

Straumann® Pro Arch with Straumann® BLX Implant System
Basic Information

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1. Treatment procedure

1.1 Implant planning

1.1.1 Planning phase

For optimal and long-lasting results, a prosthetic-driven planning phase is essential, and it should be executed in collaboration with all partners involved.

During the planning phase the following aspects need to be considered:

- Clarify patient's expectations
- Analyze patient's oral hygiene compliance
- Patient history (bone density, bone volume, sufficient lip support)
- Decide on final prosthetic restoration (fixed / removable)
- Decide on surgical procedure and implant placement based on bone volume (number of implants, implant angulation if necessary)
- Consider long-term post-operative care and maintenance

Proper diagnosis and treatment planning, including the consideration of your patient's chief complaints as well as an evidence-based implant / prosthetic design, will result in a successful treatment. These factors can significantly improve the patient's quality of life¹.

Planning and implant preparation for the full-arch restoration can either be done via conventional methods or with the help of digital planning softwares (e. g. coDiagnostiX®). In this treatment guide, the focus will be on the conventional procedure with an open-flap approach.

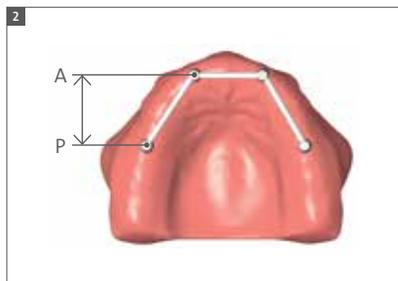
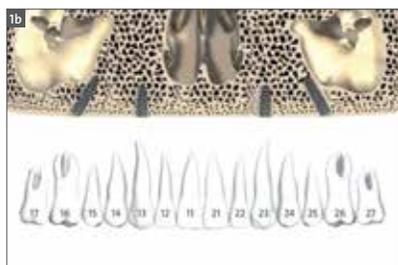
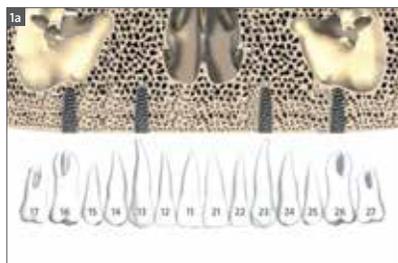
For additional information on Straumann® Guided Surgery, please consult the manual *Basic Information on Straumann® Guided Surgery* (NAMLIT 1006).

For additional information on Straumann® coDiagnostiX®, please contact your local Straumann® Territory Manager.

1.2 Surgical procedure

1.2.1 Surgical preparation and general considerations

Based on the treatment decision and the desired final restoration, define the following:



1. Position and orientation of the implant based on bone volume (according to Dr. Paulo Malo, MALO CLINIC®):

- full bone volume up to molars: straight implant placement (1a)
- bone volume sufficient in anterior region up to premolars: tilted implant placement in the posterior region (1b)

2. Implant position considering Anterior-Posterior (AP) spread for biomechanical stability.

3. Implant angulation (max. angulation): 45° (= higher A/P spread for higher stability).

4. For a restoration based on abutment level, choose an abutment-level impression, also recommended when implants are tilted.

For a final restoration using Straumann® CARES®, use an abutment-level impression to ensure optimal results.

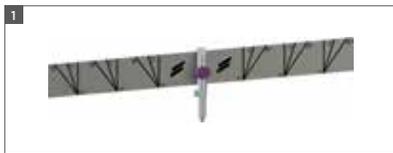
5. Together with the dental lab, produce an individual acrylic guide to verify implant axis, abutment/coping position and screw channels throughout the overall procedure.

1.2.2 Surgical procedure (flap procedure), abutment placement and immediate temporization

Make sure the surgical and prosthetic planning are both completed and critical anatomical sites are not harmed (maxilla: sinus/mandible: mandibular nerve). In some cases, the individual patient situation may require tilting of the implants. Posterior-tilted implants provide additional distal support for the prosthesis².

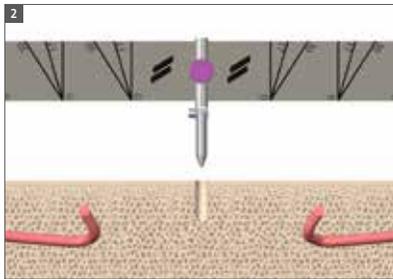
Prerequisites:

- Remaining dentition removed
- Flap opened and ready for implant placement
- Acrylic guide prepared by dental lab

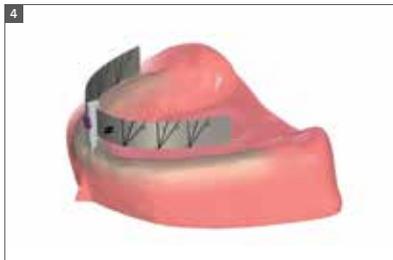


Intraoral verification:

1. To ensure a proper implant position, it is recommended to use the Straumann® Pro Arch Guide.

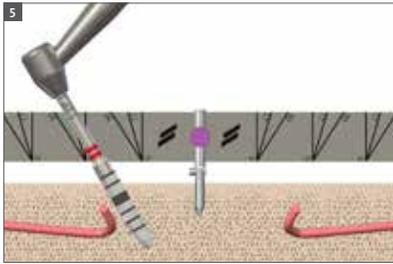


2. To prepare the placement of the Pro Arch Guide, perform the necessary midline osteotomy using the Ø2.2 mm Pilot Drill for drilling down to 10 mm.
3. Place the Pro Arch Guide in the midline osteotomy – the marks on the Pro Arch Guide help when aligning the axis of the implant.



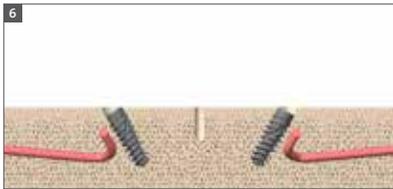
4. Bend the Straumann® Pro Arch Guide to adapt to the dental arch and use it during the implant site preparation and for orientation when you align the abutments/Occlusal Screw channel. Ideally, the Occlusal Screw channel is oriented more to the lingual/palatal side in order to avoid the screw channel emerging buccally.

Note: To adjust the inclination of the metal plate use the Hexagonal Screwdriver (046.421).

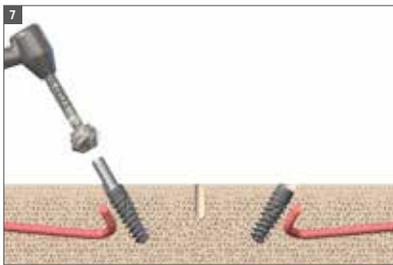


Implant site preparation:

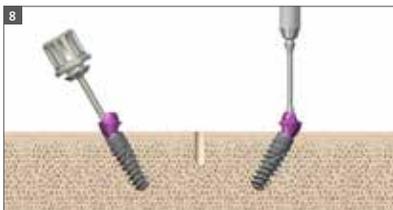
5. Drill to the appropriate depth and check correct angulation using the marks on the Straumann® Pro Arch Guide.



6. Place the appropriate implant following the Straumann® BLX Implant System surgical protocol.



7. Use the Straumann® Bone Level Bone Profiler to prepare the bone coronally to the implant shoulder in cases where the bone interferes with the abutment's emergence profile. For more details see *Appendix B: Straumann® Bone Level Bone Profiler*.



8. Position the final abutments with a torque of 35 Ncm. The Transfer and Alignment Pin is delivered pre-assembled with the angled abutment and simplifies abutment placement in the posterior region. Furthermore, the Transfer and Alignment Pin indicates orientation of the occlusal screw channel.

9. For anterior implant placement repeat steps 5 to 7.

Note: For torquing the abutment correctly despite low primary stability, refer to the *Quick Guide Holding Key for Straumann® Screw-retained Abutments* on page 21.



10. Place the titanium copings on top of the abutments and verify orientation and position with the help of the acrylic guide. Use the acrylic guide throughout the procedure to verify implant position and orientation.

If no immediate temporization is desired, place Protective Caps for Straumann® Screw-retained Abutments directly onto the abutments and hand-tighten them.

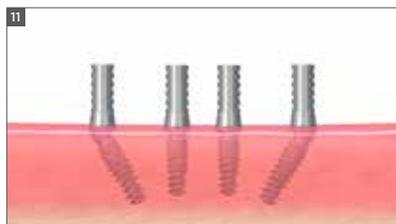
Do not keep the Protective Caps in the patient's mouth for more than 30 days. Provide sufficient space in the patient's temporary denture until the final prosthesis is placed.

1.3 Prosthetic treatment

1.3.1 Immediate temporization with the help of the dental lab

Prerequisites:

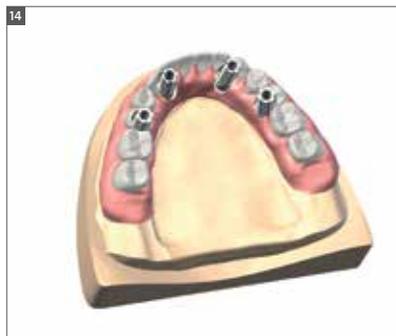
- Acrylic guide based on patient situation prepared by the dental lab
- Temporary restoration prepared by dental lab
- Abutments placed and tightened to 35 Ncm



11. Place non-engaging Titanium Copings on the anterior and posterior abutments.
12. Ensure correct position of the Titanium Copings on the abutments. Avoid any gaps between the Titanium Coping and the abutment.



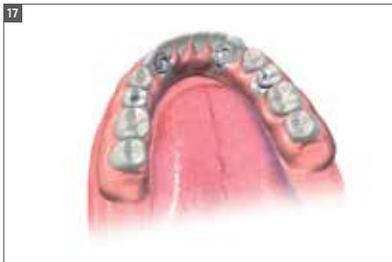
13. Use the acrylic guide to check the alignment and position of the Titanium Copings. Once the position is ensured make sure the occlusal set up fits with the prepared prosthesis. Use impression material to fix the Titanium Copings to the acrylic guide.



14. Use the acrylic guide to transfer the clinical situation to the dental lab.
15. The dental lab adapts the temporary restoration based on all information provided. Make sure to prepare sufficient space in the temporary restoration to fit in the Titanium Copings.



16. Intraorally, fix the Titanium Copings with the existing reworked prosthesis using resin material.

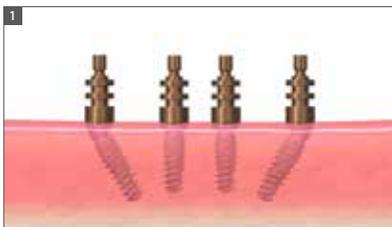


17. Finalize and polish the temporary restoration in the dental lab.
 18. Place the temporary restoration in the patient's mouth and tighten the Occlusal Screws to 15 Ncm using the SCS Screwdriver along with the Ratchet and the Torque Control Device.

1.3.2 Impression taking on abutment level for final restoration

Prerequisites:

- Implants, abutments and Protective Cap placed
- Implant site healed
- Temporary prosthesis is removed



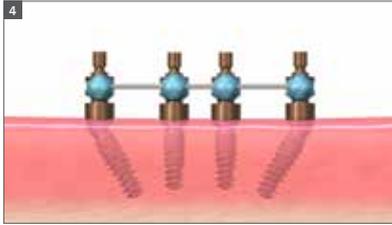
Open-tray impression

1. Place the Impression Post accurately into the abutment and hand-tighten the Guide Screw.

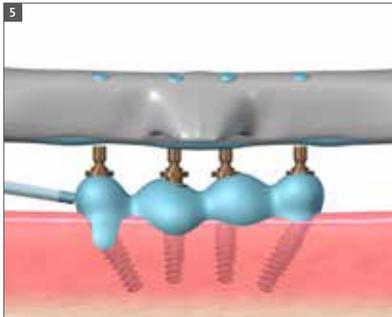
Note: For multi-unit restorations use the impression components with non-engaging features.

2. Ensure correct positioning of the Impression Posts to ensure proper fit of the restoration.

3. Make perforations in the custom-made impression tray (light-cured resin) according to the individual situation so that the Positioning Screw of the Impression Post sticks out visibly.



4. Splint the Impression Posts using a small wire or resin material.



5. Take the impression using a standard elastomeric impression material (e.g. polyvinyl siloxane or polyether rubber). Uncover the screws before the material is set.

6. Once the material is set, loosen the Guide Screws and remove the tray.

7. For easy abutment identification, include the impression components when you send the dental impression to your dental lab partner.

8. In the dental lab, reposition and fix the Analog in the impression using the Guide Screw.

9. Fabricate the master cast. A gingival mask should always be used to ensure that the emergence profile is optimally contoured.



Option for closed-tray impression:

Place the Impression Posts onto the Screw-retained Abutments, ensure correct positioning with the retentive features and click the Positioning Caps onto the Impression Posts allowing a vestibular orientation. After taking the impression, forward all impression components to the dental lab for processing. In the dental lab, screw the Impression Posts onto the corresponding analogs and click back into the Positioning Caps.

Note: All Impression Posts are intended for single use only to ensure optimal fit and precise impression taking for each patient. Hydrocolloid is not suitable for this application due to its low tensile strength.

1.3.3 Final fixed prosthesis including digital impression-taking and custom-milled bars

Prerequisites:

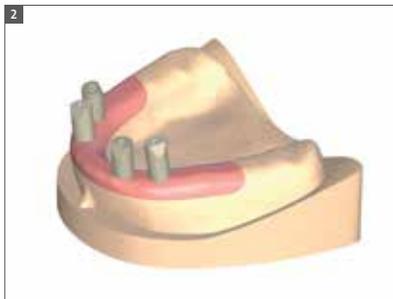
- Implants placed and completely osseointegrated
- Abutments placed
- Provisional fixed prosthesis available
- For digital procedure: digital impression taken from the dental model with the help of Straumann® CARES® Mono Scanbodies for Screw-retained Abutments, and imported into Straumann® CARES® Visual



Digital impression on a dental model with scanbodies

If you decide to work with a custom-milled CARES® framework, please proceed as follows:

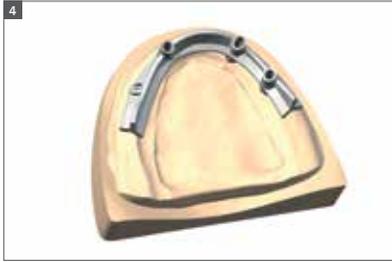
1. Fabricate a master cast based on a dental impression.



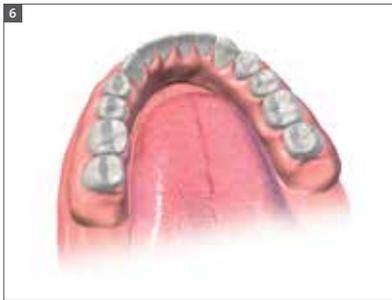
2. Place CARES® Mono Scanbodies for Screw-retained Abutments onto the abutments on the dental model.



3. Scan the dental situation with the help of the Straumann® CARES® Scanner.



4. Design the framework in Straumann® CARES® Visual.
5. Produce the final restoration based on the custom-milled framework.



6. In the dental office, place the final restoration in the patient's mouth.

In the CARES® Visual software the following framework designs for fixed screw-retained restorations are currently available:

	Tissue Level	Bone Level	Screw-retained Abutment-level
Bridge	✓	✓	✓
Bar Design	✓	✓	✓
CARES® Basic Fixed Bar	✓	✓	✓
CARES® Advanced Fixed Bar	✓	✓	✓
Material	Titanium grade 4, coron®, zirconia		



CARES® Screw-retained Bridge



CARES® Basic Fixed Bar



CARES® Advanced Fixed Bar



Zirconia bar

For additional information on Straumann® CARES® products and services, please consult the following brochures:

- *Straumann® CARES® Prosthetics (NAMLIT 1004)*
- *Straumann® CARES® Visual Software Manual (www.straumann-cares-digital-solutions.com/manual)*

Note: Straumann® CARES® may not be available in your country.

1.3.4 Straumann® CARES® Scan & Shape option

If you do not have access to a scanner and software you have the option to use our CARES® Scan & Shape service*:



7. Fabricate a master cast based on a dental impression.



8. Send the impression and order sheet to your local CARES® Scan & Shape supplier and follow their instructions.
9. Produce the final restoration based on the custom-milled framework.
10. In the dental office, place the final restoration in the patient's mouth.

For more detailed information please refer to your local subsidiary.

1.3.5 Care and maintenance

For long-term success and proper fit of the fixed prosthesis, thorough patient instruction and periodic check-ups (at least once a year) are recommended.

Careful maintenance of the fixed restoration provided it is not necessary to exchange the Occlusal Screws at each check-up visit.

During these visits, you should carefully examine the:

- Condition of peri-implant tissues with regard to diseases²:
 - Plaque and calculus, bleeding, recession, bone loss, radiographs
- Superstructure:
 - Occlusal fit and articulation, proper fit of the fixed prosthesis, wear of occlusal surface, retention, attachment loosening, abutment status
- Function of the prosthesis.

For proper care at home, instruct the patient to clean the space between gingiva and fixed prosthesis, especially around the implants on a regular basis. Dental floss, bushy dental floss or interdental brushes are recommended.

* Currently only available in the US.

2. Product overview

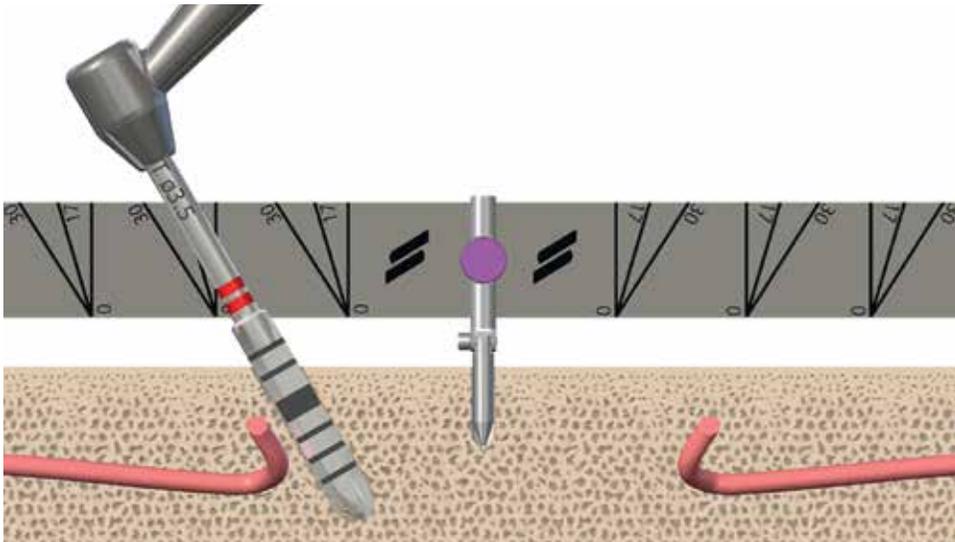
Art. No.	Image	Product	Description	Material
Screw-retained Abutments 0°, sterile				
062.4722S	RB/WB Screw-retained Abutment		straight, angle 0°, Ø4.6 mm, gingiva height 1.5 mm, sterile	TAN
062.4723S			straight, angle 0°, Ø4.6 mm, gingiva height 2.5 mm, sterile	
062.4724S			straight, angle 0°, Ø4.6 mm, gingiva height 3.5 mm, sterile	
062.4725S			straight, angle 0°, Ø4.6 mm, gingiva height 4.5 mm, sterile	
Screw-retained Abutments 17°, sterile				
062.4733S	RB/WB Screw-retained Abutment		angled, angle 17°, Ø4.6 mm, gingiva height 3.5 mm, sterile	TAN
062.4734S			angled, angle 17°, Ø4.6 mm, gingiva height 4.5 mm, sterile	
062.4735S			angled, angle 17°, Ø4.6 mm, gingiva height 5.5 mm, sterile	
Screw-retained Abutments 30°, sterile				
062.4743S	RB/WB Screw-retained Abutment		angled, angle 30°, Ø4.6 mm, gingiva height 3.5 mm, sterile	TAN
062.4744S			angled, angle 30°, Ø4.6 mm, gingiva height 4.5 mm, sterile	
062.4745S			angled, angle 30°, Ø4.6 mm, gingiva height 5.5 mm, sterile	
Replacement Screws				
065.0036	RB/WB Basal Screw*		for RB/WB Temporary Abutments, Anatomic Abutments, Variobase® for Crown, Variobase® for Bridge/Bar Cylindrical, angled Screw-retained Abutments, and angled Novaloc® Abutments, length 6.1 mm	TAN
023.4763	NC/RC Occlusal Screw		for NC/RC Titanium, Gold, Burn-Out and Variobase® Coping for Screw-retained Abutments, length 3.7 mm	

*Currently only available in the US

Art. No.	Image	Product	Description	Material
Impression Posts (at abutment level) for Multi-Unit Restorations (non-engaging)				
025.0012		Impression Posts for Open-tray Impression	for Screw-retained Abutments, abutment level, Ø4.6 mm	TAN
025.0014		Impression Posts for Closed-tray Impression		TAN/POM
Digital Impression				
025.0001		CARES® Mono Scanbody	for Screw-retained Abutments, abutment level, including Fixation Screw, Ø4.6 mm	PEEK
025.0008		Repositionable Analog	for Screw-retained Abutments, Ø4.6 mm	Stainless steel
Analogs				
023.4756		Analog for Screw-retained Abutments Ø4.6 mm	for Screw-retained Abutments Ø4.6 mm, straight	TAN
025.0050			for Screw-retained Abutments Ø4.6 mm, edentulous, straight	
023.4757			for Screw-retained Abutments Ø4.6 mm, angled, angle 17°/30°	
Lab Auxiliaries				
025.0005		Polishing Aid	for Screw-retained Abutments Ø4.6 mm, packaging 4 pieces	TAN
025.0005V4				
025.0006		Lab Processing Screw	for Screw-retained Abutments, length 20 mm	Stainless steel
025.0052			for Screw-retained Abutments, length 10 mm	
Protective Caps				
024.4323-04		Protective Cap Ø4.6 mm	for Screw-retained Abutments Ø4.6 mm, including screw 023.4763, height 5.1 mm, packaging 4 pieces	PEEK
024.4324-04			for Screw-retained Abutments Ø4.6 mm, including screw 023.4763, height 6.6 mm, packaging 4 pieces	
024.4325-04			for Screw-retained Abutments Ø4.6 mm, including screw 023.4763, height 8.1 mm, packaging 4 pieces	
Auxiliary Parts				
026.0016		Straumann® Planning Guide	visual guide for tilted implant placement in Straumann® Pro Arch cases	TAV/Ti
025.0009		Transfer and Alignment Pin	for Screw-retained Abutments	TAN
025.0019		Holding key	for Screw-retained Abutments (angled only)	Stainless steel

Art. No.	Image	Product	Description	Material
Copings				
023.0028		Variobase® for Bridge/Bar Cylindrical Coping for Screw-retained Abutments	for Screw-retained Abutments Ø4.6 mm, including screw 023.4763, Ø5.1 mm, height 4 mm	TAN
023.0032		Burn-out Coping for Variobase® for Bridge/Bar Cylindrical	for Screw-retained Abutments Ø4.6 mm	POM
023.0032V4		Burn-out Coping for Variobase® for Bridge/Bar Cylindrical	for Screw-retained Abutments Ø4.6 mm	POM
023.4751		Titanium Coping for Screw-retained Abutments	for Screw-retained Abutments Ø4.6 mm, for bridges, including screw 023.4763, height 11 mm	Ti
023.4752		Bar Titanium Coping for Screw-retained Abutments	for Screw-retained Abutments Ø4.6 mm, including screw 023.4763, height 5.5 mm	Ti
023.4754		Gold Coping for Screw-retained Abutments	for Screw-retained Abutments Ø4.6 mm, for bridges, including screw 023.4763, alloy weight 0.469 g	Ceramicor®/POM
023.4755		Bar Gold Coping for Screw-retained Abutments	for Screw-retained Abutments Ø4.6 mm, for bars, including screw 023.4763, alloy weight 0.744 g, height 5.5 mm	Ceramicor®
023.4758		Burn-out Coping for Screw-retained Abutments	for Screw-retained Abutments Ø4.6 mm, for bridges and bars, including screw 023.4763, height 11 mm	POM
Replacement Screw				
023.4763		NC/RC Occlusal Screw	for NC/RC Titanium, Gold, Burn-Out and Variobase® Coping for Screw-retained Abutments, length 3.7 mm	TAN

Appendix A: Straumann® Pro Arch Guide



Intended use: The Straumann® Pro Arch Guide is used for visual and three-dimensional orientation of the implant angulation (mesial/ distal) and oral parallelization.

Indication: The surgical and prosthetic procedure involves the placement of multiple implants in combination with Screw-retained Straight or Angled Abutments.

Product description: The Straumann® Pro Arch Guide is used in edentulous jaws for surgical implant placement. The template of the Pro Arch Guide can be easily bent to adapt to the dental arch. It is secured by drilling into the midline with a $\varnothing 2.2$ mm Pilot Drill and inserting a pin in the jaw. The drilling depth for the bone cavity of the pin is 10 mm. The drilling depth can be checked optically using the depth markings on the drills or using the optional depth stop system. The slider is used to position the template for drilling. Drill the implant sites according to the surgical protocol. Each drill is aligned parallel to the template surface and at the implantation angle. Make sure the Pro Arch Guide is properly assembled, clean and sterile. Never use potentially contaminated components.

Warnings and precautions: Take the following precautions prior to or during treatment:

- Position the patient in such a way that the danger of aspiration of components is minimized. All components that are used intraorally must be secured to prevent aspiration or swallowing.
- Do not use damaged or blunt instruments. Always inspect the instruments before use.
- If the laser markings are illegible, the device must be replaced.
- Do not use more than 20 times.

Sterilization: Autoclave, fractionated vacuum method: 132°C, 4 min (30 min drying time).

Appendix B: Straumann® Bone Level Bone Profiler

The Bone Level Bone Profiler is used to remove bone coronally to the implant shoulder in the following situations:

- deeply placed implants
- angulated/tilted implants
- scalloped or sloped alveolar ridge

Important: Use the Bone Level Bone Profilers only if the bone walls interfere with the abutment's emergence profile.

Art. No.	Image	Product	Description	Material
Bone Profilers for Bone Level				
026.0022		BL Bone Profiler 1	length 23 mm, Ø5.2 mm	Stainless steel
026.0023		BL Bone Profiler 2	length 23 mm, Ø6.6 mm	
026.0024		BL Bone Profiler 3	length 23 mm, Ø6 mm	
066.0025S		BLX Guiding Cylinder	for Bone Profiler, length 10.8 mm, Ø2.9 mm	TAN

Instructions for use

For detailed instructions please consult the *Instructions for use: Straumann® BL Bone Profilers (701713/en)* or at www.ifu.straumann.com.

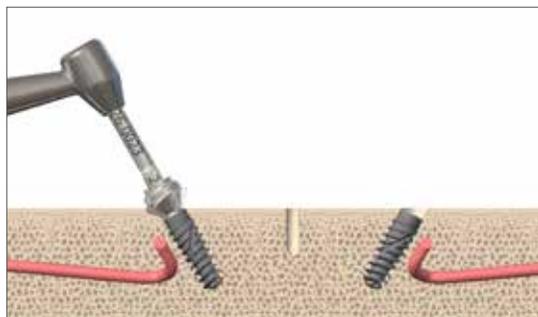


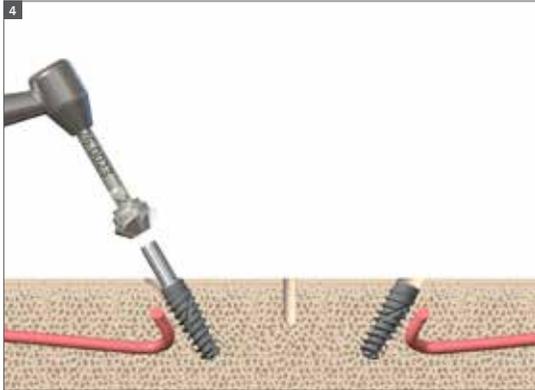
1. Screw the BLX Guiding Cylinder (066.0025S) into the implant using an SCS Screwdriver. Hand-tighten the Guiding Cylinder.
2. Choose the Bone Profiler 1, 2 or 3 depending on the abutment emergence profile, the implant position (e.g. subcrestal placement, tilted position) and surrounding bone situation (e.g. uneven, scalloped ridge). Table 1 (page 20) shows which Bone Profiler is generally suggested for a particular abutment in situations of deeply (subcrestally) placed implants.



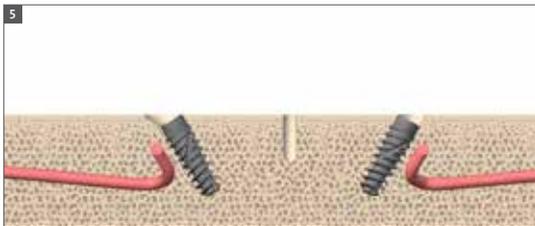
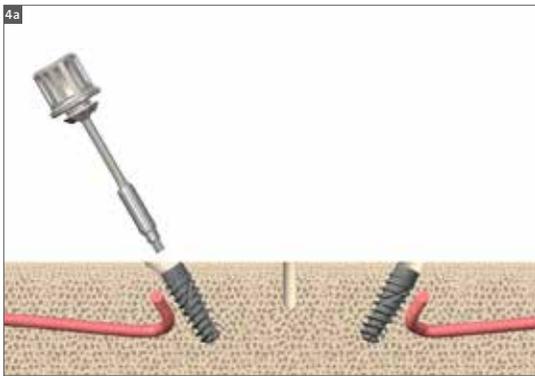
3. Insert the Bone Profiler into the dental hand-piece. Without turning the Bone Profiler, place it over the Guiding Cylinder and slide it down until the Bone Profiler is 1 mm away from the bone. Once in position, drill into the bone not exceeding the maximum rotational speed of 200 rpm. Use intermittent drilling technique with ample irrigation with sterile precooled physiological saline solution.

Important: When drilling keep the Bone Profiler and the Guiding Cylinder axially aligned and do not apply any bending forces. Continue drilling until the Bone Profiler reaches the stop collar of the Guiding Cylinder.





4. Remove the Bone Profiler and unscrew the Guiding Cylinder from the implant.



5. Place the abutment and screw it into the implant.

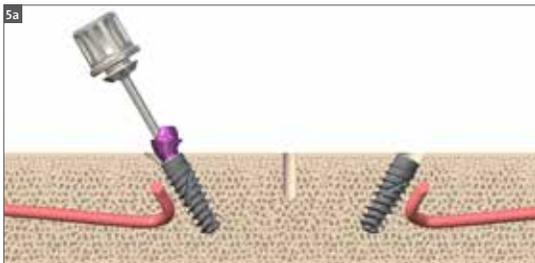


Table 1: Abutments and corresponding Bone Level Bone Profilers

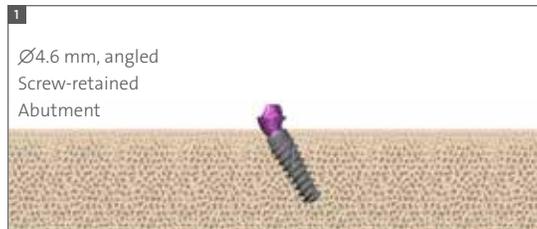
Art. No.	Product Description	Bone Profiler 1 026.0022	Bone Profiler 2 026.0023	Bone Profiler 3 026.0024
062.4722S	RB/WB, straight, angle 0°, Ø4.6 mm, gingiva height 1.5 mm, sterile		✓	
062.4723S	RB/WB, straight, angle 0°, Ø4.6 mm, gingiva height 2.5 mm, sterile	✓		
062.4724S	RB/WB, straight, angle 0°, Ø4.6 mm, gingiva height 3.5 mm, sterile	✓		
062.4725S	RB/WB, straight, angle 0°, Ø4.6 mm, gingiva height 4.5 mm, sterile	✓		
062.4733S	RB/WB, angled, angle 17°, Ø4.6 mm, gingiva height 3.5 mm, sterile			✓
062.4734S	RB/WB, angled, angle 17°, Ø4.6 mm, gingiva height 4.5 mm, sterile		✓	
062.4735S	RB/WB, angled, angle 17°, Ø4.6 mm, gingiva height 5.5 mm, sterile		✓	
062.4743S	RB/WB, angled, angle 30°, Ø4.6 mm, gingiva height 3.5 mm, sterile			✓
062.4744S	RB/WB, angled, angle 30°, Ø4.6 mm, gingiva height 4.5 mm, sterile		✓	
062.4745S	RB/WB, angled, angle 30°, Ø4.6 mm, gingiva height 5.5 mm, sterile		✓	

Appendix C: Quick Guide for Holding Key for Straumann® Screw-retained Abutments

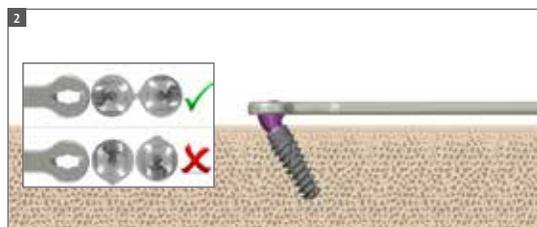


Art. 025.0019

The intended use of the Holding Key for Straumann® Screw-retained Abutments is to prevent the abutment and implant from rotating when applying the recommended tightening torque of 35 Ncm for final abutments.



With the Straumann® BLX Implant seated in the final position, place the Straumann® Screw-retained Abutment into the implant in the desired orientation.



Use the connection marked with $\varnothing 4.6$ for angled Screw-retained Abutments. Ensure that the Holding Key is properly seated and engaged on the abutment.

Note: Applicable for angled Screw-retained Abutments only.



Mount the Straumann® SCS Screwdriver on the abutment screw, at the same time hold the Holding Key to prevent the abutment and implant from rotating while torquing. Use the Straumann® Ratchet to apply a final torque of 35 Ncm.

References

- 1 Wismeijer D et al. : ITI Treatment Guide: Loading protocols in Implant Dentistry – Edentulous Patients, Volume 4, 2010, page 223 Patient Consideration
- 2 Wismeijer D et al. : ITI Treatment Guide: Loading protocols in Implant Dentistry – Edentulous Patients, Volume 4, 2010, page 54 Treatment Options for the Edentulous Arch

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