



CEMENT-RETAINED CROWNS AND BRIDGES  
WITH THE  
**SOLID ABUTMENT SYSTEM**



COMMITTED TO  
**SIMPLY DOING MORE**  
FOR DENTAL PROFESSIONALS



Straumann is the industrial partner of the ITI (International Team for Implantology) in the areas of research, development, and education.

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# INTRODUCTION

Solid abutments can be used in both anterior and posterior areas of the mouth for cement-retained crown and bridge restorations. The insertion depth of the implant should allow easy access for the removal of excess cement.

The restoration is very similar to the conventional method for fabricating crowns and bridges.

The superstructure is manufactured by the dental technician and cemented in the mouth by the dentist or prosthodontist.



## Features and Benefits

### Reliable

- Morse taper connection for a secure frictional fit
- High strength due to solid one-piece structure
- High quality prosthetic components supported by decades of success

### Simple

- Prefabricated impression components to precisely transfer the oral situation
- Color-coded components for identification purposes
- Easy fixation of the superstructure

### Versatile

- Restorations for RN and VVN implants
- Abutments can be modified to fit individual needs
- For crowns and bridges
- Various temporary restorations available

























The impression-taking procedure in the dental practice and the construction of the superstructure in the dental laboratory depend on whether or not the abutment was modified.

The following techniques are possible:

**Option A** = Non-modified abutments

**Option B** = Modified abutments







# WHO IS WHO IN THE SOLID ABUTMENT SYSTEM

	RN (Regular Neck) Ø 4.8 mm 		WN (Wide Neck) Ø 6.5 mm 	
Transfer parts	 048.017V4 For non-modified Solid abutments  048.060/061/062V4		 048.017V4 For modified Solid abutments  048.065/066	
Analogs	 048.160/161/162  048.117V4		 048.165/166  048.140	
Prosthetic restoration	cement-retained			
Case planning (available in Prosthetic Planning Kit 048.901)	 048.926/927/928V4			
Abutments	 048.540  048.541  048.542		 048.545  048.546	
Temporary restoration/ protective caps	 048.654••/655•		 048.047/048/049V4	
			 048.656••/657•	
			 048.051/052	
Plastic copings	 ••048.246 for bridge		 •048.245 for crown	
			 ••048.248 for bridge	
			 •048.247 for crown	





- Parts for the dentist
- Parts for the dental technician
- For dentist and dental technician
- Crown
- Bridge
- V4 = 4 components per pack

## AUXILIARY PARTS REQUIRED

### Parts for the dentist

Art. No.		Article
046.400/401/402		SCS screwdriver for ratchet
046.410/411/412		SCS screwdriver for handpiece
046.067/068		Solid abutment driver
046.119		Ratchet, includes service instrument
046.049		Torque control device
046.064		Holding key

### Parts for the dental technician

Art. No.		Article
046.242		Guide pin for reamer 046.243, for RN solid abutment copings
046.244		Guide pin for reamer 046.243, for WN solid abutment copings
046.243		Reamer for 45° neck
046.240		Handle for reamer



# PLACING THE ABUTMENT

## Procedure

### Initial situation

The pictures on the right show a Standard implant Ø 4.1 mm (Regular Neck Ø 4.8 mm) in position 44 (28) and a Standard implant Ø 4.8 mm (Wide Neck Ø 6.5 mm) in position 46 (30). Prior to restoration, remove any debris from the head of the healing caps and use any length SCS screwdriver to loosen, lift, and remove them. The internal aspect of the implants must then be thoroughly cleaned and dried.



Standard Implant Regular Neck in situ



Standard Implant Wide Neck in situ

1. RN solid abutments (048.540/541/542) are inserted using a solid abutment driver (046.067/068). The WN solid abutments (048.545/546) are inserted using an SCS screwdriver (046.400/401/402/410/411/412).

Working outside of the mouth and over a sterile field, align the groove of the RN solid abutment with the line on the driver shaft and insert the abutment into the driver. When placing WN solid abutments, an SCS screwdriver is used instead. The "star" configuration of the screwdriver tip connects to the occlusal opening of the abutment, allowing it to be picked up. Bring the abutment to the mouth with the appropriate driver and insert it into the implant. Use finger pressure to tighten it down.

### Caution:

Our products must be secured against aspiration when used intraorally (e.g., use of throat pack is recommended)

### RN (Regular Neck Ø 4.8 mm)



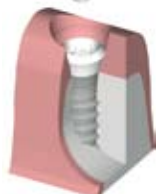
**RN solid abutment driver**  
for use with RN solid abutments

Indicator for internal wedge



groove

**RN solid abutment**  
for use with implants that have an RN Ø 4.8 mm restorative platform



### WN (Wide Neck Ø 6.5 mm)



**SCS screwdriver**  
for use with WN solid abutments



**WN solid abutment**  
for use with implants that have a WN Ø 6.5 mm restorative platform



**Tightening torque = 35 Ncm**



## PLACING THE ABUTMENT

### Procedure

**2.** Place the looped-end of the assembled ratchet with torque control device over the driver handle. The directional arrow must be pointing clockwise (towards the torque bar with tear drop). If it's not, simply pull the arrow out, flip it over, and push it back in.



**3.** For stabilization, place the pin-end of the holding key into the coronal hole on the driver handle.



**4.** Use one hand to hold the holding key and use the other hand to hold the torque bar. Grasp only the tear drop and move the torque bar to the **35 Ncm** mark.



**5.** After reaching the **35 Ncm** mark, return the torque bar to its starting position. Lift and remove the holding key, ratchet with torque control device, and the driver. The solid abutment is now in place and ready for the impression to be taken. Once the abutment has been torqued in, it should not be removed.



The Solid abutments are inserted into the implant **without applying cement.**

#### Important:

Once the impression has been taken, any removal or repositioning of the abutment will require a new impression to capture the change in location of the flat side.

Therefore, once an abutment is torqued in, it should not be removed after the impression is taken.

#### Important:

**Tightening torque = 35 Ncm**

# TAKING THE IMPRESSION: OPTION A (NON-MODIFIED ABUTMENTS)

## Overview



### Initial situation

An RN and a WN solid abutment were inserted into the implants and torqued to **35 Ncm** (see the description on pages 6–7).

### Color-coding

In order to facilitate identification, the transfer system is color-coded.







Accessories for RN solid abutment, height 4.0 mm = **yellow**

Accessories for RN solid abutment, height 5.5 mm = **grey**

Accessories for RN solid abutment, height 7.0 mm = **blue**

Accessories for WN solid abutment, height 4.0 mm = **green**

Accessories for WN solid abutment, height 5.5 mm = **brown**

Impression taking step-by-step	For implants with RN Ø 4.8 mm	For implants with WN Ø 6.5 mm
	 <p><b>RN solid abutments</b> 048.540/541/542</p>	 <p><b>WN solid abutments</b> 048.545/546</p>
<b>Step 1</b> Place the impression cap over the abutment and snap it onto the implant shoulder. Slightly rotate the cap to ensure that it is properly seated.	 <p><b>RN impression cap</b> 048.017V4</p>	 <p><b>WN impression cap</b> 048.013</p>
<b>Step 2</b> Push the positioning cylinder through the impression cap, taking care to align the internal flat side of the positioning cylinder with the flat side of the solid abutment. Push it until it is flush with the impression cap.	 <p><b>RN positioning cylinder</b> 048.060V4/061V4/062V4</p>	 <p><b>WN positioning cylinder</b> 048.065/066</p>
<b>Step 3</b> Take the impression and send it to the lab.		



### Note:

All parts of the solid abutment transfer system are supplied non-sterile. The parts can be disinfected as required using standard commercial disinfection agents for plastic products (refer to the manufacturer's instructions).

### Caution:

**The plastic components are for single use only. They must not be sterilized.**

In order to prevent any damage to the plastic components (loss of elasticity or embrittlement) they must be protected from strong light or heat irradiation.

## TAKING THE IMPRESSION: OPTION A (NON-MODIFIED ABUTMENTS)

### Procedure

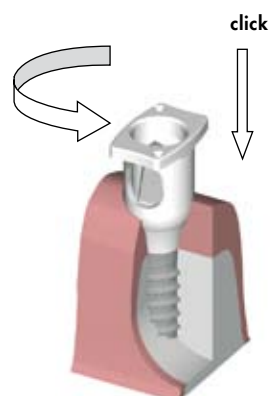
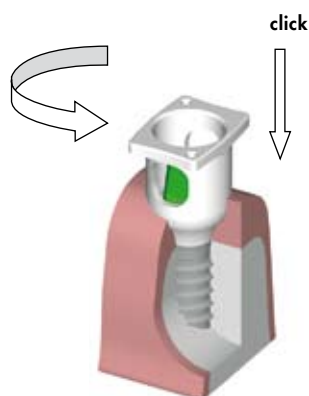
#### 1. Place the impression cap

Both the implant shoulder and the abutment must be cleaned of any blood or tissue prior to the impression procedure. If a WN solid abutment is used, the occlusal opening of the abutment must be sealed with wax or gutta percha.

##### Important:

In order to avoid errors during the impression procedure, it must be ensured that the shoulder and the margin of the impression cap are not damaged.

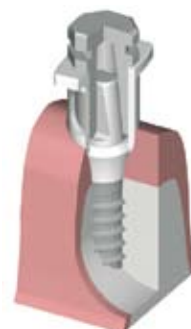
The RN impression cap (048.017V4) or the WN impression cap (048.013) is pushed over the abutment and onto the implant shoulder until the cap “clicks” into place. The impression cap is turned gently in order to check that it is securely snapped onto the implant shoulder. When the cap is seated correctly, it can be rotated smoothly on the implant.



#### 2. Insert the positioning cylinder

Positioning cylinders have a flat-side indicator (external knob) to identify where the internal flat side is. Care should always be taken to align the flat side of the positioning cylinder with the flat side of the abutment. It is then pushed down over the abutment and through the impression cap.

**The positioning cylinder must be pushed down as far as it will go, until it is flat and flush against the impression cap.**

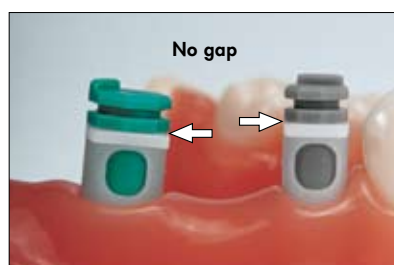


#### 3. Take the impression

The impression is taken using an elastomeric impression material (polyvinylsiloxane or polyether rubber).

##### Important:

Due to its insufficient tensile strength, hydrocolloid is not suitable for this application.



# TAKING THE IMPRESSION: OPTION B (MODIFIED ABUTMENTS)





## Overview

### Initial situation

It is sometimes necessary to modify the shape or size of a solid abutment. A different impression procedure must be used in such cases. In this case, an RN solid abutment was inserted into the implant and torqued to **35 Ncm** (see the description on pages 6–7).

Then the solid abutment was modified in the patient's mouth by the dentist using an appropriate grinding wheel with sufficient irrigation. To help ensure proper stability and retention of the restoration, the solid abutment must maintain a minimum height of 3.0 mm.



Steps in impression-taking	For implants with RN Ø 4.8 mm	For implants with WN Ø 6.5 mm
	 <p><b>RN solid abutments</b> 048.540/541/542</p>	 <p><b>WN solid abutments</b> 048.545/546</p>
<b>Step 1</b> Place the impression cap over the abutment and snap it onto the implant shoulder. Slightly rotate the cap to ensure that it is properly seated.	 <p><b>RN impression cap</b> 048.017V4</p>	 <p><b>WN impression cap</b> 048.013</p>
<b>Step 2</b> Holding the syringe steady in one spot to help avoid air bubbles from forming, inject impression material through one of the side holes of the impression cap and take the impression. Send it to the lab.		



### Note:

All parts of the solid abutment transfer system are supplied non-sterile. The parts can be disinfected as required using standard commercial disinfection agents for plastic products (refer to the manufacturer's instructions).

### Caution:

**The plastic components are for single use only. They must not be sterilized.**

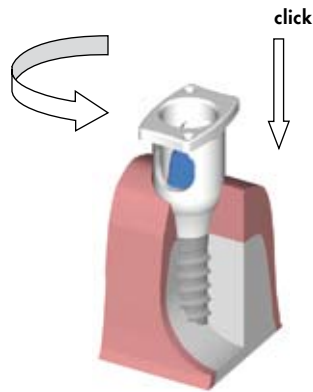
In order to prevent any damage to the plastic components (loss of elasticity or embrittlement) they must be protected from strong light or heat irradiation.

## TAKING THE IMPRESSION: OPTION B (MODIFIED ABUTMENTS)

### Procedure

#### Important:

In order to avoid errors during the impression procedure, it must be ensured that the shoulder and the margin of the impression cap are not damaged.



### 1. Place the impression cap

Both the implant shoulder and the abutment must be cleaned of any blood or tissue prior to the impression procedure. If a WN solid abutment is used, the remaining occlusal opening of the abutment must be sealed with wax and gutta percha.

The RN impression cap (048.017V4) or the WN impression cap (048.013) is pushed over the abutment and onto the implant shoulder until the cap "clicks" into place. The impression cap is turned gently in order to check that it is securely snapped onto the implant shoulder. When the cap is seated correctly, it can be rotated smoothly on the implant.



### 2. Take the impression

Impression material is injected through the occlusal and lateral openings and an impression is taken. An elastomeric impression material (polyvinylsiloxane or polyether rubber) is used for the impression procedure. Send it to the lab.



#### Important:

Due to its insufficient tensile strength, hydrocolloid is not suitable for this application.

# TEMPORARY RESTORATION

## Procedure

While the superstructure is being fabricated, the solid abutments must be temporized in some fashion. Keeping them covered will be more comfortable for the patient and also keep the abutments clean. The use of temporary plastic copings (048.654/655/656/657) is recommended for the fabrication of crowns and small temporary bridges for creating an ideal emergence profile. If the temporary restoration is intended only as a protective measure, protective caps (048.047/048/049/051/052) are ideal as an interim solution.



## Initial situation

An RN solid abutment was inserted into the implant and torqued to **35 Ncm** (see the description on pages 6–7). The impression is taken next, after which the abutment can be temporarily restored.

## A) Restoration with temporary copings

### 1. Mark the appropriate height of the provisional restoration and modify the coping accordingly

Snap the temporary coping onto the corresponding analog and mark the appropriate height according to the individual clinical situation and the abutment used. The coping can then be shortened as necessary, using the vertical retention rings of the coping as a guide.

**Important:** Do not use vaseline (aliphatic isolation agent) for insulation of the abutment.



### 2. Fabricate the provisional restoration

If necessary, you can modify the margin of the coping. Then snap the temporary coping onto the implant shoulder and create the provisional restoration on the temporary coping according to standard techniques (e.g. prefabricated polycarbonate crowns or vacuum stents). The retention rings ensure proper mechanical bonding of the veneering material to the coping. The plateau of the coping helps to prevent the veneering material from flowing under the implant shoulder.



## TEMPORARY RESTORATION

### 3. Finalize fabrication of the provisional restoration

Remove the provisional restoration/temporary coping and place it back onto the analog. Grind down and polish the emergence profile of the coping and the restoration to achieve an even profile. To avoid tissue irritation, it is important to finish the interface until it's smooth and the coping is flush with the restoration.

**Important:** The restoration must always be out of occlusion.



### 4. Remove the snap-on mechanism

**Important:** Remove the lip of the snap-on mechanism from the temporary coping by using the reamer instrument or a hand piece/rubber wheel. It is mandatory to remove the lip of the snap-on mechanism to allow proper extrusion of excess cement.



### 5. Cement the provisional restoration onto the abutment

Apply temporary cement to the inner part of the coping, and cement it onto the abutment and the implant shoulder.

**Important:** Temporary copings **must** be attached with **temporary** cement. Adequate and secure attachment is **only** provided by the use of temporary cement.



**6.** Use conventional techniques to remove the temporary coping with the attached provisional restoration (see package insert).

**Important:** To prevent abutment shifting, provisional restorations must not be removed with rotational movements.

### B) Restoration with protective caps

Only **temporary cement** should be used to secure the protective caps.

**Important:**

Protective caps are removed the same way as a temporarily cemented crown. In order to prevent any displacement of the abutment, the protective cap **must not** be removed using a rotary movement.








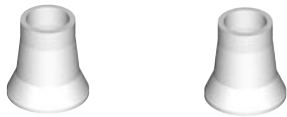
# CONSTRUCTING THE SUPERSTRUCTURE: OPTION A (NON-MODIFIED ABUTMENTS)

## Overview

### Initial situation

An RN and a WN solid abutment were inserted into the implants by the dentist and torqued to **35 Ncm** (see the description on pages 6–7). The abutments were not modified. Then the impression was taken (pages 8–9) and sent to the dental laboratory.



Steps in construction	For implants with RN Ø 4.8 mm	For implants with WN Ø 6.5 mm
<b>Step 1</b> Select the appropriate analog. Align the flat side of the analog with the flat side of the positioning cylinder (captured in the impression). Insert the analog into the impression until it snaps ("clicks") securely into place. Pour up in stone (extra hard stone, type 4 DIN 13911).	 <b>RN analogs</b> 048.160/161/162	 <b>WN analogs</b> 048.165/166
<b>Step 2</b> Select the appropriate coping (crown/bridge) and snap it ("click") over the analog. Trim the height as necessary.	 <b>RN plastic copings</b> 048.245/246 crown/bridge	 <b>WN plastic copings</b> 048.247/248 crown/bridge
<b>Step 3</b> The framework is then modeled in the usual way.		
<b>Step 4</b> After fabrication, the final restoration is delivered to the doctor. It is placed over the solid abutment with permanent cement.		



### Note:

All parts of the solid abutment transfer system are supplied non-sterile. The parts can be disinfected as required using standard commercial disinfection agents for plastic products (refer to the manufacturer's instructions).

### Caution:

**The plastic components are for single use only. They must not be sterilized.**

In order to prevent any damage to the plastic components (loss of elasticity or embrittlement) they must be protected from strong light or heat irradiation.



# CONSTRUCTING THE SUPERSTRUCTURE: OPTION A (NON-MODIFIED ABUTMENTS)

## Procedure



### 1. Casting the model

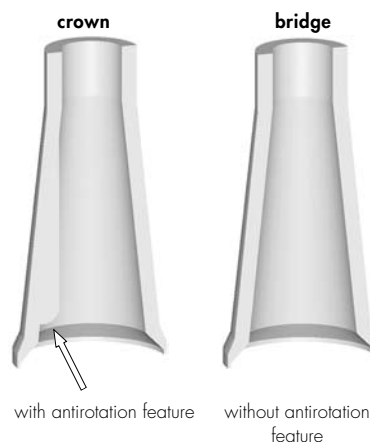
The color of the positioning cylinder in the impression identifies which analog must be used. In the laboratory, the corresponding analog (048.160/161/162/165/166) is positioned in the impression. Care should be taken to properly align the flat side of the analog with the flat side of the positioning cylinder. The analog is then pushed into the impression until it snaps securely into place.

### 2. Place the plastic coping

The plastic coping is selected in accordance with the planned superstructure:  
048.245 for crowns RN  
048.246 for bridges RN  
048.247 for crowns WN  
048.248 for bridges WN



Standard techniques and type 4 (DIN 13911) extra hard stone plaster are used to cast the working model.



#### Important:

A gingival mask should always be used to ensure that the crown is contoured correctly. This is absolutely essential for restorations in the esthetic region and with subgingival crown margins.



Once the working model has been fabricated, suitable plastic copings are selected. These are placed on the analogs and shortened if necessary.



### 3a. Wax up and cast the framework

The framework is waxed up using the conventional technique and cast in a high-gold alloy.

#### Important:

Cusps must not be over-contoured as this may lead to non-physiological loading. Wide Neck implants Ø 6.5 mm are recommended for the molar region, provided that sufficient bone is available, since this allows for optimal shaping of the crown.

For all Regular Neck implants Ø 4.8 mm, the crowns **must** be reduced to the size of premolars – this reduces the risk of non-axial loading and diminishes plaque accumulation due to over-contouring.

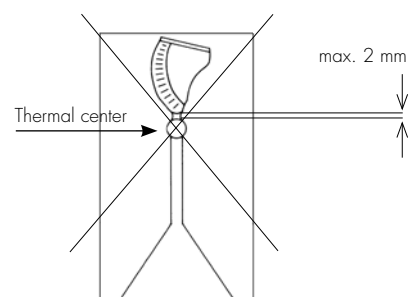
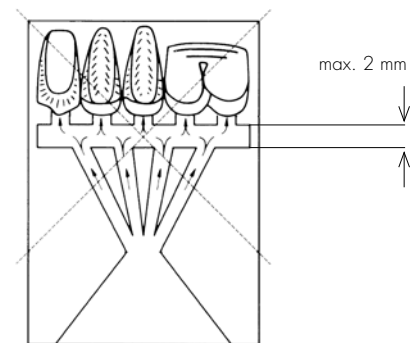
## CONSTRUCTING THE SUPERSTRUCTURE: OPTION A (NON-MODIFIED ABUTMENT)

### Procedure



The success of work carried out with prefabricated plastic components depends on the attention paid to the following points:

- Burn-out plastics are characterized by the fact that they swell up when they are burned out. For that reason, it is important that the outside of the plastic coping is completely covered with wax. The wax burns off and therefore creates sufficient space in the mold for expansion when burned out in the oven. There must be a wax layer of at least 0.3 mm in the marginal region (caution: do not wax above the delicate margin).
- If there is insufficient waxing in the marginal region of the coping, there is a risk that the frustum will break in the interior of the invested coping, due to the effects of the expansion of the plastic in the mold. This can result in a casting error.
- To avoid casting errors due to wax particles, insulating agents, etc., careful cleaning of the interior and the inside and outside of the delicate edge of the coping prior to investment (e.g. with a cotton bud soaked in alcohol) is recommended.
- The sprues must encourage elimination of the wax and plastic and must not impede the direction of flow of the alloy (i.e. there should be no sharp angles or edges). Follow the investment material manufacturer's recommendations on the selection and positioning of sprues.
- Do not use wax wetting agents if possible. The plastic is so smooth that the investment material will fill all the fine contours of the coping's interior very well during investment (with the aid of a fine blunt instrument or a fine brush). However, if wetting agents are utilized, ensure that no aggressive wetting agents are used that could attack the surface of the plastic copings. Then blow-dry the copings carefully with compressed air. Wetting agent residues can lead to a reaction with the investing material and thus to casting errors.



## CONSTRUCTING THE SUPERSTRUCTURE: OPTION A (NON-MODIFIED ABUTMENTS)

### Procedure

- The use of phosphate-bonded investment materials that allows a staged burn-out is recommended. These must be matched with the alloy used.
- When processing the investment material, follow the investment material manufacturer's instructions. Observe the recommended mixing ratio and preheating times exactly.
- The use of investment material for rapid heating methods (speed investment methods) is not recommended.
- Use only high gold content alloys, and refer to the alloy manufacturer's alloy tables.

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### General casting tips for plastic copings

#### Casting procedure

The mold must be transferred to the casting machine in the shortest time possible.

#### Careful devesting

Once the mold has slowly cooled to room temperature, carefully remove the investment material from the cast object. The following are suitable for devesting: ultrasound, water jet, pickling, or a glass fiber brush.

#### Never use sand-blasting for devesting

This would destroy the fine margins and the internal configuration, which would lead to reduced accuracy of the fit (poor marginal fit and rotation of the copings).



#### Important:

Casting defects like insufficient discharge, casting beads, or casting flashes considerably affect the precision of the prefabricated parts and jeopardize the long-term success of the restoration. The work then has to be repeated.

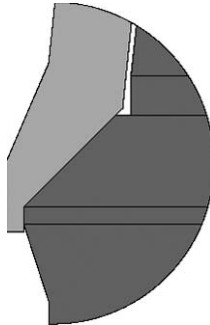
## CONSTRUCTING THE SUPERSTRUCTURE: OPTION A (NON-MODIFIED ABUTMENT)

### Procedure

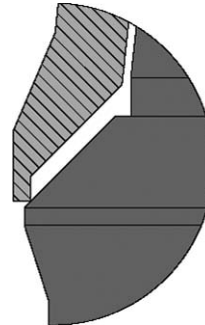
#### 3b. Remove the snap-on mechanism

The plastic copings for solid abutments are fitted with a “snap-on mechanism,” which makes it easy to fit the plastic coping on the analog. This allows the plastic copings to be perfectly positioned and fixed on the analog and therefore makes the modeling process easier.

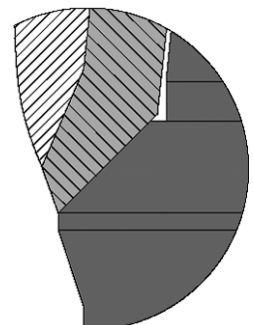
However, once the coping has been cast, the snap-on mechanism no longer works, because unlike plastic, the casting alloy has no elasticity. Following the casting, this “snap-on mechanism” must be removed using the finishing instrument (046.243) or a rubber/silicone wheel polisher **before** the cast coping is placed on the analog. Working under a stereo microscope is recommended.



Plastic coping with “snap-on mechanism”



Coping following casting. The snap-on mechanism no longer works. **The lip must be removed before the cast coping is placed on the analog.**



Finished work with lip removed.



#### Important:

The “snap-on mechanism” must be completely removed after casting using the finishing instrument (reamer) and working under a stereo microscope, otherwise it will not be possible to position the construction on the analogs and implants.

#### Tip

You may use a stereo microscope to remove up to 70% of the margin overhang using a rotary instrument like a silicone wheel. When you are close to the 45° implant shoulder, you should stop and finish the metal margin using the finishing instrument (reamer). Position the guide pin in the cast coping and remove the “snap-on mechanism” by rotating the finishing instrument slowly and evenly.

#### Important:

The finishing instrument (reamer) does not have an automatic stopping mechanism. Only remove as much as is necessary, until the protruding lip is flush with the implant shoulder. Then the crown can be placed on the analog.

# CONSTRUCTING THE SUPERSTRUCTURE: OPTION A (NON-MODIFIED ABUTMENTS)

## Procedure

In order to remove the “snap-on mechanism,” a finishing instrument (reamer) with various guide pins is available.

The following three items are required:

Article	Art. No.
Ⓐ Guide pin for RN solid abutments	046.242
or	
Guide pin for WN solid abutments	046.244
Ⓑ Reamer for 45° neck	046.243
Ⓒ Handle	046.240



## CONSTRUCTING THE SUPERSTRUCTURE: OPTION A (NON-MODIFIED ABUTMENT)

### Procedure

#### 3c. Finish and veneer the framework

The final processing of the frame is then carried out and the facing is built up according to the anatomical guidelines, allowing for premolarization (exception: Wide Neck). The “freedom in centric” concept should be used for the occlusion as described below.



#### The concept of “freedom in centric”

Natural teeth are suspended elastically in the alveolar bone by the periodontium. In comparison, implants are retained rigidly as they undergo ankylosis with the bone. Loads exerted on implant-borne crowns and bridges are transferred directly into the bone. Wherever possible, these loads should be transferred during a physiological movement, i.e., by a correctly designed occlusion, as the integrated implants may be disturbed by inadequately designed occlusal surfaces. The “freedom in centric” concept is ideal for the occlusion for implant-borne bridge-work. “Freedom in centric” involves the creation of an area of approximately 1 mm<sup>2</sup> which permits lateral freedom

of approximately 1 mm in habitual intercuspitation. This surface permits the cusps to slide smoothly between the retruded contact position and maximum intercuspitation. The position of maximum intercuspitation is considered to be the centric occlusion.

As masticatory movements can be carried out with the described tolerance, certain guided movements of the restored dentition are possible. This, together with premolarization (exception: Wide Neck), prevents overloading. Extreme cusp anatomy must be avoided as it may lead to severe intercuspitation and, consequently, to overloading.

Vertical masticatory forces must be exerted as physiologically as possible on the implant-antagonist axis. Crowns on single tooth implants should not perform guidance functions. During treatment planning (diagnostic wax-up) one should decide the degree to which this can be achieved.

# CONSTRUCTING THE SUPERSTRUCTURE: OPTION B (MODIFIED ABUTMENT)



## Overview

### Initial situation

An RN solid abutment was inserted into the implant by the dentist and torqued to **35 Ncm** (see the description on pages 6–7). The abutment is modified. Then the impression was taken (pages 10–11) and sent to the dental laboratory.

### Important:

With modified abutments, the RN and WN analogs (048.160/161/162/165/166) cannot be used to make the working model.

Steps in construction	For implants with RN Ø 4.8 mm	For implants with WN Ø 6.5 mm
<b>Step 1</b> Snap ("click") the appropriate shoulder analog onto the impression. Trim the length of the reinforcement pin as necessary. Pour up half way in stone, insert reinforcement pin, finish pouring up in stone.	 <p>048.117V4 shoulder analog and reinforcement pin for RN solid abutments</p>	 <p>048.140 shoulder analog for WN solid abutments</p>
<b>Step 2</b> The framework is cast without plastic copings using the conventional technique.		
<b>Step 3</b> After fabrication of the restoration, the final superstructure is delivered to the doctor. It is placed over the solid abutment with permanent cement.		



### Note:

All parts of the solid abutment transfer system are supplied non-sterile. The parts can be disinfected as required using standard commercial disinfection agents for plastic products (refer to the manufacturer’s instructions).

### Caution:

**The plastic components are for single use only. They must not be sterilized.**

In order to prevent any damage to the plastic components (loss of elasticity or embrittlement) they must be protected from strong light or heat.

## CONSTRUCTING THE SUPERSTRUCTURE: OPTION B (MODIFIED ABUTMENTS)

### Procedure

#### 1. Casting the model

In the laboratory, the RN shoulder analog (048.117V4) or the WN shoulder analog (048.140) is repositioned in the impression; the shoulder analog must **audibly click into place**. The shoulder analog is turned gently in order to check that it has been snapped on securely. When the shoulder analog has been placed correctly, it can be rotated smoothly. The shoulder analog (048.117V4) comes with a reinforcement pin that can be used when casting the model (exception: WN shoulder analog does not require a pin). The pin strengthens the plaster die in order to reduce the risk of die breaking. It should be used in all cases.



#### Hint

Where there are markedly divergent abutments, we recommend pouring the die with modeling resin, in order to reduce the risk of breakage. The use of the reinforcement pin is also possible with modeling resin (any possible contraction of the modeling resin is minimized by the material reduction).

A gingival mask should always be used to ensure that the crown is contoured correctly. This is absolutely essential for restorations in the esthetic region and with subgingival crown margins.

The working model is cast using type 4 (DIN 13911) extra hard stone plaster. The impression is filled as far as the implant shoulder in the region of the abutments. The tip of the reinforcement pin is dampened with plaster and is then pushed as far as it will go into the still liquid plaster by a gentle rotational movement. The remainder of the impression is then filled.





## CONSTRUCTING THE SUPERSTRUCTURE: OPTION B (MODIFIED ABUTMENTS)

### Procedure

#### Important:

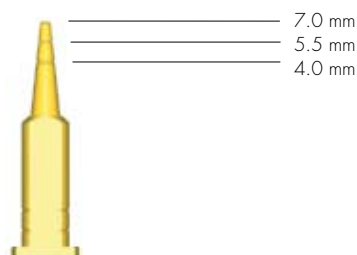
The reinforcement pin is automatically sized to match the length of the 7.0 mm solid abutment. Therefore, the tip of the pin must be shortened for use with the shorter abutments (4.0 and 5.5 mm).

There are 2 notches located at the tip of the pin:

First notch = 5.5 mm  
RN solid abutment

Second notch = 4.0 mm  
RN solid abutment

The pin should be trimmed accordingly until the rectangular end of the pin fits flat and flush against the shoulder analog.



### 2. Construct the superstructure

The subsequent procedure is identical to the procedure for conventional crown and bridge work.

The modeling is carried out and the facing is built up in accordance with the same guidelines (premolarization, axial loading, "freedom in centric") as described for Option A on page 20.

#### Important:

The prefabricated plastic copings cannot be used to construct the superstructure on modified abutments.

### Additional information

In the event that the implant shoulder has been modified, it is then necessary to take a direct impression of the abutment.

No auxiliary components can be used when there are modifications to the implant shoulder. In this case, the impression procedure and the model casting are carried out in the conventional way using injection molding and an individual impression procedure.

#### Note:

In the case of the WN solid abutment, the occlusal opening must be sealed with wax or gutta percha prior to the impression procedure.

The procedure is identical to that for natural teeth. The modeling is carried out and the facing is built up in accordance with the same guidelines (premolarization, axial loading, "freedom in centric") as described for Option A on page 20.

#### Important:

Modifying the implant shoulder is not recommended and should only be done when it is absolutely necessary.

# IMPORTANT NOTES

## Disclaimer of liability

The Straumann® dental implant is part of an overall concept and may only be used in conjunction with the associated original components and instruments according to Institut Straumann AG's instructions and recommendations. Use of products made by third parties in conjunction with the Straumann® Dental Implant System will void any warranty or other obligation, expressed or implied, of Straumann. Instruction as to application of our products takes place verbally, in writing, by electronic media, or in hands-on training corresponding to state-of-the-art at the time of introduction of the product. The user of Straumann products has the duty to determine whether or not any product is suitable for a particular patient and circumstance. Straumann disclaims any liability, expressed or implied, and shall have no responsibility for any direct, indirect, punitive or other damages, arising out of, or in connection, with any errors in professional judgment or practice in the use or installation of Straumann products.

The user is also obliged to study the latest developments of the Straumann® Dental Implant System and its applications regularly.

## Please note

The descriptions given are insufficient to allow immediate use of the Straumann® Dental Implant System. Guidance in the handling of these instruments by a doctor experienced in their use is strongly recommended.

## Validity

Upon publication of this brochure, all previous versions are superseded.

## Availability

Not all products listed in this brochure are available in all countries.

## Caution

Our products must be secured against aspiration when used intraorally (e.g., use of a throat pack is recommended).

Federal law restricts these devices to sale by, or on the order of, a dentist or physician.

## Units per package

Unless stated otherwise, there is one unit in each package.

## Documentation

You can obtain detailed instructions on the Straumann® Dental Implant System from your Straumann representative.

## Definition













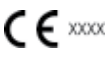
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SLActive™ = Sand-blasted, Large grit, Acid-etched, chemically active and hydrophilic.

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## Explanation of the symbols on labels and instruction leaflets

	Lot/batch number
	Article number
	Sterile by gamma irradiation
	Non-sterile
	Upper temperature limit
	Temperature limitation
	Caution: Federal (USA) law restricts these devices to sale by, or on the order of, a dentist or physician
	Do not use on patients
	Do not reuse
	Refer to instructions for use
	Use before expiration date
	Protect from exposure to strong light or heat
	Straumann products carry the CE mark and fulfill the requirements of the Medical Devices Directive 93/42 EEC

## Colored warning labels

**YELLOW** ➔ Caution: Indicates hazards or unsafe handling that might cause minor injury or damage to property.

**ORANGE** ➔ Warning: Indicates hazards that might cause serious or fatal injury.

**RED** ➔ Danger: Indicates hazards that might cause immediate serious or fatal injury.



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