

ENGLISH - EN

Prosthodontic procedure TSH[®]

Reference: PRO-00004

Version: 00

*IMPORTANT INFORMATION.
READ THIS DOCUMENT CAREFULLY BEFORE USING THE PRODUCT.*

Index

1. General Considerations	3
2. Introduction	3
3. Procedure by type of implant and restauration	4
4. Impression taking	5
5. Permanent cement-retained restorations with millable abutments	7
6. Permanent screw-retained restorations on implant direct castable abutment	10
7. Permanent overdenture restorations on ball abutment features	12
8. Rotation Castable Abutment.....	14
9. SUMMARY OF TSH® SCREW TORQUES.....	17

1. General Considerations

Phibo® products are intended to be used only by healthcare professionals specialized in odontology and implantology. It is necessary to have training in dental implantological technology for the use of any of the Phibo products.

It is also necessary to consult the information gathered in this procedure and related instructions for use (IFUs):

- **IFU-00001 Implants.**
- **IFU-00002 Implantable attachments.**
- **IFU-00003 Dental instruments Class IIa.**
- **IFU-00004 Non-implantable attachments.**
- **IFU-00005 Dental instruments Class I**

If you are not familiar with the prosthodontic procedure described here, you can contact Phibo to provide you with any information and/or training you may require to perform this procedure:

- atencionphibo@phibo.com

Before opening the package of a Phibo product, please consult the information from the product's label and IFU.

2. Introduction

The objective of this Prosthodontic Procedure is to allow for a global view of the different prosthodontic restorations that can be performed on the **TSH® implant system**.

With the TSH® system, multiple options are available in current Implantology. From single and multiple cases, fixed prostheses and complete restorations to their different forms of connection: cement-retained, screw-retained and mixed.

The **TSH® implant system** has a wide range of attachments that allow for simple and versatile prosthodontic restorations on implants, with solutions for aesthetic and functional components that guarantee a successful treatment for the patient.

3. Procedure by type of implant and restauration

Direct immediate aesthetics

Temporary restoration without occlusal contact is performed during the surgical procedure itself, after the insertion of the implant. The temporary prosthesis is created in the laboratory or CAD-CAM manufacturing center based on the initial models and is adjusted and relined in the clinic.

Indirect immediate aesthetics

Temporary restoration without occlusal contact within 24 hours after insertion of the implant. After the impression is taken, the temporary prosthesis is created in the laboratory or CAD-CAM manufacturing center. The prosthesis is then cemented and adjusted by occlusion in the clinic.

Direct immediate loading

The temporary restoration with occlusal contact is performed during the surgical procedure itself, after the insertion of the implant. The temporary prosthesis is created in the laboratory or CAD-CAM manufacturing center based on the initial models and is adjusted and relined in the clinic.

We recommend using a primary stability indicator to verify that the values obtained are optimal to ensure the effectiveness of this technique.

Indirect immediate loading

Temporary or permanent restoration with occlusal contact within 24 hours after implant insertion. After the impression is taken, the temporary or permanent prosthesis is manufactured in the laboratory or CAD-CAM manufacturing center using the initial models and is adjusted and relined at the clinic.

In the case of bar-retained overdentures, if indicated, a second adjustment of the overdenture will be performed in the mouth.

We recommend using a primary stability indicator to verify that the values obtained are optimal to ensure the effectiveness of this technique.

Early loading

Temporary or permanent restoration with occlusal contact, after six weeks in the mandible and eight weeks in the maxilla, from implant insertion. Prosthetic procedure performed in the laboratory.

We recommend using a primary stability indicator to verify that the values obtained are optimal to ensure the effectiveness of this technique.

Delayed loading

Temporary or permanent restoration with occlusal contact, after three months in the mandible and six months in the maxilla, from implant insertion. Prosthetic procedure performed in the laboratory.

4. Impression taking

Two options of impression taking are available:

- In cases of severe non-parallelism between implants or between implants and teeth, impressions are taken with **open-tray** and a long retention screw using the open-tray impression carrier.
- In cases of parallelism between implants or between implants and teeth, impressions can be taken with **closed-tray** and a short retention screw using the closed-tray impression carrier.

Materials

- ✓ TSH® Metal impression carrier for open-tray for closed-tray systems, depending on the chosen technique.
- ✓ Phibo® system 25 mm driver.
- ✓ TSH® implant analog.

Additional Materials (not supplied by Phibo®)

- ✓ Single tray
- ✓ Impression material.
- ✓ Impression material adhesive.

Procedure

Begin by removing the healing abutment from the implant.

Choose the appropriate impression-taking method (open-tray or closed-tray) and select the corresponding impression carrier accordingly.

Attach the 1.25 mm driver to the retention screw and thread it through the impression carrier until the screw tip protrudes from the lower end.

Position the carrier and screw assembly on the implant head.

Thread the assembly onto the implant until the base of the carrier makes full contact with the implant head.

Loosen the retention screw slightly and rotate the impression carrier gently clockwise or counterclockwise. If the carrier does not rotate, it is correctly aligned with the implant hexagon. If it rotates, apply slight pressure in an occlusal-gingival direction while rotating until the assembly fits securely between the hexagons.

Tighten the retention screw manually to secure the impression carrier to the implant. Perform a periapical X-ray to confirm the correct positioning and fixation of the carrier, if necessary.

Air dry the carrier to remove any moisture.

Apply the impression material around the carrier to ensure precise capture of the implant position.

Take the Impression according to the selected technique:

- **Open-Tray Technique:** Place the tray into the patient's mouth with the remaining impression material and wait for it to set. Once set, remove the retention screw and withdraw the tray with the carrier attached.
- **Closed-Tray Technique:** Insert the tray with impression material and allow it to set. Once set, remove the tray directly, leaving the impression carrier in place. Remove the carrier from the implant afterward.

Reattach the healing abutment to the implant after the impression-taking process.

Prepare the following components for the laboratory:

- Impression tray.
- Impression carrier along with the corresponding retention screw.
- Implant analog.
- Bite registration.
- Opposing arch model.

At the laboratory:

Process the impression according to the selected technique:

- **Open-Tray Technique:** Attach the implant analog to the open-tray carrier embedded in the impression material and secure it using the retention screw.
- **Closed-Tray Technique:** Connect the implant analog to the closed-tray carrier with the retention screw. Insert the assembly into the impression by aligning the flat faces and applying light pressure until a retention click is heard.

To create the model, pour soft resin into the areas representing soft tissue to replicate the peri-implant tissue contours, and allow it to set. Fill the remaining tray with plaster to form the final working model.

Finalize the model according to the selected technique:

- **Open-Tray Technique:** Once the plaster has hardened, remove the retention screw and separate the model from the impression material.
- **Closed-Tray Technique:** Once the plaster has hardened, detach the model from the tray and remove the impression carrier by loosening the retention screw.

For model conditioning, mount the model onto a semi-adjustable articulator using the pre-surgical records provided. Confirm that the model accurately reflects the clinical scenario.

Inspect the following:

- **Implant Position:** Verify angulation and parallelism.
- **Available Spaces:** Assess interproximal and occlusal dimensions for prosthetic components.
- **Soft Tissue Height:** Measure the emergence profile to ensure appropriate design of the prosthesis.
- **Opposing Arch:** Evaluate its relationship with the model for functional harmony.

With the information obtained, choose the optimal abutments and the necessary attachments to manufacture the prosthesis in the laboratory.

5. Permanent cement-retained restorations with millable abutments

Indications

For single and multiple cement-retained restorations on the abutment, in general.

To level the emergence height of the crown to the adjacent natural teeth and soft tissue thickness.

When it is necessary to adjust the height of the opposing arch and parallelize the insertion axis of the prosthesis.

In single or multiple restorations where, due to the position of the implant, the entry hole of the retention screw in a screw-retained prosthesis compromises the restoration aesthetics.

Contraindications

When the occlusal height from the implant platform is less than 4 mm.

Materials

- ✓ 1.25 mm driver.
- ✓ Torque wrench.

Additional Materials (not supplied by Phibo®)

- ✓ Implant impression record.
- ✓ Impression material.
- ✓ Single tray.

Procedure

1. Selection and Placement of Millable Abutments (Laboratory)

Choose the Millable Abutment Based On:

- Soft tissue height from the implant shoulder to the free gingival margin.
- The need for alignment with non-parallel implants.
- Desired emergence profile of the prosthesis.

Insert the chosen abutment to the implant analog, adjusting the hexagons with small turns, and manually screw the retention screw until the millable abutment is fixed on the TSH® implant analog. · Check the height of the Millable Abutment in relation to the opposing arc and the parallelism with adjacent teeth and/or abutments. · Shape the abutment by milling if necessary. Preparation of the Prosthesis

2. Preparation of the protheseis (Laboratory)

Seal the entry hole of the retention screw of the millable abutment with wax and prepare the abutment with a spacer.

Wax up directly on the abutment once it has been shaped by milling (if indicated) after applying the appropriate separator.

Model the structure for casting with wax or resin.

Perform the casting on metal. · Remove the casted structure into the cylinder.

Reline and adjust the shoulder.

Apply ceramic coating without glazing, if applicable.

Make a guide on the model for the position of the Millable Abutment in the mouth.

Remove the Millable Abutment from the model.

3. Structure Trial (Clinical)

Remove the healing abutment from the implant.

Place the abutment or abutments on the acrylic resin guide made in the laboratory.

Attach the abutment to the implant using the acrylic resin positioning guide and thread the retention screw until the abutment is fixed, gently tightening by hand.

Mount the prosthesis structure on the abutment in the mouth.

Check the fit of the structure.

Adjustments of the abutment shoulder to the implant.

- Passivity.
- Relationship with the gingiva.
- Contact points.
- Occlusion.

Remove the structure from the mouth and assemble it back into the working model.

Replace the healing abutment.

4. Structure Finishing (Laboratory)

Apply final ceramic coating and complete the glazing process.

Inspect the structure for fit and finish before returning it for clinical placement.

5. Placement of Abutments and Permanent Prosthesis (Clinical)

Remove the healing abutment from the implant.

Place the abutment or abutments on the acrylic resin guide made in the laboratory.

Attach the abutment to the implant using the acrylic resin positioning guide and thread the retention screw until the abutment is fixed, gently tightening by hand.

Tighten the retention screw using the 1.25 mm driver tip and the torque wrench at a torque of 35 N.cm.

Mount the prosthesis structure on the abutment in the mouth and check the fit of the structure:

- Adjustments of the abutment shoulder to the implant.
- Passivity.
- Relationship with the gingiva.
- Contact points.
- Occlusion.

6. Permanent screw-retained restorations on implant direct castable abutment

Indications

They are indicated for single and multiple screw-retained or bar-retained overdenture restorations for the Phibo® TSH® system. The range of implant direct castable abutments consists of:

- Anti-Rotation UCLA Castable Abutment: Suitable for single fixed screw-retained restorations.
- Rotation UCLA Castable Abutment: Ideal for multiple fixed restorations or bar-retained overdentures.

Contraindications

Cases where the retention screw entry hole compromises the restoration's aesthetics.

Materials

- ✓ 25 mm driver.
- ✓ Torque wrench.
- ✓ TSH® implant analog
- ✓ Castable Abutment & TSH®

- ✓ TSH® permanent clinical screw.
- ✓ TSH® laboratory screw.

Additional Materials (not supplied by Phibo®)

- ✓ Implant impression record.
- ✓ Impression material.
- ✓ Single tray.

Procedure

1. Selection and Placement of UCLA Abutments (Laboratory)

Choose the type of Castable Abutment to fabricate the prosthesis and check.

- Soft tissue height from the implant platform to the free gingival margin.
- Emergence profile of the prosthesis.

Insert the chosen castable abutment into the implant analog.

Check the height in relation to the opposing arc and the parallelism with adjacent teeth and/or abutments.

Model the structure in wax or resin for casting onto the castable abutment. Cast the modeled structure using a standard process.

Reline and polish the structure if necessary.

2. Structure Sample (Clinical)

Remove the healing abutment from the implant.

Attach the structure sample to the implant with the retention screw.

Check the fit of the structure:

- Adjustments of the abutment shoulder to the implant.
- Passivity.
- Relationship with the gingiva.
- Points of contact.
- Occlusion.

Remove the structure from the mouth and assemble it back into the working model.

Replace the healing abutment.

3. Structure Finishing (Laboratory)

Apply ceramic coatings and complete the glazing process.

Inspect the prosthesis for quality, including fit, aesthetics, and occlusal harmony.

4. Placement of Permanent Prosthesis (Clinical)

Remove the healing abutment from the implant

Secure the prosthesis to the implant using the retention screw.

Tighten the screw to 35 N.cm using the Phibo® 1.25 mm driver tip and torque wrench.

Confirm the fit of the prosthesis:

- Adjustments of the abutment shoulder to the implant.
- Passivity of the structure.
- Gingival adaptation.
- Contact points and occlusion.

7. Permanent overdenture restorations on ball abutment features

The Ball Abutment is a base abutment for the fabrication of mucosa-implant-supported overdenture restorations.

Indications

Base abutment for the fabrication of mucosa-implant-supported ball-retained overdenture restorations, in the Mandibular area.

In cases with significant deficit of the mandibular elastic bone mass, where the placement of implants for other types of rehabilitation involves a high risk of bone fracture.

Contraindications

In maxillary bone. As a greater number of implants have to be placed due to low bone density, the adjustment of the relines and overdenture to the abutment is more complicated.

In all cases where another type of restoration is indicated.

Materials

- ✓ Phibo® 25 mm driver
- ✓ Phibo® torque ratchet.
- ✓ TSH® implant analog.
- ✓ TSH® Ball Abutment.

- ✓ Metal O-ring cap for TSH® ball abutment.

Additional Materials (not supplied by Phibo®)

- ✓ Implant impression record.
- ✓ Impression material.
- ✓ Single tray.

Procedure

1. Selection and placement of ball abutment (laboratory)

Choose the height of the transmucosal area of the Ball Abutment most suitable for reconstruction.

Place the chosen abutment on the TSH® implant analog.

Check the abutment height in relation to the opposing arch and the space for the overdenture

2. Prosthesis fabrication (laboratory)

Model the overdenture structure.

Fix the metal O-ring cap to the overdenture with temporary material

3. Test the structure (clinical)

Remove the healing abutments.

Place the structure on the abutments.

Check the following:

- Adjustments of the abutment shoulder to the implant.
- Passivity of the structure.
- Relationship to the gingiva.
- Occlusion of the prosthesis.

Remove the structure and abutments from the mouth.

Replace the healing abutments

4. Structure finishing (laboratory)

- Shape and finalize the overdenture structure as necessary.
- Remove the temporary cement and O-ring caps.
- Permanently fix the caps to the overdenture using acrylic resin.

5. Placement of Abutments and Permanent Prosthesis (clinical)

Remove the healing abutments.

Attach the Ball Abutment to the implant using the 1.25mm driver tip and the torque wrench at a torque of 35 N.cm.

Mount the overdenture on the abutments in the mouth.

Check the following:

- Adjustments of the abutment shoulder to the implant.
- Passivity of the structure.
- Relationship to the gingiva.
- Occlusion of the prosthesis.

Instruct the patient in the procedure for inserting and removing overdentures, as well as in maintaining oral hygiene.

Periodically check the patient until a perfect fit is achieved between the soft tissue and the prosthesis.

Normal wear and tear require periodic replacement of the rubber O-ring, removing the old one with a probe and replacing it with a new one.

8. Rotation Castable Abutment

Indication

Suitable for creating bar-supported overdentures or multiple fixed restorations. Ideal for cases requiring precise alignment and secure attachment of prosthetic structures.

Allows for the customization of bar designs and complex frameworks in wax or resin.

The rotation castable abutment is specifically designed for multi-unit restorations where rotational flexibility is advantageous.

Contraindication

Not suitable in cases where the prosthetic screw retention holes compromise the aesthetics of the final restoration or cases where implants exhibit extreme angulations or lack parallelism, making precise bar or framework alignment challenging.

Materials

- ✓ Phibo® 25 mm driver
- ✓ Torque ratchet.
- ✓ TSH® impression carrier.
- ✓ TSH® healing abutment.
- ✓ TSH® clinical screw.
- ✓ TSH® implant analog.
- ✓ Rotation castable abutment for TSH®
- ✓ TSH® laboratory screw.

Additional Materials (not supplied by Phibo®)

- ✓ Impression record.
- ✓ Impression material.
- ✓ Single tray.

Procedure

1. Selection and placement of UCLA abutment (Laboratory)

Choose the type of Castable Abutment to fabricate the prosthesis and check:

- Soft tissue height from the implant platform to the free gingival margin.
- Emergence profile of the prosthesis.

Insert the chosen castable abutment into the implant analog.

Check the height in relation to the opposing arc and the parallelism with adjacent teeth and/or abutments.

Model the structure in wax or resin for casting onto the castable abutment.

Shape the bar in wax or attach prefabricated plastic bars to the castable abutment model.

Cast the modeled structure using a standard process.

Reline and polish the structure if necessary.

Model overdenture structure on the bar and its attachment.

2. Test the structure (clinical)

Remove the healing abutment from the implant.

Attach the structure sample to the implant with the retention screw.

Check the fit of the structure:

- Adjustments of the abutment shoulder to the implant.
- Passivity.
- Relationship with the gingiva.
- Occlusion.

Remove the structure from the mouth and assemble it back into the working model.

Replace the healing abutments.

3. Structure Finishing (Laboratory)

Shape the overdenture or bar as needed.

Finalize the structure with polishing and quality checks.

4. Placement of permanent prosthesis (Clinical)

Remove the Healing abutments from the Implants.

Attach the bar to the implants with the retention screws.

Tighten the retention screw using the 1.25 mm driver tip and the torque wrench at a torque of 35 N.cm.

Mount the overdenture on the bar in the mouth.

Check the fit of the structure:

- Adjustments of the abutment shoulder to the implant.
- Passivity.
- Relationship with the gingiva.
- Occlusion.

Instruct the patient in the procedure for inserting and removing overdentures, as well as in maintaining oral hygiene.

9. SUMMARY OF TSH® SCREW TORQUES

PRODUCT	TORQUE	
TSH® healing cap	25 N·cm	
TSH® healing abutment	25 N·cm	
TSH® carrier screw	Manual adjustment	
TSH® abutment screw	Temporary	25 N·cm
	Permanent	35 N·cm
TSH® laboratory screw	Manual adjustment	
TSH® clinical screw	CAD-CAM (CrCo/ Ti/ Zr with interface)	35 N·cm
	CAD-CAM (PMMA)	15 N·cm