



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.

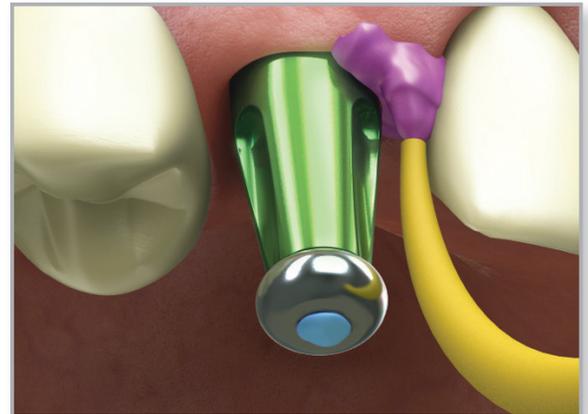


component options

- 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

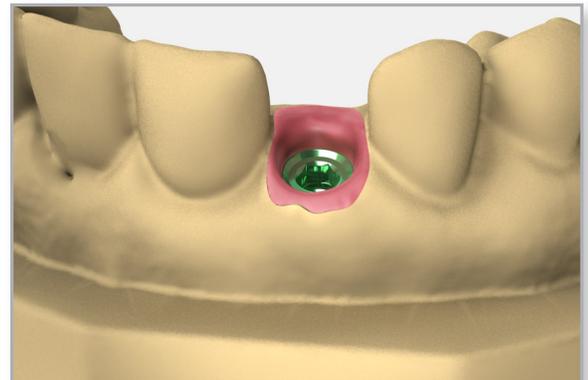
1 Make an implant-level impression

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](#).





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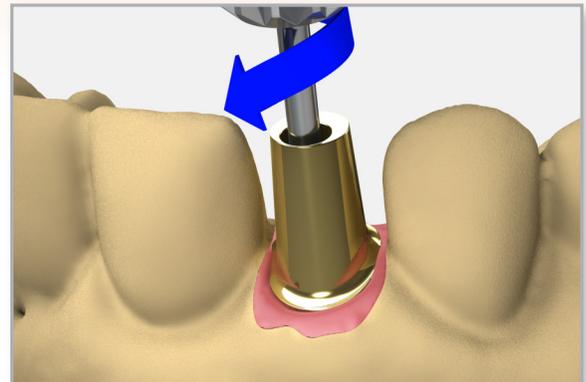
3 Lab step - Select and mark the abutment

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.

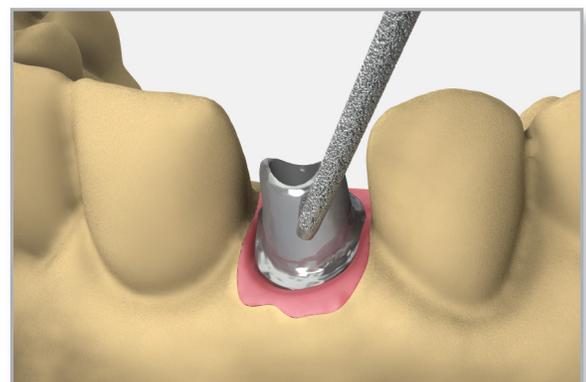
5 Lab step - Return the abutment to the model

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.





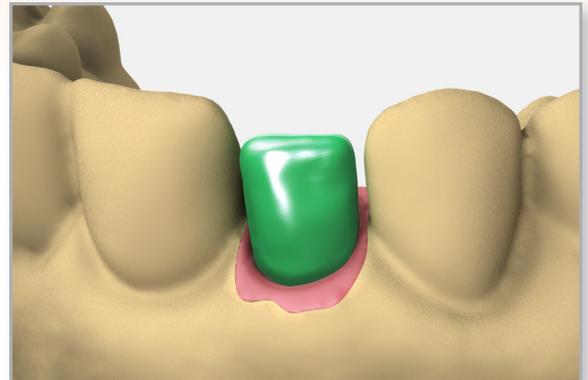
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6 Lab step - Wax the coping, sprue, invest and cast

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

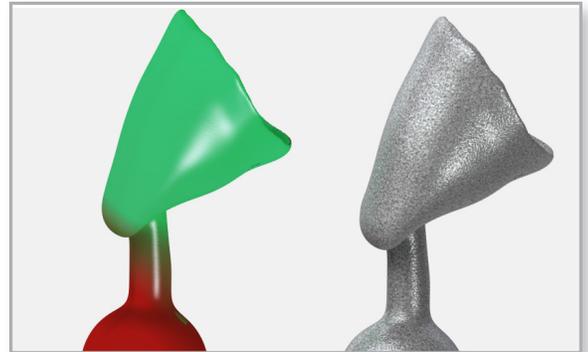
Create a wax coping for the crown on the modified abutment utilizing routine crown & bridge procedures.

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



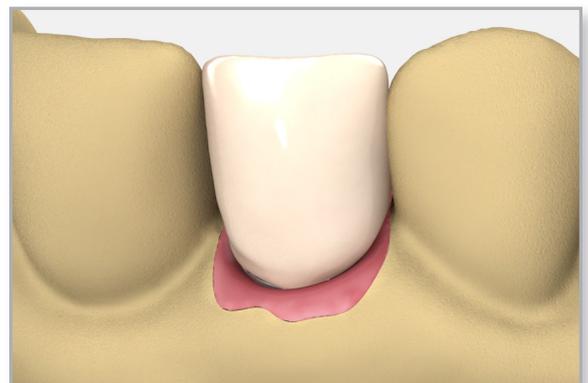
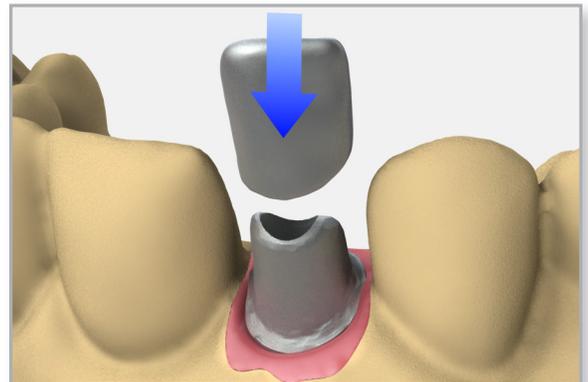
7 Lab step - Divest and finish the coping

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



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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.

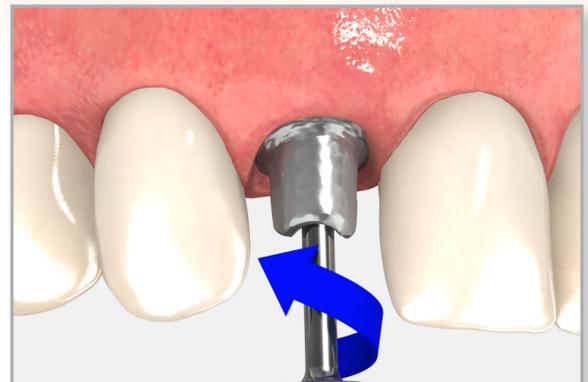
Irrigate the internally-threaded connection of the implant and dry. Place the modified abutment and abutment screw onto the implant with an .050" (1.25mm) hex driver and hand tighten.

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

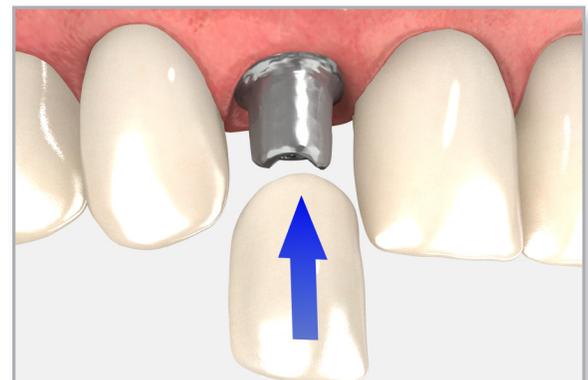
Tighten the abutment screw to 30 Ncm using a calibrated torque wrench and an .050" (1.25) hex driver. Apply counter-torque by grasping the abutment with an abutment clamp.



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.