straumann

BASIC INFORMATION

Straumann® BLX Implant System

Technical handling information

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ABOUT THIS GUIDE

This surgical and prosthetic procedure describes the steps required for implantation and restoration of the Straumann® BLX Implant System. The Straumann® BLX Implant System is recommended for use only by clinicians with advanced surgical skills. It is assumed that the user is familiar with placing dental implants. Not all detailed information will be found in this guide. Reference to existing Straumann® procedure manuals will be made throughout this document.

Not all products shown are available in all markets.

1. THE STRAUMANN® BLX IMPLANT SYSTEM

The Straumann® BLX Implant System offers Bone Level implants (BLX) that are designed for high primary stability and immediate treatment procedures.

The Straumann® BLX Implants are made from the material Roxolid® with the SLActive® and SLA® surface and are available in the endosteal diameters ∅ 3.5 mm to ∅ 6.5 mm, with length options from 6 mm to 18 mm for the diameter up to ∅ 5.0 mm, and 6 mm to 16 mm for diameters ∅ 5.5 mm and ∅ 6.5 mm. A unified color code simplifies identification of instruments and implants for the available endosteal diameters.

The Straumann® BLX prosthetic components are identified with RB (Regular Base) and WB (Wide Base), corresponding to the implant neck diameters of ∅ 3.5 mm and ∅ 4.5 mm, respectively.

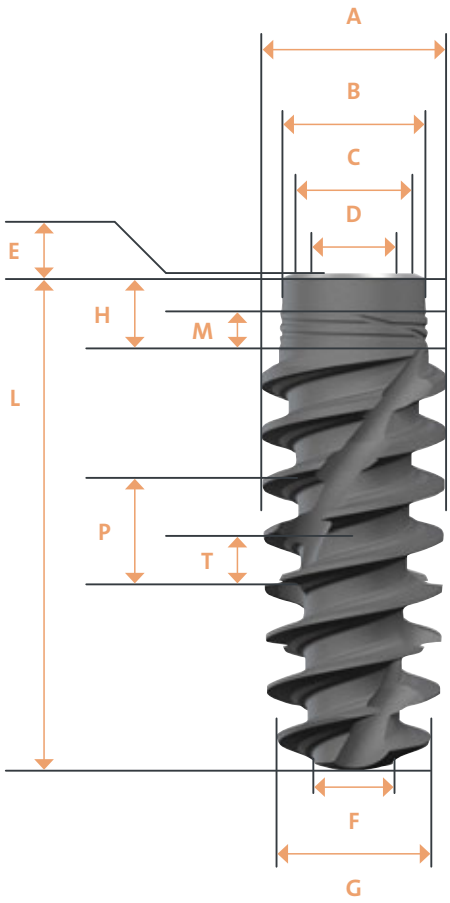
		Straumann® BLX Implant						
		∅ 3.5 mm	∅ 3.75 mm	∅ 4.0 mm	∅ 4.5 mm	∅ 5.0 mm	∅ 5.5 mm	∅ 6.5 mm
Color code		(white)	(red)	(gray)	(green)	(magenta)	(brown)	(black)
Prosthetic Base		RB (Regular Base)				WB (Wide Base)		
Connection		TorcFit™						
Picture								
SLActive®								
Available lengths	6 mm	–	061.4306	061.5306	061.6306	061.7306	061.8306	061.9306
	8 mm	061.3308	061.4308	061.5308	061.6308	061.7308	061.8308	061.9308
	10 mm	061.3310	061.4310	061.5310	061.6310	061.7310	061.8310	061.9310
	12 mm	061.3312	061.4312	061.5312	061.6312	061.7312	061.8312	061.9312
	14 mm	061.3314	061.4314	061.5314	061.6314	061.7314	061.8314	061.9314
	16 mm	061.3316	061.4316	061.5316	061.6316	061.7316	061.8316	061.9316
	18 mm	061.3318	061.4318	061.5318	061.6318	061.7318	–	
SLA®								
Available lengths	6 mm	–	061.4506	061.5506	061.6506	061.7506	061.8506	061.9506
	8 mm	061.3508	061.4508	061.5508	061.6508	061.7508	061.8508	061.9508
	10 mm	061.3510	061.4510	061.5510	061.6510	061.7510	061.8510	061.9510
	12 mm	061.3512	061.4512	061.5512	061.6512	061.7512	061.8512	061.9512
	14 mm	061.3514	061.4514	061.5514	061.6514	061.7514	061.8514	061.9514
	16 mm	061.3516	061.4516	061.5516	061.6516	061.7516	061.8516	061.9516
	18 mm	061.3518	061.4518	061.5518	061.6518	061.7518	–	

To obtain more information about the indications and contraindications related to each implant, please refer to the corresponding instructions for use. Instructions for use can be found at www.ifu.straumann.com.

Note:
Particular care should be taken when placing small-diameter Roxolid® implants (∅ 3.5 mm) in the molar region or other high-load situations due to the risk of implant overload.

2. IMPLANT

2.1 DESIGN AND SPECIFICATION



Straumann®
BLX Implant
Ø4.5 mm

	Straumann® BLX Implant						
	Ø3.5 mm	Ø3.75 mm	Ø4.0 mm	Ø4.5 mm	Ø5.0 mm	Ø5.5 mm	Ø6.5 mm
[A] Maximum outer diameter	Ø3.5 mm	Ø3.75 mm	Ø4.0 mm	Ø4.5 mm	Ø5.0 mm	Ø5.5 mm	Ø6.5 mm
[B] Neck diameter	Ø3.4 mm	Ø3.5 mm			Ø4.5 mm		
[C] Platform diameter	Ø2.9 mm						
[D] Connection diameter	Ø2.7 mm						
[E] 22.5° bevel height	0.1 mm	0.12 mm			0.33 mm		
[F] Apical diameter, body	Ø1.9 mm				Ø2.2 mm		
[G] Apical diameter, threads	Ø2.75 mm	Ø2.9 mm		Ø3.6 mm	Ø3.5 mm	Ø4.0 mm	Ø5.2 mm
Number of apical cutting edges	2				4		
[L] Implant lengths: 6 mm, 8 mm							
[H] Neck height	1.0 mm						
[M] Micro threads height	0.5 mm						
[P] Thread pitch*	1.7 mm		1.8 mm	2.0 mm	1.9 mm	2.1 mm	2.3 mm
[T] Thread spacing	0.85 mm		0.9 mm	1.0 mm	0.95 mm	1.05 mm	1.15 mm
[L] Implant lengths: 10 mm, 12 mm, 14 mm							
[H] Neck height	1.7 mm						
[M] Micro threads height	0.85 mm						
[P] Thread pitch*	2.1 mm	2.2 mm	2.25 mm	2.5 mm	2.3 mm	2.5 mm	2.7 mm
[T] Thread spacing	1.05 mm	1.1 mm	1.125 mm	1.25 mm	1.15 mm	1.25 mm	1.35 mm
[L] Implant lengths: 16 mm, 18 mm							
[H] Neck height	2.0 mm						
[M] Micro threads height	1.0 mm						
[P] Thread pitch*	2.5 mm	2.6 mm	2.7 mm	2.8 mm	2.7 mm	2.8 mm	3.1 mm
[T] Thread spacing	1.25 mm	1.3 mm	1.35 mm	1.4 mm	1.35 mm	1.4 mm	1.55 mm

** Implant advances by this amount with every rotation.*

3. CONNECTION

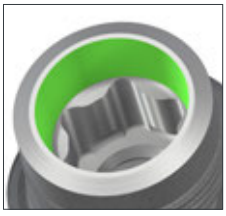
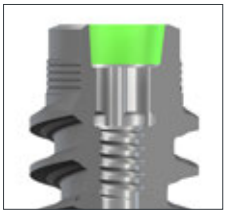
3.1 TORCFIT™ CONNECTION

The Straumann® BLX Implant features the intuitive TorcFit™ connection. This connection supports self-guiding insertion, for clear-cut tactile feedback. Six positions enable a simple yet flexible alignment and outstanding protection against rotation.

All BLX Implants have the same inner geometry regardless of the diameter of the implant. This allows the use of one set of prosthetic components (“RB/WB abutments”) and simplifies the prosthetic steps. In addition, a wide emergence profile can be created on top of WB implants (“WB abutments”).

Improved Torx with six positions:
- Allows transmission of high torques
- Simple yet flexible implant and abutment alignment


7° conical prosthetic connection:
- High mechanical stability and stress distribution
- Exact implant-abutment fit
- Narrow emergence profile creates space for soft tissues
- Clear feedback of final position by friction fit

22.5° shoulder prosthetic connection:
- High mechanical stability
- Exact implant-abutment fit
- Extra wide emergence profiles (implants with diameter >5.0 mm)
- Divergence compensation for bridges

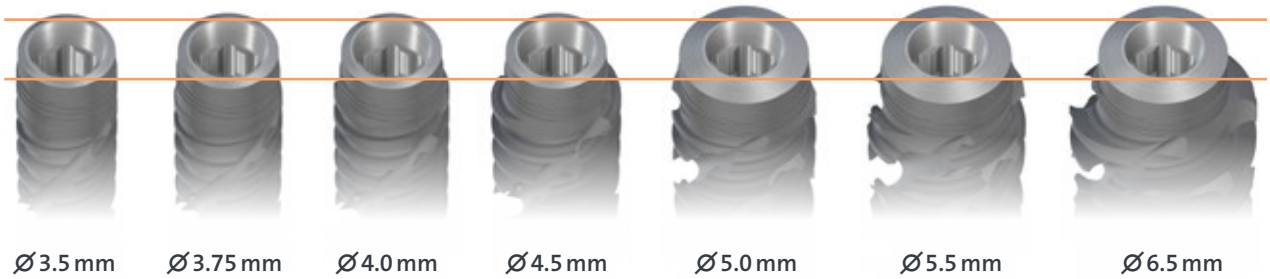

Flat top portion:
- High accuracy for impression components
- Flat sealing for healing and temporary components to protect inner conus


Same inner geometry regardless of the diameter of the implant

- A single prosthetic range to manage all implant diameters (“RB/WB”)
- Simplified prosthetic steps
- Same implant driver for all implants

Precise machined shoulder for optional wide emergence profile (diameter >5.0 mm)

- Free choice of implant regardless of prosthetic volume to restore

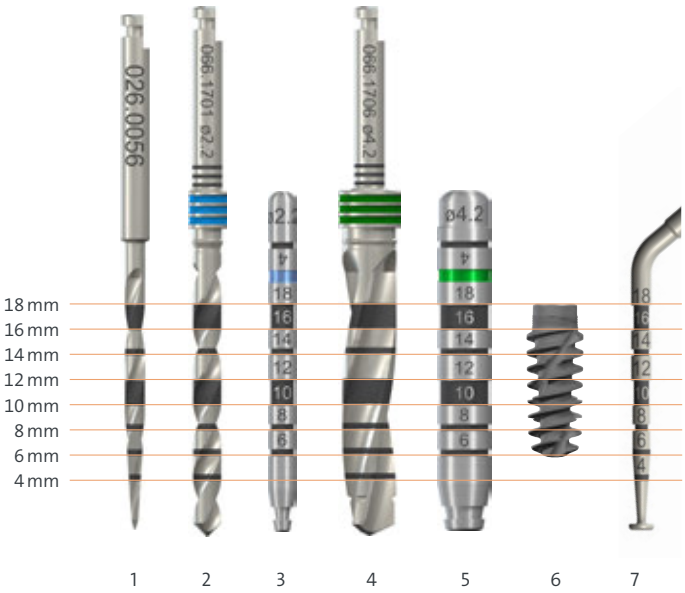


Ø3.5 mm Ø3.75 mm Ø4.0 mm Ø4.5 mm Ø5.0 mm Ø5.5 mm Ø6.5 mm

4. INSTRUMENTS

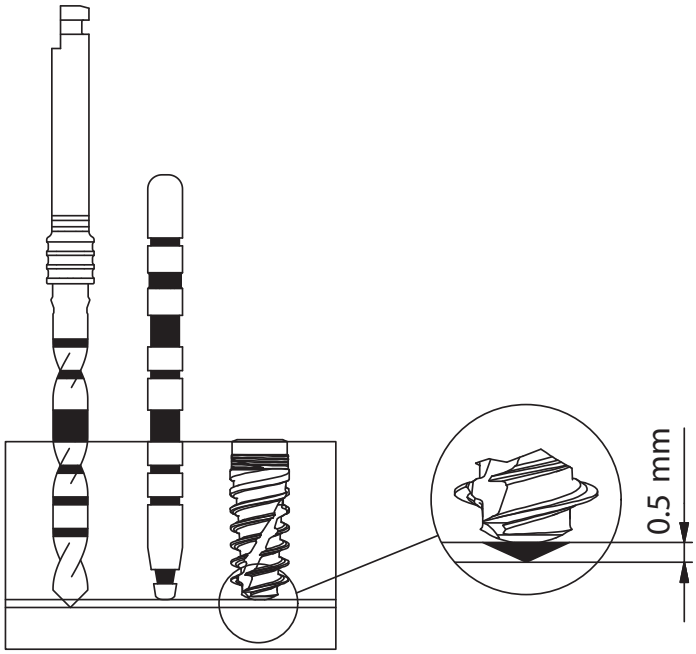
The Straumann® BLX Implant System is supplied with a specific set of instruments.

The instruments have depth marks at 2 mm intervals that correspond to the available implant lengths. The first bold mark on the drills represents 10 mm and 12 mm, where the lower edge of the mark corresponds to 10 mm and the upper edge to 12 mm. The second bold mark on the long drills represents 16 mm and 18 mm, where the lower edge of the mark corresponds to 16 mm and the upper edge to 18 mm.



1. Needle Drill: 026.0056
2. Pilot Drill, long: 066.1701
3. Alignment Pin: 046.799
4. Drill 6, long: 066.1706
5. Depth Gauge 046.804
6. BLX Implant ∅4.5 / 12 mm: 061.6312
7. Implant Depth Gauge: 066.2000

Warning: Due to the function and design of the drills, the drill tip is up to 0.5 mm longer than the insertion depth of the implant. For example, if you drill until the 10 mm marking the actual osteotomy has a depth of 10.5 mm.



4.1 VELODRILL™

The BLX VeloDrill™ line in the Straumann® Dental Implant System is delivered color-coded, the color corresponding to the specific implant diameter. For precise depth control, VeloDrills™ are compatible with a disposable drill stop system (refer to *Straumann® Drill Stop, Basic Information* (702874/en)).

	Needle drill	Drill No. 1 (pilot)	Drill No. 2	Drill No. 3	Drill No. 4	Drill No. 5	Drill No. 6	Drill No. 7	Drill No. 8	Drill No. 9
Color	–									
Picture (short)										
Diameter	Ø1.6 mm	Ø2.2 mm	Ø2.8 mm	Ø3.2 mm	Ø3.5 mm	Ø3.7 mm	Ø4.2 mm	Ø4.7 mm	Ø5.2 mm	Ø6.2 mm
Step diameter	NA	NA	Ø2.5 mm	Ø3.0 mm	Ø3.3 mm	Ø3.6 mm	Ø3.9 mm	Ø4.4 mm	Ø4.9 mm	Ø5.7 mm
Short	026.0054	066.1301	066.1302	066.1303	066.1304	066.1305	066.1306	066.1307	066.1308	066.1309
Long	026.0056	066.1701	066.1702	066.1703	066.1704	066.1705	066.1706	066.1707	–	
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel

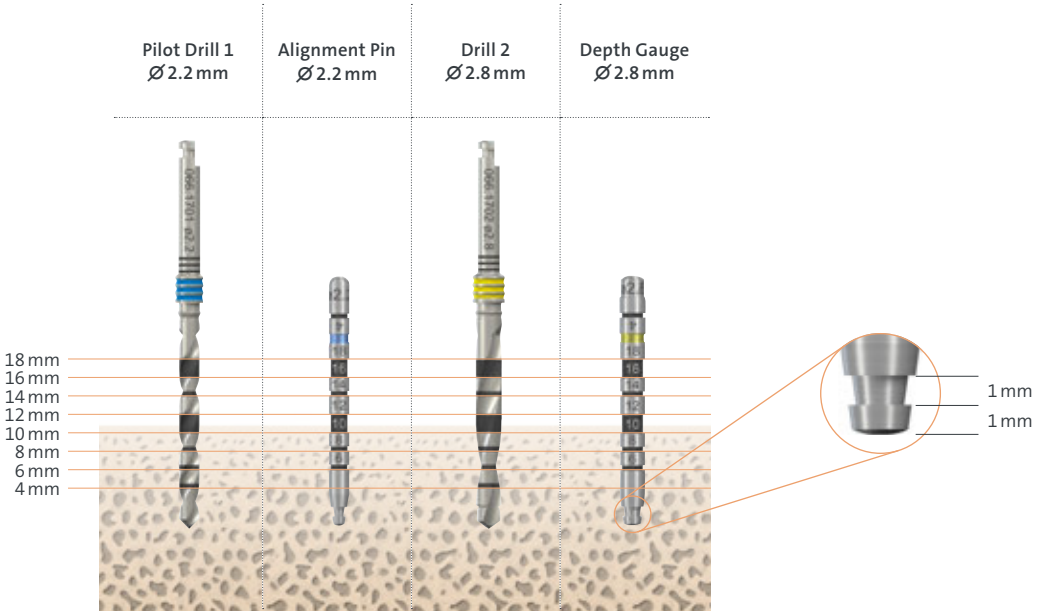
4.2 EXTERNAL IRRIGATION WHEN USING DRILL EXTENDER

The Stop Ring reduces the effectiveness of the irrigation when a Drill Extender is used. In this case use additional external irrigation (e.g with a syringe) to ensure proper cooling of the osteotomy during drilling.

4.3 ALIGNMENT PINS AND DEPTH GAUGES

Alignment pins and depth gauges are available for accurate depth measurements and alignment of orientation and position of the osteotomy. Their diameters and colors correspond to the drill diameters and are compatible with all Straumann® Dental Implant Systems.

The tip and the groove are both 1.0 mm long. This allows distortion measurements on an interoperative radiograph.



066.1701 (long)	046.799	066.1702 (long)	046.800

4.4 IMPLANT DEPTH GAUGE

The Implant Depth Gauge is used for accurate depth measurement and tactile examination of the osteotomy.
Blue end: use to examine osteotomy made using Drill No. 1 (Ø 2.2 mm)
Yellow end: use to examine osteotomy made using Drill No. 2 (Ø 2.8 mm) and wider
The Implant Depth Gauge is made of titanium alloy (TAN) and is compatible with all Straumann® Dental Implant Systems.

Implant Depth Gauge, 066.2000

4.5 IMPLANT DRIVER

Select the appropriate implant driver type for pick-up and insertion of the Straumann® BLX Implants.

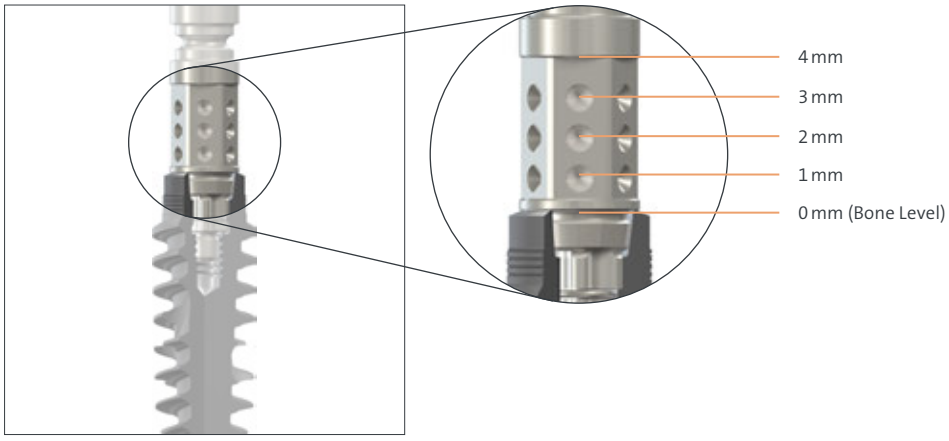
Implant Driver type								
Implant Driver for Handpiece 21				Implant Driver for Ratchet 21			Implant Driver for Ratchet, screw-retained	
								
short	medium	long	extra long	short	medium	long	short	long
Length 21 mm	Length 26 mm	Length 31 mm	Length 36 mm	Length 21 mm	Length 26 mm	Length 31 mm	Length 21 mm	Length 31 mm
Stainless steel								
066.4101	066.4107	066.4102	066.4108	066.4201	066.4207	066.4202	066.4205	066.4206

Note: Consider the available intra oral space when selecting an implant driver. The long and extra-long versions are recommended for anterior only.

Surgical Handle for TorcFit™ Implant Driver

Stainless steel
066.4000

The Implant Drivers for Handpiece (long (066.4102), extra long (066.4108)) are compatible with the Surgical Handle, for TorcFit™ Implant Driver. If manual surgical implant drivers are used to insert the implant, special attention is required to avoid overtightening.

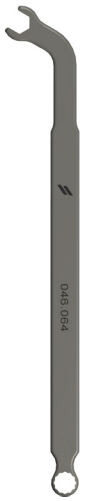


The round markings on the implant drivers indicate the distance to the implant shoulder in 1 mm steps.

4.6 RATCHET AND TORQUE CONTROL DEVICES

The Ratchet is a two-part lever arm instrument with a rotary knob for changing the direction of force. It is supplied with a service instrument, which is used to tighten and loosen the head screw. The Holding Key (046.064) can be used to stabilize the Ratchet.

Two different Torque Control Devices are available for defined torque transmission or for torque measurements, with markings of 15 Ncm / 35 Ncm and 35-50 Ncm / 80 Ncm, respectively. Choose the appropriate device depending on the intended use.

	Ratchet and Torque Control Devices			
	Holding Key	Ratchet	Torque Control Device for Ratchet	Torque Control Device for Ratchet, Surgical
				
Intended use	Auxiliary	Torque transmission	Prosthetic	Surgical
Torque markings	NA	NA	0 / 15 / 35 Ncm	0 / 35 / 50 / 80 Ncm
Article number	046.064	046.119	046.049	066.1100
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel, DLC coated

Note: To ensure prolonged perfect function and cleanability, the Ratchet must always be taken apart and the individual parts disinfected, cleaned and sterilized after use. Its function must be checked in good time before each use.

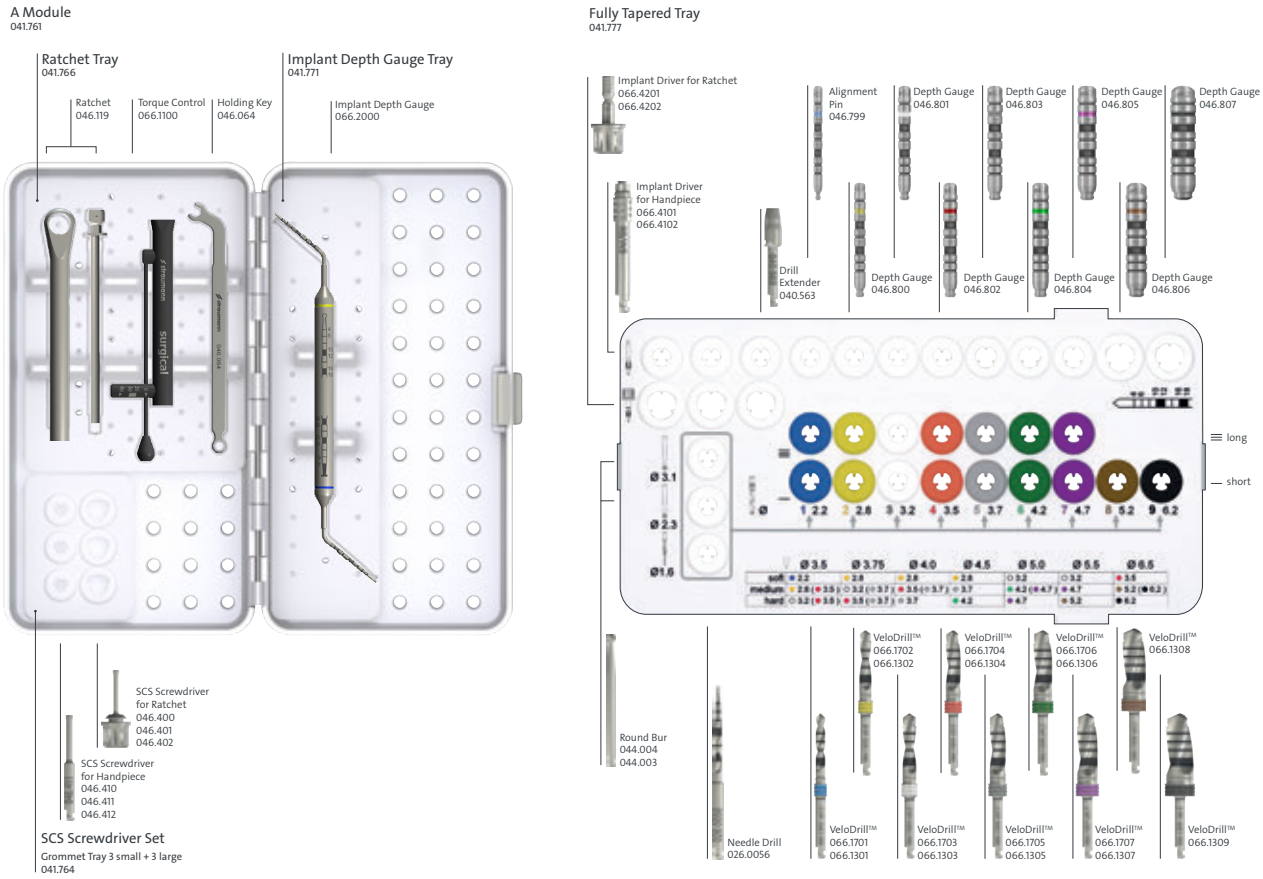
Always use the Service Instrument to tighten the bolt of the Ratchet before use.

Torque reading on Torque Control Device:

4.7 STRAUMANN® MODULAR CASSETTE

The Straumann® Modular Cassette is used for the sterilization and the secure storage of the surgical instruments and auxiliary instruments. For guidelines on how to clean and sterilize the cassette, please refer to *Straumann® Modular Cassette, Basic Information* (702527/en).

4.8 SETUP FOR BLX FREEHAND SURGERY



For more information refer to *Straumann® Modular Cassette Selection Guide* (702824/en).

5. SURGICAL PROCEDURE

The workflow for the surgical procedure for the Straumann® BLX Implant System involves 3 steps:

- Preoperative planning
- Implant bed preparation
- Implant insertion

5.1 PREOPERATIVE PLANNING

Prosthetic-driven planning is recommended, and close communication between the patient, dentist, surgeon and dental technician is imperative for achieving the desired esthetic result.

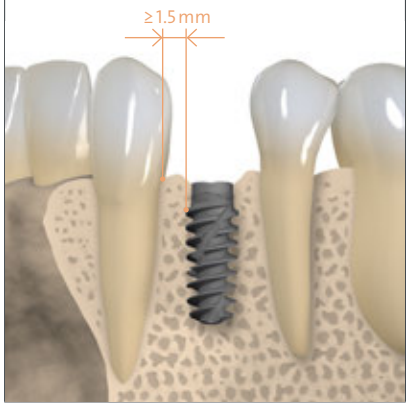
To determine the topographical situation, axial orientation and the appropriate implants, making a wax-up / set up using the previously prepared study cast is recommended. Subsequently, the type of superstructure can be defined. The wax-up / set-up can later be used as the basis for a custom-made x-ray or drill template and for a temporary restoration.

Note: Abutments should always be loaded axially. Ideally, the long axis of the implant is aligned with the cusps of the opposing tooth. Extreme cusp formation should be avoided as this can lead to unphysiological loading.

Mesiodistal bone availability is an important factor when choosing the implant type and diameter as well as the inter-implant distances if multiple implants are placed. The point of reference on the implant for measuring mesiodistal distances is always the largest diameter of the implant.

The following three rules should be regarded as minimum guidelines:

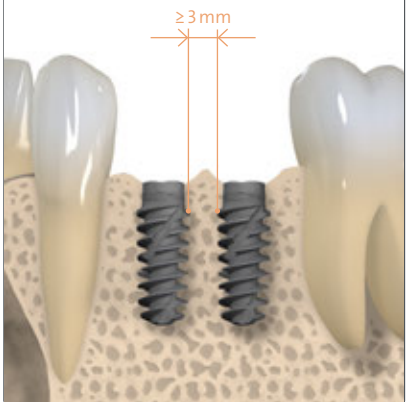
Rule 1



Rule 1: Distance to adjacent tooth at bone level

A minimum distance of **1.5 mm from the implant adjacent tooth** (mesial and distal) is recommended.

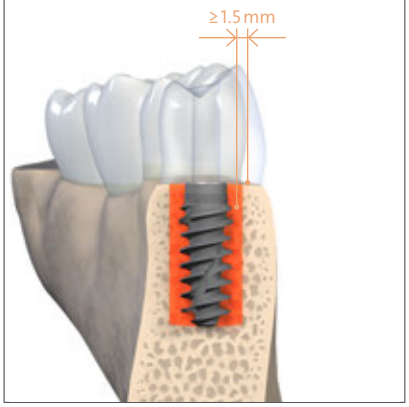
Rule 2



Rule 2: Distance to adjacent implants at bone level

A minimum distance of **3 mm between two adjacent implants** (mesiodistal) is recommended.

Rule 3



Rule 3: The facial and palatal bone layer must be at least 1.5 mm thick in order to ensure stable hard and soft tissue conditions. Within this limitation, a restoration-driven orofacial implant position and axis should be chosen to allow the placement of screw-retained restorations.

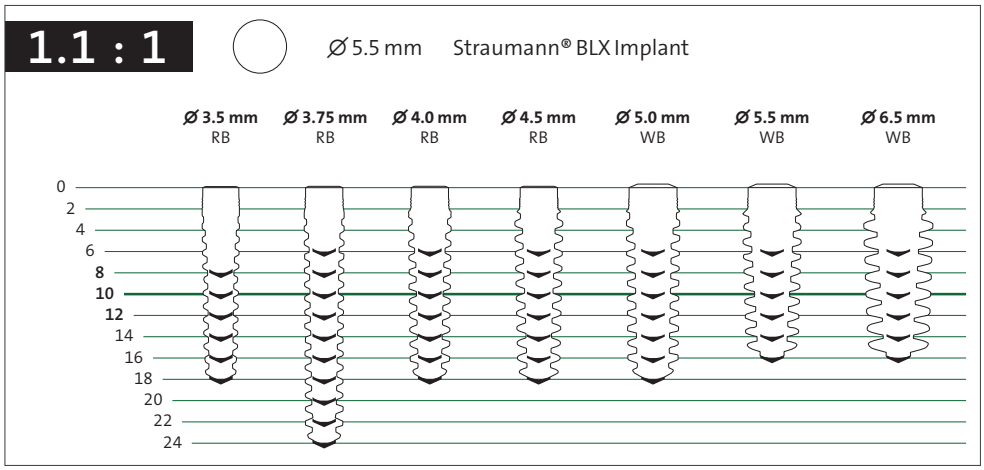
Caution: An augmentation procedure is indicated if the orofacial bone wall is less than 1.5 mm or a layer of bone is missing on one or more sides. This technique should be employed only by dentists with adequate experience in the use of augmentation procedures.

5.1.1 X-ray Reference Foil

The vertical bone availability determines the maximum allowable length of the implant that can be placed. A minimum distance of 2 mm between the apex of the implant and the alveolar nerve should be kept. For easier determination of the vertical bone availability, we recommend the use of an x-ray reference foil with X-ray Reference Sphere (049.076V4).

The BLX X-ray Reference Foil (065.0000) is used for measurement and comparison. It assists the user in selecting the suitable implant type, diameter and length. Similar to the distortions that occur in x-rays, the implant dimensions are shown on the individual reference foils with the corresponding distortion factors (1:1 to 1.7:1). Each magnification factor or scale is determined by showing the X-ray Reference Sphere on the reference foil. First, compare the size of the X-ray Reference Sphere on the patient's x-ray with the size of the Reference Sphere on the reference foil. Superimpose the two pictures to find the correct scale. Next, determine the spatial relations around the implant position, and establish the implant length and insertion depth.

For more information regarding the preparation of a x-ray jig with the Reference Spheres, refer to *Straumann® Dental Implant System, Basic Information* (702084/en).



Note: For Straumann® BLX Implants use only the x-ray reference foil specific to the BLX Implant (065.0000).

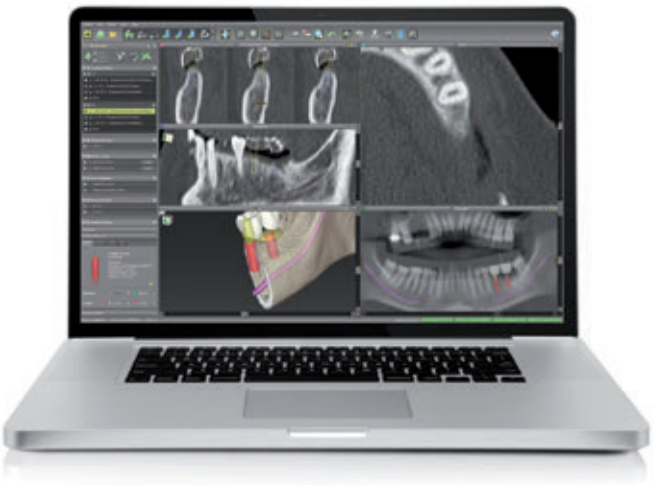
To calculate the effective bone availability, use the following formula:

$$\frac{\text{X-ray Reference sphere 5 mm} \times \text{bone availability (X-ray*)}}{\text{Reference sphere diameter on the X-ray}} = \text{effective bone availability}$$

* Taking into consideration all implant-related anatomical structures (e.g. mandibular canal, sinus maxillaris, etc.)

5.1.2 Planning software

Another possibility is digital planning with e.g. coDiagnostiX®. This 3D diagnostics and implant planning software is designed for the image-guided surgical planning of dental implants, including BLX Implants, which are included in the system's digital library. Working with the software is based on a patient's medical image data, such as a CT (Computed Tomography) or DVT (Digital Volume Tomography) scan processed by coDiagnostiX®.



Planning includes the calculation of several views (such as virtual OPG or a 3-dimensional reconstruction of the image dataset), analysis of the image data and the placement of implants, abutments and drilling sleeves.

coDiagnostiX® software is designed for use by professionals with appropriate knowledge in implantology and surgical dentistry. For further information, please refer to the coDiagnostiX® manual.

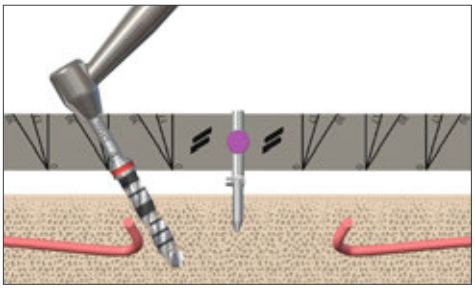
CARES® Synergy workflow
CARES® Synergy provides real-time communication between the implant planning software (coDiagnostiX®) and the lab software (i.e. Straumann® CARES®) and improves implant planning by visualizing the relationship between the proposed implant position and the proposed restoration.

For more information refer to *Straumann® Guided Surgery System Instruments, Basic Information* (702526/en).

5.1.3 Straumann® Pro Arch Guide

For intraoperative visual and three-dimensional orientation of the implant angulation (mesial/distal) and oral parallelization, use the Straumann® Pro Arch Guide.

The Pro Arch Guide is used in edentulous jaws for surgical implant placement. The Pro Arch Guide can be easily bent to adapt to the dental arch. It is secured by drilling into the symphysis with a ∅ 2.2 mm Pilot Drill and 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. Use the TS Hexagonal Screwdriver (046.420) to adjust and disassemble.



Straumann® Pro Arch Guide (026.0016)

For further information on the treatment of edentulous patients and angulated placement of BLX Implants, please refer to the *Straumann® Pro Arch, Basic Information* (490.015/en).

5.1.4 Bone density definition

Cross sectional view of different types of bone quality*		
Type I	**Type II / III**	**Type IV**
Hard	Medium	Soft
Thick cortical bone with marrow cavity	Thin cortical bone with dense trabecular bone of good strength	Very thin cortical bone with low density trabecular bone of poor strength
		

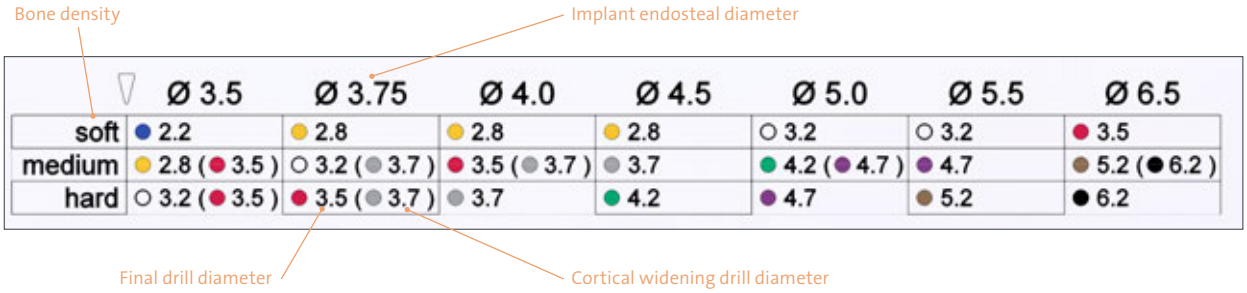
** Lekholm U, Zarb G. Patient selection and preparation in Tissue Integrated Prostheses. Branemark P I, Zarb G A, Albrektsson T (eds). pp199–210. Quintessence, 1985.*

5.2 IMPLANT BED PREPARATION

The Straumann® Modular Cassette with specific instruments is used to prepare the implant bed. Different drill protocols should be employed depending on the bone density. This offers the flexibility to adapt the implant bed preparation to the individual bone quality and anatomical situation.

A quick guide to the surgical drill protocol is printed on the cassette and indicates the final drill recommended for each implant diameter and bone density.

Numbers in brackets ( ): to a depth of 4 mm (for implant lengths 6 mm and 8 mm) and 6 mm (for implant lengths 10 mm and longer) are only used to widen the coronal part of the implant bed.



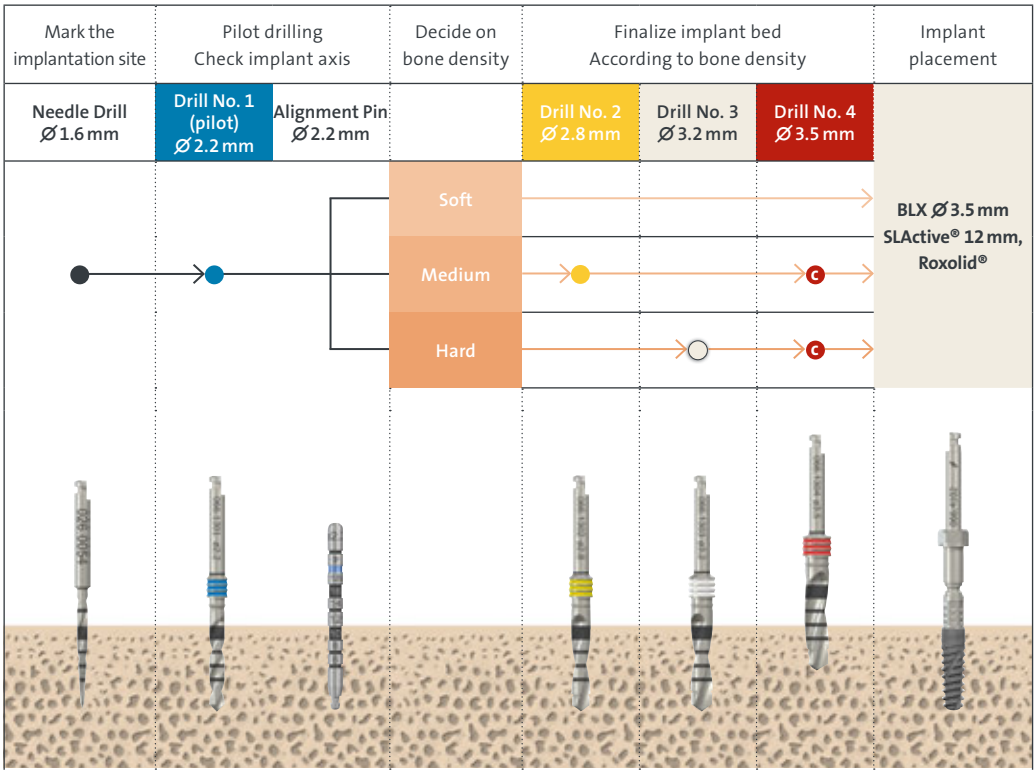
	Ø 3.5	Ø 3.75	Ø 4.0	Ø 4.5	Ø 5.0	Ø 5.5	Ø 6.5
soft	2.2	2.8	2.8	2.8	3.2	3.2	3.5
medium	2.8 (3.5)	3.2 (3.7)	3.5 (3.7)	3.7	4.2 (4.7)	4.7	5.2 (6.2)
hard	3.2 (3.5)	3.5 (3.7)	3.7	4.2	4.7	5.2	6.2

Note: Every implant bed has to be initiated with the pilot drill (Ø 2.2 mm) to full implant length. On the quick guide only the final drill is displayed. The clinician can decide whether or not a sequence of drills with increasing diameters is used. Due to the self-cutting properties of the BLX Implant the implant bed can be underprepared in length by 2 mm with the subsequent/final drills in soft bone (stepped). Rotate the drills in a clockwise direction, use an intermittent drilling technique and provide ample cooling with pre-cooled (5°C, 41°F) sterile saline solution. Do not exceed the recommended drill speed of 800 rpm.

Hard bone drill protocol:
Application of the hard bone drill protocol for a BLX Implant diameter with wider threads (Ø 4.5 mm, Ø 5.5 mm and Ø 6.5 mm) in healed sites results in a small gap between the implant neck and the surrounding crestal bone. In such situations it is recommended to consider minor bone grafting around the implant neck. This may be accomplished by scraping a small amount of bone with a surgical chisel from the area surrounding the osteotomy (already exposed) and placing it between the implant and the osteotomy.

5.2.1 Workflow for BLX Ø3.5 mm

Implant bed preparation, illustrated with a BLX Implant Ø3.5 mm / 12 mm RB



800 rpm	800 rpm			800 rpm	800 rpm	800 rpm	15 rpm
026.0054	066.1301			066.1302	066.1303	066.1304	

C Preparation of cortical bone only
- to a depth of 4 mm for implants with a length of 6 mm and 8 mm
- to a depth of 6 mm for implants with a length of 10 mm to 18 mm

Note: The Straumann® BLX Ø3.5 Implants are not recommended to be used in the posterior area.

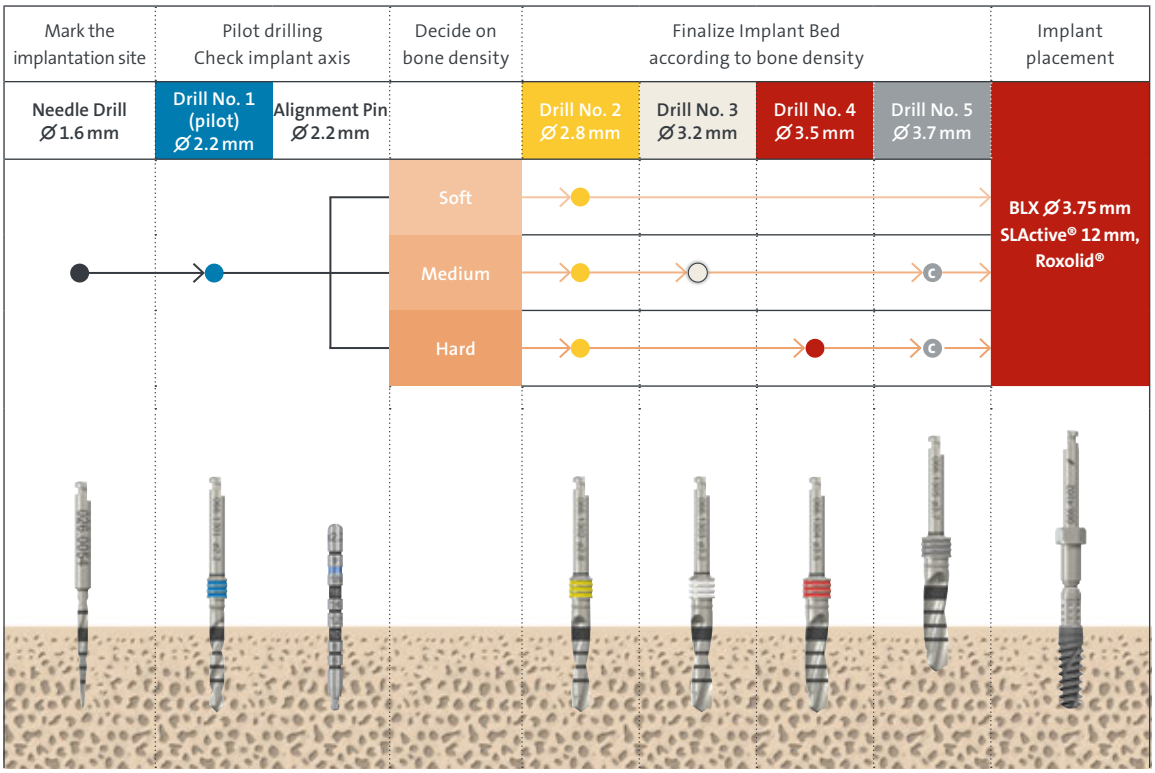
Warning: Due to the function and design of the drills, the drill tip is up to 0.5 mm longer than the insertion depth of the implant. For example, if you drill up to the 10 mm marking, the actual implant bed has a depth of 10.5 mm.

Subcrestal implant placement: Consider the final implant position for drill depth and never undersize in length with the Drill No.1 (pilot).

Immediate placement: In extraction sites where the implant only engages with its apical part, **Drill No. 2 (Ø2.8 mm)** is recommended as the final drill.

5.2.2 Workflow for BLX Ø 3.75 mm

Implant bed preparation, illustrated with a BLX Implant Ø 3.75 mm / 12 mm RB



800 rpm	800 rpm			800 rpm	800 rpm	800 rpm	800 rpm	15 rpm
026.0054	066.1301			066.1302	066.1303	066.1304	066.1305	

C Preparation of cortical bone only
- to a depth of 4 mm for implants with a length of 6 mm and 8 mm
- to a depth of 6 mm for implants with a length of 10 mm to 18 mm

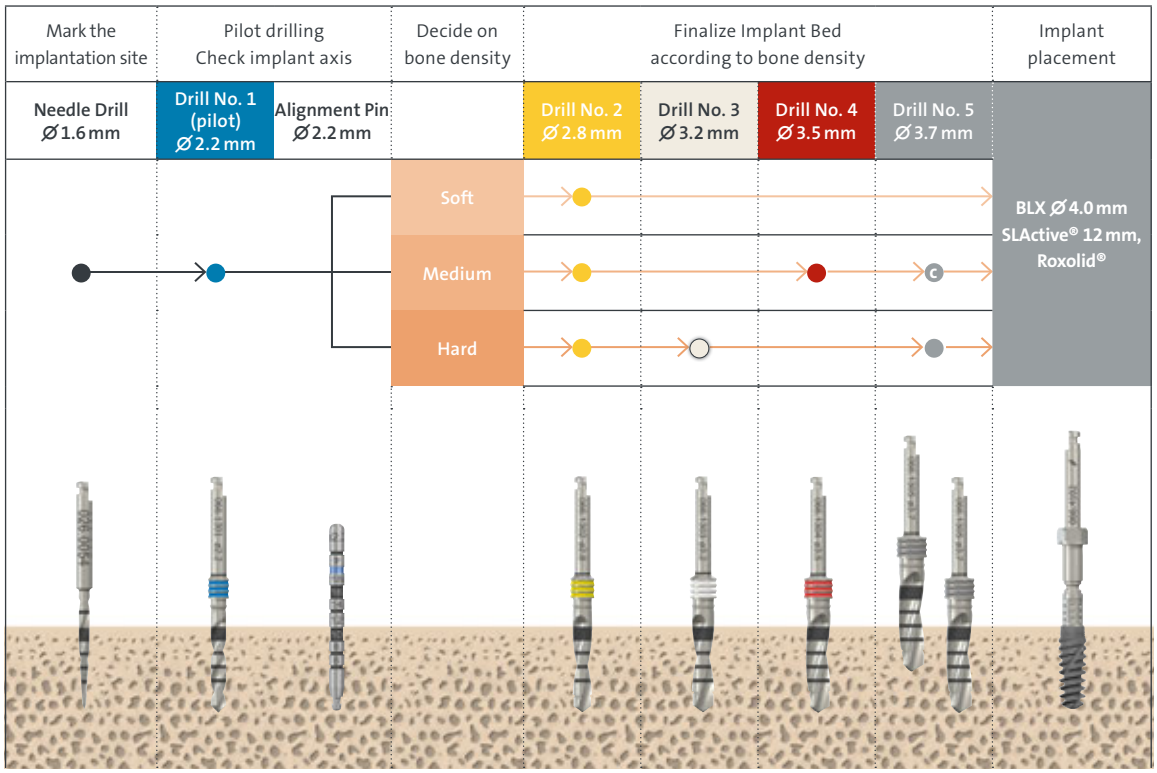
Warning: Due to the function and design of the drills, the drill tip is up to 0.5 mm longer than the insertion depth of the implant. For example, if you drill until the 10 mm marking, the actual implant bed has a depth of 10.5 mm.

Subcrestal implant placement: Consider the final implant position for drill depth and never undersize in length with the Drill No.1 (pilot).

Immediate placement: In extraction sites where the implant only engages with its apical part, **Drill No. 2 (Ø 2.8 mm)** is recommended as the final drill.

5.2.3 Workflow for BLX Ø4.0 mm

Implant bed preparation, illustrated with a BLX Implant Ø4.0 mm / 12 mm RB



800 rpm	800 rpm			800 rpm	800 rpm	800 rpm	800 rpm	15 rpm
026.0054	066.1301			066.1302	066.1303	066.1304	066.1305	

C Preparation of cortical bone only
- to a depth of 4 mm for implants with a length of 6 mm and 8 mm
- to a depth of 6 mm for implants with a length of 10 mm to 18 mm

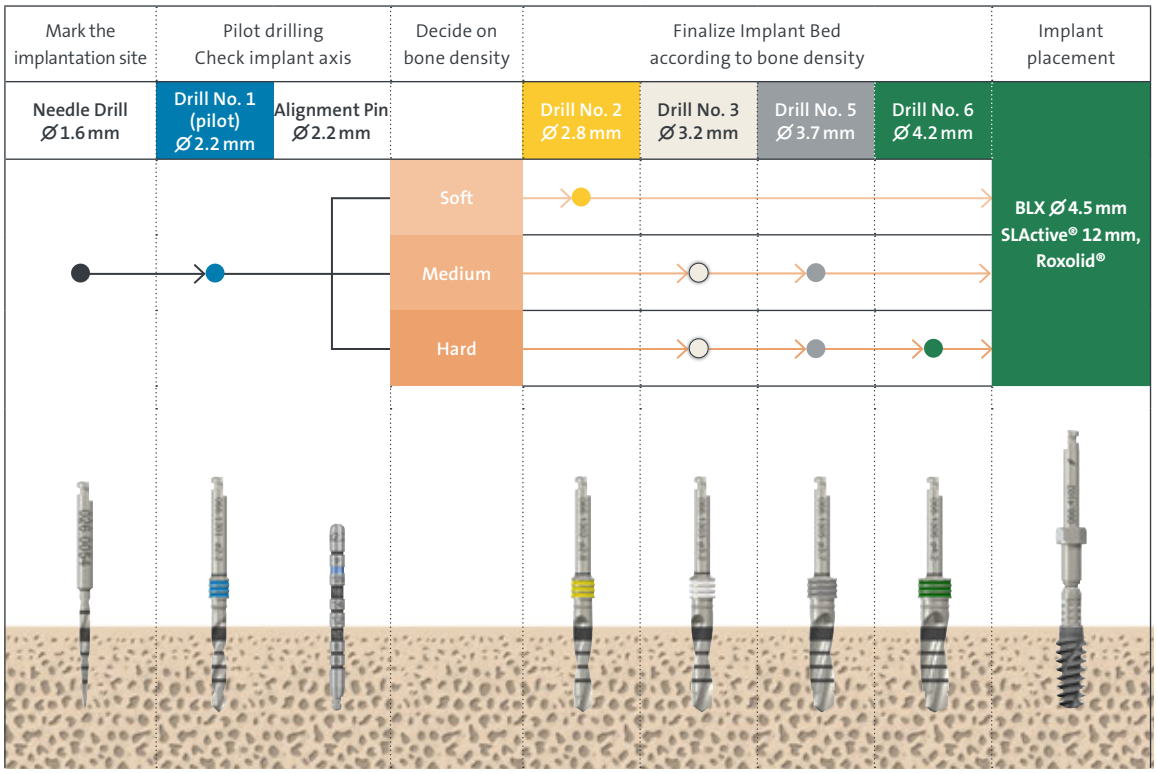
Warning: Due to the function and design of the drills, the drill tip is up to 0.5 mm longer than the insertion depth of the implant. For example, if you drill until the 10 mm marking, the actual implant bed has a depth of 10.5 mm.

Subcrestal implant placement: Consider the final implant position for drill depth and never undersize in length with the Drill No.1 (pilot).

Immediate placement: In extraction sites where the implant only engages with its apical part, **Drill No. 3 (Ø3.2 mm)** is recommended as the final drill.

5.2.4 Workflow for BLX Ø4.5 mm

Implant bed preparation, illustrated with a BLX Implant Ø4.5 mm / 12 mm RB



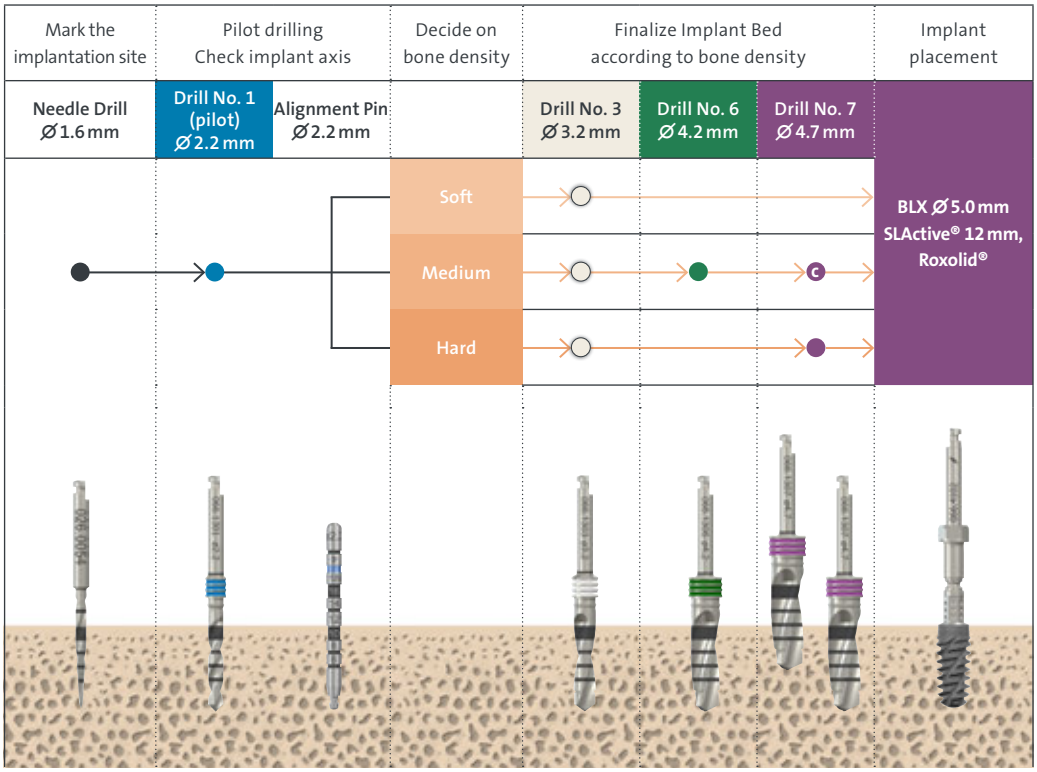
Warning: Due to the function and design of the drills, the drill tip is up to 0.5 mm longer than the insertion depth of the implant. For example, if you drill until the 10 mm marking, the actual implant bed has a depth of 10.5 mm.

Subcrestal implant placement: Consider the final implant position for drill depth and never undersize in length with the Drill No.1 (pilot).

Immediate placement: In extraction sites where the implant only engages with its apical part, **Drill No. 4 (Ø3.5 mm)** is recommended as the final drill.

5.2.5 Workflow for BLX Ø 5.0 mm

Implant bed preparation, illustrated with a BLX Implant Ø 5.0 mm / 12 mm WB



C Preparation of cortical bone only
- to a depth of 4 mm for implants with a length of 6 mm and 8 mm
- to a depth of 6 mm for implants with a length of 10 mm to 18 mm

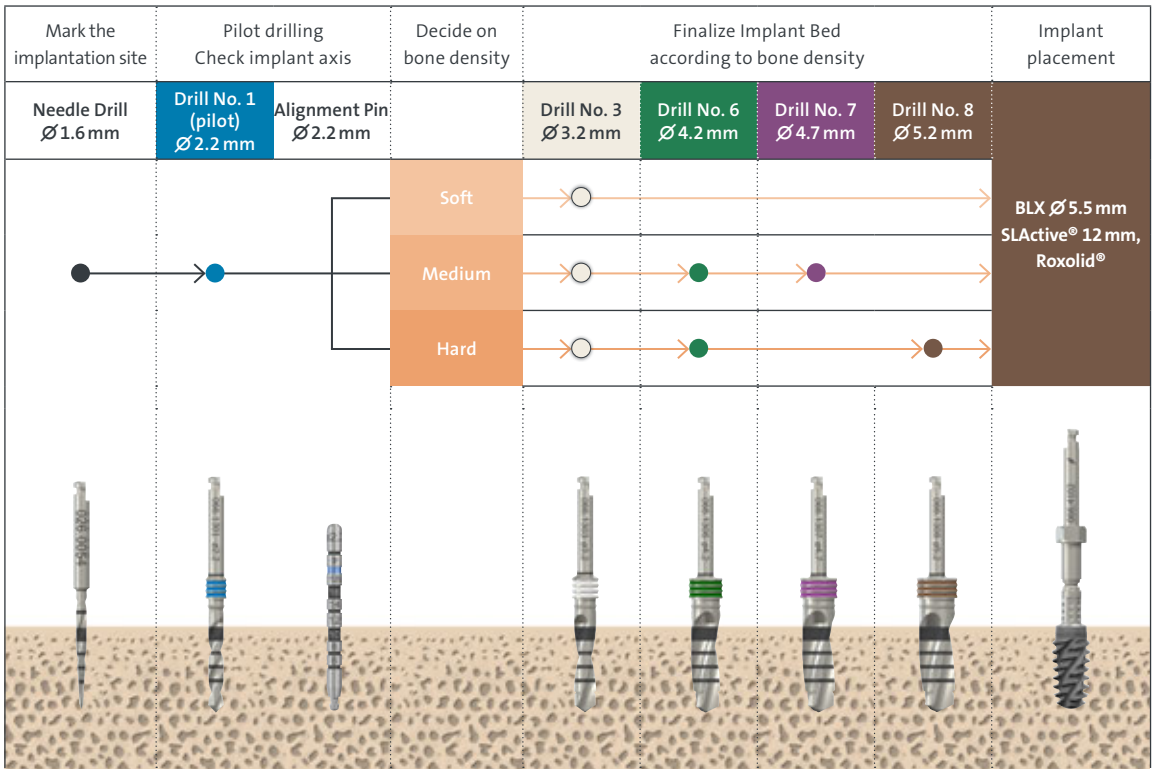
Warning: Due to the function and design of the drills, the drill tip is up to 0.5 mm longer than the insertion depth of the implant. For example, if you drill until the 10 mm marking, the actual implant bed has a depth of 10.5 mm.

Subcrestal implant placement: Consider the final implant position for drill depth and never undersize in length with the Drill No.1 (pilot) or Drill No. 2.

Immediate placement: In extraction sites where the implant only engages with its apical part, **Drill No. 5 (Ø 3.7 mm)** is recommended as the final drill.

5.2.6 Workflow for BLX Ø 5.5 mm

Implant bed preparation, illustrated with a BLX Implant Ø 5.5 mm / 12 mm WB



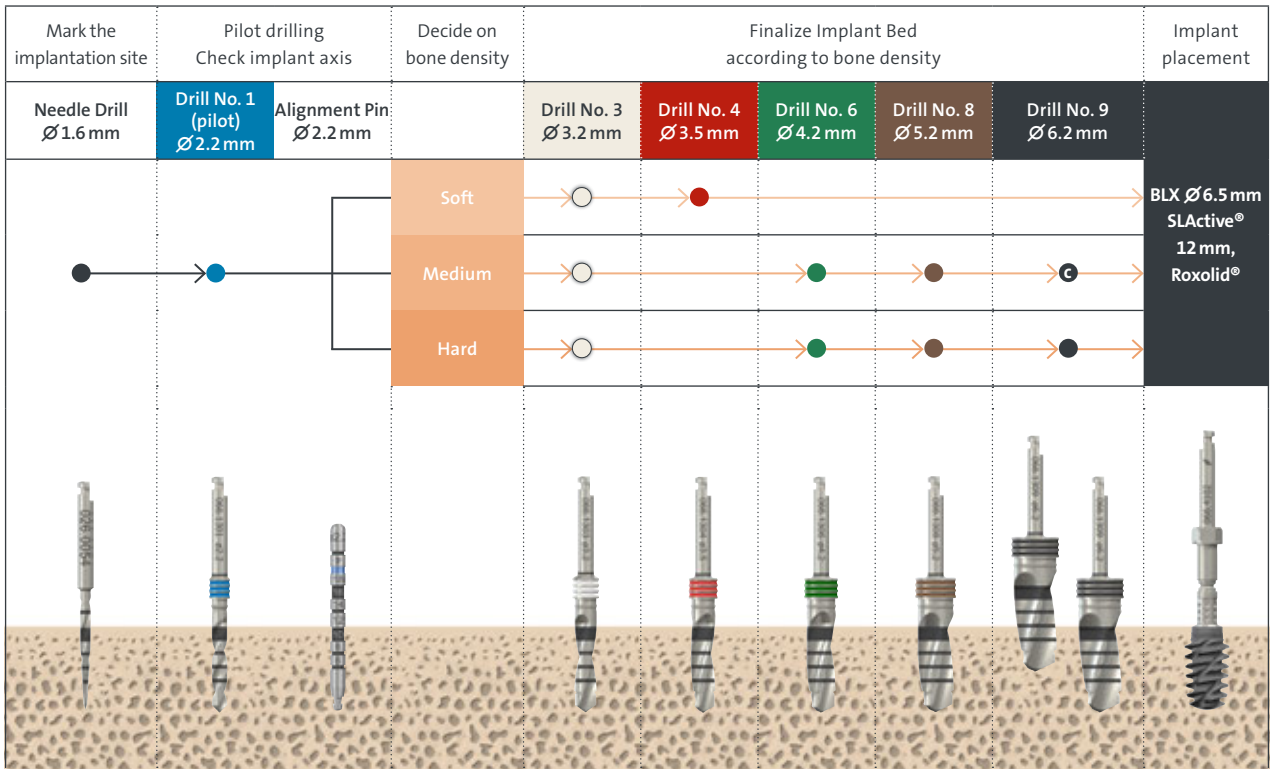
Warning: Due to the function and design of the drills, the drill tip is up to 0.5 mm longer than the insertion depth of the implant. For example, if you drill until the 10 mm marking, the actual implant bed has a depth of 10.5 mm.

Subcrestal implant placement: Consider the final implant position for drill depth and never undersize in length with the Drill No.1 (pilot) or Drill No. 3.

Immediate placement: In extraction sites where the implant only engages with its apical part, **Drill No. 6 (Ø 4.2 mm)** is recommended as the final drill.

5.2.7 Workflow for BLX Ø6.5 mm

Implant bed preparation, illustrated with a BLX Implant Ø6.5 mm / 12 mm WB



800 rpm	800 rpm			800 rpm	800 rpm	800 rpm	800 rpm	800 rpm	15 rpm
026.0054	066.1301			066.1303	066.1304	066.1306	066.1308	066.1309	

C Preparation of cortical bone only
- to a depth of 4 mm for implants with a length of 6 mm and 8 mm
- to a depth of 6 mm for implants with a length of 10 mm to 18 mm

Warning: Due to the function and design of the drills, the drill tip is up to 0.5 mm longer than the insertion depth of the implant. For example, if you drill until the 10 mm marking, the actual implant bed has a depth of 10.5 mm.

Subcrestal implant placement: Consider the final implant position for drill depth and never undersize in length with the Drill No.1 (pilot) or Drill No. 2.

Immediate placement: In extraction sites where the implant only engages with its apical part, **Drill No. 7 (Ø4.5 mm)** is recommended as the final drill.

5.3 IMPLANT PICK UP

The BLX Implants are provided with a new implant carrying system that supports direct pick-up with an appropriate Implant Driver.

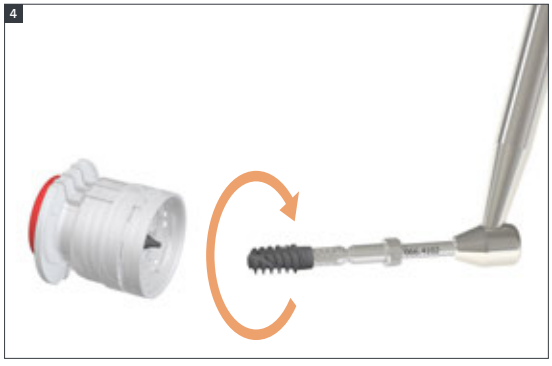
Step 1 – Open box and remove seal of blister to get access to the implant vial.

Note: Patient label can be found on the blister seal. The blister ensures the sterility of the implant. Do not open the blister until immediately prior to implant placement.

Step 2 – Open the vial with a counter-clockwise turn and remove the lid together with the implant.

Step 3 – Hold the vial lid and connect the Implant Driver to the implant using the Handpiece. You hear a click when the Implant Driver is attached correctly.

Caution: Make sure that the Implant Driver is properly seated and pull slightly on the driver to verify that it is correctly attached. Replace the Implant Driver with a new one if insufficient attachment occurs.



Step 4 – A slight clockwise turn is needed to remove the implant from its holder.

Note: after removing the implant from the solution, the chemical activity of SLActive® is ensured for 15 minutes.

5.4 IMPLANT PLACEMENT

A Straumann® BLX Implant can be placed using the Handpiece, or manually using the Ratchet.
Do not exceed the recommended maximum speed of 15 rpm when using the Handpiece.

Step 1 – Place the implant

Place the implant with the driver in the implant bed by turning it clockwise.

Step 2 – Final position

Use the Ratchet to move the implant to its final position by turning it clockwise. If there is strong resistance before the implant reached its final position, rotate the implant counterclockwise a few turns and continue to insert. Repeat this step several times if necessary.

If resistance is still too strong remove the implant, place the implant together with the implant driver back into the vial or store it temporarily in the cassette and widen the implant bed according to the drill protocol.

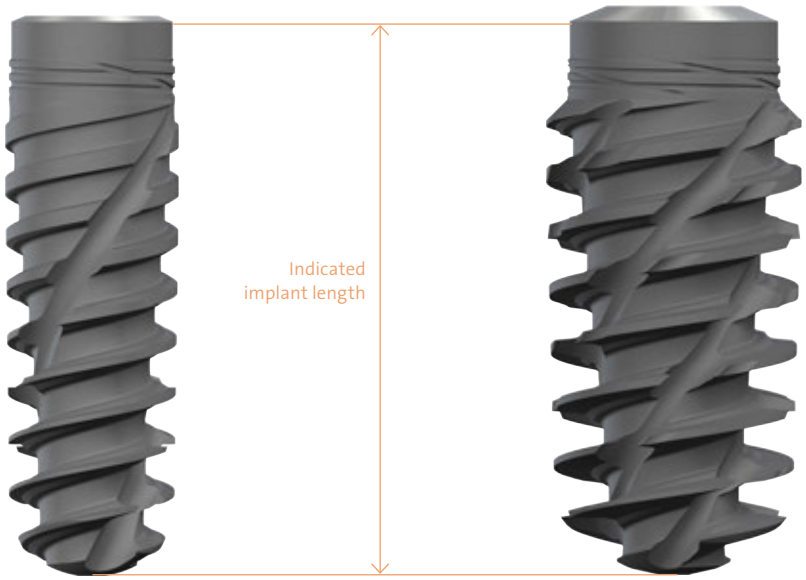
Note: For immediate function, a final torque of at least 35 Ncm should be achieved. Excessive insertion torque must be avoided because this can lead to resorption of the bone.

For ISQ measurements: The Osstell Smartpeg type 38 (100455) is compatible with the BLX Implant System.

Coronoapical implant position

Straumann® BLX Implants allow for flexible coronoapical implant positioning, depending on individual anatomy, implant site, the type of restoration planned, and preference. In healed sites, a slight subcrestal placement of 0.5 to 1.0 mm is recommended.

Note: Consider final implant position for drill depth, never undersize in length with the Drill no. 1 (pilot) for BLX ∅ 6.5 mm.

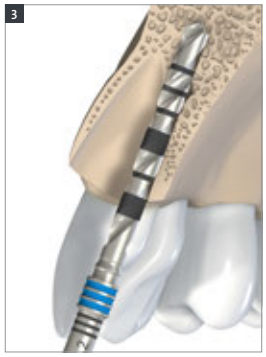


5.4.1 Immediate implant placement in anterior extraction sockets

The specific design and the self-cutting threads of the Straumann® BLX Implant facilitate the immediate stabilization of the implant in anterior extraction sockets. Below is an example of a Straumann® BLX ∅4.0 mm, L 14 mm in a maxillary central incisor position considering a screw-retained crown restoration:

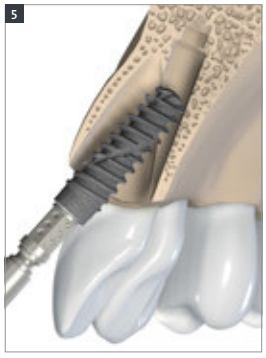
Step 1:
Start with the Needle Drill to create an entry point at the palatal wall of the extraction socket.

Step 2:
Pre-drill the implant bed with the ∅2.2 Pilot Drill. Start in palatal direction.



Step 3:
While drilling, re-direct after 1-2 mm into implant direction. Drill to full implant length and always apply lateral pressure towards the palatal wall.

Step 4:
Widen the implant bed and correct the implant bed position if necessary. Refer to the recommended drill protocol for extraction sockets. Underpreparation of 2 mm in length is recommended.



Step 5:
Start implant insertion in palatal direction until engaged in the bone, while rotating redirect the implant to the final position.

Step 6:
Consider the surrounding anatomical situation and desired emergence profile for the final implant position.

Step 7:
Place a healing abutment to protect the connection while filling the gap between implant and buccal bone with bone graft material.

Step 8:
Optional: replace the healing abutment with a corresponding temporary or final abutment based on the restorative option.

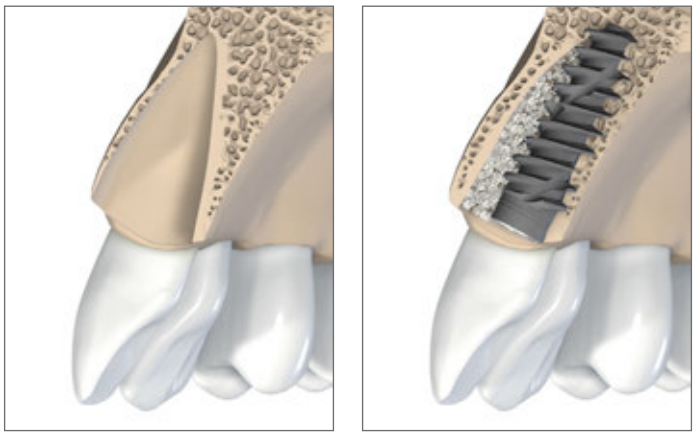
Recommended drill protocol for immediate implant placement in extraction sockets:

Implant Diameter	Step 1	Step 2/3	Step 4
BLX ∅3.5	Needle Drill	Pilot Drill ∅2.2	Drill ∅2.8
BLX ∅3.75			
BLX ∅4.0			Drill ∅3.2
BLX ∅4.5			Drill ∅3.5

- Preferably place the implant manually using the BLX Surgical Handle (066.4000).
- In case of strong resistance during placement use the recommended drill protocol for medium density bone.

5.5 GAP MANAGEMENT

As no implant will match the individual anatomical situation after tooth extraction, immediate treatment procedures may require additional bone grafting ("gap management") and soft tissue/wound healing management.
Different grafting materials, barrier membranes and healing agents are being used to support safe, enduring stability of the implant inside the bony compartment as well as sufficient hard and soft tissue to ensure esthetics.



Bone grafting materials	Product	Country availability	Reason why
Allograft	Straumann® AlloGraft botiss maxgraft®	North America (Straumann® AlloGraft) Selected countries in Europe (botiss maxgraft®)	Fast graft to bone turnover supporting early and long-term implant stability Full remodeling potential Bone vitality
Xenograft	Straumann® XenoGraft botiss cerabone®	Global	Long-term graft presence supporting volume preservation
Synthetic alternative	Straumann® BoneCeramic™		Prolonged graft to bone turnover Volume preservation

Barrier membranes prohibit cells - particularly epithelial cells - from penetrating their structure, and thereby allow slow-growing bone tissue to re-occupy the grafted space.

Barrier Membranes	Product	Country availability	Reason why
Porcine collagen membrane	botiss jason®	Global	Very thin but strong structure Easy handling Prolonged barrier function Fully resorbable
	Straumann® Membrane Flex	North America, Iberia, Distributor & Emerging Markets (Europe, Middle East and Africa)	Appropriate barrier function for non-complex cases Easy handling Fully resorbable
	botiss collprotect®	Europe	
Bovine collagen membrane	Straumann® Membrane Plus	North America	Long barrier function Fully resorbable
Synthetic dPTFE membrane	botiss permamem®	Europe	Ultra thin, strong structure Open healing possible Non-resorbable Has to be removed manually after < 4 weeks

The immediacy approach for placing dental implants is demanding on the human body. With its clinically proven beneficial impact on wound healing and favorable influence on scar tissue, Straumann® Emdogain® can make a real difference. We recommend a thin layer of Emdogain® on top of the membrane and after socket closure.

5.6 PRIMARY IMPLANT CLOSURE

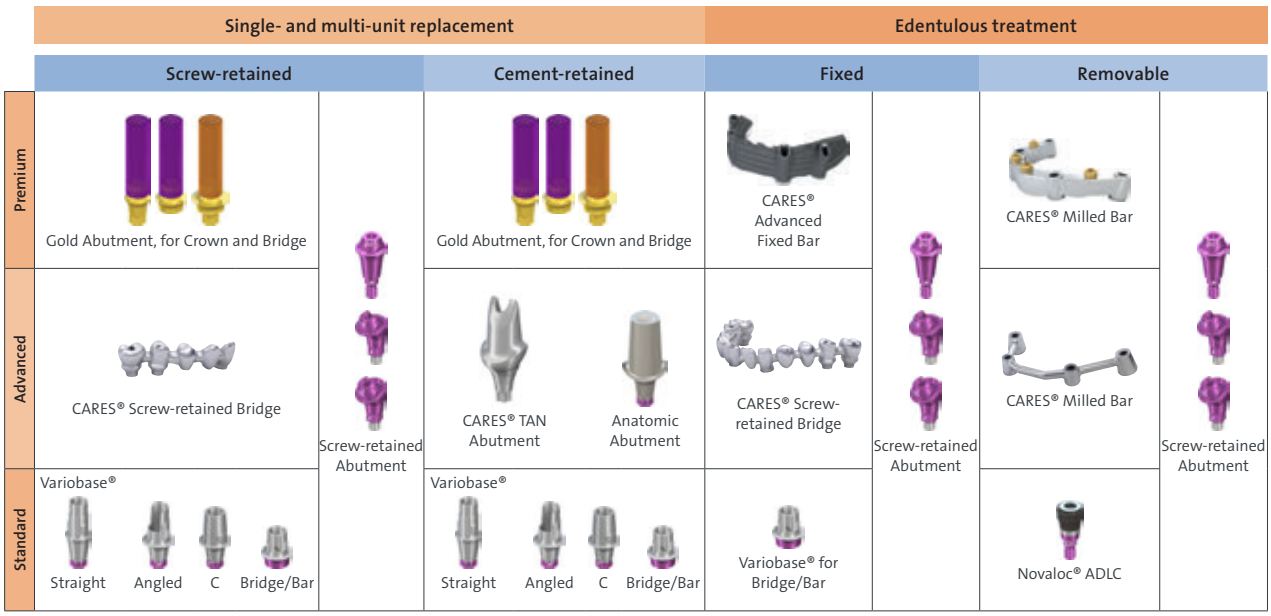
	BLX Implant Closure Caps, sterile	
	RB Closure Cap	WB Closure Cap
		
Compatibility	BLX Implant ∅ 3.5 BLX Implant ∅ 3.75 BLX Implant ∅ 4.0 BLX Implant ∅ 4.5	BLX Implant ∅ 5.0 BLX Implant ∅ 5.5 BLX Implant ∅ 6.5
Recommended tightening torque	hand-tight	hand-tight
Article number	064.4100S	064.8102S
Material	Titanium	Titanium

Note: Since the BLX closure caps cover the entire implant shoulder, gingiva, bone particles or bone graft particles can easily be trapped between Healing Cap and implant. It is recommended to clean the implant connection thoroughly prior to the placement of the closure cap and to check the proper seating prior to wound closure, e.g. visually or by taking an x-ray.

6. PROSTHETIC WORKFLOW OVERVIEW

6.1 ABUTMENT OVERVIEW

	Anatomic Abutment	Straumann® Variobase® for Crown	Variobase® for Bridge/Bar Cylindrical	Variobase® for Crown AS	Straumann® Screw-retained Abutment	Straumann® CARES® Abutment TAN	Straumann® CARES® Bridge/Bar	Straumann® Novaloc® ADLC	Gold Abutment for Crown	Gold Abutment for Bridge	Straumann® Variobase® C
											
Single crown											
Screw-retained		•		•	•				•		•
Cement-retained	•	•		•		•			•		•
Bridge											
Screw-retained			•		•		•			•	
Cement-retained	•		•				•		•		
Removable overdentures											
Telescope	•								•		
Retentive anchor								•			
Bar					•		•			•	
Impression											
Implant level	•	•	•	•	•				•	•	•
Abutment level					•						
Material*	Titanium alloy								Ceramicor®		Titanium alloy

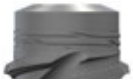


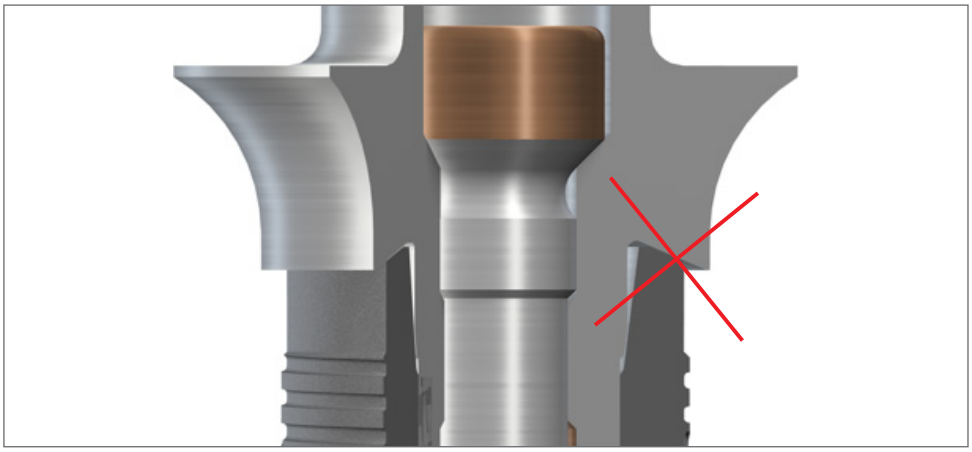
6.2 COLOR CODING

The Straumann® BLX Implant System has a simple and consistent color coding and laser markings for quick and precise identification of secondary parts and auxiliaries.
This concept allows for correct identification of matching components and simplifies the communication between the individuals involved in the treatment process.

Components color coded magenta can be used on all BLX Implants ∅ 3.5 mm to ∅ 6.5 mm.

Components color coded brown can only be used on BLX Implants ∅ 5.0 mm, ∅ 5.5 mm and ∅ 6.5 mm.

Prosthetic color		Implant diameters	Implant base
	 RB/WB	∅ 3.5 mm ∅ 3.75 mm ∅ 4.0 mm ∅ 4.5 mm ∅ 5.0 mm ∅ 5.5 mm ∅ 6.5 mm	 RB WB
	 WB	∅ 5.0 mm ∅ 5.5 mm ∅ 6.5 mm	 WB



No WB Abutments on RB Implants!

6.3 OVERVIEW OF PROSTHETIC COMPONENTS

Impression-taking components Implant analogs	 065.0031		 065.0033		 065.4310		 065.0035	
							Abutment diameter	
			Ø 3.8 mm 					
Gingiva height GH 0.75 mm								
Gingiva height GH 1.5 mm	 062.4934	 062.4981	 062.4501		 062.4410	 062.4944	 062.4972	 062.4982	 * 062.4961
Gingiva height GH 2.5 mm	 062.4935		 062.4502	 062.4507		 062.4945			
Gingiva height GH 3.5 mm	 062.4936		 062.4503	 062.4508		 062.4946			
Gingiva height GH 4.5 mm			 062.4504	 062.4509					
Gingiva height GH 5.5 mm			 062.4505	 062.4510					
Gingiva height GH 6.5 mm			 062.4506	 062.4511					
Gingiva height GH 7.5 mm				 062.4512					

*Variobase® for Bridge/Bar Cylindrical and Gold Abutment for Bridges use separate healing and temporary parts to create a consistent emergence profile.

065.0021

065.0038

065.0023

Ø 4.5 mm

Ø 6.0 mm

062.4722S

062.4420

062.4430 *

062.4723S

062.4153

062.4103

062.4724S

062.4733S

062.4743S

062.4154

062.4104

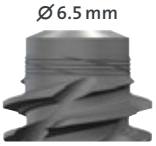
062.4725S

062.4734S

062.4744S

062.4735S

062.4745S



Impression-taking components Implant analogs	 065.0032		 065.0034			 065.4810			
			Ø 3.8 mm 						
Gingiva height GH 0.75 mm									
Gingiva height GH 1.5 mm	 062.4934	 062.4981	 062.4501		 062.4410	 062.4944	 062.4972	 062.4982	 * 062.4961
Gingiva height GH 2.5 mm	 062.4935		 062.4502	 062.4507		 062.4945			
Gingiva height GH 3.5 mm	 062.4936		 062.4503	 062.4508		 062.4946			
Gingiva height GH 4.5 mm			 062.4504	 062.4509					
Gingiva height GH 5.5 mm			 062.4505	 062.4510					
Gingiva height GH 6.5 mm			 062.4506	 062.4511					
Gingiva height GH 7.5 mm				 062.4512					

*Variobase® for Bridge/Bar Cylindrical and Gold Abutment for Bridges use separate healing and temporary parts to create a consistent emergence profile.

065.0035

065.0022

065.0038

065.0024

Abutment diameter

Ø4.5 mm		Ø6.0 mm	Ø5.5 mm			
			 062.4953			
 062.4722S	 062.4420	 * 062.4430		 062.4954	 062.4971	 062.4983	 062.8410
 062.4723S		 062.4153	 062.4103				
 062.4724S	 062.4733S	 062.4743S	 062.4154	 062.4104			
 062.4725S	 062.4734S	 062.4744S					
	 062.4735S	 062.4745S					

7. IMPORTANT CONSIDERATIONS

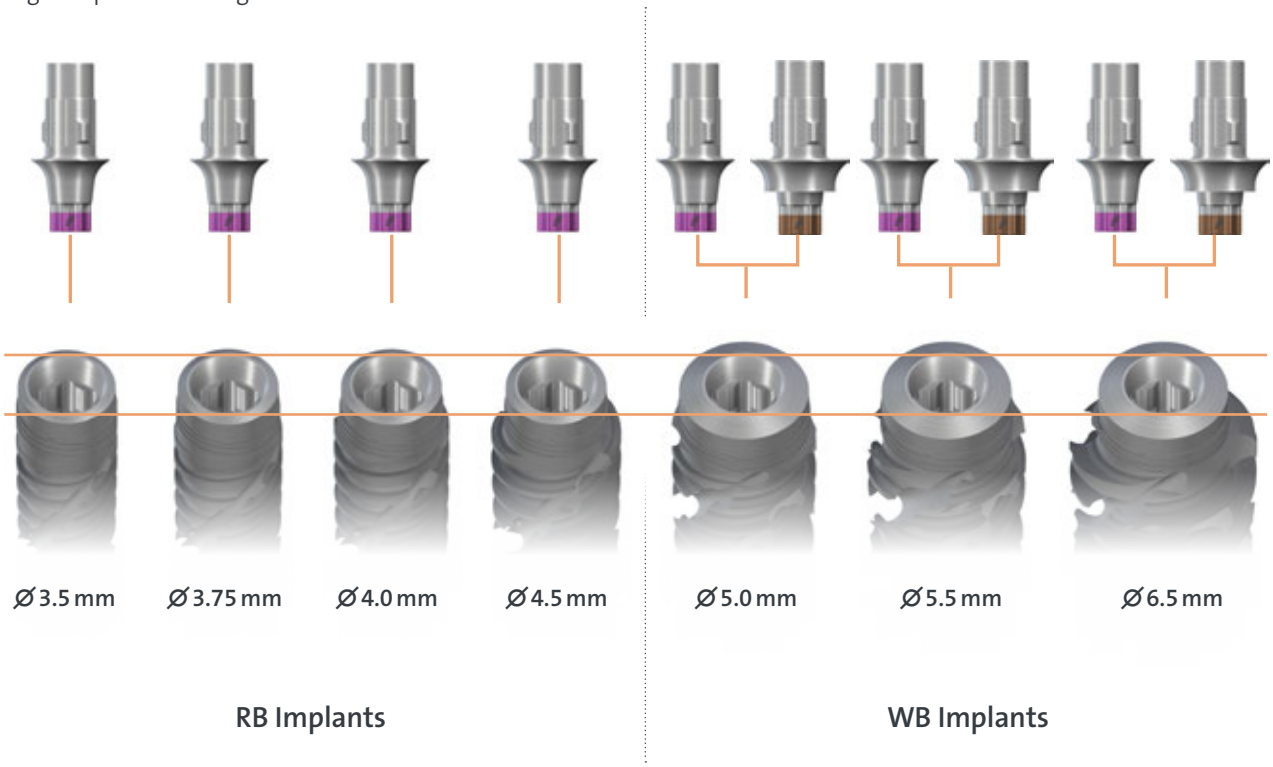
7.1 IMPLANT BASE CONCEPT

One prosthetic range

- RB/WB abutments fit on all BLX Implants

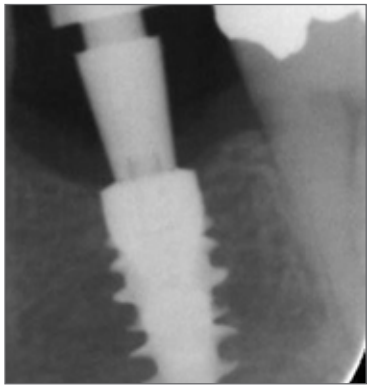
Optional:

- WB abutments fit only on implants with an implant diameter larger than ∅5.0 mm. WB abutments create a wide emergence profile starting from the shoulder.



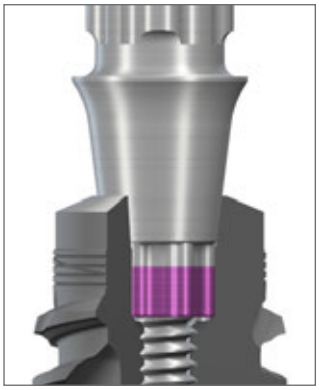
7.2 HOW TO VERIFY CORRECT IMPRESSION POST SEATING

BLX Impression Post screws will only engage with the implant if correctly seated. Final seated Impression Posts engage at the flat shoulder of the implant.

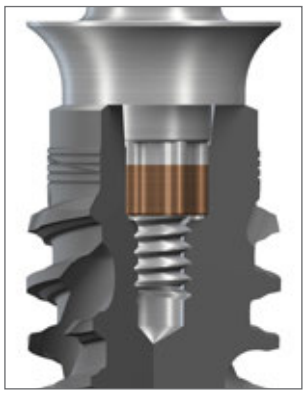


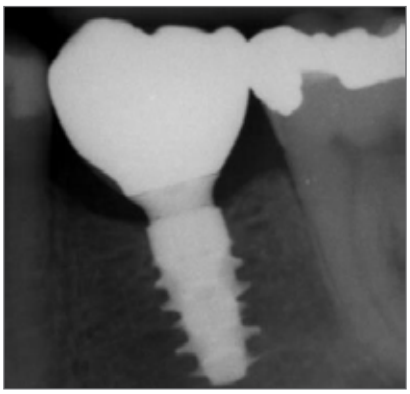
7.3 HOW TO VERIFY CORRECT FINAL ABUTMENT SEATING

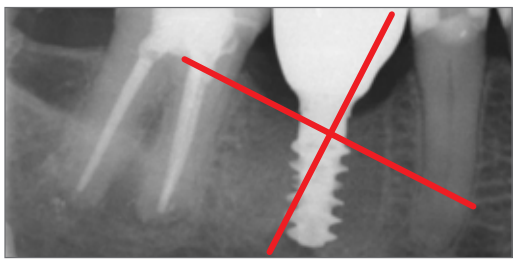
BLX abutment screws will only engage with the implant if correctly seated.



RB/WB abutments fit both RB and WB implants







WB abutments only fit WB implants

7.4 REMOVAL OF FINALLY TIGHTENED TORCFIT™ ABUTMENTS

Due to tight sealing of the 7° conus of the TorcFit™ connection, abutments can lock strongly in the implant after final insertion.

7.4.1 TorcFit™ Removal Tool (065.0008 and 065.0009)

If the basal screw cannot be removed with the SCS Screwdriver [1], the Removal Tool may be used.

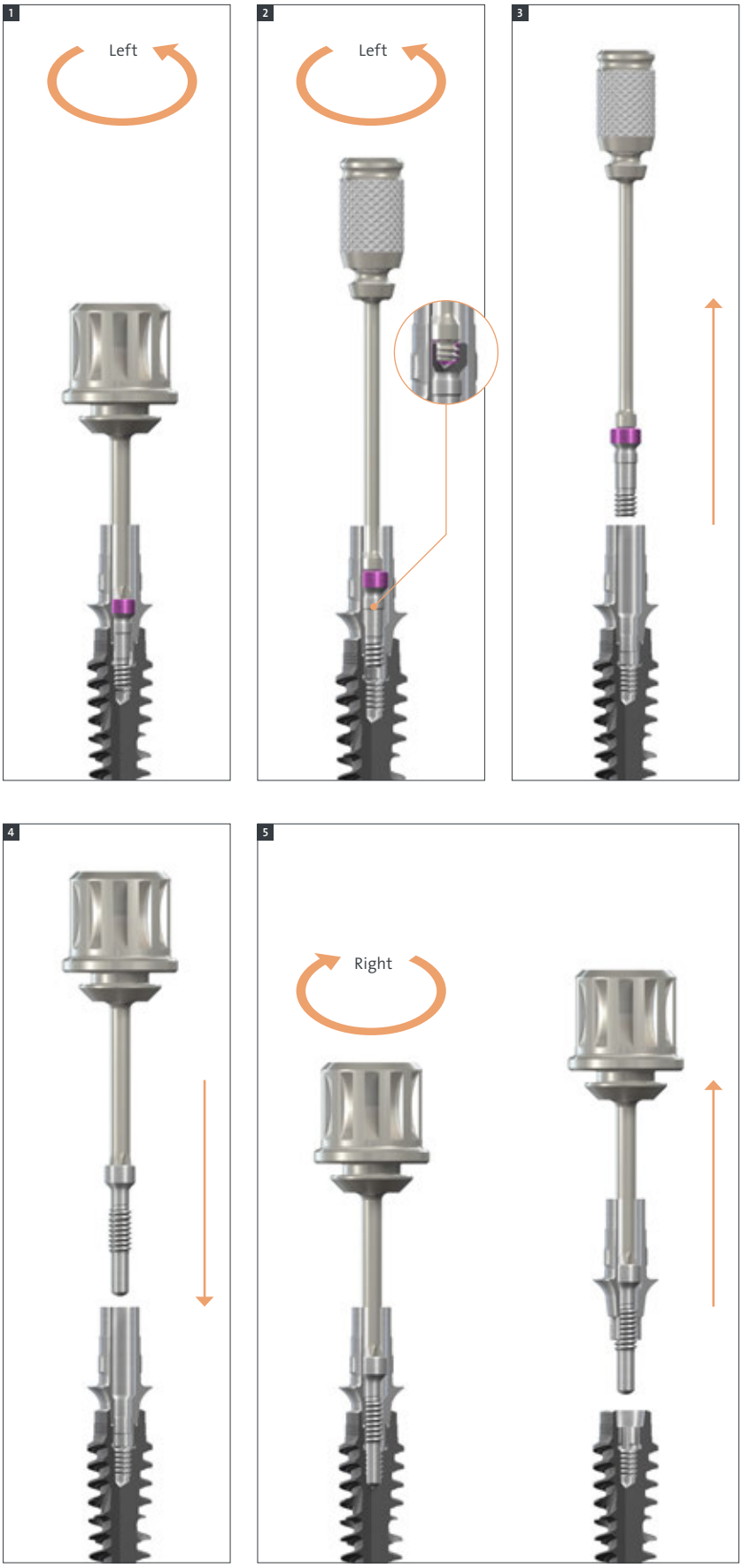
This tool features a left-hand thread that engages in the basal screw head [2] to remove the Basal Screw [3].

7.4.2 TorcFit™ Abutment-Removal Screw (065.0007)

In case the Abutment cannot be removed using the SCS Screwdriver alone, the Abutment Removal Screw can be used.

Insert the SCS Screwdriver into the Abutment Removal Screw. Engage the screw into the abutment [4] until the grip is sufficient enough to free the abutment from the implant [5].

Please note: When dealing with Variobase® for Crown AS, there may be a need to remove or cut the crown in order to gain access to the screw channel. Once the crown has been taken off, the process for removing the angled abutment with the removal tool remains the same as that for the straight abutment.



8. SOFT TISSUE MANAGEMENT

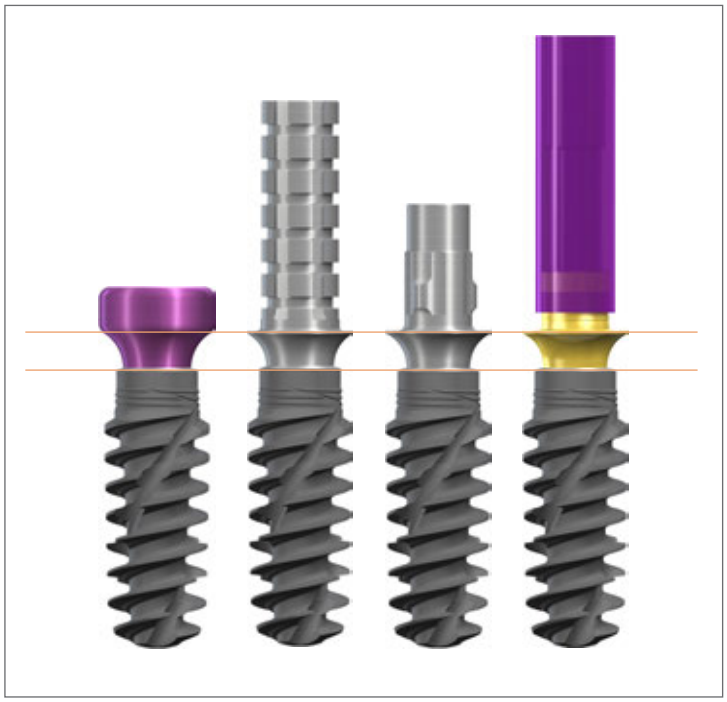


Figure 1: Consistent emergence profile by matching components (RB).

The Straumann® BLX Implant line puts a strong emphasis on esthetic considerations. It offers tailor-made solutions that allow for natural soft tissue shaping and maintenance in all indications. A versatile portfolio of healing and temporary abutments is available for easy and fast processing.

Esthetic results are determined by successful soft tissue management. To optimize the soft tissue management process, all healing abutments, temporary abutments and final abutments feature Consistent Emergence Profiles™. Thus, the emergence profiles are uniform throughout the treatment process.

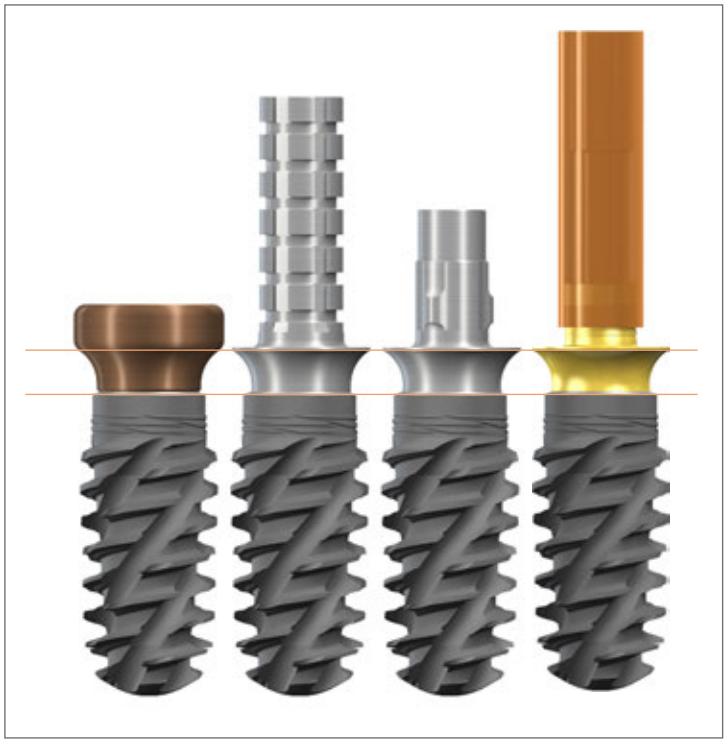
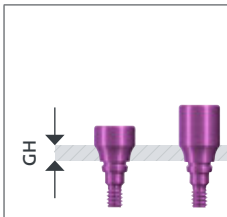
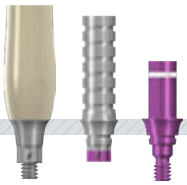
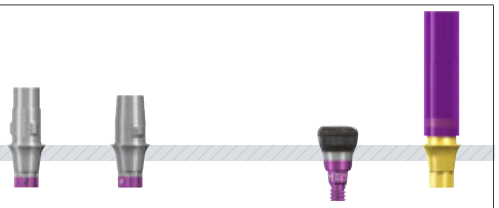
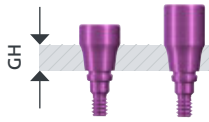
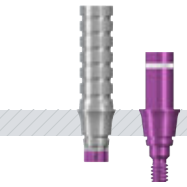
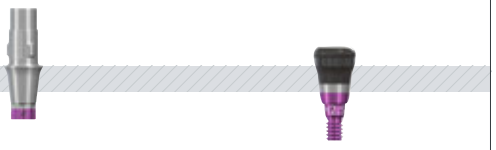
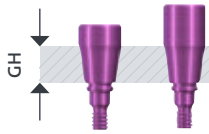
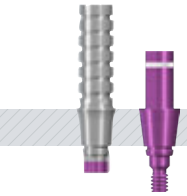
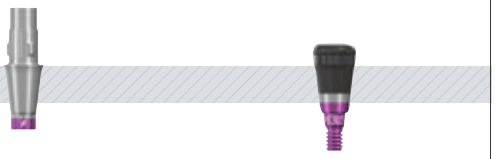
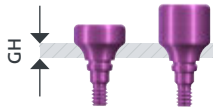
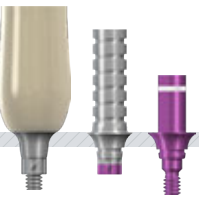
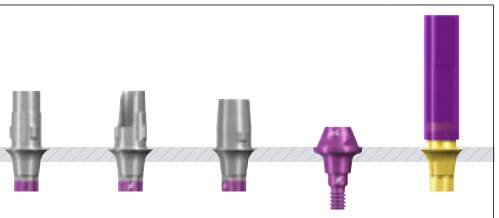
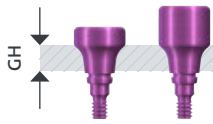
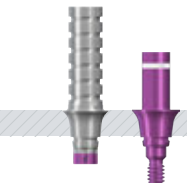
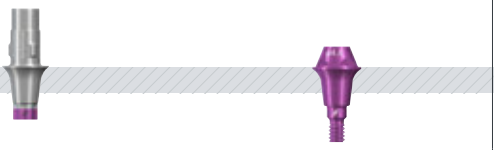
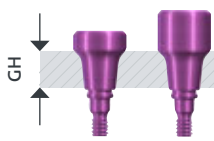
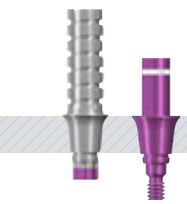
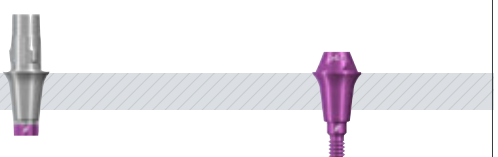
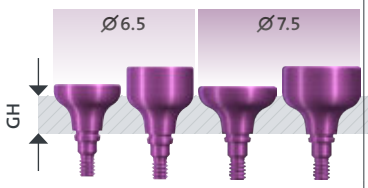
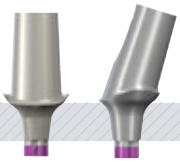
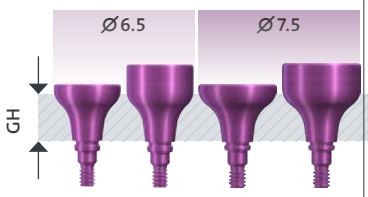
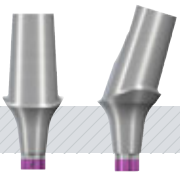
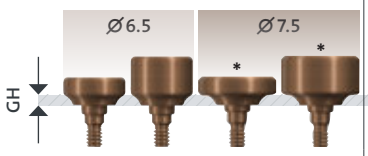
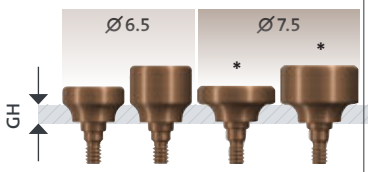
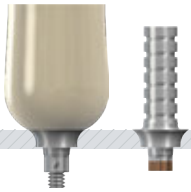
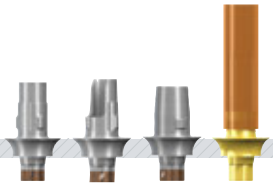


Figure 2: Consistent emergence profile due to matching components (WB).

8.1 OVERVIEW OF CONSISTENT EMERGENCE PROFILES™

8.1.1 Which healing abutments suit which final abutment?

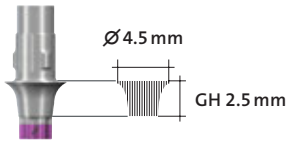
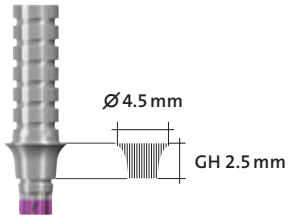
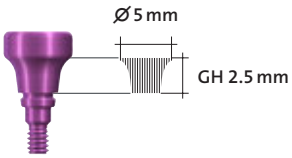
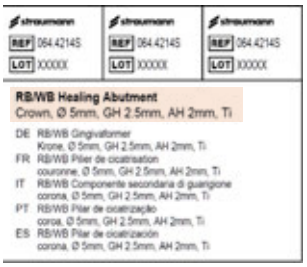
Crowns		Healing Abutments for Crown*	Temporary Abutments for Crown	Final Abutments
Final Abutment Ø3.8 mm	Gingiva height GH 1.5 mm	 064.4202S / 064.4203S	 064.4361 / 064.4362 / 064.4322S	 062.4934 062.4981 062.4501 062.4410
	Gingiva height GH 2.5 mm	 064.4204S / 064.4205S	 064.4363 / 064.4323S	 062.4935 062.4502
	Gingiva height GH 3.5 mm	 064.4206S / 064.4207S	 064.4364 / 064.4324S	 062.4936 062.4503
Final Abutment Ø4.5 mm	Gingiva height GH 1.5 mm	 064.4212S / 064.4213S	 064.4371 / 064.4372 / 064.4332S	 062.4944 062.4972 062.4982 062.4722S 062.4420
	Gingiva height GH 2.5 mm	 064.4214S / 064.4215S	 064.4373 / 064.4333S	 062.4945 062.4723S
	Gingiva height GH 3.5 mm	 064.4216S / 064.4217S	 064.4374 / 064.4334S	 062.4946 062.4724S

Crowns		Healing Abutments for Crown*	Temporary Abutments for Crown	Final Abutments
Final Abutment Ø6.0 mm	Gingiva height GH 2.5 mm	 064.4224S / 064.4225S 064.4234S / 064.4235S	 064.4382	 062.4103 / 062.4153
	Gingiva height GH 3.5 mm	 064.4226S / 064.4227S 064.4236S / 064.4237S	 064.4383	 062.4104 / 062.4154
Final Abutment Ø5.5 mm	Gingiva height GH 0.75 mm	 064.8201S / 064.8202S / 064.8203S / 064.8204S	 064.4391	 062.4953
	Gingiva height GH 1.5 mm	 064.8212S / 064.8213S / 064.8214S / 064.8215S	 064.4390 / 064.4392	 062.4954 / 062.4971 / 062.4983 / 062.8410

Bridges		Healing Abutments for Bridges	Temporary Abutments for Bridges	Final Abutments Bridges
Final Abutment Ø4.5 mm	Gingiva height GH 1.5 mm	 064.4232S / 064.4233S	 064.4352	 062.4961 / 062.4430

* Healing abutments with same consistent emergence profile and different final diameter.

8.1.2 How to match fitting components

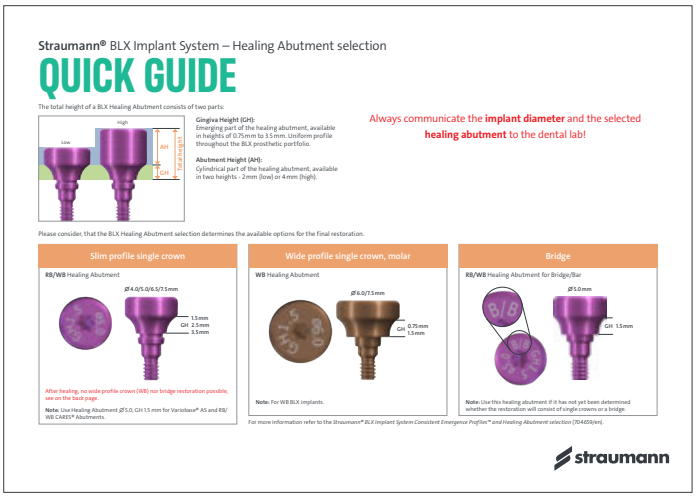
		**RB/WB Variobase® for Crown**, including screw, Ø 4.5 mm, GH 2.5 mm, AH 5.5 mm, TAN
		**RB/WB Temporary Abutment**, for crown, Ø 4.5 mm, GH 2.5 mm, TAN
		**RB/WB Healing Abutment***, Crown, Ø 5 mm, GH 2.5 mm, AH 2 mm, Ti

** Healing abutments anticipate the final crown, therefore, they have a larger nominal diameter than the final abutments.*

8.2 ALWAYS COMMUNICATE THE SELECTED HEALING ABUTMENT TO THE DENTAL LAB

The BLX Healing Abutment selection determines the available options for the final restoration. Therefore, always communicate the implant diameter and the selected healing abutment to the restoring dentist or dental lab in order to facilitate the appropriate final abutment selection.

For more information refer to *Straumann® BLX Implant System – Healing Abutment selection, Quick Guide* (704658/en).



9. TEMPORARY RESTORATION

9.1 HEALING ABUTMENT – TITANIUM GRADE 4

9.1.1 Application

- Soft tissue management
- Closure of implant connection for submerged and non-submerged healing

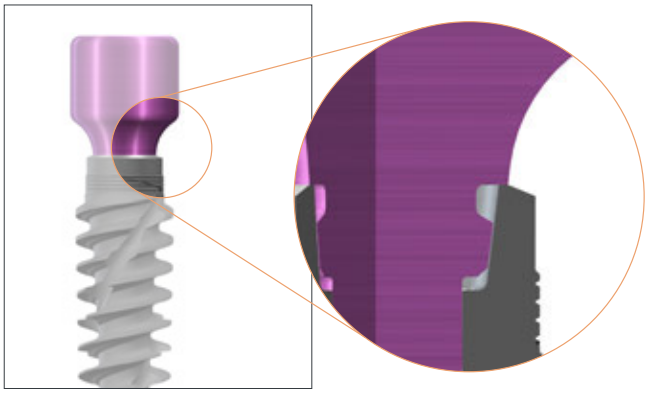
9.1.2 Characteristics

Simple

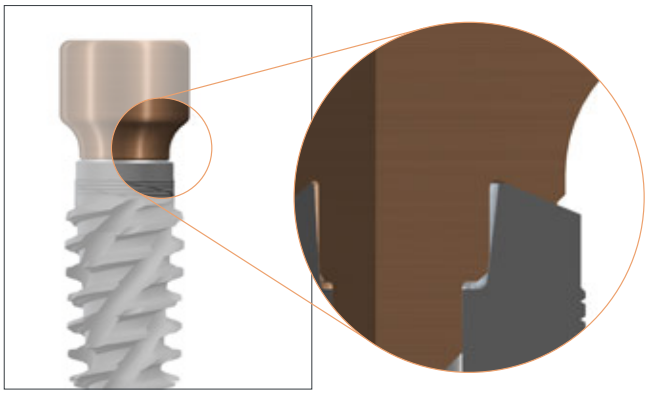
- One-piece design
- Color-coded emergence profile base and laser-marked diameters and gingiva heights
- Two different abutment heights for different soft tissue thickness
- Cylindrical section gives space to soft tissue
- Shape anticipates the emergence profile of the crown
- Anatomically shaped emergence profiles, healing abutments, temporary posts and final abutments (for optimal component selection see chapter 8.1 “Overview of Consistent Emergence Profiles™”)

Reliable

- Tight sealing on the top surface of implant
- Keep inner connection untouched for final abutment
- Flat sealing for healing and temporary components to protect inner cone

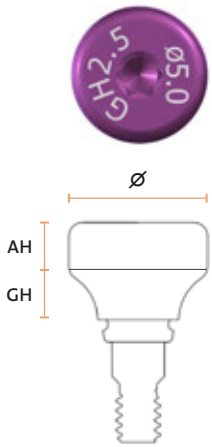


RB/WB Healing Abutment sealing mechanism



WB Healing Abutment sealing mechanism

9.1.3 Overview of Healing Abutment dimensions



AH = abutment height
GH = gingiva height
Ø = diameter

		Healing Abutments (Ø)						
		RB/WB				WB		
GH	AH	Ø 4.0	Ø 5.0	Ø 6.5	Ø 7.5	Ø 6.0	Ø 7.5	Total height
0.75 mm	2 mm 4 mm	–				064.8201S 064.8202S	064.8203S 064.8204S	2.75 mm 4.75 mm
1.5 mm		064.4202S 064.4203S	064.4212S 064.4213S	064.4222S 064.4223S	–	064.8212S 064.8213S	064.8214S 064.8215S	3.5 mm 5.5 mm
2.5 mm		064.4204S 064.4205S	064.4214S 064.4215S	064.4224S 064.4225S	064.4234S 064.4235S	–		4.5 mm 6.5 mm
3.5 mm		064.4206S 064.4207S	064.4216S 064.4217S	064.4226S 064.4227S	064.4236S 064.4237S			5.5 mm 7.5 mm
		Ø 3.8	Ø 4.5	Ø 6.0		Ø 5.5		
		Matching Final Abutments Ø						

Note: Separate healing abutments for bridge available.

9.2 TEMPORARY ABUTMENT – TITANIUM ALLOY (TAN)

9.2.1 Application

- Cement-retained temporary crowns

9.2.2 Characteristics

More solutions

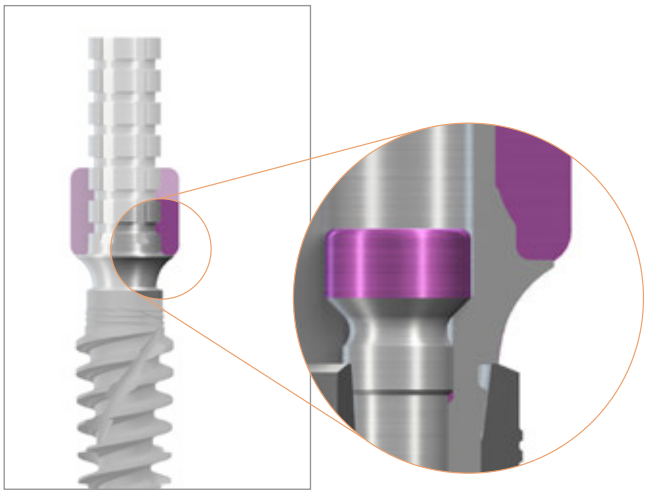
- Narrow diameter for narrow interdental spaces
- Crowns
- Anterior and posterior region
- Color coded emergence profile base

Reliable

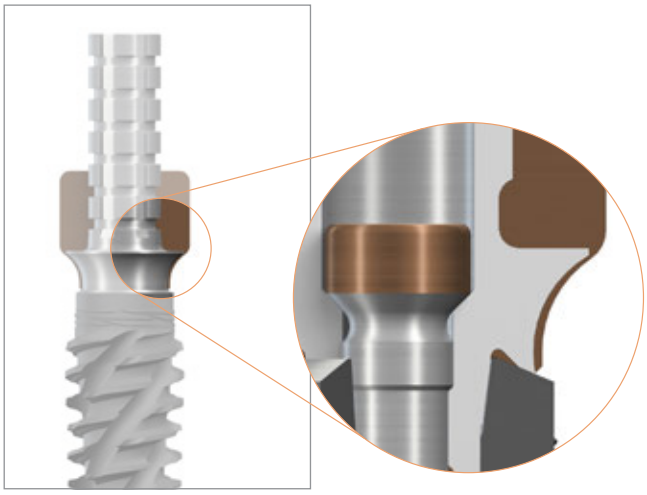
- High stability due to titanium alloy (TAN) material
- BLX connection for engaging abutments
- Tight sealing on top surface of implant
- Keep inner connection untouched
- Flat sealing to protect inner cone for final abutments
- Anatomically shaped emergence profiles, healing abutments, temporary posts and final abutments (for optimal component selection see chapter 8.1 “Overview of Consistent Emergence Profiles™”)

Note: Do not use for longer than 180 days. Place temporary restorations out of occlusion.

The Temporary Abutment can be shortened vertically no more than 6 mm with standard tools and procedures.

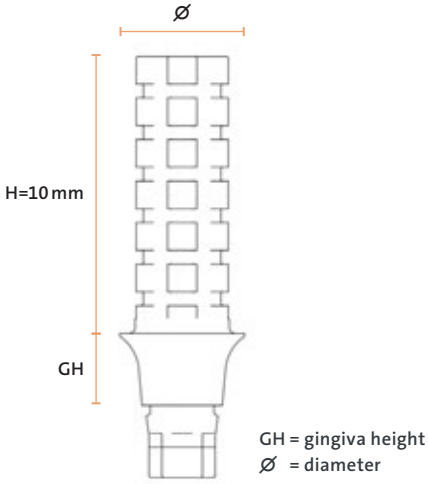


RB/WB Temporary Abutment



WB Temporary Abutment

9.2.3 Overview of Temporary Abutment dimensions



		Diameter (Ø)			
		Ø 3.8 mm	Ø 4.5 mm	Ø 6.0 mm	Ø 5.5 mm (WB)
GH	0.75 mm	–			064.4391
	1.5 mm	064.4362	064.4372 064.4352*	–	064.4391
	2.5 mm	064.4363	064.4373	064.4382	–
	3.5 mm	064.4364	064.4374	064.4383	
	4.5 mm	–			

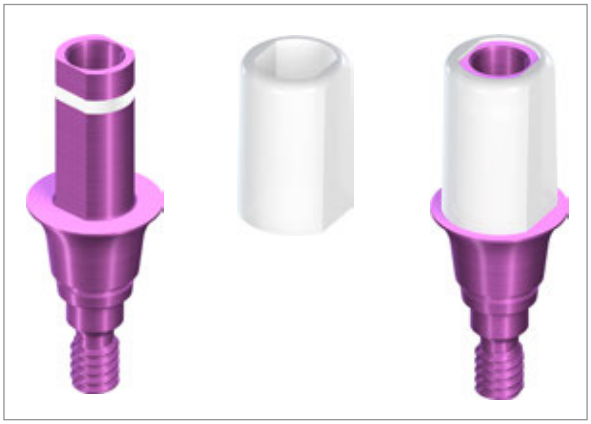
For detailed instructions how to use temporary abutments, please refer to *Straumann® Bone Level Prosthetic Procedures, Basic Information* (702061/en).

9.3 IMMEDIATE TEMPORARY ABUTMENT – TITANIUM ALLOY (TAN)

9.3.1 Application

- Cement-retained temporary crowns
- In implants that are osseointegrated or in the immediate loading technique as long as the minimum implant insertion torque value of 35 Ncm has been achieved

BLX (TorcFit™)



Magenta abutments: **RB/WB** connection

9.3.2 Characteristics

Simple

- Chairside workflow using associated Plastic Coping
- Easy choice of components thanks to color-coding

Reliable

- Pre-sterilized abutment

Note: Do not keep the Immediate Temporary Abutment and Plastic Coping in the patient's mouth for longer than 180 days. The temporary cement margin should be less than 2 mm below the gingiva.

	Ø 3.8 mm	Ø 4.5 mm	Compatible Plastic Coping (PMMA)
Gingiva height GH 1.5 mm	064.4322S	064.4332S	023.0033V2 (pack of 2)
Gingiva height GH 2.5 mm	064.4323S	064.4333S	
Gingiva height GH 3.5 mm	064.4324S	064.4334S	

9.4 TEMPORARY ABUTMENT – POLYMER WITH TITANIUM-ALLOY INLAY (VITA CAD-TEMP®/TAN)

9.4.1 Application

- Individual soft tissue management for esthetic cases
- Screw- or cement-retained temporary crowns
- Cement-retained temporary bridges

BLX (TorcFit™)

9.4.2 Characteristics

Simple

- Easy-to-achieve esthetic long-term temporary crowns and bridges (maximum 180 days)
- Tooth-colored customizable polymer material

Efficient

- Efficient chair-side dentist workflow: ready-to-prep temporary abutment

Reliable

- TorcFit™ connection: precise fit and high mechanical stability

Note:

Do not use for longer than 180 days. Place temporary restoration out of occlusion.

- The devices are provided non-sterile and are for single use only.
- The abutment must be secured against aspiration during intra-oral use.
- The abutments must be cleaned and sterilized prior use. Follow the guidelines described in the IFU.

	Ø 3.8 mm	Ø 4.5 mm	Ø 5.5 mm
Gingiva height GH 1.5 mm			
	064.4361	064.4371	064.4390

10. IMPRESSION TAKING

10.1 CONVENTIONAL IMPLANT LEVEL IMPRESSION TAKING

10.1.1 Application

- Open-tray impression procedure
- Closed-tray impression procedure

10.1.2 Characteristics

Simple

- Color-coded components for easy information transfer from mouth to master model
- Slender emergence profile accommodates space limitations
- Guide screw can be tightened either by hand or with the SCS Screwdriver (15 Ncm)

Reliable

- Seating on top portion of implant ensures high accuracy
- Clear-cut tactile response from the prosthetic connection verifies proper seating of components
- Easy removal

Note: Open-tray impression procedure requires a custom-made tray with perforations.

Impression posts are intended for single use to ensure optimal fit and precise impression taking for each patient.

RB/WB and WB Impression Posts only vary in the color code but have a similar design otherwise.

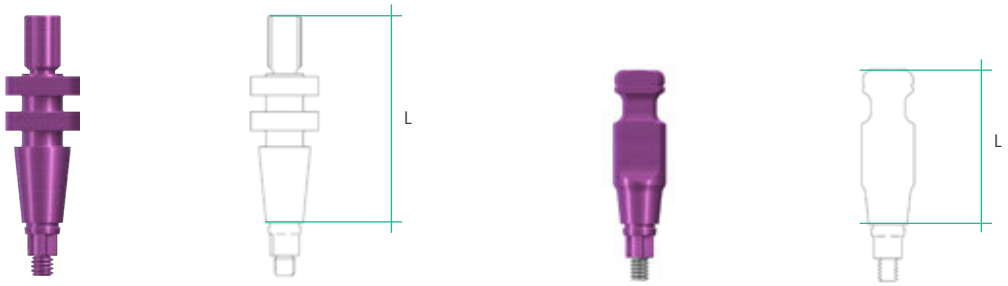
RB/WB Impression Post Open Tray

WB Impression Post Open Tray

RB/WB Impression Post Closed Tray

WB Impression Post Closed Tray

10.1.3 Overview of Impression Post dimensions



L = length

For detailed instructions on impression taking, please refer to *Straumann® Bone Level Prosthetic Procedures, Basic Information* (702061/en).

10.2 DIGITAL IMPRESSIONS: STRAUMANN® CARES® MONO SCANBODY

10.2.1 Product description

Straumann® scanbodies represent the position and orientation of the respective dental implant, analog or abutment in CADCAM scanning procedures. This helps the CADCAM software to correctly align the subsequent CADCAM restorations.

	BLX		
	CARES® RB / WB Mono Scanbody, for implant-level scanning	**Straumann® ScanPost S RB/WB L (Variobase® C) for implant-level scanning**	**CARES® Mono Scanbody for Screw-retained Abutment, for abutment level, ⌀ 4.6 mm, PEEK / TAN**
			
Compatibility			
Number of components	2: Scanbody, self-retaining screw		
Component/material	**Scanbody:** polymer (PEEK) **Screw:** titanium alloy (TAN)	**Scanbody:** titanium alloy (TAN) **Screw:** titanium alloy (TAN)	**Scanbody:** polymer (PEEK) **Screw:** titanium alloy (TAN)

For detailed instructions how to use the CARES® Mono Scanbody, please refer to *Step-by-step instructions on the intraoral scanbodies, Basic Information* (702063/en).

For detailed instructions how to take conventional impression, please refer to *Straumann® Bone Level Prosthetic Procedures, Basic Information* (702061/en).

11. FINAL RESTORATION

11.1 STRAUMANN® SCREW-RETAINED ABUTMENTS

11.1.1 Application

- Screw-retained multi-unit as well as single-unit restorations at abutment level
- Full-arch restorations at abutment-level, screw-retained as well as removable

11.1.2 Characteristics

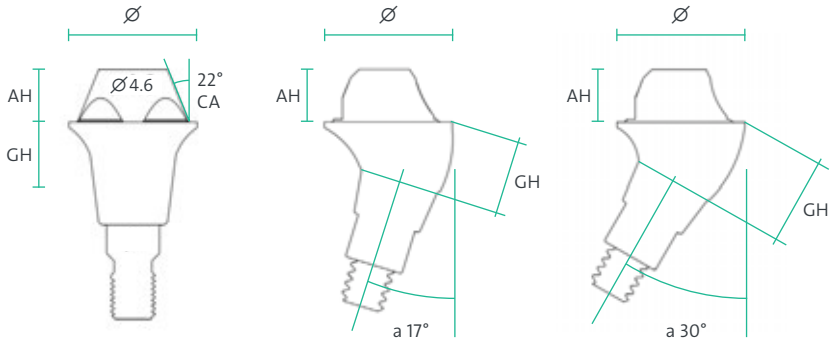
Sleek design and clear portfolio

- Same low abutment connector design allows streamlined tertiary components over all implant types
- Abutment angulations of 0°, 17° and 30°
- Abutment design allows both multi-unit and single-unit restorations
- Sterile packed for immediate use
- Different gingiva heights of 1.5 mm, 2.5 mm, 3.5 mm, 4.5 mm and 5.5 mm
- Simplified handling with the BLX connection
- Straight abutments in one-piece design

11.1.3 Preparation – abutment placement

Clean and dry the interior of the implants thoroughly.
Position the abutments in the implants. Tighten them to 35 Ncm using the SCS Screwdriver along with the Ratchet and the Torque Control Device.

11.1.4 Overview of Screw-retained Abutment dimensions



AH = abutment height
GH = gingiva height
Ø = diameter
CA = abutment connector
a = angle

		Diameter (Ø)		
		Ø 4.6 (RB/WB)		
Angle		0°	17°	30°
GH	0.75 mm	–	–	
	1.5 mm	062.4722S		
	2.5 mm	062.4723S		
	3.5 mm	062.4724S	062.4733S	062.4743S
	4.5 mm	062.4725S	062.4734S	062.4744S
	5.5 mm	–	062.4735S	062.4745S

Engaging feature for single-unit restorations / non-engaging feature for multi-unit restorations

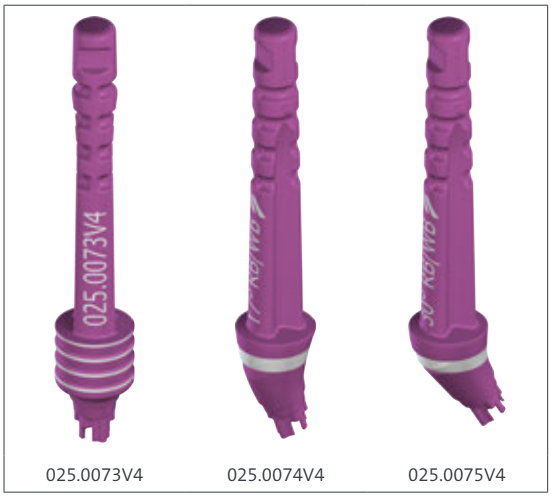
Engaging (Crown)			Non-engaging (Bridge/Bar)						
									
									
Burn-out Coping 023.4748	**Coping, TAN** 024.0023	**Coping** 023.4753	**Coping, TAN, for Bridge** 024.0024	**Coping, Ti, for Bar** 023.4752	**Coping, for Bridge** 023.4754	**Coping, for Bar** 023.4755	**Variobase® for Bridge/Bar Cylindrical** 023.0028	**Burn-out Coping, for Variobase® for Bridge/ Bar Cylindrical Coping** 023.0032	**Burn-out Coping** 023.4758
 **Occlusal Screw** 023.4763									

11.1.5 Plan Abutments for RB/WB Screw-retained Abutments for intra- and extra-oral planning.

- All gingiva heights marked on each abutment
- Possibility to cut the pin for easier placement in posterior region
- Fabricated of sterilizable polymer material

Note: After intraoral use clean and sterilize the Plan Abutment as described in the IFU *Instructions for Use: Straumann® Prosthetic Planning and Placement Tools* (702879).

Note: Do not modify the abutments. For processing in the dental lab use the Lab Processing screws.

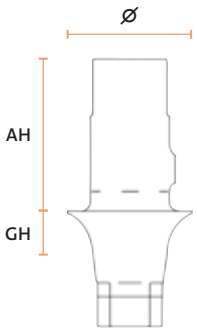


025.0073V4 025.0074V4 025.0075V4

For detailed instructions how to use BLX Screw-retained Abutments, please refer to *Straumann® Bone Level Prosthetic Procedures, Basic Information* (702061/en).

11.2 STRAUMANN® VARIOBASE®

Straumann® Variobase® prosthetic components provide dental laboratories with the flexibility to create customized prosthetic restorations. In addition, Variobase® Abutments come with the benefit of the original Straumann® connection and the unique Straumann® engaging mechanism.



AH = abutment height
GH = gingiva height
Ø = diameter

Single-unit restorations		**Variobase® for Crown** • Abutment heights 5.5 mm available • Possibility to tailor the abutment height 5.5 mm down to 3.5 mm • Different gingiva heights available
		**Variobase® for Crown AS** • Screw-channel angulation of up to 25° • Abutment heights 5.5 mm available
		**Variobase® C** • Integrated in Sirona®'s software libraries • Chimney design matches the shape of Sirona®'s Scanbodies and pre-fabricated screw-channel in material blocks
Multi-unit and full-arch restorations		**Variobase® for Bridge/Bar** • Cementation Aid for Variobase® for Bridge/Bar Cylindrical supporting an easy cementation procedure • Non-engaging interface sitting on the implant shoulder to provide high angulation compensation

11.2.1 Variobase® component overview

The following Variobase® prosthetic components can be used on TLX implant platforms:

Variobase® for Crown

	BLX RB/WB		BLX WB
	Ø 3.8 mm	Ø 4.5 mm	Ø 5.5 mm
Abutments Variobase® for Crown	GH 0.75 mm		
			 062.4953
	GH 1.5 mm		
	 062.4934	 062.4944	 062.4954
	GH 2.5 mm		
	 062.4935	 062.4945	
	GH 3.5 mm		
	 062.4936	 062.4946	
Burn-out Copings for Variobase® for Crown	065.0014	065.0015	065.0016
Screws for Variobase® for Crown	 065.0036		

Variobase® for Crown AS

	BLX RB/WB		BLX WB
	Ø 3.8 mm	Ø 4.5 mm	Ø 5.5 mm
Abutments Variobase® for Crown AS	GH 1.5 mm		
		 062.4972	 062.4971
Burn-out Copings for Variobase® for Crown AS		065.0018	065.0019
Screws for Variobase® for Crown AS	 065.0037		

Variobase® C (Sirona® CEREC®)

	BLX RB/WB		BLX WB
	Ø 3.8 mm	Ø 4.5 mm	Ø 5.5 mm
Abutments Variobase® C	GH 1.5 mm		
	 062.4981	 062.4982	 062.4983
Sirona® Scanbody size	"S" or "L"*	"L"	
Straumann® ScanPost*	 065.0038		
Material block Screw-hole size	"S"	"L"	
Replacement screw	 065.0036		

*Please use Scanbody size S when using the Straumann® Variobase® C
Please use Scanbody size L when using the Straumann® ScanPost S RB/WB L

Note:

- Order the Variobase® C and Straumann® ScanPost via the Straumann® sales channels.
- Order the Sirona® Scanbody through the Sirona® distribution channels.
- Order the material block with pre-fabricated screw-channel through the material manufacturer's distribution channels.

Variobase® for Bridge/Bar Cylindrical

	Ø3.8 mm	Ø4.5 mm	Ø5.5 mm
	GH 1.5 mm		
Abutments Variobase® for Bridge/Bar Cylindrical		 062.4961	
Cementation Aid		 160.3	
Burn-out Copings for Variobase® for Bridge/Bar Cylindrical		065.0017 / 065.0017V4	
Screws for Variobase® for Bridge/Bar Cylindrical		 065.0036	

Note: For bridge reconstructions use dedicated Healing Abutments and Temporary Abutments to ensure appropriate protection of the implant shoulder during the healing phase.

RB/WB Healing Abutment Bridge/Bar

RB/WB Temporary Abutment for Bridge/Bar

For detailed instructions on how to use Variobase® Abutments, please refer to *Straumann® Variobase®, Basic Information* (702087/en).

11.3 STRAUMANN® ANATOMIC ABUTMENTS

11.3.1 Application

- Cement-retained restorations

11.3.2 Characteristics

Simple and Reliable

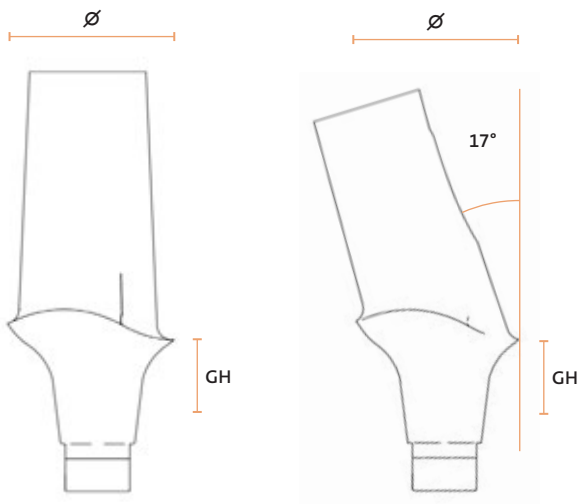
- Less grinding necessary due to prepared mucosa margins
- Adaptation to natural soft tissue contour due to prepared mucosa margins at different heights
- Oval shape resembles emergence profile of a natural tooth
- 0° and 17°
- Anatomically shaped emergence profiles, healing abutments, temporary posts and final abutments (for optimal component selection see chapter 8.1 “Overview of Consistent Emergence Profiles™”)

A minimum height of 3 mm above the mucosa margin of the abutment must be maintained in order to maintain proper stability of the abutment. The cement margin must not be more than 2 mm below the mucosa. Use a new basal screw for the final insertion of the abutment.

RB/WB Anatomic Abutment, straight

RB/WB Anatomic Abutment, angled

11.3.3 Overview of Anatomic Abutment dimensions



GH = gingiva height ⌀ = diameter

		Diameter (⌀)	
		⌀ 6 mm	
Angle		0°	17°
GH	0.75 mm	–	
	1.5 mm		
	2.5 mm	062.4103	062.4153
	3.5 mm	062.4104	062.4154
	4.5 mm	–	

For detailed instructions on how to use the Anatomic Abutments, please refer to *Straumann® Bone Level Prosthetic Procedures, Basic Information* (702061/en).

11.4 STRAUMANN® GOLD ABUTMENTS

11.4.1 Characteristics

Simple

- Easy wax-up and protection of the screw channel due to modelling aid (burn-out polymer)
- Easy-to-achieve esthetics due to individual contouring of the emergence profile and adaptation to the margin of the gingival contour

Reliable

- Excess cement is easily removed by raising the cement margin using an individually designed mesostructure
- TorcFit™ connection

Note: For screw-retained bridges the Gold Abutment for Bridge must be used.

RB/WB Gold Abutment, for Crown

RB/WB Gold Abutment, for Bridge

11.4.2 Overview of Gold Abutments

		Diameter (Ø)		
		Ø 3.8 mm (RB/WB)	Ø 4.5 mm (RB/WB)	Ø 5.5 mm (WB)
GH	0.75 mm	–		
	1.5 mm	062.4410	062.4420 062.4430*	062.8410
	2.5 mm	–		
	3.5 mm			
	4.5 mm			

*Gold Abutment for Bridge use separate healing and temporary parts "for bridge" to create a consistent emergence profile.

For detailed instructions how to use Gold Abutments, please refer to *Straumann® Bone Level Prosthetic Procedures, Basic Information* (702061/en).

11.5 STRAUMANN® NOVALOC® ABUTMENTS

The Straumann® Novaloc® Retentive System for hybrid dentures offers an innovative carbon-based abutment coating (ADLC[1]) with excellent wear resistance, overcoming up to 60° implant divergence. Both the straight and 15° angled abutments are available in various abutment heights, covering a broad range of clinical implant situations. Together with its durable PEEK[2] matrices, the Novaloc® Retentive System provides a unique and long-lasting attachment performance.

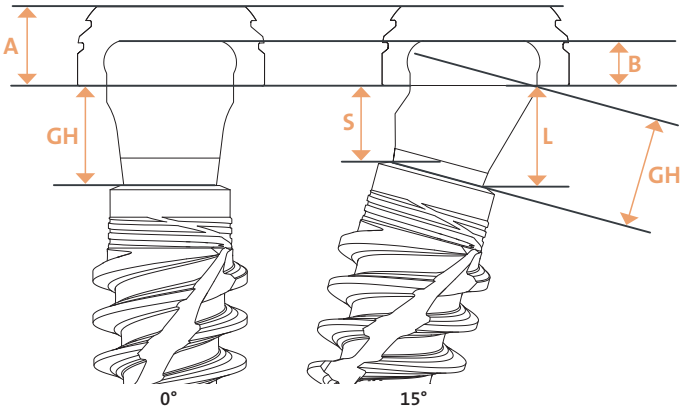
RB/WB Novaloc® ADLC, straight

RB/WB Novaloc® ADLC, angled

11.5.1 Characteristics

- PEEK[2] matrix inserts offering excellent chemical and physical properties
- Matrix accommodates up to 40° prosthetic divergence between two abutments
- 6 retention strengths offer optimal adjustment of the denture retention
- Matrix Housing available in titanium, or color-neutral PEEK[2] for a higher aesthetic outcome
- Carbon-based abutment coating (ADLC[1]) offers a smooth surface and ultimate hardness for excellent wear resistance

11.5.2 Overview of Novaloc® Abutment dimensions



		Diameter (Ø)			
		Ø 3.8 mm (RB/WB)			
Angle		0°	15°		
GH	1.5 mm	062.4501	–	S	L
	2.5 mm	062.4502	062.4507	1.2 mm	1.9 mm
	3.5 mm	062.4503	062.4508	2.2 mm	2.9 mm
	4.5 mm	062.4504	062.4509	3.2 mm	3.9 mm
	5.5 mm	062.4505	062.4510	4.2 mm	4.9 mm
	6.5 mm	062.4506	062.4511	5.2 mm	5.9 mm
	7.5 mm	–	062.4512	6.2 mm	6.9 mm
Matrix				A	2.3 mm
				B	1.4 mm

For detailed instructions on how to use BLX Novaloc® Abutments, please refer to *Straumann® Novaloc® Retentive System for Hybrid Dentures, Basic Information* (702067/en).

[1] *Amorphous Diamond-Like Carbon*
[2] *Polyether ether ketone*

11.6 STRAUMANN® CARES® ABUTMENTS

11.6.1 Application

- Cement-retained crowns (CARES® TAN)
- Cement-retained bridges via mesostructure
- Directly venerable crowns (CARES® CoCr)

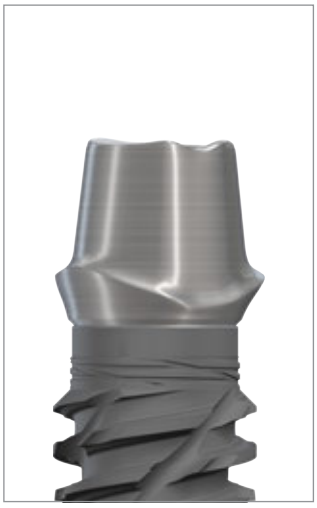
11.6.2 Material

- Titanium-Aluminum-Niobium (TAN)
- Cobalt Chromium (CoCr)

11.6.3 Characteristics

- CoCr for direct veneering
- Screw-retained one piece metal restorations
- Anatomical emergence profile
- A patient-specific emergence profile
- Straumann® Guarantee for Straumann® CARES® Abutments

RB/WB Straumann® CARES® Abutment



WB Straumann® CARES® Abutment

For detailed instructions on how to use CARES® abutments, please refer to *Straumann® CARES® Implant-borne prosthetics, Basic Information* (702165/en).

11.7 STRAUMANN® SCREW-RETAINED BARS AND BRIDGES (SRBB)

11.7.1 Application

Straumann® CARES® SRBB are prosthetic mesostructures, either directly screwed to the endosseous dental implant or to the screw-retained abutment intended as an aid in prosthetic rehabilitations for multiple-tooth replacement or fully edentulous patients.

11.7.2 Material

- Titanium grade 4
- Cobalt-chromium alloy (coron®)

RB/WB Straumann® CARES® Screw-retained Bars and Bridges

Important note for CARES® SRBB on Straumann® Screw-retained Abutments
Please keep in mind that CARES® SRBB are milled based on their master cast. Therefore, a precise replication of the oral situation is essential for a good fitting of the CARES® SRBBs.
For abutment-level CARES® SRBB, the master cast represents the oral situation. Therefore, it is necessary to use a master model with abutment analogs, created from an oral abutment-level impression of the final abutments, and torqued with 35 Ncm.
Master models with subsequently hand-tightened (< 35 Ncm) abutments may not accurately represent the oral situation and therefore could lead to a poor fitting restoration with height and alignment deviations, although it will fit the model. Therefore, if abutments subsequently need to be placed on the master model, only a torque of 35 Ncm will adequately represent the final oral situation. The subsequently placed abutment should be rotated so that it fits against one end of the implant/abutment interface's play and the dentist must be informed that the abutment has to be rotated in the same direction during oral placement.
If an SRBB on subsequently placed Screw-retained Abutments is ordered, the stone model with the torqued abutments is required for production.

For detailed instructions how to use CARES® abutments, please refer to *Straumann® CARES® Implant-borne prosthetics, Basic Information* (702165/en).

11.7.3 Straumann® CARES® SRBB working conditions

	CARES® SRBB are available on the following Straumann platforms		Divergence compensation between any two platforms		Screws for Straumann® CARES® SRBB
			Ti	coron®	
Implant Level	Straumann® Tissue Level Implants	Regular Neck (RN)	40°		synOcta® Basal screw 048.356
		Wide Neck (WN)			
	Straumann® Bone Level Implants	Regular CrossFit® (RC)	30°		NC/RC SRBB BL screw 025.2926
		Narrow CrossFit® (NC)			
	Straumann® BLX Implants	RB/WB (Regular Base and Wide Base	40°		RB/WB SRBB Basal Screw, straight, TAN 065.0036
Abutment level	Straumann® Screw-retained Abutment	∅ 4.6 mm	50°	40°	NC/RC Occlusal Screw, TAN for Coping, Screw-retained Abutment 023.4763
		∅ 3.5 mm	30°	30°	

Important: when combining different platforms with each other, the smallest divergence compensation value applies.

Note

- Straumann® Repositionable Implant Analogs are not intended to be used for Straumann® CARES® SRBB. Straumann may return the order if the requirements are not fulfilled.
- **Always use new abutment-/occlusal-screws for patient use.**
- The screws delivered with the CARES® SRBB are meant for patient use. For additional screws in case of loss or for lab use, only use the screws mentioned in the chart above.

11.8 STRAUMANN® CARES® SCAN & SHAPE

CARES® Scan & Shape allows you to benefit from the knowledge and experience of a highly trained team of CADCAM dental experts to provide a tailored design service. The concept is designed to ensure the best possible fit of the final restorations. You can now order: customized abutments, CARES® Screw-retained Bars and Bridges (SRBB), CARES® X-Stream™ Restorative Options and tooth-borne restorations via Scan & Shape.*

Whether you're expanding your business or you have an existing staff member out for an extended period of time, we're open 24/7 so you don't have to be.

Ordering process
- The CARES® Scan & Shape online ordering platform provides a one-stop-shop for all your customized prosthetics
- Send digital files using our open STL-Files upload* service or
- Traditional workflows – send us your master cast and/or wax-up model*

Premium Straumann Service
- Custom-made abutment design
- Straumann® Original connection
- Straumann precision fit between implant and abutment

Compatible solutions
- Provides a streamlined "one-stop shop" and an efficient digital workflow
- Benefit from Straumann® CARES® Scan & Shape services for customized abutments and CARES® X-Stream™ single restoration for all major implant platforms

Note: For detailed information on all Straumann® CARES® offerings, please see *Straumann® CARES® Scan & Shape, Basic Information* (702168/en).

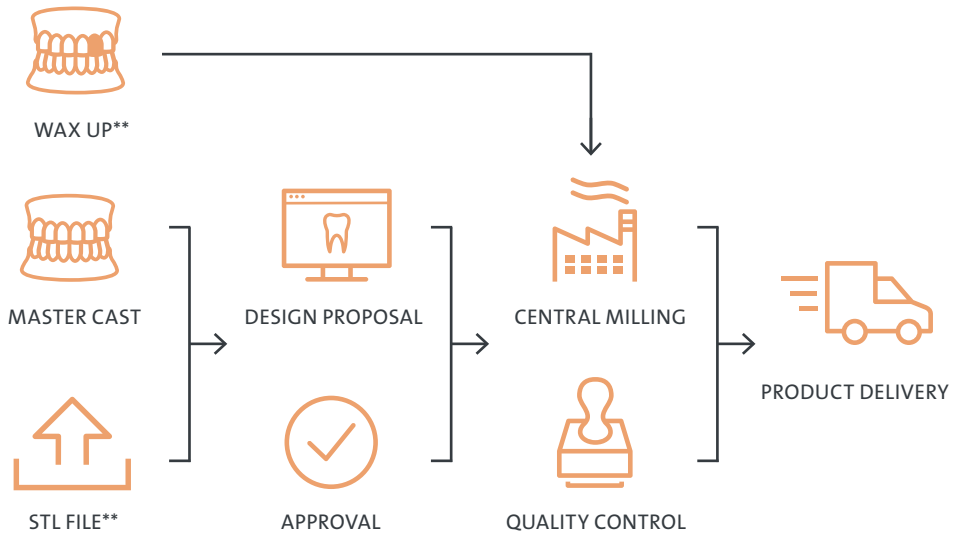
** Not all products, services and workflows are available in all countries. Please contact your sales representative for a detailed overview.*

11.8.1 Straumann® CARES® Scan & Shape workflow overview*

Even CADCAM proficient labs can take advantage of our design service. If you are using 3Shape®, exocad®, Dental Wings® or any other dental-design software you can simply upload your open STL files.

Digital functionality**

- Upload your case from any open system such as 3Shape®, exocad®, Dental Wings®, etc.
- Upload your open STL-file of lower jaw, upper jaw, bite registration, together with a scan of diagnostic wax-up for SRBBs.



Simple workflow

Log onto Straumann® CARES® Scan & Shape Online

- Send us your STL files, ship us your models or wax-ups**
- Manage your orders online anytime around the clock
- Receive your CARES® prosthetics just the way you want it

Scan & Shape online platform product portfolio

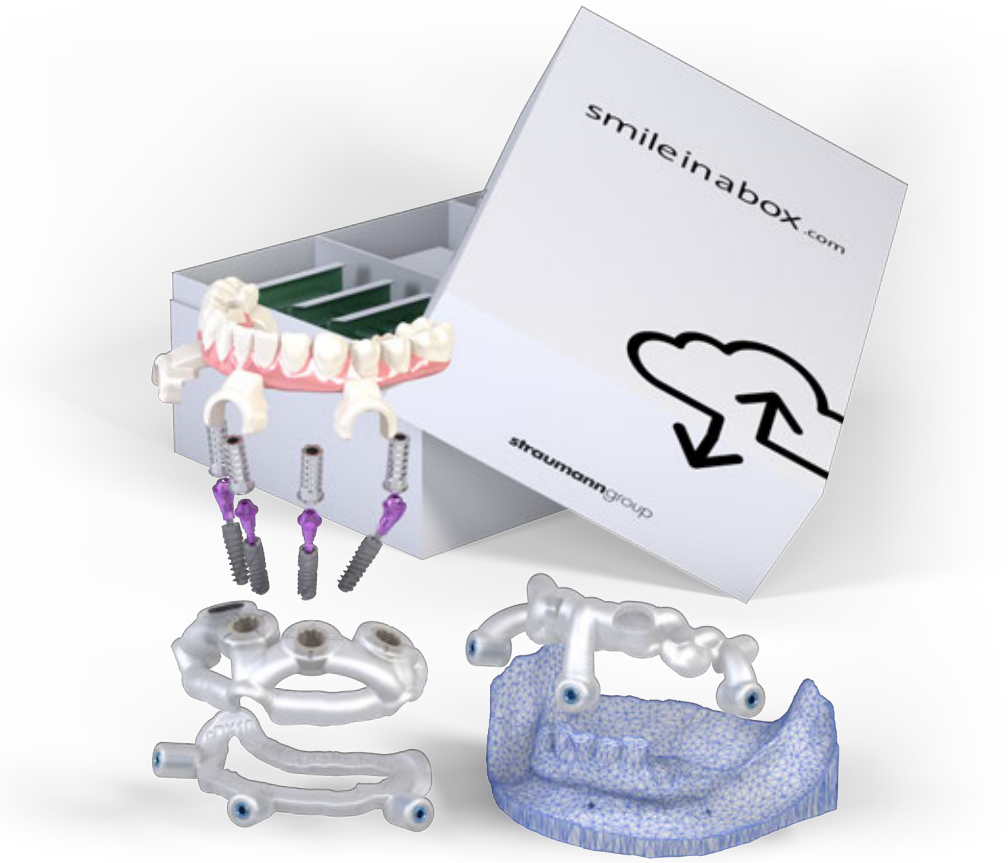
For a complete overview of the Straumann® CARES® Scan & Shape product portfolio, consult *Straumann® CARES® Scan & Shape Basic Information* (702168/en) or contact your local Straumann representative.

* *Not all products, services and workflows are available in all countries.*

** *STL File upload option and model workflow may vary from country to country.*
Not all products are available through wax up workflow.
Please contact your local sales representative for a detailed overview of the available workflows and products.

11.9 SMILE IN A BOX™

Smile in a Box™ is a flexible treatment planning and manufacturing service which helps you to grow and develop your dental practice. Our solution drives value by improving patient acceptance and allowing access to digital dentistry without the worry of additional financial investment. Improve efficiency by reducing chair time with immediate treatment protocols. Increase the level of confidence in implant placement through a more predictable workflow using guided surgery. Focus on your passion by choosing what you outsource and what steps you keep in house. We help you to scale your business – no matter where you are in your practice growth plans.



12. FURTHER INFORMATION

For further information please consult the following brochures:

- *Straumann® Modular Cassette, Basic Information* (702527/en)
- *Straumann® Velodrills, Basic Information* (705226/en)
- *Straumann® Drill stop, Basic Information* (702874/en)
- *Straumann® Modular Cassette Selection Guide* (702824/en)
- *Straumann® Bone Level Prosthetic Procedures, Basic Information* (702061/en)
- *Straumann® Variobase®, Basic Information* (702087/en)
- *Straumann® Novaloc® Retentive System for Hybrid Dentures, Basic Information* (702067/en)
- *Straumann® CARES® Implant-borne prosthetics, Basic Information* (702165/en)
- *Straumann® CARES® Scan & Shape, Basic Information* (702168/en)
- *Step-by-step instructions on the intraoral scanbodies, Basic Information* (702063/en)
- *Straumann® Guided Surgery System Instruments, Basic Information* (702526/en).

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