a perfect fit ™

CONELOG® SCREW-LINE IMPLANT
BASIC INFORMATION
SURGICAL PROCEDURES

CONELOG® SCREW-LINE implants
CONELOG® Implant position planning
Surgical procedure
Healing options

camlog

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GENERAL SYSTEM INFORMATION ABOUT THE CONELOG® IMPLANT SYSTEM

The CONELOG® Implant System is based on years of clinical and laboratory experience and is a user-friendly, consistently prosthetically oriented implant system.

All CONELOG® Products are manufactured with the latest state-of-the-art technology. The CONELOG® Implant System is continuously developed by the company's research and development team in collaboration with clinics, universities and dental technicians and therefore stays abreast of the latest technology.

The CAMLOG® and CONELOG® Implant Systems are well documented scientifically. Studies* support this with respect to a great many parameters including the implant surface, time of implantation and/or implant loading, primary stability, connection design or type of superstructure. The long-term results of the Promote® Surface are convincing.

IMPORTANT NOTE
The descriptions that follow are not adequate to permit immediate use of the CAMLOG®/CONELOG® Implant System. Instruction by a surgeon experienced in using the CAMLOG®/CONELOG® Implant System is strongly recommended. CAMLOG®/CONELOG® Dental implants and abutments should only be used by dentists, physicians, surgeons and dental technicians who have been trained in using the system.
CAMLOG regularly offers relevant courses and training sessions.

Methodical errors made during the treatment can result in loss of the implant and significant loss of the peri-implant bone.

COLOR CODING

COLOR CODING OF THE SURGICAL AND PROSTHETIC CONELOG® PRODUCTS

	COLOR	DIAMETER
	Gray	3.3 mm
	Yellow	3.8 mm
	Red	4.3 mm
	Blue	5.0 mm

* See section «Further documentation» on page 42

CONELOG®
SCREW-LINE IMPLANT
PROMOTE® PLUS

GENERAL

CONELOG® SCREW-LINE implants are endosseous implants available in various lengths and diameters. They are surgically inserted in the bone of the maxilla and/or mandible and serve as an anchor for functional and esthetic oral restorations for partially and fully edentulous patients. The prosthetic restoration is performed with single crowns, bridges or full dentures that are attached to the CONELOG® Implants with the appropriate CONELOG® Components. CONELOG® SCREW-LINE implant, Promote® plus are distinguished by:

- a conical implant/abutment connection,
- the Promote® surface,
- standard integrated Platform Switching,
- a machined implant shoulder surface,
- a slightly tapered external geometry and
- efficient implant handling with mounted insertion post.

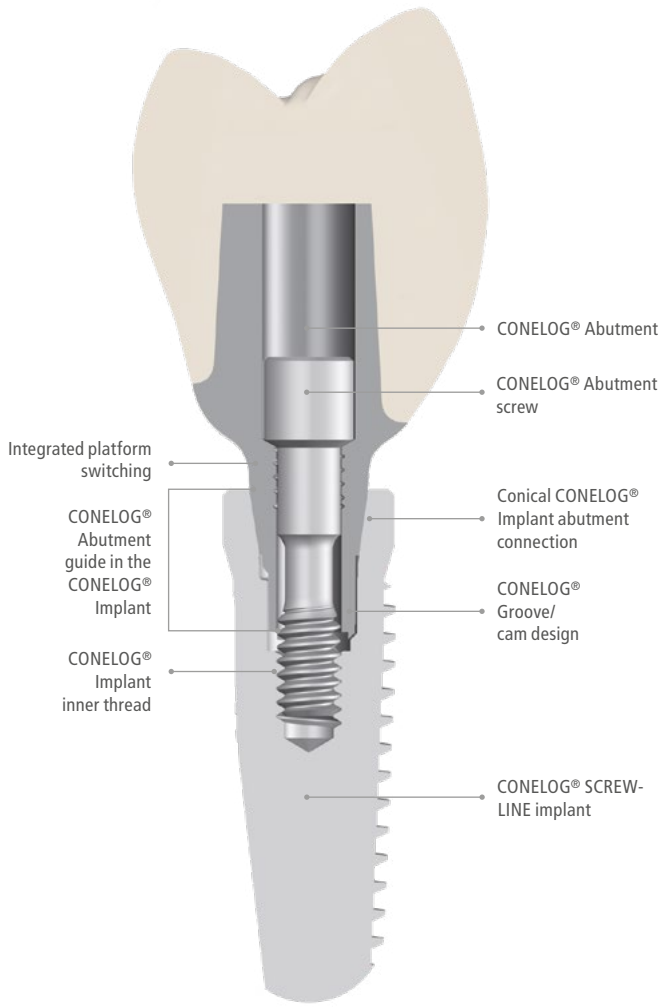
The CONELOG® SCREW-LINE implant, Promote® plus is not only suitable for late implantations but also for immediate or delayed immediate implantations in maxillary and/or mandibular bone. The selected healing technique can be either submerged or transgingival. In the case of a one-stage surgical procedure, the implants can be loaded immediately if good primary stability has been achieved and functional loading is appropriate.

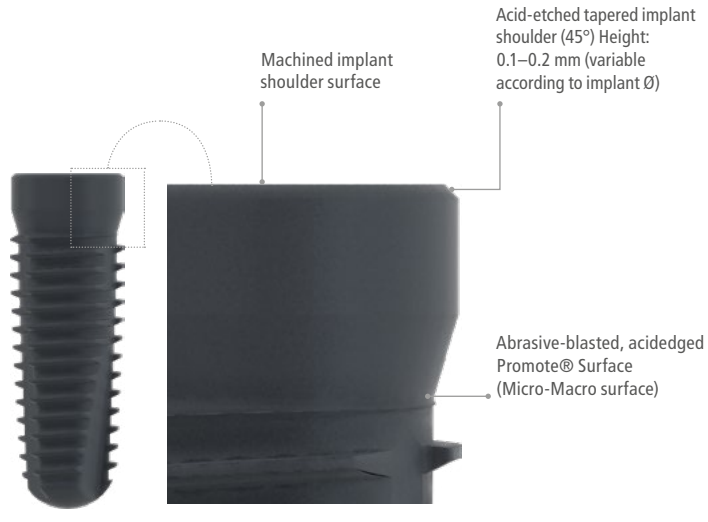
The CONELOG® SCREW-LINE implant, Promote® plus has an acid-etched, tapered implant shoulder (45°). The implant is easily inserted because the taper of the implant body (3°–9° depending on length and diameter) induce
self centering. The self-cutting thread provides for continuous grip on the bone and high primary stability.

RANGE OF USE FOR CONELOG® SCREW-LINE IMPLANTS

A more deeply positioned coronal implant shoulder is recommended particularly where a high-esthetic outcome is important. The CONELOG® SCREW-LINE implant, Promote® plus is suited for this situation. The following clinical conditions facilitate the process:

- Normal to thick biotype,
- Gingival height of at least 3.0 mm,
- Minimum width of 1.0 mm of the attached gingiva,
- Minimum distance of 2.0 mm between attached gingiva and mimetic musculature.





CONELOG® SCREW-LINE implant, Promote® plus

CONELOG®
SCREW-LINE IMPLANT
PROMOTE® PLUS

MATERIALS

All CONELOG® Implants are made of titanium grade 4. The CONELOG® Abutments and abutment screws are made of titanium alloy Ti6Al4V ELI.

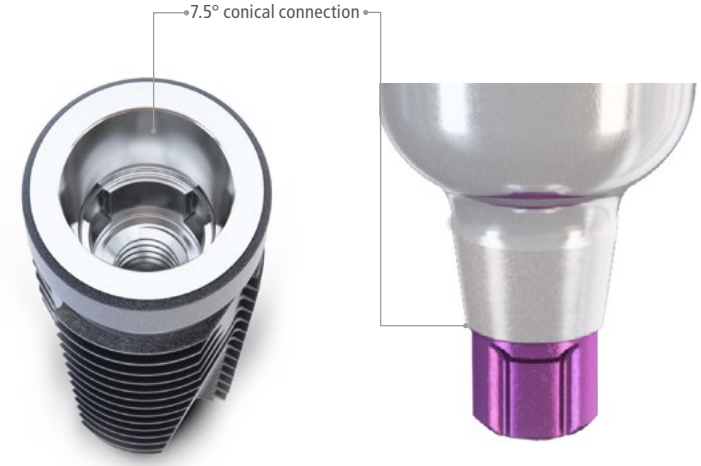
PRODUCT PRECISION

For the most part, the inner and outer geometry of the CONELOG® Implants and abutments are rotary machined. As a result, the tolerances can be kept very small as well as excellent component precision without impacting the material structure. The CONELOG® Implant abutment connection ensures a very precise, stable and rotation-resistant connection to the CONELOG® Prosthetic components.

INNER CONFIGURATION OF THE IMPLANT

CONELOG® SCREW-LINE implants are equipped with a cone (7.5°) and three grooves in the inner configuration for positioning CONELOG® Abutments. The CONELOG® Abutments are equipped with an apical cone and three cams which will lock into the tapered connection and the three grooves of the implant.

The CONELOG® Abutment does not cover the implant shoulder.
A CONELOG® Abutment screw is used to fix CONELOG® Abutments in the CONELOG® SCREW-LINE implant with a defined torque.



Conical CONELOG® Implant abutment connection

For optimal positioning of the abutments in the implant, they should be aligned in the bone so that one of the three grooves points vestibularly. The drivers include markings on the outside that correspond to the three grooves of the CONELOG® Implant inner configuration.

Groove/cam design of the CONELOG® Implant abutment connection

IMPLANT DIMENSIONS

	Article	Art. No.	Ø	L	A Ø
	**CONELOG® SCREW-LINE Implant, Promote® plus** incl. insertion post and cover screw, sterile **Material** Titanium Grade 4	C1064.3309*	3.3 mm	9 mm	2.7 mm
		C1064.3311*		11 mm	
		C1064.3313*		13 mm	
		C1064.3316*		16 mm	
		C1064.3807**	3.8 mm	7 mm	3.5 mm
		C1064.3809		9 mm	
		C1064.3811		11 mm	
		C1064.3813		13 mm	
		C1064.3816		16 mm	
		C1064.4307**	4.3 mm	7 mm	3.9 mm
		C1064.4309		9 mm	
		C1064.4311		11 mm	
		C1064.4313		13 mm	
		C1064.4316		16 mm	
		C1064.5007**	5.0 mm	7 mm	4.6 mm
		C1064.5009		9 mm	
		C1064.5011		11 mm	
		C1064.5013		13 mm	
		C1064.5016		16 mm	

Note: the implant length (L) is the distance from the apical curve to the machined shoulder surface of the implant. (Length over everything)
AØ: Apical diameter (mean value)

*** IMPORTANT NOTE**

CONELOG® Implants with a diameter of 3.3 mm. These are an alternative in cases where the alveolar ridge width is only 5–6 mm. Because of their lower mechanical strength compared with larger diameter implants, they should only be used under the following conditions:

- As single implants, they should be used only to replace mandibular incisors and/or maxillary lateral incisors.
- Edentulous mandibles can be prosthetically restored with a barsplinted restoration consisting of at least four implants Ø 3.3 mm without distal extensions.
- Implants of Ø 3.3 mm are suitable for a partially edentulous arch when combined with implants of larger diameter for splinted superstructures. However, the limited strength of the implants with Ø 3.3 mm must be taken into account.
- Avoid excessive mechanical stressing of the implants when using ball abutments in combination with Ø 3.3 mm implants.
- The healing time for Ø 3.3 mm implants is at least 12 weeks.
- Double crown constructions are not allowed on Ø 3.3 mm implants.

****IMPORTAT NOTE**

CONELOG® Implants with a length of 7 mm should only be used when there is not enough space for a longer implant. Immediate loading single tooth replacement is not recommended with these implants.

If the ratio of crown length to implant length is unfavourable the biomechanical risk factors have to be considered and appropriate measures have to be taken by the dental professional.

IMPLANT POSITION PLANNING

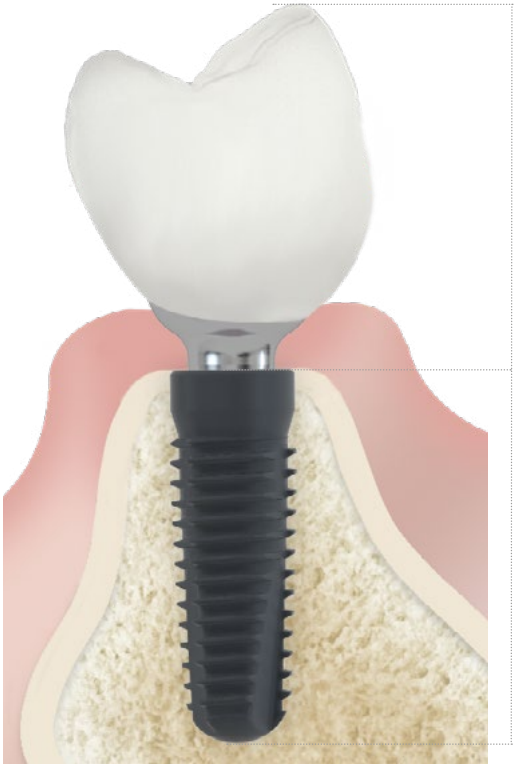
The planning of implant-prosthetic reconstruction requires a team approach and a high level of attention to detail and clinical experience of all concerned. This is equally true for the restorative dentist, the surgeon, the dental technician, and the dental office support staff such as the nurse, hygienist, and chair side assistant.

The following aspects should be taken into account during planning:

LEVERAGE RATION ON IMPLANT

The loading of the implant-bone interface is determined by the leverage ratio from the osseointegration-related resistance to the prosthetic load arm (equal to the supracrestal implant length plus crown length from the implant shoulder). If the implant length (IL) is less than the length of the crown (CL), measures must be taken to reduce loading (e.g. using prosthetic splints).

The ratio of crown length (CL) to implant length (IL) should be 0.8:1 maximum.



RESTORATIONS

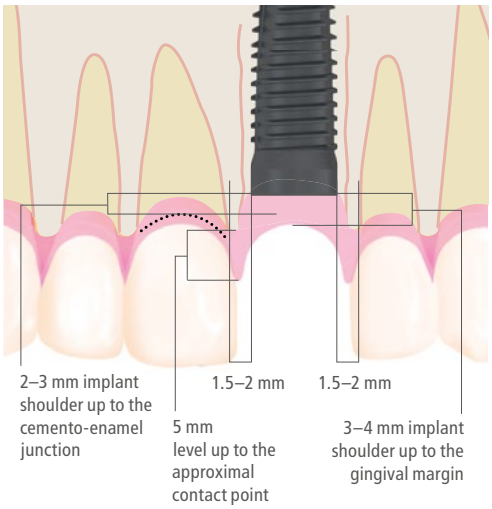
FIXED RESTORATION

Single Crowns

Single-crown treatment is a possible form of treatment under the aspect of a "Restitutio ad integrum". It contains all the beneficial elements of periodontal prosthetic rehabilitation:

- Physiologically adequate biomechanical loading prevents further atrophy of the hard- and soft tissue,
- Good preconditions for natural-looking esthetics are established,
- Oral hygiene is simple,
- Fabrication is technically straightforward,
- Readily extendable/alterable.

Vertical implant position

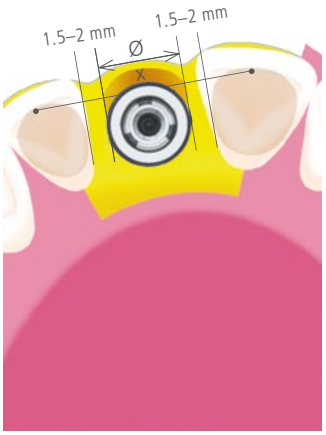


Esthetically challenging region

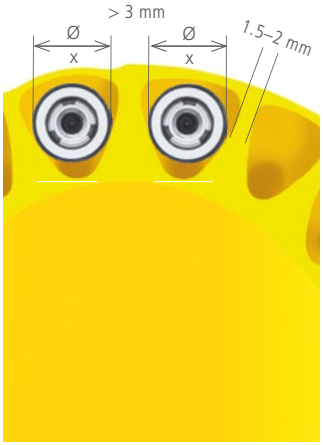
To achieve an esthetically successful estoration, a number of important elements are required: a harmonious gingiva line, optimal implant positioning as well as vertical/orofacial and mesio-distal dimensions, a physiological crown shape, and the presence of interdental papillae. The indications for the hard-tissue configurations to be preserved and for soft-tissue management must be observed during planning.

Implant diameters and lengths must be sized properly to leave adequate bone (at least 1 mm) around the implant. Maintain a minimum distance of 1.5 mm to an adjacent natural tooth and 3 mm to an adjacent implant.

Structure-preserving or structure-sparing procedures must be used during flap creation and implant placement. In addition, oral hygiene requirements must be kept in mind during planning.



Mesio-distal implant position at bone level



Distances at bone level

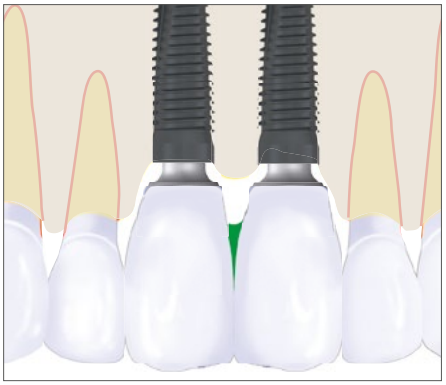
IMPLANT POSITION PLANNING

Splinted crowns

In the event of unfavorable leverage relations around the implant, a choice must be made between a longer implant or, if this is anatomically impossible, splinting adjacent crowns. If splinting is required by reason of stability, then hygienic requirements must also be taken into account.

Development of a uniform insertion direction for the crown block must be part of the abutment preparation. The implant-to-abutment connection should not be altered.

Single-crown restoration



Crown-splinting

Implant-supported bridges

CONELOG® SCREW-LINE implants are as well dedicated for Implant-supported bridges. Implant distribution should be structured in such a way that spanned segments are kept small.

Development of a uniform insertion direction for the crown block should be part of the abutment preparation. The implant-to-abutment connection should not be altered.

Cement-retained bridge

REMOVABLE RESTORATIONS

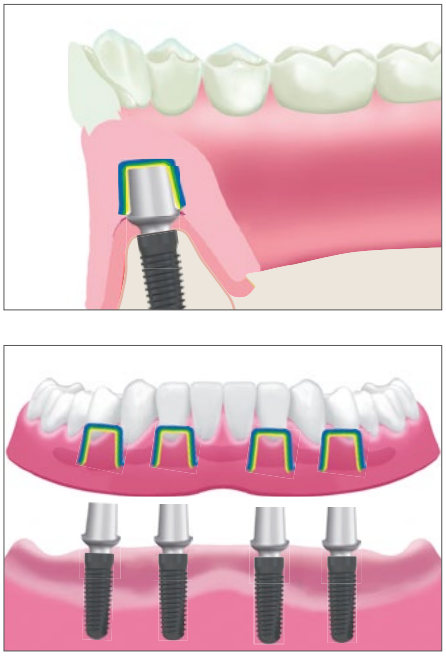
A hybrid denture may be implant-retained and mucosa-supported, or simply implant-supported. The tension-free seat of a secondary (telescopic crown) or primary (bar-) splinted structure on implants is called "passive fit".

In the case of telescopic crowns, this is obtained through intraoral bonding of the secondary crowns (preferably galvano crowns) onto the tertiary framework. In the case of bar structures, it involves the use of bar sleeves for a "passive fit" and intraoral bonding of the titanium bonding base. The idea is to create a fit that is free from stress or to minimize stress on the implants.

When planning a removable denture, the implants should be placed so that, if necessary, extending to a fixed restoration is possible.

Double crowns

The production precision of the CONELOG® Connection is particularly necessary with a telescopic crown restoration since the abutments can be fastened always in the same, exactly defined position on the implant. A precision fit for the removable superstructure is made simple and consistent in every case.



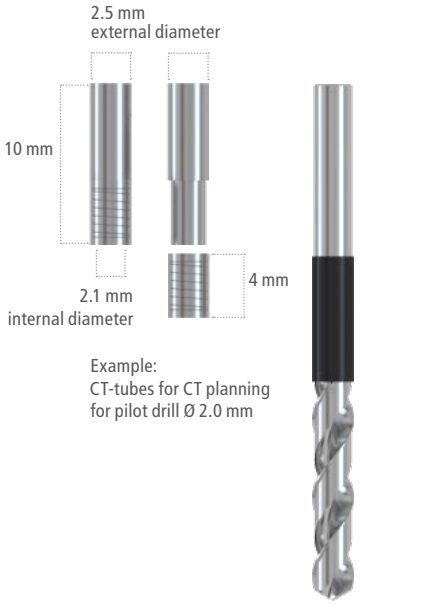
Tension-free seat through intraoral bonding of the secondary crowns onto the tertiary framework.

IMPLANT POSITION PLANNING

X-RAY/DRILLING TEMPLATE WITH CT-TUBES FOR CT PLANNING

CT-tubes for the CT planning are integrated at the suitable implant positions in the planning templates created from the wax-up/set-up and are used as reference positions in the X-ray image. The CT-tubes have two parts, and are made of titanium as this material does not cause any scattering of rays in the CT/DVT. The lower section is polymerized into the template. The upper section is pluggable. The entire CT-tube is used for the radiological diagnostics; the upper section can be removed for surgery. Depending on the software used for the evaluation, titanium CT-tubes or other radio-opaque positioning elements (e.g. steel, barium sulfate) are integrated for the CT/DVT-supported planning.

Placing the CT-tubes directly on the mucosa makes it possible to determine their density in the CT/DVT. The documentation included with these systems contains more information on this topic.

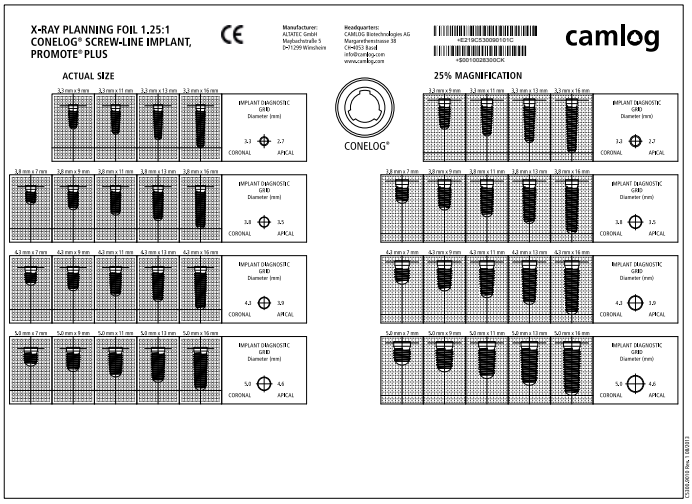


Example:
CT-tubes for CT planning
for pilot drill Ø 2.0 mm

Drill for placement
of CT-tubes

ORTHOPANTOMOGRAM

X-Ray planning foils are available in 1.25:1 and 1.4:1 scales for all implant types to check the dimensions on the orthopantomogram. The foil magnifications match the delay factors for most orthopantomographs. However, they should be considered only as approximations in implant dimensioning. The self-adhesive implant planning films (X-Ray Transfer pictures, scale 1.25:1) for the specific implant type can be attached to the proposed implant positions on the orthopantomograph film.

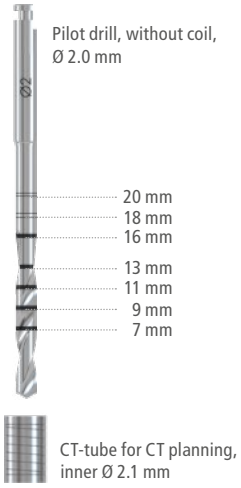


FABRICATING THE DRILLING TEMPLATE WITH CT-TUBES FOR CT PLANNING

If a planning or x-ray template with tubes for CT planning was created, it can be converted into a drilling template after adjusting the tube positions based on the implant planning. If required, the template is reduced to an outline after preparation of the flap to ensure it stays in position during surgery (dental or gingival base outside the surgical area).

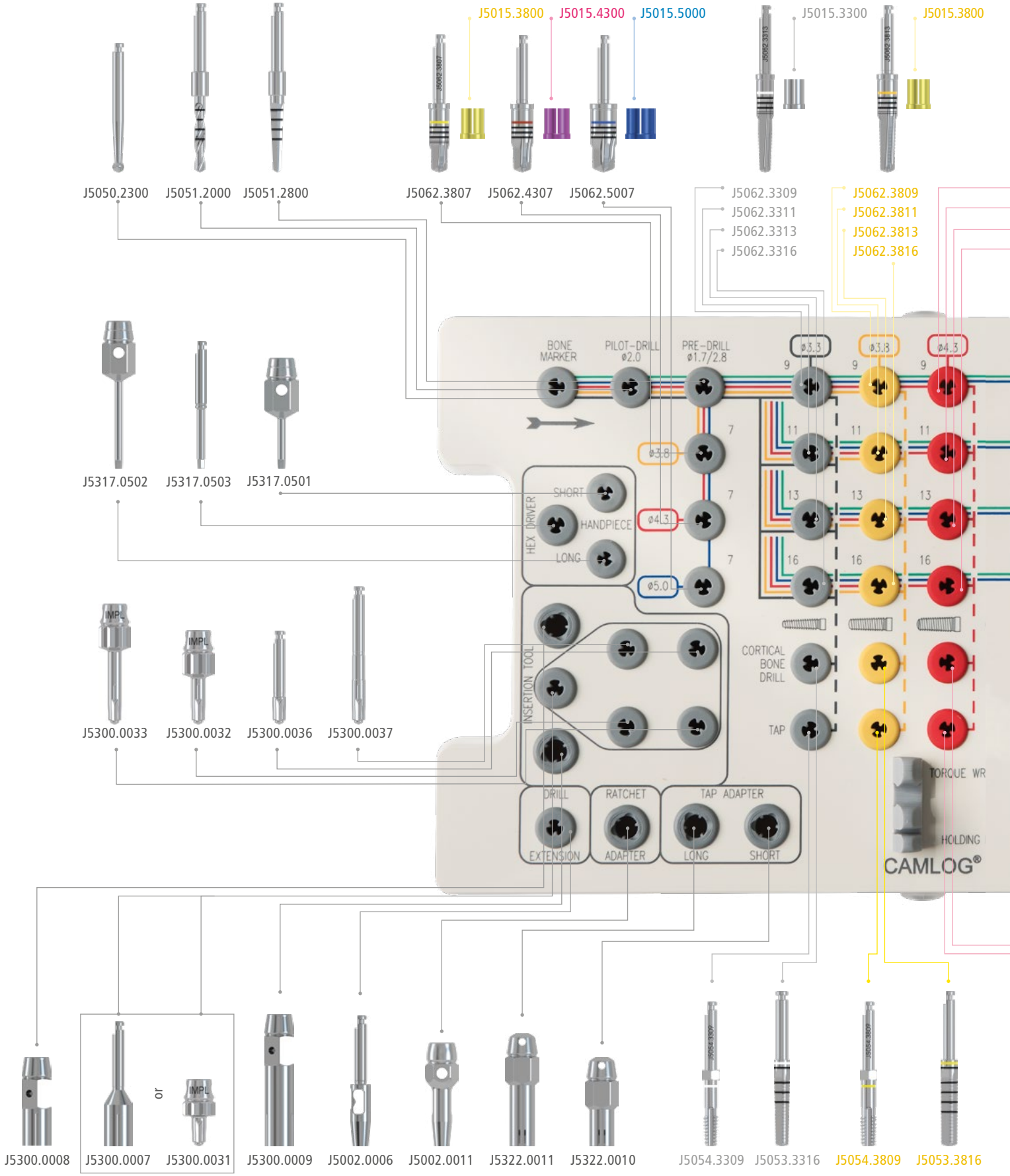
PILOT DRILLING WITH CT-TUBES FOR CT PLANNING

The pilot drill without coil has a 2.0 mm diameter. It can also be used with the CT-tube for drill Ø 2.0 mm which has a 2.1 mm inner diameter. There are ring markings, whose lower edges define the drill depth of 7, 9, 11, 13, 16, 18 and 20 mm. The thickness of each ring mark is 0.4 mm. The 18 and 20 mm markings are not filled in and are used for orientation when using the 4 mm long CT-tube with 2.1 mm internal diameter.



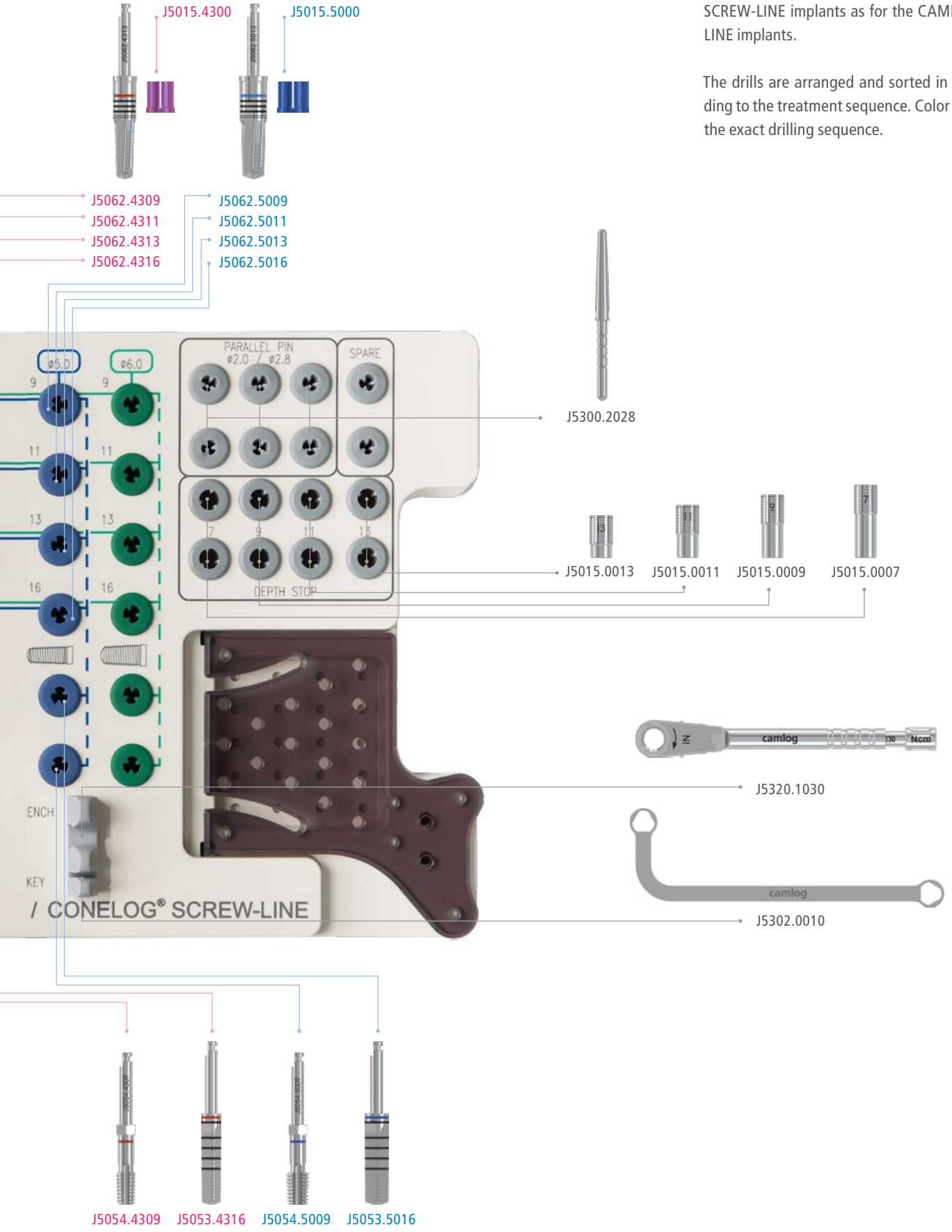
IMPORTANT NOTE
Only use CT-tubes for drill Ø 2.0 mm with 2.1 mm internal diameter in conjunction with the pilot drill.

SURGERY-SET FOR **CONELOG® SCREW-LINE IMPLANTS**



The same surgery set is used for the CONELOG® SCREW-LINE implants as for the CAMLOG® SCREW-LINE implants.

The drills are arranged and sorted in the set according to the treatment sequence. Color lines indicate the exact drilling sequence.



SURGICAL PROCEDURE

DRILLING SEQUENCES FOR IMPLANT BED PREPARATION

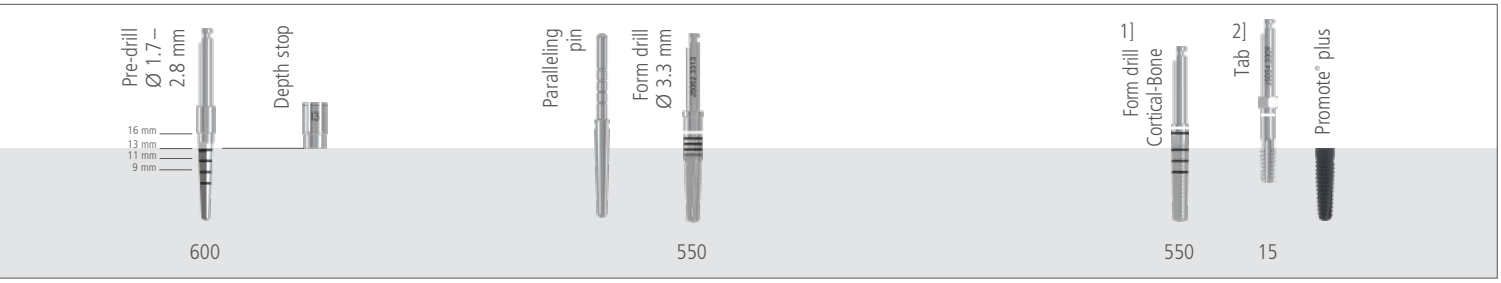
Overview of the implant bed preparation using the example of a CONELOG® SCREW-LINE implant, Promote® plus, length 13 mm.

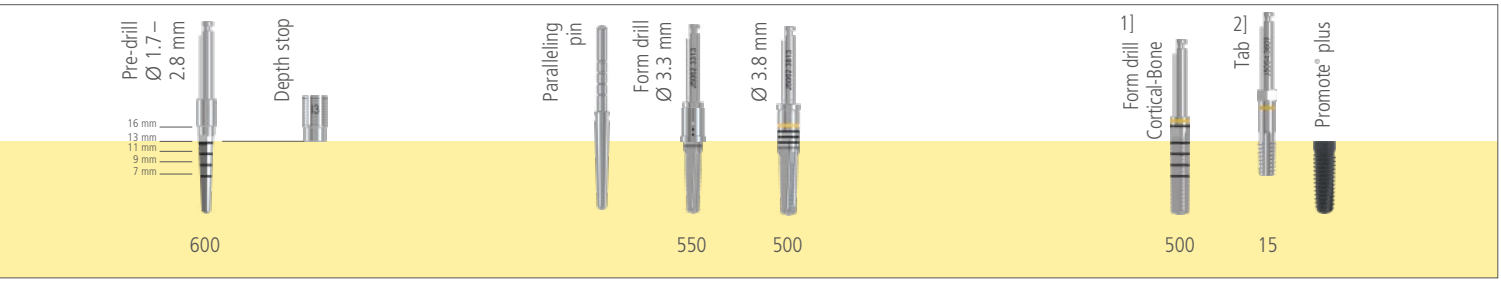
- Punch-mark the desired implant position with the Ø 2.3 mm round bur
- Deep drill along the implant axial line with the Ø 2.0 mm pilot drill
- Checking the drilling depth with the paralleling pin Ø 1.7–2.8/2.0 mm with depth marks
- Pre-drill with the Ø 1.7–2.8 mm pre-drill
- Checking the axis of the drilling hole with the paralleling pin Ø 1.7–2.8/2.0 mm with depth marks
- Shape with the form drill
- Probe the implant bed hole for its bony end
- Cortical bone drilling [1]
- Tap SCREW-LINE [2]

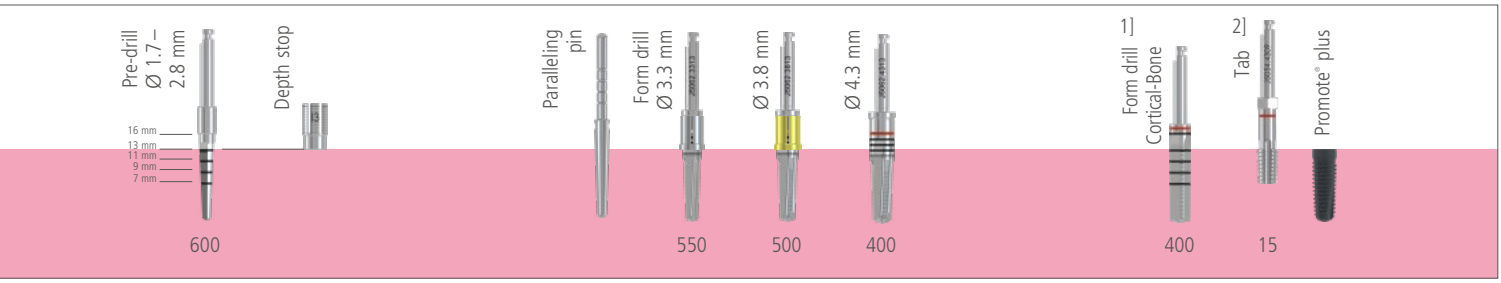
[1] Form drills cortical bone (CB) allow reduced-torque implant insertion in cortical bone for bone quality 1[A].

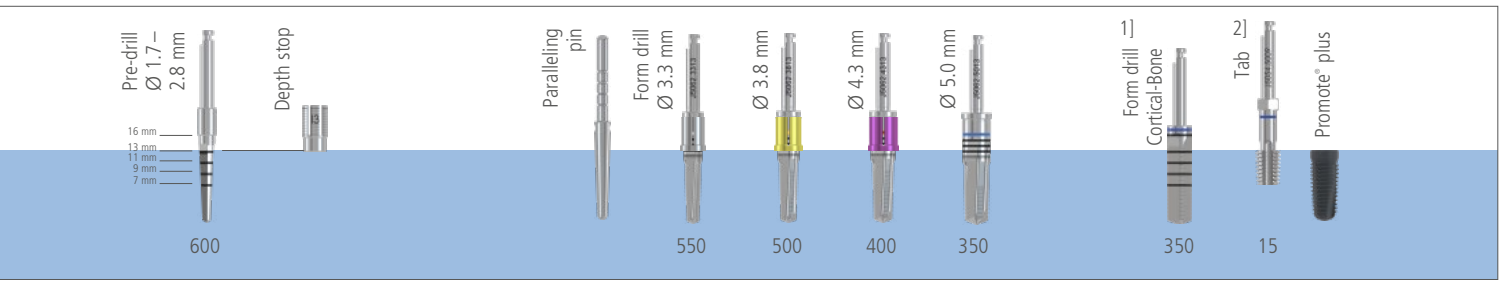
[2] We recommend using the tap for bone qualities 1[A] and 2[A].

[A] See section «Further documentation» on page 42


Pre-drill Ø 1.7 – 2.8 mm
Depth stop
16 mm
13 mm
11 mm
9 mm
600
Paralleling pin
Form drill Ø 3.3 mm
550
1] Form drill Cortical-Bone
550
2] Tab
Promote® plus
15


Pre-drill Ø 1.7 – 2.8 mm
Depth stop
16 mm
13 mm
11 mm
9 mm
7 mm
600
Paralleling pin
Form drill Ø 3.3 mm
550
Ø 3.8 mm
500
1] Form drill Cortical-Bone
500
2] Tab
Promote® plus
15


Pre-drill Ø 1.7 – 2.8 mm
Depth stop
16 mm
13 mm
11 mm
9 mm
7 mm
600
Paralleling pin
Form drill Ø 3.3 mm
550
Ø 3.8 mm
500
Ø 4.3 mm
400
1] Form drill Cortical-Bone
400
2] Tab
Promote® plus
15


Pre-drill Ø 1.7 – 2.8 mm
Depth stop
16 mm
13 mm
11 mm
9 mm
7 mm
600
Paralleling pin
Form drill Ø 3.3 mm
550
Ø 3.8 mm
500
Ø 4.3 mm
400
Ø 5.0 mm
350
1] Form drill Cortical-Bone
350
2] Tab
Promote® plus
15

SURGICAL PROCEDURE

DRILL SPEEDS

The drill speed depends on the diameter. The recommended speeds are 300–800 rpm depending on the drill type (handpiece angle reduction ratio 16:1–20:1).

The recommended maximum drilling speed for thread tapping is 15 rpm (handpiece angle reduction ratio 70:1–100:1). The tap adapter for the torque wrench also allows manual tapping.

The lower edge of the depth mark is the reference for the preparation depth.

COOLING OF DRILLS

The cooling occur through external irrigation on the angled hand piece with sterile saline solution (pre-chilled to 5°C/41°F).

DRILL LIFE

Drill longevity depends on bone quality and drilling technique. The pilot drills, pre-drills, and form drills are good for 10–20 times. If excessive force has to be applied because of a dull drill, then change the drill immediately to prevent bone overheating.

Article	⌀	drilling speed (rpm)
Round bur	–	800
Pilot drill with/without depth stop	2.0 mm	800
Pre-drill	1.7–2.8 mm	600
Form drill with/without depth stop	3.3 mm	550
	3.8 mm	500
	4.3 mm	400
	5.0 mm	350
Form drill cortical bone	3.3 mm	550
	3.8 mm	500
	4.3 mm	400
	5.0 mm	350
Tap	3.3 mm	max. 15
	3.8 mm	
	4.3 mm	
	5.0 mm	

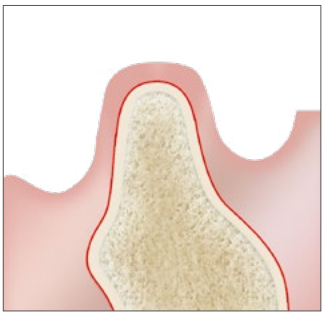
CAUTION
The maximum apical extension length of the drill is 0.4 mm.

INCISION LINE

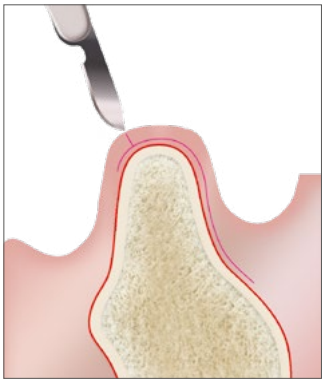
The indication used as an example illustrates the insertion of a Ø 4.3 mm, L 13 mm CONELOG® SCREW-LINE implant, Promote® plus in the lateral mandible. A split flap preparation is selected for the incision line. We recommend this procedure in cases where there is sufficient bone width and no bone augmentation has to be performed. We recommend a split flap preparation only where the thickness of the mucosa is adequate. Otherwise a full mucoperiosteal flap preparation should be performed.

After performing a somewhat lingual, paracrestal mucosal incision, a predominantly epiperiosteal flap is created on the vestibular aspect. The muscle is divided and the preparation is continued for approximately another 5 mm. The mucosa is separated 2–3 mm lingually to simplify suturing later.

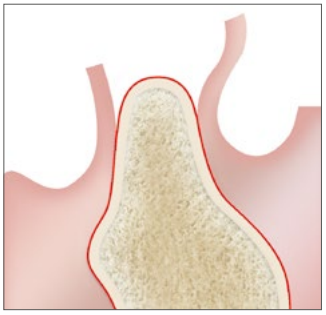
After marking the desired implant position (if necessary, with a drilling template), the periosteum is removed circularly only in the area around this site (with gingival punch or scalpel). Depending on the selected implant diameter and implant length, the implant bed is then shaped using the instruments designed for the CONELOG® SCREW-LINE implant.



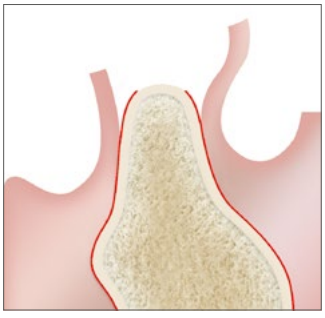
Initial situation



Mucosal incision



Epiperiosteal split-flap preparation



Removal of the periosteum at the implantation site

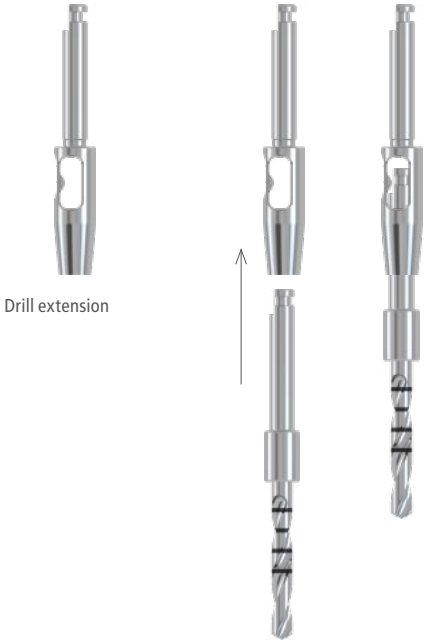
SURGICAL PROCEDURE

IMPLANT BED PREPARATION

GENERAL

DRILL EXTENSION

A drill extension is available to prevent resting of the angled handpiece on the remaining dentition during preparation of the implant bed adjacent to elongated teeth.

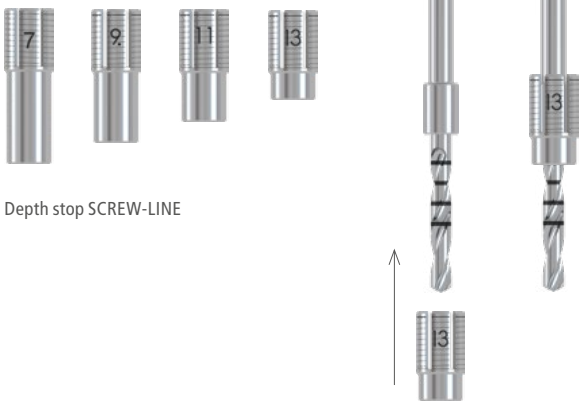


Drill extension

DEPTH STOP SCREW-LINE

The pilot drill SCREW-LINE and pre-drill have a maximum working length of 16 mm. The drilling depths of 7, 9, 11, and 13 mm are lasermarked.

Insertable depth stops limit the drilling depths to the selected depths of 7, 9, 11, or 13 mm.



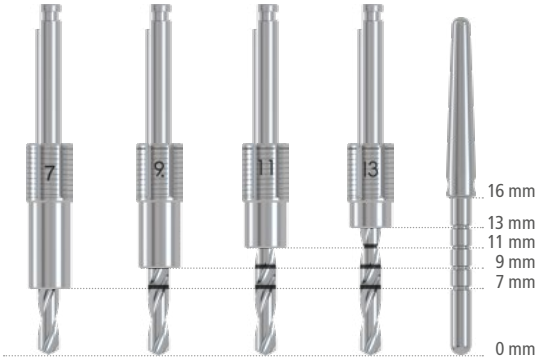
Depth stop SCREW-LINE

NOTE

The depth stops SCREW-LINE are only compatible with the SCREW LINE pilot and pre-drill.

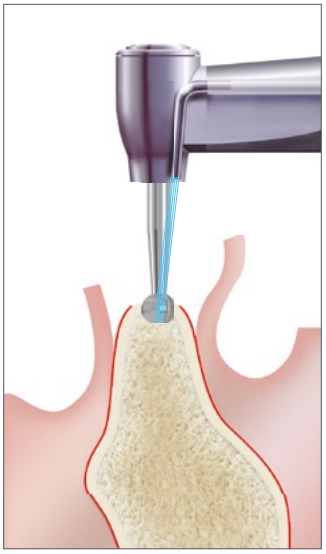
PARALLELING PINS SCREW-LINE
WITH DEPTH MARKINGS
After each pilot and pre-drilling, the depth and axial directions are checked using the paralleling pins with depth markings.

The depth marks and diameter graduations on the paralleling pins allow inspection of the drilling depth and axis at each stage of pilot and pre-drilling.



PUNCH-MARKING THE CORTICAL BONE
The round bur Ø 2.3 mm is used for punch-marking the cortical bone, which simplifies the use of the drills to follow. The bur is inserted up to the bur equator.

Recommended drilling speed: 800 rpm


Punch-marking the cortical bone

SURGICAL PROCEDURE

PILOT DRILLING AND DEPTH CONTROL

The pilot drill determines the depth and axis of the implant site. The depth marks on the drill correspond to the implant lengths 7, 9, 11 and 13 mm. The maximum drilling depth is 16 mm. For safety reasons, a depth stop matching the proposed implant length should be used.

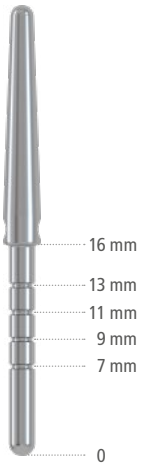
Recommended drilling speed: 800 rpm

If no drilling template is used, the depth stops may be placed to the pilot drill after the markings have been drilled.

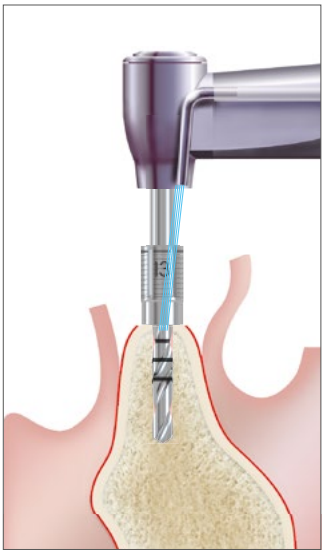
Once drilling is complete, the depth and axis of the implant bed is checked using the paralleling pins. If several implants are being placed, a paralleling pin is inserted into the first hole in order to align the other implant axes.

The pilot drill is aligned parallel to the paralleling pin and visually checked from two planes (sagittal and transversal).

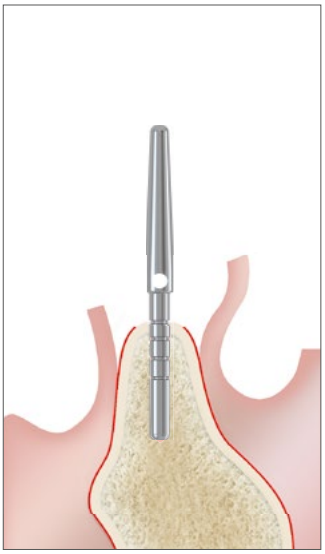
Pilot drill, SCREW-LINE
Ø 2.0 mm, 800 rpm



Paralleling pin
SCREW-LINE



Pilot drilling



Depth control following pilot drilling

PRE-DRILLING AND CONTROL AXIS ALIGNMENT

A tapered pre-drill SCREW-LINE with a coronal diameter of 2.8 mm and apical diameter of 1.7 mm is available for the SCREW-LINE configuration.

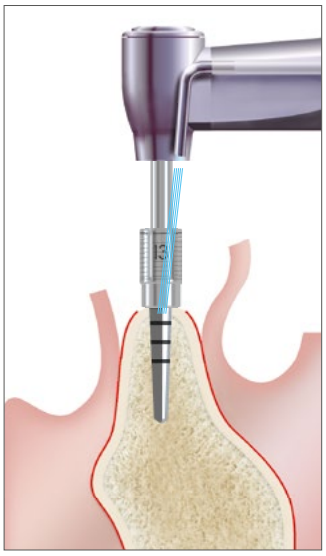
Recommended drilling speed: 600 rpm

The depth marks on the drill match the implant lengths 7, 9, 11 and 13 mm. The maximum drilling depth is 16 mm. For safety reasons, a depth stop matching the proposed implant length should be used. Further drilling is performed with the form drills.

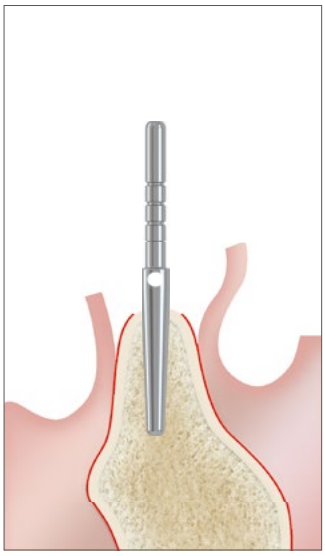
The axis alignment is controlled with the paralleling pin.

Pre-drill SCREW-LINE:
Ø 1.7–2.8 mm, 600 rpm

Paralleling pin
SCREW-LINE



Pre-drilling



Control of axis alignment

SURGICAL PROCEDURE

FORM DRILLING

Diameter- and length-specific form drills are available for each implant size. The form drills are color-coded and laser-marked.

The form drills included in the surgery sets are supplied with a color-coded removable depth stop. This must only be used with form drills SCREW-LINE.

Depending on the specified drilling depth (implant length), the hole diameter is expanded progressively with the series of form drills until the intended implant diameter is achieved. The small graduations in diameter achieve a gentle preparation of the bone.

Drill sequence in ascending order to the drill hole expansion up to the defined implant diameter.

Recommended drilling speeds:
Ø 3.3 mm, 550 rpm
Ø 3.8 mm, 500 rpm
Ø 4.3 mm, 400 rpm
Ø 5.0 mm, 350 rpm

PERFORMING FORM DRILLING

Performing form drilling using CONELOG® SCREW-LINE as an example implant size Ø 4.3 mm, L 13 mm:

1. Form drill Ø 3.3 mm, L 13 mm with depth stop,
2. Form drill Ø 3.8 mm, L 13 mm with depth stop,
3. Form drill Ø 4.3 mm, L 13 mm **without** depth stop (final form drilling).

FINAL FORM DRILLING

In order to place the CONELOG® SCREW-LINE implant Promote® plus epicrestally, final form drilling is performed without depth stop and to the upper edge of the first filled depth mark.

The lower edge of the first achieved depth mark corresponds to the drill length with the depth stop in place.

If final form drilling is performed with the depth stop, the implant lies 0.4 mm supracrestal.

The reusable depth stops can be used with replacement form drills (delivered without depth stops).

If the circular bone level is uneven, the depth stop rests on the highest point of the crest and thereby limits the insertion depth.

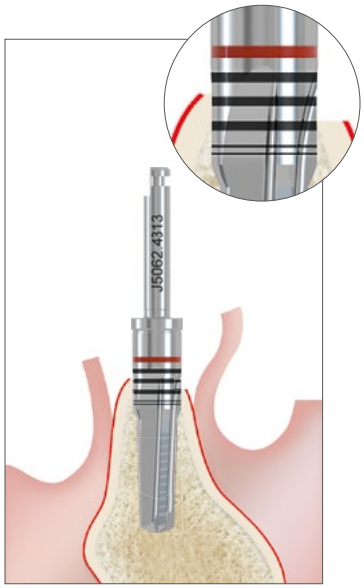
If a deeper insertion is required for esthetic or functional reasons, the depth stop can be removed and form drilling can be continued in steps of 1 mm (watch for anatomic structures). In this case, preparation is performed using the laser marks (black). The marks are arranged at intervals of 1.0 mm and are 0.4 mm in width.

NOTE

The two lower thin black markings are solely for the purposes of implant bed preparation for CAMLOG® SCREW-LINE Promote® Implants (insertion depth up to 1.4 mm supracrestal) and are of no relevance for the insertion depth of the CONELOG® SCREW-LINE Promote® plus implants.

CAUTION

Because of the cutting angle on the drill tip of the form drill, the length extends 0.4 mm beyond the apical tip of the implant.



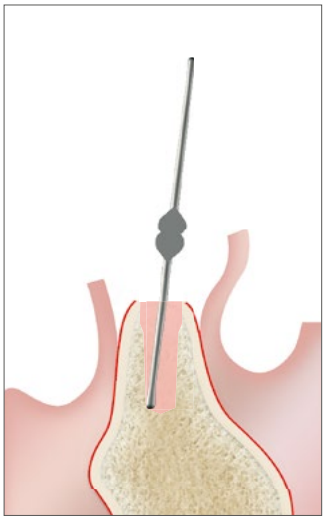
Form drilling without depth stop

Example: insertion depth for an irregular bone profile

SURGICAL PROCEDURE

CHECKING THE IMPLANT BED

Probing the implant bed hole for fenestration is recommended. Results of probing tests for the absence of soft tissue in the implant bed hole must be documented in the patient file.



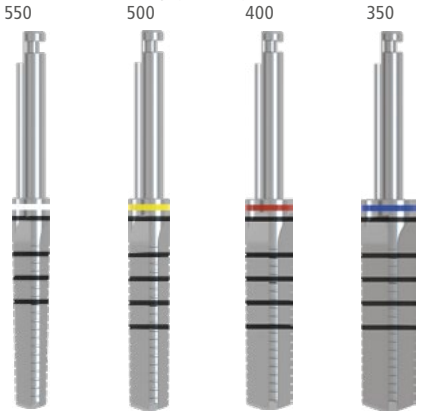
Checking the implant bed

CORTICAL BONE DRILLING

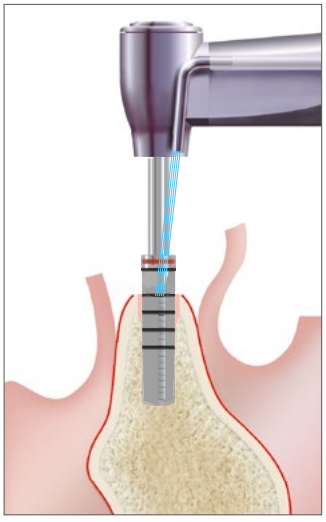
If the bone quality is class 1[A] the cortical bone drill enables reduced-torque implant insertion through controlled circular expansion of the implant bed. The flattened drill tip serves as the depth stop. A color-coded laser-marked cortical bone drill is available for each implant diameter.

[A] See section «Further documentation» on page 42

Recommended drilling speed in rpm:



Form drill SCREW-LINE cortical bone



Cortical bone drilling Ø 4.3 mm for implant length 13 mm

TAPPING

All CONELOG® SCREW-LINE implants come with a self-tapping thread. Use of a tap is recommended for bone quality categories 1[A] and 2[A].

The maximum speed must not exceed 15 rpm when performing powerassisted tapping. We recommend manual tapping.

[A] See section «Further documentation» on page 42

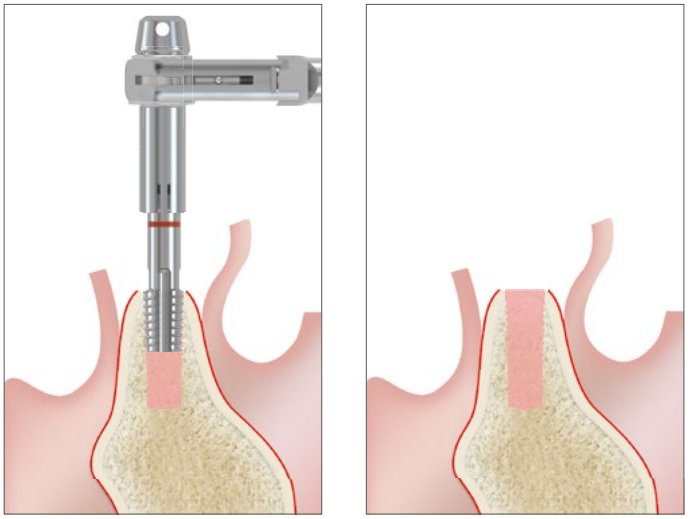
Ø 3.3 mm Ø 3.8 mm Ø 4.3 mm Ø 5.0 mm

Tap SCREW-LINE, with hexagon, max. 15 rpm

Manual tapping is performed with tap adapters for the tap SCREW- LINE and the locked torque wrench. Make sure to pay attention to the axial direction of the implant bed when inserting and removing the tap. The limit for insertion of the tap is the upper edge of the cutting blade.

Locked torque wrench

Tap adapter, short and long, for tap SCREW-LINE



Tapping in the upper region of the implant bed

SURGICAL PROCEDURE

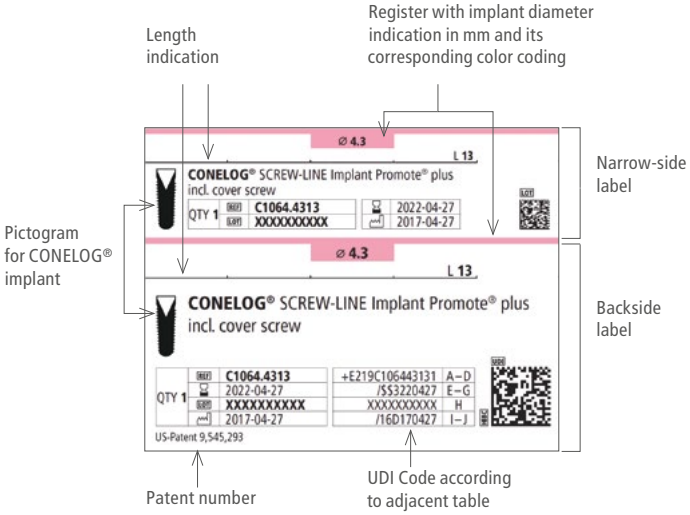
IMPLANTATION

GENERAL INFORMATION ON PACKAGING AND IMPLANT HANDLING

A) Exterior packaging (cardboard) with label:

The label on the exterior packaging contains relevant system information and is applied on three sides. This means that the label is clearly readable regardless of stacking of the packages.

Example product label on the exterior packaging:



UDI CODE

A B C D E F G H I J K

+E219C106443131 / $$3220427XXXXXXXXXX / 16D170427+

Sections of the primary code (UDI-DI)	Code	Explanation
A	+	Protected HIBC-ID (1 digit)
B	E219	Manufacturer's code (Altatec)
C	C10644313	Article number (max. 13 digits)
D	1	Quantity index (number of packaging units, 1 digit)
Sections of the secondary code (UDI-DI)	**Code**	**Explanation**
E	/	Separator primary/secondary
F	$$3	Identifier for expiry date
G	220427	Expiry date (6 digits) 27.04.2022
H	XXXXXXXXXX	Manufacturer's batch (10 digits)
I	/16D	Identifier for date of manufacture
J	170427	Date of manufacture (6 digits) 27.04.2017
K	+	Variable test mark

Further information on the exterior packaging:
The bottom side of the CONELOG® Implant packaging refers to the instruction manual in electronic form: https://ifu.camlog.com
In addition, it includes a QR code which links directly to the corresponding webpage.

The left side view of the CONELOG® Implant packaging contains the CE label, the corresponding ISO warnings as well as the address of the legal manufacturer.

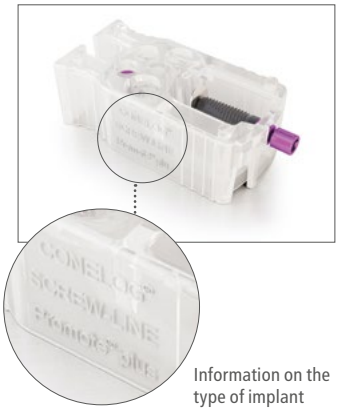
B) Transparent blister with Tyvek® foil and primary label:

The blister with the Tyvek® foil represents the primary packaging, the contents of which are sterile - implant holder with implant and cover crew. Furthermore, the blister includes four self-adhesive patient labels. These can, for example, be used for the patient records, the implant pass,
and the letter of referral.

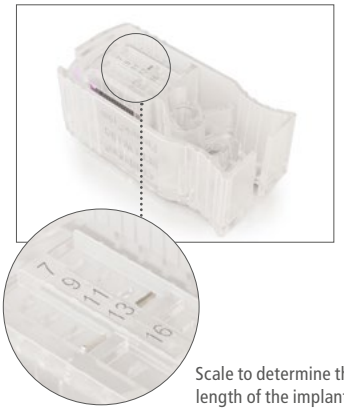
C) Implant holder with implant and cover screw:

The implant retention system securely fixates the implant and the cover screw in the packaging. Both the implant and the cover screw can be released and removed via a simple click mechanism with the implant holder. In addition, the implant can be clearly identified in the implant holder after removal from the primary packaging:

a) One side of the implant holder contains information which identifies the type of implant.
b) The implant diameter can be identified via the color-coding of the insertion post and the cover screw.
c) A scale on the bottom side of the implant holder allows reading the length of the implant: the position of the titanium retaining plate on the scale gives the implant length 7, 9, 11, 13 and 16 mm.



Information on the type of implant



Scale to determine the length of the implant

D) Mounted insertion posts:

The implants are secured in the implant holder with a color-coded insertion post corresponding to the diameter. The insertion posts **are mounted** in the implant and can be pulled off easily from the implant after implantation without requiring further tools.

SURGICAL PROCEDURE

E) Insertion tools:

The implant can be picked up directly with the insertion tool via the mounted insertion post and removed from the implant holder. One of the five illustrated insertion tools can be used for this purpose.

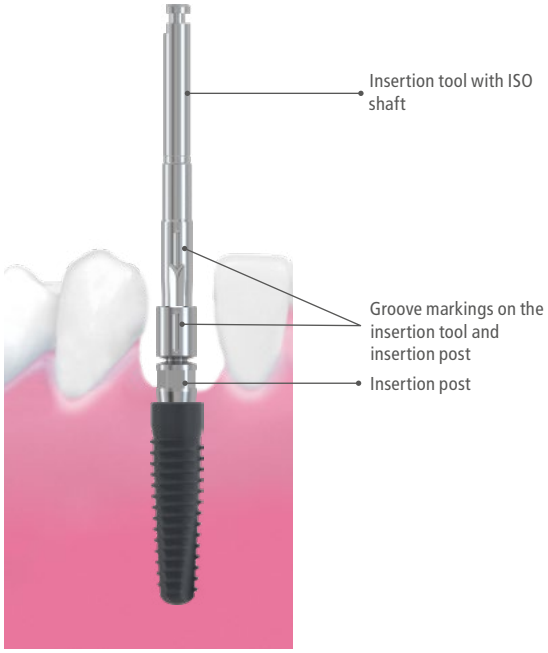
The insertion posts and insertion tools are designed such, that they are also suitable for narrow gaps: none of the components required for inserting the implant have a diameter greater than that of the implant itself.

Furthermore, the long insertion tools also allow the placement of implants in narrow and deep anatomical situations.

The three manual insertion tools for use with the wrench (long, short, extra short).

The two insertion tools with ISO shaft (short and long) for use with the angled hand piece.

The figure illustrates the use of a handpiece insertion tool (with ISO shaft) with insertion post for the CONELOG® Implant Ø 3.3 mm under tight interdental conditions.



OPENING OF THE PACKAGING AND TRANSFER OF THE IMPLANT HOLDER TO THE STERILE ZONE

The exterior packaging is opened with the perforated packaging tab.

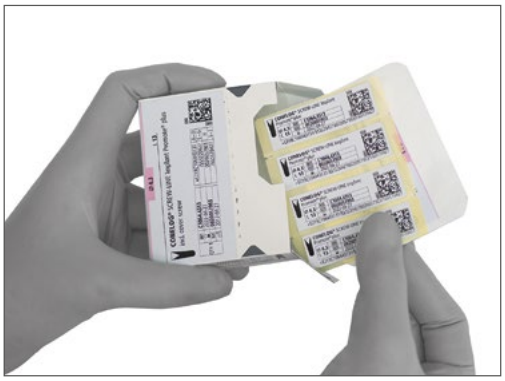
NOTE
If the perforated packaging tab is partially or fully open, the packaging is deemed damaged and the implant may no longer be used.

The four self-adhesive patient labels included with the blister, are intended for documentation purposes for example:

- Implant pass
- Letter of referral
- Patient records

The blister with the Tyvek® foil forms the sterile barrier. As long as the blister as well as the Tyvek® foil are undamaged, sterility of the content is assured.

Opening of the blister:
At the two lower corners, the blister is fitted with tabs which allow easy separation of the Tyvek® foil from the blister. If the blister or the Tyvek® foil are damaged, the content is no longer sterile and may no longer be used.



SURGICAL PROCEDURE

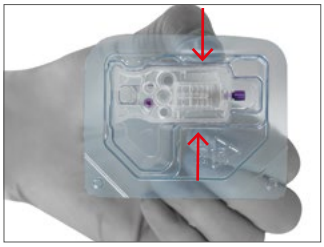
There are two ways to transfer the implant holder to the sterile zone **(A and B)**:

A: DISCARDING THE IMPLANT HOLDER ONTO THE STERILE SHELF

The opened blister is gently compressed between two fingers in the marked position.

The blister is designed such, that the implant holder is retained in the blister as long as finger pressure is maintained. This allows controlled placement over the sterile shelf.

By releasing finger pressure, the holder can be discarded onto the sterile shelf in a controlled manner.

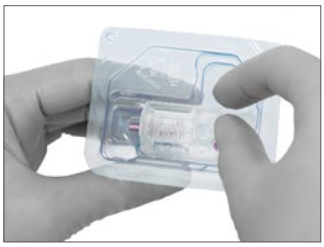


B: PASSING THE IMPLANT HOLDER TO THE IMPLANTOLOGIST

The opened blister is passed to the implantologist.

The implantologist takes the implant holder with two fingers at the intended place.

Then the implant holder can be used in the sterile zone.



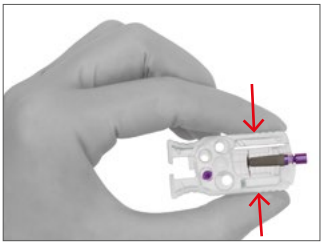
PICKING UP THE INSERTION POST WITH THE MANUAL INSERTION TOOL

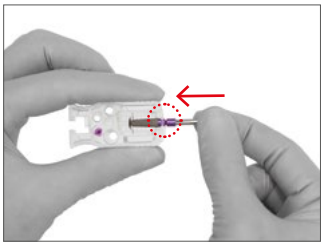
The front part of the implant holder is held between two fingers and the prior sterilized insertion tool is mounted into the insertion post **by appling pressure.** This ensures a secure seat of the insertion tool in the insertion post.

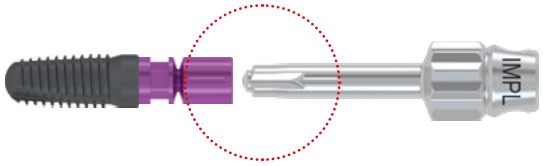
Contamination from non-sterile instruments must be avoid.

NOTE

It should be noted that **picking up the insertion post with the insertion tool is done by applying pressure**. This ensures secure retention of the insertion post in the insertion tool.







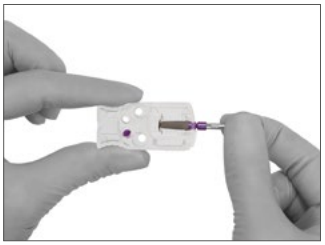
Observe the correct alignment during the pick-up process!

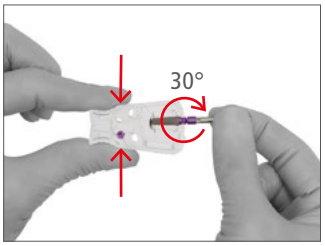
The three groove markings on the head of the insertion post serve easy picking up of the post with the insertion tool, which is also fitted with the corresponding three markings.

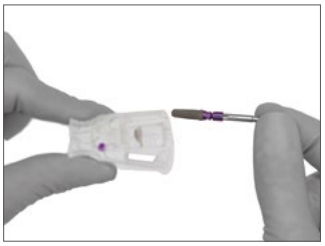
Furthermore, the three groove markings on the insertion tool and on the insertion post relate to the groove position of the implant-abutment connection.

The further steps for removing the implant are as follows:

- Hold the implant holder at the rear section (see arrows in illustration) and press together to release the lock on the implant holder and thus release the implant;
- Loosen the insertion post with a slight twist (approx. 30° clockwise with the insertion tool);
- Lift out insertion post **upwards in a straight line** (do not bend).







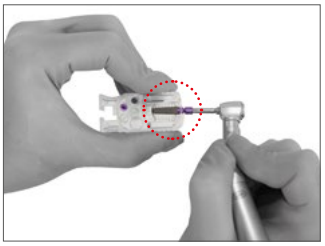
SURGICAL PROCEDURE

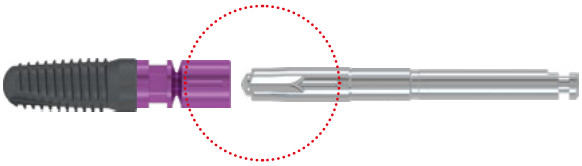
PICKING UP THE INSERTION POST WITH THE ANGLED HAND PIECE

Optionally, the insertion post can also be picked up directly with the ISO shaft handpiece insertion tool on an angled hand piece. The front part of the implant holder is held and then the insertion post is picked up with the handpiece insertion tool **by appling pressure.**

During the pick-up process, observe the correct alignment of the three groove markings on the head of the insertion post and the insertion tool.

Contamination from non-sterile instruments must be avoid.

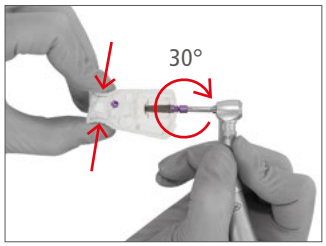


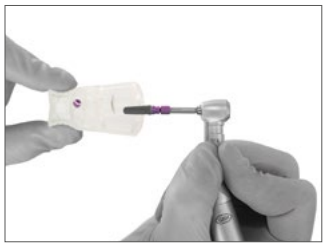


Observe the correct alignment during the pick-up process!

NOTE

It should be noted that **picking up the insertion post with the insertion tool is done by applying pressure.** This ensures secure retention of the insertion post in the insertion tool.





The further steps for removing the implant are as follows:

- Hold the implant holder at the rear section (see arrows in illustration) and press together to release the lock on the implant holder and thus release the implant;
- Remove the insertion post from the holder with a slight twist (approx. 30° clockwise with the insertion tool);
- Lift out the insertion post by pulling the angled hand piece **upwards in a straight line** (do not bend).

IMPLANT INSERTION AND POSITIONING

Using the insertion tool, the implant is inserted into the implant bed and carefully screwed in clockwise either manually or with the angled hand piece (maximum speed may not exceed 15 rpm). Pay attention to the axial alignment of the implant bed.

In the case of manual insertion, once the implant has been inserted into the implant bed, the implant can be screwed into its final position with the wrench.

If the thread was tapped in advance, the positions of the threaded ends in the cortical bone and on the implant must match.

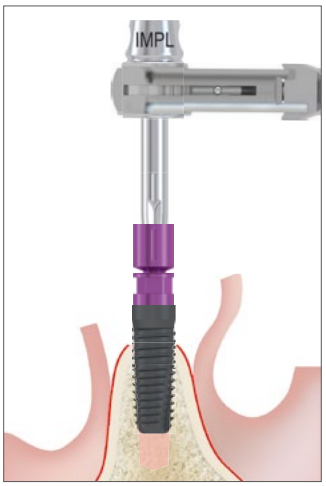
It is recommended to first rotate the insertion tool with the implant carefully to the left manually, until the thread socket can be felt. Then the implant is screwed in clockwisemanually with the insertion tool.

When reaching the planned insertion depth (see section on «Form drilling»), one of the three grooves should face in a vestibular direction.

If it was decided to set preparation depths for the implants individually by removing the depth stop during form drilling, this must be kept in mind when inserting the implant. It is possible to individually position implants vertically to match the drilling depth.

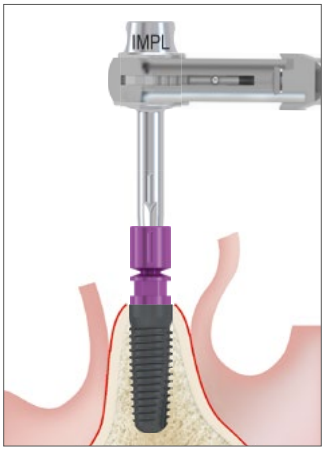
Insertion of implant with a manual insertion tool

Insertion of implant with a machine insertion tool



Screw insertion of implant with manual insertion tool and wrench (max. 15 rpm)

Screw insertion of implant with a machine insertion tool and angled hand piece (max. 15 rpm)



Manually screwed in implant

Machine screwed in implant

SURGICAL PROCEDURE

The following is to be observed during implantation:

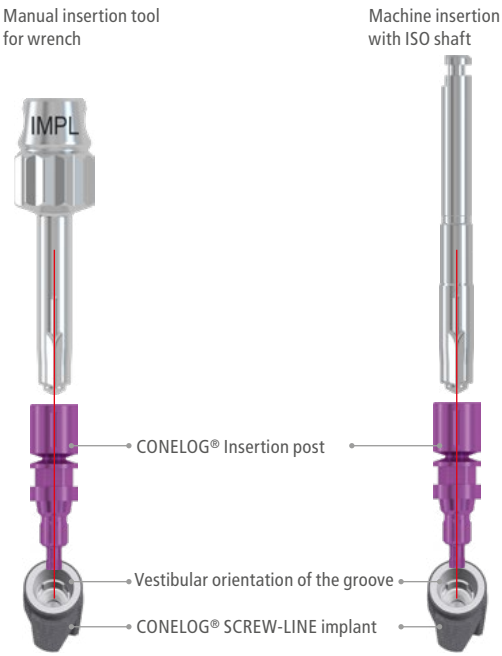
Groove markings are applied to the insertion tool and the insertion post which correspond to the three grooves of the implant-abutment connection. These permit a check of the groove positions during the insertion and their orientation as required for the prosthesis.

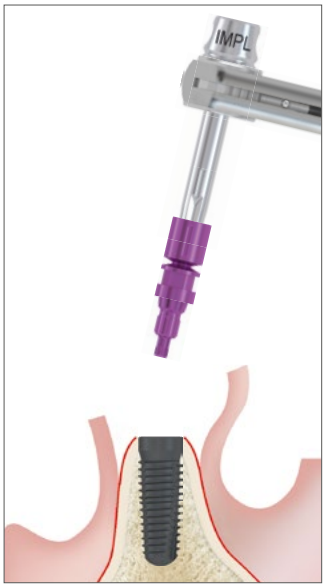
If the dental technician has not indicated the groove position, a vestibular orientation is advantageous in most cases since the angle of angulated abutments originates at a groove.

NOTE
Keep in mind during positioning of the grooves that turning to the next groove position (120°) will cause the screw implant to be inserted about 0.2 mm deeper.

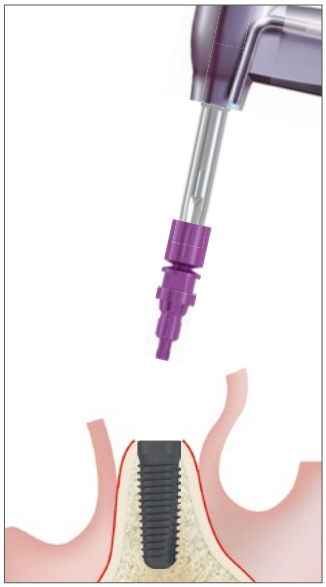
After successful checking of the implantation depth (see section "Form drilling") as well as the position of the grooves (see above), the insertion post can be pulled from the implant using the torque wrench or with the angled hand piece. Attention should be paid to sufficient primary stability of the implant. Prior to removal, ensure sufficient mating between the insertion tool and the insertion post **with slight axial pressure** on the insertion tool.

If the primary stability is not sufficient, the implant can be stabilized with a suitable instrument during extraction of the insertion post.





Removal of the insertion post for manual screwing in



Removal of the insertion post for machine screwing in

ADDITIONAL INSTRUMENTS

PRE-DEFINED BREAKING POINT OF THE INSERTION POST AND IMPLANT REMOVAL ADAPTER

To protect the inner configuration of the implants, the insertion posts are fitted with a pre-defined breaking point. If the torque is too high during insertion of the implant, the insertion post snaps off at the pre-defined breaking point. This ensures that the inner configuration of the implant is not damaged and that the fracture fragment of the post can be removed with forceps as a single piece from the implant.

The fractured piece must be secured with a ligature prior to removal to avoid aspiration.

If snapping at the predetermined breaking point occurs at the same time as final positioning of the implant, the fragment of the insertion post is extracted as described above, and the procedure can be continued as planned. The cover screw or a healing cap is applied to the implant or it is already fitted with a prosthetic component.

REMOVAL ADAPTER FOR IMPLANTS

If the implant is not in the final position when the insertion post snaps, the implant must be removed as described in the following, and the reason for snapping investigated.

In order to remove the implant after snapping of the insertion post at the pre-defined breaking point, appropriate CONELOG® Removal adapters are available for all CONELOG® SCREW-LINE implants.

In order to remove the implant, the manual insertion tool is mounted to the removal adapter. Here it should be noted that picking up the removal adapter with the insertion tool is done by applying pressure.
Three lateral markings correspond with the cams of the removal adapter and thus allow easy insertion of the removal adapter into the implant, until the cams fit the grooves.

NOTE
The CONELOG® Removal adapter should only be used for the explantation of non-osseointegrated implants.
The CONELOG® Removal adapter should not be used to change implant axis or to adjust the height of the implant. Otherwise the inner configuration of the implant can be damaged.

	Article	Art. No.	Ø
	**Removal adapter** CONELOG®, sterile L 14.2	C5302.3301	3.3 mm
		C5302.4301	3.8 mm
			4.3 mm
		C5302.5001	5.0 mm

SURGICAL PROCEDURE

Afterwards the implant can be unscrewed with the mounted removal adapter using the insertion tool and the locked torque wrench or the angled hand piece. The implant must be disposed.

Insertion of the removal adapter to the implant

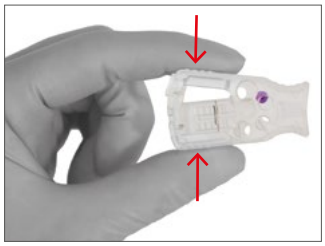
Unscrewing the implant using the removal adapter,the insertion tool as well as the locked torque wrenche

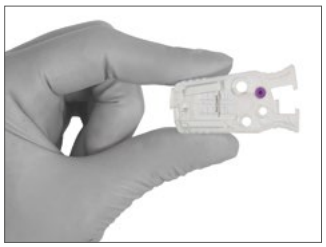
SUBMERGED HEALING

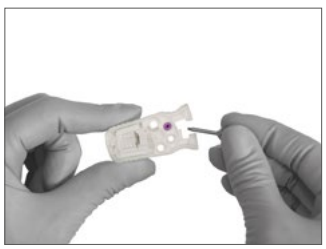
The cover screw for submerged healing is located in the middle section of the implant holder and protected against falling out (red circle) in one of the provided wells (Ø 3.3 mm, Ø 3.8 mm, Ø 4.3 mm, Ø 5.0 mm).

By closing (compressing) the implant holder (see illustration) the cover screw can be released. The screw is freely accessible after this procedure. This procedure is only possible if the insertion post and implant are no longer in place.

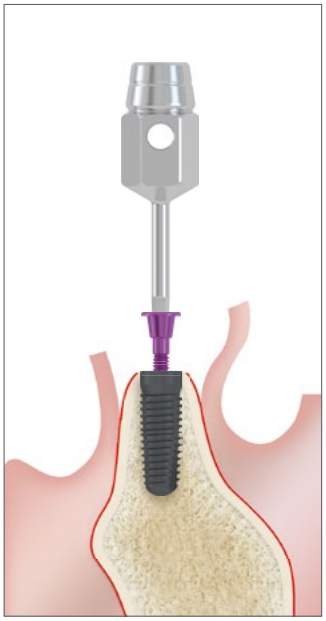
Using a screwdriver, the cover screw can be picked up directly from the implant holder **by applying pressure**.





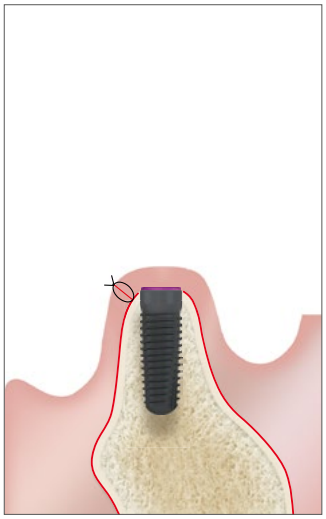


Pick up the cover screw with the screwdriver, hex, and insert it into the CONELOG® SCREW-LINE implant manually controlled (danger of aspiration). The cover screw must only be tightened manually controlled using the hex screwdriver.



Inserting the CONELOG® Cover screw

CONELOG® SCREW-LINE implant with CONELOG® Cover screw



Wound closure

SURGICAL PROCEDURE

TRANSGINGIVAL HEALING

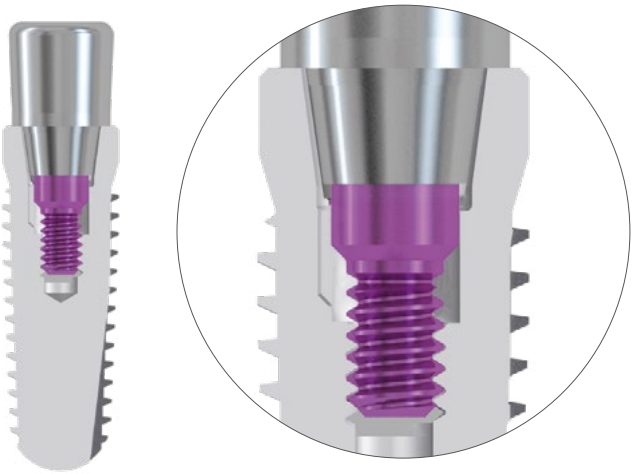
CONELOG® HEALING CAPS

Use of the CONELOG® Healing caps supports the development of the periimplant soft tissue. CONELOG® Healing caps are available in three different geometries:

- cylindric
- wide body
- bottleneck

The healing caps are color-coded to match the respective implant diameter.

CONELOG® Healing caps are screwed hand-tight into the CONELOG® SCREW-LINE implant with a hex screwdriver. The healing cap sits on the machined implant shoulder, and covers it completely.



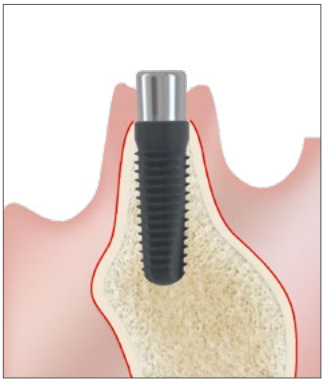
Connection CONELOG® SCREW-LINE implant – CONELOG® Healing cap

CONELOG® Healing cap		Art. No.	Ø	GH	GØ
	cylindrical	C2015.3320	3.3 mm	2.0 mm	3.0 mm
		C2015.3340		4.0 mm	3.0 mm
		C2015.3820	3.8 mm	2.0 mm	3.5 mm
		C2015.3840		4.0 mm	3.5 mm
		C2015.3860*		6.0 mm	3.5 mm
		C2015.4320	4.3 mm	2.0 mm	3.8 mm
		C2015.4340		4.0 mm	3.8 mm
		C2015.4360*		6.0 mm	3.8 mm
		C2015.5020	5.0 mm	2.0 mm	4.5 mm
		C2015.5040		4.0 mm	4.5 mm
		C2015.5060*		6.0 mm	4.5 mm
	wide body	C2014.3340	3.3 mm	4.0 mm	4.8 mm
		C2014.3840	3.8 mm	4.0 mm	5.3 mm
		C2014.3860		6.0 mm	5.3 mm
		C2014.4340	4.3 mm	4.0 mm	5.8 mm
		C2014.4360		6.0 mm	5.8 mm
		C2014.5040	5.0 mm	4.0 mm	6.5 mm
		C2014.5060		6.0 mm	6.5 mm
	bottleneck	C2011.3340	3.3 mm	4.0 mm	3.3 mm
		C2011.3840	3.8 mm	4.0 mm	3.8 mm
		C2011.3860		6.0 mm	3.8 mm
		C2011.4340	4.3 mm	4.0 mm	4.0 mm
		C2011.4360		6.0 mm	4.0 mm
		C2011.5040	5.0 mm	4.0 mm	4.7 mm
		C2011.5060		6.0 mm	4.7 mm

GH: Gingival height GØ: Gingival diameter
* suitable for bite registration

CONELOG® HEALING CAPS, CYLINDRICAL, AND WIDE BODY

The cylindrical and wide body CONELOG® Healing caps are for standard use. After removal of the CONELOG® Cover screw, diameter-matching CONELOG® Healing caps are screwed in manually with a screwdriver, hex. A gingival height ensuring that the healing cap sits 1–1.5 mm supragingivally should be selected. The CONELOG® Impression is taken once the periimplant soft tissue has been stabilized.



CONELOG® Healing cap, cylindrical

CONELOG® Healing cap, wide body

CONELOG® HEALING CAP BOTTLENECK

In esthetically challenging areas, the treatment outcome can be optimized by using CONELOG® Healing caps, bottleneck. The coronally tapered crosscut enables soft-tissue generation during healing.

After 3–4 weeks (and before the final organization of the elastic fibers) a CONELOG® Healing cap cylindrical is screwed in. No tissue should be excised.

The tissue is coronally suppressed and thereby forms a papilla-like structure. The impression is taken once the peri-implant soft tissue has stabilized.

Healing stage

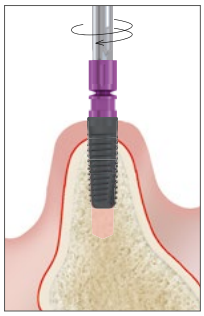
Soft-tissue generation

Coronal suppression of the soft tissue by substitution with a CONELOG® Healing-cap cylindrical

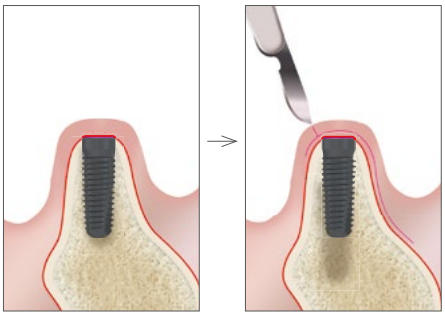
SURGICAL PROCEDURE

TISSUE GENERATION/TISSUE SUPPROT

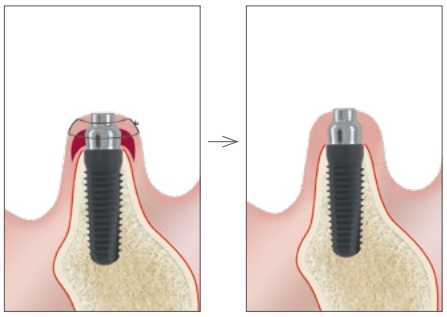
One-step use
(transgingival)



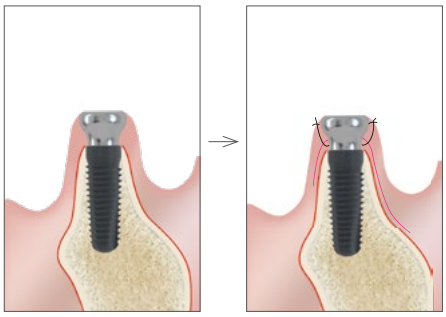
Two-step-use
(submerged)



Bottleneck
tissue generation – step 1

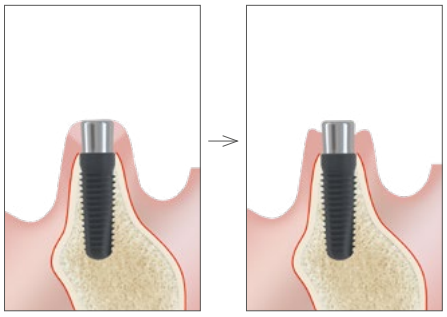


Wide body
tissue support



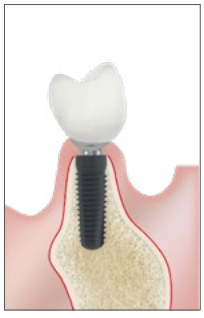
optional

Cylindrical
tissue generation – step 2



Temporary restoration with
CONELOG® Temporary abutment

Final restoration –
abutment
with superstructure



FURTHER DOCUMENTATION

Further information on the CONELOG® Products can be found in the following documents:

- CONELOG® Product catalog
- CONELOG® Working instructions
- CONELOG® Instruction manuals
- Preparation instructions
- CAMLOG literature overview
- CAMLOG and science

[A] Bone quality as documented in Lekholm U, Zarb GA. Patient selection and preparation. In: Branemark PI, Zarb GA, Albrektsson T, editors. Tissue-integrated prostheses-Osseointegration in Clinical Dentistry. Chicago: Quintessence Publishing Co; 1985; p.199–209.

The documents, with the exception of [A], are available from the local CAMLOG representative.

See also:

https://ifu.camlog.com
www.camlog.com

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