



Cement-retained restorations



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Important notes

Meaning of icons

Procedure that apply only for single restoration

- DDD) Procedure that apply only for multiple restoration
 -)) 1.25mm hex screwdriver
 -)) 1.25mm ball hex screwdriver

Restoration on implant level

The procedure sequence, as seen below, illustrates the different restorative stages and can be found throughout the manual for easy usage. The stage of the treatment procedure being reviewed is highlighted with a circle.



Clinician steps. Procedures that apply for prosthodontists are marked red. Laboratory steps. Procedures that apply for technicians in the dental lab are marked green.

Attention!

- 1. Never exceed the recommended tightening torque 15 Ncm for the screw. Overtightening of abutment may lead to a screw fracture.
- 2. Use abutment extractor SR for easier removing ROOTT R healing abutment or abutment.
- 3. Use pink screw, for laboratory steps.
- 4. Use green screw, for clinician steps.

Prosthetic options





Instruments

Screwdrivers are used for the fixation of all superstructures.



Additional section about usage of carrier CRE

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Carrier

Each ROOTT **R** implant comes with a free multi-functional part (CRE) which is made of the same material as implants & abutments.

- Can be used as a healing abutment, modified with composite.
- Can be used as a scan post.
- Can be used as a temporary or regular abutment.
- With HE-END holder can be used as a closed tray transfer.
- With HE-END holder can be used as a scan post.



CRE CRE+HE-END

Healing period

Clinician steps



Make individual healing abutment. Use anatomic profile generator bar – manufactured or created individual using software and 3D printer. Use flowable composite to create desired healing abutment profile.



Polish the composite surface. Trim CRE part above composite. Use as a one stage healing abutment. Healing period 3-6 months.

Note! For detailed information how to work with healing abutment see on page 10.

Impression technique



Clinician steps



Closed tray impression technique with HE-END as transfer cap

Mount holder HE-END on carrier. Inject impression material around the transfer. Fill the impression tray with impression material and seat the impression tray into the mouth. After the impression dry, the impression is removed, HE-END holder stays in the impression.



Direct scan

Use CRE carrier as usual intraoral scan post. Scan with intraoral scanner. Send files to the laboratory.



Direct scan via HE-END

Mount holder HE-END on carrier. Use this combination as a usual intra-oral scan post. Scan with intra-oral scanner. Send files to the laboratory.

Laboratory steps

Laboratory scanning

Use CRE carrier as usual laboratory scan post, separately or in combination with holder HE-END. Scan in the laboratory and send files to the computer.



Note! For detailed information how to work with transfers and scan posts see on pages 12-13.

Model



Laboratory steps



Prepare stone model using standard methods.



Use appropriate libraries to make model. Print created 3D model. Put digital analog inside, put soft tissue on top.

Final prosthesis

Carrier can be used as cementable narrow abutment for provisional immediate loading or as prosthetic abutment for definitive loading.

Laboratory steps



Cement-retained

Fabricate crown using standard modeling, casting and veneering methods. Check if it fits on model.



Screw-retained

Fabricate crown using standard modeling, casting and veneering methods. Check if it fits on model.

Clinician step



Final

Cement or screw final prosthesis.

Note! For detailed information how to work with cementable abutment see on pages 17-22.

Healing period



After surgical procedures begins the healing period. Depending on the situation there are two different solutions: one stage surgical technique and two stage surgical technique.

Cover screw

It is packed with implant, can be find screwed in green holder's HE-body. Used to cover the implant during two stage surgery technique.





Healing abutments, narrow

of insufficient space.

Used to heal soft tissue and to create emergence profile. Suitable in cases







Healing abutments, regular GF1, GF2, GF3, GF4, GF5, GF6, GF7 Used to heal soft tissue and to create emergence profile. Color coding.



Healing abutments, one-piece Used to heal soft tissue and to create emergence profile. Simple usage. No screw.

GFP3 GFP4 GFP5



Clinician steps



Bone build up

Specially designed and developed to create and maintain a space over the implant platform. Will also keep the soft tissue far from the implant platform during the healing and the osseointegration period. Can be used with bone graft or without. The implant should be placed 1 mm under the bone level. Healing period 2 months.



Two stage surgical technique

In the two-stage surgical procedure, the implant platform is covered with cover screw to prevent tissue overgrowth during the healing phase of the implant and for better osseointegration. Healing time 3-6 months. The implant is uncovered during a second surgical procedure and a healing abutment is placed for soft tissue healing. Healing time 2-4 weeks.



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One stage surgical technique

In a one stage procedure, a healing abutment is placed immediately after implant placement. No need for a second surgery. Healing period 3-6 months. Implant should have good primary stability.

Note! Sterilize products before use.

Impression technique



Implant Impression is an important step accurately relating an analog of the implant to the other structures in the dental arch. Conical connection together with hex allows to transfer the exact position of the implant into the laboratory model. There are a few types of impression technique: open tray, and closed tray (with cap or direct).



Closed tray transfer, with cap

Is used when there is insufficient clinical height in the distal parts of the upper and lower jaws and when implant axes diverge by up to 20°.



Closed tray transfer, direct

Useful in cases of limited inter-arch distance.





Digital impression is more precise, time saving, no traditional impression needed, less components to handle.



AN



Implant analogs

Implant analog is necessary for efficient and safe laboratory work. The laboratory receives the impression for fabrication of the model or digital files and produces a working model with removable gingival material.

Carrier

With the holder HE-END can be used as a closed tray transfer. Can be used as a scan post. With the holder HE-END can be used as a scan post.



Digital analog





Impression

Clinician steps



Open tray impression technique

Appropriate transfer is placed to implant and screwed by hand. Inject impression material around the transfer. Use an individual impression tray, or make a hole for the screw. Fill the impression tray with impression material and seat the impression tray into the mouth. After the impression dry, the screw is unscrewed and the impression removed. Transfer stays in impression.



Closed tray impression technique with transfer cap

Place appropriate transfer to implant. Tight by hand. Mount TC cap on transfer and push until it clicks. Inject impression material around the transfer. Fill the impression tray with impression material and seat the impression tray into the mouth. After the impression dry, the impression is removed, and the TC cap stays in the impression.



Closed tray impression technique, direct method

Place appropriate transfer to implant. Tight by hand. Inject impression material around the transfer. Fill the impression tray with impression material and seat the impression tray into the mouth. After the impression dry, the impression is removed, transfer stays in mouth.

Note! Sterilise products before use.



Intra-oral scanning

Clinician steps



Attach intra-oral scan post to implant in patient's mouth. The digital impression is taken directly on the patient using an intraoral scanner. Scan intra-oral scan post.



Scan occlusion.



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Scan mouth without scan post.



Send files to laboratory.

Note! For aesthetic reasons make sure that the side with flat surface is facing toward the inner side, there will be abutments screw channel.



Model



Laboratory steps



Attach analog to transfer and put to impression. Inject gingiva mask around analog. Fill the impression tray with stone material.



Take off stone model after model hardens. Unscrew transfer's screw and remove it from stone model. Stone model is with analog and ready for use.

Digital

Laboratory steps



Laboratory recieves files.



Use appropriate libraries to make model.



Print created 3D model. Put a digital analog inside, put soft tissue on top.

Prosthesis



Dental technician selects appropriate abutment, after consultation with the clinician, modifies if needed. Laboratory fabricates a crown with conventional casting technique, veneering the crown.

The abutment should be selected in the gingiva height analogous to the healing abutment. A mismatching profile of the structure may result in compression of the gingiva*.



An abutment is a component that is intermediate between the implant and the restoration.

The abutment provides the retention, support, stability and optimal position necessary for the definitive restoration.

Fixed prosthesis can be cement-retained, screw-retained or telescopic fixation.



*See Annex 1 for healing abutments and abutments compatibility



Cement-retained restorations

Cement-retained restorations are a traditional design to attach a restoration (crown, bridge) to an implant-retained abutment. Crowns and bridges are fabricated indirectly in the laboratory and cemented onto an implant abutment intraorally.

Screw-retained restorations

Abutments have occlusal screw channels for screw-retained fixation. This allows later to remove abutment in case to replace a crown.

Screws All abutments are supplied with two screws: for laboratory use – pink for clinical use – green Recommended maximum torque – 15 Ncm.						
Narrow abutment A1N Is used to create cement-retained restorations in cases of insufficient space for an anatomical abutment.	A1N					
Anatomical abutments A1, A2, A3, A4 A1A15, A2A15, A3A15, A4A15 A1A25, A2A25, A3A25, A4A25 Are used to create cement-retained restorations, shape of the abutment allows to work with subcrestal position of the implant and significantly reduces the time usually spent on milling standard abutments.	A1 A1 A3	A2	A1A15	A2A15	41A25	42A25 A2A25 A4A25
Transgingival abutments AT1, AT2, AT3, AT4, BP Is used to create single cement-retained restorations in the masticatory area with adjustable height only. BP burnout cap insure precise alignment of the metal body to prevent dental cementing failure.	AT1	AT2	AT3	AT4	BP	
Burn-out abutments AB, ABR, ABM, A1NP Are intended for use by the technician for simple casting of custom-made abutments for constructing the prosthetic restoration.	AB	ABR	ABM	A1NP		



Cement-retained Anatomical abutments



Laboratory steps



Take a stone or printed model. Connect the abutment to analog and hand-tighten using a dedicated screwdriver. Modify abutment if needed.



Fabricate crown using standard modelling, casting and veneering methods. Check if it fits the model.



Send abutment and final restoration to clinician.

Clinician steps



Remove healing abutment or temporary abutment. Make sure the implant prosthetic platform is free of bone and soft tissue.



Disinfect abutment before use. Connect the abutment to implant and hand-tighten using a dedicated screwdriver.





Clinician steps



Before cementation, the access hole to the abutment screw must be closed with filling material.



Disinfect crown before use. Fix the final crown to the abutment. Excess cement should be removed immediately.



Final restoration.

Screw-retained Anatomical abutments

Laboratory steps



Take a stone or printed model. Connect the abutment to analog and hand-tighten using a dedicated screwdriver. Modify abutment if needed.



Fabricate crown using standard modelling, casting and veneering methods. Check if it fits the model.





Laboratory steps



Don't forget to cover the screw hole before cementation.



Cement crown to abutment on model. Clean excess cement.



Send abutment with final restoration to clinician.

Clinician steps



Remove healing abutment or temporary abutment. Make sure the implant prosthetic platform is free of bone and soft tissue.



Disinfect abutment with crown before use. Prosthetics are screwed into the implant. Screw access should be closed with a composite.



Final restoration.



Cement-retained Transgingival abutments



Laboratory steps



Connect abutment to analog and handtighten using a dedicated screwdriver.



Mount BP cap on abutment. Adjust height by cutting.



Fabricate crown using standard modelling, casting and veneering methods.



Send abutment and final restoration to clinician.

Clinician steps



Remove healing abutment or temporary abutment. Make sure the implant prosthetic platform is free of bone and soft tissue.



Disinfect abutment before use. Connect the abutment to implant and hand-tighten using a dedicated screwdriver.





Clinician steps



Before cementation, screw access should be closed with a composite.



Disinfect prosthesis before use. Fix the final crown to the abutment. Excess cement should be removed immediately.



Final restoration.

Screw-retained Transgingival abutments

Laboratory steps



Connect abutment to analog and hand-tighten using a dedicated screwdriver.



Mount BP cap on abutment. Adjust height by cutting.



Cover screw hole before fabrication crown.





Laboratory steps



Fabricate crown using standard modelling, casting and veneering methods.



Cement crown to abutment on model. clean excess cement.



Send abutment with final restoration to clinician.

Clinician steps



Remove healing abutment or temporary abutment. Make sure the implant prosthetic platform is free of bone and soft tissue.



Disinfect abutment with crown before use. Prosthetics are screwed into the implant. Screw access should be closed with a composite.



Final restoration.



Burn out abutments



Abutm	nents	Single restorations	Multiple restorations	Titanium base
AB		+	-	PCO1S-PCO3S
ABR		-	+	PCO1-PCO3, PCOR
ABM		+	-	PCO1S
A1NP		+	+	-



Not allowed to cast metal directly to titanium base.

Cement-retained

Laboratory steps



Insert titanium base abutment PCOxS to analog.



Mount on top burn-out abutment. Adjust height by cutting.



Fabricate crown from burn-out abutment using standard modelling, casting and veneering methods.



Laboratory step



Send abutment and final restoration to clinician.

Clinician steps



Remove healing abutment or temporary abutment. Make sure the implant prosthetic platform is free of bone and soft tissue.



Disinfect abutment before use. Connect the abutment to implant and hand-tighten using a dedicated screwdriver.



Before cementation, screw access should be closed with a composite.



Disinfect prosthesis before use. Fix the final crown to the abutment. Excess cement should be removed immediately.



Final restoration.





Screw-retained Burn out abutments



Not allowed to cast metal directly to titanium base.

Laboratory steps



Insert titanium base abutment PCOxS to analog.



Mount on top burn-out abutment. Adjust height by cutting.



Fabricate crown from burn-out abutment using standard modelling, casting and veneering methods.



Cover screw hole before cementation.



Cement crown to abutment on model. Clean excess cement.



Send abutment with final restoration to clinician.





Clinician steps



Remove healing abutment or temporary abutment. Make sure the implant prosthetic platform is free of bone and soft tissue.



Disinfect abutment with crown before use. Prosthetics are screwed into implant. Screw access should be closed with a composite.



Final restoration.

Compatibility

healing abutments with abutments





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Medical devices under these instructions are in compliance with established in EU regulatory requirements.

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