

screw-retained single crowns using custom-cast abutments



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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.

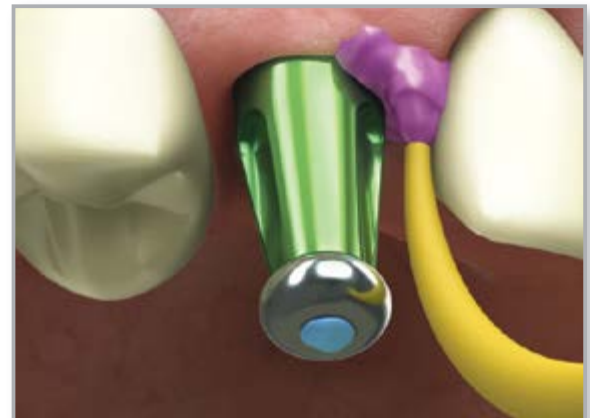


component options

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

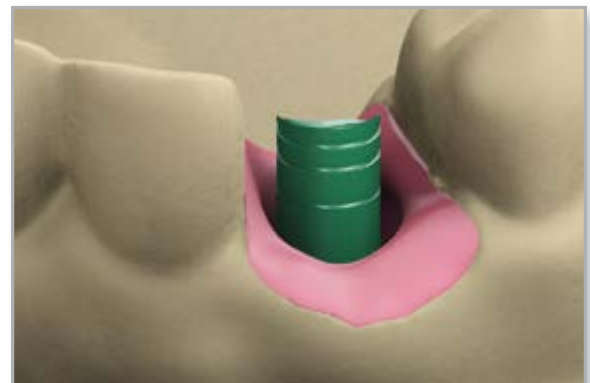
Fabricate a working model following conventional laboratory procedures. A soft tissue model is recommended whenever the margins are subgingival. Follow the steps for creating an implant-level stone model (hexed) using either the **open tray technique using the direct pick-up coping module** or the **closed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



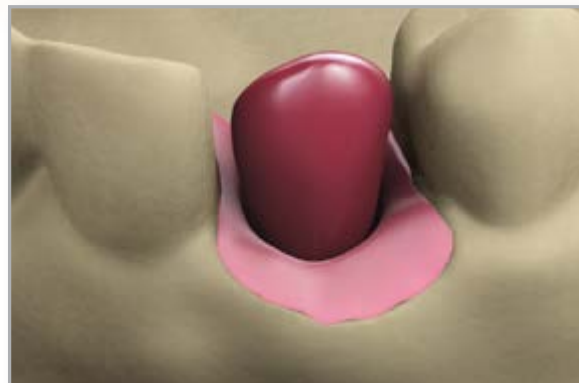
Important:
For screw-retained restorations, maintain at least 3mm from the abutment platform to avoid damaging the abutment screw.



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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.

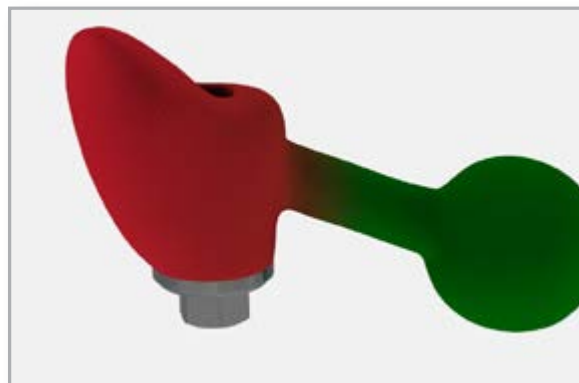


Note:

custom castable gold alloy specifications*

- Melting range: 1400-1490 °C
- Coefficient of thermal expansion: $12.2 \times 10^{-6} \text{K}^{-1}$
- 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 of a chemical investment remover is recommended to preserve the precision fit.

Confirm the cast abutment on the working model.





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7 Lab step - Apply the porcelain

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

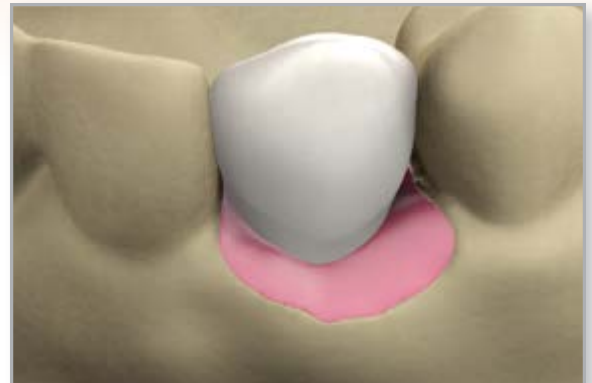
Apply porcelain and finish according to routine laboratory procedures.



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

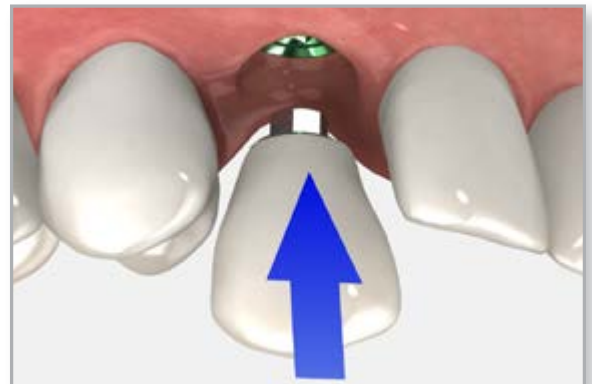
- crown
- abutment screw
- working model

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.



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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.



Direct Offices

BioHorizons USA
888-246-8338 or
205-967-7880

BioHorizons Canada
866-468-8338

BioHorizons Spain
+34 91 713 10 84

BioHorizons UK
+44 (0)1344 752560

BioHorizons Germany
+49 761-556328-0

BioHorizons Chile
+56 (2) 23619519

BioHorizons Italy
800-063-040

Distributors

For contact information in our 90 countries, visit www.biohorizons.com



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