heights for the 3.5mm and 4.5mm platform and 1mm and 3mm collar heights for the 5.7mm platform.

Note:
The ball abutment shoulder should be 1mm supragingival to prevent soft tissue impingement when the denture is seated.

Important:
Always measure the tissue at the highest point when selecting the appropriate ball abutment.

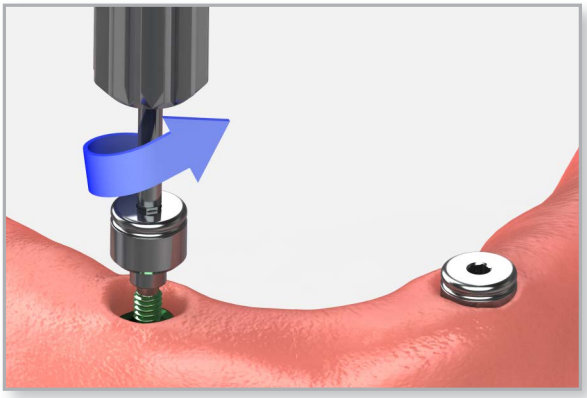
component options

- ball abutment
- ball abutment analog
- .050" (1.25mm) hex driver
- torque wrench
- ball attachment set or o-ring attachment set

1 Remove the healing abutments

Remove the healing abutments using an .050" (1.25mm) hex driver. Confirm that the prosthetic platforms are free of any bone debris or soft tissue. Irrigate the internal connection of the implants and dry.

Helpful Hint:
When working with multiple implants. Remove one healing abutment at a time, replacing it immediately with a ball abutment. This reduces the likelihood of soft tissue collapsing onto the implant.



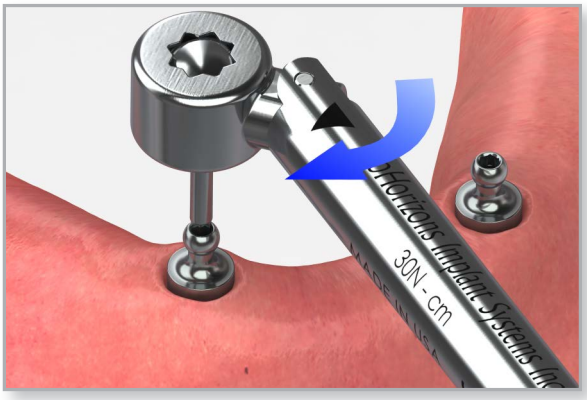
2 Place the abutments

Place the ball abutments onto each implant using an .050" (1.25mm) hex driver.

Take a radiograph along the long axis of the implants to ensure the abutments are seated completely in onto the implants.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

Tighten each ball abutment to 30 Ncm using a calibrated torque wrench and an .050" (1.25mm) hex driver.

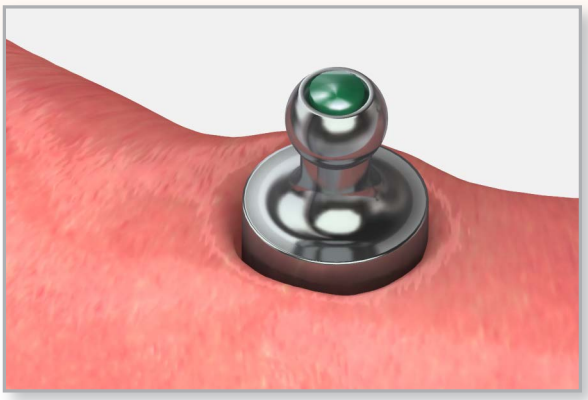


customer care:
888.246.8338

ball abutment impression technique

3 Block out the hex hole

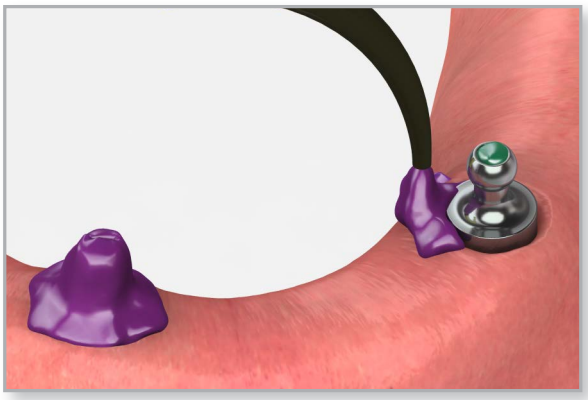
Block out the hex hole on the top of each ball abutment with a material of choice.



4 Make a full-arch impression

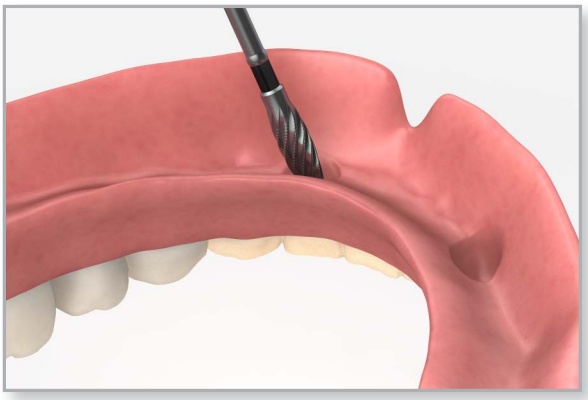
Syringe a medium or heavy-bodied elastomeric impression material around the ball abutments. Make a denture impression to record all soft tissue contours for the new denture fabrication.

Note:
If a reline impression of an existing denture is being used, relieve the denture to accommodate the height of the ball abutments and proceed with steps 1-4.



5 Modify the existing denture

Relieve the existing denture to accommodate the height of the ball abutments. A soft liner may be used to reline the denture and provide a transitional degree of retention prior to the fabrication of the new denture.



send to lab

- impression
- ball abutment analogs
- ball attachment set or o-ring attachment set
- bite registration
- opposing model or impression
- prescription with lab instructions

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ball abutment impression technique

6 Lab step - Seat the analogs

Insert the ball abutment analogs in the corresponding location in the impression.

7 Lab step - Fabricate the stone model

Fabricate a working model and articulate according to normal laboratory procedures.

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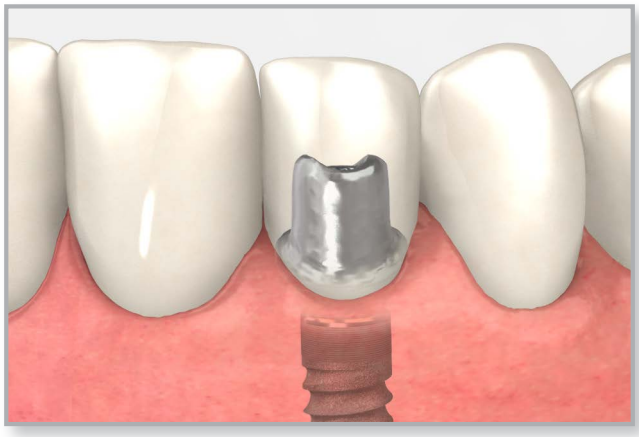
Use the abutment selection guide to determine what abutments are best suited for the desired final prosthesis. Simply determine if the case is a single-tooth, multiple-unit or overdenture restoration. Next, select the desired abutment based on cement-retained or screw-retained fixation. In the case of an overdenture prosthesis, select the abutment based on a bar or abutment-retained denture and a tissue-supported or implant-supported restoration.



abutment selection guide
for single unit restorations

temporary abutments					
Cement-retained			Screw-retained		
					
PEEK temp cylinder	titanium, hexed	easy Ti	PEEK plastic	titanium, hexed	easy Ti

Prosthetic Techniques

- cement-retained crown using a PEEK temporary abutment
- screw-retained crown using a PEEK temporary abutment
- screw-retained crown using the Laser-Lok Easy Ti abutment

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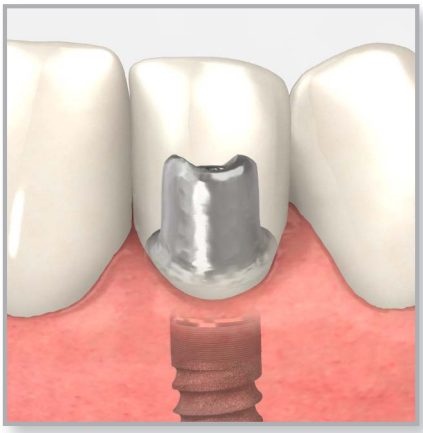
abutment selection guide
for single unit restorations



custom abutments

Cement-retained			Screw-retained
hybrid zirconia	full titanium	custom cast, hexed	custom cast, hexed

Prosthetic Techniques

- digital or traditional restorations with hybrid base abutments
- screw-retained single crowns using custom-cast abutments
- cement-retained single crowns using cementable abutments

stock cementable abutments

3inOne

narrow

angled

angled esthetic

straight esthetic

Prosthetic Techniques

- cement-retained single crowns using cementable abutments
- chairside modification of cement-retained abutments

Laser-Lok cementable abutments

angled esthetic

straight esthetic

Prosthetic Techniques

- handling of Laser-Lok® abutments
- cement-retained single crowns using cementable abutments

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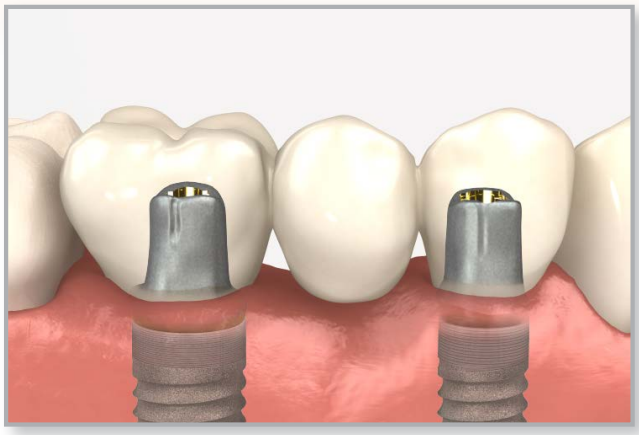

abutment selection guide
for bridge restorations

temporary abutments

Cement-retained			Screw-retained		
					
PEEK plastic	titanium, non-hexed	easy Ti	PEEK plastic	titanium, non-hexed	easy Ti

Prosthetic Techniques

- screw-retained bridge using titanium temporary abutments

custom abutments

Cement-retained			Screw-retained
			
hybrid zirconia	full titanium	custom cast, non-hexed	custom cast, non-hexed

Prosthetic Techniques

- screw-retained bridge using custom-cast abutments

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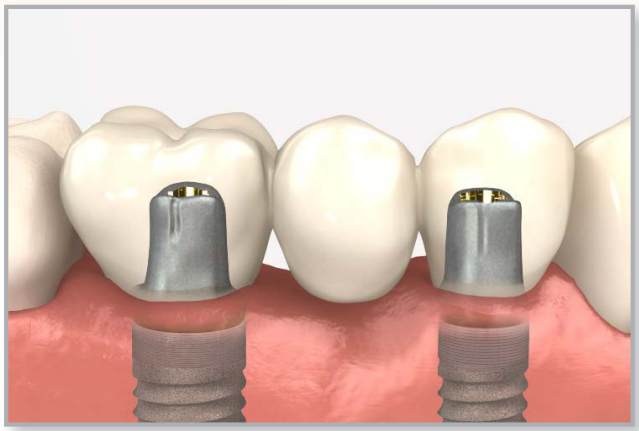

abutment selection guide
for bridge restorations

stock abutments

Cement-retained					Screw-retained
					
3inOne	narrow	angled	angled esthetic	straight esthetic	Multi-unit

Prosthetic Techniques

- cement-retained bridge using cementable abutments

Laser-Lok abutments

Cement-retained		Screw-retained
		
angled esthetic	straight esthetic	Multi-unit

Prosthetic Techniques

- handling of Laser-Lok® abutments
- cement-retained bridge using cementable abutments

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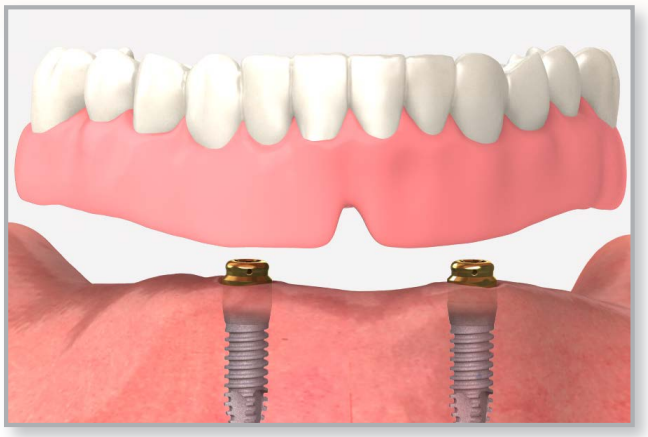
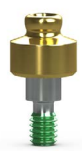
BIOHORIZONS®

abutment selection guide for overdenture or hybrid restorations



tissue-supported, abutment-retained restorations

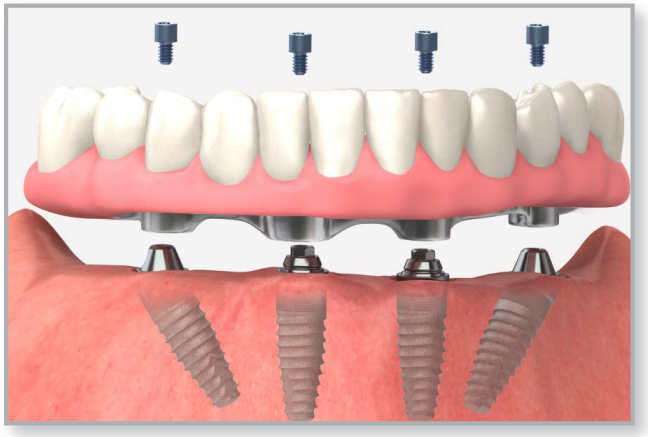

OD Secure


ball


Locator

Prosthetic Techniques

- OD Secure abutment overdenture: chairside pick-up using existing denture
- ball abutment overdenture: chairside pick-up using existing denture
- Locator abutment overdenture: chairside pick-up using existing denture



screw-retained bar or hybrid restoration abutments

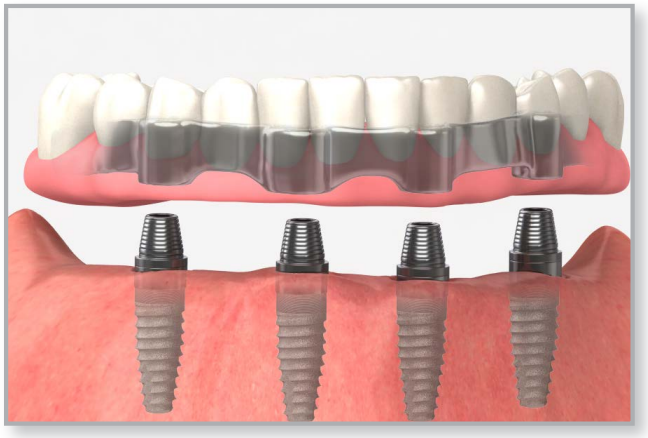

custom cast, non-hexed


Multi-unit angled


Multi-unit straight

Prosthetic Techniques

- Multi-unit abutment hybrid or fixed-detachable screw-retained restoration
- Multi-unit abutment bar overdenture



passive-fit, screw-retained, abutment-level bar abutments


Multi-unit straight


Multi-unit angled


passive fit coping

Prosthetic Techniques

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crown cementation technique

Many studies have shown excess cement left in the sulcus when cementing implant-supported crowns can cause peri-implant disease, possibly leading to bone loss and a compromised clinical outcome.

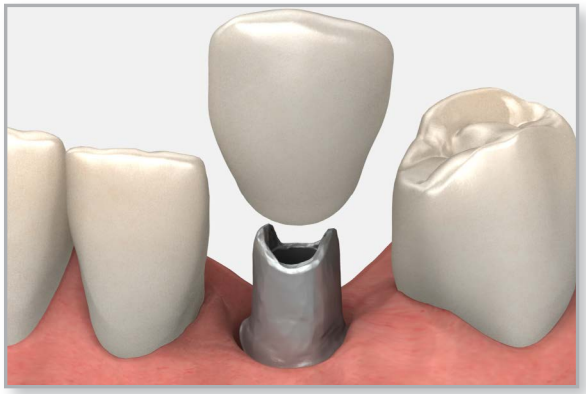
The technique described here includes several tips for reducing excess cement and can be used for both temporary and final restorations.

intraoral preparation for cementation

1 Try-in the crown

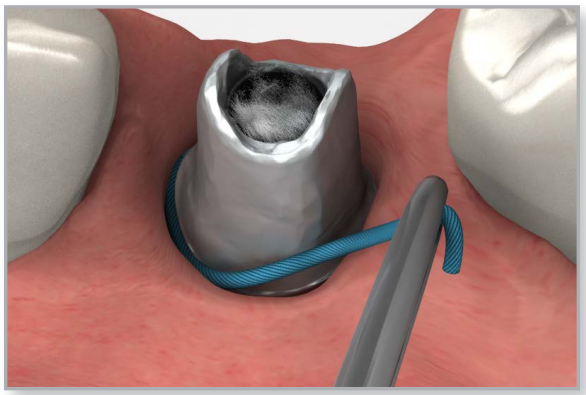
Seat the crown and/or bridge on the seated abutment(s) to confirm fit and contour.

Modify as necessary and polish after making adjustments.



2 Pack the retraction cord

Gently place an appropriate size non-impregnated retraction cord below the margin of the abutment(s). The retraction cord should minimize excess cement from entering into the sulcus during the cementation procedure.

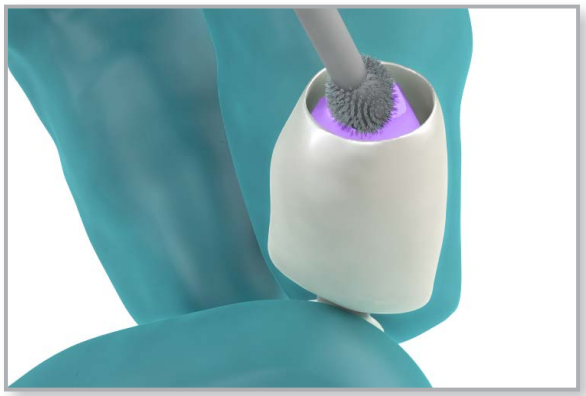


extraoral preparation for cementation

3 Fabricate a “copy” or “practice” abutment

Fill the inside of the crown with a fast setting vinyl polysiloxane material such as a bite registration paste. The shaft of a cotton swab, an explorer tip or a microbrush tip may be inserted into the crown/material to serve as a handle as the material sets.

Remove the “copy” or “practice” abutment from the crown and compare it to the original abutment.



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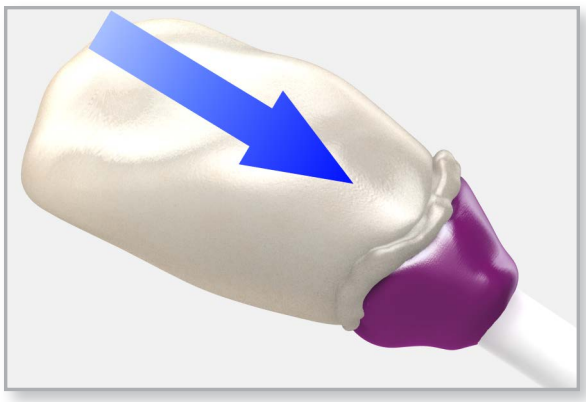
crown cementation technique

4 Fill the crown with cement

Fill the crown with cement and place the copy/practice abutment back into the crown, expressing the excess cement.

5 Remove the excess cement

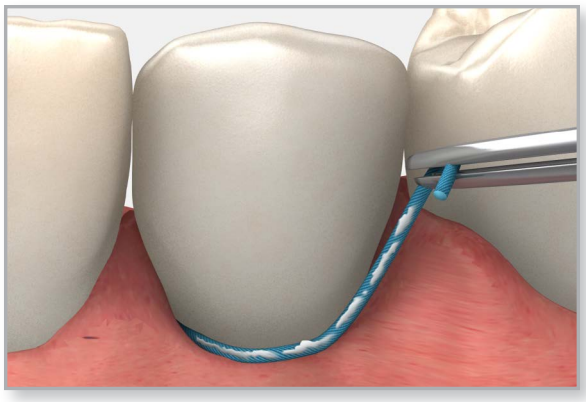
Remove the excess cement extruded from the crown.



6 Seat the crown

Proceed with cementing the crown intraorally. After the cement is set, remove the retraction cord and any remaining excess cement.

Modify as necessary and polish after making adjustments.



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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.

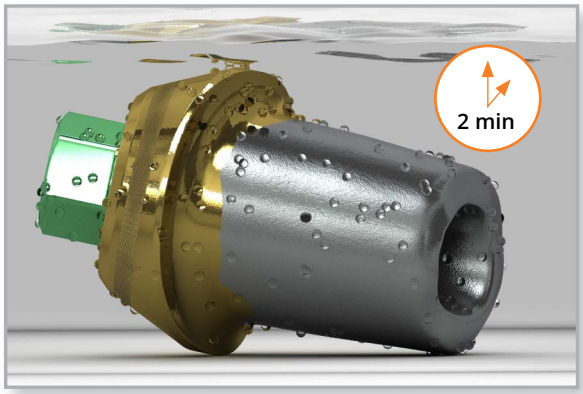
⚠ **Important:** For ideal results, Laser-Lok components should be used throughout the healing, temporization and final abutment phases. When a Laser- Lok component is temporarily removed for impression making or other restorative procedures, keep the removed Laser-Lok component in sterile saline until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

component options

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

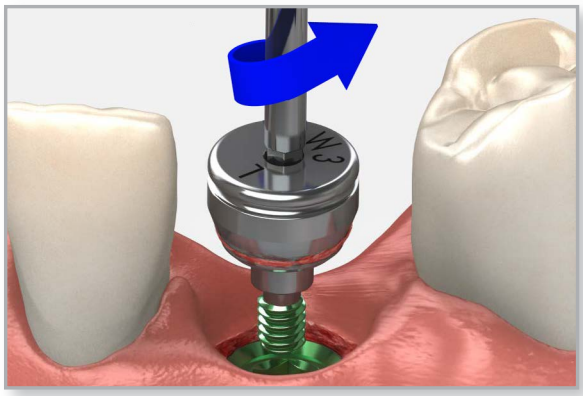
1 Prepare abutment

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

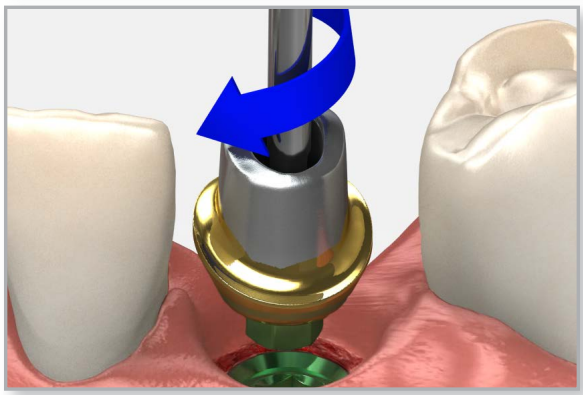
Remove the Laser-Lok healing abutment or Laser-Lok temporary with an .050" (1.25mm) hex driver. Make sure the prosthetic platform is free of bone and soft tissue.



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.



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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/or temporary abutments without Laser-Lok have been used.

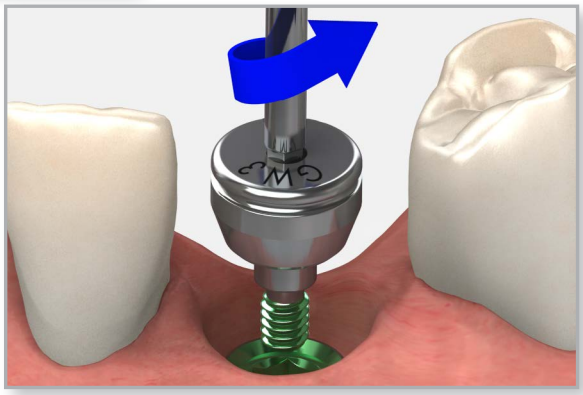
component options

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

1 Remove healing abutment

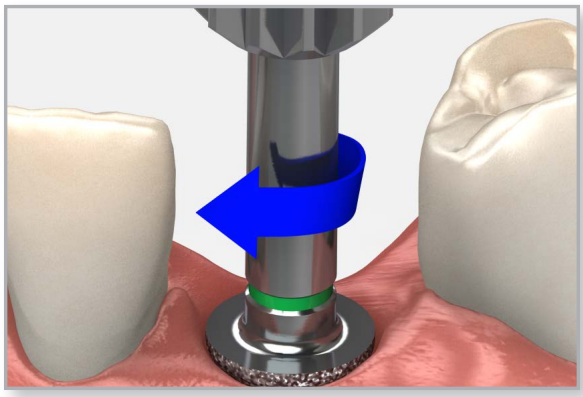
Remove the healing abutment or temporary prosthesis without Laser-Lok using an .050" (1.25mm) hex driver. Make sure the prosthetic platform is free of bone and soft tissue.

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



2 use a tissue groomer to abrade tissue

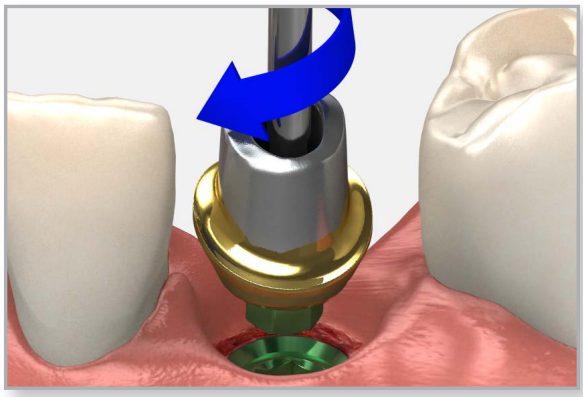
Fully seat the tissue groomer inside the implant hex to protect the connection. Turn the groomer by hand to lightly abrade the soft tissue just above the implant prosthetic platform. This will create some light bleeding, which is necessary for tissue to attach to the Laser-Lok surface.



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

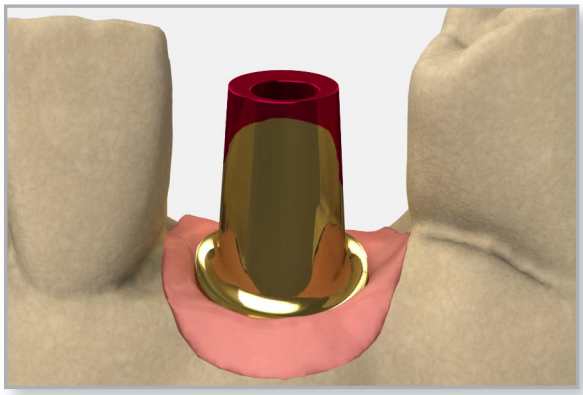
When Laser-Lok abutments require laboratory modification, it is important that care be taken to protect the Laser-Lok surface from laboratory contamination and damage. Following these steps will help ensure the surface maintains its ideal characteristics for soft tissue attachment.

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

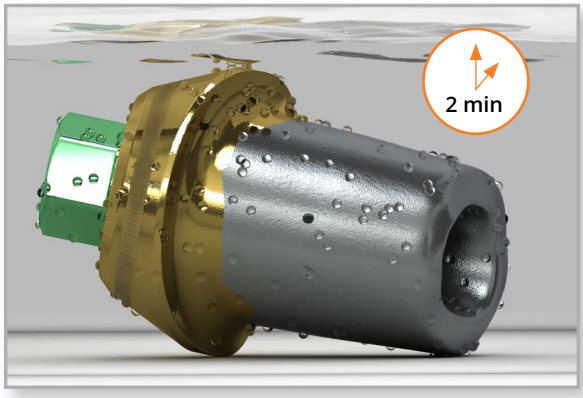
Place the marked abutment onto the end of the Laser-Lok protective sleeve that best covers the Laser-Lok zone and modify as per normal laboratory procedures. Proceed with normal laboratory procedures for crown fabrication. Refer to the cement-retained single crowns using cementable abutments module for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

Important:
The Laser-Lok microchannels begin at the base of the abutment and extend approximately 1mm 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

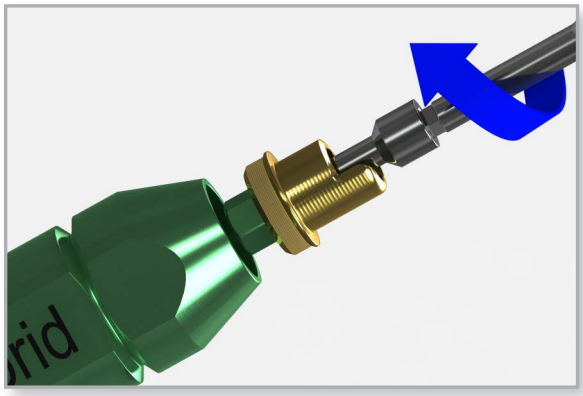
Use this technique when fabricating a custom zirconia coping for the Laser-Lok Ti base abutment. Normal laboratory procedures should be used to fabricate the custom zirconia coping.

component options

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

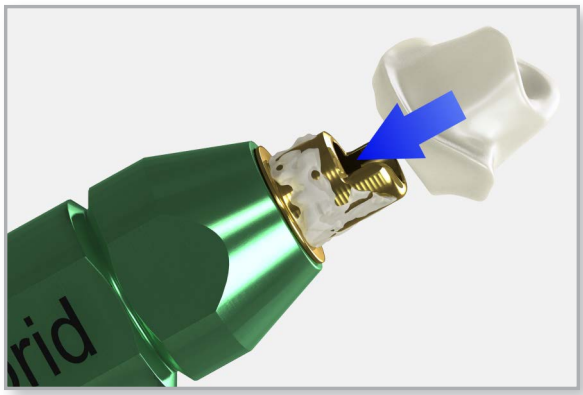
1 lab step – attach abutment to protective sleeve

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.

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laboratory handling of Laser-Lok Custom Ti abutments

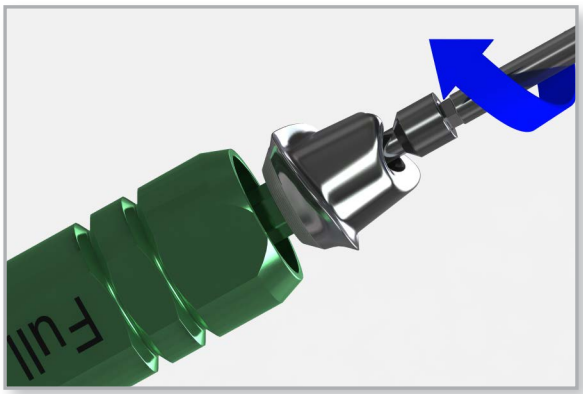
Use this technique when fabricating a custom abutment from the Laser-Lok Custom Ti abutment. Normal laboratory/milling center procedures should be used to fabricate the custom titanium abutment.

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 Gobbato, 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 Schupbach, 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. Iglhaut 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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custom (CAD/CAM) prosthetics overview

Digitally designed abutments for use with CAD/CAM Ti Blanks must be designed using appropriate design software (i.e. 3Shape, exocad) with appropriate library files installed. All digitally design files are to be sent to a BioHorizons validated milling center for manufacture.

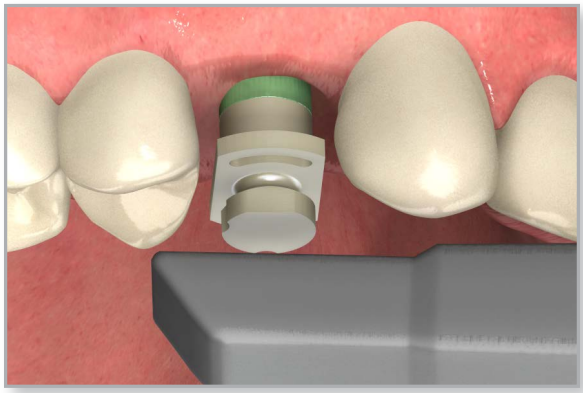
1 Digitize the impression

There are two primary ways to create a digital impression.

Option A - The first and most common method is to take an implant level impression, pour a stone model, place a scan body onto the implant analog and scan the model using a 3D tabletop digital scanner.

For implant level impressions, refer to the open tray technique using the direct pick-up coping module, the closed tray technique using the indirect transfer coping module and the closed tray pick-up technique using the snap coping module.

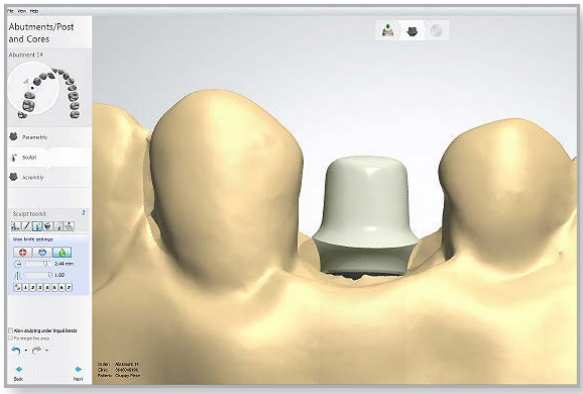
Option B - The second method is to take an intra-oral digital impression by placing a scan body into the implant and scan the scan body and surrounding dentition using a handheld 3D scanner. For digital impressions, refer to the digital or traditional impressions using the snap scan bodies module.



Important:
The scan body must be compatible with the scanner and have an associated abutment library in the design software.

2 Design the abutment

The file that is created during the digital impression is imported into the design software that will be used by the technician to design the custom abutment. Import the correct Ti Blank library for design. The crown may also be designed at this time depending on the desired workflow.



Note:
The restorative clinician should approve the design before milling the abutment or fabricating the crown.

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custom (CAD/CAM) prosthetics overview

There are five steps to creating and delivering a custom (CAD/CAM) abutment and final restoration.

3 Mill the abutment

Once the abutment design is confirmed and approved, the file is sent to a validated milling center. After the milling is complete, a technician will inspect the abutment to ensure that it matches the original design.

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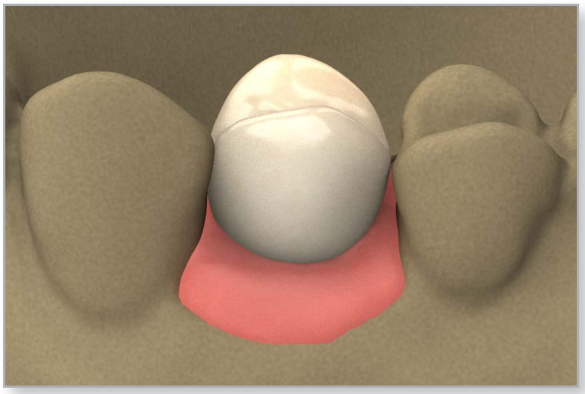
Email: info@vulcandental.com

The abutment and abutment screw are sent to the laboratory for fabrication of the final crown.

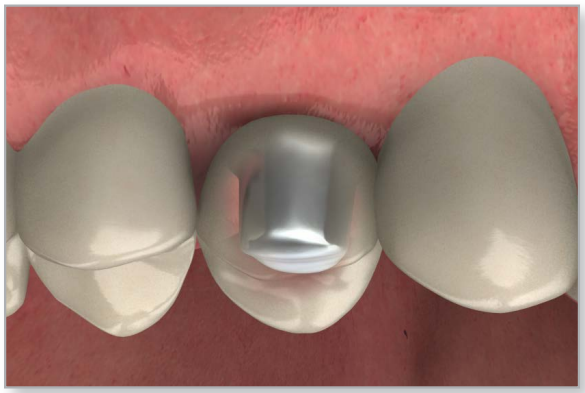
4 Fabricate the crown

The laboratory will use the custom abutment and stone model to complete the crown following routine laboratory procedures.



5 Deliver custom abutment and crown

The custom abutment and crown should be sanitized per standard clinical procedures. The abutment screw should be tightened to 30Ncm using an .050" (1.25mm) hex driver. The final crown should be cemented following the crown cementation technique module.

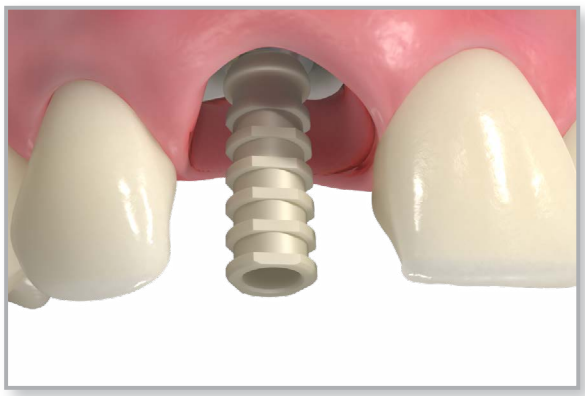


custom healing abutment using the iShell and PEEK temporary abutment

Use this technique for the fabrication of a screw-retained custom healing abutment. The iShell is designed for chair-side restorations that develop optimal soft tissue contouring and can be used when immediate load is indicated.

component options

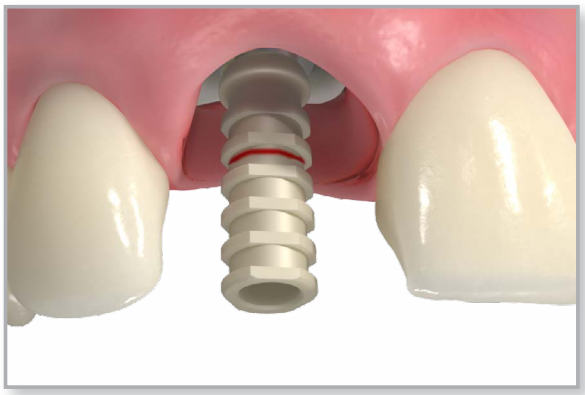
- iShell*
- PEEK temporary cylinder abutments
- .050" (1.25mm) hex driver
- iShell seating tool (optional)



1 Place the PEEK temporary cylinder abutment

Make sure the implant prosthetic platform is free of bone and soft tissue. Snap the PEEK temporary cylinder abutment onto the implant using downward pressure.

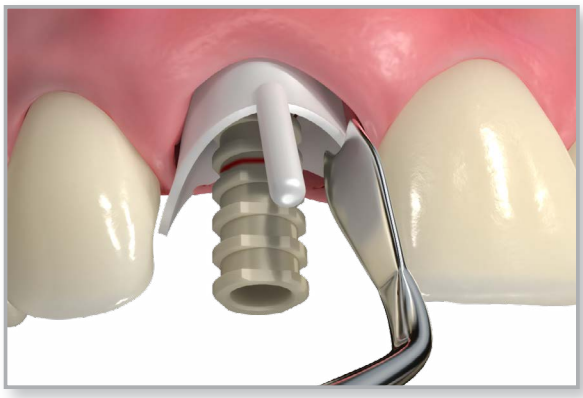
Note:
Snap feature creates a friction fit which will retain the abutment without the use of an abutment screw.



2 Mark the abutment

Evaluate inter-occlusal dimensions, angulation, and tissue contour. Mark the abutment for the required vertical reduction.

Important:
Maintain at least 3mm of abutment height to avoid damaging the abutment screw.



3 Seat the iShell

Use the iShell seating tool to seat the custom iShell completely into the sulcus around the PEEK abutment.

Note:
The iShell seating tool can be ordered directly from Benco. Item# **PPIS**

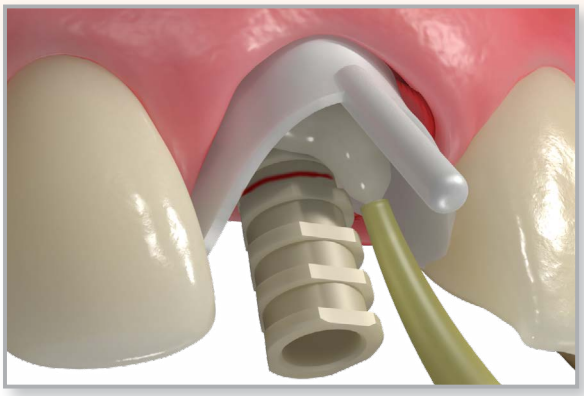
** iShell is available by prescription from Vulcan Custom Dental.*

customer care:
888.246.8338

custom healing abutment using the iShell and PEEK temporary abutment

4 Fill the iShell

Place composite, or another material of choice, inside the iShell and around the PEEK abutment.



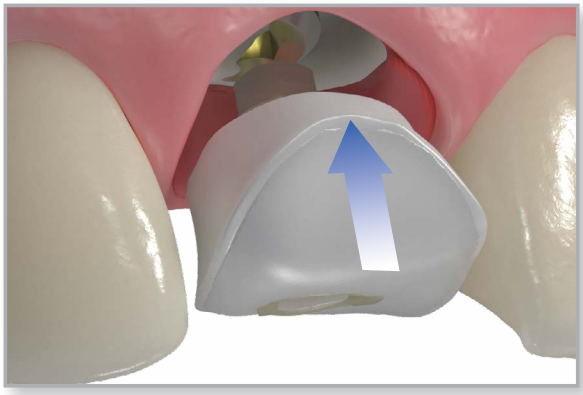
5 Remove and modify the assembly

After the material has set, remove the iShell and PEEK abutment assembly. Modify the assembly for vertical clearance and gingival margins using a carbide or acrylic bur. Add material to voids and smooth any sharp edges.

6 Re-seat the assembly

Make sure the implant prosthetic platform is free of bone and soft tissue. Irrigate the internal connection of the implant and dry. Try in the prosthesis to confirm fit and contour. Modify as necessary and polish after making adjustments. Re-seat the prosthesis onto the implant and tighten the abutment screw to 30 Ncm using a calibrated torque wrench and an .050" (1.25) hex driver.

Note:
Tightening the abutment screw to 30 Ncm is not recommended if the temporary is placed at the time of surgery.



7 Fill the screw access channel

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access channel. This allows for easy access to the abutment screw in the future. Fill the remainder of the channel using a composite resin material of choice. Take an x-ray for temporary prosthesis delivery records.

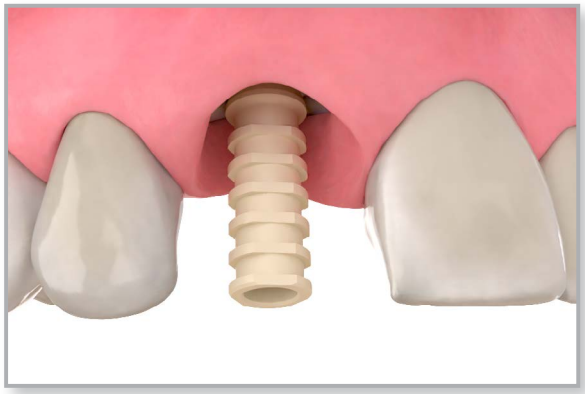
customer care:
888.246.8338

screw-retained crown using the PEEK temporary cylinder abutment

Use this technique for the fabrication of short term (30 days), screw-retained single or multiple unit temporary restorations. This abutment is designed for chair-side restorations for developing optimal soft tissue contour and can be used when immediate load is indicated.

component options

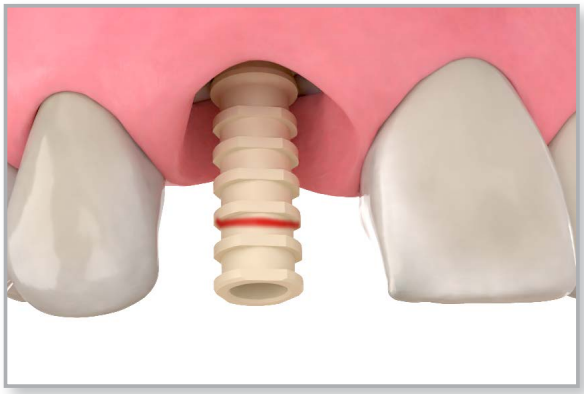
- PEEK temporary cylinder abutments
- .050" (1.25mm) hex driver
- torque wrench
- direct coping screws



1 Place the PEEK temporary cylinder abutment

Make sure the implant prosthetic platform is free of bone and soft tissue. Snap the PEEK temporary cylinder abutment onto the implant using downward pressure.

Note:
Snap feature creates a friction fit which will retain the abutment without the use of an abutment screw.



2 Mark the abutment

Evaluate inter-occlusal dimensions, angulation, and tissue contour. Mark the abutment for the required vertical reduction.

3 Modify the abutment

Remove the marked plastic abutment and place it on the abutment prepping handle using an .050" (1.25mm) hex driver and hand tighten. Modify the abutment for vertical clearance and gingival margins using a carbide or acrylic bur.

Important:
Maintain at least 3mm of abutment height to avoid damaging the abutment screw.

customer care:
888.246.8338

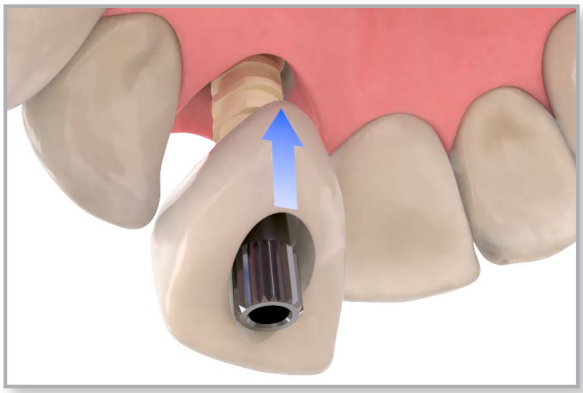
screw-retained crown using the PEEK temporary cylinder abutment

4 Try in the shell crown

Verify the implant prosthetic platform is free of bone and soft tissue. Irrigate the internally-threaded connection of the implant and dry. Snap the modified abutment onto the implant. Try in the appropriate poly-carbonate/shell crown and modify as needed.

5 Create an access hole

Place the direct coping screw. Finger tighten using the knurled top or hand tighten using an .050" (1.25mm) hex driver. Create a screw access hole through the shell crown allowing the direct coping screw to pass through.



6 Fill the shell crown

Mix acrylic or another material of choice and place inside the shell crown. Position the shell crown over the direct coping screw onto the modified plastic abutment.

Note:
Undercuts on adjacent teeth should be blocked-out prior to this reline procedure.

7 Remove and polish the crown

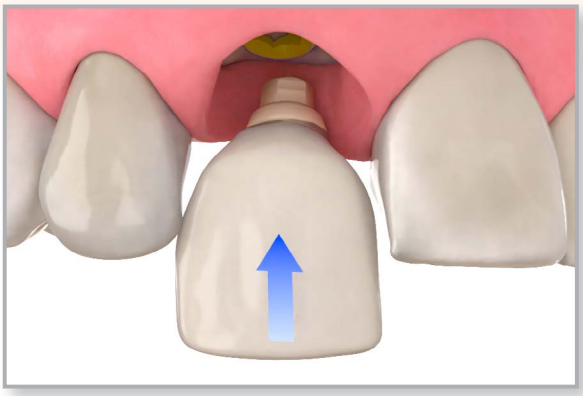
Remove the direct coping screw and the relined shell crown using an .050" (1.25mm) hex driver. Place the screw-retained temporary crown onto the abutment prepping handle using the abutment screw. Contour and polish the temporary crown.

customer care:
888.246.8338

screw-retained crown using the PEEK temporary cylinder abutment

8 Re-seat the crown

Make sure the implant prosthetic platform is free of bone and soft tissue. Irrigate the internal connection of the implant and dry. Try in the prosthesis to confirm fit and contour. Modify as necessary and polish after making adjustments. Re-seat the prosthesis onto the implant and hand tighten the abutment screw using an .050" (1.25mm) hex driver.



9 Check and modify the temporary

Check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making adjustments.

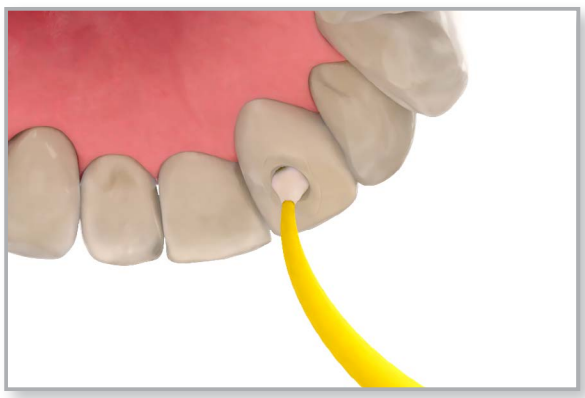
10 Tighten the abutment screw

Tighten the abutment screws to 30 Ncm using a calibrated torque wrench and an .050" (1.25) hex driver.

Note:
Tightening the abutment screw to 30 Ncm is not recommended if the temporary is placed at the time of surgery.

11 Fill the screw access channel

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access channel. This allows for easy access to the abutment screw in the future. Fill the remainder of the channel using a composite resin material of choice. Take an x-ray for temporary prosthesis delivery records.



customer care:
888.246.8338

screw-retained crown using the Laser-Lok Easy Ti abutment

Use this technique for the fabrication of long-term single or multi unit, screw-retained, temporary restorations. The abutment has Laser-Lok microchannels for connective tissue attachment and is TiN coated for esthetics.

Laser-Lok has been shown to create a biologic seal by establishing a physical, connective tissue attachment to the abutment. Use this technique at the time of implant placement, implant uncovery or when a Laser-Lok healing abutment has been used to establish and maintain the biologic seal.

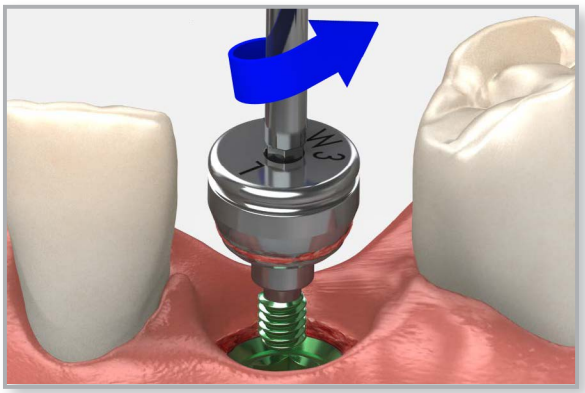
Important:
For ideal results, Laser-Lok components should be used throughout the healing, temporization and final abutment phases. When a Laser-Lok component is temporarily removed for impression making or other restorative procedures, keep the removed Laser-Lok component in sterile saline until reinserting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

component options

- Laser-Lok Easy Ti abutments
- .050" (1.25mm) hex driver
- torque wrench
- Laser-Lok protective sleeve
- direct coping screws

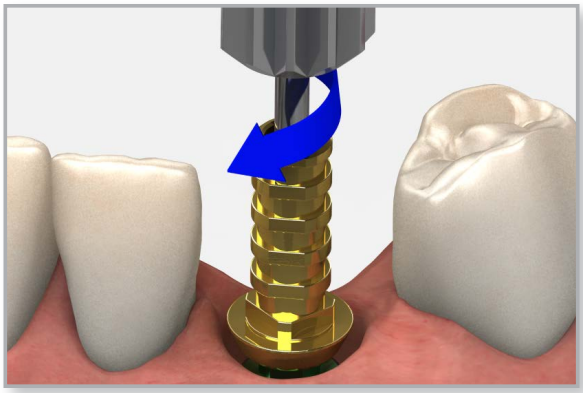
1 Remove the Laser-Lok healing abutment

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



2 Seat the Easy Ti abutment

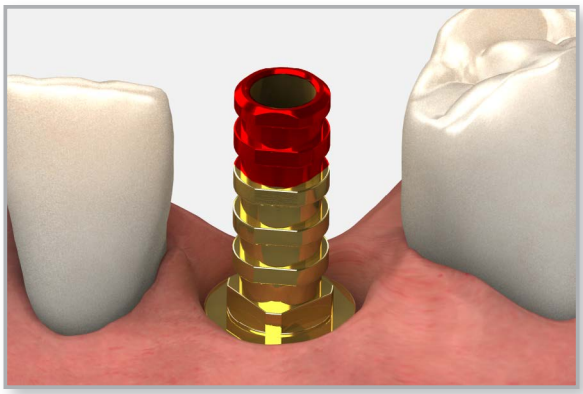
Seat the Easy Ti abutment, engaging the hex of the implant. Hand tighten the abutment screw using an .050" (1.25mm) hex driver.



3 Mark the abutment

Evaluate inter-occlusal dimensions, angulation, and tissue contour. Mark the abutment for the required vertical reduction.

Important:
Maintain at least 3mm of abutment height to avoid damaging the abutment screw.

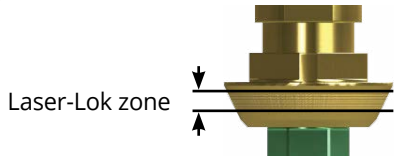


customer care:
888.246.8338

screw-retained crown using the Laser-Lok Easy Ti abutment

4 Modify the abutment

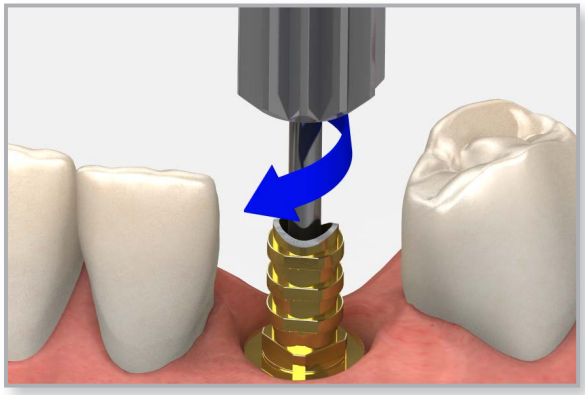
Remove the marked Easy Ti abutment and secure it to the end of the Laser-Lok protective sleeve marked "Full Ti" using an .050" (1.25mm) hex driver and hand tighten. Modify the abutment for vertical clearance using a carbide bur or a cut-off disk. Do not modify the margin where the Laser-Lok zone is located.



Note:
Replace the healing abutment immediately to prevent soft tissue collapse over the implant.

5 Seat the modified Easy Ti abutment

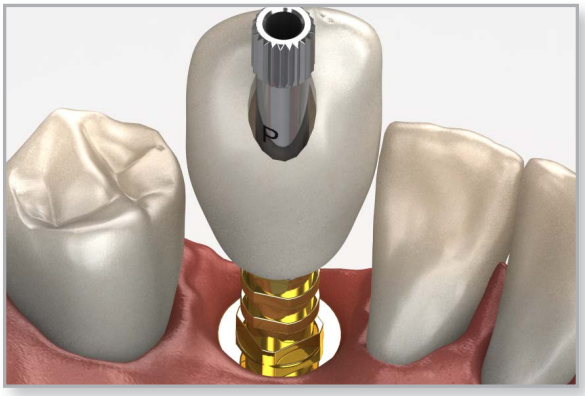
Remove the healing abutment. Verify the implant prosthetic platform is free of bone and soft tissue. Place the modified Easy Ti abutment onto the implant using the abutment screw and an .050" (1.25mm) hex driver. Hand tighten.



6 Try in shell crown and create access hole

Try in the appropriate poly-carbonate/shell crown and modify as needed. Remove the abutment screw using an .050" (1.25mm) hex driver and replace it with the direct coping screw. Finger tighten the screw using the knurled top or hand tighten using an .050" (1.25mm) hex driver. Create a screw-access hole through the shell crown allowing the direct coping screw to pass through.

Important:
Gently place an appropriate size non-impregnated retraction cord at the margin of the abutment to minimize the risk of contaminating the Laser-Lok zone with acrylic during the next step of the temporization process.

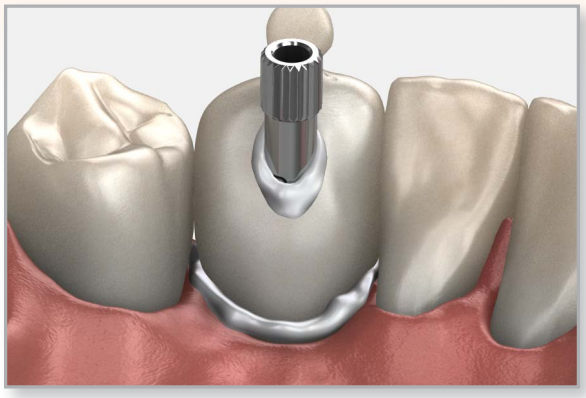


screw-retained crown using the Laser-Lok Easy Ti abutment

7 Fill the shell crown

Mix acrylic or another material of choice and place inside the shell crown. Position the shell crown over the direct coping screw onto the modified Laser-Lok Easy Ti abutment.

Note:
Undercuts on adjacent teeth should be blocked out prior to this reline procedure.



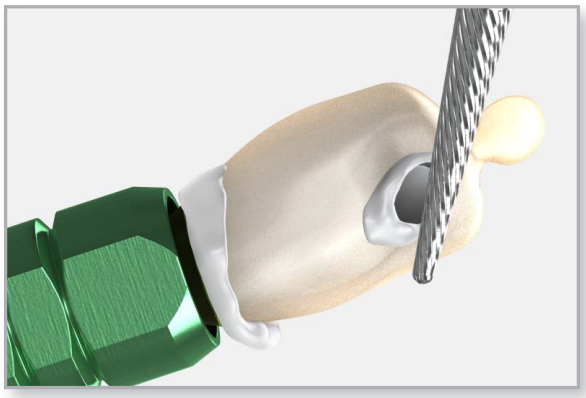
8 Remove and polish the crown

Remove the direct coping screw and the relined shell crown/abutment using an .050" (1.25mm) hex driver. Remove the retraction cord.

Place the screw-retained temporary crown onto the Laser-Lok protective sleeve using the abutment screw. Fill in any voids, contour, and polish the crown.

Note:
Replace the healing abutment immediately to prevent soft tissue collapse over the implant.

Important:
Laser-Lok abutments must be ultrasonically cleaned after they have been modified in order to remove particulate from the Laser-Lok zone.

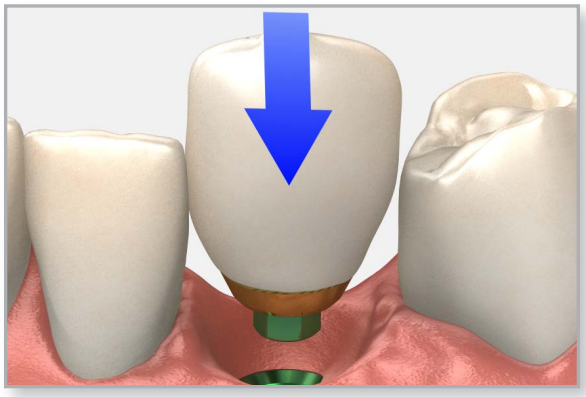


9 Deliver the temporary crown

Remove the healing abutment. Make sure the implant prosthetic platform is free of bone and soft tissue. Irrigate the internal connection of the implant and dry. Try in the prosthesis to confirm fit and contour. Modify as necessary and polish after making adjustments.

Re-seat the crown onto the implant and hand tighten the abutment screw using an .050" (1.25mm) hex diver.

Note:
Take a radiograph along the long axis of the implant to ensure the abutment is seated completely onto the implant.



screw-retained crown using the Laser-Lok Easy Ti abutment

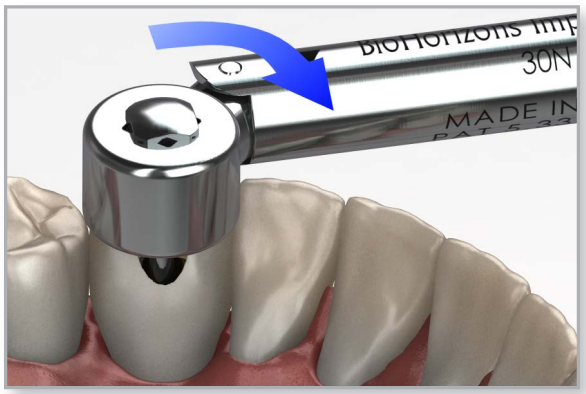
10 Check and modify occlusion

Check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making any adjustments.

11 Tighten the abutment screw

Tighten the abutment screw to 30Ncm using a calibrated torque wrench and an .050" (1.25mm) hex driver.

Note:
Tightening the abutment screw to 30 Ncm is not recommended if the temporary is placed at the time of surgery.



12 Fill the screw access channel

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access channel. This allows for easy access to the abutment screw in the future. Fill the remainder of the channel using a composite resin material of choice.

Take an x-ray for temporary prosthesis delivery records.

customer care:
888.246.8338

cement-retained crown using the Laser-Lok Easy Ti abutment and PEEK plastic sleeves

Use this technique for the fabrication of long-term, single-implant, cement-retained, temporary restorations. The abutment has Laser-Lok microchannels for connective tissue attachment and is TiN coated for esthetics.
Laser-Lok has been shown to create a biologic seal by establishing a physical, connective tissue attachment to the abutment. Use this technique at the time of implant placement, implant uncovery or when a Laser-Lok healing abutment has been used to establish and maintain the biologic seal.

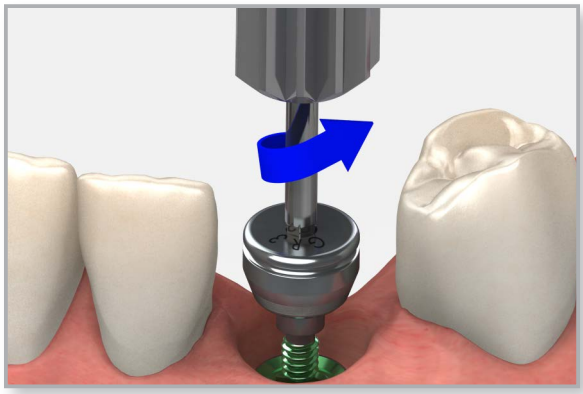
⚠ **Important:** For ideal results, Laser-Lok components should be used throughout the healing, temporization and final abutment phases. When a Laser- Lok component is temporarily removed for impression making or other restorative procedures, keep the removed Laser-Lok component in sterile saline until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

component options

- Laser-Lok easy Ti abutment
- Easy Ti PEEK plastic sleeves
- .050" (1.25mm) hex driver
- torque wrench
- abutment prepping handle

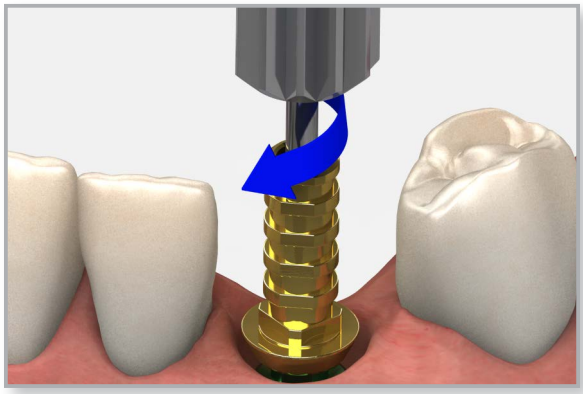
1 Remove the Laser-Lok healing abutment

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



2 Seat the Easy Ti abutment

Seat the Easy Ti abutment, engaging the hex of the implant. Hand tighten the abutment screw using an .050" (1.25mm) hex driver.



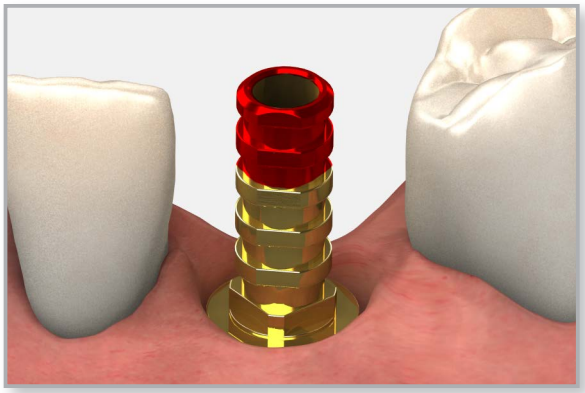
customer care:
888.246.8338

cement-retained crown using the Laser-Lok Easy Ti abutment and PEEK plastic sleeves

3 Mark the abutment

Evaluate inter-occlusal dimensions, angulation, and tissue contour. Mark the abutment for the required vertical reduction and allow about 2mm of clearance for the restoration.

Important:
Maintain at least 3mm of abutment height to avoid damaging the abutment screw.



4 Modify the abutment

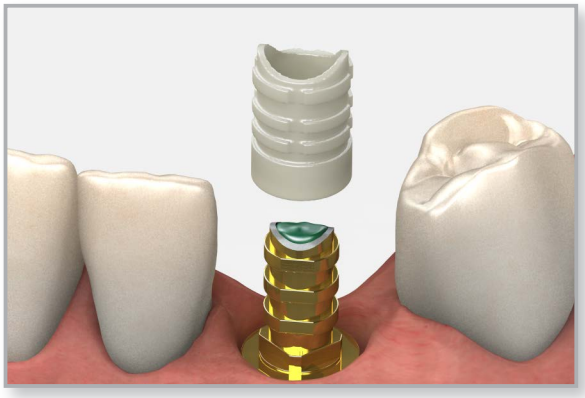
Remove the marked Easy Ti abutment and secure it to the end of the Laser-Lok protective sleeve marked "Full Ti" using an .050" (1.25mm) hex driver and hand tighten. Modify the abutment for vertical clearance using a carbide bur or a cut-off disk. Do not modify the margin where the Laser-Lok zone is located.

Note:
Replace the healing abutment immediately to prevent soft tissue collapse over the implant.

Remove the healing abutment. Verify the implant prosthetic platform is free of bone and soft tissue. Place the modified Easy Ti abutment onto the implant using the abutment screw and tighten the abutment to 30 Ncm using a calibrated torque wrench and an .050" (1.25mm) hex driver.

5 Modify the PEEK sleeve

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access hole and fill the remaining channel with composite or another material of choice. This allows for easy access to the abutment screw in the future.



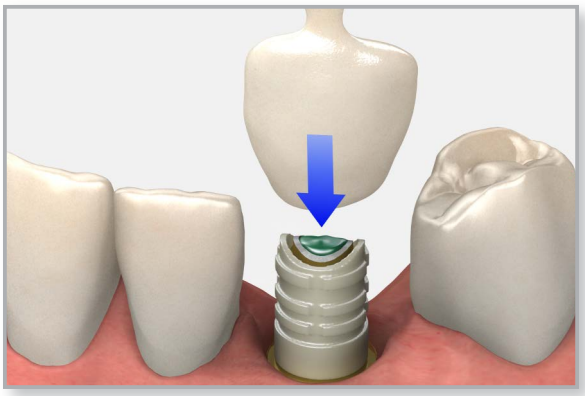
Place the Easy Ti PEEK plastic sleeve over the modified Ti abutment. Contour the plastic sleeve to match the modified Ti abutment.

cement-retained crown using the Laser-Lok Easy Ti abutment and PEEK plastic sleeves

6 Prepare the shell crown

Seat the appropriate polycarbonate/shell crown and modify as needed following conventional procedures.

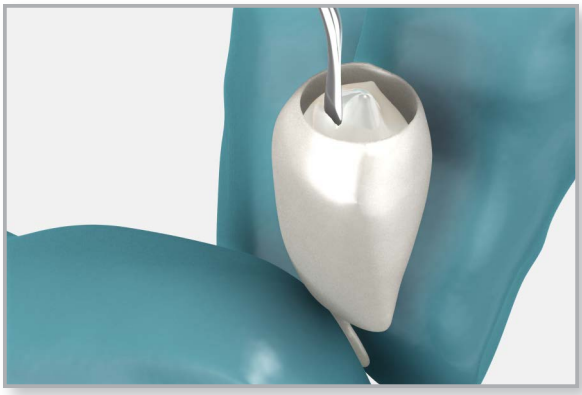
Helpful Hint:
Block-out any undercuts on the adjacent teeth as necessary to prevent locking the temporary in place.



7 Reline the shell crown

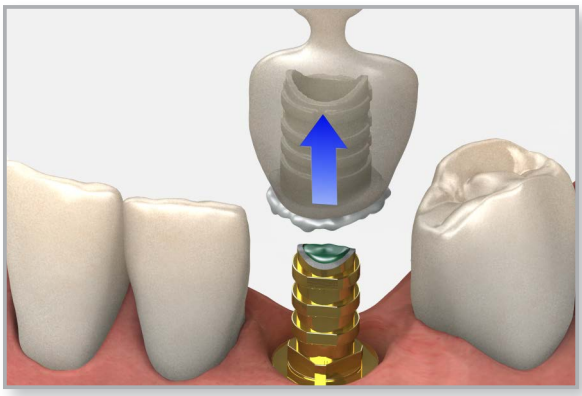
Mix acrylic or a material of choice and place enough material inside the shell crown to cover the plastic sleeve and ensure the sleeve will be picked up. Position the shell crown over the PEEK sleeve/abutment assembly.

Note:
Care must be taken to minimize the amount of reline material placed in the shell crown to prevent the acrylic/crown from locking onto the abutment base and to reduce the risk of acrylic contaminating the Laser-Lok zone of the abutment.



8 Remove the shell crown

Remove the relined shell crown. The plastic sleeve should be picked up in this step. Fill in any voids and add material to establish the desired emergence contour of the temporary. Check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making adjustments.



cement-retained crown using the Laser-Lok Easy Ti abutment and PEEK plastic sleeves

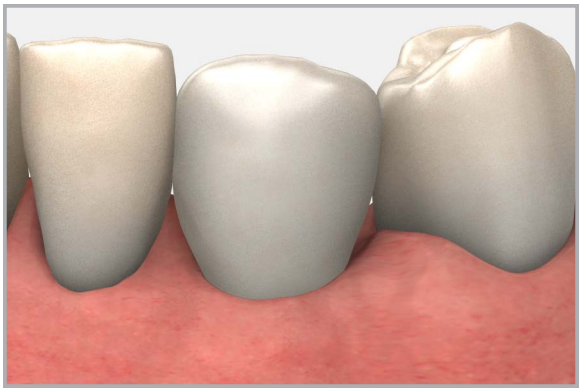
9 Cement the crown

Place a small amount of cement around the inside margin of the crown.

Important:
See crown cementation technique module.

10 Deliver the temporary crown

Seat the temporary crown on the abutment, engaging the square at the base of the abutment. Remove all excess cement from the sulcus. Modify as necessary and polish after making adjustments.



customer care:
888.246.8338

cement-retained crown using a PEEK temporary abutment

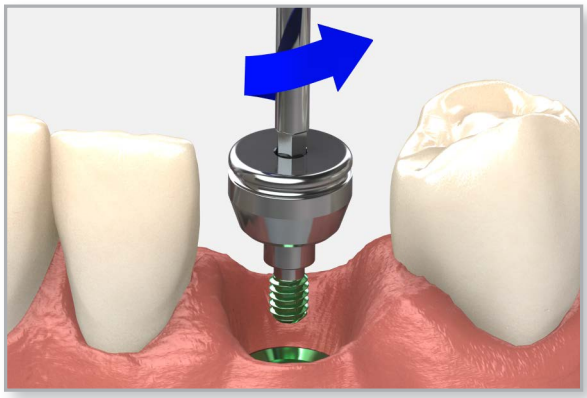
Use this technique for the fabrication of short term (30 days), cement-retained single or multi unit temporary restorations. Temporaries may be used at the time of surgery, uncovery, or following an implant-level impression.

component options

- PEEK temporary abutment
- .050" (1.25mm) hex driver
- torque wrench
- abutment prepping handle

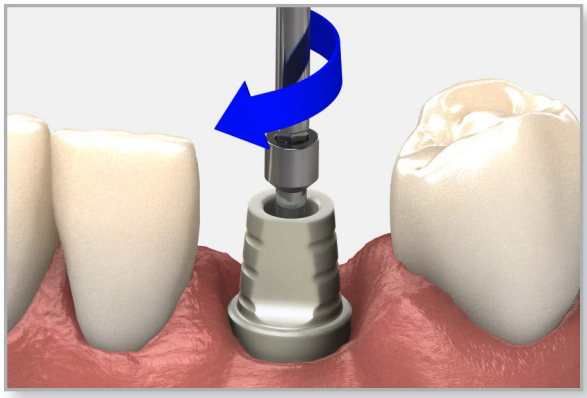
1 Remove the healing abutment

Remove the healing abutment using an .050" (1.25mm) hex driver. Make sure the prosthetic platform is free of bone and soft tissue.



2 Seat the PEEK abutment

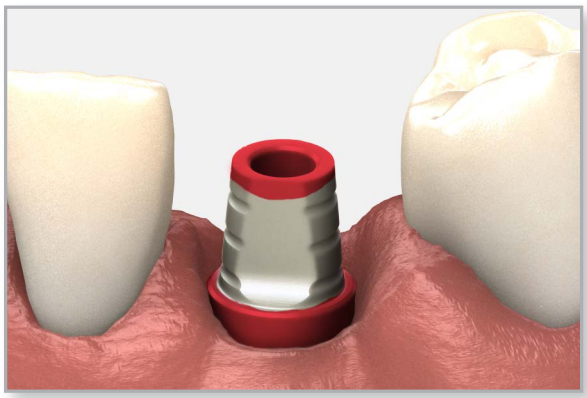
Seat the plastic temporary abutment, engaging the hex of the implant. Hand tighten the abutment screw using an .050" (1.25mm) hex driver.



3 Mark the abutment

Evaluate inter-occlusal dimensions, angulation, and tissue contour. Mark the abutment for the required vertical reduction and gingival contour.

Important:
Maintain at least 3mm of abutment height to avoid damaging the abutment screw.



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cement-retained crown using a PEEK temporary abutment

4 Modify the abutment

Remove the marked plastic abutment from the model and place it on the abutment prepping handle using an .050" (1.25mm) hex driver and hand tighten. Modify the abutment for vertical clearance and gingival margins using a carbide or acrylic bur.

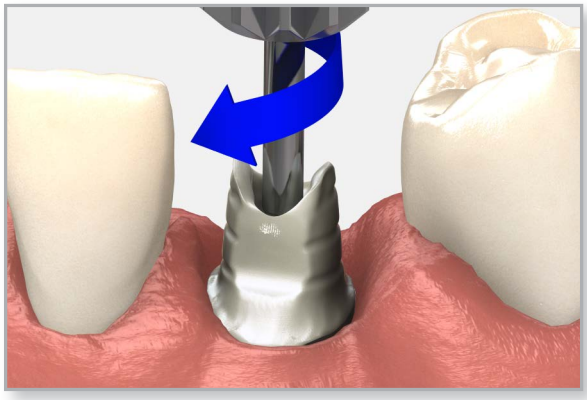
Note:
Replace the healing abutment immediately to prevent soft tissue collapse over the implant.

5 Seat the modified plastic abutment

Verify the implant prosthetic platform is free of bone and soft tissue. Irrigate the internally-threaded connection of the implant and dry. Place the modified plastic abutment and abutment screw onto the implant using an .050" (1.25mm) hex driver and hand tighten.

Take a radiograph along the long axis of the implant to ensure the abutment is seated completely onto the implant.

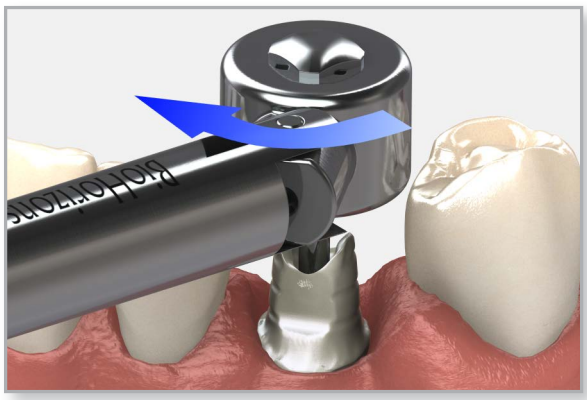
Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.



6 Tighten the abutment screw

Tighten the abutment screws to 30 Ncm using a calibrated torque wrench and an .050" (1.25) hex driver. Apply counter-torque by grasping the abutment using an abutment clamp.

Note:
Tightening the abutment screw to 30 Ncm is not recommended if the temporary is placed at the time of surgery.

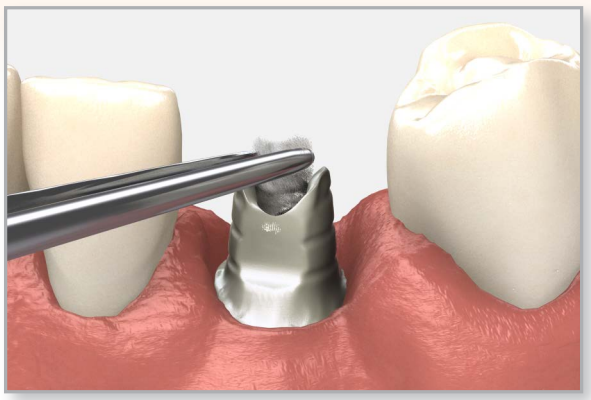


cement-retained crown using a PEEK temporary abutment

7 Block the screw access hole

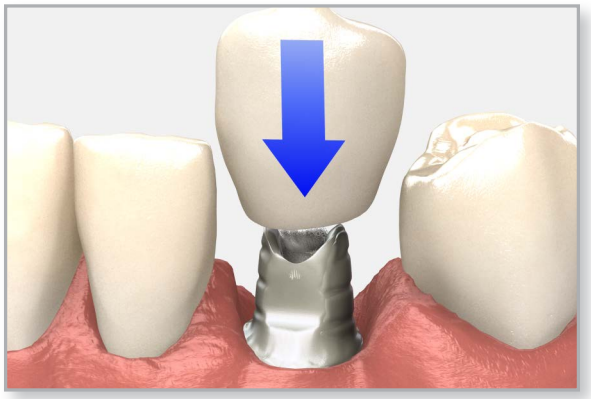
Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access hole and fill the remaining channel with composite or another material of choice. This allows for easy access to the abutment screw in the future.

Apply a separating solution onto the plastic abutment in preparation for fabricating the temporary crown.



8 Try-in the shell crown

Try-in the appropriate poly-carbonate/shell crown and modify as needed following conventional procedures.



9 Fill the shell crown

Mix acrylic or another material of choice, place inside the shell crown and position the crown over the plastic abutment. Withdraw the relined shell crown and remove the excess acrylic and polish. Try in the temporary crown to confirm fit and contour. Modify as necessary and polish after making adjustments.

cement-retained crown using a PEEK temporary abutment

10 Deliver the temporary

Clean the separating solution from the prepared plastic abutment. Place the temporary restoration onto the abutment prior to cementation. Check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making adjustments.

Important:
Cement the crown following the crown cementation technique module.

Take an x-ray for temporary prosthesis delivery records.

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screw-retained crown using a PEEK temporary abutment

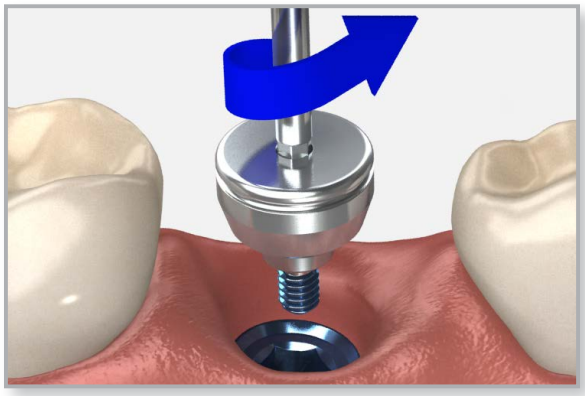
Use this technique for the fabrication of short term (30 days), screw-retained single or multi unit temporary restorations. Temporaries may be used at the time of surgery, uncovery, or following an implant-level impression.

component options

- PEEK temporary abutment
- .050" (1.25mm) hex driver
- torque wrench
- abutment prepping handle
- direct coping screw

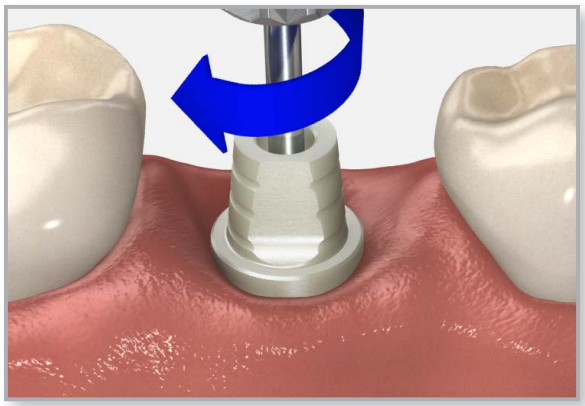
1 Remove the healing abutment

Remove the healing abutment using an .050" (1.25mm) hex driver. Make sure the prosthetic platform is free of bone and soft tissue.



2 Seat the PEEK abutment

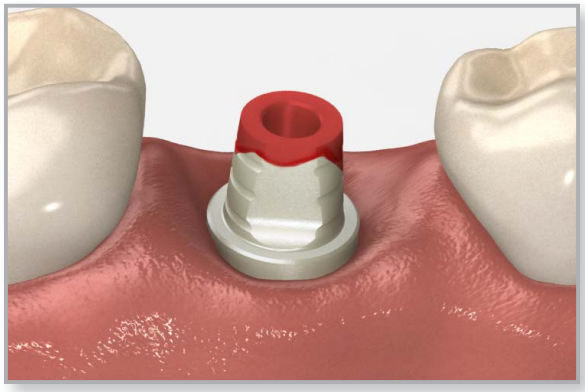
Seat the plastic temporary abutment, engaging the hex of the implant. Hand tighten the abutment screw using an .050" (1.25mm) hex driver.



3 Mark the abutment

Evaluate inter-occlusal dimensions, angulation, and tissue contour. Mark the abutment for the required vertical reduction and gingival contour.

Important:
Maintain at least 3mm of the abutment height to avoid damaging the abutment screw.



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screw-retained crown using a PEEK temporary abutment

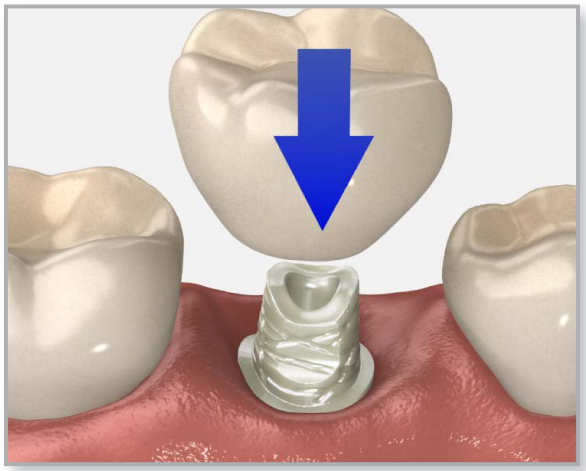
4 Modify the abutment

Remove the marked plastic abutment from the model and place it on the abutment prepping handle using an .050" (1.25mm) hex driver and hand tighten. Modify the abutment for vertical clearance and gingival margins using a carbide or acrylic bur.

Note:
Replace the healing abutment immediately to prevent soft tissue collapse over the implant.

5 Create undercuts

Add undercuts to the surface of the modified abutment for mechanical retention of the acrylic.

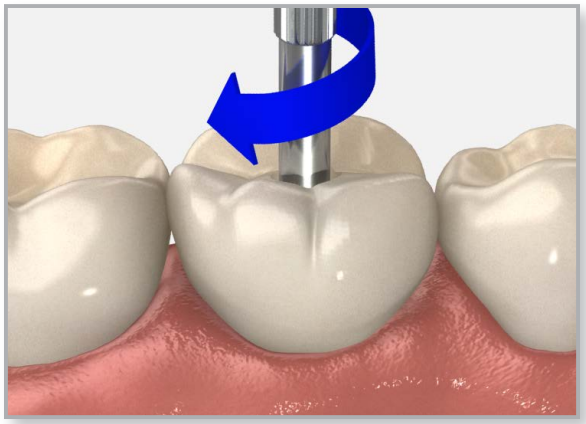


6 Try in the shell crown

Verify the implant prosthetic platform is free of bone and soft tissue. Irrigate the internally-threaded connection of the implant and dry. Place the modified abutment onto the implant using the abutment screw and an .050" (1.25mm) hex driver. Hand tighten. Try in the appropriate poly-carbonate/shell crown and modify as needed.

7 Create an access hole

Remove the abutment screw from the modified plastic abutment and replace it with the direct coping screw using an .050" (1.25mm) hex driver. Create a screw-access hole through the shell crown allowing the direct coping screw to come through. Finger tighten using the knurled top or hand tighten using an .050" (1.25mm) hex driver.



screw-retained crown using a PEEK temporary abutment

8 Fill the shell crown

Mix acrylic or another material of choice and place inside the shell crown. Position the shell crown over the direct coping screw onto the modified plastic abutment.

Note:
Undercuts on adjacent teeth should be blocked-out prior to this reline procedure.

9 Remove and polish the crown

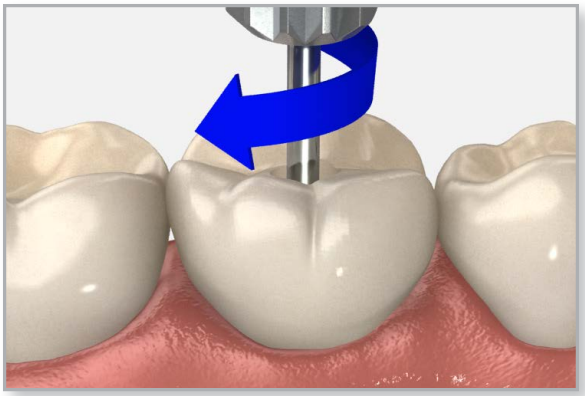
Remove the direct coping screw and the relined shell crown using an .050" (1.25mm) hex driver. Place the screw-retained temporary crown onto the abutment prepping handle using the abutment screw.
Contour and polish the temporary crown.

10 Re-seat the crown

Make sure the implant prosthetic platform is free of bone and soft tissue. Irrigate the internal connection of the implant and dry. Try in the prosthesis to confirm fit and contour. Modify as necessary and polish after making adjustments.

Re-seat the prosthesis onto the implant and hand tighten the abutment screw using an .050" (1.25mm) hex driver.

Note:
Take a radiograph along the long axis of the implant to ensure the abutment is seated completely onto the implant.



screw-retained crown using a PEEK temporary abutment

11 Check and modify the temporary

Check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making adjustments.

12 Tighten the abutment screw

Tighten the abutment screws to 30 Ncm using a calibrated torque wrench and an .050" (1.25) hex driver.

Note:
Tightening the abutment screw to 30 Ncm is not recommended if the temporary is placed at the time of surgery.

13 Fill the screw access channel

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access channel. This allows for easy access to the abutment screw in the future. Fill the remainder of the channel using a composite resin material of choice.

Take an x-ray for temporary prosthesis delivery records.

screw-retained bridge using titanium temporary abutments

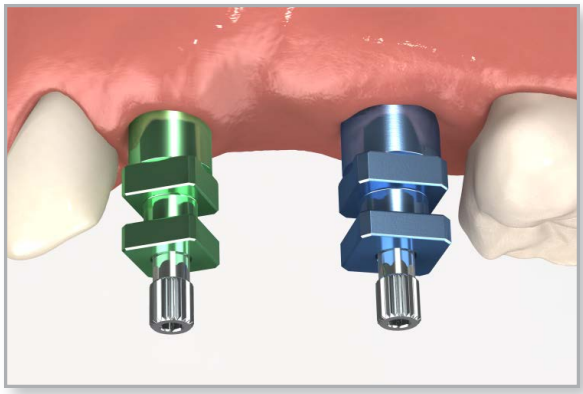
Use titanium temporary abutments for the fabrication of screw-retained, single or multi-unit temporary restorations. Titanium temporary abutments may be used at the time of surgery, uncovery, or following an implant-level impression. These abutments may also be utilized for fabricating provisional hybrid restorations.

component options

- titanium temporary abutments, hexed or non-hexed
- .050" (1.25mm) hex driver
- torque wrench
- abutment prepping handle
- direct coping screws

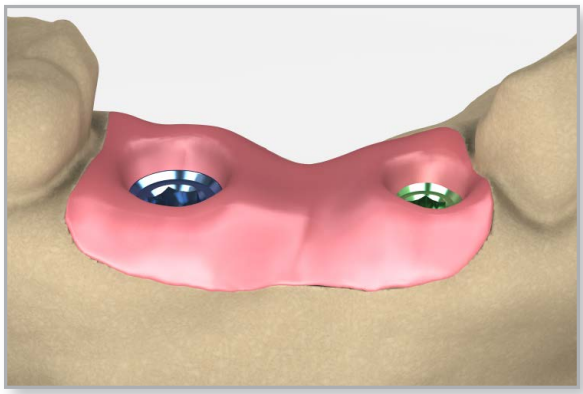
1 Make an implant-level impression

Remove the healing abutments and follow the steps for creating an implant-level impression using either the open tray technique using the direct pick-up coping module or the closed tray technique using the indirect transfer coping module.



2 Lab step - Pour the working model

Fabricate a working model following conventional laboratory procedures. A soft tissue model is recommended whenever the margins are subgingival. Follow the steps for creating an implant-level stone model (non-hexed) using either the open tray technique using the direct pick-up coping module or the closed tray technique using the indirect transfer coping module.



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screw-retained bridge using titanium temporary abutments

3A Lab step - Option A - Set the denture teeth

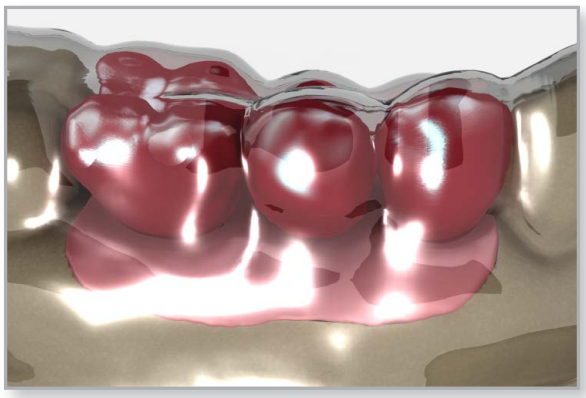
Set the denture teeth on the master model where the multiple-unit, screw-retained, temporary prosthesis will be fabricated.

3B Lab step - Option B - Create a wax buildup

Use wax to build up and design the contours for the multiple-unit, screw-retained, temporary prosthesis.

4 Lab step - Create a template

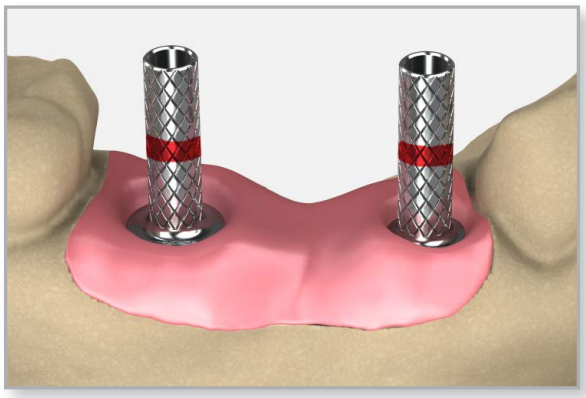
Make a vacuum-formed template, according to the manufacturer's instructions, over the denture teeth or waxed prosthesis and adjacent teeth.



5 Lab step - Select and mark the abutments

Seat the selected titanium temporary abutments (non-hexed for multiple units) onto the implant analogs in the working model. Hand tighten the abutment screws using an .050" (1.25mm) hex driver.

Determine the modifications needed to provide adequate room for the fabrication of the temporary bridge. Mark the abutments for the required vertical reduction.



screw-retained bridge using titanium temporary abutments

6 Lab step - Modify the abutments

Modify the titanium temporary abutments using carbide burs, cut-off disks, or heatless stone wheels. Modify the height leaving the sleeve 1-2mm out of occlusion.

Important:
Maintain at least 3mm of abutment height to avoid damaging the abutment screw.

Helpful Hint:
The modified abutments may be "splinted" together with orthodontic wire or another material of choice to increase the strength of the temporary and to support the pontics.

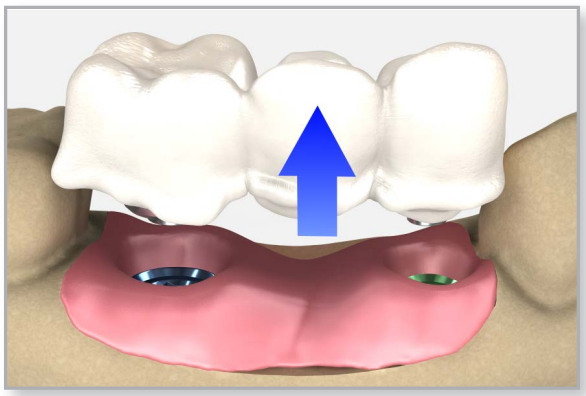
7 Lab step - Make the temporary

Modify the template by making holes in the occlusal surface for the direct coping screws in the same positions as the implants.

Mix a material of choice and flow the material onto the modified titanium temporary abutments and inside the template to form the temporary bridge.

8 Lab step - Remove from the model

Remove the direct coping screws and the template from the working model using an .050" (1.25mm) hex driver. Remove the temporary bridge from the template and fill in any voids around the subgingival area and/or the abutments.



screw-retained bridge using titanium temporary abutments

9 Lab step - Finish and polish the temporary

Remove any excess material, and contour and polish the temporary prosthesis. Place the bridge back onto the working model. Hand tighten using the abutment screws and an .050" (1.25mm) hex driver.

Adjust the temporary bridge as needed. Check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making adjustments.

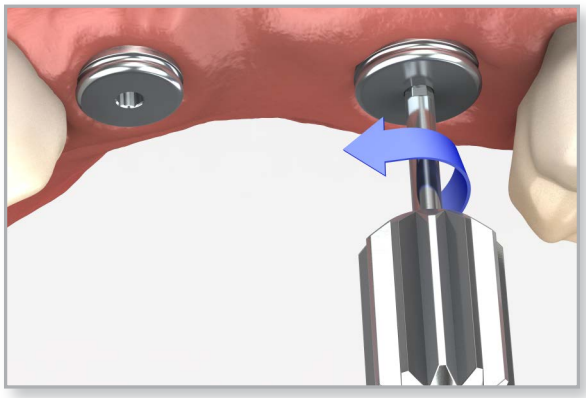
send to clinician

- temporary bridge
- abutment screws
- working model

10 Remove the healing abutments

Remove the healing abutments using an .050" (1.25mm) hex driver. Make sure the implant prosthetic platform is free of bone and soft tissue.

Irrigate the internal connections of the implants and dry.



11 Seat the temporary

Sanitize the temporary prosthesis per standard clinical procedures. Place the temporary bridge onto the implants using the abutment screws and an .050" (1.25mm) hex driver. Hand tighten.

Take a radiograph along the long axis of the implant to ensure the bridge is seated completely onto the implants.

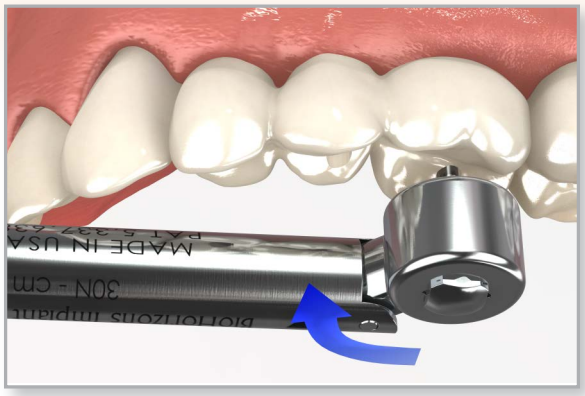
Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

Modify as necessary and polish after making adjustments.

screw-retained bridge using titanium temporary abutments

12 Tighten the abutment screws

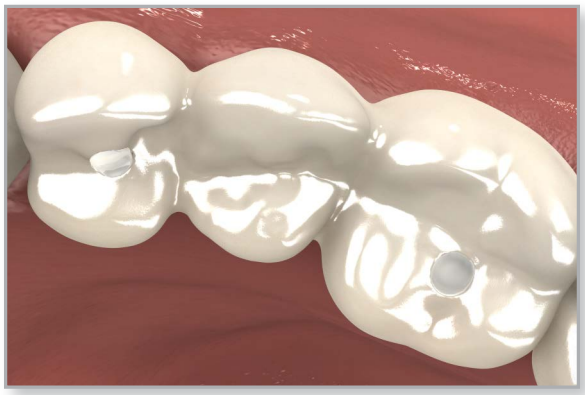
Tighten the abutment screws to 30 Ncm using a calibrated torque wrench and an .050" (1.25mm) hex driver.



13 Fill the screw access channels

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access channels. This allows for easy access to the abutment screws in the future. Fill the remainder of the channels with a composite resin material of choice.

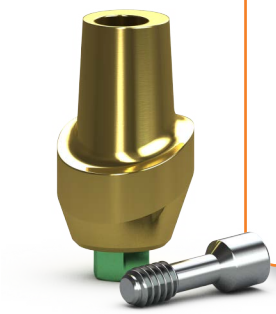
Take an x-ray for final prosthesis delivery records.



cement-retained single crowns using cementable abutments

Cement-retained implant restorations are similar to conventional crowns and bridges. Crowns and bridges are fabricated indirectly in the laboratory and cemented onto an implant abutment intraorally.

Use this technique for a laboratory-modified cementable abutment. The clinician makes an implant-level impression; the lab prepares the abutment and fabricates the restoration.

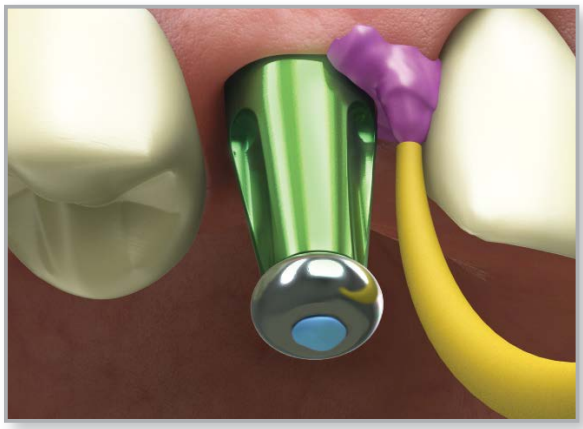


component options

- 3inOne abutments
- angled abutments
- angled esthetic abutments
- narrow emergence abutments
- straight esthetic abutments
- .050" (1.25mm) hex driver
- torque wrench
- abutment prepping handle
- abutment clamp

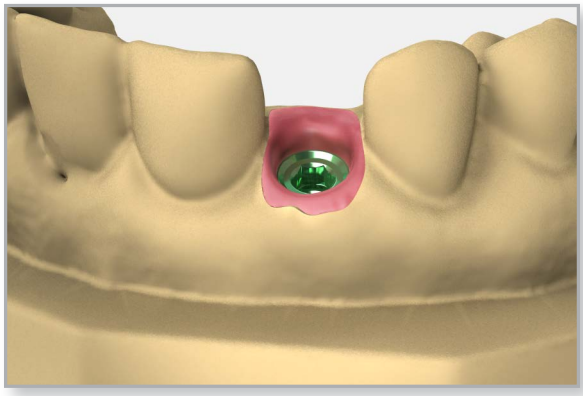
1 Make an implant-level impression

Remove the healing abutment and follow the steps for creating an implant-level impression following either the open tray technique using the direct pick-up coping module or the closed tray technique using the indirect transfer coping module.



2 Lab step - Pour the working model

Fabricate a working model following conventional laboratory procedures. A soft tissue model is recommended whenever the margins are subgingival. Follow the steps for creating an implant-level stone model in either the open tray technique using the direct pick-up coping module or the closed tray technique using the indirect transfer coping module.

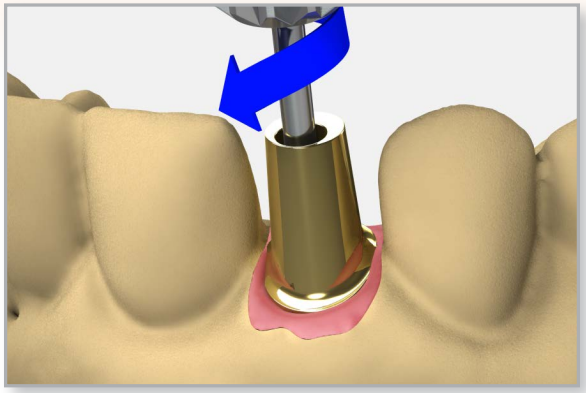


cement-retained single crowns using cementable abutments

3 Lab step - Select and mark the abutment

Select an abutment based on implant location, tissue depth and doctor preference. Seat the abutment, engaging the hex of the implant analog in the mounted working model. Hand tighten the abutment screw with an .050" (1.25mm) hex driver. Evaluate inter-occlusal dimensions, angulations, and tissue contour. Mark the abutment for the required vertical reduction and gingival contour.

Note:
Allow a minimum of 1.5 – 2.0mm of occlusal clearance for metal and porcelain.

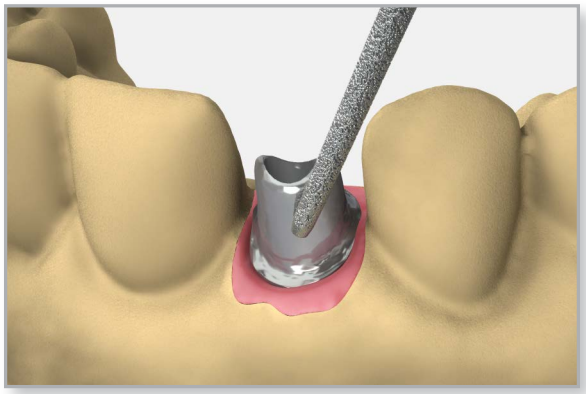


4 Lab step - Modify the abutment

Place the marked abutment onto the appropriate abutment prepping handle and modify the abutment using carbide burs, cut-off disks, or heatless stone wheels. A diamond bur may be used to define the margins.

Note:
Create an axial groove to indicate the buccal surface for re-indexing the abutment in the mouth. If the flat of the abutment is removed during the preparation, a new anti-rotational feature must be established on the abutment.

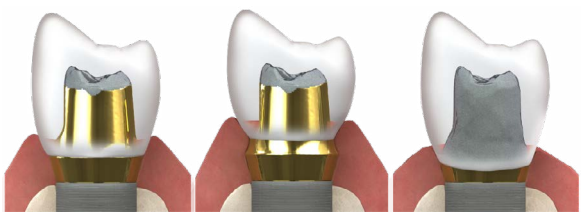
Important:
For cement-retained restorations, maintain at least 3mm from the abutment platform to avoid damaging the abutment screw.



5 Lab step - Return the abutment to the model

Return the modified abutment to the mounted working model and make final adjustments. A diamond bur may be used to modify and finesse margins.

Important:
When preparing a margin on an abutment for cement retention, it is important to respect the soft tissue contours rather than the pre-defined margin of the abutment. The abutment should be modified so the margin is 0.5mm to 1mm subgingival in the esthetic zone and at or above the gingiva in non-esthetic areas. Three examples of margin placement on a 3inOne abutment are shown on the right.



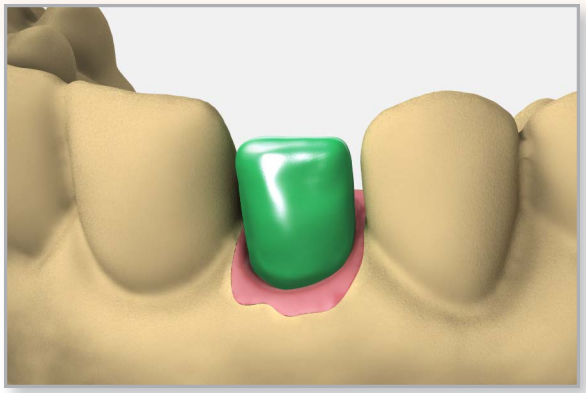
cement-retained single crowns using cementable abutments

6 Lab step - Wax the coping, sprue, invest and cast

In preparation to wax and cast the coping, block out the screw-access hole of the prepared abutment and apply die spacer.

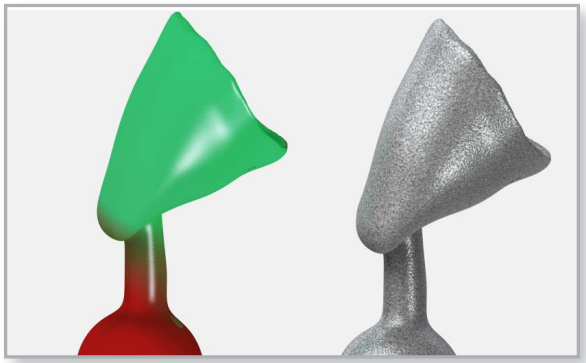
Create a wax coping for the crown on the modified abutment utilizing routine crown & bridge procedures.

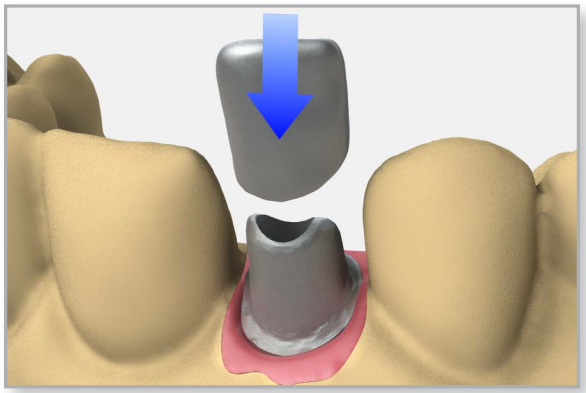
Sprue, invest and cast the coping pattern in noble or high noble alloy according to the manufacturer's instructions.



7 Lab step - Divest and finish the coping

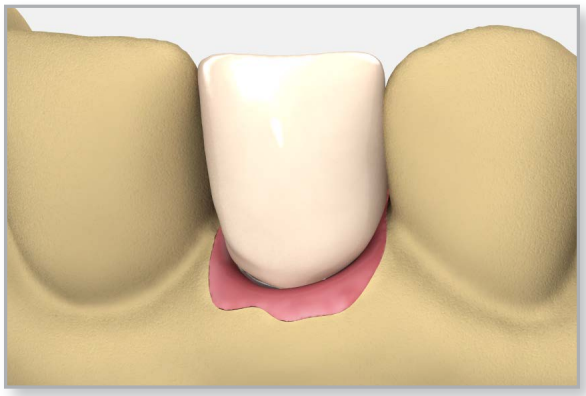
Divest, fit, and finish the cast coping following conventional laboratory techniques in preparation for porcelain application.





8 Lab step - Fabricate the crown

Apply opaque and porcelain to the metal framework and complete the crown according to routine laboratory procedures.



send to clinician

- finished crown
- modified abutment and abutment screw
- working model
- impression coping

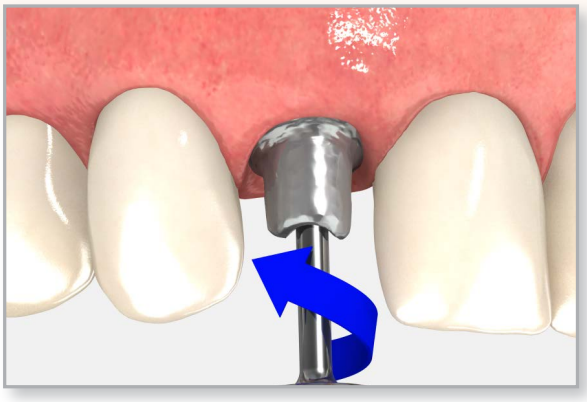
cement-retained single crowns using cementable abutments

9 Seat the prepared abutment

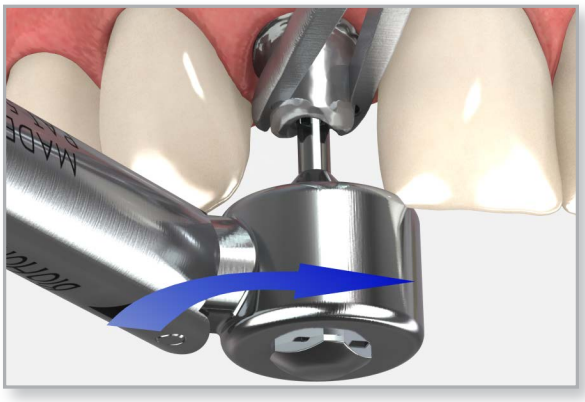
Sanitize modified abutment and crown per standard clinical procedure. Remove the healing abutment or provisional prosthesis from the implant with an .050" (1.25mm) hex driver. Make sure the implant prosthetic platform is free of bone and soft tissue.

Irrigate the internally-threaded connection of the implant and dry. Place the modified abutment and abutment screw onto the implant with an .050" (1.25mm) hex driver and hand tighten.

Take a radiograph along the long axis of the implant to ensure the abutment is seated completely in the hex of the implant.



Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.



10 Tighten the abutment screw

Tighten the abutment screw to 30 Ncm using a calibrated torque wrench and an .050" (1.25) hex driver. Apply counter-torque by grasping the abutment with an abutment clamp.

11 Cement the final crown

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access hole and fill the remaining channel with composite or another material of choice. This allows for easy access to the abutment screw in the future.

Place the final restoration onto the abutment prior to cementation. Check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making adjustments.

Important:
Cement the crown following the crown cementation technique module

Take an x-ray for final prosthesis delivery records.

cement-retained bridge using cementable abutments

Cement-retained implant restorations are similar to conventional crown and bridge restorations. Bridges are fabricated indirectly in the laboratory and cemented onto implant abutments intraorally.

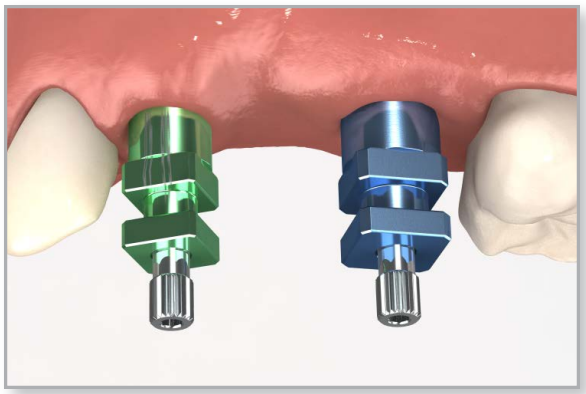
Use this technique for laboratory-modified cementable abutments. The clinician makes an implant-level impression; the lab prepares the abutments and fabricates the restoration.

component options

- 3inOne abutments
- angled abutments
- angled esthetic abutments
- narrow emergence abutments
- straight esthetic abutments
- .050" (1.25mm) hex driver
- abutment clamp
- torque wrench
- abutment prepping handle

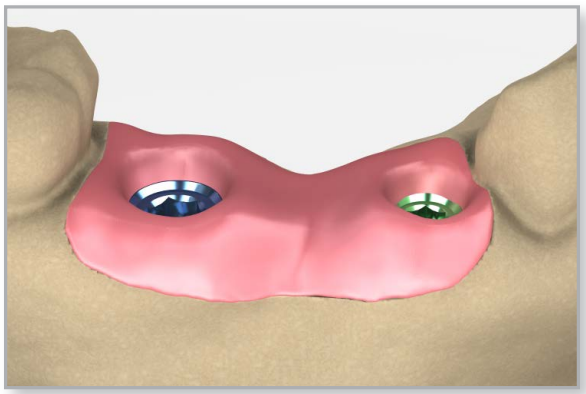
1 Make an implant-level impression

Remove the healing abutments and follow the steps for creating an implant-level impression using either the open tray technique using the direct pick-up coping module or the closed tray technique using the indirect transfer coping module.



2 Lab step - Pour the working model

Fabricate a working model following conventional laboratory procedures. A soft tissue model is recommended whenever the margins are subgingival. Follow the steps for creating an implant-level stone model (hexed) using either the open tray technique using the direct pick-up coping module or the closed tray technique using the indirect transfer coping module.



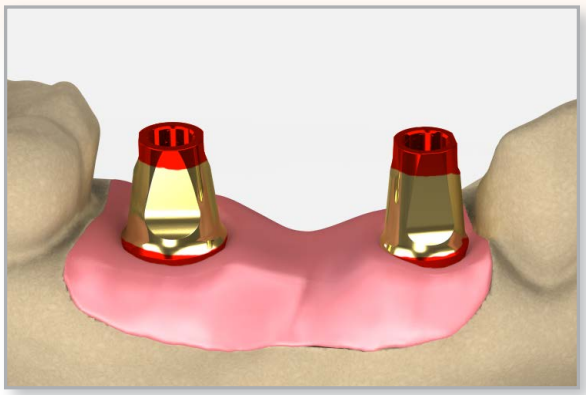
customer care:
888.246.8338

cement-retained bridge using cementable abutments

3 Lab step - Select and mark the abutments

Select the abutments based on implant location, tissue depth and doctor preference. Seat the abutments, engaging the hex of the implant analogs in the mounted working model. Hand tighten the abutment screws using an .050" (1.25mm) hex driver. Evaluate inter-occlusal dimensions, angulations, and tissue contour. Mark the abutments for the necessary vertical reduction and gingival contour.

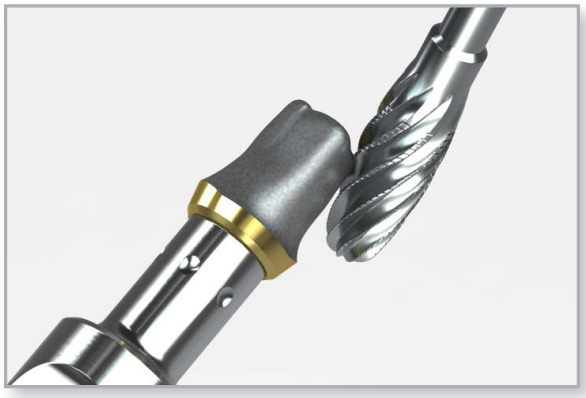
Note:
A minimum of 1.5 - 2.0mm of occlusal clearance is required for metal and porcelain.



4 Lab step - Modify the abutments

Place each marked abutment onto the appropriate abutment prepping handle and modify using carbide burs, cut-off disks, or heatless stone wheels. A diamond bur may be used to define the margins.

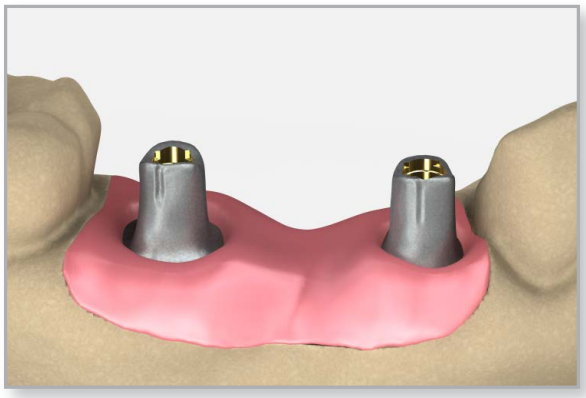
Add a vertical groove to indicate the buccal surface for re-indexing the abutments in the mouth.

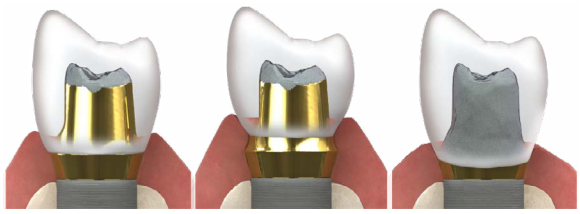


5 Lab step - Return to the model

Seat the modified abutment to the mounted working model and make final adjustments. A diamond bur may be used to modify the margins.

Important:
When preparing a margin on an abutment for cement retention, it is important to respect the soft tissue contours rather than the pre-defined margin of the abutment. The abutment should be modified so the margin is 0.5mm to 1mm subgingival in the esthetic zone and at or above the gingiva in non-esthetic areas. Three examples of margin placement on a 3inOne abutment are shown on the right.





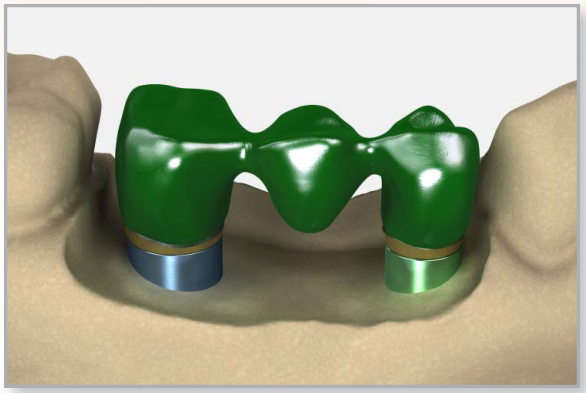
cement-retained bridge using cementable abutments

6 Lab step - Wax the framework, sprue, invest and cast

In preparation to wax and cast the coping, block out the screw-access holes of the prepared abutments and apply die spacer.

Create a wax framework for the bridge on the modified abutments utilizing routine crown & bridge procedures.

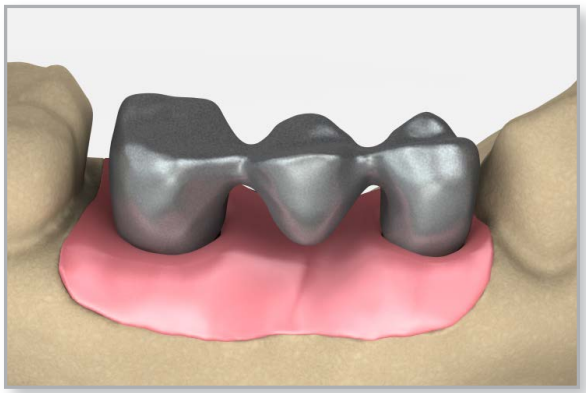
Sprue, invest and cast the wax pattern in noble or high noble alloy according to manufacturer's instructions.



7 Lab step - Divest and finish the cast framework

Divest, fit, and finish the cast framework following conventional laboratory techniques. Confirm the framework fits passively on the modified abutments.

Send to the clinician for framework try-in.



send to clinician

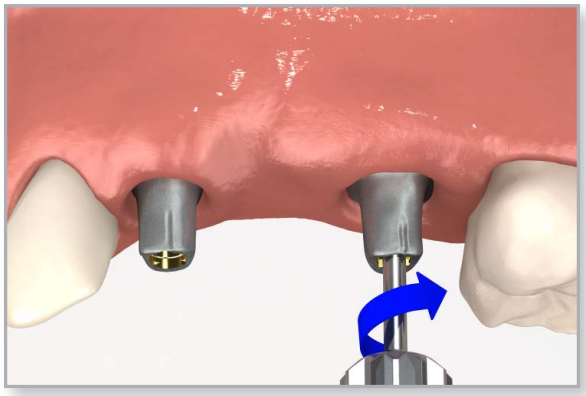
- cast framework
- modified abutments and abutment screws
- working model
- impression copings

8 Seat the abutments

Sanitize the abutments and bridge framework per standard clinical procedures. Remove the healing abutments or provisional restorations from the implants using an .050" (1.25mm) hex driver. Make sure the implant prosthetic platforms are free of bone and soft tissue.

Irrigate the internal connection of the implants and dry. Place the modified abutments and abutment screws onto the implants using an .050" (1.25mm) hex driver and hand tighten.

Take a radiograph along the long axis of the implants to ensure that the abutments are seated completely.



Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

cement-retained bridge using cementable abutments

9 Try in the bridge framework

Try in the bridge framework. Confirm a passive fit and that no additional adjustments are necessary. Remove the bridge framework. Remove the modified abutments, one at a time, replacing them with the healing abutments or temporary prosthesis.

send to lab

- metal framework
- modified abutments and abutment screws
- working model
- prescription with lab instructions

10 Lab step - Fabricate the crown

Apply opaque and porcelain to the metal framework and complete according to routine laboratory procedures.

send to clinician

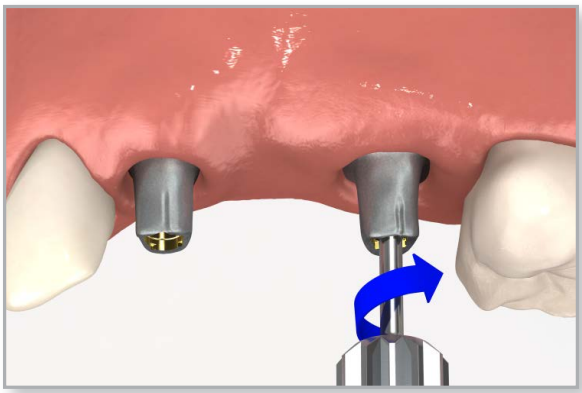
- finished bridge
- modified abutments and abutment screws
- working model
- impression copings

11 Seat the prepared abutments

Sanitize the modified abutments and bridge per standard clinical procedures. Remove the healing abutments or provisional prosthesis from the implants using an .050" (1.25mm) hex driver. Make sure the implant prosthetic platforms are free of bone and soft tissue.

Irrigate the internal connection of the implants and dry. Place the modified abutments and abutment screws onto the implant using an .050" (1.25mm) hex driver and hand tighten.

Take a radiograph along the long axis of the implant to ensure that the abutment is seated completely.

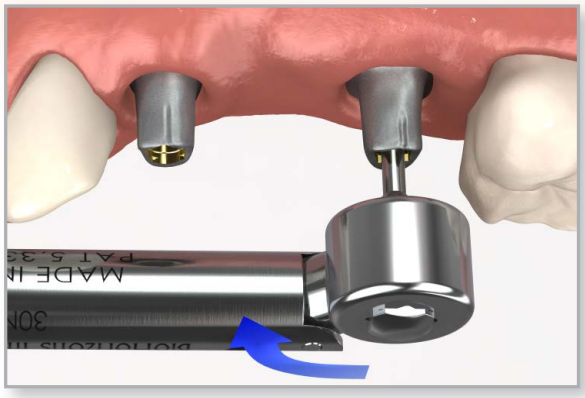


Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

cement-retained bridge using cementable abutments

12 Tighten the abutment screws

Tighten the abutment screws to 30 Ncm using a calibrated torque wrench and an .050" (1.25) hex driver. Apply counter-torque by grasping the abutment using an abutment clamp.



13 Cement the bridge

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access holes and fill the remaining channels with composite or another material of choice. This allows for easy access to the abutment screws in the future.

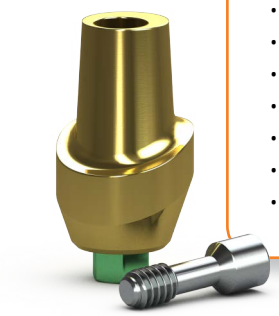
Place the final restoration onto the abutments prior to cementation. Check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making adjustments.

Important:
Cement the bridge following the crown cementation technique module.

Take an x-ray for final prosthesis delivery records.

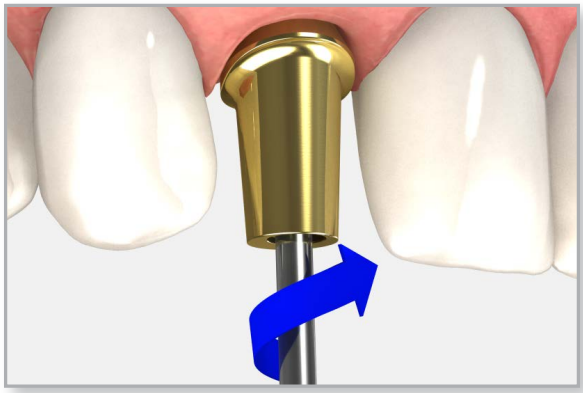
chairside modification of cement-retained abutments

Use this technique for modifying abutments chairside. Chairside modification of cement retained abutments for single or multi unit restorations is used when conventional crown and bridge is preferred. A single unit is depicted below.



component options

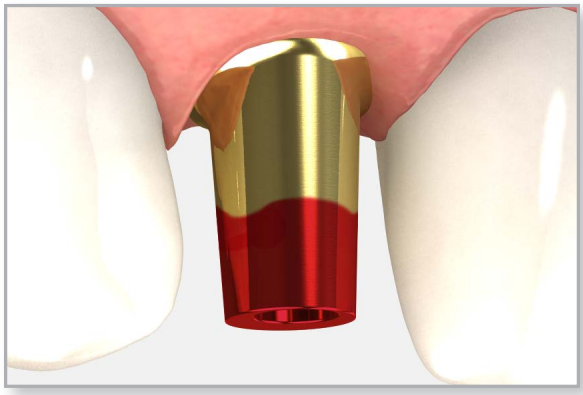
- 3inOne abutments
- angled abutments
- angled esthetic abutments
- narrow emergence abutments
- straight esthetic abutments
- .050" (1.25mm) hex driver
- torque wrench
- abutment prepping handle
- abutment clamp



1 Remove the healing abutment and seat the selected abutment

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

Place the selected abutment onto the implant and hand tighten the abutment screw with an .050" (1.25mm) hex driver). The emergence of the abutment should match the emergence of the healing abutment.

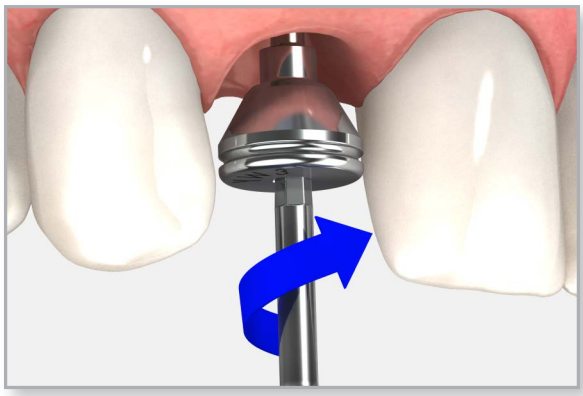


2 Mark the abutment for modification

Check the inter-occlusal dimension and angulations. Mark the required modifications for vertical clearance and gingival contours.

Note:
Allow a minimum of 1.5 – 2.0 mm of occlusal clearance for metal and porcelain.

Important:
For cement-retained restorations, maintain at least 3mm from the abutment platform to avoid damaging the abutment screw.



3 Remove the abutment and replace the healing abutment

Remove the marked abutment and immediately replace the healing abutment or temporary prosthesis onto the implant to prevent soft tissue collapse over the implant.

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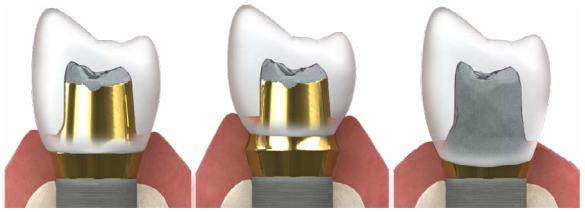
chairside modification of cement-retained abutments

4 Modify the abutment

Place the abutment onto the appropriate abutment prepping handle. Modify the abutment using carbide burs, cut-off disks, or heatless stone wheels. A diamond bur may be used to define the margins.

Note:
Create an axial groove to indicate the buccal surface for re-indexing the abutment in the mouth. If the flat of the abutment is removed during the preparation, a new anti-rotational feature must be established on the abutment.

Important:
When preparing a margin on an abutment for cement retention, it is important to respect the soft tissue contours rather than the pre-defined margin of the abutment. The abutment should be modified so the margin is 0.5mm to 1mm subgingival in the esthetic zone and at or above the gingiva in non-esthetic areas. Three examples of margin placement on a 3inOne abutment are shown on the right.

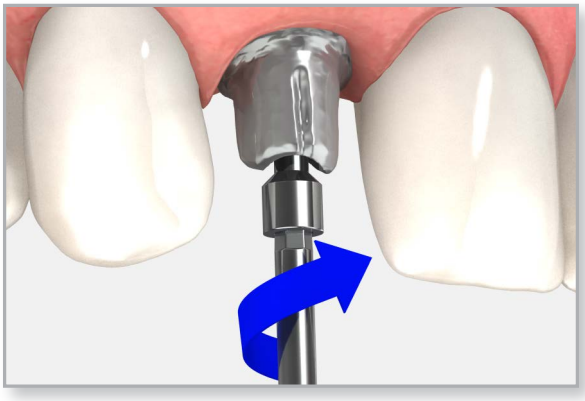


5 Seat the modified abutment

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

Irrigate the internally-threaded connection of the implant and dry. Seat the modified abutment and hand tighten with an .050" (1.25mm) hex driver.

Take a radiograph along the long axis of the implant to ensure the abutment is seated completely in the hex of the implant.



Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform

Tighten the abutment screw to 30 Ncm. Apply counter-torque by grasping the abutment with an abutment clamp.

Note:
Minor intra-oral adjustments may be necessary. Use copious amounts of irrigation to eliminate excessive heat buildup in the surrounding bone tissue that may compromise the osseointegration of the implant. Use carbide or coarse diamond burs.

chairside modification of cement-retained abutments

6 Make a full-arch impression

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access channel. This allows for easy access to the abutment screw in the future.

Syringe medium or heavy-bodied impression material around prepared abutment and in the impression tray. Make a conventional crown & bridge impression.

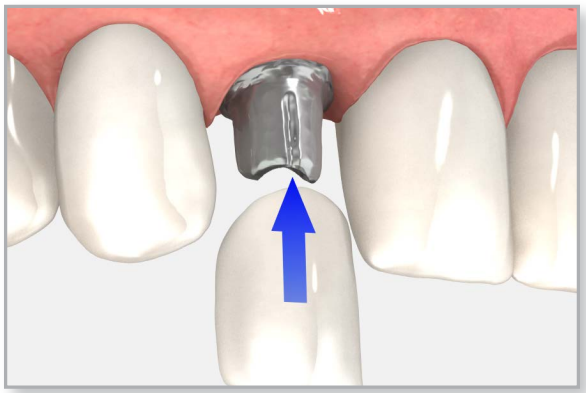
Note:
Retraction cord or injectable retraction medium may be necessary to record the margin prepared on the abutment.

7 Make the temporary

Prepare and cement the provisional crown using the technique and a material of choice.

Try in temporary crown and check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making adjustments.

Important:
Cement the temporary crown following the crown cementation technique module



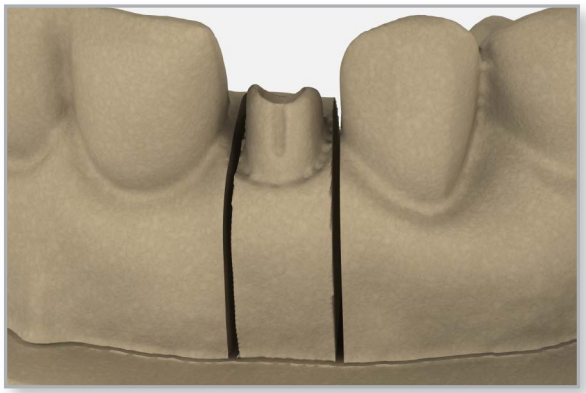
send to lab

- impression
- bite registration
- opposing model or impression
- prescription with lab instructions

8 Lab step - Pour the working model

Pour a working model in minimal expansion, high hardness die stone and articulate according to standard laboratory procedures.

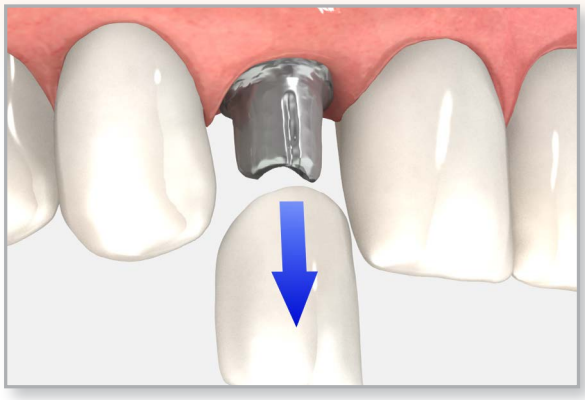
Note:
The remaining dental laboratory procedures utilize conventional crown and bridge techniques.



chairside modification of cement-retained abutments

9 Remove the temporary

Sanitize the final crown following a standard clinical protocol. Remove the provisional prosthesis. Make sure the abutment and margins are free of all temporary cement for complete seating of the final crown.



10 Cement the crown

Place the final crown onto the abutment prior to cementation. Check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making adjustments.

Important:
Cement the final crown following the crown cementation technique module.

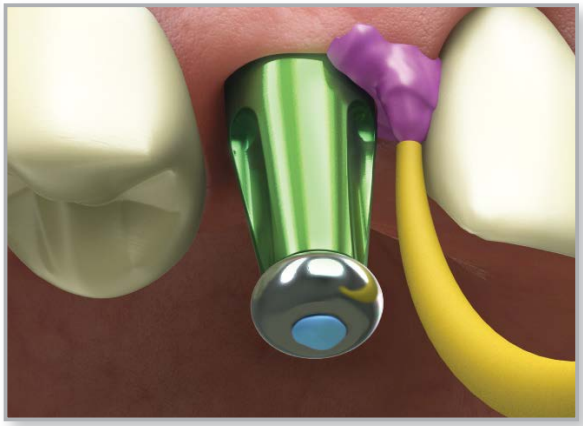
Take an x-ray for final prosthesis delivery records.

screw-retained single crowns using custom-cast abutments

The custom castable abutment, hexed (UCLA) offers the clinician the option of making a custom crown that is screw-retained onto the implant. Use this technique for a lab-fabricated, custom, screw-retained crown. The custom crown can complement soft tissue contour and height and can also correct angulation.

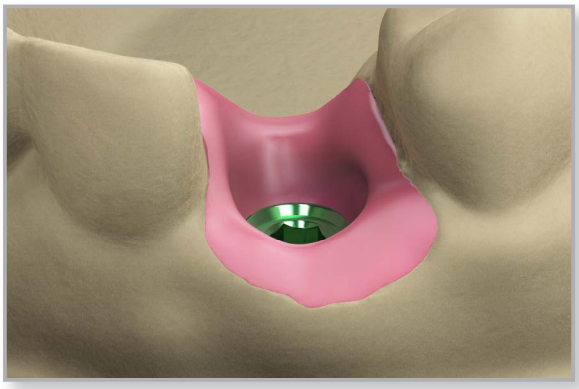
component options

- custom castable (UCLA) abutment, hexed
- .050" (1.25mm) hex driver
- polishing protector
- torque wrench



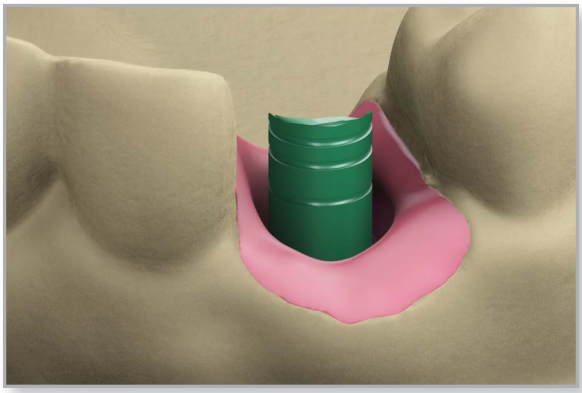
1 Make an implant-level impression

Follow the steps for creating an implant-level impression using either the open tray technique using the direct pick-up coping module or the closed tray technique using the indirect transfer coping module.



2 Lab step - Pour the working model

Fabricate a working model following conventional laboratory procedures. A soft tissue model is recommended whenever the margins are subgingival. Follow the steps for creating an implant-level stone model (hexed) using either the open tray technique using the direct pick-up coping module or the closed tray technique using the indirect transfer coping module.



3 Lab step - Seat, mark, and modify the abutment

Seat the selected custom castable abutment onto the implant analog in the working model. Hand tighten the abutment screw with an .050" (1.25mm) hex driver.

Determine modifications needed to provide adequate room for the fabrication of the crown. Modify the plastic sleeve of the abutment with a cutting disk or an acrylic bur for correct vertical and interproximal clearances. Modify height leaving the sleeve out of occlusion 1-2 mm.

Important:
For screw-retained restorations, maintain at least 3mm from the abutment platform to avoid damaging the abutment screw.

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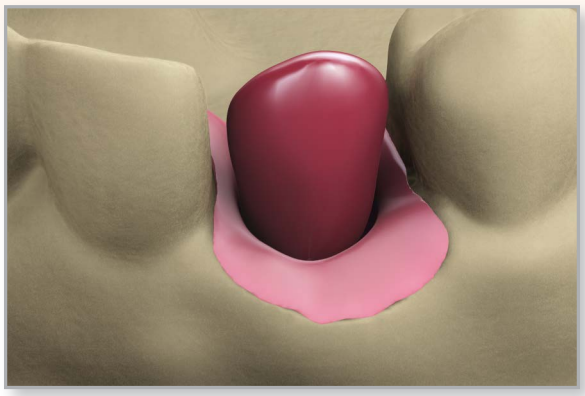
screw-retained single crowns using custom-cast abutments

4 Lab step - Wax the custom abutment

Use wax and/or acrylic burnout resin to incorporate the modified custom castable abutment into the pattern. The final contours of the pattern may be built up with crown & bridge wax.

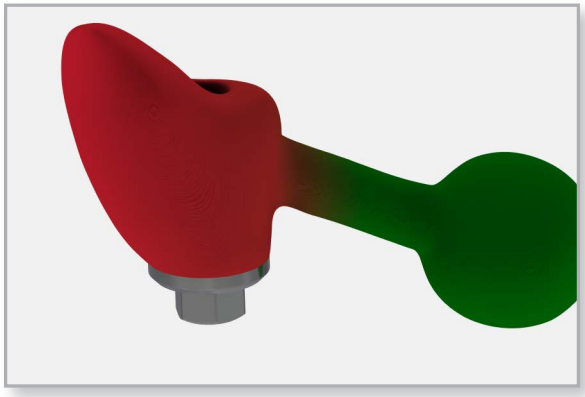


5 Lab step - Sprue, invest and cast the abutment

Sprue, invest and cast the abutment pattern in noble or high noble alloy according to manufacturer's instructions. When investing, pour the investment into the ring very slowly to insure the investment flows up through the screw access hole.

Note:
custom castable gold alloy specifications*
- Melting range: 1400-1490°C
- Coefficient of thermal expansion: $12.2x10^{-6}K^{-1}$
- Hardness HV5: >215
- Tensile Strength: >750 MPa
- Composition:
  60% Gold, 20% Platinum, 19% Palladium, 1% Iridium

** Material Data Sheet for Ceramicor® from Centres+Métaux*

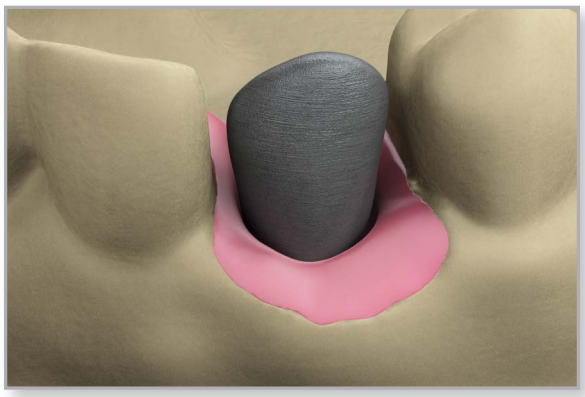


6 Lab step - Divest, fit, and finish the abutment

Divest, fit, and finish the casting following conventional laboratory techniques.

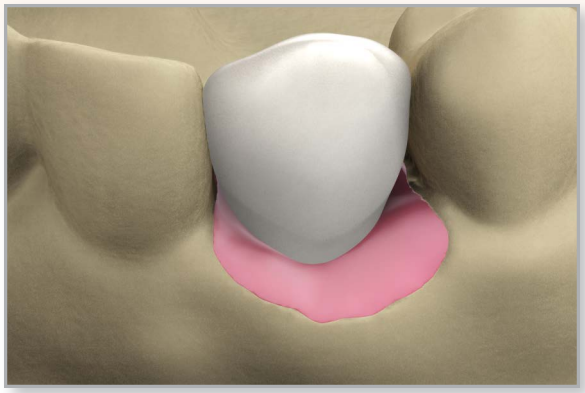
Important:
When divesting the casting, it is important not to sandblast the implant/abutment interface. Doing so may result in a poor fit between the abutment and the implant. Use polishing protectors when processing UCLA abutments. Use of a chemical investment remover is recommended to preserve the precision fit.

Confirm the cast abutment on the working model.



screw-retained single crowns using custom-cast abutments

7 Lab step - Apply the porcelain



Prepare the cast abutment to receive the opaque layer according to routine laboratory procedures.

Apply porcelain and finish according to routine laboratory procedures.

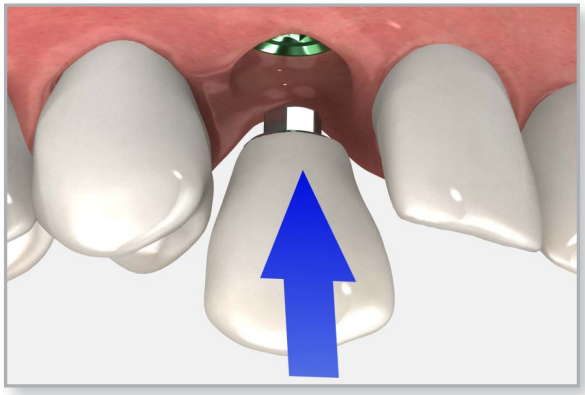
Note:
When applying porcelain, use caution not to get any porcelain into the screw-access holes. Polish any metal margins as is routine.

Seat the finished crown onto the analog on the working model and send to clinician for patient delivery.

send to clinician

- crown
- abutment screw
- working model

8 Seat the final restoration



Sanitize the finished crown using standard clinical procedure. Remove the healing abutment or temporary prosthesis from the implant with an .050" (1.25mm) hex driver.

Make sure the implant prosthetic platform is free of bone and soft tissue. Irrigate the internally-threaded connection of the implant and dry.

Secure the crown onto the implant using the abutment screw and an .050" (1.25mm) hex driver. Hand tighten.

9 Check and modify the restoration

Check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making adjustments.

Take a radiograph along the long axis of the implant to ensure that the crown is seated completely in the hex of the implant.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

customer care:
888.246.8338

screw-retained single crowns using custom-cast abutments

10 Tighten the abutment screw

Tighten the abutment screw to 30 Ncm using an .050" (1.25mm) hex driver and a calibrated torque wrench.

11 Fill the screw access channel

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access channel. This allows for easy access to the abutment screw in the future. Fill the remainder of the channel with a composite resin material of choice.

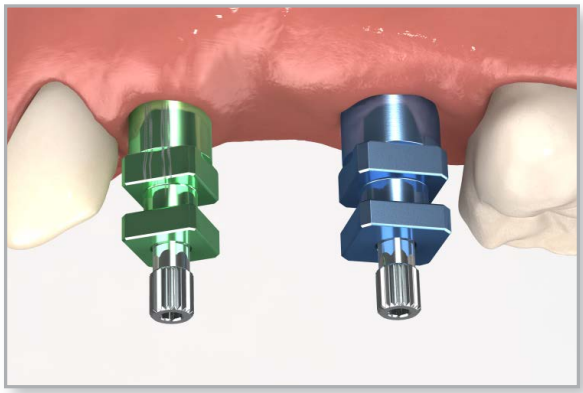
Take an x-ray for final prosthesis delivery records.

screw-retained bridge using custom-cast abutments

The custom castable abutment, non-hexed (UCLA) offers the clinician the option of making a custom bridge that is screw-retained onto implants. Use this technique for a lab-fabricated, custom, screw-retained bridge. The custom bridge can complement soft tissue contour and height and can also correct angulation.

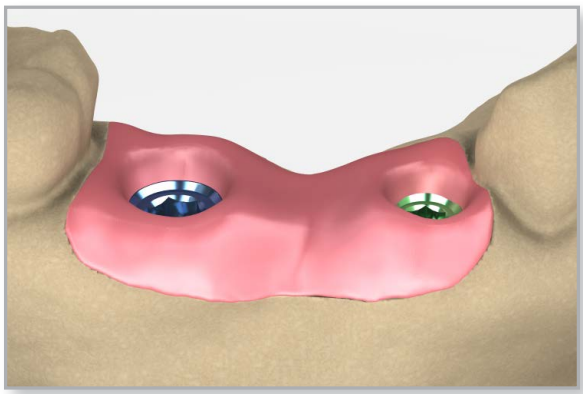
component options

- custom castable (UCLA) abutment, non-hexed
- .050" (1.25mm) hex driver
- polishing protector
- torque wrench



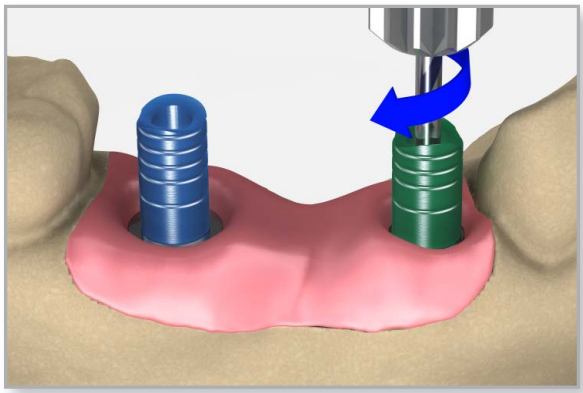
1 Make an impression

Follow the steps for creating an implant-level impression using either the open tray technique using the direct pick-up coping module or the closed tray technique using the indirect transfer coping module.



2 Lab step - Pour the working model

Fabricate a working model following conventional laboratory procedures. A soft tissue model is recommended whenever the margins are subgingival. Follow the steps for creating an implant-level stone model using either the open tray technique using the direct pick-up coping module or the closed tray technique using the indirect transfer coping module.



3 Lab step - Seat, mark, and modify the abutment

Seat the selected non-hexed, custom castable abutments onto the implant analogs in the working cast. Hand tighten the abutment screws with an .050" (1.25mm) hex driver.

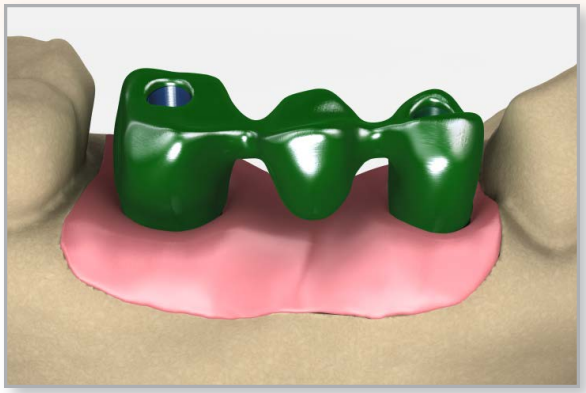
Determine modifications needed to provide adequate room for the fabrication of bridge. Modify the plastic sleeves of the abutments with a cutting disk or an acrylic bur for correct vertical and interproximal clearances. Modify height leaving the sleeve out of occlusion 1-2 mm.

Important:
For screw-retained restorations, maintain at least 3mm from the abutment platform to avoid damaging the abutment screw.

screw-retained bridge using custom-cast abutments

4 Lab step - Wax the custom framework

Use wax and/or acrylic burnout resin to incorporate the modified custom castable abutments into the pattern. The final contours of the pattern may be built up with crown & bridge wax.



5 Lab step - Sprue, invest and cast the framework

Sprue, invest and cast the wax frame in noble or high noble alloy according to manufacturer's instructions. When investing, pour the investment into the ring very slowly to insure the investment flows up through the screw access holes.

Note:
custom castable gold alloy specifications*
- Melting range: 1400-1490°C
- Coefficient of thermal expansion: $12.2x10^{-6}K^{-1}$
- Hardness HV5: >215
- Tensile Strength: >750 MPa
- Composition:
  60% Gold, 20% Platinum, 19% Palladium, 1% Iridium

** Material Data Sheet for Ceramicor® from Centres+Métaux*

6 Lab step - Divest, fit, and finish the framework

Divest, fit, and finish the casting following conventional laboratory techniques.

Important:
When divesting the casting, it is important not to sandblast the implant/abutment interface. Doing so may result in a poor fit between the abutments and the implants. Use polishing protectors when processing UCLA abutments. Use of a chemical investment remover is recommended to preserve the precision fit.

Note:
A metal try-in is recommended for 3 or more units to confirm a passive fit of the framework prior to porcelain application.

screw-retained bridge using custom-cast abutments

send to clinician

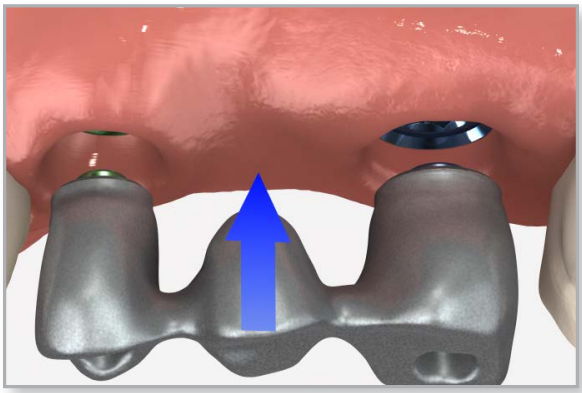
- metal framework
- abutment screws
- working model

7 Try-in the metal framework

Sanitize the bridge framework using standard clinical procedure. Remove the healing abutments or temporary restoration from the implants with an .050" (1.25mm) hex driver.

Make sure the implant prosthetic platforms are free of bone and soft tissue. Irrigate the internally-threaded connection of the implants and dry.

Secure the custom bridge framework onto the implants using the abutment screws and an .050" (1.25mm) hex driver. Hand tighten.



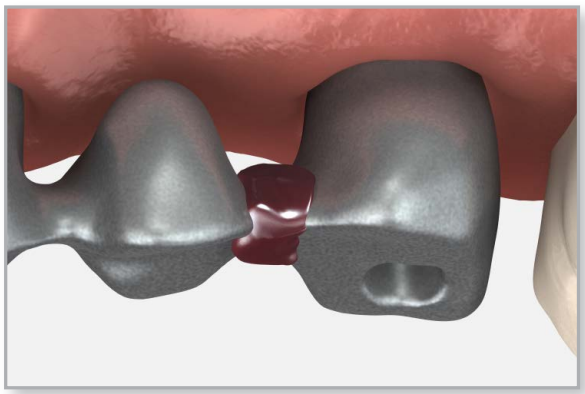
8 Take an X-ray and confirm fit

Take a radiograph along the long axis of the implants to ensure the framework is seated completely on the implants.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

Confirm a passive fit of the framework. If the framework is not passive, section and relate in the mouth using resin material. Send to the lab for soldering/laser welding.

Remove framework, replace the healing abutments or temporary restoration, and return to the lab for porcelain application.



send to lab

- metal framework
- abutment screws
- working model
- prescription with lab instructions

customer care:
888.246.8338

screw-retained bridge using custom-cast abutments

9 Lab step - Apply the porcelain

Apply opaque and porcelain to the metal framework and complete according to routine laboratory procedures.

Note:
When applying porcelain, use caution not to get any porcelain into the screw-access holes. Polish any metal margins as is routine. Implant analogs may be used to protect the connection during polishing.

Secure the finished bridge onto the analogs on the working model and send to clinician for patient delivery.

send to clinician

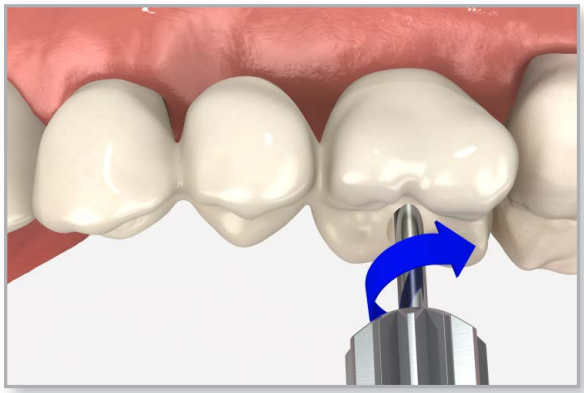
- finished bridge
- abutment screws
- working model

10 Seat the final restoration

Sanitize the finished bridge using standard clinical procedure. Remove the healing abutments or temporary restoration from the implants using an .050" (1.25mm) hex driver.

Make sure the implant prosthetic platforms are free of bone and soft tissue. Irrigate the internally-threaded connection of the implants and dry.

Secure the bridge onto the implants using the abutment screws and an .050" (1.25mm) hex driver.
Hand tighten.



11 Check and modify the restoration

Check the occlusion and contacts. There should only be light contact in centric occlusion and no contact in lateral excursions. Modify as necessary and polish after making adjustments.

Take a radiograph along the long axis of the implants to ensure that the bridge is seated completely onto the implants.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

screw-retained bridge using custom-cast abutments

12 Tighten the abutment screws

Tighten the abutment screws to 30 Ncm using an .050" (1.25mm) hex driver and a calibrated torque wrench.

13 Fill the screw access channels

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into screw access channels. This allows for easy access to the abutment screws in the future. Fill the remainder of the channels with a composite resin material of choice.

Take an x-ray for final prosthesis delivery records.

Multi-unit abutment hybrid or fixed-detachable screw-retained restoration

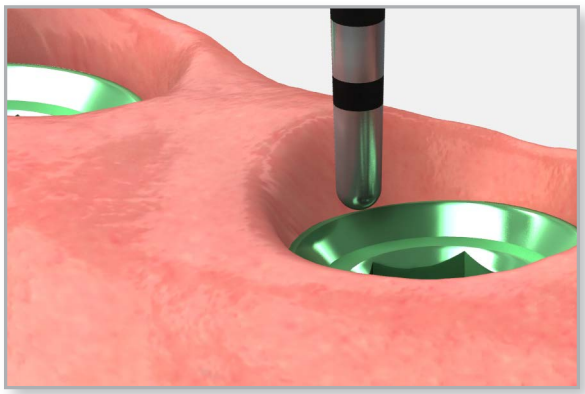
Use this technique for the fabrication of a multiple unit implant-supported, screw-retained hybrid in a partially or fully edentulous patient.

component options

- Multi-unit abutments, straight
- Multi-unit abutments, angled
- Multi-unit direct pick-up copings
- Multi-unit abutment replicas
- Multi-unit protection analogs
- Multi-unit abutment prosthetic screws
- Multi-unit abutment cover caps
- manual Multi-unit hex adapter
- handpiece Multi-unit hex adapter
- 4mm square Multi-unit hex adapter
- .050" (1.25mm) hex driver
- torque wrench

1 Select the abutments

Measure the tissue depth from the top of the implant to the top of the tissue at its highest point. Select a Multi-unit abutment with a collar height which is 1-2mm taller than what is measured and also matches the platform size and angulation needed for proper coping position.



customer care:
888.246.8338

Multi-unit abutment hybrid or fixed-detachable screw-retained restoration

2 Place the abutments

Remove the healing abutments using an .050" (1.25mm) hex driver.

Straight abutments: Seat each straight abutment using the color-coded carrier, threading it clockwise onto the implant body. Bend the carrier to release it from the abutment. Hand tighten the abutment using the manual Multi-unit hex adapter.

Angled abutments: Remove the color-coded carrier from the angled abutment using an .050" (1.25mm) hex driver. Deliver the abutment to the implant using the hex driver (for convenient, one-handed placement) or the Multi-unit carrier (for controlled, two-handed placement). The Multi-unit carrier is sold separately. Hand tighten the abutment screw.

Important:
When placing an angled Multi-unit abutment, rotate the abutment and choose one of the six positions that best corrects the implant angle.

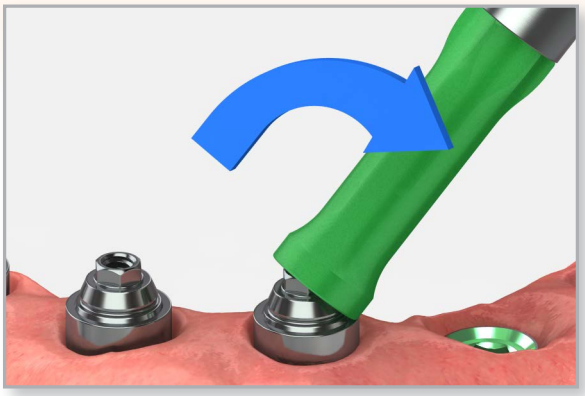
Helpful Hint:
Remove one healing abutment at a time and immediately replace it with a Multi-unit abutment. This reduces the likelihood of soft tissue collapsing onto the implant. Work from the posterior to the anterior.

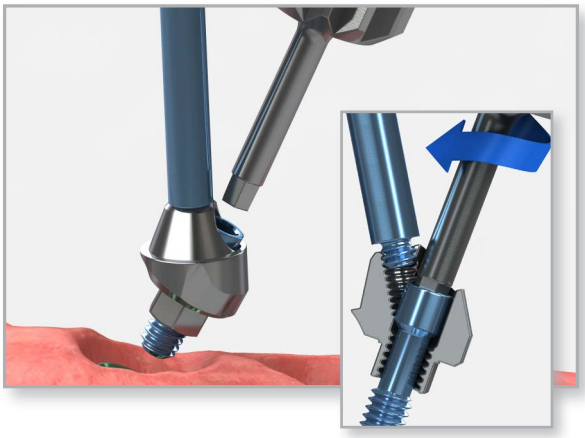
Take a radiograph along the long axis of the implants to ensure that the Multi-unit abutments are seated completely.

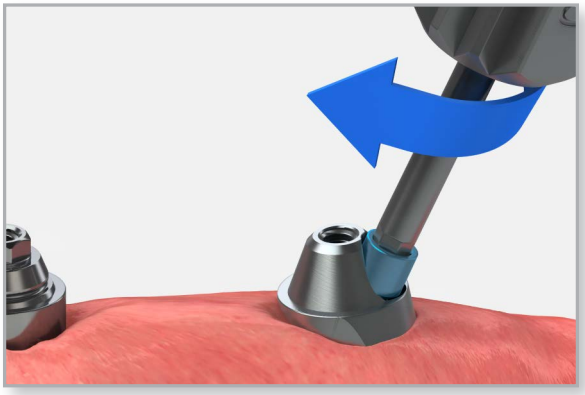
Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

Straight abutments: Tighten the abutments to 30 Ncm using a calibrated torque wrench and the 4mm square hex adapter. The Multi-unit handpiece hex adapter can be used with a compatible torque wrench.

Angled abutments: Tighten the abutments to 30 Ncm using a calibrated torque wrench and an .050" (1.25) hex driver.





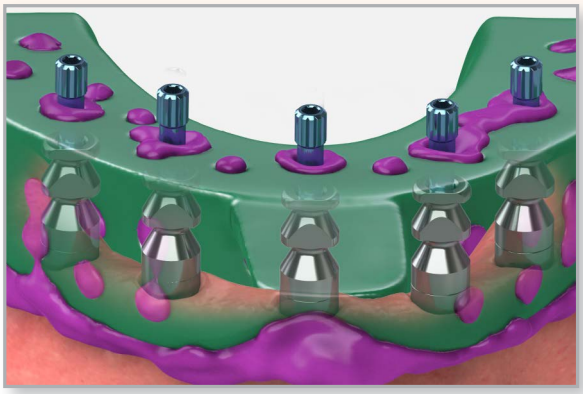


Multi-unit abutment hybrid or fixed-detachable screw-retained restoration

3 Make an abutment-level impression

Follow the steps for creating an abutment-level impression by referring to the impression technique for either the Multi-unit abutment open tray technique using the direct pick-up coping module or the Multi-unit abutment closed tray technique using the indirect transfer coping module.

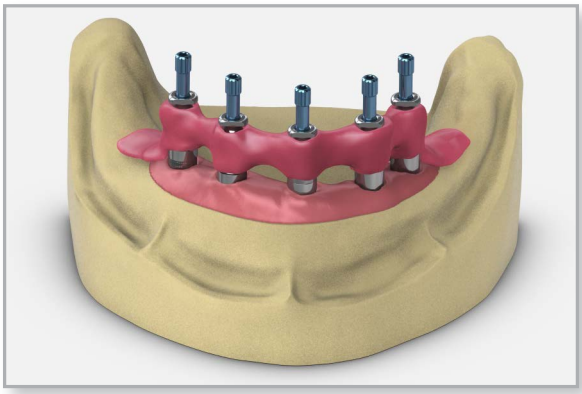
Important:
The fabrication of a verification jig is recommended to ensure the accuracy of the master stone model. Follow the steps for creating a verification jig by referring to the verification jig fabrication module.



4 Lab step - Make a stabilized baseplate

Place the Multi-unit direct pick-up copings on the model using the long prosthetic screws.

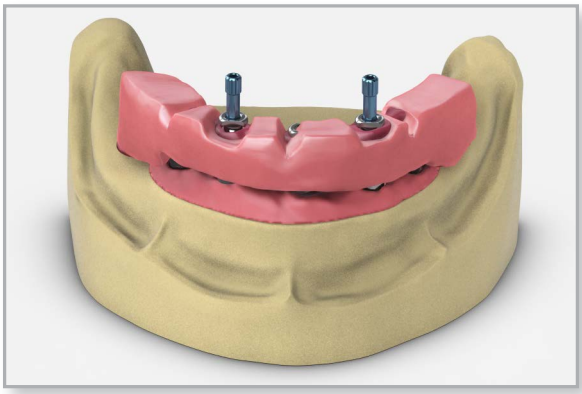
Place a baseplate material of choice around the copings. Contour the material around the copings and posterior along the edentulous arch. This will be used to stabilize the wax rim.



5 Lab step - Create a wax occlusal rim

Create a wax occlusal rim on the stabilized baseplate allowing access to the screws. Only two screws in the cuspid areas are needed to secure the assembly to the model.

Index the occlusal rim to stabilize bite registration material used in next step.



send to clinician

- stabilized baseplate
- model
- regular prosthetic screws

Multi-unit abutment hybrid or fixed-detachable screw-retained restoration

6 Try-in the stabilized baseplate

Remove the cover caps from the Multi-unit abutments using an .050" (1.25mm) hex driver. Attach the baseplate and occlusal rim assembly to the abutments using the regular Multi-unit prosthetic screws and hand tighten using an .050" (1.25mm) hex driver.

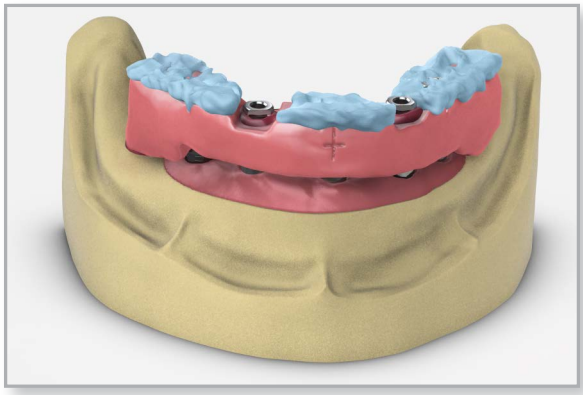
Contour the occlusal rim, mark the midline, and smile line. Record the vertical dimension of the occlusion with a bite registration material.

7 Attach the baseplate to the working model

Remove the baseplate and the bite registration from the mouth and reassemble on the working model using the Multi-unit prosthetic screws. Replace the healing caps onto the abutments using an .050" (1.25mm) hex driver.

Note: If making a verification jig, refer to verification jig fabrication module.

Return the case to the laboratory for the fabrication of a trial hybrid denture.



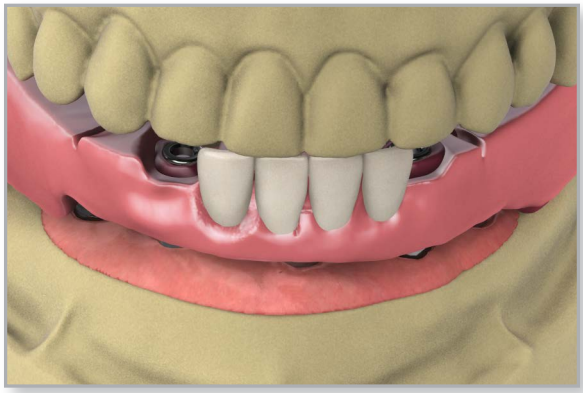
send to lab

- tooth selection
- occlusal rim
- bite registration
- models
- prescription with lab instructions

8 Lab step - Mount and set the teeth

Mount the working and opposing model on an articulator.

Set denture teeth on the wax rim and wax for try-in. Adjust the teeth as necessary to clear the screw access holes. Finish for a trial hybrid denture.



send to clinician

- trial hybrid denture mounted on working cast
- regular prosthetic screws

Multi-unit abutment hybrid or fixed-detachable screw-retained restoration

9 Try in the trial hybrid denture

Remove the healing caps from the Multi-unit abutments using an .050" (1.25mm) hex driver. Seat the hybrid denture try-in onto the Multi-unit abutments and place the prosthetic screws through the two access holes in the denture. Hand tighten using an .050" (1.25mm) hex driver.

10 Verify the trial hybrid denture

Verify occlusion, esthetics, and phonetics. It may be necessary to make adjustments and new inter-occlusal records for a new try-in.

Remove the trial hybrid denture and replace the healing caps using an .050" (1.25mm) hex driver. Replace the trial hybrid denture onto the working model and secure.

send to lab

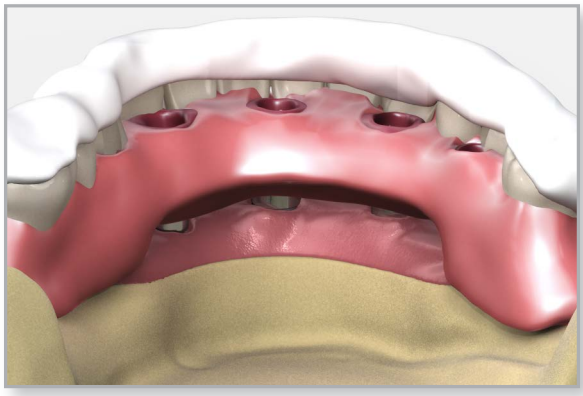
- trial hybrid denture mounted on working model
- new inter-occlusal records, if necessary

11 Lab step - Form a matrix

Index the working model with circular grooves or notches to allow for accurate repositioning of the lab matrix putty.

Make a labial matrix of the denture teeth in silicone putty to record tooth position and labial borders of the prosthesis relative to the working model.

Remove the teeth from the wax-up and place them into their respective locations in the silicone putty matrix. Lute them into position with sticky wax.

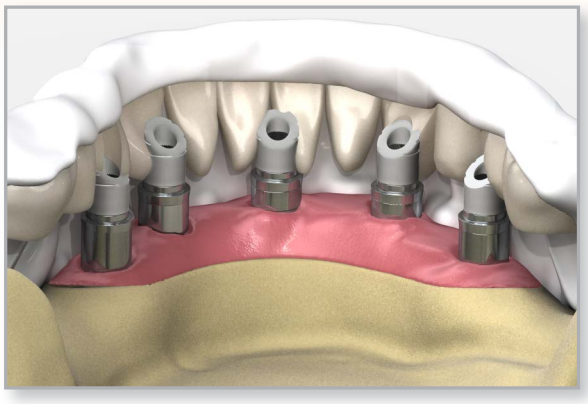


Multi-unit abutment hybrid or fixed-detachable screw-retained restoration

12 Lab step - Place the copings

Place the gold custom castable copings for the Multi-unit abutment on the working model. Position the matrix with the teeth onto the working model and use it as a guide for modifying the copings. Design the frame within the confines of the trial hybrid denture teeth.

Connect the copings using an acrylic resin material to serve as a foundation for the frame wax-up.



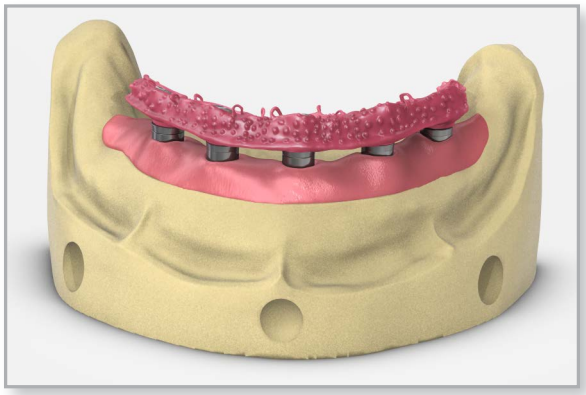
13 Lab step - Wax the framework

Wax the framework to follow and support the position of the teeth. Keep the frame 2-3 mm off the tissue for adequate hygiene space.

Following completion of the wax-up, add retention beads and loops to retain the acrylic.

Note:
custom castable gold alloy specifications*
- Melting range: 1400-1490°C
- Coefficient of thermal expansion: $12.2x10^{-6}K^{-1}$
- Hardness HV5: >215
- Tensile Strength: >750 MPa
- Composition:
  60% Gold, 20% Platinum, 19% Palladium, 1% Iridium

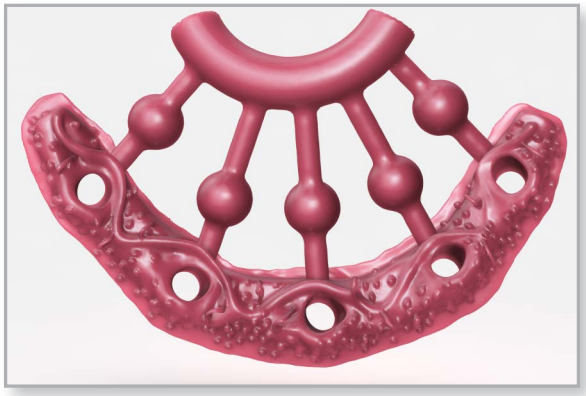
** Material Data Sheet for Ceramicor® from Centres+Métaux*



14 Lab step - Sprue, invest and cast the framework

Sprue and invest the wax pattern per normal laboratory procedures. Cast the frame in a noble or high noble alloy.

Important:
Do not use a non-precious alloy.



Multi-unit abutment hybrid or fixed-detachable screw-retained restoration

15 Lab step - Divest, finish, and polish the framework

Divest the frame.

Important:
When divesting the casting, it is important not to sandblast the abutment interface. Doing so may result in a poor fit between the abutment and the frame. Using a chemical investment remover is preferred. When polishing the interface between the abutment and the prosthetic connection, attach a Multi-unit protection analog to protect the connection.

Finish the casting and check for a passive fit. Section and solder/laser weld as needed.

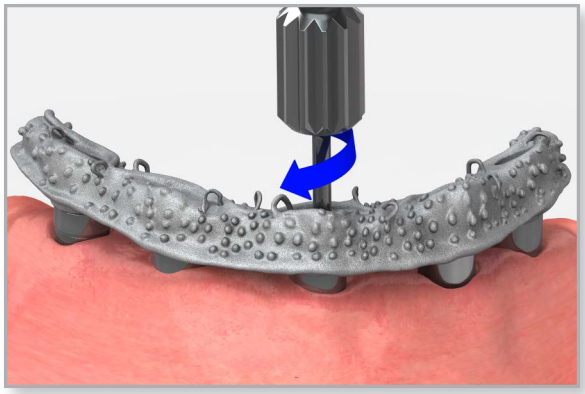
Polish the frame, again using the protection analog.

Send to the clinician for try-in.

send to clinician

- hybrid frame
- regular prosthetic screws
- working model

16 Try-in the framework



Remove the healing caps from the Multi-unit abutments using an .050" (1.25mm) hex driver.

Place the hybrid frame and confirm that it seats passively. Beginning with the most distal implant, place the first prosthetic screw. Hand tighten the screw and make sure the abutment interface/connections on all the remaining implants are completely seated.

Continue placing the prosthetic screws. Verify the fit each time a screw is placed. If at any point the frame lifts as a screw is tightened, the frame is not passive and needs to be sectioned in this area and returned to the lab for correction. Refer to the correcting a non-passive framework module.

Remove the hybrid framework. Replace the healing caps onto the Multi-unit abutments using an .050" (1.25mm) hex driver.

send to lab

- hybrid frame
- prescription with lab instructions
- working model

customer care:
888.246.8338

Multi-unit abutment hybrid or fixed-detachable screw-retained restoration

17 Lab step - Wax set-up

Set-up the denture teeth in wax following conventional denture procedures and send to the clinician for a trial hybrid denture.

send to clinician

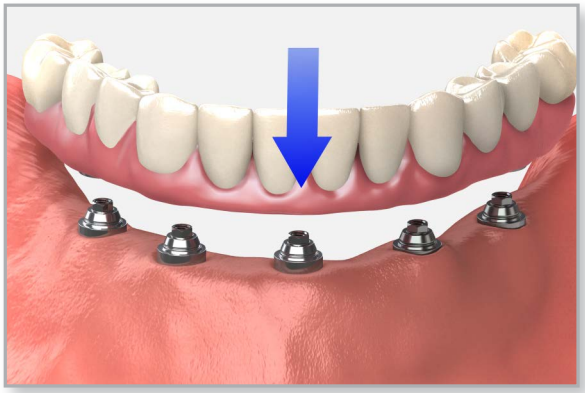
- hybrid frame with teeth set up in wax
- regular prosthetic screws
- working model

18 Trial hybrid denture try-in

Remove the healing caps from the Multi-unit abutments using an .050" (1.25mm) hex driver.

Place the trial hybrid denture and verify occlusion, esthetics, and phonetics. Make any necessary adjustments and take a new bite registration if needed.

Remove the hybrid denture and replace the healing caps onto the Multi-unit abutments using an .050" (1.25mm) hex driver. Send to the lab for final processing.

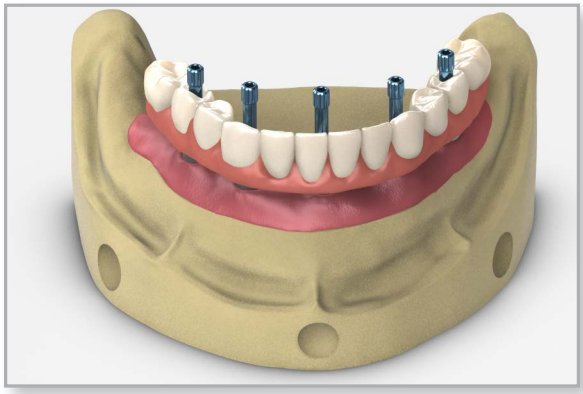


send to lab

- trial hybrid denture
- prescription with lab instructions
- working model
- regular prosthetic screws
- bite registration

19 Lab step - Final processing

Process acrylic using conventional denture procedures. Use the long prosthetic screws during processing. This will maintain the screw access holes.



send to clinician

- completed hybrid prosthesis
- regular prosthetic screws
- working model

Multi-unit abutment hybrid or fixed-detachable screw-retained restoration

20 Deliver the final restoration

Remove the healing caps from the Multi-unit abutments using an .050" (1.25mm) hex driver.

Place the hybrid prosthesis and confirm that it seats passively. Beginning with the most distal implant, place the first prosthetic screw. Hand tighten the screw and make sure the connections to all the remaining abutments are completely seated.

Verify occlusion, esthetics, and phonetics. Modify as necessary and polish after making adjustments.

21 Tighten the prosthetic screws

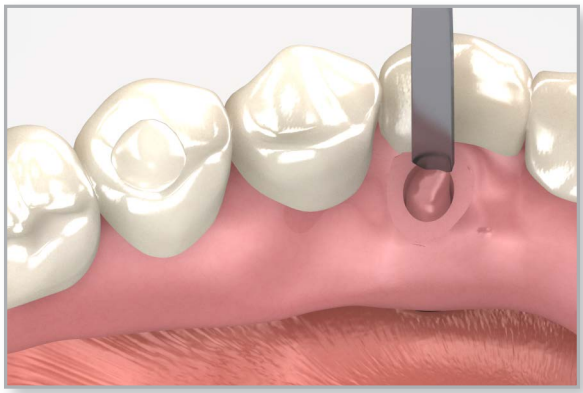
Tighten the prosthetic screws to 15 Ncm using an .050" (1.25mm) hex driver and a calibrated torque wrench.

Important:
Do not exceed 15 Ncm when tightening prosthetic screws onto the Multi-unit abutments. BioHorizons recommends the use of the ITL precision adjustment torque wrench.

22 Fill the screw access channels

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access channel. This allows for easy access to the prosthetic screw in the future. Fill the remainder of the channels with a composite resin material of choice.

Take an x-ray for final prosthesis delivery records.



Multi-unit abutment bar overdenture

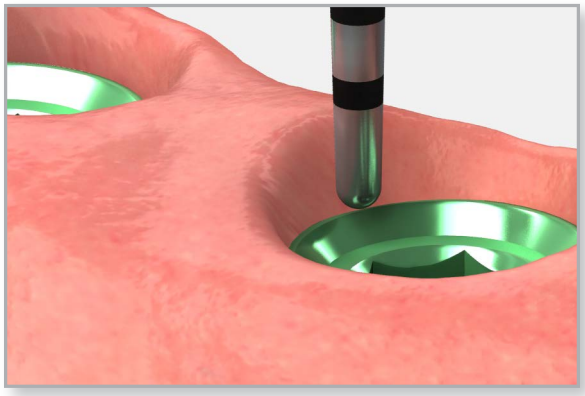
Use this technique for the fabrication of a multiple-unit, implant-supported, screw-retained bar with an overdenture in a totally edentulous patient.

component options

- Multi-unit abutments, straight
- Multi-unit abutments, angled
- Multi-unit abutment cover cap
- manual Multi-unit hex adapter
- handpiece Multi-unit hex adapter
- 4mm square Multi-unit hex adapter
- .050" (1.25mm) hex driver
- torque wrench
- Multi-unit direct pick-up copings
- Multi-unit abutment replicas
- Multi-unit protection analog
- Multi-unit prosthetic screws

1 Select the abutments

Measure the tissue depth from the top of the implant to the top of the tissue at its highest point. Select a Multi-unit abutment with a collar height which is 1-2mm taller than what is measured and also matches the platform size and angulation needed for proper coping position.



Multi-unit abutment bar overdenture

2 Place the abutments

Remove the healing abutments using an .050" (1.25mm) hex driver.
Straight abutments: Seat each straight abutment using the color-coded carrier, threading it clockwise onto the implant body. Bend the carrier to release it from the abutment. Hand tighten the abutment using the manual Multi-unit hex adapter.
Angled abutments: Remove the color-coded carrier from the angled abutment using an .050" (1.25mm) hex driver. Deliver the abutment to the implant using the hex driver (for convenient, one-handed placement) or the Multi-unit carrier (for controlled, two-handed placement). The Multi-unit carrier is sold separately. Hand tighten the abutment screw.

Important:
When placing an angled Multi-unit abutment, rotate the abutment and choose one of the six positions that best corrects the implant angle.

Helpful Hint:
Remove one healing abutment at a time and immediately replace it with a Multi-unit abutment. This reduces the likelihood of soft tissue collapsing onto the implant. Work from the posterior to the anterior.

Take a radiograph along the long axis of the implants to ensure that the Multi-unit abutments are seated completely.

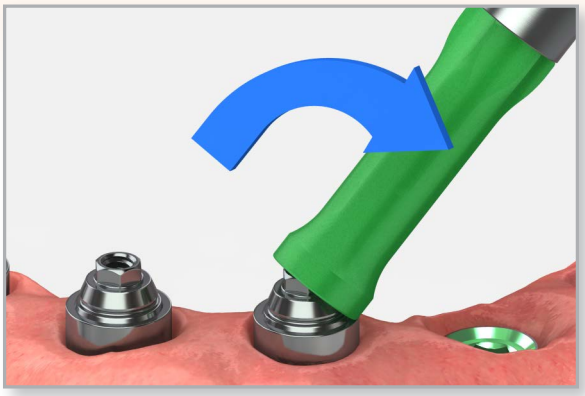
Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

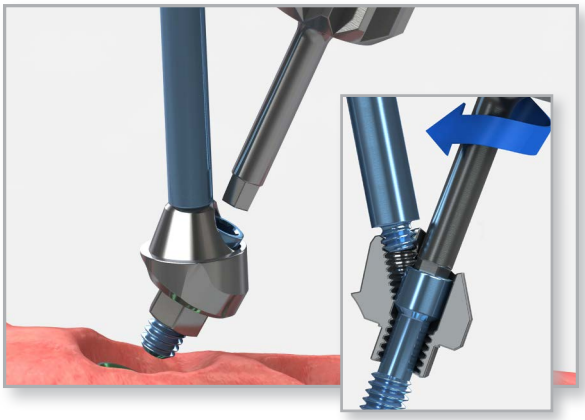
Straight abutments: Tighten the abutments to 30 Ncm using a calibrated torque wrench and the 4mm square hex adapter. The Multi-unit handpiece hex adapter can be used with a compatible torque wrench.
Angled abutments: Tighten the abutments to 30 Ncm using a calibrated torque wrench and an .050" (1.25) hex driver.

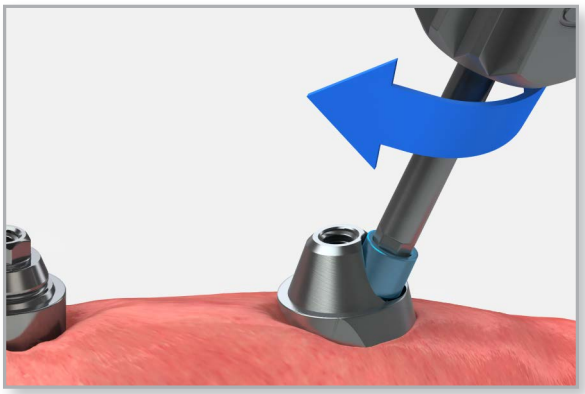
3 Make an abutment-level impression

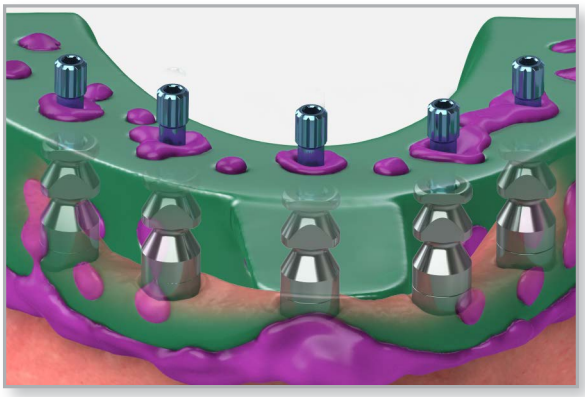
Follow the steps for creating an abutment-level impression by referring to either the Multi-unit abutment open tray technique using the direct pick-up coping module or the Multi-unit abutment closed tray technique using the indirect transfer coping module.

Important:
The fabrication of a verification jig is recommended to ensure the accuracy of the master stone model. Follow the steps for creating a verification jig by referring to the verification jig fabrication module.







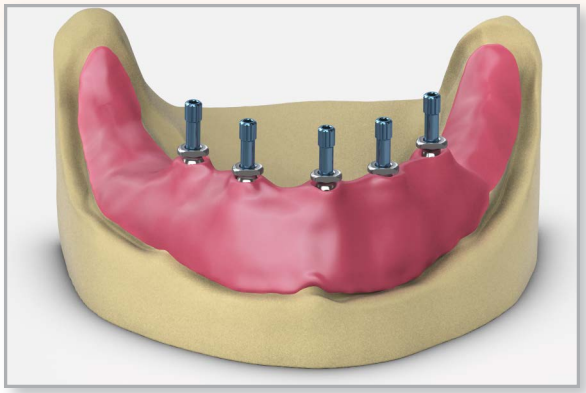


Multi-unit abutment bar overdenture

4 Lab step - Make a stabilized baseplate

Place the Multi-unit direct pick-up copings on the model using the long prosthetic screws.

Place a baseplate material of choice around the copings. Contour the material around the copings and posterior along the edentulous arch. This will be used to stabilize the wax rim later.



5 Lab step - Create a wax occlusal rim

Create a wax occlusal rim on the stabilized baseplate allowing access to the screws. Only two screws in the cuspid areas are needed to secure the assembly to the model.

Index the occlusal rim to stabilize bite registration material used in next step.

send to clinician

- stabilized baseplate
- model
- regular prosthetic screws

6 Try-in the stabilized baseplate

Remove the cover caps from the Multi-unit abutments using an .050" (1.25mm) hex driver. Attach the baseplate and occlusal rim assembly to the abutments using the regular Multi-unit prosthetic screws and hand tighten using an .050" (1.25mm) hex driver.

Contour the occlusal rim, mark the midline, and smile line. Record the vertical dimension of the occlusion with bite registration material.

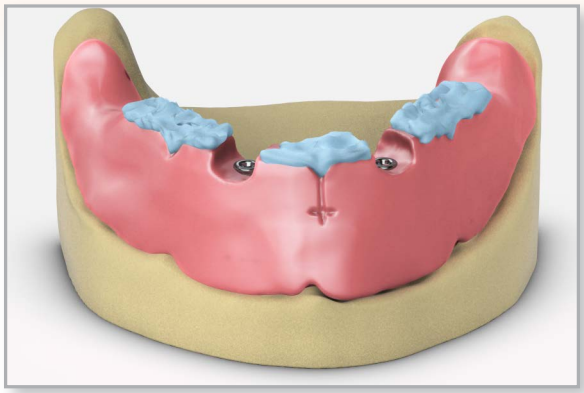
Multi-unit abutment bar overdenture

7 Attach the baseplate to the working model

Remove the baseplate and the bite registration from the mouth and reassemble on the working model using the Multi-unit prosthetic screws. Replace the healing caps onto the abutments using an .050" (1.25mm) hex driver.

Note:
If making a verification jig, refer to verification jig fabrication module.

Return the case to the laboratory for the fabrication of a stabilized trial denture.



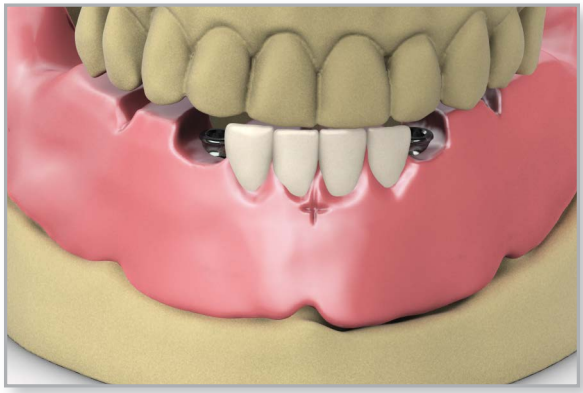
send to lab

- tooth selection
- occlusal rim
- bite registration
- models
- prescription with lab instructions

8 Lab step - Mount and set the teeth

Mount the working and opposing model on an articulator. Index the occlusal rim to stabilize bite registration material used in next step.

Set the denture teeth for a trial denture. Finish for a denture wax try-in.



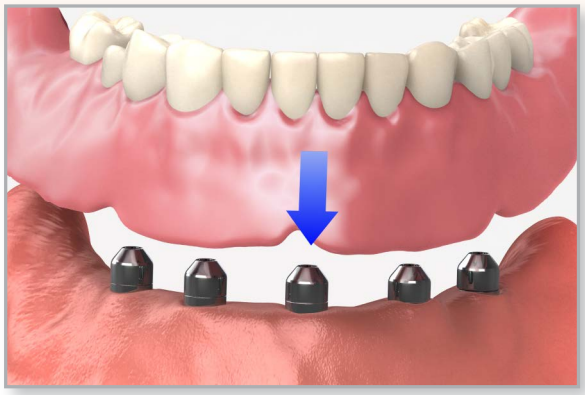
send to clinician

- trial denture for approval

Multi-unit abutment bar overdenture

9 Try in the trial denture

Verify occlusion, esthetics, and phonetics. It may be necessary to make adjustments and new inter-occlusal records for a new try-in.



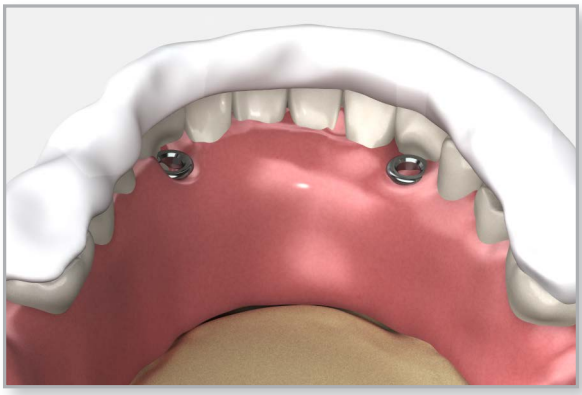
send to lab

- trial denture
- new inter-occlusal records, if necessary

10 Lab step - Form a matrix

Index the working model with circular grooves or notches to allow for accurate repositioning of the lab matrix putty.

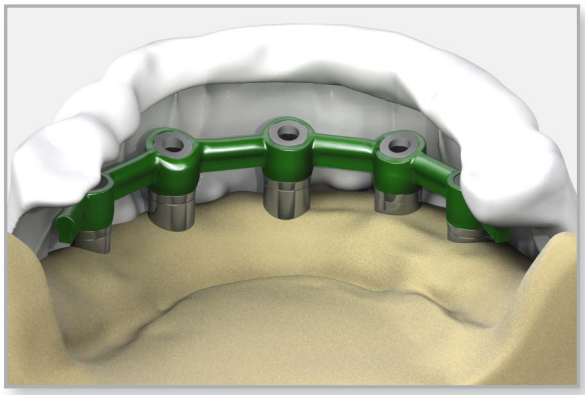
Make a labial matrix of the denture teeth in silicone putty to record tooth position and labial borders of the prosthesis relative to the working model.



11 Lab step - Place the copings and design the bar

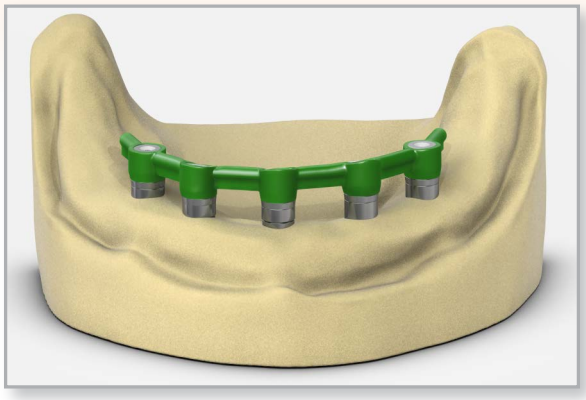
Place the gold custom castable copings for the Multi-unit abutment on the working model. Position the matrix onto the working model and use it as a guide for modifying the copings.

Design the bar within the confines of the wax try-in.



Multi-unit abutment bar overdenture

12 Lab step - Wax the bar



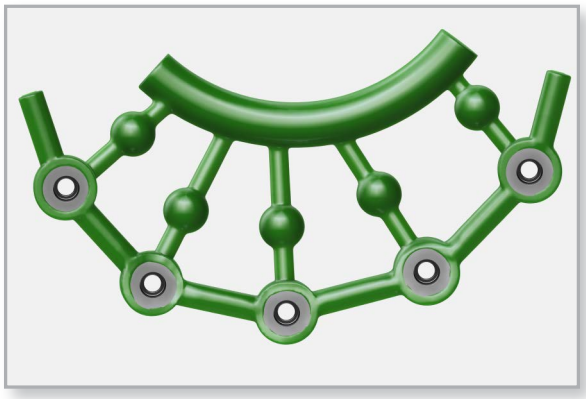
Verify attachment position, bar height and functional requirements. Design the overdenture bar using a bar wax and/or a preformed pattern of choice, incorporating the copings within the bar pattern.

Verify the position of attachments with a surveyor and adjust as needed.

Note:
custom castable gold alloy specifications*
- Melting range: 1400-1490°C
- Coefficient of thermal expansion: $12.2x10^{-6}K^{-1}$
- Hardness HV5: >215
- Tensile Strength: >750 MPa
- Composition:
  60% Gold, 20% Platinum, 19% Palladium, 1% Iridium

** Material Data Sheet for Ceramicor® from Centres+Métaux*

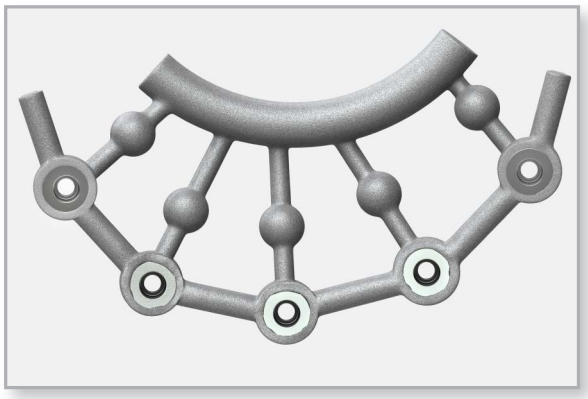
13 Lab step - Sprue, invest and cast



Sprue and invest the wax pattern per normal laboratory procedures. Cast the frame in a noble or high noble alloy.

Important:
Do not use a non-precious alloy.

14 Lab step - Divest, finish, and polish



Divest the bar.

Important:
When divesting the casting, it is important not to sandblast the abutment interface. Doing so may result in a poor fit between the abutment and the bar. Using a chemical investment remover is preferred. When polishing the interface between the abutment and the bar connection, attach a Multi-unit protection analog to protect the connection.

Finish the casting and check for a passive fit. Section and solder/laser weld as needed.

Polish the bar, again using the protection analog.

Multi-unit abutment bar overdenture

15 Process attachments in the denture base

Attach the finished bar to the working model using the prosthetic screws and an .050" (1.25mm) hex driver. Adapt the wax-setup to fit over the bar and process the selected attachments into the denture base using normal laboratory procedures.

send to clinician

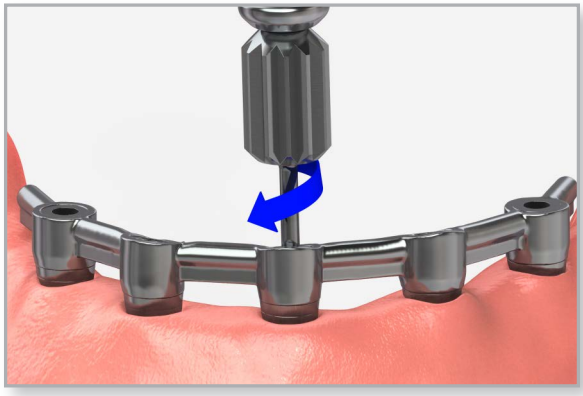
- bar
- regular prosthetic screws
- trial denture
- working model

16 Try in the bar

Remove the healing caps from the Multi-unit abutments using an .050" (1.25mm) hex driver.

Place the bar on the Multi-unit abutments and confirm that the bar seats passively. Beginning with the most distal implant, place the first prosthetic screw. Hand tighten the screw and make sure the abutment interface/connections on all the remaining implants are completely seated.

Continue placing the prosthetic screws. Verify the fit each time a screw is placed. If at any point the bar lifts as a screw is tightened, the bar is not passive and needs to be sectioned in this area and returned to the lab for correction. Refer to the correcting a non-passive framework module.

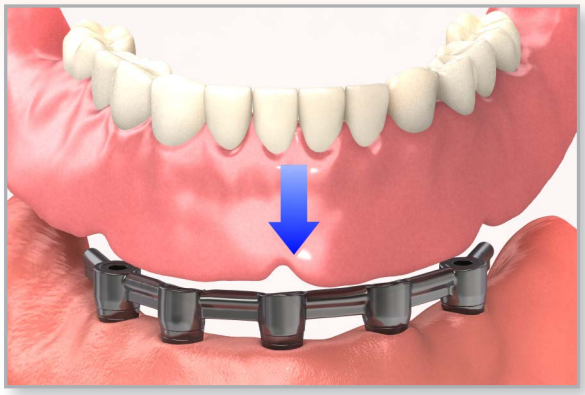


Multi-unit abutment bar overdenture

17 Try in the trial denture

Place the trial denture on the bar and verify occlusion, esthetics, and phonetics. Make any necessary adjustments and take a new bite registration if needed.

Remove the denture and the bar. Replace the healing caps onto the Multi-unit abutments using an .050" (1.25mm) hex driver.



send to lab

- bar
- trial denture on the bar
- prescription with lab instructions
- working model
- regular prosthetic screws

18 Lab step - Process the denture

Process the denture according to conventional laboratory procedures.

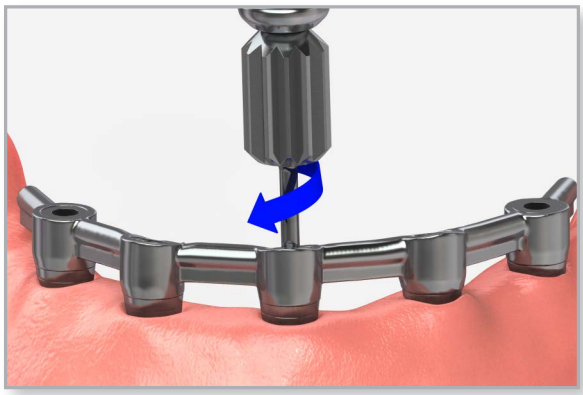
send to clinician

- bar
- regular prosthetic screws
- finished denture
- working model

19 Deliver the final restoration

Remove the healing caps from the Multi-unit abutments using an .050" (1.25mm) hex driver.

Place the final cast bar and confirm that the bar seats passively. Beginning with the most distal implant, place the first prosthetic screw. Hand tighten the prosthetic screw using an .050" (1.25mm) hex driver. Make sure the connections to all the remaining abutments are completely seated.



Multi-unit abutment bar overdenture

20 Tighten the prosthetic screws

Tighten the prosthetic screws to 15 Ncm using an .050" (1.25mm) hex driver and a calibrated torque wrench.

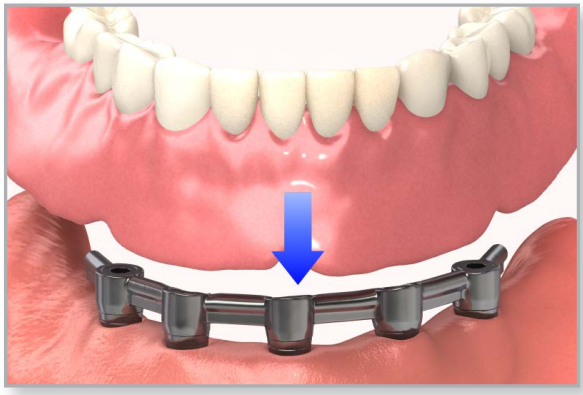
Important:
Do not exceed 15 Ncm when tightening prosthetic screws onto the Multi-unit abutments. BioHorizons recommends the use of the ITL precision adjustment torque wrench.

21 Deliver the denture

Seat the finished denture, engaging the attachments.

Verify occlusion, esthetics, and phonetics. Modify as necessary and polish after making adjustments.

Take an x-ray for final prosthetic delivery records.



verification jig fabrication

Use this technique to verify and achieve passive fitting metal framework for a bridge, hybrid prosthesis or for an overdenture bar. A passive fit when splinting multiple implants together is suggested for implant-supported restorations.

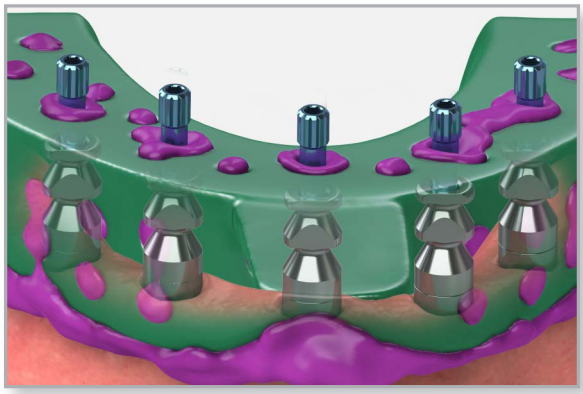
component options

- direct impression copings
- Multi-unit direct impression copings
- implant analogs
- Multi-unit abutment replicas
- .050" (1.25mm) hex driver
- Multi-unit prosthetic screws, long

1 Make an implant-level or Multi-unit abutment level impression

Refer to one of the following modules that applies to the clinical situation:

- open tray technique using the direct pick-up coping
- closed tray technique using the indirect transfer coping
- Multi-unit abutment open tray technique using the direct pick-up coping
- Multi-unit abutment closed tray technique using the indirect transfer coping



2 Lab step - Pour the working model

Fabricate a working model following conventional laboratory procedures. A soft tissue model is recommended whenever the margins are subgingival. Refer to one of the following modules that applies to the clinical situation:

- open tray technique using the direct pick-up coping
- closed tray technique using the indirect transfer coping
- Multi-unit abutment open tray technique using the direct pick-up coping
- Multi-unit abutment closed tray technique using the indirect transfer coping

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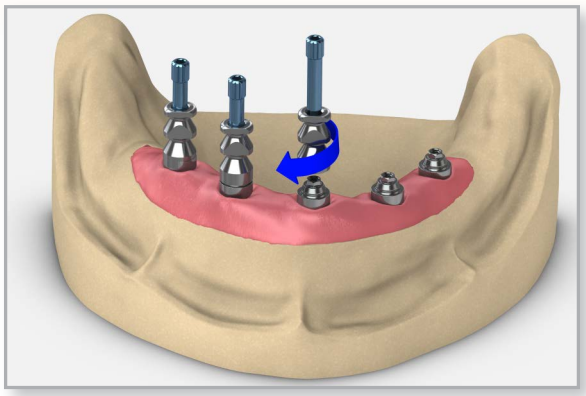
verification jig fabrication

3 Lab step - Place the direct impression copings on the model

Place implant-level or Multi-unit direct pick-up copings on the model using the long prosthetic screws.

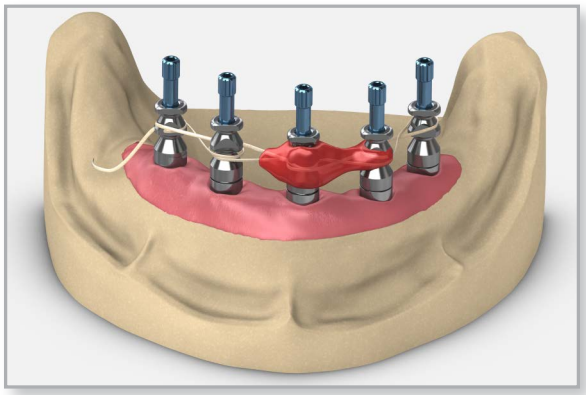
Note:
As an alternative, titanium temporary abutments or Multi-unit titanium copings may be used for this procedure.



4 Lab step - Connect the impression copings

Intertwine dental floss or orthodontic wire around the direct impression copings. Apply pattern resin or a light-cured material to the impression copings while incorporating the floss or wire, luting the impression copings together. Trim, shape, and smooth the acrylic as needed for try-in.

Send the completed verification jig to the clinician for try-in.



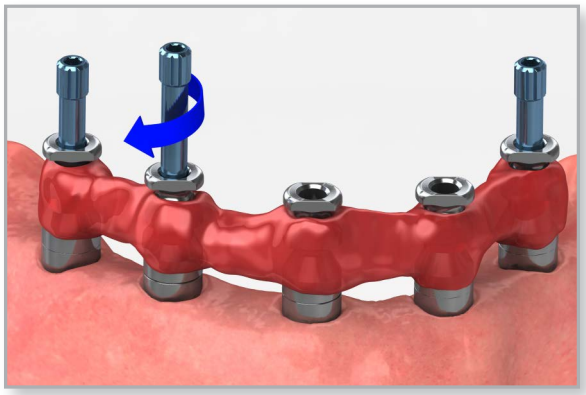
send to clinician

- verification jig
- abutment screws
- working model
- long abutment screws

5 Try-in the verification jig

Remove the healing caps from the Multi-unit abutments or healing abutments from the implants using an .050" (1.25mm) hex driver. Confirm the prosthetic platform is free of any debris or soft tissue.

Place the verification jig and confirm that it seats passively. Beginning with the most distal implant, place the first abutment screw. Hand tighten the screw and make sure the prosthetic interface on all the remaining implants are completely seated.



Note:
Visually or with a radiograph, always ensure the verification jig is completely seated onto the implants or the abutments.

Continue placing the abutment screws. Verify the fit each time a screw is placed. If at any point the verification jig lifts as a screw is tightened, this indicates the jig is not passive and needs to be sectioned in that area.

verification jig fabrication

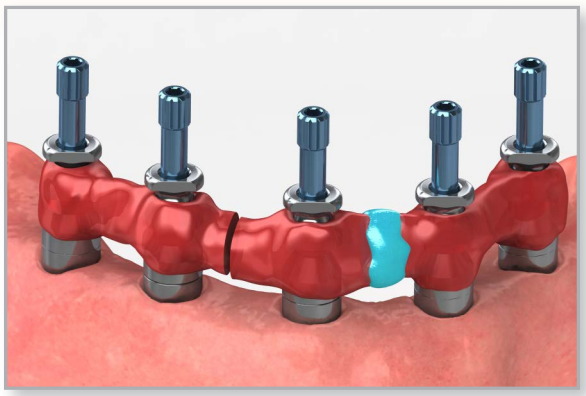
6 Section the verification jig

Section the jig as necessary to create a passive fit and lute the sections together using acrylic or composite material.

Remove the modified verification jig from the mouth and replace the cover caps or healing abutments using an .050" (1.25mm) hex driver.

Return the luted verification jig to the laboratory for correction.

Important:
DO NOT ATTACH the verification jig to the model.

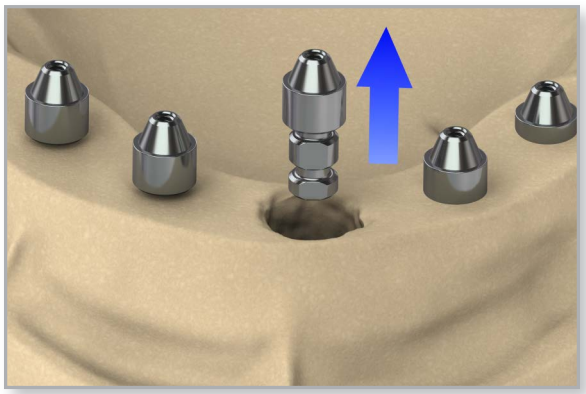


send to lab

- luted verification jig
- abutment screws
- working model
- long abutment screws

7 Lab step - Correct the model

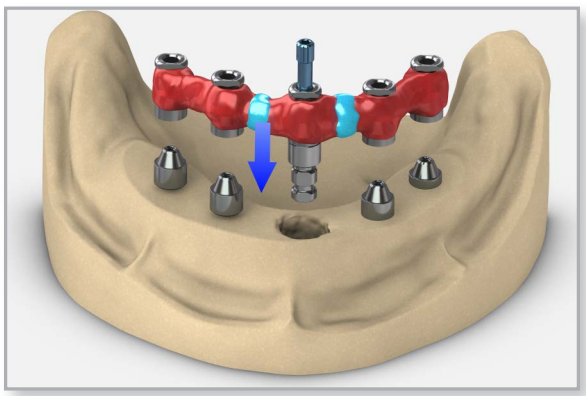
Once the verification jig has been modified in the mouth, the working model must be corrected. Remove misaligned abutment replicas or implant analogs from the working model until the verification jig rests passively on the remaining replicas or analogs.



8 Lab step - Seat the jig on the model

Attach the removed replicas or analogs to the verification jig and seat on the model securing it to the remaining replicas or analogs. The reattached replicas or analogs will be suspended within the hole created when they were removed from the model.

Soak the model in water.

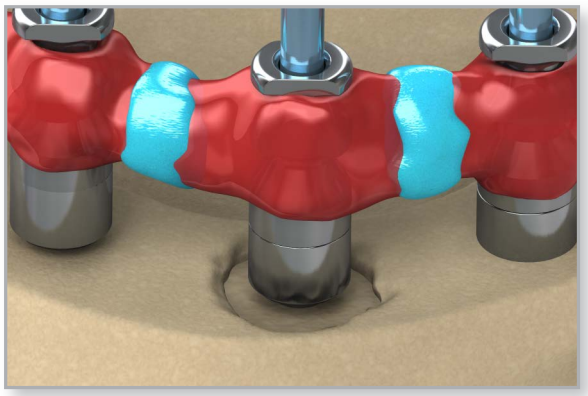


verification jig fabrication

9 Lab step - Modify the model

Carefully vibrate stone into the voids around the retentive undercuts of the replicas or analogs. Allow the stone to set. Soak the model in water.

Proceed with another try-in or continue with the case.



correcting a non-passive framework

Use this technique to verify and achieve passive fitting metal framework for a bridge, hybrid prosthesis or for an overdenture bar. A passive fit when splinting multiple implants together is suggested for implant-supported restorations.

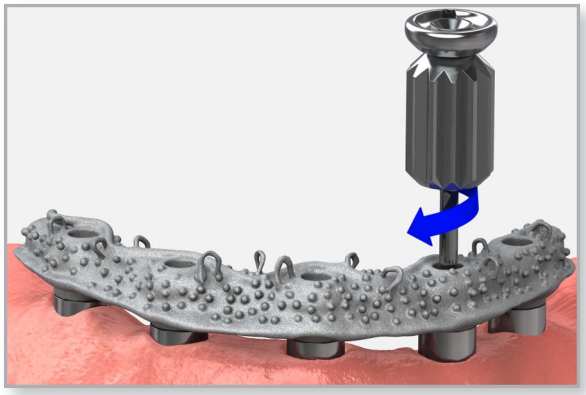
1 Try-in the frame

Remove the healing caps from the Multi-unit abutments or healing abutments from the implants using an .050" (1.25mm) hex driver. Confirm that the prosthetic platform is free of any debris or soft tissue.

Place the framework and confirm that the frame seats passively. Beginning with the most distal abutment or implant, place the first abutment screw. Hand tighten the screw and make sure the prosthetic interface on all the remaining abutments or implants is completely seated.

Note:
Visually or with a radiograph, always ensure the bar or framework is completely seated onto the abutments.

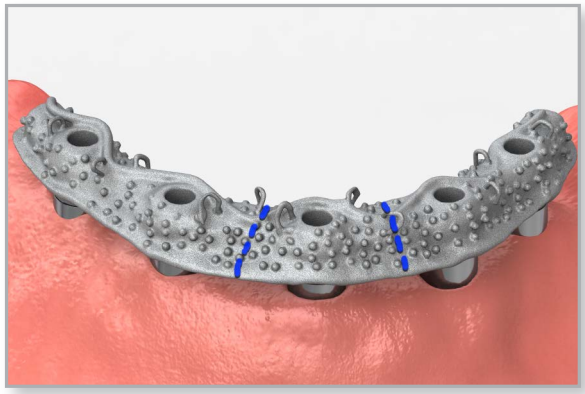
Continue placing the abutment screws. Verify the fit each time a screw is placed. If at any point the frame lifts as a screw is tightened, this indicates the frame is not passive and needs to be sectioned in that area and returned to the lab for correction.



2 Mark and modify the framework

Mark the area(s) that will require sectioning.

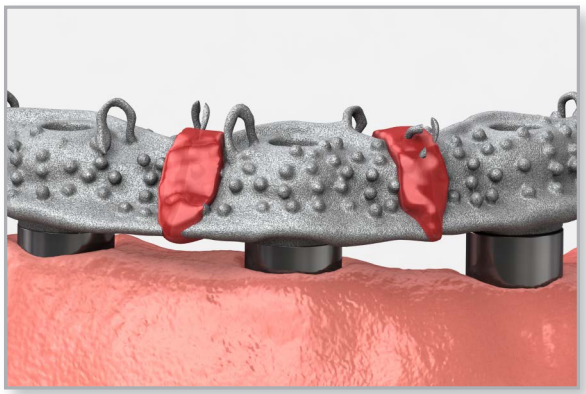
Remove and section the framework where necessary.



3 Lute the sectioned framework

Seat the sectioned frame and lute it together using acrylic/ composite resin material.

Note:
Visually or with a radiograph, always ensure the bar or framework is completely seated onto the abutments.



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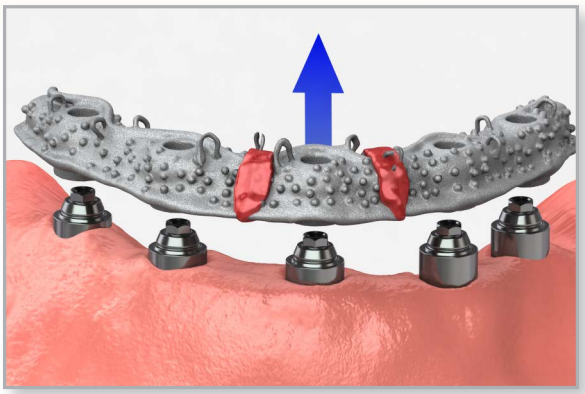
correcting a non-passive framework

4 Remove and replace the healing components

Remove the framework and replace the healing caps on the Multi-unit abutments or healing abutments on the implants using an .050" (1.25mm) hex driver.

Return the luted framework to the laboratory for soldering/ laser welding.

Important:
DO NOT ATTACH the framework to the model.

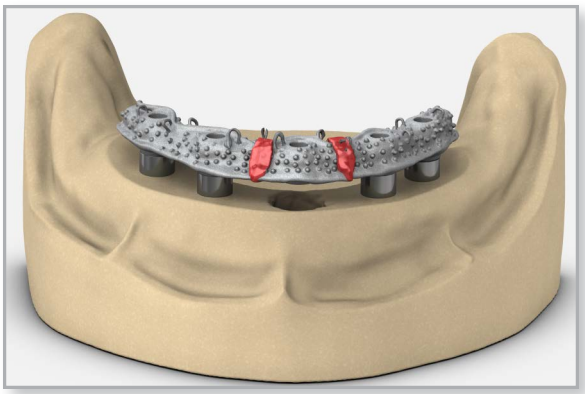


send to lab

- sectioned and luted framework
- prosthetic screws
- working model

5 Lab step - Remove the misaligned replica or analog

Remove the misaligned replicas or analogs from the working model.

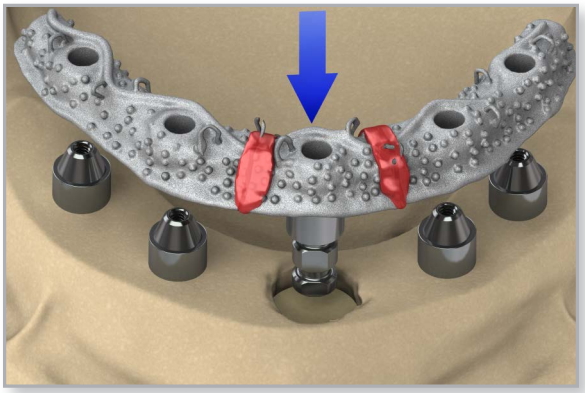


6 Lab step - Correct the working model

Attach the removed replicas or analogs to the framework and seat on the model securing it to the remaining replicas or analogs. The reattached replicas or analogs will be suspended within the holes created when they were removed from the model.

Soak the model in water.

Carefully vibrate stone into the voids around the retentive undercuts of the analogs. Allow the stone to set.



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correcting a non-passive framework

7 Lab step - Solder/laser weld the framework

Remove the resin from the sectioned framework and clean each segment. Return the framework to the corrected master model and solder/laser-weld the corrections.

Proceed with another try-in or continue with the case.

OD Secure chairside pick-up using existing denture

Use this technique for chairside pick-up of the OD Secure housing into an existing denture. OD Secure abutments are designed for use with overdentures or partial dentures retained in whole or in part by dental implants in the mandible or maxilla. They offer multiple levels of retention and low vertical profile.

component options

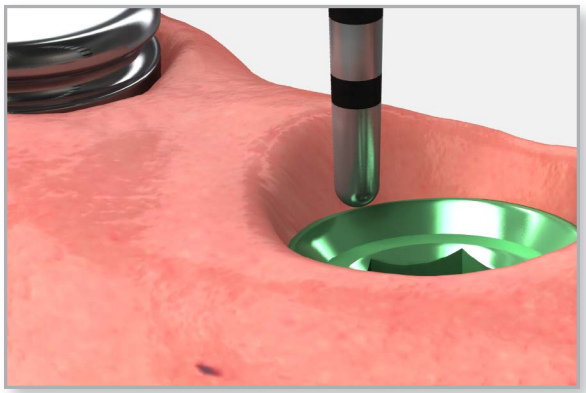
- OD Secure abutment kit
- OD Secure extraction tool
- OD Secure insertion tool
- torque wrench

1 Select the OD Secure abutments

Select the proper OD Secure abutment based on the prosthetic platform and the tissue height. Measure the tissue thickness from the top of the implant to the crest of the gingiva at its highest point.

Choose the abutment cuff height that exactly equals the tissue height or is slightly taller. This will place the OD Secure connection 1.5mm above the tissue and allow the housing cap to seat completely.

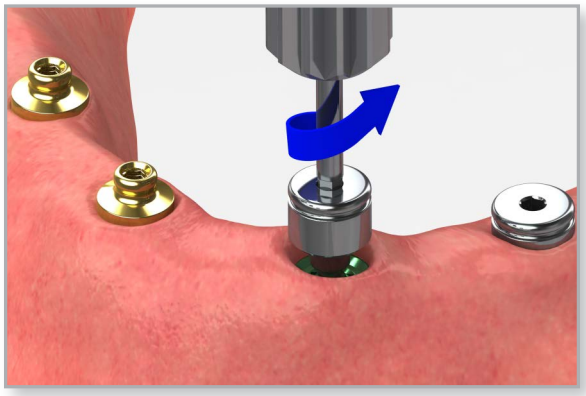
Note:
Due to tissue depth variations, the abutment heights you choose may vary.



2 Remove the healing abutments

Remove the healing abutments using an .050" (1.25mm) hex driver. Confirm that the prosthetic platforms are free of bone debris and soft tissue. Irrigate the internal connection of the implants and dry.

Helpful Hint:
When working with multiple implants, remove one healing abutment at a time and replace it immediately with a OD Secure abutment. This helps to prevent the possibility of soft tissue collapsing onto the implant.



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OD Secure chairside pick-up using existing denture

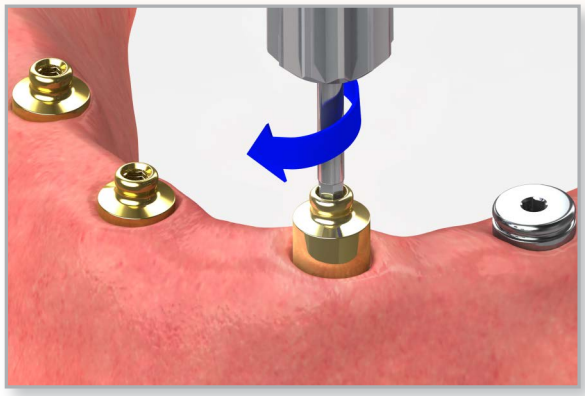
3 Place the OD Secure abutments

Place the OD Secure abutment onto each implant using an .050" (1.25mm) hex driver. Hand tighten.

Take a radiograph along the long axis of the implants to ensure the abutments are seated completely onto the implants.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

Tighten each OD Secure abutment to 30 Ncm using a calibrated torque wrench and an .050" (1.25mm) hex driver.

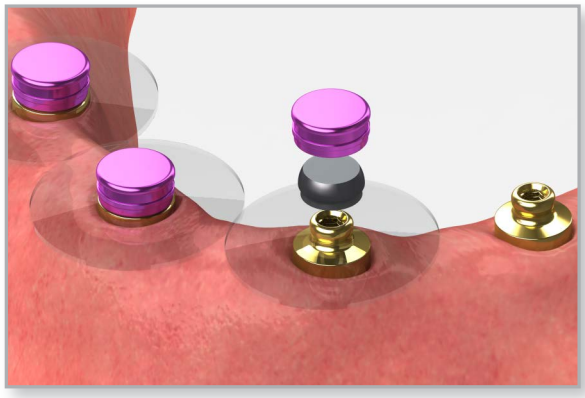


4 Place the block-out spacers and housing caps

Place a block-out spacer over the head of each OD Secure abutment. This blocks out the area immediately surrounding the abutment allowing the full resilient function of the pivoting metal housing cap over the OD Secure connection.

Place a OD Secure housing cap with a black lab processing insert onto each OD Secure abutment.

Note:
If the block-out spacer does not completely fill the space between the tissue and the metal housing cap, block out any remaining undercuts with a material of choice to prevent the acrylic resin from locking the denture onto the abutment.



5 Modify the denture

Place a transferable mark on the top of each OD Secure abutment with an indelible pencil and seat the denture to determine the ideal location for the housing caps in the denture.

Prepare recesses in the denture to accommodate the protruding OD Secure abutments. There must be no contact between the denture and the housing caps. If the denture rests on the housing cap, excess pressure on the implant will result.

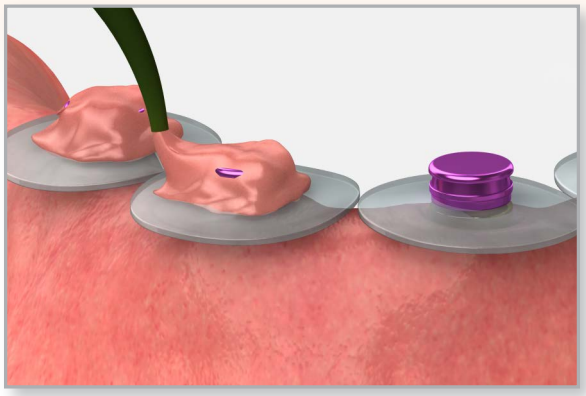
Make lingual vent holes for the escape of any excess acrylic.

OD Secure chairside pick-up using existing denture

6 Apply the acrylic

Use either a chairside light cure acrylic resin or a permanent self-curing acrylic to bond the housing caps to the denture.

Place a small amount of a material of choice into the recessed area of the denture and around the denture caps.

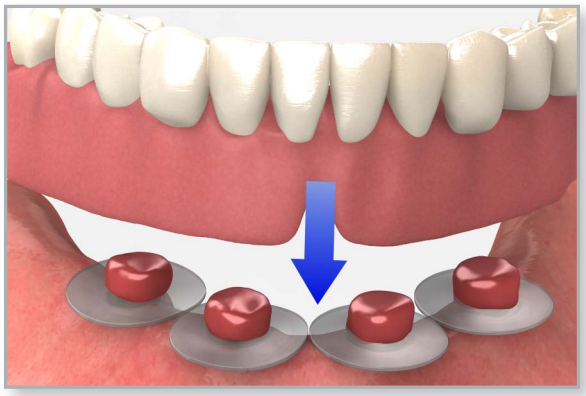


7 Seat the denture

Insert the denture. Guide the patient into occlusion, maintaining a proper relationship with the opposing arch.

Maintain the denture in a passive position without compressing the soft tissue while the denture material sets.

Important:
Excessive occlusal pressure during the setting time may cause tissue recoil against the denture base and could contribute to dislodging and wear of the nylon male.



8 Remove the denture

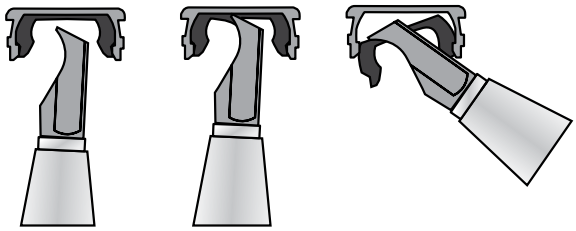
After the acrylic has cured, remove the denture. Fill in any voids with acrylic and remove excess acrylic from around the housing cap and the lingual vent-hole. Polish before changing to the final retentive cap insert.

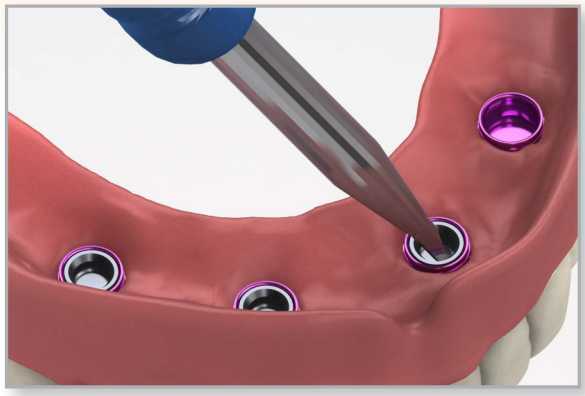
OD Secure chairside pick-up using existing denture

9 Remove the black insert

Use the OD Secure tool to remove the black lab processing insert from the metal housing cap.

Insert the OD Secure tool into the cap assembly and pull the insert out.

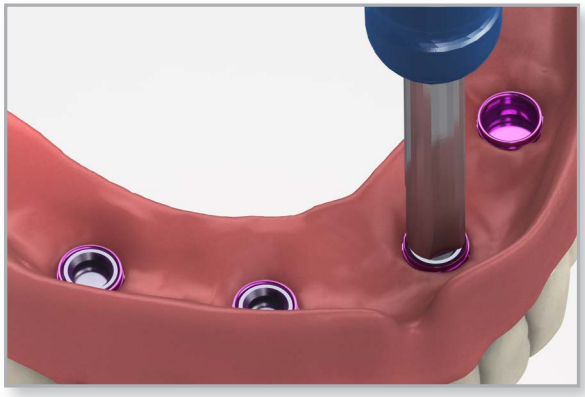




10 Place the male retention insert

Use the OD Secure cap insert tool to firmly push a retention cap insert into the housing cap. The retention insert must seat securely into place, level with the rim of the cap.

Note:
The OD Secure cap insert tool does not retain the replacement retention cap insert. It is best to hold the denture with the occlusal side down and snap the retention insert into the metal cap.

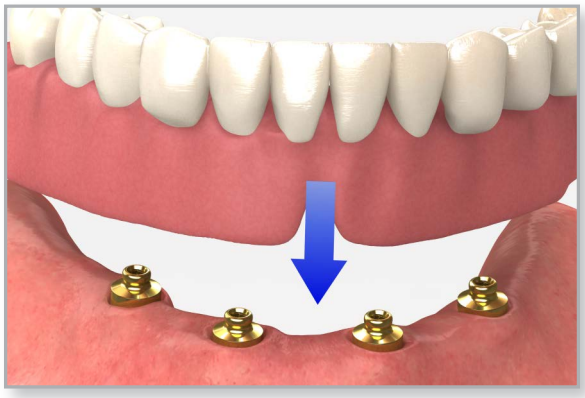


11 Deliver the denture

Remove the provisional prosthesis and seat the overdenture onto the OD Secure abutments. Modify the occlusion and the tissue side of the denture as necessary and polish after making adjustments.

Verify the patient's ability to remove and seat the denture properly. If the denture has too much or too little retention, select an insert with different retention.

Instruct the patient on the proper insertion and removal of the prosthesis. This includes inserting the denture using their fingers and not biting the denture in to place. When removing the denture, it should be lifted as evenly as possible.



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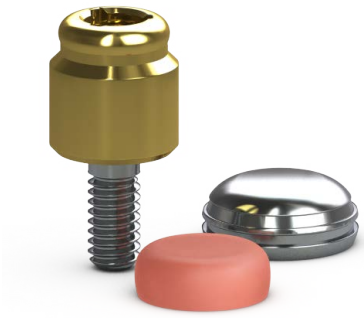
Locator® abutment overdenture: chairside pick-up using existing denture

Use this technique for chairside pick-up of the Locator caps into an existing denture. Locator abutments are designed for use with overdentures or partial dentures retained in whole or in part by dental implants in the mandible or maxilla. They offer multiple levels of retention and low vertical profile. The self-aligning design enables patients to easily seat their dentures.



component options

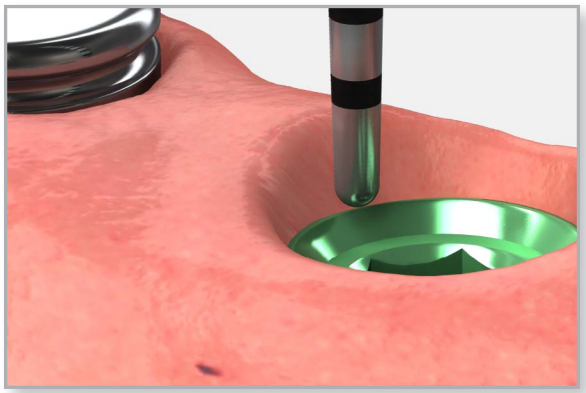
- Locator abutments
- Locator core tool
- Locator square drive tool
- torque wrench
- Locator male processing package

1 Select the Locator abutments

Select the proper Locator abutment based on the prosthetic platform and the tissue height. Measure the tissue thickness from the top of the implant to the crest of the gingiva at its highest point.

Choose the abutment cuff height that exactly equals the tissue height or is slightly taller. This will position the functioning 1.8 mm of the Locator abutment above the surrounding tissue.

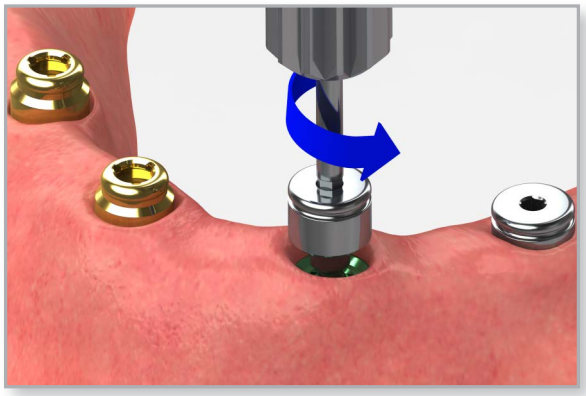
Note:
Due to tissue depth variations, the abutment heights you choose may vary.



2 Remove the healing abutments

Remove the healing abutments using an .050" (1.25mm) hex driver. Confirm that the prosthetic platforms are free of bone debris and soft tissue. Irrigate the internal connection of the implants and dry.

Helpful Hint:
When working with multiple implants, remove one healing abutment at a time and replace it immediately with a Locator abutment. This helps to prevent the possibility of soft tissue collapsing onto the implant.



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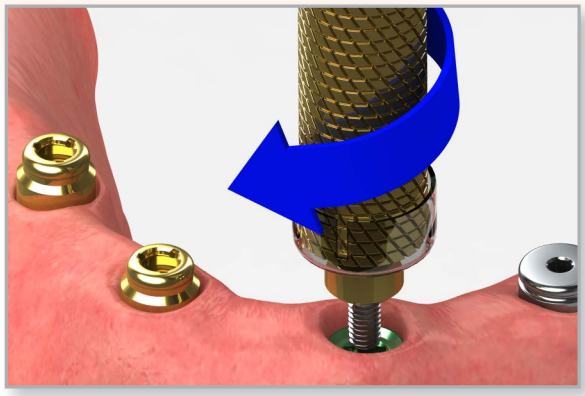
Locator abutment overdenture: chairside pick-up using existing denture

3 Place the Locator abutments



Place the Locator abutment onto each implant using the Locator hand driver with a Locator abutment holder. Hand tighten.

Take a radiograph along the long axis of the implants to ensure the abutments are seated completely onto the implants.

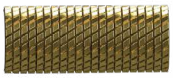
Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

Tighten each Locator abutment to 30 Ncm using a calibrated torque wrench and the Locator square drive tool. Alternatively, use an .050" (1.25mm) hex driver inserted into the core tool hand driver.

Locator core tool instructions

Male retention insert removal tool
For removing the male retention inserts from the metal housing

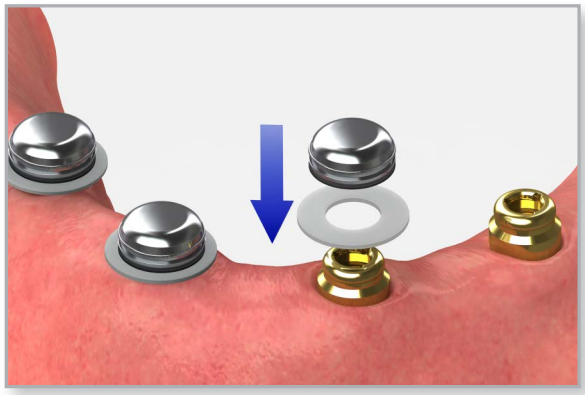
Male retention insert tool
For placing the male retention inserts into the metal housing



Hand driver
For hand tightening the Locator abutment

Locator abutment holder
For retaining and delivering the Locator abutment using the hand driver portion of the core tool.

4 Place the white block-out spacers and denture caps



Place a white block-out spacer over the head of each Locator abutment. This blocks out the area immediately surrounding the abutment allowing the full resilient function of the pivoting metal denture cap over the Locator male.

Place a Locator cap with a black processing insert onto each Locator abutment.

Note:
If the white block-out spacer does not completely fill the space between the tissue and the metal denture cap, block out any remaining undercuts with a material of choice to prevent the acrylic resin from locking the denture onto the abutment.

Locator abutment overdenture: chairside pick-up using existing denture

5 Modify the denture

Place a transferable mark on the top of each Locator abutment with an indelible pencil and seat the denture to determine the ideal location for the denture caps in the denture.

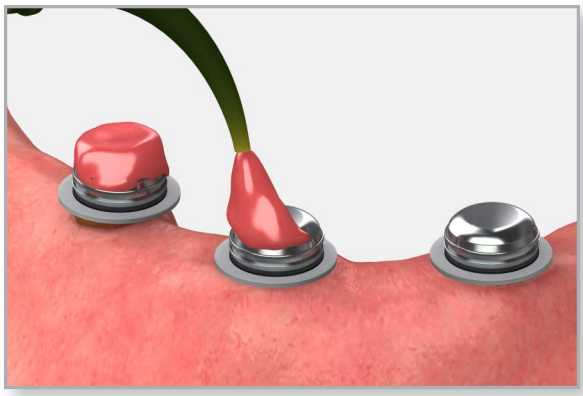
Prepare recesses in the denture to accommodate the protruding Locator males. There must be no contact between the denture and the titanium caps. If the denture rests on the metal cap, excess pressure on the implant will result.

Make lingual vent holes for the escape of any excess acrylic.

6 Apply the acrylic

Use either a chairside light cure acrylic resin or a permanent self-curing acrylic to bond the denture caps to the denture.

Place a small amount of a material of choice into the recessed area of the denture and around the denture caps.

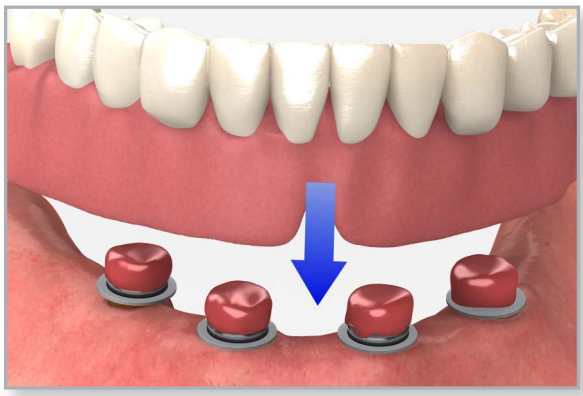


7 Seat the denture

Insert the denture. Guide the patient into occlusion, maintaining a proper relationship with the opposing arch.

Maintain the denture in a passive position without compressing the soft tissue while the denture material sets.

Important:
Excessive occlusal pressure during the setting time may cause tissue recoil against the denture base and could contribute to dislodging and wear of the nylon male.



8 Remove the denture

After the acrylic has cured, remove the denture and discard the white spacer. Fill in any voids with acrylic and remove excess acrylic from around the denture cap and the lingual vent-hole. Polish before changing to the final male retentive insert.

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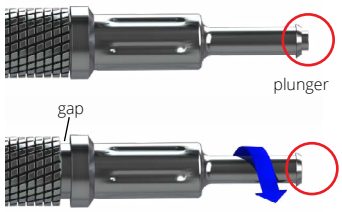
Locator abutment overdenture: chairside pick-up using existing denture

9 Remove the black insert

Use the Locator male removal tool to remove the black processing male from the metal denture cap.

Note:
Before inserting the tool, rotate the tool counter-clockwise so the plunger on the end is positioned inside the tool. There will be a visible gap.



Insert the male removal tool end into the cap assembly and push straight down into bottom of the nylon male. Tilt the tool so the sharp edge grabs the black insert and pull it out of the cap. To discard the insert from the tool, point it down and away from you and tighten the male removal tool clockwise back onto the core tool. The insert will dislodge from the tip of the tool.

10 Place the male retention insert

Use the Locator core tool to firmly push a Locator male retention insert into the denture cap. The retention insert must seat securely into place, level with the rim of the cap.

Note:
The Locator core tool does not retain the replacement male. It is best to hold the denture with the occlusal side down and snap the male into the metal denture cap.

11 Deliver the denture

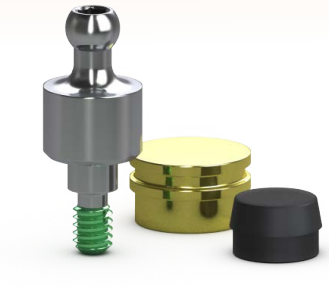
Remove the provisional prosthesis and seat the overdenture onto the Locator abutments. Modify the occlusion and the tissue side of the denture as necessary and polish after making adjustments.

Verify the patient's ability to remove and seat the denture properly. If the denture has too much or too little retention, select an insert with different retention.

Instruct the patient on the proper insertion and removal of the prosthesis. This includes inserting the denture using their fingers and not biting the denture in to place. When removing the denture, it should be lifted as evenly as possible

ball abutment overdenture: chairside pick-up using existing denture

Use this technique for chairside pick-up of ball abutment attachments into an existing denture. Ball abutments are designed to secure a tissue-supported overdenture in the mandible.



component options

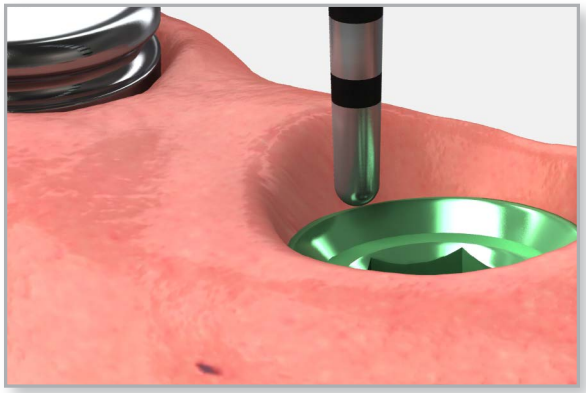
- ball abutments
- .050" (1.25mm) hex driver
- torque wrench
- ball attachment set
- directional rings
- insert seating tool
- reamer

1 Select the ball abutments

Select the proper ball abutment based on the prosthetic platform of the implant and tissue height. Measure the tissue thickness from the top of the prosthetic platform to the crest of the gingiva at its highest point.

Choose the abutment collar height that is 1mm higher than the tissue height. There should be no tissue above the shoulder of the collar.

Note:
Due to tissue depth variations, the abutment heights you choose may vary.

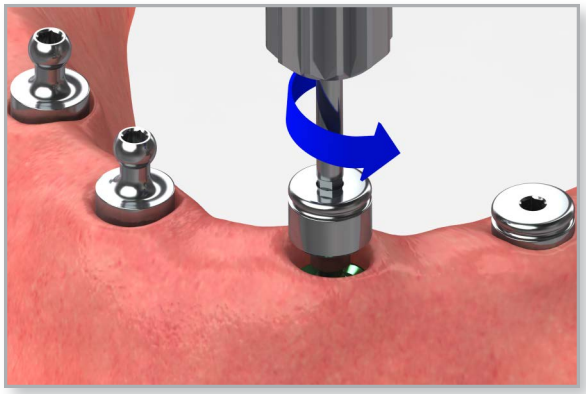


2 Remove the healing abutments

Remove the healing abutments using an .050" (1.25mm) hex driver. Confirm that the prosthetic platforms are free of bone debris and soft tissue. Irrigate the internal connection of the implants and dry.

Helpful Hint:
When working with multiple implants, remove one healing abutment at a time and replace it immediately with a ball abutment. This helps to prevent the possibility of soft tissue collapsing onto the implant.

Important:
The ball abutment's shoulder should be 1mm supragingival to prevent soft tissue impingement at time of seating.



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ball abutment overdenture: chairside pick-up using existing denture

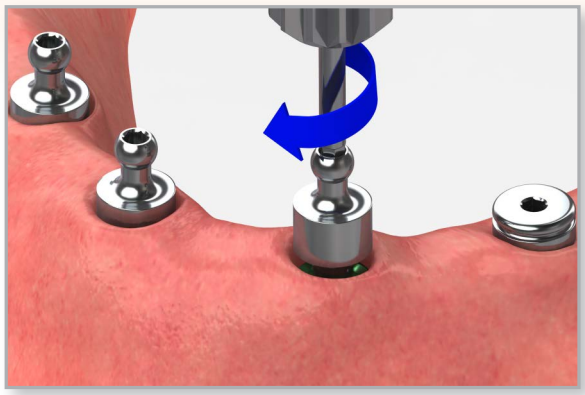
3 Place the ball abutments

Place the selected ball abutment onto each implant using an .050" (1.25mm) hex driver. Hand tighten.

Take a radiograph along the long axis of the implants to ensure the abutments are seated completely on the implants.

Tighten the ball abutments using the 30 Ncm torque wrench and an .050" (1.25mm) hex driver.

Note:
The X-ray tube must be positioned perpendicular to the implant prosthetic platform.



4 Mark the denture

Place a transferable mark on top of each ball abutment with an indelible pencil and seat the denture to determine the ideal location for the attachment housings in the denture.

Prepare recesses in the denture to accommodate space for the housings. There must be no contact between the denture and the housings with a minimum of .25mm of space between the housings and the denture.

Important:
Resting the denture on the metal caps will result in excess pressure on the implants.

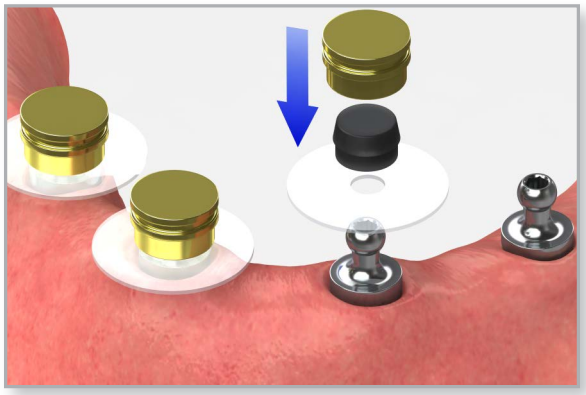
Make lingual vent holes for the escape of any excess acrylic.

5 Seat the attachment housings

Insert the black nylon lab processing insert into each of the titanium housings with the insert seating tool. Snap an attachment housing onto each abutment.

Note:
If the implants are not parallel, it may be necessary to use directional rings or blockout material to position the housings on the same horizontal plane for a parallel path of draw.

Helpful Hint:
The protective discs may be positioned over the ball abutment to protect the soft tissue during the pick-up procedure.



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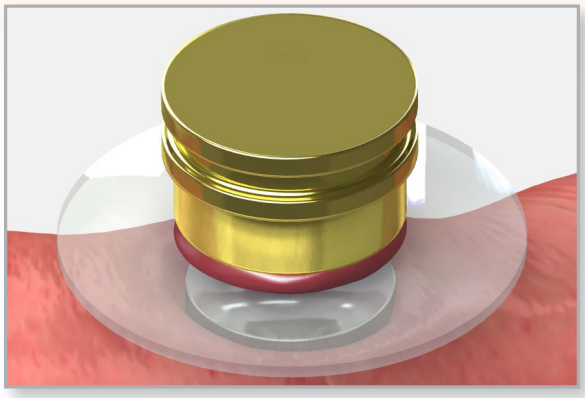
ball abutment overdenture: chairside pick-up using existing denture

6 Block out the undercuts

Block out any undercuts beneath the housing and soft tissue with a material of choice to prevent the acrylic resin from locking the denture onto the abutment. Seat the denture making sure the denture is not touching the housings.

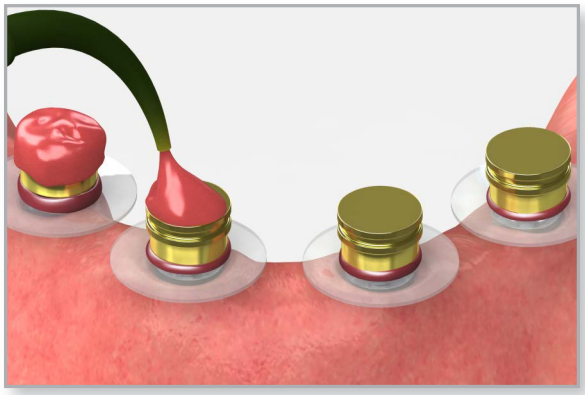
Important:
If the undercuts are not blocked out, the denture may become locked onto the ball abutments.



7 Apply the acrylic

Use either a chairside light cure acrylic resin or a permanent self-curing acrylic for bonding the ball attachment housings to the denture.

Place a small amount of material into the recessed area of the denture and around the titanium housings.

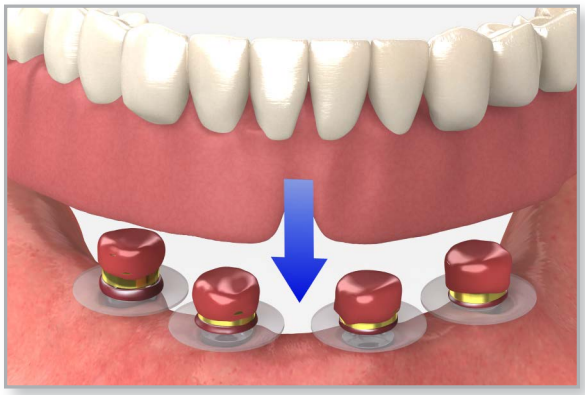


8 Seat the denture

Insert the denture. Guide the patient into occlusion, maintaining a proper relationship with the opposing arch.

Maintain the denture in a passive position without compressing the soft tissue while the denture material sets.

Important:
Excessive occlusal pressure during the seating time may cause tissue recoil against the denture base and could contribute to dislodging and wear of the nylon insert.



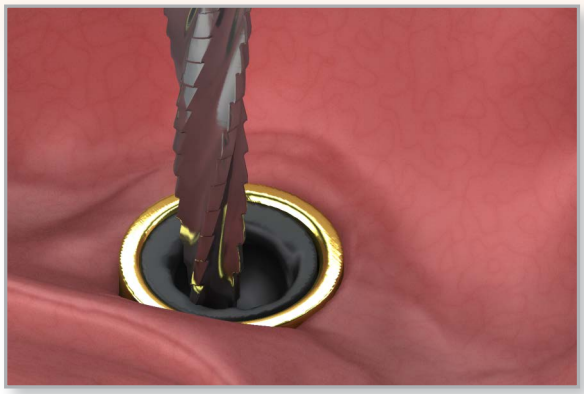
9 Remove the denture

After the acrylic has cured, remove the denture and discard the directional rings, if used. Fill any voids with acrylic, remove the excess acrylic from around the housings and the lingual vent-hole, and polish.

ball abutment overdenture: chairside pick-up using existing denture

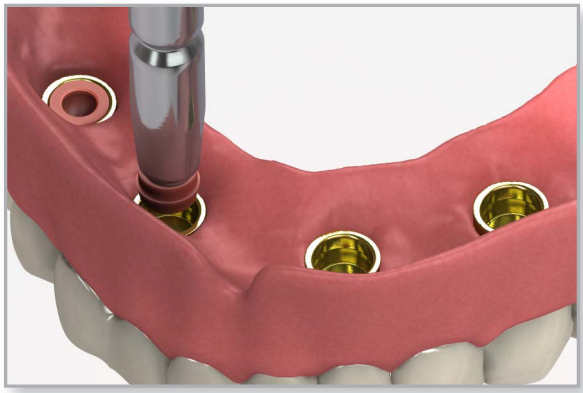
10 Remove the black processing insert

Remove the black processing insert from the housing by using a rotary instrument operated at a low RPM. Care should be taken not to damage the housing during this procedure.



11 Place the nylon retention insert

Use the insert-seating tool to seat the nylon insert (white for more retention or pink for less retention) into the titanium housing. The insert must seat securely in place and be level with the rim of the housing.



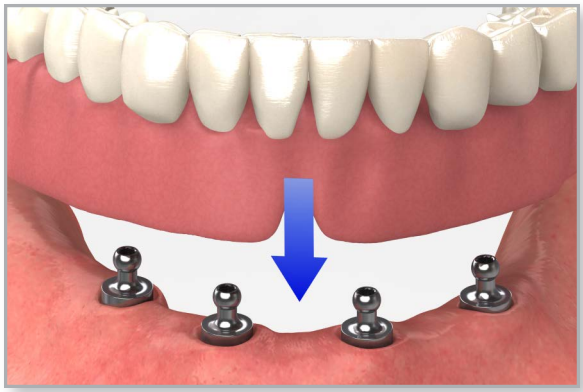
12 Deliver the denture

Seat the overdenture onto the ball abutments. Modify the occlusion and the tissue side of the denture as necessary and polish after making adjustments.

Verify the patient's ability to remove and seat the denture properly. If the denture has too much or too little retention, select an insert with a different retention.

Helpful Hint:
If the retention is too great for the patient to remove the denture and an insert with lower retention is not available, the reamer may be used to reduce the retention. Insert the reamer into the caps and rotate clockwise for a few rotations. Try in the prosthesis, if retention is still too great; repeat the use of the reamer until the proper retention is achieved.

Instruct the patient on the proper insertion and removal of the prosthesis. This includes inserting the denture using their fingers and not biting the denture into place. When removing the denture, lift it as evenly as possible.



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SmartShape™ Healers digital & closed-tray impression workflows

The BioHorizons SmartShape healing system offers an anatomically designed healing abutment solution that is also integrated within digital restorative workflows. Healers are available in different profiles that are contoured to match natural tooth shapes to provide more esthetic tissue shaping. Once placed, the SmartShape healer can be scanned or impressed to transfer the implant position to a model. Custom abutments can be milled to match the anatomical profile of each healer and maintain the tissue contouring with the final restoration.

Easy identification & selection

SmartShape Healers are available in 6 different anatomical profiles across the 4 BioHorizons internal hex connections. Two height options are available to accommodate varying tissue thicknesses and implant placement protocols.

	Shape	Connections	Heights
A1	Maxillary Centrals (Sites 8, 9)		Regular & Tall
A2	Maxillary Laterals & Mandibular Incisors (Sites 7, 10, 23-26)		Regular & Tall
M1	Maxillary Canines (Sites 6,11)		Regular & Tall
M2	Premolars & Mandibular Canines (Sites 4-5, 12-13, 20-22, 27-29)		Regular & Tall
P1	Maxillary Molars (Sites 2-3, 14-15)		Regular & Tall
P2	Mandibular Molars (Sites 18-19, 30-31)		Regular & Tall

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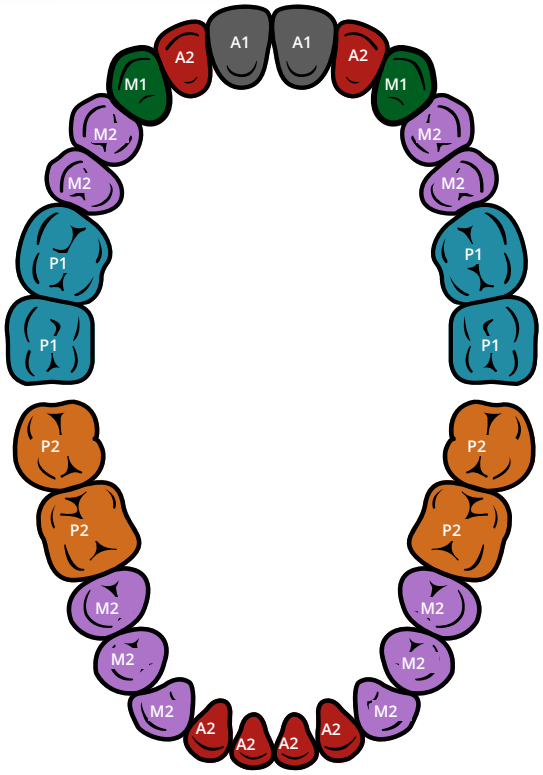
SmartShape Healer selection is determined by the anatomical position in the mouth for the best match between natural dentition and the abutment emergence profile.

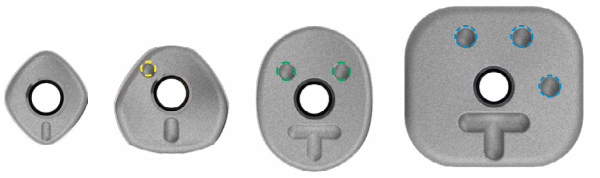
A1- Anterior 1 | A2- Anterior 2 | M1- Mid 1

M2- Mid 2 | P1- Posterior 1 | P2- Posterior 2



The implant platform is indicated by dimples on the occlusal surface.

No Dimple	**3.0mm platform (Gray)**	
1 Dimple	**3.5mm platform (Yellow)**	
2 Dimples	**4.5mm platform (Green)**	
3 Dimples	**5.7mm platform (Blue)**	

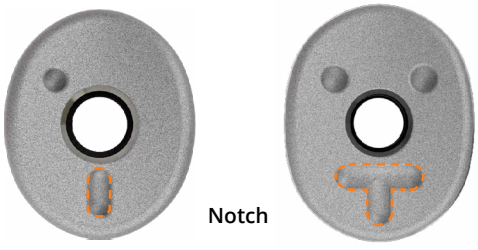


Important:
A notch is marked on the occlusal surface for indexing the healer profile and identifying the healer height.

The healer should be placed so the notch is perpendicular to the buccal plane.

Different tissue heights offer a solution for two implant position/depth options for varying tissue thickness and implant placement protocols.

I	**Regular height**
T	**Tall height**



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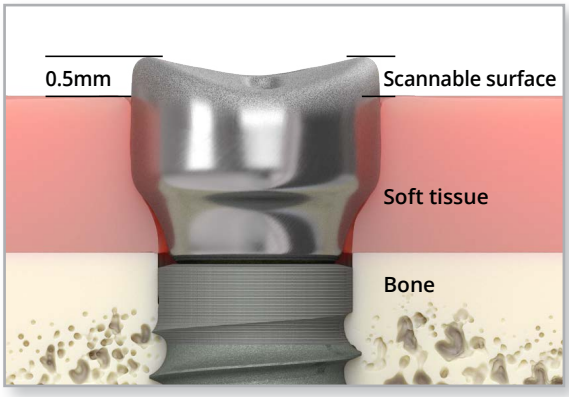
Digital impressions using SmartShape Healers

1 SmartShape Healer placement

Confirm the implant prosthetic platform is free of any bone debris or soft tissue. Place the SmartShape Healer with the occlusal notch perpendicular to the buccal plane. Verify the healer is fully seated, then hand tighten the screw with a .050" (1.25mm) hex driver.

Important:
Make sure the SmartShape Healer is seated properly, leaving 0.5mm of the scannable surface above the soft tissue.



Helpful hint:
Take a radiograph along the long axis of the implant to ensure that the healer is seated completely into the hex of the implant. Note: The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

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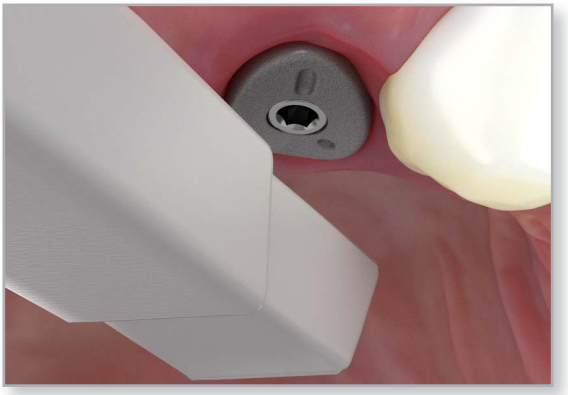
Digital impressions using SmartShape Healers

2 Digitize the impression

Confirm the occlusal surface of the SmartShape Healer is free of any residue or debris. Take an intraoral digital impression of the healer and surrounding dentition using a handheld 3D scanner.

Important:
Ensure the lab has the digital library that is compatible with the scan body. The BioHorizons digital library can be downloaded from vulcandental.com/DigitalLibraries.



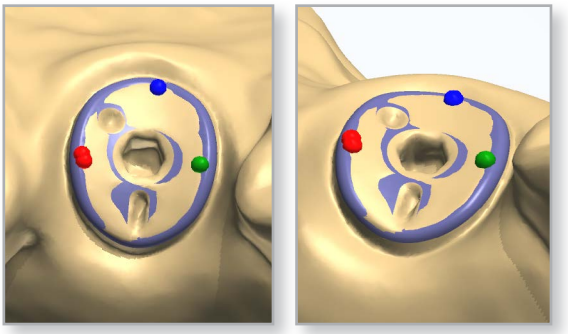
Import into CAD software

- Digital impression of SmartShape Healer
- Opposing intraoral scan or model
- Prescription with lab instructions including SmartShape Healer height, anatomical shape and platform size (or product code)

3 Verify alignment & platform size

Correct alignment

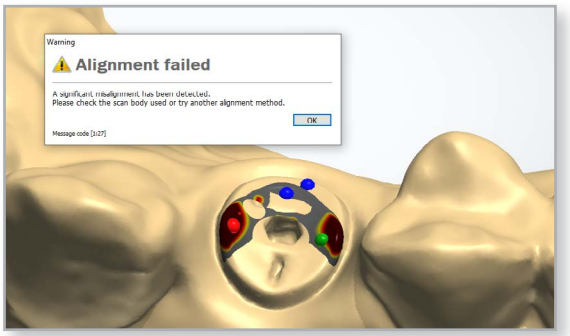
Correct alignment is indicated by a match between the SmartShape Healer and scan throughout all regions. This requires selecting the correct anatomical shape, platform and height, which should be recorded in the prescription. Once the platform, height and alignment have been verified the lab can continue with the design process.



Helpful hint:
The occlusal dimples and notches are only used for visual identification of the healer. Since these features are not used in the digital alignment process, it is recommended to select points along the healer's anatomical profile to initiate alignment.

Misalignment

Misalignment is visible in red when the incorrect shape is selected. Visual confirmation is required to ensure that the correct height (buccal notch) and platform (dimples) have been selected.



Closed-tray impression using the SmartShape Healers

1 SmartShape Healer placement

Confirm the implant prosthetic platform is free of any bone debris or soft tissue. Place the SmartShape Healer with the occlusal notch perpendicular to the buccal plane. Verify the healer is fully seated and hand tighten the screw with a .050" (1.25mm) hex driver.

Important:
Make sure the SmartShape Healer is seated properly, leaving the scannable surface a minimum of 0.5mm above the soft tissue.

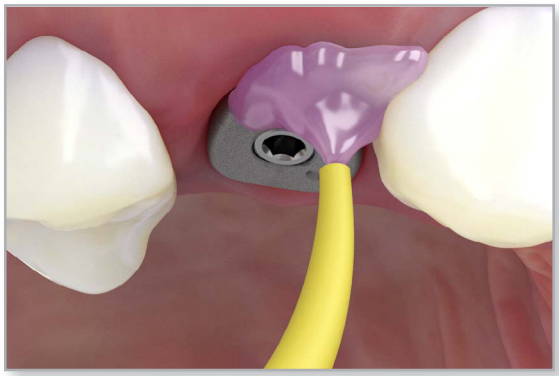
Helpful hint:
Take a radiograph along the long axis of the implant to ensure the abutment is seated completely into the hex of the implant. Note: The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

2 Make a full-arch impression

Syringe a medium-body elastomeric impression material around and over the SmartShape Healer. Load the tray with the same impression material and take the impression.

After the impression material has set, remove the tray from the mouth with the embedded impression of the the SmartShape Healer.

Confirm no distortions are present on the impression and that it captured the entire SmartShape Healer occlusal surface and surrounding tissue.



Send to lab

- Impression of SmartShape Healer
- Opposing model or impression
- Prescription with lab instructions including SmartShape Healer height, anatomical shape and platform size (or reference number)

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888.246.8338

Closed-tray impression using the SmartShape Healers

3 Lab step – scan the closed-tray impression

There are two primary ways to digitize the traditional impression.

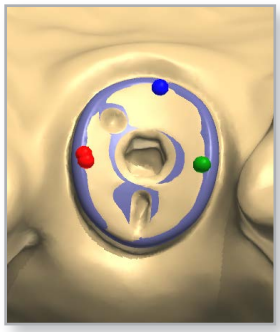
Option A: Pour a stone model from the impression to replicate the abutment. Use a 3D tabletop digital scanner to scan the stone model.

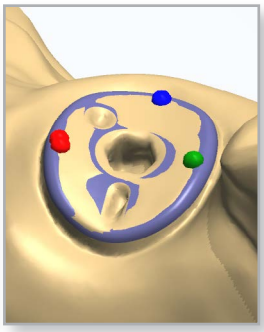
Option B: Use a 3D tabletop digital scanner to directly scan the impression material. *Note that this may require specialized software or scanner settings.*

4 Verify alignment & platform size

Correct alignment

Correct alignment is indicated by a match between the SmartShape Healer and scan throughout all regions. This requires selecting the correct anatomical shape, platform and height, which should be recorded in the prescription. Once the platform, height and alignment have been verified, the lab can continue with the design process.

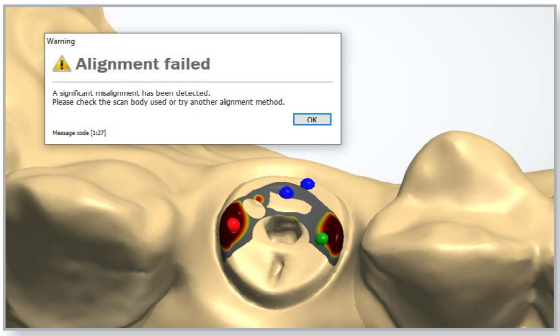




Helpful hint:
The occlusal dimples and notches are only used for visual identification of the healer. Since these features are not used in the digital alignment process, it is recommended to select points along the healer's anatomical profile to initiate alignment.

Misalignment

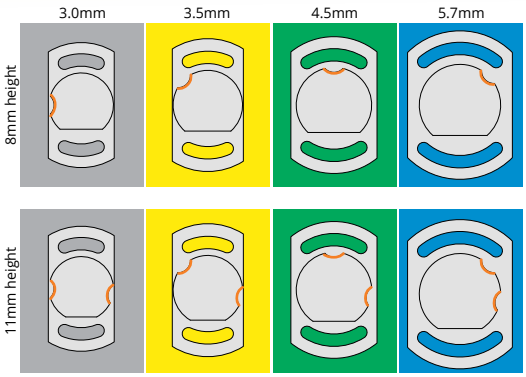
Misalignment is visible in red when the incorrect shape is selected. Visual confirmation is required to ensure that the correct height (buccal notch) and platform (dimples) have been selected.



digital or traditional impressions using the snap scan bodies

The one-piece design can be placed by hand without any additional instrumentation. Each snap scan body features a color-coded radiopaque titanium body that can be used to verify seating on a radiograph. Unique markings on each snap scan body help to identify the implant platform when scanning in the mouth or with table-top scanners, can also be used for traditional closed tray impressions.

Available in 8mm and 11mm heights, to accommodate varying tissue heights.



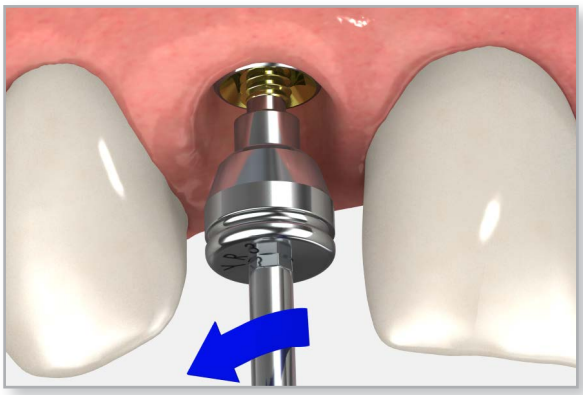
- each snap scan body is designed with a unique top for easy identification from the occlusal view.
- 8mm snap scan bodies feature a single notch, 11mm snap scan bodies feature two notches.

1 Remove the healing abutment

Remove the healing abutment using an .050" (1.25mm) hex driver. Confirm the implant prosthetic platform is free of any bone debris or soft tissue.

Important:
When a Laser-Lok healing abutment is temporarily removed for impression making or other restorative procedures, keep the removed Laser-Lok healing abutment in sterile saline until reinserting into the mouth.

Helpful Hint:
When placing snap scan bodies on multiple implants, remove one healing abutment at a time, replacing it immediately with the snap scan body. This reduces the likelihood of soft tissue collapsing onto the implant. Work from the posterior to the anterior.



2 Place the snap scan body

Snap the snap scan body onto the implant. Choose between 8mm or 11mm height options to accommodate for the tissue height.

Take a radiograph along the long axis of the implant to ensure that the snap scan body is seated completely into the hex of the implant. Note: The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

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888.246.8338

digital or traditional impressions using the snap scan bodies

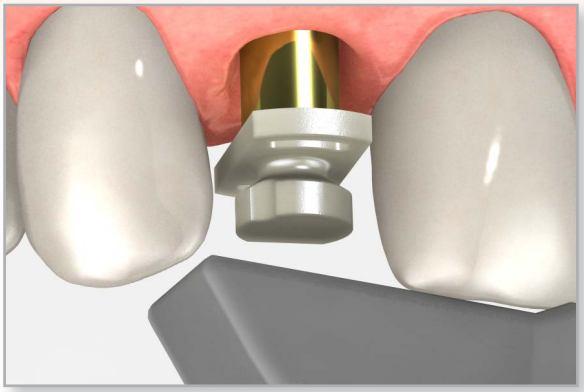
3 Digitize the impression

There are two primary ways to create a digital impression.

Option A - The first method is to take an intra-oral digital impression by placing a snap scan body into the implant and scan the scan body and surrounding dentition using handheld 3D scanner.

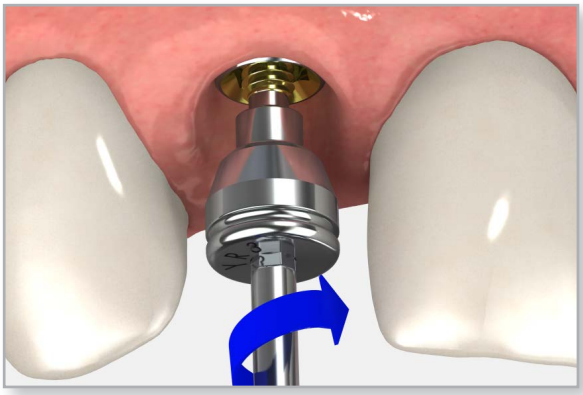
Option B - The second method is to take an implant level impression, pour a stone model, place a snap scan body into the implant analog and scan the model using 3D tabletop digital scanner.

Important:
Ensure the lab has the digital library that is compatible with the scan body. BioHorizons digital library can be downloaded from vulcandental.com.



4 Replace healing abutment

Replace the healing abutment immediately to prevent soft tissue collapse over the implant.



send to lab

- impression with embedded snap scan bodies
- opposing model or impression
- implant analog
- prescription with lab instructions

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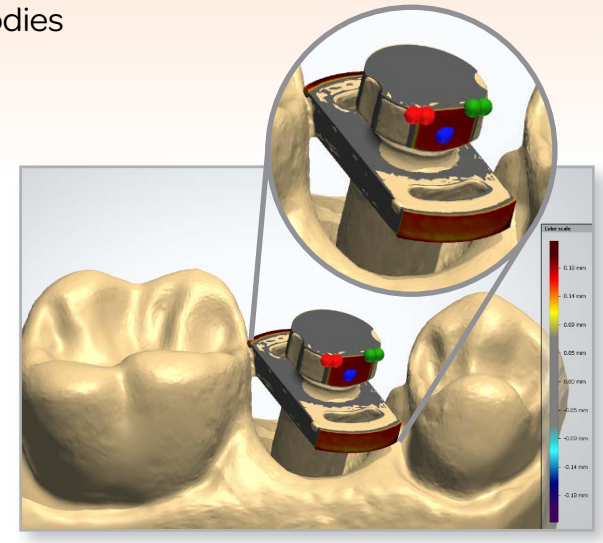
888.246.8338

digital or traditional impressions using the snap scan bodies

5 Lab Step - Verify alignment and platform size

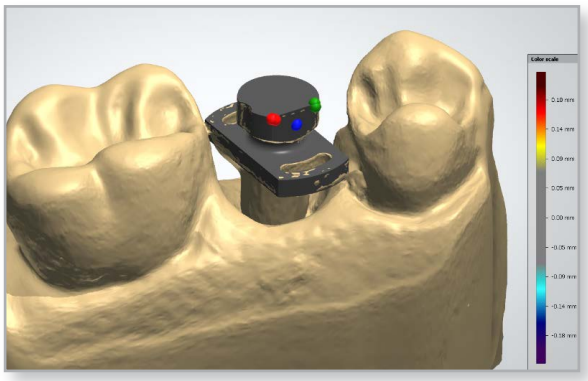
Misalignment is visible in red on the flange edges as well as the occlusal surface when the wrong height is selected for the platform.

This image shows a 8mm height snap scan body for the 3.0 platform was used but the 11mm height has been selected in the software, resulting in misalignment.



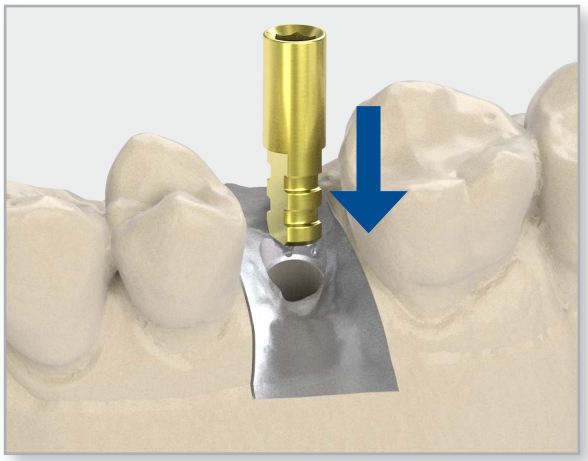
Correct alignment is shown by a mesh of the scan body and scan throughout all regions.

This image shows that a 8mm height snap scan body for the 3.0 platform was used and the same snap scan body has been selected in the software, resulting in the correct alignment. Once the platform and alignment has been verified the lab can continue with the design process.



6 Optional Lab Step- Analogs for printed models

The Biohorizons implant analogs are available for all implant platforms and can be used for printed models, the analogs are inserted from the top of the model to terminal stop position. The two flat sides at the bottom of the analog hold the hex timing position. BioHorizons digital library can be downloaded from vulcandental.com.



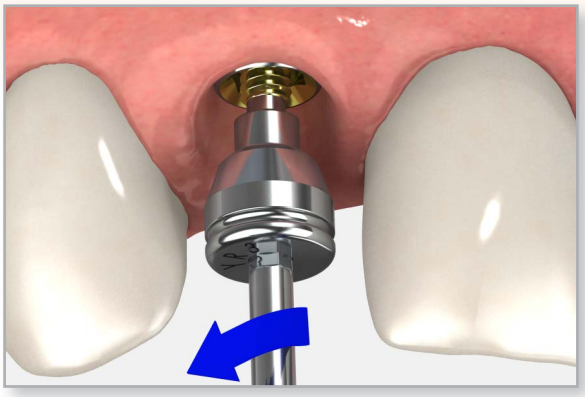
closed tray impression using the snap scan bodies

1 Remove the healing abutment

Remove the healing abutment using an .050" (1.25mm) hex driver. Confirm the implant prosthetic platform is free of any bone debris or soft tissue.

Important:
When a Laser-Lok healing abutment is temporarily removed for impression making or other restorative procedures, keep the removed Laser-Lok healing abutment in sterile saline until reinserting into the mouth.

Helpful Hint:
When placing snap scan bodies on multiple implants, remove one healing abutment at a time, replacing it immediately with the snap scan body. This reduces the likelihood of soft tissue collapsing onto the implant. Work from the posterior to the anterior.



2 Place the snap scan body

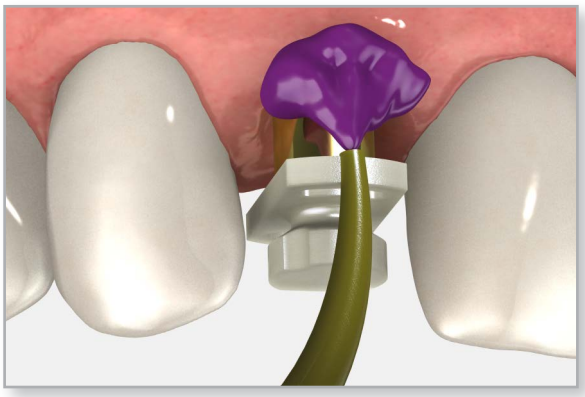
Snap the snap scan body onto the implant. Choose between 8mm or 11mm height options to accommodate for the tissue height.

Take a radiograph along the long axis of the implant to ensure that the snap scan body is seated completely into the hex of the implant. Note: The X-ray tube must be positioned perpendicular to the implant prosthetic platform.

3 Make a full-arch impression

Syringe a medium or heavy body elastomeric impression material around and over the snap scan body. Load the tray with impression material and make the impression.

After the impression material has set, remove the tray from the mouth. The snap scan body will be picked up in the impression and remain embedded. Verify the impression material is completely adapted around the snap scan body.



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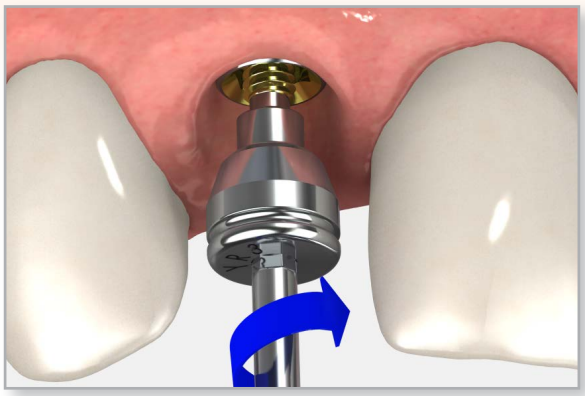
closed tray impression using the snap scan bodies

4 Replace healing abutment

Replace the healing abutment immediately to prevent soft tissue collapse over the implant.

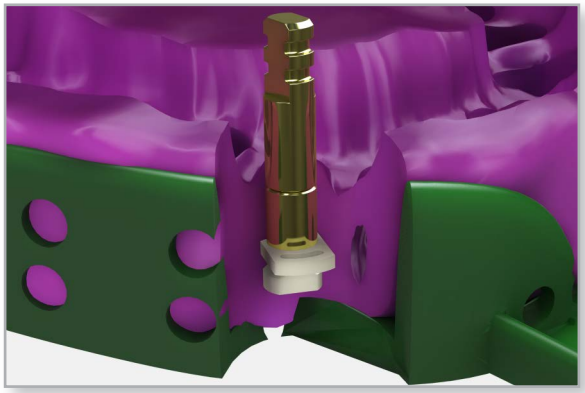


send to lab

- impression with embedded snap scan bodies
- opposing model or impression
- implant analog
- prescription with lab instructions

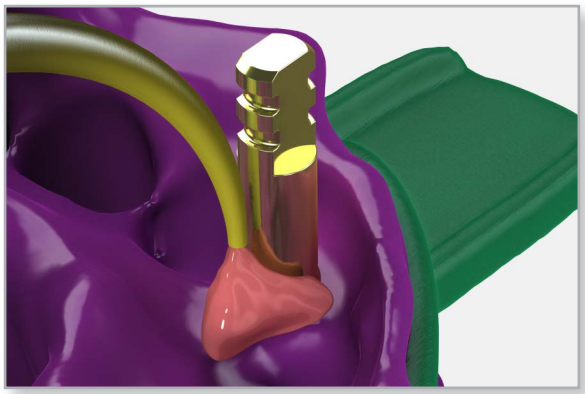
5 Lab step - Assemble the analog

Snap the appropriate diameter implant analog to the snap scan body in the impression.



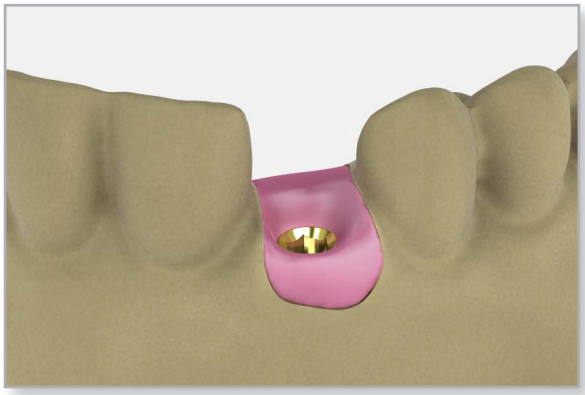
6 Lab step - Make a soft tissue model

Verify that the Snap scan body and analog assembly are properly snapped together. Apply lubricant where the soft tissue replica material is to be applied. Syringe a soft tissue replica material around the analog.



7 Lab step - Fabricate the stone model

Fabricate a working model in minimal expansion, high hardness die stone. Articulate according to normal laboratory procedures.



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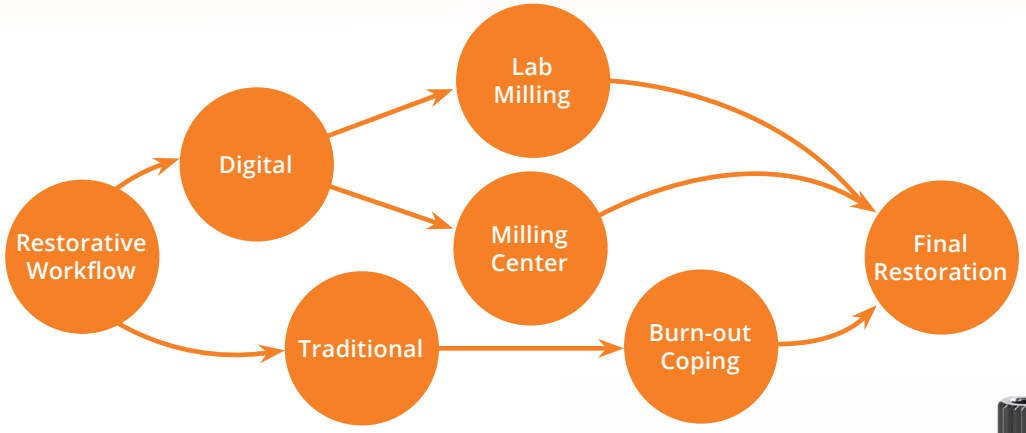
digital or traditional restorations with Laser-Lok titanium base abutments

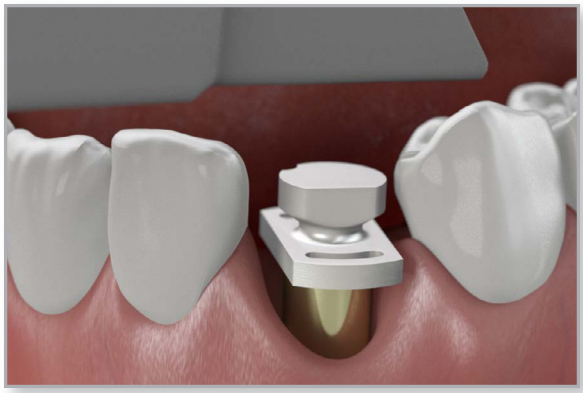
BioHorizons titanium base abutments are designed to support both digital and traditional workflows for cement and screw-retained restorations. The titanium base abutment features BioHorizons unique Laser-Lok technology to create a connective tissue attachment and titanium nitride coating to maintain a natural hue through soft tissue.



Digital Workflow

component options

- CAD/CAM system with a BioHorizons library
- Snap scan body
- Laser-Lok titanium base abutment
- Laser-Lok protective sleeve
- Direct coping screw, shallow hex
- Analog handle



1 Digitize the impression

There are two primary ways to create a digital impression.

Option A - The first method is to take an intra-oral digital impression by placing a scan body into the implant and scanning the scan body and surrounding dentition using handheld 3D scanner.

Option B - The second method is to take an implant level impression, pour a stone model, place a software-dependent scan body into the implant analog and scan the model using 3D tabletop digital scanner.

Important:
Ensure the lab has the digital library that is compatible with the scan body. BioHorizons digital library can be downloaded from vulcandental.com.

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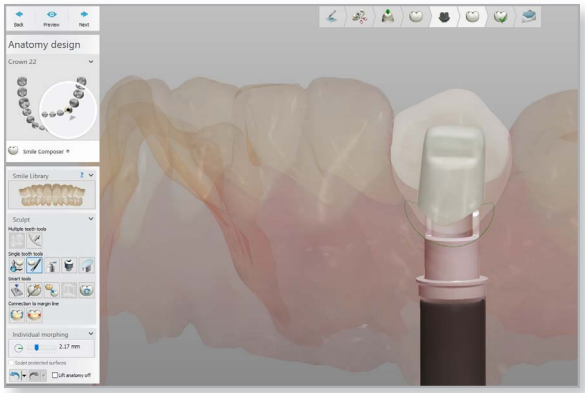
888.246.8338

2 Lab Step: Design the crown

The file that is created during the digital impression is imported into the design software that will be used by the technician to design the crown. The restorative clinician should approve the design before milling the crown.

Note:
Cement retained restorations are also a restorative option.



3 Lab Step: Milling

Once the crown is designed, send the file to a milling center or to an in-house milling machine.

4 Lab Step: Cement the crown

Clean the surface of and bond the restoration to the titanium base abutment following the cement manufacturer's indications. The cement or bonding material should be indicated for Zirconium dioxide ceramics or PMMA.

The direct coping screw, shallow hex (PXDCSS) should be used to prevent cement entering the screw access channel.

See steps 5-8 for delivering the final restoration.

Traditional Workflow

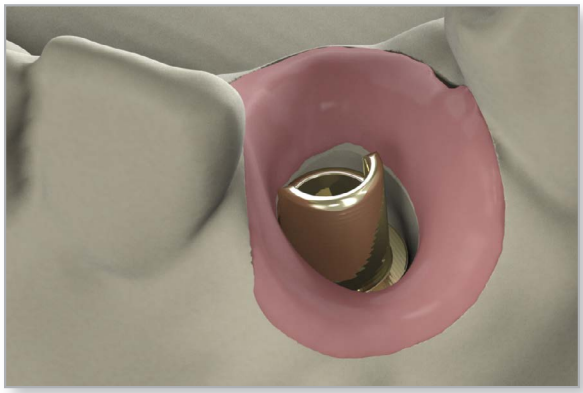
component options

- Laser-Lok titanium base abutment
- Titanium base waxing sleeve
- Laser-Lok protective sleeve
- Direct coping screw, shallow hex
- Analog handle

1 Screw titanium base abutment on model

Positioning the selected titanium base abutment engaging the hex of the implant analog with the "L" shaped cut out towards lingual/palatal. Hand tighten the abutment screw with an .050" hex driver.

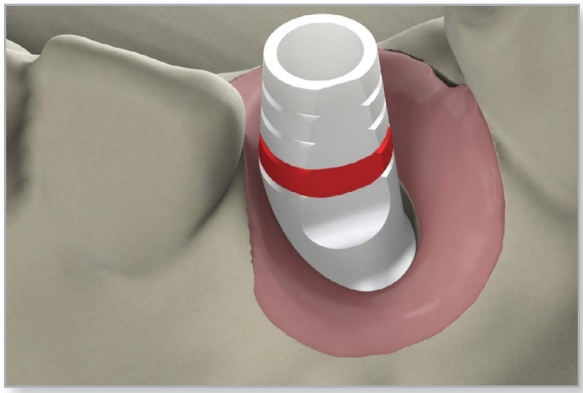
Note:
Cement retained restorations are also a restorative option.



2 Lab Step: Waxing sleeve preparation

Place the waxing sleeve on the titanium base abutment, determine modifications needed to provide adequate room for the fabrication of the crown.

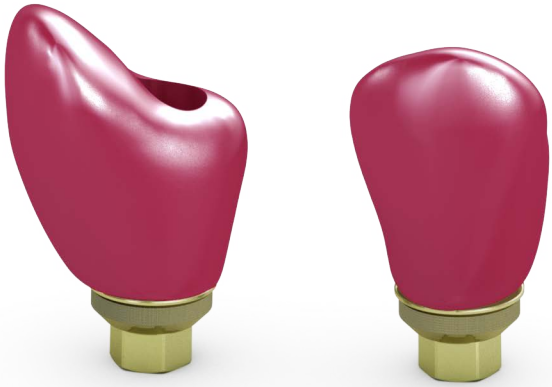
Mark the waxing sleeve of the abutment for the required vertical reduction and modify with a cutting disk or an acrylic bur for occlusal clearance.



3 Lab Step: Wax restoration

Use wax and/or acrylic burnout resin to incorporate the modified waxing sleeve to create a full contour wax-up and follow the standard procedures to press or cast the restoration.

Note:
Depending on the treatment the wax up may be a coping, bridge or full contour crown.



4 Lab Step: Finalization

The final contours of the pattern may be built up with crown & bridge wax. Clean the surface of and bond the restoration to the titanium base abutment following the cement manufacturer's indications. The cement or bonding material should be indicated for Zirconium dioxide ceramics or PMMA and lithium disilicate restorations.

The direct coping screw, shallow hex (PXDCSS) should be used to prevent cement entering the screw access channel.

5 Seat the final restoration

Clean and sterilize the finished crown using standard clinical procedure. Remove the healing abutment or temporary prosthesis from the implant with an .050" (1.25mm) hex driver.

Make sure the implant prosthetic platform is free of bone and soft tissue. Irrigate the internally-threaded connection of the implant and dry.

Secure the titanium base abutment restoration onto the implant using the abutment screw and an .050" (1.25mm) hex driver. Hand tighten.

6 Check and modify the restoration

Check the occlusion and contacts. There should only be light contact in centric occlusion. Modify as necessary and polish after making adjustments.

Take a radiograph along the long axis of the implant to ensure that the restoration is seated completely in the hex of the implant.

Note:
The x-ray tube must be positioned perpendicular to the implant prosthetic platform.

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7 Tighten the abutment screw

Tighten the abutment screw to 30 Ncm using an .050" (1.25mm) hex driver and a calibrated torque wrench.

8 Fill the screw access channel

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access channel. This allows for easy access to the abutment screw in the future. Fill the remainder of the channel with a composite resin material of choice.

Take as x-ray for final prosthesis delivery records.

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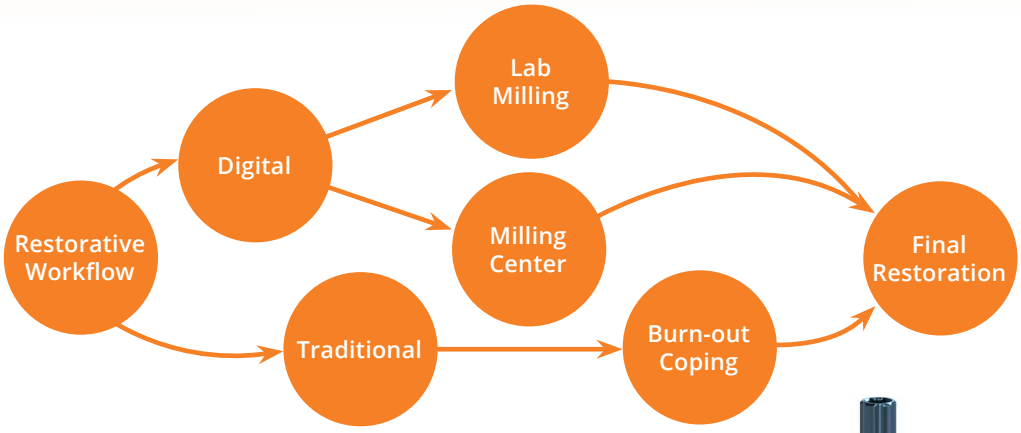
digital or traditional restorations with hybrid base abutments

BioHorizons hybrid base abutments are designed for digital and traditional workflows. Available in hexed and non-hexed options for single or multiple-unit, screw-retained and cement-retained restorations. Hybrid base abutments* are compatible with the precision angle driver and screw, allowing the screw channel to be redirected up to 15°.



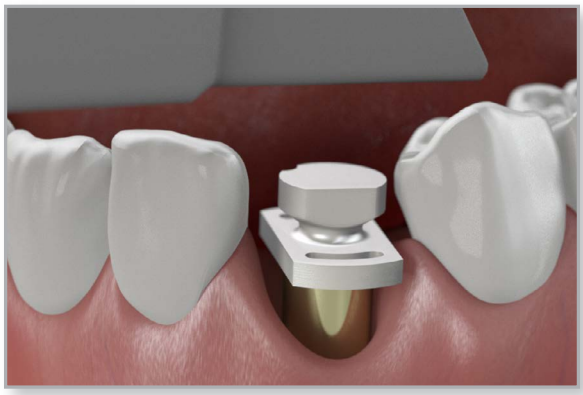
Digital Workflow

component options

- CAD/CAM system with a BioHorizons library
- Snap Scan Body
- Hybrid base abutment
- Custom block-out screw
- Analog handle

Note:

Hybrid base abutments packaged with PXMUAS (light blue) abutment screw.



1 Digitize the impression

There are two primary ways to create a digital impression.

Option A - The first method is to take an intra-oral digital impression by placing a scan body into the implant and scanning the scan body and surrounding dentition using handheld 3D scanner.

Option B - The second method is to take an implant level impression, pour a stone model, place a software-dependent scan body into the implant analog and scan the model using 3D tabletop digital scanner.

Important:
Ensure the lab has the digital library that is compatible with the scan body. BioHorizons digital library can be downloaded from vulcandental.com.

*Excluding 2mm collar height hybrid base abutments

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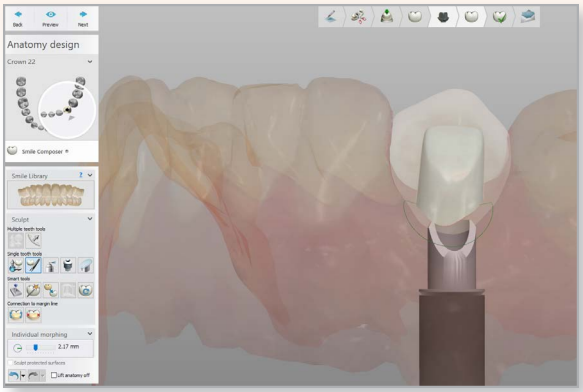
2 Lab Step: Design the crown

The file that is created during the digital impression is imported into the design software that will be used by the technician to design the crown. The restorative clinician should approve the design before milling the crown.

Note:
An angled screw channel restoration could be designed in this step. Refer to the Precision Angled Screw Restoration Overview manual.

Important:
The precision angled screw and driver are compatible with the BioHorizons hybrid base abutments and Tissue-Level hybrid base abutments.



3 Lab Step: Milling

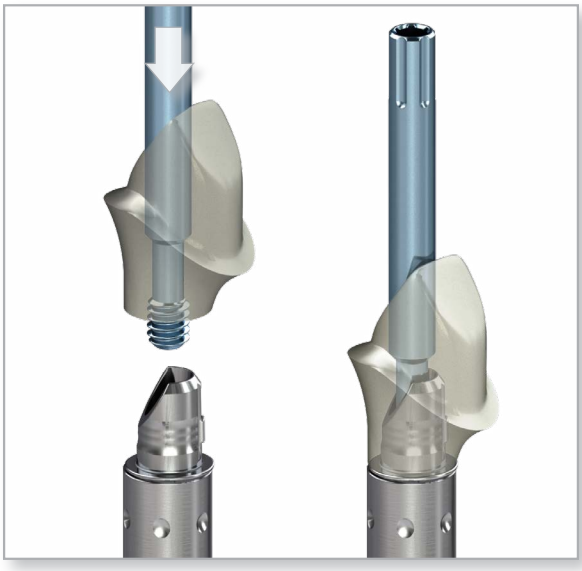
Once the crown is designed send the file to a milling center or in-house milling machine.

4 Lab Step: Finalization

Clean the surface and bond the restoration to the hybrid base following the cement manufacturer's indications. The cement or bonding material should be indicated for Zirconium dioxide ceramics or PMMA. The customer block-out screw (PXMUASL) should be used to prevent cement entering the screw access channel.

See steps 5-8 for delivering the final restoration.

Note:
If an angled screw channel restoration was designed, refer to the Precision Angled Screw Restoration Overview manual for the final restoration delivery.



Traditional Workflow

component options

- Hybrid base abutment
- Hybrid base abutment waxing sleeve
- Custom block-out screw
- Analog handle

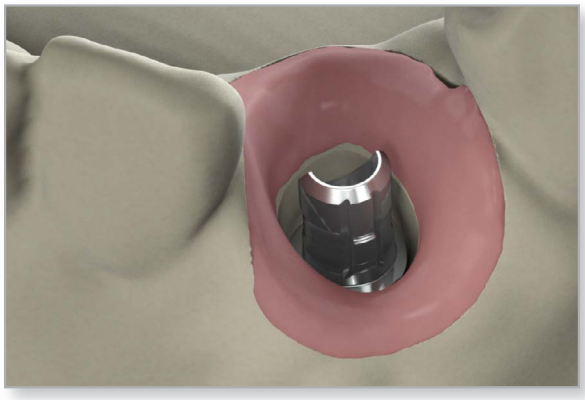
Note:

Hybrid base abutments packaged with PXMUAS (light blue) abutment screw.

1 Screw hybrid base abutment on model

Position the selected hybrid base abutment to engage the hex of the implant analog with the "L" shaped cut out towards lingual/palatal. Hand tighten the abutment screw with an .050" hex driver.

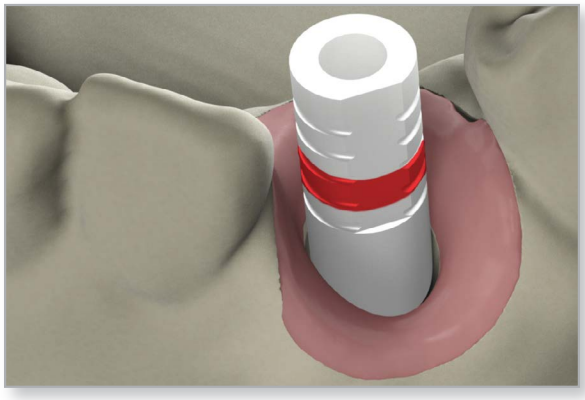
Note:
Cement retained restorations are also a restorative option.



2 Lab step: Waxing sleeve preparation

Place the waxing sleeve on the hybrid base abutment, determine modifications needed to provide adequate room for the fabrication of the crown.

Mark the waxing sleeve of the abutment for the required vertical reduction and modify with a cutting disk or an acrylic bur for occlusal clearance.



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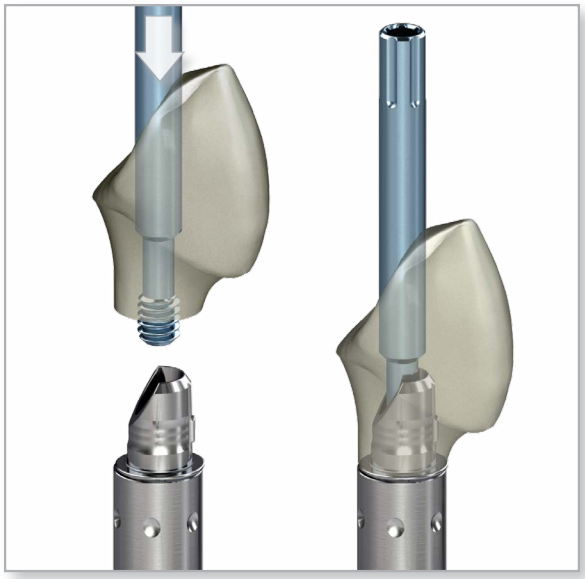
3 Lab step: Wax restoration

Use wax and/or acrylic burnout resin to incorporate the modified waxing sleeve to create a full contour wax-up and follow the standard procedures to press or cast the restoration.

Note:
Depending on the treatment the wax up may be a coping, bridge or full contour crown.

4 Lab step: Finalization

The final contours of the pattern may be built up with crown & bridge wax. Clean the surface and bond the restoration to the hybrid base abutment following the cement manufacturer's indications. The cement and lithium disilicate restorations or bonding material should be indicated for Zirconium dioxide ceramics or PMMA. The customer block-out screw (PXMUASL) should be used to prevent cement entering the screw access channel.



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5 Seat the final restoration

Sanitize the finished crown using standard clinical procedure. Remove the healing abutment or temporary prosthesis from the implant with an .050" (1.25mm) hex driver.

Make sure the implant prosthetic platform is free of bone and soft tissue. Irrigate the internally-threaded connection of the implant and dry.

Secure the hybrid base abutment restoration onto the implant using the abutment screw and an .050" (1.25mm) hex driver. Hand tighten.

6 Check and modify the restoration

Check the occlusion and contacts. There should only be light contact in centric occlusion. Modify as necessary and polish after making adjustments.

Take a radiograph along the long axis of the implant to ensure that the restoration is seated completely in the hex of the implant.

Note:
The x-ray tube must be positioned perpendicular to the implant prosthetic platform.

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7 Tighten the abutment screw

Tighten the abutment screw to 30 Ncm using an .050" (1.25mm) hex driver and a calibrated torque wrench.

8 Fill the screw access channel

Place a resilient material of choice (gutta-percha, silicone or temporary filling material) into the screw access channel. This allows for easy access to the abutment screw in the future. Fill the remainder of the channel with a composite resin material of choice.

Take as x-ray for final prosthesis delivery records.

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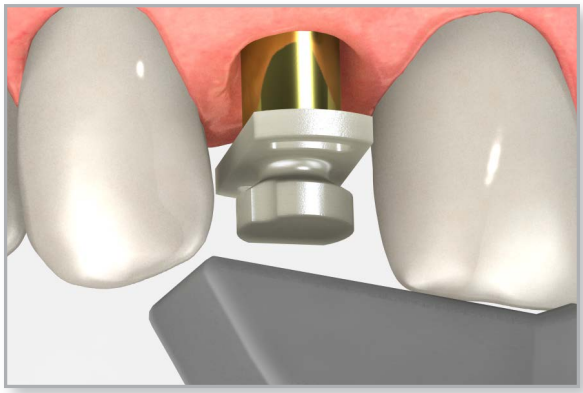
precision angled screw restoration overview

There are 4 steps to creating and delivering a Precision Angled Screw restoration. The steps are as follows:

1 Digitize the impression



There are two primary ways to create a digital impression.

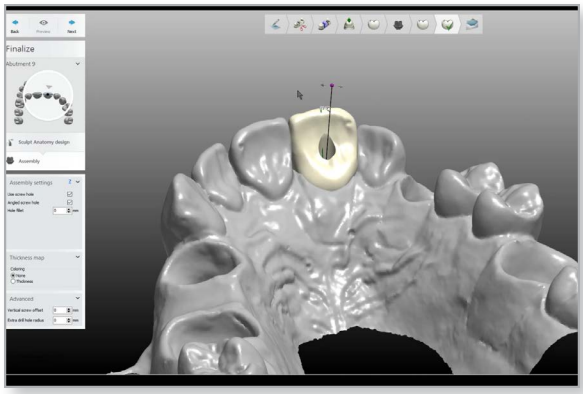
Option A - The first method is to take an intra-oral digital impression by placing a scan body into the implant and scanning the scan body and surrounding dentition using handheld 3D scanner.

For implant level impressions, refer to the open tray technique using the direct pick-up coping module, the closed tray technique using the indirect transfer coping module and the closed tray pick-up technique using the snap coping module.

Option B - The second method is to take an implant level impression, pour a stone model, place a software-dependent scan body into the implant analog and scan the model using 3D tabletop digital scanner

Important:
In order to design a Precision Angled Screw restoration, a BioHorizons Scan body must be used and the BioHorizons CAD/CAM Abutments & Model library must be downloaded from the Vulcan website. vulcandental.com/home/downloads

2 Design the crown



The file that is created during the digital impression is imported into the design software that will be used by the technician to design the angled screw channel restoration.

Note:
The precision angled screw and driver are compatible with the BioHorizons Hybrid Base abutments and Tissue-Level Hybrid Base abutments. Not compatible with Laser-Lok titanium base or 2mm tall hybrid base abutments.

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precision angled screw restoration overview

Creating and delivering a Precision Angled Screw channel restoration on a BioHorizons hybrid base abutment (continued)

3 Cement the crown

The laboratory will use the Hybrid Base abutment and stone or printed model to complete the crown following normal laboratory procedures. The gold Precision Angled Screw should remain in the Hybrid Base abutment during the cementation of the crown to the abutment.

Important:
During cementation of the crown to the abutment, prevent cement from entering into the angled screw channel of the crown and the internal aspect of the abutment. The final angled screw channel restoration will have a captured screw within the assembly.

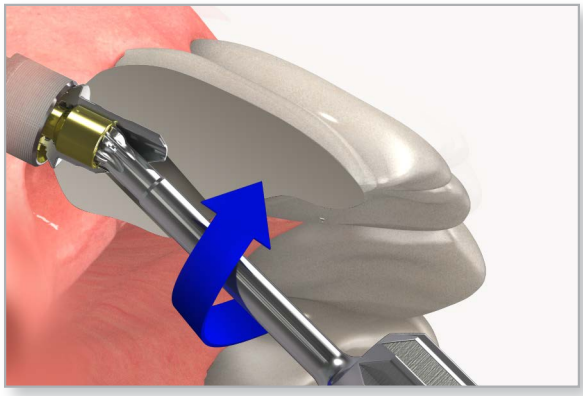
4 Deliver the final restoration

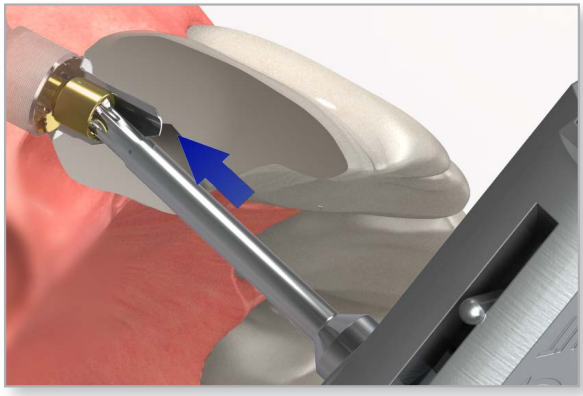
The final restoration should be sanitized following standard clinical procedures. When utilizing the angled screw channel feature, ONLY a Precision Angled Driver should be used to tighten the gold Precision Angled Screw that is captured in the restoration.

Secure the restoration onto the implant using the Precision Angled Driver. Hand tighten.

Tighten the abutment screw to 30Ncm using the Precision Angled Driver and a calibrated torque wrench

Important:
When using the calibrated torque wrench, apply a steady downward pressure along the axis of the driver to maintain optimum driver and screw engagement.





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digital scanning for Multi-unit abutments

The Scan Body is designed to be mounted directly on the Multi-unit abutment or Multi-unit analog using the dedicated driver.

parts:

IO 11B-A	Elos Accurate® Scan Body for Multi-Unit Abutments
C13485	Elos Accurate® Scan Body Driver

Laboratory Scanning Workflow

component options

- CAD/CAM system with BioHorizons library
- Elos Accurate Scan body & Driver
- Desktop scanner

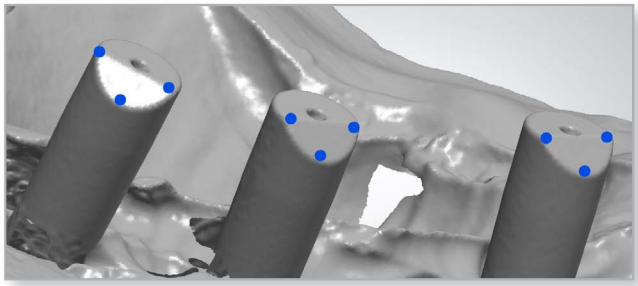
1 Secure Scan Bodies

Ensure the seating surface is clean and free of residue. Seat the scan body on the multi-unit connections and hand tighten with the Scan Body Driver.

2 Digitize the model

Conduct the scan according to the scanner manufacturer's instructions. Then, using the relevant digital library, align the scan body by selecting the middle of the top cutout.

Note:
The PXMUCC may be used as a scan body with a similar workflow to the Elos Accurate body. Blasting may be required to reduce the reflectiveness of the surface.



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ordering & warranty information

Product Support Specialist: _____

Cell phone: _____

Fax: _____

Territory Manager: _____

Cell/mobile phone: _____

Email and/or fax: _____

BioHorizons Lifetime Warranty on Implants and Prosthetics for Clinicians: All BioHorizons implants and prosthetic components include a Lifetime Warranty.BioHorizons implant or prosthetic components will be replaced if removal of that product is due to failure (excluding normal wear to overdenture attachments).

Additional Warranties: BioHorizons warranties surgical drills, taps and other surgical and restorative instruments.

(1) Surgical Drills and Taps: Surgical drills and taps include a warranty period of ninety (90) days from the date of initial invoice. Surgical instruments should be replaced when they become worn, dull, corroded or in any way compromised. Surgical drills should be replaced after 12 to 20 osteotomies.[16]

(2) Instruments: The BioHorizons manufactured instrument warranty extends for a period of one (1) year from the date of initial invoice. Instruments include drivers, implant site dilators and BioHorizons tools used in the placement or restoration of BioHorizons implants.

Return Policy: Product returns require a Return Authorization Form, which may be acquired by contacting Customer Care. The completed Return Authorization Form must be included with the returned product. For more information, please see the reverse side of the invoice that was shipped with the product.

Disclaimer of Liability: BioHorizons products may only be used in conjunction with the associated original components and instruments according to the Instructions for Use (IFU). Use of any non-BioHorizons products in conjunction with BioHorizons products will void any warranty or any other obligation, expressed or implied.

Treatment planning and clinical application of BioHorizons products are the responsibility of each individual clinician. BioHorizons strongly recommends completion of postgraduate dental implant education and adherence to the IFU that accompany each product. BioHorizons is not responsible for incidental or consequential damages or liability relating to use of our products alone or in combination with other products other than replacement or repair under our warranties.

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Validity: Upon its release, this literature supersedes all previously published versions.

Availability: Not all products shown or described in this literature are available in all countries. BioHorizons continually strives to improve its products and therefore reserves the right to improve, modify, change specifications or discontinue products at any time.

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