Basic information on the Straumann® Variobase™ Abutment.
Straumann is the industrial partner of the ITI (International Team for Implantology) in the areas of research, development, and education.
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1. Introduction.

1.1 PURPOSE OF THIS GUIDE

This guide was created for dental technicians and dentists working with the Straumann® Variobase™ Abutment for designing screw-retained or cement-retained customized abutments and cement-retained bridges (via mesostructure). It provides step-by-step information on working with the Straumann Variobase Abutment.

⚠️ Warning/Pre-Caution
Failure to follow the procedures outlined in these instructions may harm the patient and/or lead to any or all of the following complications:
• Aspiration or swallowing of a component
• Breakage
• Infection

💡 Note
Implant-borne superstructures require optimal oral hygiene on the part of the patient. This must be considered by all involved parties when planning and designing the restoration.

Consult the brochure Basic Information on the Surgical Procedures – Straumann Dental Implant System for information on indications and contraindications of Straumann implants, such as the required minimum number of implants, implant type, diameter and loading protocols.
2. General information.

2.1 INTRODUCTION TO THE STRAUMANN® VARIOBASE™ ABUTMENT

The Straumann Variobase Abutment provides dental laboratories with the flexibility to create customized abutments through their preferred workflow. In addition, the Straumann Variobase Abutment comes with the benefit of the original Straumann connection and the unique Straumann engaging mechanism.

For intended use and indications for use, please refer to the instructions for use.

2.2 TECHNICAL REQUIREMENTS FOR DIGITAL WORKFLOW

The Straumann Variobase Implant Kit is available from Straumann on request.

Note
The Straumann Variobase Implant Kit only provides the geometry of the coping for the Straumann Variobase Abutment.

Software
To design using the Straumann Variobase Abutment for digital workflows, CAD software containing the Straumann Variobase Implant kit can be used. Please follow the instructions of the CAD software provider. Please contact Straumann for more information regarding availability.

Milling
Once the coping is designed using CAD software, the resulting STL file is sent to Straumann.

Milling is available for customers with the Straumann CS2 scanner or the CARES® prosthetic app for Dental Wings scanners.
2.3 SYSTEM OVERVIEW

The Straumann® Variobase™ Abutment covers the following Straumann implant platforms.

<table>
<thead>
<tr>
<th></th>
<th>NC</th>
<th>RC</th>
<th>NNC</th>
<th>RN</th>
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<td><img src="048.356.png" alt="Image" /></td>
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</table>

*Article numbers ending in 'V4' or in '-04' contain 4 burn-out copings in one pack.*
2.4 PRODUCT CHARACTERISTICS

Reliability
• The original Straumann® implant-abutment connection
• Strong retention of the coping with a patented² engaging mechanism
  • Extra bonding surface with 4 cams

Efficiency
• Variobase™ STL data available for various CAD software platforms
• Easy and precise wax-up process with accurate burn-out copings
• Compact base dimensions for design flexibility
• Simplified bonding process
  • Skip the sandblasting process
  • 4 cams facilitate precise positioning of the coping

Cost-effectiveness
• Use the CAD software of choice, and send to Straumann

²Patent pending.
3. Restoration, design and finishing.

3.1 PREPARATION

Prerequisites
- The tooth shade has been identified
- The impression has been taken
- Shade information and impression have been sent to the dental lab

3.1.1 FABRICATION OF THE MASTER CAST

To ensure high-quality restorations, fabricate the master cast using standard methods and type-4 dental stone (ISO 6873). Adhere to the following requirements:
- Use new, undamaged and original Straumann implant analogs
- Embed the implant analogs in the stone; the analogs must not move in the model
- Always use a gingival mask to ensure the emergence profile is optimally contoured
- Use scannable material for the gingival mask
3.2 DESIGN AND FABRICATION OF COPING/CROWN

3.2.1 SCANNING AND DESIGNING WITH A SCANBODY

**Step 1 – Assembling**
Check for proper fit of the scanbody in the analog and hand-tighten the self-retaining screw (maximum 15 Ncm). Use the Straumann® SCS Screwdriver to fix the post in the analog. Check again for proper fit and for any rotational or vertical looseness. If a single-tooth restoration is planned, orient the angled surface of the scanbody buccally (not adjacent to the approximal tooth). Avoid any contact of the scanbody to the proximal teeth.

**Step 2 – Scanning and modeling**
Follow the software provider’s instructions on how to scan and recognize the scanbody. Design the coping or crown following the software provider’s instructions.
3.2.2 SCANNING AND DESIGNING WITH A WAX-UP

Step 1 – Placing of the Straumann® Variobase™ Abutment
Place the Straumann Variobase Abutment on the analog and hand-
tighten the screw (maximum 15 Ncm). Use the Straumann SCS
Screwdriver to place the abutment on the analog. Check again for
proper fit and for any rotational or vertical movement.

Step 2 – Assembly of the burn-out coping
Attach the burn-out coping to the Straumann Variobase Abutment
and check for proper fit.

Note
Working with the burn-out coping supports a clean and sharp-
edged finish of the screw channel and a good fit to the Straumann
Variobase Abutment.

Note
The burn-out coping should be free of any rotational or vertical
movement.

Step 3 – Shortening of the burn-out coping
Shorten the burn-out coping to the height of the occlusal plane
according to the individual circumstances.

Note
Ensure that the shortened burn-out coping still covers the
Straumann Variobase Abutment completely.
Step 4 – Wax-up
Contour a wax-up according to the individual anatomical situation.

**Note**
- Make a reduced anatomic design or a full-contour design depending on the indications of the dental material used
- Ensure that the wax layer on the abutment is sufficiently thick
- Respect the minimal wall thickness of the respective dental material used according to the manufacturer’s instructions

Step 5 – Scanning and Modeling
Follow the software provider’s instructions on how to scan and recognize the wax-up. Complete design of the coping following the software provides instructions.

### 3.2.3 MILLING

**Preparation for milling**
Transfer design data to Straumann by following the instructions of your CAD software provider.

**Note**
- Use the proper settings per material following the instructions of your CAD software provider
- In lab milling or third party milling is not indicated and will void the warranty
3.2.4 FINISHING OF THE COPING/CROWN IN DENTAL LABORATORY

Step 1 – Finishing of the coping/crown
Use standard procedures to finalize the coping or crown.

Note
- The coping or crown to be bonded to the Straumann® Variobase™ Abutment must be finalized before bonding
- For cement-retained restorations, the crown can be made and finalized after the bonding step

3.3 BONDING

Step 1 – Seating on master model
Seat the Straumann Variobase Abutment on the implant analog in the master model with a screw (hand-tight). Seal the screw channel with wax to prevent excess cement from flowing into the screw channel.

Note
Due to its patented* engaging mechanism, it is not necessary to sandblast the Straumann Variobase Abutment to obtain a strong bond.

Always bond on the master model to ensure precise seating of the coping or crown on the Straumann Variobase Abutment.

Due to the symmetrical nature of the four cams, confirm the position of the crown according to the individual patient anatomy prior to bonding.

* Patent pending.
Step 2 – Bonding
Apply self-adhesive dental cement on the Straumann® Variobase™ Abutment. Follow the cement manufacturer’s instructions. Bond the coping to the Straumann Variobase Abutment.

⚠️ Note
- Immediately remove excess cement from the abutment. Polish the lower margin of the coping after the cement has dried
- Always use a polishing aid to protect the abutment’s prosthetic connection

⚠️ Warning
- Do not fire the abutment after bonding

* Tested with Panavia™ F2.0 resin cement by Kuraray and a zerion® (zirconium dioxide) coping by Straumann.
3.4 INSERTION (DENTIST’S OFFICE)

The final restoration is fixed on the master cast before it is delivered to the doctor’s office.

**Step 1 – Preparation**
- Remove the healing cap or temporary restoration
- Remove the superstructure from the master cast and unscrew the abutment from the analog
- Clean and dry the interior of the implant and the abutment thoroughly

**Note**
Always ensure that surfaces of threads and screw heads are clean and that a new screw is used for the final restoration.

**Step 2 – Final insertion**

**Option A: Screw-retained final restoration**
- Position the sterilized Straumann® Variobase™ Abutment with the coping in the implant. Tighten the screw to 35 Ncm using the SCS Screwdriver together with the ratchet and the torque control device
- Close the SCS screw channel with cotton and sealing compound (i.e. gutta-percha). This allows for later removal of the Straumann Variobase Abutment in case a crown replacement should be required

**Option B: Cement-retained final restoration**
- Position the sterilized Straumann Variobase Abutment in the implant. Tighten the screw to 35 Ncm using the SCS Screwdriver together with the ratchet and the torque control device
- Close the SCS screw channel with cotton and sealing compound (i.e. gutta-percha). This allows for later removal of the Straumann Variobase Abutment in case a crown replacement should be required
- Cement the superstructure to the abutment
- Remove excess cement
## 4. Auxiliaries and instruments.

### 4.1 SCS SCREWDRIVERS

<table>
<thead>
<tr>
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<th>Material</th>
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<tr>
<td>046.400</td>
<td>SCS Screwdriver for ratchet, extra short</td>
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<td>046.401</td>
<td>SCS Screwdriver for ratchet, short</td>
<td>Length 21 mm</td>
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<tr>
<td>046.402</td>
<td>SCS Screwdriver for ratchet, long</td>
<td>Length 27 mm</td>
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### 4.2 RATCHET

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<td>046.119</td>
<td>Ratchet includes service instrument</td>
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### 4.3 POLISHING AIDS AND ANALOG HOLDER

<table>
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<td>046.239</td>
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5. Important Guidelines.

Please note
Practitioners must have appropriate knowledge and instruction in the handling of the Straumann CADCAM products or other Straumann products (“Straumann Products”) for using the Straumann Products safely and properly in accordance with the instructions for use.

The Straumann Product must be used in accordance with the instructions for use provided by the manufacturer. It is the practitioner’s responsibility to use the device in accordance with these instructions for use and to determine, if the device fits to the individual patient situation.

The Straumann Products are part of an overall concept and must be used only in conjunction with the corresponding original components and instruments distributed by Institut Straumann AG, its ultimate parent company and all affiliates or subsidiaries of such parent company (“Straumann”), except if stated otherwise in this document or in the instructions for use for the respective Straumann Product. If use of products made by third parties is not recommended by Straumann in this document or in the respective instructions for use, any such use will void any warranty or other obligation, express or implied, of Straumann.

Availability
Some of the Straumann Products listed in this document may not be available in all countries.

Caution
In addition to the caution notes in this document, our products must be secured against aspiration when used intraorally.

Validity
Upon publication of this document, all previous versions are superseded.

Documentation
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