

OCCLUSALLY SCREW-RETAINED RESTORATIONS WITH VARIO SR PROSTHETIC COMPONENTS ON CAMLOG® VARIO SR ABUTMENTS



Basic Information

- Aligning tool for controlling the implant axes
- Impression taking and cast fabrication
- Occlusally screw-retained crown, bridge and bar constructions
- Insertion

camlog

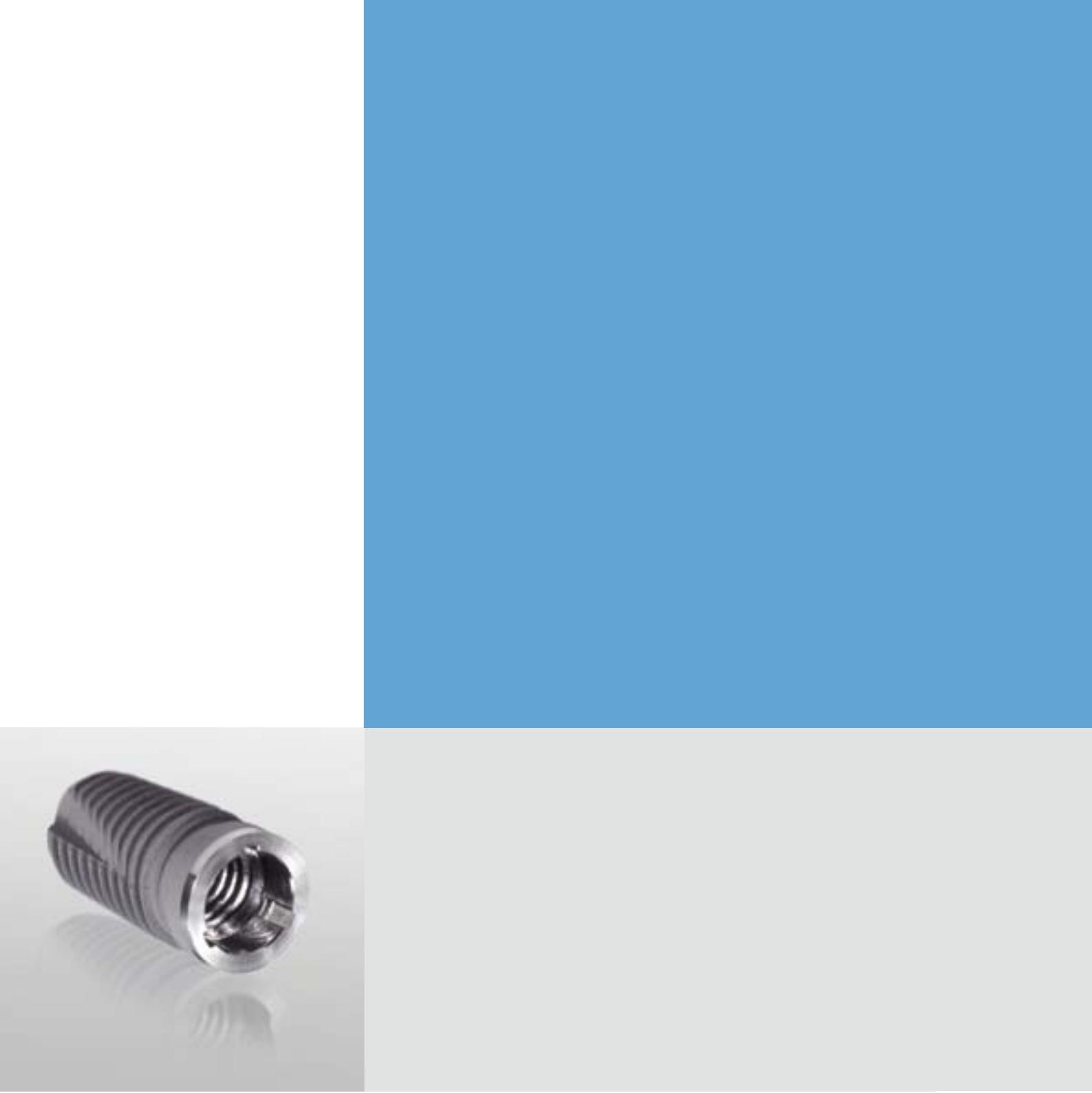


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GENERAL SYSTEM INFORMATION ON THE CAMLOG® IMPLANT SYSTEM

THE CAMLOG® IMPLANT SYSTEM

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

All CAMLOG® products are continually updated to the latest technological standards. The CAMLOG® Implant System is continuously developed and adapted by the CAMLOG research and development team in collaboration with clinics, universities and dental technicians and therefore stays abreast of the latest developments in technology.

The CAMLOG® Implant System is well documented scientifically. Numerous studies investigating into implant surface, time of implantation and/or implant loading, primary stability, connection design or type of superstructure support this. The long-term results for the CAMLOG® Implant System are convincing.

IMPORTANT NOTE

The descriptions that follow are not adequate to permit immediate use of the CAMLOG® Implant System. Instruction by an experienced operator in the management of the CAMLOG® Implant System is strongly recommended. CAMLOG® dental implants and abutments should be used only by dentists, physicians, surgeons and dental technicians trained in the system. Appropriate courses and training sessions are regularly offered by CAMLOG. Methodological errors in treatment can result in loss of the implant and significant loss of peri-implant bone.



SYSTEM INTRODUCTION

GENERAL GUIDELINES FOR THE FABRICATION OF IMPLANT-SUPPORTED PROSTHECTICS

Modern implant prosthetics is now an established component of dentistry. The expectations and demands of patients are steadily increasing. Therefore, the ultimate goal of modern implant-supported treatment concepts is for full esthetic, functional, phonetic, and psychosocial rehabilitation. This applies equally to replacements of lost single incisors associated with trauma and the complex rehabilitation of periodontally compromised remaining teeth or the treatment of an edentulous heavily atrophied maxilla and mandible.

Increasingly higher demands for quality and specialization require a multi-disciplinary team approach to combine the member's acquired knowledge and experience. Modern implant-supported restorations need a high level of attention to detail and clinical experience. This is true equally for the restorative dentist, the surgeon, the dental technician, and the dental office support staff such as the nurse, hygienist, and chair assistant. The CAMLOG team concept takes all of these demands into consideration. The sequence of treatment procedures is structured, and specific procedures are clearly assigned to specific team members once the joint planning phase is complete.

The implant-supported prosthetic restoration should be designed as simple and as safe as possible in regards to planning and fabrication. The required number of implants, as well as their length and diameter are determined based on the restoration planned later and the available bony implant site. The pre-implantation planning should be oriented exclusively to prosthetic needs (backward planning).

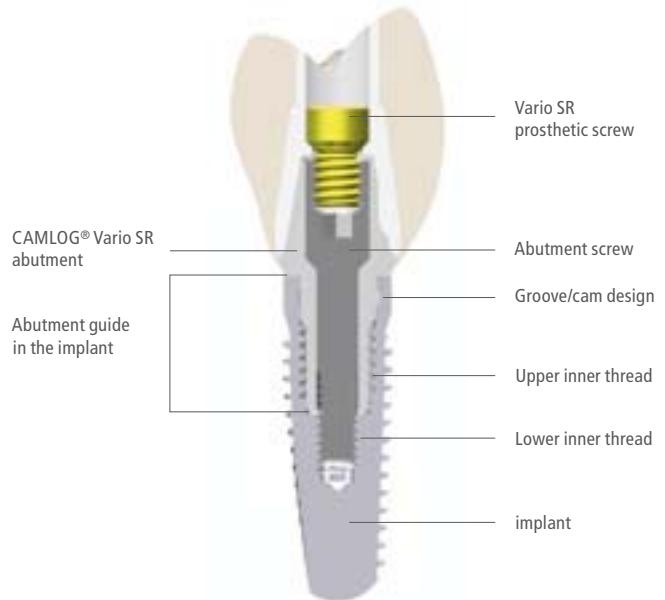
The patient is the focus of the implantological restoration. The patient's needs and desires must play a part in the fabrication of the prosthetic restoration. This also requires taking into account anatomical relationships and conditions. Natural teeth are attached elastically by the periodontium to the alveolar bone. However, implants are rigidly anchored to the alveolar bone by the ankylosis connection to the bone substance. Mastication forces placed on implant-borne crown and bridge restorations are transferred directly to the bone. For this reason, the mastication forces should be transferred by a possible physiological process in the form of a suitable occlusion design thus supporting the long-term success of the integrated implants.

This can be achieved in the posterior occlusal area with a surface area of approx. 1 mm² that allows lateral freedom of movement of approx. 1 mm in habitual intercuspal position. This makes it possible for the cusps to glide smoothly between the retrusive contact position (centric occlusion) and the maximum intercuspal position called «freedom in centric». In conjunction with a premolarized forming, overloads can be avoided. Extreme cusp formations should be avoided due to dentition that is too strong and vertical mastication forces affect the implant/antagonist axis preferably physiologically. Guidance functions of crown restorations on individual implants can lead to lateral force affects that are too strong and should be avoided. Appropriate planning should occur (e.g. wax-up) in advance.

CAMLOG® TUBE-IN-TUBE™ IMPLANT ABUTMENT CONNECTION

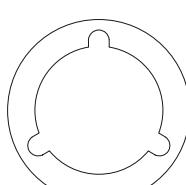
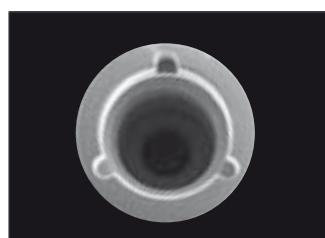
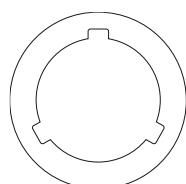
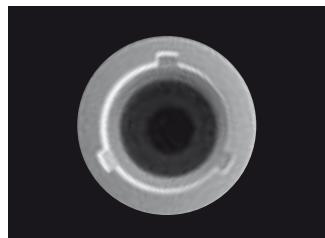
All CAMLOG® SCREW-LINE and CAMLOG® ROOT-LINE implants are equipped with the proven Tube-in-Tube™ Implant Abutment Connection and feature three symmetrically arranged grooves (width 0.5 or 0.7 mm, depth 1.2 mm).

All CAMLOG® Vario SR abutments include three cams under the implant shoulder support that correspond to the three grooves in the CAMLOG® SCREW-LINE and CAMLOG® ROOT-LINE implant, as well as in the CAMLOG® lab analog. When inserting the CAMLOG® Vario SR abutments, their tubular extension toward the apex affects the simple, easy and safe orientation in the longitudinal axis of the implant/lab analog before the three cams rest on the shoulder of the implant. The abutment is rotated until tactile engagement of the cams in the grooves of the implant/lab analog. The abutment is then in the final position.



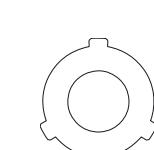
CAMLOG® SCREW-LINE IMPLANTS

have square grooves (inner configuration of the K-Series) in the cylindrical implant neck area.



CAMLOG® ROOT-LINE IMPLANTS

have round grooves in the cylindrical implant neck area.



CAMLOG® VARIO SR ABUTMENTS

are equipped with the three square grooves and fit in all CAMLOG® SCREW-LINE and ROOT-LINE implants.

CAMLOG COLOR-CODING

COLOR-CODING OF THE SURGICAL AND PROSTHETICAL CAMLOG® PRODUCTS

	COLOR	DIAMETER
	grey	3.3 mm
	yellow	3.8 mm
	red	4.3 mm
	blue	5.0 mm
	green	6.0 mm

IMPORTANT NOTE

No components of different diameters should be used together. The system components must not be modified.

PLANNING OF THE PROSTHETIC RESTORATION

INTRODUCTION

Modern implant prosthetics is planned by working back from the desired therapy goal; this is referred to as «backward planning.» It applies particularly to pre-implantation augmentation procedures to restore sufficient bony structure to allow placement of implants in the optimal prosthetic position.

Function, phonetics, and hygienic potential require prosthetically oriented implant positioning and dimensioning, which the dental technician defines on the basis of the wax-up/set-up. The prosthetic design and the required implant position(s) and axial alignment(s) are planned by the dentist and dental technician working closely together. This requires both to be fully informed of the treatment options.

If implant positions (implants approximating the former tooth positions) cannot be implemented for a fixed denture for whatever reason – functional (implant loading, crown length), esthetic (soft tissue support) or hygienic – a removable denture must be planned.

More information about planning the prosthetic restoration is available in the working instruction «Crown and bridge restorations with the CAMLOG® Implant System», Art. No. J8000.0069.

PRODUCT DESCRIPTION

INTRODUCTION

The CAMLOG® Vario SR prosthetic components can be used to fabricate occlusally screw-retained crown, bridge and bar constructions in the maxilla and mandible on CAMLOG® SCREW-LINE and CAMLOG® ROOT-LINE implants.

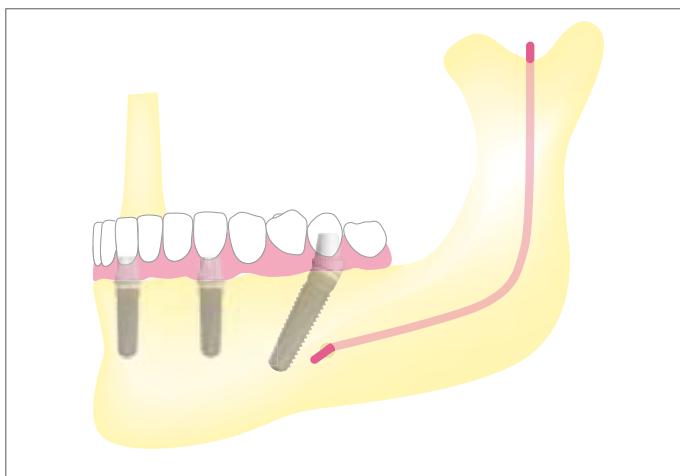
CAMLOG® Vario SR abutments and Vario SR prosthetic components consist of prefabricated components precisely matched to one another that standardize the clinical and technical procedure. The result is a lower workload and considerable time savings for the practice and laboratory.

CAMLOG® Vario SR prosthetic components contain color-coded CAMLOG® Vario SR abutments in straight and in 20° and 30° angled version, Vario SR impression caps, open/closed tray, Vario SR analogs, burn-out Vario SR plastic copings, Vario SR titanium caps for temporary and final restorations, titanium Vario SR Bases for bars for laser welding and a yellow anodized Vario SR prosthetic screw.



ANATOMICALLY CHALLENGING AREAS

20° and 30° angled CAMLOG® Vario SR abutments are available for bridging large implant axis divergences. Where bone supply is reduced and anatomical structures are unfavorable for implantation, the implants can be placed in the distal direction and an appropriate prosthetic restoration can be created. Optimum use of the bone supply is thus ensured.

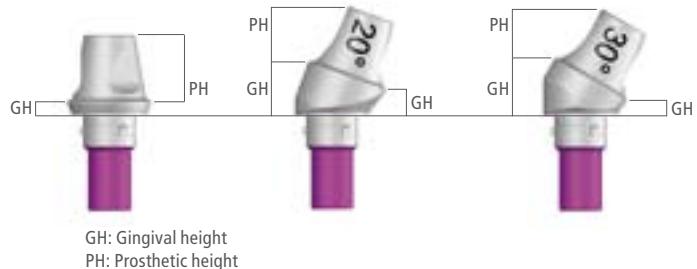


CAMLOG® VARIO SR ABUTMENTS

CAMLOG® Vario SR abutments are available in various gingival heights (GH) and in implant diameters 3.8/4.3/5.0/6.0 mm. They are color-coded by implant diameter. Straight CAMLOG® Vario SR abutments are delivered with an CAMLOG® Vario SR abutment screw (Art. No. J4007.1600, M1.6 for Ø 3.8/4.3 mm; Art. No. J4007.2000, M2.0 for Ø 5.0/6.0 mm). Angled CAMLOG® Vario SR abutments each include a CAMLOG® abutment screw (Art. No. J4005.1601, M1.6 for Ø 3.8/4.3 mm; Art. No. J4005.2001, M2.0 for Ø 5.0/6.0 mm).

NOTE

Only Vario SR prosthetic components may be used in combination (exception: angled CAMLOG® Vario SR abutments 20°/30° with CAMLOG® abutment screws Art. No. J4005.1601/2001).



CAMLOG® VARIO SR ABUTMENTS, STRAIGHT,

incl. CAMLOG® Vario SR abutment screw

Art. No.	K2560.3808	K2560.4308	K2560.5008	K2560.6008
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Ø mm	3.8	4.3	5.0
GH mm	0.8	0.8	0.8
PH mm	3.8	3.8	3.8

CAMLOG® VARIO SR ABUTMENTS, ANGLED, incl. CAMLOG® abutment screw

Art. No.	K2561.3800	K2561.4300	K2561.5000	K2561.6000	K2562.3800	K2562.4300	K2562.5000	K2562.6000
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Ø mm	3.8	4.3	5.0	6.0	3.8	4.3	5.0	6.0
Angle	20°	20°	20°	20°	30°	30°	30°	30°
GH mm	3.1–1.8	3.2–1.7	3.9–2.2	4.0–2.0	3.1–1.2	3.2–1.0	4.0–1.5	4.3–1.3
PH mm	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8

Ø: Implant diameter

GH: Gingival height

PH: Prosthetic height (measured from the abutment shoulder to occlusal abutment edge)

All CAMLOG® Vario SR abutments incl. the enclosed abutment screws are packed sterile.

CAMLOG® VARIO SR ABUTMENT OVERVIEW

Straight, 20° and 30° angled abutments	Straight CAMLOG® Vario SR abutments Ø 3.8/4.3 mm	Angled CAMLOG® Vario SR abutments Ø 3.8/4.3 mm	Straight CAMLOG® Vario SR abutments Ø 5.0/6.0 mm	Angled CAMLOG® Vario SR abutments Ø 5.0/6.0 mm
Abutment screws	CAMLOG® Vario SR abutment screw M 1.6 Art. No. J4007.1600	CAMLOG® abutment screw M 1.6 Art. No. J4005.1601	CAMLOG® Vario SR abutment screw M 2.0 Art. No. J4007.2000	CAMLOG® abutment screw M 2.0 Art. No. J4005.2001

NOTE

CAMLOG® abutment screws are compatible with all CAMLOG® abutments.

CAUTION

Only use the matching abutment screw type!

VARIO SR PROSTHETIC COMPONENTS

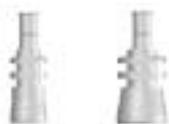
To fabricate occlusally screw-retained restorations, various Vario SR prosthetic components are available that are attached to the CAMLOG® Vario SR abutments and Vario SR analogs using the Vario SR prosthetic screw (M 2.0).

SYSTEM OVERVIEW OF VARIO SR PROSTHETIC COMPONENTS

IMPRESSION TAKING

Vario SR impression caps

open and closed tray, without antirotational mechanism, for impression taking for bar and bridge restorations



Vario SR impression cap, open tray
Ø 3.8/4.3 and 5.0/6.0 mm



Vario SR impression cap, closed tray
Ø 3.8/4.3 and 5.0/6.0 mm

CAST FABRICATION

Vario SR analogs,

for cast fabrication for bar and bridge restorations



Vario SR analog
Ø 3.8/4.3 mm



Vario SR analog
Ø 5.0/6.0 mm

TEMPORARY RESTORATION

Vario SR protection caps,

for initial temporary restoration of the CAMLOG® Vario SR abutments



Vario SR protective cap
Ø 3.8/4.3 mm



Vario SR protective cap
Ø 5.0/6.0 mm

FABRICATION OF THE SUPERSTRUCTURE

Vario SR prosthetic screw,

hex, M 2.0, yellow anodized



Vario SR prosthetic screw for all Vario SR caps and diameters

Vario SR plastic copings,

burn-out, for single crowns with antirotational mechanism, for bridge constructions and cast bar constructions without antirotational mechanism



Vario SR plastic coping
crown/bridge
Ø 3.8/4.3 mm



Vario SR plastic coping
crown/bridge
Ø 5.0/6.0 mm

Vario SR titanium caps,

bridge, without antirotational mechanism, for temporary restorations and/or final bridge restorations



Vario SR titanium cap, bridge
Ø 3.8/4.3 mm



Vario SR titanium cap, bridge
Ø 5.0/6.0 mm

Vario SR bases for bar

made of titanium, for fabrication of laser-welded titanium bar constructions, without antirotational mechanism



Vario SR base for bar
Ø 3.8/4.3 mm



Vario SR base for bar
Ø 5.0/6.0 mm

Vario SR copings and analogs are each available for diameters

3.8/4.3 mm and 5.0/6.0 mm.

APPLICATION

SELECTION AND INSERTION OF THE CAMLOG® VARIO SR ABUTMENTS

The suitable CAMLOG® Vario SR abutments can be selected depending on the clinical situation for bridge and bar constructions on the patient directly.

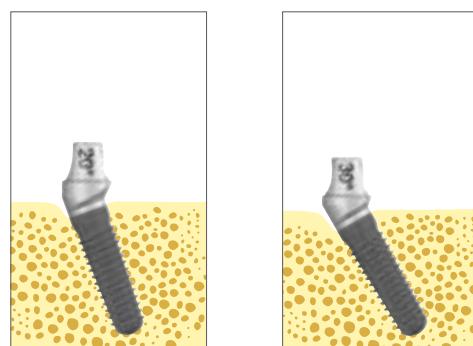
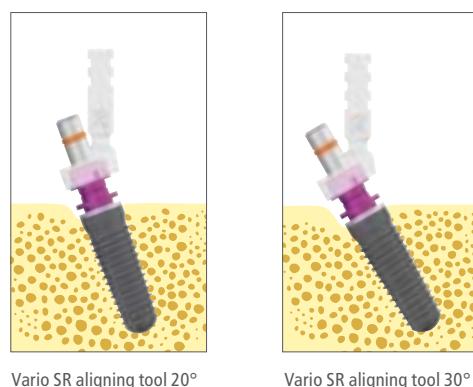
CAMLOG® Vario SR abutments are sterile packed incl. the enclosed abutment screw. Sterilization of the abutment as recommended before insertion is not required for immediate final integration and when the abutment remains in the implant.



The angle of the Vario SR aligning tools is identical to the 20° and 30° angled CAMLOG® Vario SR abutments.

SELECTING ANGLED CAMLOG® VARIO SR ABUTMENTS WITH THE ALIGNING TOOLS 20°/30°

After inserting the implant, the Vario SR 20° and 30° aligning tools can be used when multiple implants are placed to check the respective insertion direction and alignment of the implant grooves before inserting the CAMLOG® Vario SR abutments. The respective aligning tool is simply placed over the insertion post attached to the implant. If necessary, the user can slightly adjust the alignment of the grooves of the inner implant configuration.



IMPORTANT NOTE

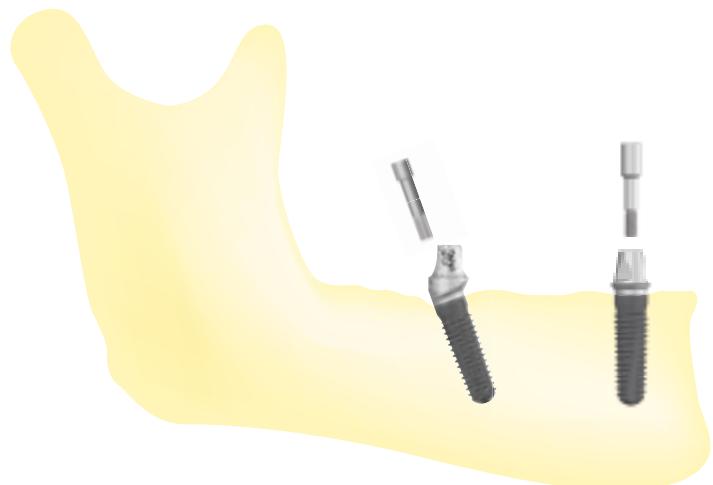
The products must always be protected from the risk of aspiration during intraoral use.

ABUTMENT INSERTION

Clean the internal configuration of the implant before inserting the abutment. The selected CAMLOG® Vario SR abutment is inserted in the CAMLOG® implant and rotated until tactile engagement of the cams in the grooves of the implant. The abutment is then in the final position.

ATTENTION!**MAKE SURE THAT THE ABUTMENT SCREW TYPES MATCH!**

- Straight CAMLOG® Vario SR abutments = use CAMLOG® Vario SR abutment screws
- Angled CAMLOG® Vario SR abutments (20°/30°) = use CAMLOG® abutment screws



A screwdriver (hex) and torque wrench are used to tighten the abutment screw with a torque of 20 Ncm. To achieve maximum pre-tension on the screws, the abutment screw should be retightened with the same torque after approx. 5 minutes.

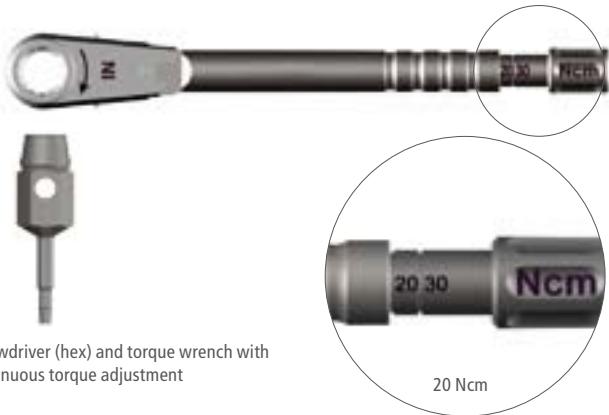
IMPORTANT NOTE

The special design of the CAMLOG® Vario SR abutment screw and the CAMLOG® Vario SR lab screw for the straight CAMLOG® Vario SR abutment requires the sole use of the screwdriver, hex, Art. No. J5316.0501/0502/0503/0504/0510!

We recommend taking a control x-ray to make sure the abutment is correctly seated on the implant.

IMPORTANT NOTE

CAMLOG® Vario SR abutments may not be modified. This would compromise the matched shape of the Vario SR prosthetic components.



Screwdriver (hex) and torque wrench with continuous torque adjustment



Screwdriver, hex, extra short, short, long

CAMLOG® VARIO SR SELECTION ABUTMENTS

CAMLOG® VARIO SR SELECTION ABUTMENTS

If the impression is taken over the CAMLOG® implant shoulder directly and a master cast is created with CAMLOG® lab analogs, the suitable CAMLOG® Vario SR abutments can be selected using the CAMLOG® Vario SR selection abutments.

After fabricating the master cast, the CAMLOG® Vario SR abutments suitable for the superstructures can be quickly and easily selected using the color-coded selection abutments in the dental laboratory. There is no longer any need for expensive and complicated storage of the original abutments, either by the dentist or at the prosthodontist or dental laboratory.

The CAMLOG® Vario SR selection abutments are identical in geometry to the original CAMLOG® Vario SR abutments. The selection abutments are made out of plastic (POM), have only one cam and are fully stained.

The appropriate abutments are selected on the master cast. The implant axis, groove position, gingival line/thickness and implant diameter are taken into account. The selection abutments can be inserted directly into the CAMLOG® lab analog and are reusable.

NOTE

The CAMLOG® Vario SR abutments for diameter 6.0 mm are selected using the blue selection abutments with diameter 5.0 mm.

WARNING!

CAMLOG® Vario SR selection abutments may not be used on the patient!

ART. NO.	SELECTION ABUTMENT	ART. NO.	ORIGINAL ABUTMENT	DIMENSIONS IN MM
K3563.3800		K2560.3808		Ø: 3.8 GH: 0.8 PH: 3.8
CAMLOG® Vario SR Selection abutment kit for Ø 3.8 mm (contains 2 units each)		K2561.3800		Ø: 3.8 GH: 3.1–1.8 PH: 3.8
		K2562.3800		Ø: 3.8 GH: 3.1–1.2 PH: 3.8
K3563.4300		K2560.4308		Ø: 4.3 GH: 0.8 PH: 3.8
CAMLOG® Vario SR Selection abutment kit for Ø 4.3 mm (contains 2 units each)		K2561.4300		Ø: 4.3 GH: 3.2–1.7 PH: 3.8
		K2562.4300		Ø: 4.3 GH: 3.2–1.0 PH: 3.8
K3563.5000		K2560.5008		Ø: 5.0 GH: 0.8 PH: 3.8
CAMLOG® Vario SR Selection abutment kit for Ø 5.0/6.0 mm (contains 2 units each)		K2560.6008		Ø: 6.0 GH: 0.8 PH: 3.8
		K2561.5000		Ø: 5.0 GH: 3.9–2.2 PH: 3.8
		K2561.6000		Ø: 6.0 GH: 4.0–2.0 PH: 3.8
		K2562.5000		Ø: 5.0 GH: 4.0–1.5 PH: 3.8
		K2562.6000		Ø: 6.0 GH: 4.3–1.3 PH: 3.8

GH: Gingival height
PH: Prosthetic height

OPTIONS FOR IMPRESSION-TAKING

For bridge and bar constructions, the impression can be taken using Vario SR impression caps, open and/or closed tray, over the CAMLOG® Vario SR abutment already in its final position. For single crown restorations, the impression is taken using the CAMLOG® impression posts and/or closed tray on the CAMLOG® implant shoulder directly.

METHODS OF IMPRESSION-TAKING, OPEN AND CLOSED TRAY

Components for the open or closed tray method are available for impression taking. If heavily divergent implant axes are present or combination with a functional impression-taking is desired, the open impression method should be used. Never modify the system components. Only implants, abutments and impression components of the same diameter may be used together.

IMPRESSION MATERIAL

Silicone or polyether materials are suitable for the open and closed impression-taking methods.

NOTE

The fixing screws of the CAMLOG® impression posts and the Vario SR impression caps, open tray, as well as the Vario SR impression cap, closed tray, may only be tightened by hand!

IMPRESSION-TAKING FOR VARIO SR BRIDGE AND BAR CONSTRUCTIONS

After final fixation of the CAMLOG® Vario SR abutments in CAMLOG® implants, the impression is taken using the Vario SR impression cap, open or closed tray, directly over the abutment shoulder.

ART. NO.	ARTICLE	FOR IMPLANT DIAMETERS
J2566.4300	Vario SR impression cap, open tray, incl. fixing screw	3.8/4.3 mm
J2566.6000	Vario SR impression cap, open tray, incl. fixing screw	5.0/6.0 mm
J2565.4300	Vario SR impression cap, closed tray	3.8/4.3 mm
J2565.6000	Vario SR impression cap, closed tray	5.0/6.0 mm

NOTE

Vario SR impression caps, open and closed tray, have no antirotational mechanism and therefore are only suited for impression-taking directly over Vario SR abutments for bridge and bar constructions.

IMPRESSION-TAKING WITH VARIO SR

IMPRESSION CAP, OPEN TRAY

Vario SR impression caps, open tray, are equipped with an integrated fixing screw and are placed directly on the CAMLOG® Vario SR abutment. When tightening the fixing screw, the thread engages in the occlusal thread of the angled CAMLOG® Vario SR abutment or in the head thread of the CAMLOG® Vario SR abutment screw in straight abutments. The fixing screw has a break-off point in the upper area. With limited occlusal space conditions, it can be shortened extra orally by 3 mm by breaking it off with a screwdriver (hex).

CAUTION

Shorten extra-orally only!

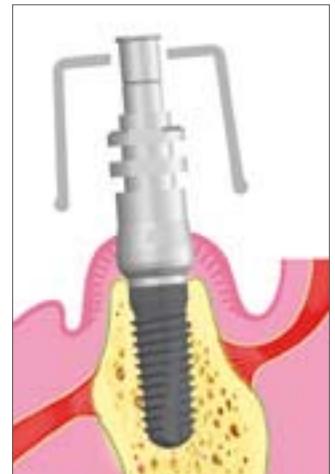


Vario SR impression cap, open tray

The Vario SR impression cap, open tray, is placed on the CAMLOG® Vario SR abutment. The fixing screw must be hand-tightened with the screwdriver. For tight and thick gingiva in particular, we recommend a radiographic check of the correct seating of the impression cap prior to taking the impression.

The impression is taken using an individual tray with perforations for the fixing screw.

Before taking the impression, check the tray for a precision fit. The fixing screws protruding from the perforations must not touch the tray. Then use a silicone or polyether impression material to take the impression.



To remove the impression, loosen the fixing screw, pull it back and then lift off the impression. The impression cap remains in the impression.

TIP: To simplify the procedure, we recommend also sending the matching Vario SR analog to the laboratory.



IMPRESSION-TAKING WITH VARIO SR

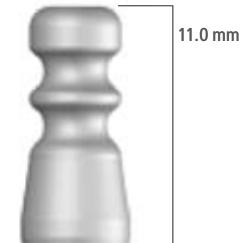
IMPRESSION CAP, CLOSED TRAY

Vario SR impression caps, closed tray, are one-piece, repositionable and are screwed on the CAMLOG® Vario SR abutments directly. An internal thread engages in the occlusal thread of the angled CAMLOG® Vario SR abutment respectively in the head thread of the CAMLOG® Vario SR abutment screw in straight abutments. A prefabricated impression tray is used for the closed impression method.

The Vario SR impression cap, closed tray, is screwed onto the CAMLOG® Vario SR abutment. A prefabricated impression tray is used for the closed impression method. Before taking the impression, check the tray for a precision fit. For tight and thick gingiva in particular, we recommend a radiographic check of the correct seating of the impression cap prior to taking the impression. Then use a silicone or polyether impression material to take the impression.

After removing the impression, the Vario SR impression cap, closed tray, remains on the CAMLOG® Vario SR abutment. The impression cap is removed and given to the lab together with the impression.

TIP: To simplify the procedure, we recommend also sending the matching Vario SR analog to the laboratory.



Vario SR impression cap, closed tray,
repositionable



IMPRESSION-TAKING FOR VARIO SR SINGLE CROWN FABRICATION

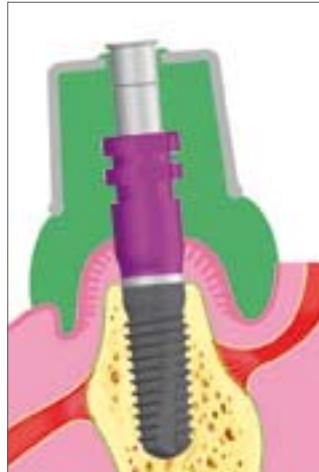
To fabricate single crown restorations on CAMLOG® Vario SR abutments, the impression is taken directly over the CAMLOG® implant shoulder with a color-coded CAMLOG® impression post, open or closed tray. The impression posts are equipped with a fixing screw that is tightened by hand on the implant using a screwdriver (hex).

NOTE

Taking the impression directly over the CAMLOG® implant shoulder using a CAMLOG® impression post, open and/or closed tray, requires that the cast be fabricated using a CAMLOG® lab analog of the same color.

CAMLOG® IMPRESSION POST, OPEN TRAY

ART. NO.	K2121.3800	K2121.4300	K2121.5000	K2121.6000



CAMLOG® IMPRESSION POST, CLOSED TRAY, incl. impression cap and bite registration cap

ART. NO.	K2110.3800	K2110.4300	K2110.5000	K2110.6000



CAMLOG® impression posts, open and closed tray, are compatible with the CAMLOG® implants of the SCREW-LINE and ROOT-LINE.

Detailed information about impression-taking with CAMLOG® impression posts is available in the working instruction "Impression-taking, bite registration, and temporary restoration on CAMLOG® implants", Art. No. J8000.0065.

BITE REGISTRATION ON CAMLOG® VARIO SR ABUTMENTS

For accurate implant-supported measurement of arch relations and their transfer to the cast situations, Vario SR titanium caps, bridge, are placed on the CAMLOG® Vario SR abutments in the CAMLOG® implant and fixed using the Vario SR prosthetic screw.

The caps may be shortened occlusally by 5.0 mm (extra-orally) including the third chamfer.



Vario SR titanium caps, bridge,
with Vario SR prosthetic screw

POSSIBLE OPTIONS

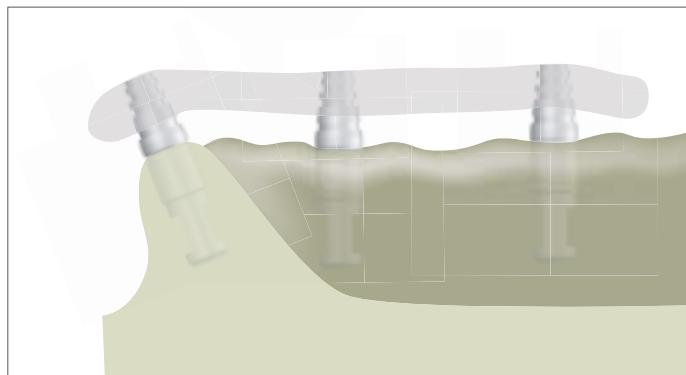
Implant-supported measurement of the arch relations and their transfer to the cast situation may be carried out using the Vario SR titanium caps optionally with applied commercial materials for the bite registration or splinted Vario SR titanium caps as a one-piece bite register.

EXAMPLE BITE REGISTRATION WITH SPLINTED

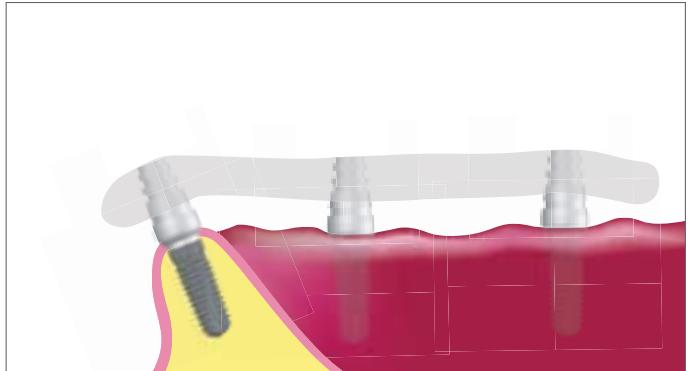
VARIO SR TITANIUM CAPS

After taking the impression and fabricating the cast, the Vario SR titanium caps, bridge, are screwed onto the Vario SR analogs and a bite register splinted with the caps fabricated on the working cast. The Vario SR titanium caps, bridge, are wrapped with a suitable plastic and joined. The Vario SR prosthetic screws must not be covered.

TIP: To correct distortion stress with larger restorations (edentulous jaw, large gaps), we recommend disconnecting the register between the caps and then reconnecting in the mouth with suitable plastic after attaching to the CAMLOG® Vario SR abutments.



Once the register has been created, it is inserted in the mouth with the caps, a screwdriver (hex) used to hand-tighten the Vario SR prosthetic screws and the occlusion checked.

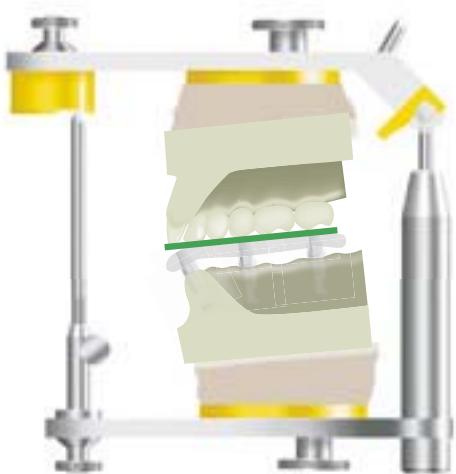


Then the registration of the habitual arch relations is carried out using standard materials.



Loosen the Vario SR prosthetic screws after curing. Remove the bite register with the integrated caps and give it to the dental laboratory.

Mount the bite register with integrated caps on the Vario SR analogs in the cast and screw on. Connect the bite registration to the opposing jaw cast and mount the casts in an articulator.



CAST FABRICATION

STANDARDIZED CAST FABRICATION

Impression-taking and fabrication of the cast for bridge and bar constructions take place by using prefabricated Vario SR components, and for single crowns, with components of the CAMLOG® Implant System. The fixing screws of the Vario SR impression caps, open tray, respectively the CAMLOG® impression posts, open and closed tray, are hand-tightened using a screwdriver (hex) with the Vario SR analogs or CAMLOG® lab analogs for cast fabrication.

NOTE

The components must not be modified!

CAST FABRICATION FOR BRIDGE AND BAR RESTORATIONS WITH VARIO SR ANALOGS

If the impression was taken over the already inserted CAMLOG® Vario SR abutment (straight and/or angled), the Vario SR analog is used. The Vario SR analog is hand-tightened onto the respective Vario SR impression cap, open or closed tray, used.

ART. NO.	ARTICLE	FOR IMPLANT DIAMETERS
J2567.4300	Vario SR analog	3.8/4.3 mm



J2567.6000	Vario SR analog	5.0/6.0 mm
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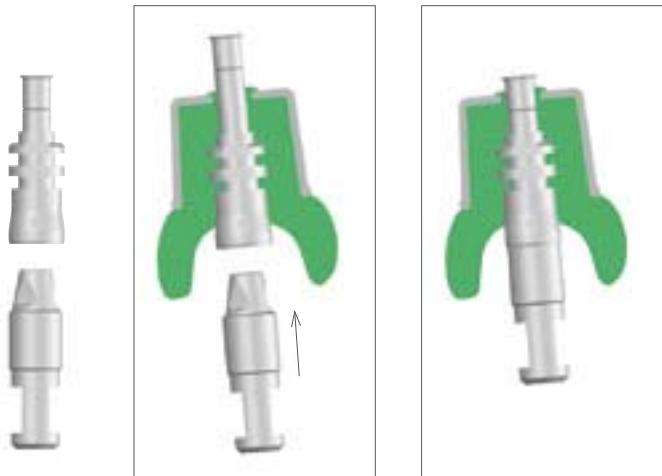
NOTE

Vario SR impression caps, open and closed tray, have no anterotational mechanism and therefore are only suited for impressions directly over CAMLOG® Vario SR abutments for bridge and bar constructions. Therefore, the cast is only fabricated with Vario SR analogs.

CAST FABRICATION WITH VARIO SR IMPRESSION CAP, OPEN TRAY

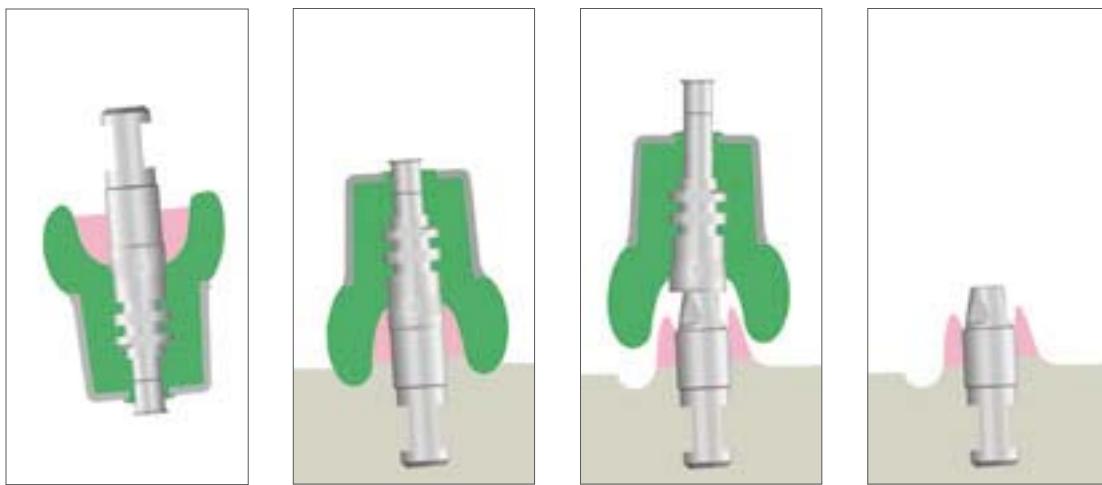
After the impression is taken, the Vario SR impression caps, open tray, are in the impression.

The Vario SR analogs corresponding to the diameters are attached to the Vario SR impression caps, closed tray, in the impression (note proper seating) in the dental laboratory. A screwdriver (hex) is used to hand-tighten the fixing screw.



Vario SR impression cap, open tray, with Vario SR analog

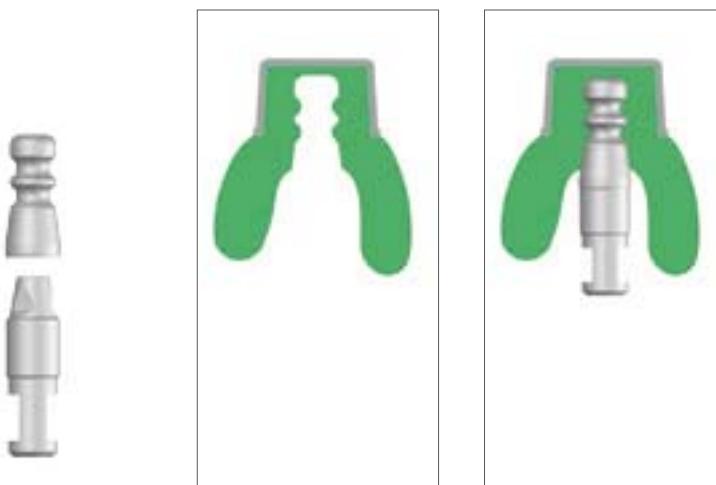
The impression is cast with suitable cast plaster. After the plaster has cured, the Vario SR impression cap fixing screws are loosened and the impression removed.



TIP: We recommend that you fabricate the cast with a gingival mask. The surrounding gingiva is represented elastically and true to the situation especially for subgingival crown margins and restorations in esthetic areas. An optimal design of the crown contour is easier to achieve.

CAST FABRICATION WITH VARIO SR IMPRESSION CAP, CLOSED TRAY

After the impression is taken, the one-piece Vario SR impression caps, closed tray, are screwed together with the Vario SR analogs and repositioned in the impression in the dental laboratory. Do not use bonding material!



Vario SR impression cap, closed tray, with Vario SR analog

The impression is cast with appropriate cast plaster and the Vario SR impression caps may not loosen. After the plaster has cured, the impression is lifted off the cast and the impression caps are removed from the analogs.

TIP: We recommend that you fabricate the cast with a gingival mask. The surrounding gingiva is represented elastically and true to the situation especially for subgingival crown margins and restorations in esthetic areas. An optimal design of the crown contour is easier to achieve.



CAST FABRICATION FOR SINGLE TOOTH RESTORATIONS WITH THE CAMLOG® LAB ANALOG

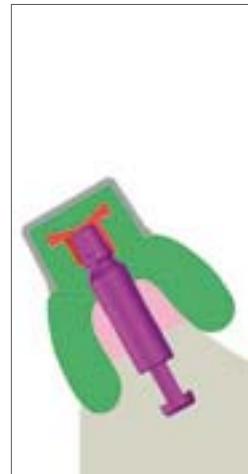
If the impression was taken without CAMLOG® Vario SR abutment on the CAMLOG® implant shoulder level, the CAMLOG® lab analog is used for cast fabrication. The CAMLOG® lab analog is attached to the CAMLOG® impression post, open or closed tray, and hand-tightened using a screwdriver (hex).

CAMLOG® LAB ANALOG

ART. NO.	J3010.3800	J3010.4300	J3010.5000	J3010.6000
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CAMLOG® impression post,
open tray



CAMLOG® impression post,
closed tray

NOTE

Taking the impression directly over the CAMLOG® implant shoulder using a CAMLOG® impression post, open and/or closed tray, requires that the cast be fabricated using a CAMLOG® lab analog of the same color.

Detailed information about cast fabrication with CAMLOG® lab analogs is available in the working instruction "Crown and Bridge Restorations with the CAMLOG® Implant System", Art. No. J8000.0069.

After fabricating the cast, a straight or angled CAMLOG® Vario SR abutment is placed in the CAMLOG® lab analog based on the clinical situation and fixed by hand using a corresponding brown anodized lab screw (see also page 29).

The single crown is fabricated on the original CAMLOG® Vario SR abutment.

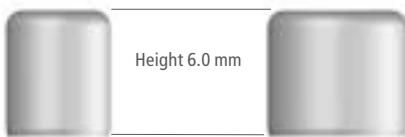


TEMPORARY RESTORATIONS

VARIO SR PROTECTION CAPS

Vario SR protection caps can be used for the initial restoration as the final prosthetic restoration is being fabricated. Vario SR protection caps are made of titanium alloy, are one piece, sterile packed and each available in 3.8/4.3 mm and 5.0/6.0 mm diameters.

ART. NO.	ARTICLE	FOR IMPLANT DIAMETERS
J2568.4300	Vario SR protective cap	3.8/4.3 mm
J2568.6000	Vario SR protective cap	5.0/6.0 mm



Vario SR protection caps are screwed directly onto the CAMLOG® Vario SR abutments (straight/angled) attached definitively to the CAMLOG® implant. The caps are picked up with a screwdriver (hex) and screwed in hand-tightened.



NOTE

If an existing prosthesis is used as a temporary restoration, it must be hollow ground in the areas of the Vario SR protection caps. The prosthesis must not lie on the Vario SR protection caps and thus compromise implant healing by transferring mastication forces.

NOTE

During intraoral use, products must be secured in general against aspiration and swallowing.

TEMPORARY BRIDGE RESTORATIONS

VARIO SR TITANIUM CAPS

Vario SR titanium caps are attached to the already inserted Vario SR abutments (straight/angled). They are equipped with a retention surface on the outside for coating with plastic. The caps are made of titanium alloy and are each available in the 3.8/4.3 mm and 5.0/6.0 mm diameters.

NOTE

Vario SR titanium caps, bridge, have no antirotational mechanism and therefore are only suited for bridge restorations.

ART. NO.	ARTICLE	FOR IMPLANT DIAMETERS
J2564.4301	Vario SR titanium caps, bridge, incl. Vario SR prosthetic screw	3.8/4.3 mm
J2564.6001	Vario SR titanium caps, bridge, incl. Vario SR prosthetic screw	5.0/6.0 mm
J4005.2004	Vario SR prosthetic screw, hex, M 2.0, yellow anodized	

Information about fabricating a temporary bridge restoration is available on page 34.

FABRICATION OF THE PROSTHETIC RESTORATION

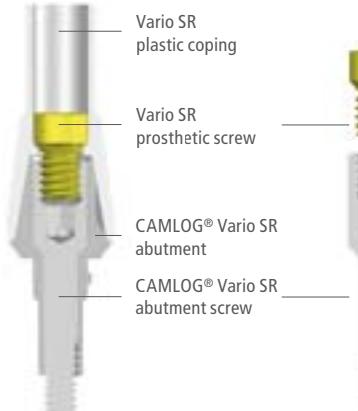
To fabricate occlusally screw-retained restorations, various Vario SR prosthetic components are available that are attached to the CAMLOG® Vario SR abutments (straight and angled) using the Vario SR prosthetic screw (M 2.0). A screwdriver (hex) is used to tighten the screws (see also information on page 14).

PROSTHETIC SCREW CONNECTION FOR STRAIGHT CAMLOG® VARIO SR ABUTMENTS

The CAMLOG® Vario SR abutment screw is used to fix the straight CAMLOG® Vario SR abutment in the implant. When inserting the superstructure, the Vario SR prosthetic screw is used to secure the Vario SR caps. The prosthetic screw engages in the thread in the head of the Vario SR abutment screw and fixes the cap to the abutment.



CAMLOG® Vario SR abutment, straight



PROSTHETIC SCREW CONNECTION FOR ANGLED CAMLOG® VARIO SR ABUTMENTS

The CAMLOG® abutment screw is used to fix the angled CAMLOG® Vario SR abutment in the implant. When inserting the superstructure, the Vario SR prosthetic screw is used to secure the Vario SR caps. The prosthetic screw engages in the thread in the head of the Vario SR abutment and fixes the cap to the abutment.



CAMLOG® Vario SR abutment, angled



OPTIONAL FABRICATION OF THE SUPERSTRUCTURE DIRECTLY ON CAMLOG® VARIO SR ABUTMENTS

BROWN ANODIZED LAB SCREWS

The superstructure (bridge/bar) can also be fabricated on the CAMLOG® Vario SR abutment (straight/angled) directly. However, fabrication of a single crown restoration requires fabrication on the original CAMLOG® Vario SR abutments (see also Impression-taking for Vario SR single crown restoration, page 19).

After fabricating the cast with CAMLOG® lab analogs, the CAMLOG® Vario SR abutment is set in the CAMLOG® lab analog. In this case, we recommend the use of a brown anodized lab screw (hex) for fixation of the abutment in the CAMLOG® lab analog. The abutment screw attached to the abutment is only used for final insertion in the implant.

CAMLOG® VARIO SR ABUTMENT OVERVIEW

Straight, 20° and 30° angled abutments	Straight CAMLOG® Vario SR abutments Ø 3.8/4.3 mm	Angled CAMLOG® Vario SR abutments Ø 3.8/4.3 mm	Straight CAMLOG® Vario SR abutments Ø 5.0/6.0 mm	Angled CAMLOG® Vario SR abutments Ø 5.0/6.0 mm
				
Lab screws	CAMLOG® Vario SR lab screw M 1.6 Art. No. J4008.1600	CAMLOG® lab screw M 1.6 Art. No. J4006.1601	CAMLOG® Vario SR lab screw M 2.0 Art. No. J4008.2000	CAMLOG® lab screw M 2.0 Art. No. J4006.2001
				

NOTE

CAMLOG® lab screws are compatible with all CAMLOG® abutments.

CAUTION

Only use the matching lab screw type!

CAST SUPERSTRUCTURE VARIO SR PLASTIC COPINGS

To fabricate the prosthetic restoration, prefabricated burn-out Vario SR plastic copings are available for single crown, bridge and bar constructions. The wax-up (wax, plastic) is fabricated on the plastic copings directly. The

wax-up is cast in a suitable alloy using the casting technique and can be ceramically veneered for single crown and bridge restorations.

VARIO SR PLASTIC COPINGS FOR CROWN RESTORATIONS ON STRAIGHT CAMLOG® VARIO SR ABUTMENTS

ART. NO.	ARTICLE	FOR IMPLANT DIAMETERS
J2563.4302*	Vario SR plastic coping, crown, with triple-surface antirotational mechanism for straight CAMLOG® Vario SR abutments, burn-out (POM)	3.8/4.3 mm
J2563.6002*	Vario SR plastic coping, crown, with triple-surface antirotational mechanism for straight CAMLOG® Vario SR abutments, burn-out (POM)	5.0/6.0 mm
J4005.2004	Vario SR prosthetic screw, hex, M 2.0, yellow anodized	

VARIO SR PLASTIC COPINGS FOR BRIDGE RESTORATIONS ON STRAIGHT AND ANGLED CAMLOG® VARIO SR ABUTMENTS

ART. NO.	ARTICLE	FOR IMPLANT DIAMETERS
J2563.4301	Vario SR plastic coping, bridge, for straight and angled CAMLOG® Vario SR abutments, burn-out (POM)	3.8/4.3 mm
J2563.6001	Vario SR plastic coping, bridge, for straight and angled CAMLOG® Vario SR abutments, burn-out (POM)	5.0/6.0 mm
J4005.2004	Vario SR prosthetic screw, hex, M 2.0, yellow anodized	

VARIO SR PLASTIC COPINGS FOR CROWN RESTORATIONS ON 20° AND 30° ANGLED CAMLOG® VARIO SR ABUTMENTS

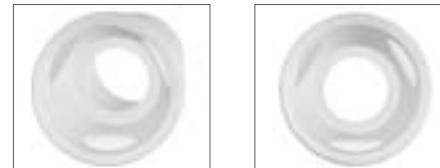
ART. NO.	ARTICLE	FOR IMPLANT DIAMETERS
J2563.4303**	Vario SR plastic coping, crown, with single-surface antirotational mechanism for angled CAMLOG® Vario SR abutments, burn-out (POM)	3.8/4.3 mm
J2563.6003**	Vario SR plastic coping, crown, with single-surface antirotational mechanism for angled CAMLOG® Vario SR abutments, burn-out (POM)	5.0/6.0 mm
J4005.2004	Vario SR prosthetic screw, hex, M 2.0, yellow anodized	

*Incompatible with angled Vario SR abutments.

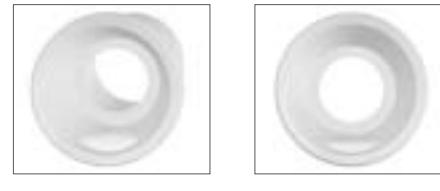
**Incompatible with straight Vario SR abutments.

VARIO SR ANTIROTATIONAL MECHANISMS

For single crown restorations on straight CAMLOG® Vario SR abutments, plastic copings with three antirotational surfaces in the inner configuration are used.



For single crown restorations on angled CAMLOG® Vario SR abutments, plastic copings with one antirotational surface are used.



For bridge and bar constructions on straight and angled CAMLOG® Vario SR abutments, plastic copings with round inner configuration are used.



EXAMPLE OF FABRICATING A FINAL BRIDGE RESTORATION

To fabricate a bridge restoration, Vario SR plastic copings, bridge, are set on the Vario SR analogs and fixed using the Vario SR prosthetic screw. The copings can be shortened occlusally by 5.0 mm.



Vario SR plastic copings, bridge,
with Vario SR prosthetic screw

WAX-UP

The framework is waxed up in the usual manner according to the design of the "reduced crown shape". Take care that adequate and uniform ceramic or plastic layer can be achieved for the veneering. The wax thickness over the plastic coping should be at least 0.3 mm. Do not mold over the delicate coping edge.

IMPORTANT NOTE

When burning out the casting muffle, swelling may occur due to the thermal expansion of the plastic and damage the investment compound in the area of the plastic coping. This can cause investment compound to be included in the casting metal. Therefore, a minimum wax thickness of 0.3 mm should be applied to the plastic coping. When heating, the wax softens first and gives the plastic enough space to expand.

The ideal framework form can be controlled with a previously prepared silicone index.

TIP: To prevent non-axial loads and over contouring in the posterior area, we recommend reducing wax-up to premolar size.



VERTICAL DIMENSION TO THE OCCLUSION LEVEL

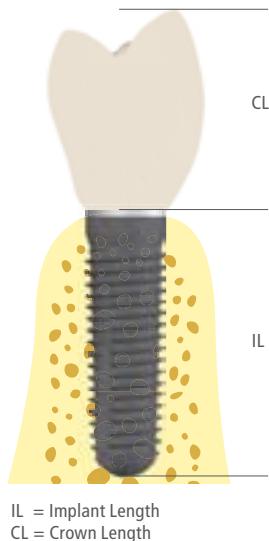
Information from implantologists about the length of implants used plays an important role in the prosthetic planning or restoration. Loading of the implant-bone interface is a result of the leverage relation generated by osseointegration-related resistance to the prosthesis load arm (equivalent to the supracrestal implant length plus the length of the crown above the implant shoulder). If IL is smaller than CL, then the load must be reduced (e.g. through prosthetic splinting). The length ratio of single crown to implant should be max. 0.8:1.

EMBEDDING, CAST AND DEVESTMENT

The embedding is done according to the instruction manual of the flask system used. We do not recommend the use of wax wetting agents. However, if wax wetting agents are used, they must be suitable for use with POM plastic components. When embedding, the correct placement of the wax-up in the casting muffle is of importance. Volume ratios and pin angles must be selected so that the required temperature for casting is achieved. This is particularly important for voluminous casts.

We recommend phosphate bound investment materials. The manufacturer's processing instructions must be observed and the mixing ratios and preheating times accurately observed. We recommend you do not use any quick heating processes (speed investment materials). The cast delay time must be kept as brief as possible.

After casting, the cast object must be slowly cooled to room temperature and the object gently devested. We recommend gentle devestment in an ultrasonic bath with waterjet or stripping.



IL = Implant Length
CL = Crown Length

After trimming, the cast object is prepared for ceramic or plastic veneering. The ceramic to be used must be compatible with the alloy (observe heat expansion coefficient). The occlusal surface should be designed based on the "freedom in centric" concept.

INSERTION OF THE PROSTHETIC RESTORATION

The finished bridge restoration is transferred to the CAMLOG® Vario SR abutments and fixed using the new unused Vario SR prosthetic screws. The tightening torque is 15 Ncm.

For hygiene and esthetic reasons, we recommend closing the transocclusal screw opening. To ensure that the Vario SR prosthetic screw can be removed again, the screw head is covered with some wax or gutta-percha and the screw channel closed with e.g. composite.



Clean and disinfect the prosthetic components prior to insertion. We recommend component sterilization (see also the "Preparation Instructions for the CAMLOG® Implant System", Art. No. J8000.0032). The peri-implant hard and soft tissue situation must allow gapless insertion of the restoration.

BRIDGE CONSTRUCTIONS MADE OF PLASTIC VARIO SR TITANIUM CAPS

Vario SR titanium caps are equipped with a retention surface on the outside for coating with plastic. They are made of titanium alloy and are each available in the 3.8/4.3 mm and 5.0/6.0 mm diameters.

NOTE

Vario SR titanium caps, bridge, have no antirotational mechanism and therefore are only suited for bridge restorations.

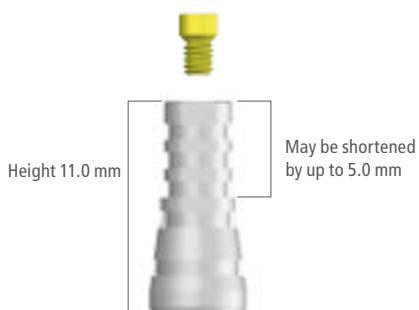
VARIO SR TITANIUM CAPS FOR BRIDGE RESTORATIONS ON STRAIGHT AND ANGLED CAMLOG® VARIO SR ABUTMENTS

ART. NO.	ARTICLE	FOR IMPLANT DIAMETERS
J2564.4301	Vario SR titanium caps, bridge, incl. Vario SR prosthetic screw	3.8/4.3 mm
J2564.6001	Vario SR titanium caps, bridge, incl. Vario SR prosthetic screw	5.0/6.0 mm
J4005.2004	Vario SR prosthetic screw, hex, M 2.0, yellow anodized	

A temporary bridge restoration can be fabricated directly on the CAMLOG® Vario SR abutments (straight/angled) inserted in the implant or on the working model.

EXAMPLE OF FABRICATING A FINAL BRIDGE RESTORATION

To fabricate a bridge restoration, Vario SR titanium caps, bridge, are set on the Vario SR analogs and fixed using the Vario SR prosthetic screw. The caps may be shortened occlusally by 5.0 mm up to and including the third groove.



Vario SR titanium cap, bridge,
with Vario SR prosthetic screw

The caps are then veneered and attached with suitable plastic in the usual manner.



INSERTION OF THE PROSTHETIC RESTORATION

The finished plastic bridge is transferred to the CAMLOG® Vario SR abutments and fixed using the new unused Vario SR prosthetic screws. The tightening torque is 15 Ncm.

For hygiene and esthetic reasons, we recommend closing the transocclusal screw opening. To ensure that the Vario SR prosthetic screw can be removed again, the screw head is covered with some wax or gutta-percha and the screw channel closed with e.g. composite.

Clean and disinfect the prosthetic components prior to insertion. We recommend component sterilization (see also the "Preparation Instructions for the CAMLOG® Implant System", Art. No. J8000.0032). The peri-implant hard and soft tissue situation must allow gapless insertion of the restoration.



HYBRID PROSTHETICS

LASER-WELDED BAR CONSTRUCTIONS

VARIO SR BASES FOR BAR

Vario SR bases for bar are made out of grade 4 titanium and are suitable for laser-welded bar constructions with prefabricated bar elements made out of identical material. The copings do not have an antirotational mechanism and are each available in the 3.8/4.3 mm and 5.0/6.0 mm diameters.

VARIO SR BASES FOR BAR FOR BAR CONSTRUCTIONS ON STRAIGHT AND ANGLED CAMLOG® VARIO SR ABUTMENTS

ART. NO.	ARTICLE	FOR IMPLANT DIAMETERS
J2570.4300	Vario SR base for bar, laser-weldable, incl. Vario SR prosthetic screw	3.8/4.3 mm
J2570.6000	Vario SR base for bar, laser-weldable, incl. Vario SR prosthetic screw	5.0/6.0 mm
J4005.2004	Vario SR prosthetic screw, hex, M 2.0, yellow anodized	

NOTE

Vario SR bases for bar have no antirotational mechanism and therefore are only suited for bar constructions.

TASKS OF A BAR RESTORATION

In implantological hybrid prosthetics, bar restorations represent stable implant-connecting constructions; a hybrid prosthesis can be securely anchored.

- Protecting the prosthesis against shearing and lifting forces
- Shear distribution
- Stabilization and primary splinting of the implants
- Resilience compensation through degrees of freedom

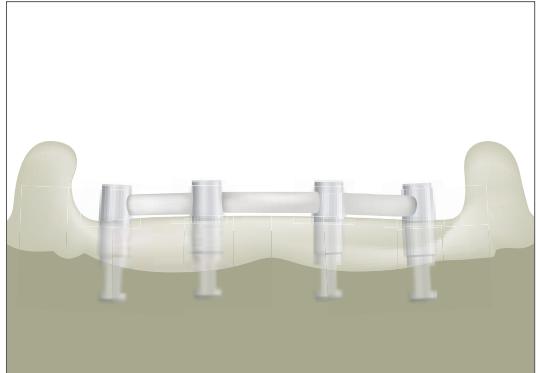
FABRICATING A BAR CONSTRUCTION

To fabricate a bar construction, Vario SR bases for bar are set on the Vario SR analogs. A screwdriver (hex) is used to screw in the Vario SR prosthetic screw hand-tight.



Vario SR base for bar with Vario SR prosthetic screw

The bar elements are cut accordingly and in consideration of a joining gap that is as small as possible fitted between the Vario SR bases for bar.



After assembling all the components, the bar segments are laser-welded together with the Vario SR bases for bar under sufficient argon gas purging and the bar are high-gloss polished.

IMPORTANT NOTE ABOUT LASER-WELDING

Blue discoloration on the welds must be avoided. This points to insufficient purging with argon gas and to oxygen uptake of the titanium. Brittleness and associated weakness in the weld is the result. Observe the operating instructions of the laser devices used!

After completing the bar construction, the final bar prosthesis with base reinforcement made out of metal is fabricated in the usual manner. The teeth are positioned based on the principle of modern complete dentures. An existing full prosthesis can also be converted into a bar-retained prosthesis with suitable bar matrices.

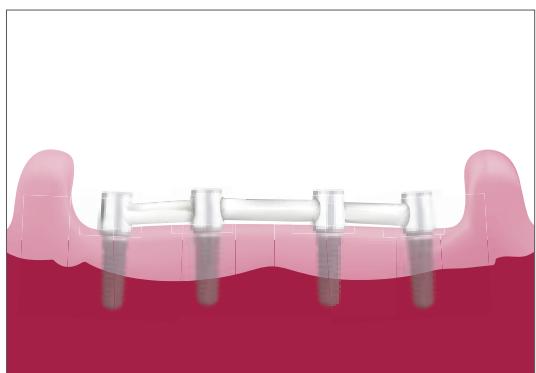
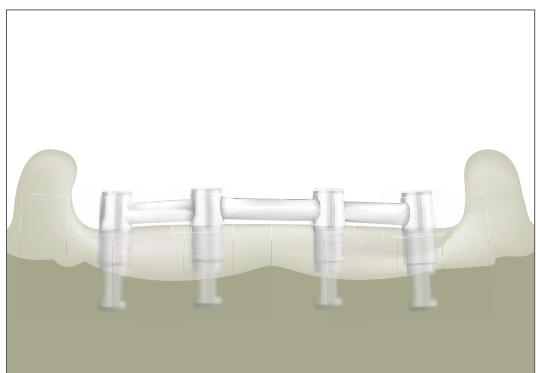
IMPORTANT NOTE

The matrix should be placed before fabrication of the prosthesis with a suitable relief wire. Only then is vertical translation of the prosthesis on the bar ensured.



INSERTING THE BAR CONSTRUCTION

The finished bar construction is transferred to the CAMLOG® Vario SR abutments and with new unused Vario SR prosthetic screws, fixed with 15 Ncm using a screwdriver (hex). The full prosthesis is then inserted and checked for proper fit.



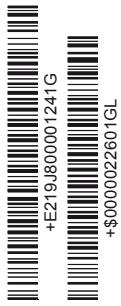
FURTHER DOCUMENTATION

Further information about CAMLOG® products is available in the following documentation:

- Current CAMLOG product catalog
- Working instructions
- Preparation instruction
- Instruction manuals (included with CAMLOG® products as package inserts)
- www.camlog.com

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Art. No. J8000.0124 Rev.0 09/2010

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