

**SwissPlus Manual**  
Narrow Abutment System



# Restorative Options with Narrow Abutments

Narrow Abutments are used for cemented single- and multi-unit restorations when the long axis of the implant is approximately parallel with the clinical long axis of the adjacent teeth and/or implant/abutment combination. There must be acceptable soft tissue thickness to establish margins at least 0.5mm subgingival for esthetics. The abutments are supplied with a plastic component which can be used as a transfer as well as a waxing coping.

These abutments require minimum preparation and consist of the following two options:

## 1) One-Piece Narrow Abutments (does not engage the internal anti-rotational area of implant interface) [OPA]:

Used for **multiple-unit restorations only**. This abutment is attached to the implant and its spatial position is transferred to a working cast with a direct impression technique. The abutment is to be left in the patient's mouth once its position has been transferred. A provisional restoration is fixed over the abutments during prosthesis fabrication. The abutment is designed superiorly with 6° round tapering walls and a single flat 3° tapered side. The base portion of the abutment interfaces with the 8° internal bevel and thread of the implant. Tightened into the implant with a 1.25mmD Hex Tool, the abutment forms a seal with the 3.5mmD opening at the most superior aspect of the implant.

The abutment functions as a support and the circumference of the implant platform will function as the margin for the prosthesis. If required, preparation of the abutment is achieved chairside or with copious irrigation, intraorally.

## 2) Two-piece abutment components (engages the internal anti-rotational area of implant interface):

Used for **single- or multiple-unit restorations**. This abutment can be attached to the implant and function similar to a One-Piece Abutment (mentioned above).

A preferable alternative is to make an implant level impression and attach the abutment to the Implant Replica in the working cast. The prosthesis is fabricated on the Two-Piece Narrow Abutment and respective Implant Replica in the working cast.

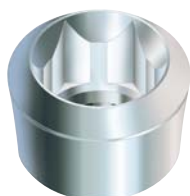
### •Two-Piece Narrow Abutment for the standard 4.8mmD platform [OPA2]:

The abutment head is designed superiorly with 6° round tapering walls and a single flat 3° tapered side. The tapered inferior aspect of the abutment has an octagon which interfaces with the 3.0mmD (flat-to-flat) internal octagon as well as the 8° internal tapered walls of the implant. Fixed to the implant with an abutment screw [GPCAS] it forms a seal with the 3.5mmD opening at the most superior aspect of the implant. The abutment functions as a support and the circumference of the implant platform will function as the margin for the prosthesis.

### •Two-Piece Narrow Abutment for the mini 3.8mmD platform [SPMA2]:

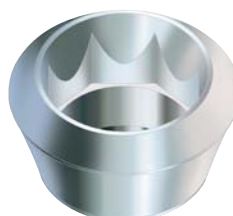
The abutment head has 4° round tapering walls with a set of opposing tapering flat surfaces and is fixed to the implant with an abutment screw [MHLAS]. Designed to interface with the 2.5mmD (flat-to-flat) internal hexagon and seal the 2.9mmD aperture of the narrow platform SwissPlus Implant. Used in areas of limited mesial-distal restorative space the abutment assembly functions as a support for the prosthesis, and can be prepared chairside or in the laboratory.

Abutment for the Internal Hexagon Implant, 3.8mmD platform



2-piece Narrow Abutment [SPMA2]

Abutments for the Internal Octagon Implant, 4.8mmD platform



1-piece Narrow Abutment [OPA]



2-piece Narrow Abutment [OPA2]

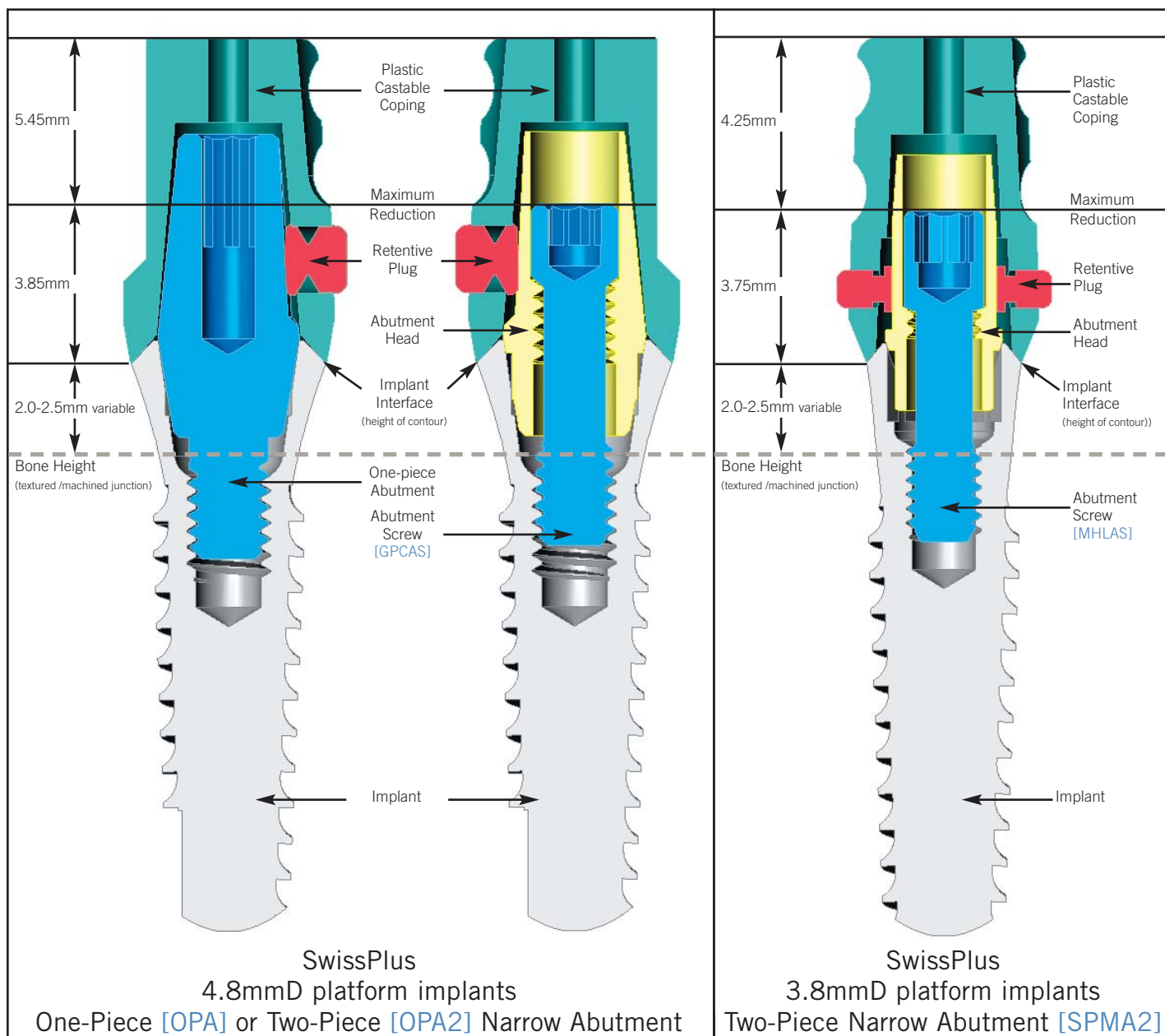
# Preparation Guidelines for Narrow Abutments

## Vertical height requirements of the final abutment assembly

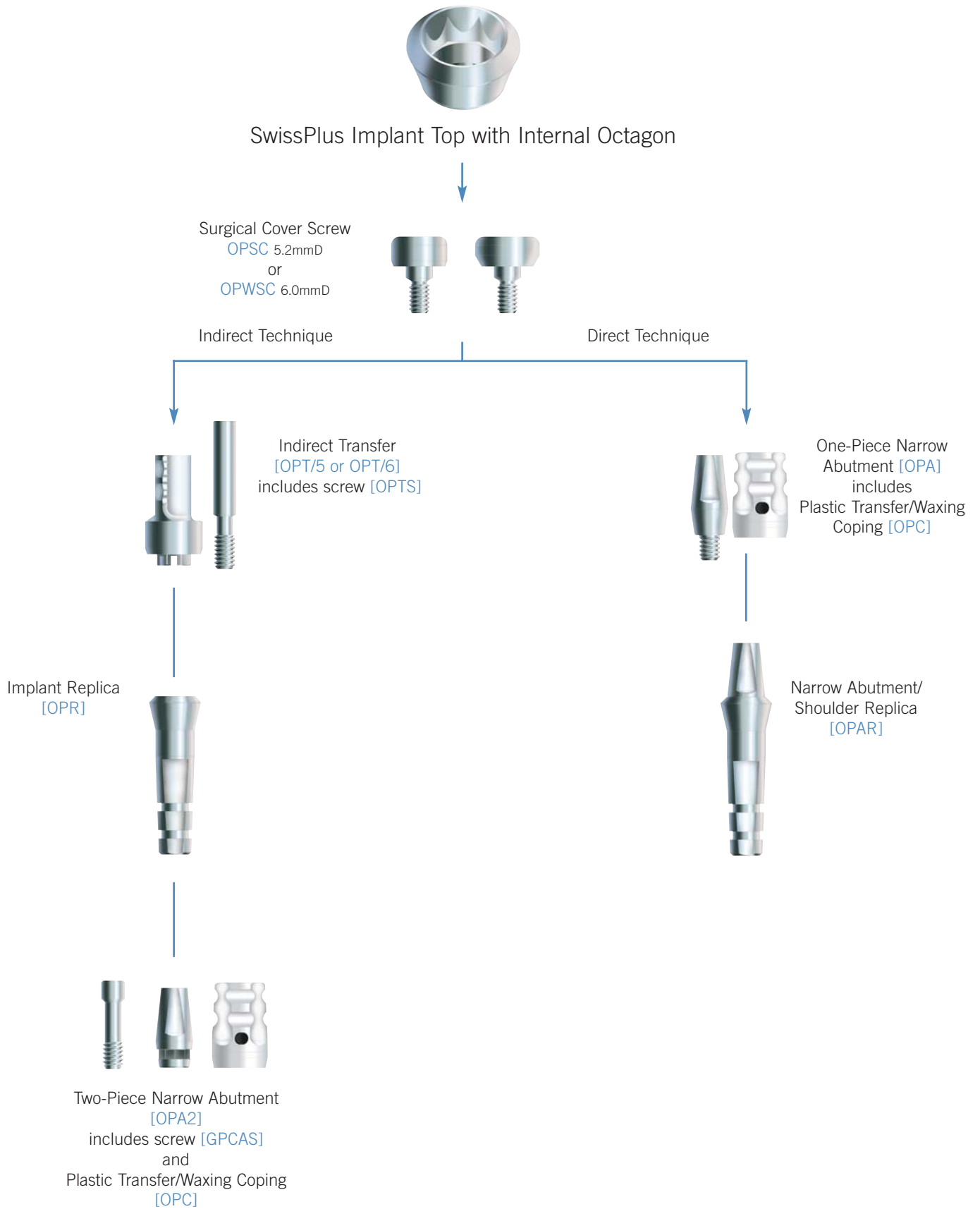
To allow for an esthetic, subgingival connection between the implant and prosthesis interface, determine the appropriate tissue depth on the labial or buccal surface. The prosthesis margin is determined by the height of contour of the implant.

The vertical height from the implant platform to the top of the abutment measures 5.7mm and 5.1mm above the 4.8mmD and 3.8mmD implant platforms respectively.

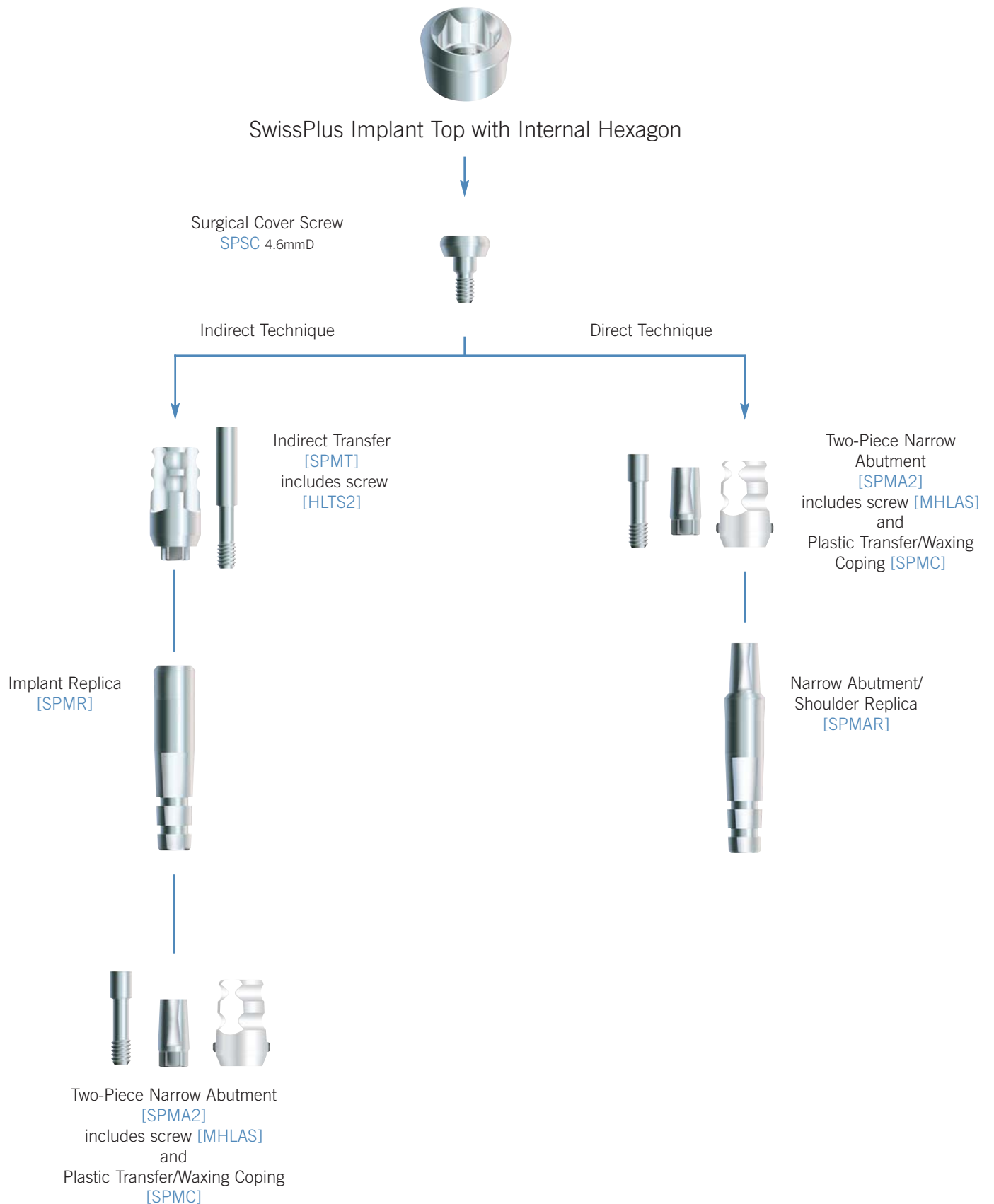
After the abutment components are in place, the minimum vertical clearance between the implant interface (measured from the implant height of contour) and the opposing dentition is 3.85mm for internal octagon implants with 4.8mmD platform, and 3.7mm for internal hexagon implants with 3.8mmD platform. This measurement is taken from the platform to the point of maximum reduction of the abutment or abutment head/screw combination, and it does not include the vertical space required for prosthesis fabrication.



# Components for 4.8mmD platform SwissPlus Implant

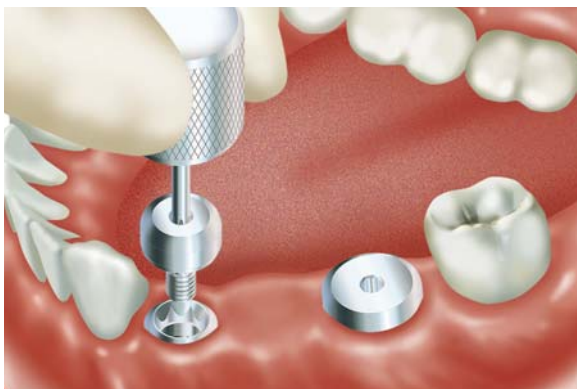


# Components for 3.8mmD platform SwissPlus Implant



# Narrow Abutment System

## Option 1: Direct technique – attaching and preparing the abutment



### Exposing the tops of the implants

After the healing period, remove the Surgical Cover Screw with a 1.25mmD Hex Tool. With a Single-Stage Implant there is no need to “uncover” the implant so the cover screw is easily accessible.



### Attaching the Narrow Abutments

Attach either one-piece [OPA] or two-piece [OPA2 or SPMA2] Narrow Abutments to the implants with a 1.25mmD Hex Tool. Tighten the abutments to 30 Ncm with a calibrated torque wrench.

Note: For ease of use orient the flat of the two-piece abutment to the facial. This alignment will aid in the orientation of the Plastic Transfer/Coping [OPC or SPMC]. If using the one-piece abutment, orientation of the flat is determined by the thread timing of the internal thread of the mating implant and thread of the abutment.

Standard impression procedures with the Plastic Transfer will follow this step if no preparation of the abutments is required.



### Modifying the Narrow Abutments

Use a marker to indicate the vertical reduction required.

Remove the marked abutment from the mouth if major reduction in profile is required and prepare the abutment chairside.

Attach the abutment to an Implant Replica [OPR or SPMR] and insert assembly into the Abutment Holder [ABTH]. Modify the abutment with cut-off disks, heatless stone wheels and 12-fluted carbide burs.

**Caution:** Do not reduce the abutment lower than indicated in the guidelines on the prior pages.



### Making final adjustments to the abutments

Reattach, then tighten the abutments to 30 Ncm with a calibrated torque wrench.

Confirm vertical clearance and common path of draw of proposed restoration relative to surrounding dentition and/or implants. If required, make minor modifications to the abutments under copious irrigation. After completion of final modifications, retighten the abutments to the recommended torque.

**Note:** Clearly mark on the impression and laboratory work authorization slip that the abutments have been modified.

# Narrow Abutment System

## Option 1: Direct technique – preparing the transfer coping



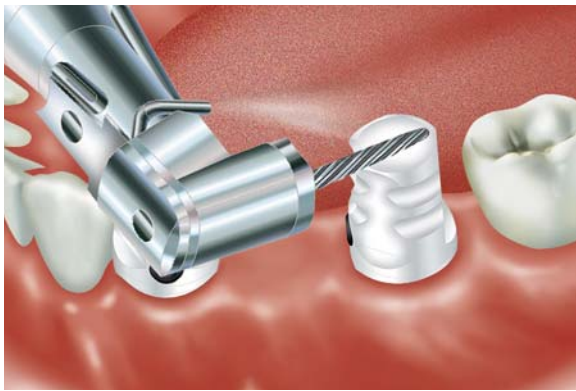
OPC



SPMC

### Attaching the Plastic Transfer Copings

Attach the respective Plastic Transfer Coping [OPC for 4.8mmD platform implants and SPMC (has two black plugs) for 3.8mmD platform implants]. The black plug(s) on the Plastic Transfer Coping will align with the flat(s) on the abutments for rotational stability.



### Modifying the Plastic Transfer Coping

Trim the Plastic Transfer Coping to the exact vertical height and contour of the prepared Narrow Abutment.

Follow procedures as if using a reduction coping in standard crown and bridge techniques. With this procedure the clinician will trim the abutment then the coping.



### Reactivating the Plastic Transfer Coping

Remove the Plastic Transfer Coping from the abutment after it has been trimmed to the correct contour.

Reactivate the copings prior to making the impression. Roll the plastic component on a flat surface which will align the outer portion of the black plug flush with the outside profile of the coping. The plug is now in position to be carefully realigned with the flat of the abutment, and press-fit into place.

**NOTE: The above procedure only applies to the component [OPC] which has one black plug.**



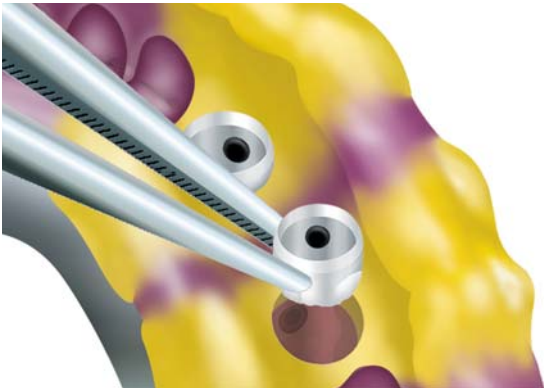
### Making an impression of the prepared abutments

Block out the hex-holes in the tops of the abutments and/or abutment screws with a medium of choice to prevent the ingress of impression material. Remove excess material so that the blockout is flush with the tops of the abutments. Make a conventional, full-arch, crown-and-bridge impression with an elastomeric impression material, such as vinyl polysiloxane. To insure a proper fit of the finished restoration, the abutments must remain in the patient's mouth after completing the impression procedure.

Remove the impression with enclosed Plastic Transfer Copings and send the impression to the laboratory for fabrication of the working cast.

# Narrow Abutment System

## Option 1: Direct technique – fabricating the working cast



OPAR  
or  
SPMAR

### Removing the Plastic Transfer Copings

Abutments that have been modified in any way will have to have their corresponding Narrow Abutment/Shoulder Replica [OPAR, SPMAR] reduced to the identical profile prior to pouring of the working cast.

Use tweezers to carefully remove the Plastic Transfer Copings from within the impression. The copings will provide visual indication of which abutments have been trimmed orally as well as allow the technician to reactivate the OPC black plug as previously instructed.

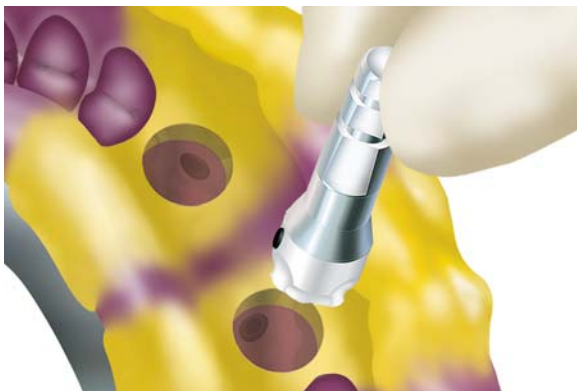


### Trimming the Narrow Abutment/Shoulder Replica

Attach the Plastic Transfer Coping to the corresponding Narrow Abutment/Shoulder Replica [OPAR, SPMAR].

Insert the assembly into the Abutment Holder [ABTH] and fasten in place.

Precisely trim the aluminum replica to the profile of the plastic coping, taking care not to heat or cut the plastic. If major reduction is required, mark the replica with a fine instrument, remove the plastic coping and then trim. The trimmed plastic coping is used as a reduction coping for the aluminum replica.



### Fabricating the working cast

Reactivate the black plug\* of the Plastic Transfer Coping and then align the plug with the flat side of the replica, and press-fit the two pieces together.

Place the assembly back into the impression ensuring correct orientation of the plug and the flat surfaces of the coping. Pour the working cast in dental stone with soft tissue replication material.

\*This procedure is only for the coping [OPC] with a single plug.



### Fabricating the working cast

After the dental stone sets, separate the cast from the impression. The trimmed Narrow Abutment/Shoulder Replica will be incorporated within the stone cast with the same orientation as the abutments in the patient's mouth.

The soft tissue replication material can be removed for a visual inspection of the abutment/implant shoulder interface, if desired.

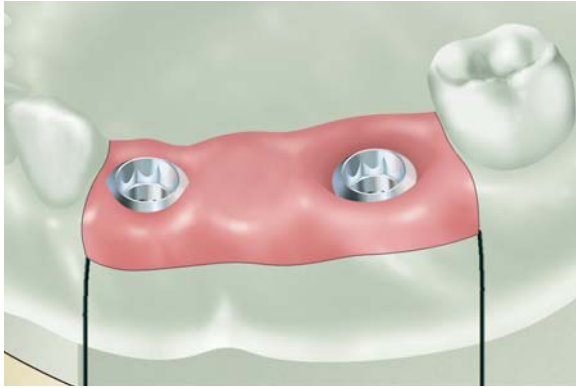
Pour the opposing arch impression in dental stone, then utilize the interocclusal records to articulate the casts.

**Proceed to common procedures for fabricating the framework pattern on page 59**



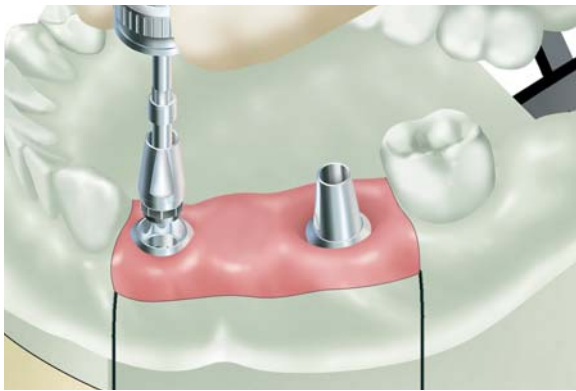
# Narrow Abutment System

## Option 2: Indirect technique – attaching the abutment



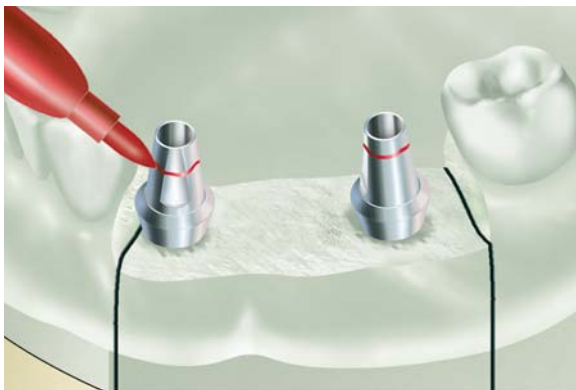
### Selecting the Narrow Abutments

Fabricate the working cast utilizing one of the transfer procedures mentioned in the Impression-Taking section. Two-Piece Narrow Abutments (“abutment”) consist of an abutment body with either a base octagon [OPA2] or hexagon [SPMA2] and an abutment screw [GPCAS or MHLAS] respectively.



### Seating the Narrow Abutments

Interdigitate the abutment’s engaging component with that of the Implant Replica in the working cast. Thread the abutment screw through the abutment body and into the Implant Replica with the 1.25mmD Hex Tool. To complete seating, tighten the abutment screw to 30 Ncm with a calibrated torque wrench.

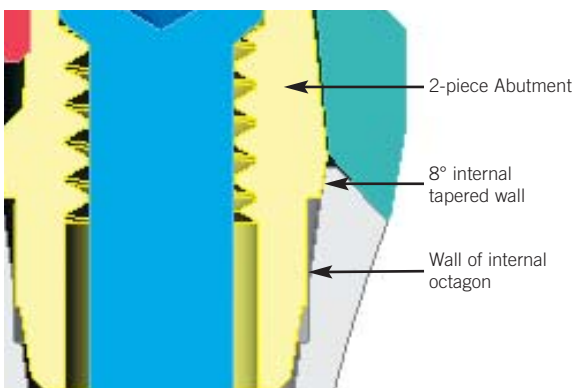


### Mark the abutment for desired preparation

Mark the required modifications to achieve appropriate vertical clearance.

Note: The reduction of the abutment needs to take into consideration the following:

- 1) Desired thickness of casting alloy.
- 2) Desired thickness of veneering material.
- 3) Occlusal considerations such as centric occlusion and protrusive or lateral excursions.



### Removing the Narrow Abutments

The male octagon or hexagon of the abutment [OPA2, SPMA2] will engage the internal octagon or hexagon of the Implant Replica [OPR, SPMR].

Note: Due to the contact of the OPA2 with the internal octagon and the 8° bevel, a frictional connection often occurs with the implant or Implant Replica.

Optional Step: To remove the abutment [OPA2] first remove the abutment screw, then fully seat the Removal Tool [HLRTX2] to back the abutment off the Implant Replica or Implant.

# Narrow Abutment System

## Option 2: Indirect technique – preparing the abutments



### Modifying the Narrow Abutments

Attach the abutment to an additional Implant Replica [OPR or SPMR] located within the Abutment Holder [ABTH]. Modify the abutment with cut-off disks, heatless stone wheels and 12-fluted carbide burs.

Keep modification to vertical reduction only if possible.



### Attaching the abutments

Attach the Narrow Abutments to the corresponding Implant Replica's. Tighten to the required torque with a calibrated torque wrench. Close the articulator and confirm desired clearance in all excursive and centric movements.



### Attaching the Plastic Transfer Copings

The Narrow Abutments [OPA2 and SPMA2] are supplied with a Plastic Transfer Copings [OPC and SPMC] which are used as the foundation for the prosthesis framework fabrication.



### Modifying the Plastic Transfer Coping

Trim the Plastic Transfer Coping to the exact vertical height and contour of the prepared 2-piece Narrow Abutment.

Follow procedures as if using a reduction coping in standard crown and bridge techniques. With this procedure, the technician will trim the abutment then the coping.

**Proceed to common procedures for fabricating the framework pattern on page 59**

# Prosthesis fabrication for Narrow Abutment System

## Common procedures for fabricating the framework pattern



### Seating the Plastic Copings

Attach the Plastic Copings on the the prepared components. Depending on what process has been used will determine the components in the working cast:

Option1: Direct technique will have prepared Narrow Abutment /Shoulder replica in working cast.

Option2: Indirect technique will have prepared 2-piece Narrow Abutments attached to the corresponding Implant Replica in working cast.

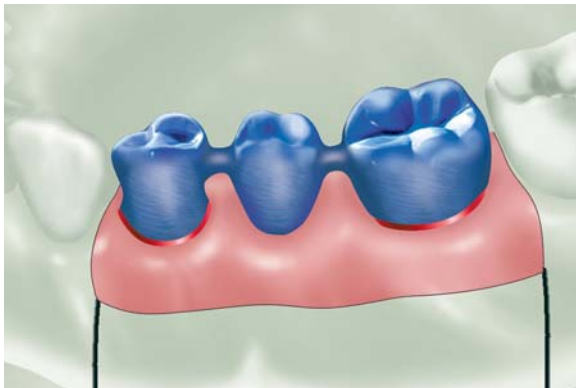


### Removing the retentive plug.

The black plug provides an intimate contact between the tapered wall(s) of the Narrow Abutment and the plastic coping.

It is designed as a retentive feature for transfer procedures as well as an anti-rotational feature when utilizing this component for framework fabrication of single-unit restorations. Once seated the black plug can be fused in position to the coping by melting the components with a hot instrument.

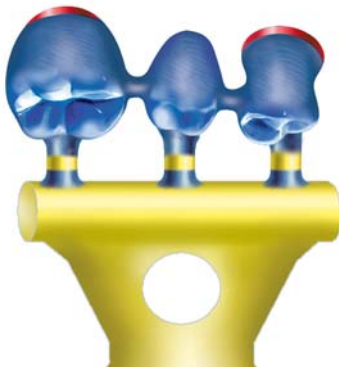
Trim the internal retentive feature or remove the black plug completely prior to the wax up of the multi-unit framework. Note: The hole left by the removal of the plug needs to be filled completely prior to investing.



### Fabricating the wax framework pattern

Trim excess bulk from the plastic coping to allow for an even thickness of veneering material between the final framework and adjacent and opposing dentition.

Create the wax framework pattern according to routine crown-and-bridge procedures.



### Spruing, investing and casting the framework pattern

Attach 10-gauge sprue wax with reservoirs to the thickest part of each unit within the framework pattern. Add auxiliary sprues and vents to prevent porosity in the casting, as needed.

Invest and cast the pattern in noble or high noble ceramic alloy according to the manufacturer's guidelines.

# Prosthesis fabrication for Narrow Abutment System

## Common procedures for fabricating the final prosthesis



### Finishing the cast framework

Divest the cast framework with ultrasonic cleaning and non-abrasive glass bead. Follow conventional laboratory techniques to fit and finish the cast framework. Seat the finished framework onto the working cast and confirm that a passive fit has been achieved.

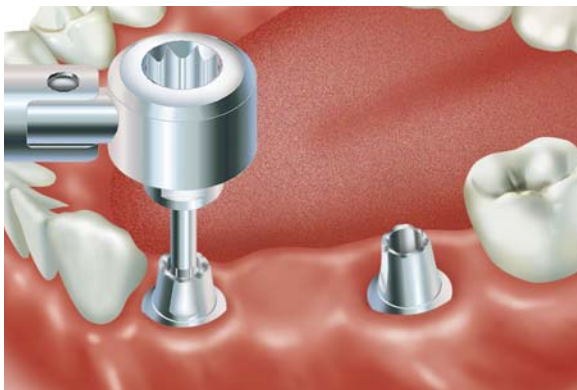
Place the framework on the working cast and send it to the clinician for a try-in of the metal framework. The dentist should confirm that a passive fit has been achieved before the veneering material is applied.



### Finishing the final prosthesis

Prepare the framework to receive the opaque layer and apply porcelain to the opaqued framework according to routine laboratory procedures.

Finish the porcelain and polish any metal margins, seat the finished prosthesis on the working cast and send it to the clinician for final delivery.



### Delivering the final prosthesis

Remove the provisional restoration from the patient's mouth. Retorque the abutments to 30 Ncm with the calibrated torque wrench. Wait ten minutes, then retighten. This is done to compensate for clamping force lost due to screw embedment.



### Delivering the final prosthesis

Seal the screw access channel in each abutment with cotton pellets and light-curing resilient material or gutta percha. This will ensure future access to the screw head. Seat the final prosthesis onto the abutments and confirm fit and contour.

Check the occlusion. Verify that no additional finishing or adjustment is required.

Cement the final prosthesis with a cement of choice. To facilitate future retrievability, a soft-access cement may be used. Provide the patient with oral hygiene instructions prior to release.