PROSTHETIC GUIDE

Smart solution
anthogyr

anthofit®

Un choix rationnel
Smart solution
We would like to thank you for your confidence in choosing to work with the Anthofit® implant solution.

For your safety and comfort of use, our products have been created using the benefits of proven scientific knowledge and clinical experience.

Thanks to many years of collaboration with a committee of foremost dental implantologists and our own R&D team, the Anthofit® implant range is both simple to use and high-performance from an aesthetical and biomechanical point of view.

This instruction manual contains most of the information necessary to place implants.

Some key points to a global therapeutic dental implant approach are here presented as a reminder.

But the most important part of this manual deals with the presentation of the Anthofit® system and its associated surgical protocol.

For further information, at the end of this manual are some key reference publications which will help you optimise your use of the Anthofit® system or simply complete your general dental surgery knowledge.

We invite you to carefully read this document before placing any implants.

Your success will be ours. Our network of business partners and our experts remain at your disposal to provide you with any further information needed.

The Anthogyr team.
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</tr>
</tbody>
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Complications
Cleaning and sterilization
Materials
Recommended reading
Warnings and recommendations

The instructions contained in this document describe the different phases of the surgical procedure and prosthetic restoration to be followed for the Anthofit® implant system. A few general features specific to inserting implantable devices are recalled for information. This is not in any way an exhaustive document about implant and prosthetic practices to which the reader has any right of complaint.

Training:
Anthofit® components should only be implanted by practitioners who have been trained in implant practice and/or prosthetic techniques, and who are equipped for this type of procedure. Correct knowledge of surgical techniques and prosthetics is required to use this system. Specific training is offered and delivered at the Anthogyr company.

The surgical and prosthetic technique for the Anthofit® system is performed exclusively in conjunction with the original components and instruments in accordance with the manufacturer’s recommendations. Anthogyr can take no responsibility implant in case of placement non-compliant with this manual and in case of use of prosthetic parts or instruments foreign to the system.

The parts are not interchangeable with other implant systems.

Clinical evaluation of the patient and the choice of treatment solution are the sole responsibility of the practitioner. The implant diameter and length must be determined beforehand by the dental practitioner, depending on the clinical situation. Patients should also be informed of potential risks associated with implanting this type of device: oedema, bruising, haemorrhage, periodontal complications, transient or permanent nerve damage, local or systemic infections or inflammation, bone fractures, loosening or fracture of the implant, dehiscence, aesthetic problems, aspirating or swallowing the device, iatrogenic trauma etc.

Equipment:
The practitioner using the system is responsible for the follow-up and maintenance procedures required to identify and treat any complications as early as possible and for ensuring the correct functioning and safety of the device. The references and the batch numbers of all components implanted, temporarily and/or definitively, must be recorded in the medical file of the patient. Follow-up and maintenance are part of the knowledge of a practitioner trained in placing dental implants.

The practitioner is also responsible for defining the different settings for his/her equipment (instrument rotation speed, irrigation flow rate, etc), according to each clinical case, and for confirming that these are in good condition before each procedure.

Reusable instruments must be cleaned, decontaminated and sterilized before each surgery (even when first used) in accordance with current protocols in hospitals and clinics. The organization of the operating room, preparation of operating staff and of the patient (premedication, anaesthesia, etc…) should follow current procedures and are the responsibility of the practitioner.

Anthogyr can under no circumstances be held responsible for any harm arising from defective handling or use. In order to avoid swallowing or inhaling small components, it is recommended that these are rendered secure by fixing them to the outside of the mouth with a suture thread. Whenever an instrument is changed, confirm that the contra-angle or key are correctly fixed by applying slight traction and ensure that each part is correctly fixed onto the transfer system outside the oral cavity.

Conservation:
In producing our products, we have paid particular care and guarantee that a manufacturing control has been performed on all products made available for sale. In order to guarantee their integrity, it is recommended that they be stored in their original packaging at an ambient temperature of between 15 and 30°C, away from moisture and direct sunlight.

Protect packages from dust and do not store in the same premises as solvents and/or paints containing solvents or chemical substances. The device must be used before the expiration date indicated on the traceability label.

If the package (blister-closure / bag) is damaged or a defect is apparent when the product is opened, it is imperative that the device not be used and that the nature of the defect, part numbers and batch numbers of the components concerned are reported to the distributor or to Anthogyr.

The technical specifications contained within these instructions are provided for indicative purposes only and cannot form the subject of any complaint.

The Anthofit® implant system must not be used on animals.

Single-use devices must not be reused, nor resterilized (risk of contamination and risk of alteration of functional surfaces).

The instructions for use here in may only be reproduced or disseminated with prior approval from the Anthogyr company. Anthogyr reserves the right to vary the technical feature of its products and/or to make changes or improvements to the Anthofit® system without prior notice.

The Anthofit® implant system is not compatible with other Anthogyr and competitors’ systems.

If uncertain, the user should contact the Anthogyr company before use.

This brochure invalidates and replaces all previous versions.
1. Generalities

A/ PACKAGING AND PICTOGRAMS

→ Packaging of prosthetic components

The prosthetic parts are delivered non-sterile in individual bags.
The cover screws and healing screws are delivered sterile. Refer to the Anthofit® surgical manual.
The components and other devices delivered sterile must be unpacked observing the different sterility areas (outside of the blister / bag = non sterile, inside of the blister / bag = sterile, plastic stopper tube = sterile, implant = sterile).

→ Pictograms and traceability

Symbols used on the labels:

- REF: Part number
- LOT: Manufacturing batch
- STERILE: Gamma ray sterilization
- R: Sterilisation control sticker (not appearing on the picture)
- : No sterile
- : Do not re-use
- : Manufacturing date
- : Expiration date
- : CE number
- : See instruction for use
- : Can be sterilised in an autoclave at 135°C
- : Do not autoclave sterilise

The sterilisation control disc turns red during the Anthogyr sterilisation process. It does not suffice to guarantee product sterility and must not be confused with the colour coding for the diameter of the implant.

Each component has a batch number. In order to ensure full traceability of components intended to remain permanently in the mouth, it is recommended that the batch number is recorded in the patient file. If the device has any obvious defect when the tube is opened, do not use it and report the nature of the defect to the distributor or Anthogyr along with the part numbers and batch numbers of the pieces concerned.

→ Storage

The components of the Anthofit® system must be stored at a temperature between 15 and 30°C in a place with relative humidity of between 30 and 70%. Avoid any exposure to light. Protect packages against dust. Do not store solvents and/or paints containing solvents or chemical substances in the same place.
B/ ANCILLARY EQUIPMENT

Calibrated tightening of the prosthetic components can be achieved using either the prosthetic dynamometrical wrench ref. IN CCD, or with the Torq Control® ref. 15500.

→ Torq Control® manual dynamometric wrench ref. 15500

Secure screw tightening

Torque adjustment
10 to 35 N.cm
(10, 15, 20, 25, 30, 32 & 35 N.cm)

1
Select the torque

2
Screwing

3
The screw automatically stops when the selected torque is reached

• Precise tightening thanks to the torque control and automatic dedutching (7 torque levels).
• Prevents screws from breaking or prosthetic parts from unscrewing.
• Easy access in mouth and easy to use thanks to the micro-head and its lightness.
• Hygiene and maintenance (see leaflet provided with the product).

⚠️ Prosthetic purpose only (do not use it for implant tightening).
SCOPE OF USE
The prosthetic dynamometrical wrench ref. IN CCD is used for dental requirements in the area of dental prostheses. Any other form of use is forbidden and can cause danger. This instrument is fitted with a torque system that enables very precise tight locking of prosthetic parts.

USING THE KEY
The key is supplied non-sterile. Before first using it, the key must be cleaned and sterilized. Before use, check that the key is not damaged or that no part is missing.

Connecting / Disconnecting the rotary instrument
It is preferable to wear protective gloves for all tool handling. Check the condition of the rotary instruments used and handle them cautiously and carefully.

Inserting and locking the rotary instrument
- Insert the rotary instrument and turn it slightly until hearing a clicking sound and until the ratchet enters the groove.
- Check that the rotary instrument is correctly held with a slight axial movement each time the tool is changed.

Removing the rotary instrument
- Remove the instrument by pulling it out.

Using the torque system
Once the rotary instrument is connected to the prosthetic part, operate the flexible rod so as to reach the desired tightening torque.

If the flexible rod does not indicate «0» when you do not use the prosthetic dynamometrical wrench, this means that it may be damaged. In this case, please return it to the Anthogyr After-Sales Department.

HYGIENE AND MAINTENANCE
See « Cleaning and sterilization » page 49.

DISASSEMBLING / RE-ASSEMBLY
Remove the head of the main body by applying slight traction.

Remove the main body.

Remove the “ratchet + spring” set from the head.
a- Opening the kit

1) Unclip the 2 base pegs of the insert to be removed.
2) Remove the insert from the main plate.
3) Repeat the same for each insert.

b- Placing in «desk stand» position

Position the lug of the transparent rear cover in the hole of the main plate.

*If difficulty is experienced opening the transparent covers, ensure that the inserts are correctly positioned and clipped.

c- Disassembling inserts

1) Unclip the 2 base pegs of the insert to be removed.
2) Remove the insert from the main plate.
3) Repeat the same for each insert.
d- Disassembling the transparent covers
1) Carefully take off the side of the main plate.
2) Remove the base peg of the transparent cover.
3) Repeat the same for the other side.

e- Disassembling the side covers
1) Disengage the cover from the main plate.
2) Repeat the same for the other side.

f- Disassembling the stainless steel side plates
1) Remove the stainless steel plate from the cover.
2) Repeat the same for the other side.

To assemble the kit, repeat stages a/ to f/ in reverse order.
The Anthofit implants are intended to replace missing tooth roots with 1 or 2 stage surgical planning. They are manufactured of medical grade titanium and delivered sterile. They are available in several diameters (body and neck) and lengths, with two types of prosthetic connection: External Hexagon (HE) and Internal Octagon (OI).

The Anthofit® system proposes 2 prosthetic connections: External Hexagon (HE) or Internal Octagon (OI).

Internal Octagon Connection (OI)
Choice of the prosthetic components should be made in relation to the implant’s prosthetic platform. Each prosthetic platform is colour coded in order to ease communication between the laboratory technician and clinician during the reconstruction phases.

External Hexagon Connection (HE)
Two prosthetic platforms R (Regular) and L (Large) are proposed:
- The R (Regular) platform is identical for implants diameter Ø 3.5*, 3.75 and 4.00mm.
- The L (Large) platform is dedicated to the Ø 5mm implant.

*The 3.5 mm diameter is contra-indicated in the posterior sites.
D/ HEALING SCREWS SELECTION GUIDELINES

Choose the screw that matches the planned prosthetic construction and the abutment used as the support.

E/ PROSTHETIC MAINTENANCE

Maintenance of dental implant prosthetics should be ensured by both the clinician and the patient.

→ Patient maintenance

Daily erasing of dental plaque:

1/ The prosthetic area should be maintained using conventional hygienic cleaning tools (toothbrush, floss, interdental brushes).
2/ Use a non-abrasive toothpaste which does not contain acid fluorides.
3/ Using antiseptics for short periods of time can be advised in areas difficult to access and/or with irritation.
4/ Hydropulsors with anti-plaque agents or antiseptics are advised for patients with limited manual liability.

→ Professional maintenance

During the first year, a quarterly visit is recommended. Then every 3 or 6 months in case of periodontal disease or peri-implant lesions. This frequency should be adjusted according to the medical status of the patient. Each visit should include:

1/ Assessment of the soft tissues (inflammation, consistency, volume, shape).
2/ Plaque index and presence of tartar.
3/ Bleeding when probing.
4/ Prosthetic adaptation, detection of prosthetic mobility for fixed prosthesis.
5/ Occlusion control.
6/ Radiographic examination (assessment of peri-implant bone level).

Ultrasonic scaling systems, steel or titanium curettes are prohibited from use in elimination of dental tartar. Favor plastic curettes.
Some of the instruments required to tighten Anthofit® prosthetic components are the same as for the Ossfit® range. The instruments are available singly or in surgical kits.

**F/ PROSTHETIC KIT**

**Prothèse - IN MOD PRH**

- Short prosthetic wrench
- Long prosthetic wrench
- Conical abutment wrench
- Dalbo wrench
- Dynamometrical manual wrench
- Ball attachment wrench
- Prosthetic mandrels
- Conical abutment mandrels
- Ball attachment mandrels

**2. IMPRESSION TAKING**

- IMPLANT
  - Direct implant
    - Pick-up technique
  - Direct implant
    - Pop-in technique
  - Conical abutment
    - Pick-up technique on conical abutment
**Recommendations**

> Impression techniques known as «Pick-up direct on implant» and «Pop-in direct on implant» can both be used for unitary or plural reconstruction.
> Combining both techniques on a same construction is proscribed.
> For plural reconstructions, it is advised to favour the Pick-up technique when implants are divergent or convergent.
> For plural reconstruction, it is possible to link the Pick-up transfers together prior to impression taking.

### A/ DIRECT IMPLANT IMPRESSION TECHNIQUE

#### Pick-up technique

**Necessary material:**

- Short tightening wrench (ref. IN CHECV)
- Long tightening wrench (ref. IN CHELV)
- Pick-up transfer
- Analog

Using the following table:

Select the appropriate transfer, matching with implant diameter and the profile of healing screw to be used.

<table>
<thead>
<tr>
<th>OI Implant</th>
<th>Ø 3.5 mm</th>
<th>Ø 4 mm</th>
<th>Ø 5 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Healing screw</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cylindrical</td>
<td>ØIPC001, ØIPC002, ØIPC003, ØIPC004, ØIPC005</td>
<td>ØIPC006, ØIPC007, ØIPC008, ØIPC009, ØIPC010</td>
<td>ØIPC011, ØIPC012</td>
</tr>
<tr>
<td>Conical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pick-up transfer</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ØITR001, ØITR002, ØITR003, ØITR004, ØITR005</td>
<td>ØITR022, ØITR023, ØITR024, ØITR025</td>
<td>ØITR026, ØITR027, ØITR028, ØITR029, ØITR030</td>
<td></td>
</tr>
<tr>
<td><strong>Analogs</strong></td>
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</tr>
<tr>
<td>ØIAN001, ØIAN002, ØIAN003</td>
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</tbody>
</table>

In case of limited interdental space, the narrowest transfer can be used (ØITR002) whatever the diameter of implant. The analog will have to match the implant diameter.
1. **Removal of the healing screw**
Remove the healing screw using the wrench ref. IN CHELV (or ref. IN CHECV).

2. **Placing the Pick-up transfer**
Tighten the Pick-up transfer using the wrench ref. IN CHECV.
Once the tightening is done, take a lateral X-Ray to assess that there are no spaces between the transfer and the implant platform and that the transfer is well positioned.

3. **Impression taking**
Use an open impression tray perforated where the Pick-up’s tightening screw emerges.
Assess correct access and the absence of obstacles to the tightening screws when positioning the transfers. Inject impression material with a syringe around the base of the transfer.
Load the impression tray and proceed to impression-taking following the manufacturer’s recommendations while taking great care to remove any impression material from the tightening screws’ heads before it hardens.
4. Removal of the impression tray
Remove the screws using the wrench ref. IN CHECV. When the screws have been removed, the tray itself can be removed without difficulty. Reposition the healing screw on the implant/s.

5. Tightening of the analogs
Tighten the appropriate analog on the visible part of the transfer, in the impression’s intrados. 
Control visually the correct adaptation of the transfers on the analogs.

6. Casting of the model
Inject the soft gingiva with a syringe around the interface analog/transfer. Then cast the model.

→ Pop-in technique

Necessary material :

- Short tightening wrench (ref. IN CHECV)
- Long tightening wrench (ref. IN CHELV)
- Pop-in transfer
- Analog
In the case of limited interdental space, the narrowest transfer can be used (OITR007) whatever the implant diameter. The analog must match the implant diameter.

Use the following table:
Select the appropriate transfer, matching the implant diameter and profile of the healing screw to be used.

<table>
<thead>
<tr>
<th>OI Implant</th>
<th>Ø 3.5 mm</th>
<th>Ø 4 mm</th>
<th>Ø 5 mm</th>
</tr>
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<tbody>
<tr>
<td><strong>Healing screw</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cylindrical</td>
<td>OIPC001</td>
<td>OIPC002</td>
<td>OIPC003</td>
</tr>
<tr>
<td>Conical</td>
<td>OIPC004</td>
<td>OIPC005</td>
<td>OIPC006</td>
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</table>

<table>
<thead>
<tr>
<th>Pop-in transfer</th>
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<tbody>
<tr>
<td>OITR007</td>
<td>OITR008</td>
<td>OITR009</td>
<td>OITR010</td>
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<table>
<thead>
<tr>
<th>Analogs</th>
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</thead>
<tbody>
<tr>
<td>OIAN001</td>
<td>OIAN002</td>
<td>OIAN003</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HE Implant</th>
<th>Ø 3.5 mm</th>
<th>Ø 3.75 mm</th>
<th>Ø 4 mm</th>
<th>Ø 5 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Healing screw</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cylindrical</td>
<td>HEP001</td>
<td>HEP002</td>
<td>HEP003</td>
<td>HEP004</td>
</tr>
<tr>
<td>Conical</td>
<td>HEP005</td>
<td>HEP006</td>
<td>HEP007</td>
<td>HEP008</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pop-in transfer</th>
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<tbody>
<tr>
<td>HETR001</td>
<td>HETR002</td>
<td>HETR003</td>
<td>HETR004</td>
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</table>

<table>
<thead>
<tr>
<th>Analogs</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAN001</td>
<td>HEAN002</td>
<td>HEAN003</td>
</tr>
</tbody>
</table>

1. **Removal of the healing screw**
   Remove the healing screw using the wrench ref. IN CHELV (or IN CHECV).

2. **Placing of the Pop-in transfer**
   Tighten the Pop-in transfer using the wrench ref. IN CHECV.
   Once this is done, take a lateral X-Ray to assess that there are no spaces between the transfer and the implants platform and that the transfer is well positioned.
   Once the tightening done, fill in the tightening screw head using Cavit or surgical wax.
3. Impression taking
Use a stiff impression tray. Inject impression material with a syringe around the base of the transfer. Load the impression tray and take the impression following manufacturer recommendations.

4. Removal of the impression tray
When the impression material has hardened remove the impression tray. The Pop-in transfer remains in place on the implant.

5. Insertion of analogs in the impression
Remove the Pop-in transfer from the implant and reposition the healing screw using the wrench ref. IN CHECV and/or IN CHELV. Tighten the appropriate analog on the transfer and place the whole in the intrados of the impression while respecting the flat shapes of the transfer and pressing firmly. A slight clipping will indicate that the transfer is correctly positioned.

6. Casting of the model
Inject the soft gingiva using a syringe around the interface analog/transfer. Then cast the model.

Note
> For repositioning Pop-in transfers in plural reconstructions, it is highly recommended to follow completely step 5, before proceeding to the next step.
Instructions for use

> The standard use of an angulated conical abutment is similar to that of a straight conical abutment apart from the angulation of the implant.
> The range of conical abutments has been designed to fashion screwed plural or bar finished prostheses.
> Warning! The straight and angulated conical abutments are delivered decontaminated and not sterile. They may be sterilised by autoclaving at 135°C or cold using a recognised standard procedure.

Necessary material:

<table>
<thead>
<tr>
<th>O1 Implant</th>
<th>Ø 3.5 mm</th>
<th>Ø 4 mm</th>
<th>Ø 5 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healing screw</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cylindrical</td>
<td>GIPC001, GIPC002, GIPC006, GIPC007</td>
<td>GIPC006, GIPC007</td>
<td>GIPC011, GIPC012</td>
</tr>
<tr>
<td>Conical abutments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GICD032, GICD034, GICD036, GICD038, GICD039, GICD040, GICD041, GICD042, GICD043</td>
<td>GICD031, GICD032, GICD033, GICD034, GICD035, GICD036, GICD037, GICD038, GICD039</td>
<td>GICD038, GICD040, GICD041, GICD042, GICD043</td>
<td></td>
</tr>
<tr>
<td>Pick-up transfers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GICD019</td>
<td>GICD015</td>
<td>GICD022</td>
<td></td>
</tr>
<tr>
<td>Protection caps</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>GICD016, GICD017</td>
<td>GICD015, GICD017</td>
<td>GICD022</td>
<td></td>
</tr>
<tr>
<td>Analogs</td>
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<tr>
<td>GICAD004, GICD005</td>
<td>GICD005</td>
<td>GICD006</td>
<td></td>
</tr>
</tbody>
</table>
1. Placing of the abutment
Remove the healing screw using the wrench ref. IN CHELV or IN CHECV and tighten the abutment on the implant with the wrench IN CHIP. Assess with radiography that the conical abutment is well tightened on the implant (absence of space at the abutment-implant level of contact). Tighten the abutment at a torque of 35 N.cm using the mandrel ref. IN MHICP or ref. IN MHILP and the dynamometric manual wrench TorqControl® ref. 15500 or using screw wrench ref. IN CHECV or ref. IN CHELV and the dynamometric prosthetic wrench ref. IN CCD.

2. Placing the Pick-up transfer
Tighten the pick-up transfer on the implant using the wrench IN CHECV. Once tightening complete, manually assess that there are no spaces along the prosthetic interface and that the transfer is well positioned.
In case of doubt, a control radio is advised in order to ensure the components’ positioning is correct.
3. Impression taking
Use an open impression tray perforated where the Pick-up’s tightening screw emerges. Assess correct access and the absence of obstacles to the tightening screws when positioning the transfers. Inject impression material with a syringe around the base of the transfer. Load the impression tray and proceed to impression-taking following the manufacturer’s recommendations while taking great care to remove any impression material from tightening screw’s heads before it hardens.

4. Removal of the impression tray
Remove the screws using the wrench ref. IN CHECV. Whren the screws have been removed, the tray itself can be removed without difficulty. Position the protection caps on the abutments.

5. Tightening the analogs
Tighten the appropriate analog on the visible part of the transfer, in the impression’s intrados. Control visually the correct adaptation of the transfers on the analogs.

6. Casting of the model
Cast the model.
3. Temporary prosthesis

Instructions for use

- A temporary PEEK abutment cannot be kept in the mouth for more than 30 days.
- The screwed prosthesis is simpler application to use the temporary PEEK abutment as a single or plural unit.
- Warning! In the screwed prosthesis, the axis of the implants should ideally be directed towards the occlusal face of the teeth to be restored in order to avoid unattractive vestibular emergence of the screw holes.
- Be aware that the PEEK temporary abutment is decontaminated and non-sterilised.
- The sterilisation could be reached either with an autoclave or with a chlorexidine solution.
- Be aware that the PEEK temporary abutment has been developed with aesthetical function while waiting for the permanent abutment realisation. The PEEK temporary abutment has to be placed without any contact with the antagonist teeth so that the integrity of the device could be guaranteed.

Usage PEEK temporary abutment

Necessary material:

- Short tightening wrench (ref. IN CHECV)
- Long tightening wrench (ref. IN CHELV)
- Short mandrel (ref. IN MHECV)
- Long mandrel (ref. IN MHELV)
- Temporary abutment

Select the appropriate abutment matching the implant diameter: please refer to the table below.

<table>
<thead>
<tr>
<th>Implant Ø1</th>
<th>Ø 3.5 mm</th>
<th>Ø 4 mm</th>
<th>Ø 5 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporary abutment</td>
<td><img src="CIPE001.png" alt="Image" /></td>
<td><img src="CIPE002.png" alt="Image" /></td>
<td><img src="CIPE003.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implant Ø2</th>
<th>Ø 4.1 mm</th>
<th>Ø 5.0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporary abutment</td>
<td><img src="HEPE001.png" alt="Image" /></td>
<td><img src="HEPE002.png" alt="Image" /></td>
</tr>
</tbody>
</table>
2. Temporary abutment positioning

Position the temporary abutment on the implant and assess the correct positioning.
If necessary and according to the anatomical situation, modify the abutment with a drill.
Manually tighten the abutment with a long laboratory screw (ref. OICA005) and with a tightening wrench (ref. in CHECV).

3. Resin construction

Drill the guide to allow the laboratory screw to pass through. Fill the guide with acrylic resin and cover the temporary abutment, allowing the long laboratory screw pass through. Let the resin harden.
Remove the long laboratory screw (ref. OICA005) with the wrench ref. IN CHECV.
In order to easily remove the screw, it is recommended to tilt the driving hexagon with cotton. Take the temporary tooth out of the guide and polish.
Think about the choice of the temporary resin placed without any contact with the antagonist teeth.

4. Dental prosthesis fixation

Tighten the prosthesis with the fixing screw provided and temporary abutment and then tighten the screw to 15 N/cm. Two techniques to control the torque are available:
- either the Torq Control® dynamometric wrench ref. 15500 and mandrels red. IN MHECV or IN MHHELV.
- or the prosthetic ratchet wrench ref. IN CCD and tightening wrench IN CHELV.
Fill in the screw access shaft using small sponges or cotton ball scoated with bionometric glass, composite or temporary ablation cement.

1. Removal of the healing screw

Remove the healing screw using the tightening wrench ref. IN CHELV (or IN CHECV).
4. Cemented prosthesis

Direct implant impression technique

Tin Plus® abutment

100% castable or gold-based abutments

Recommendations

> Cemented implant prosthesis can be used for plural or unitary constructions.
> A temporary PEEK abutment cannot be kept in the mouth for more than 30 days.

A/ USE OF THE Tin Plus® TITANIUM ABUTMENT

Necessary material:

- Short tightening wrench (ref. IN CHECV)
- Long tightening wrench (ref. IN CHELV)
- Short mandrel (ref. IN MHECV)
- Long mandrel (ref. IN MHELV)
- Tin Plus® abutment
- Castable cap

Select the appropriate abutment matching the implant diameter: please refer to the buying guide.

- Anthofit® OI straight or tapered:
  - Red = Ø 3.5 mm
  - Yellow = Ø 4.0 mm
  - Blue = Ø 5.0 mm

- Anthofit HE straight:
  - R Code = Prosthetic Ø of 4.1 mm Regular for implants Ø 3.5, 3.75 and 4.0 mm
  - L Code = Prosthetic Ø 5.0 mm Large only for implants Ø 5.0 mm
For a precise selection of collar height and angulation (15° or 20°), use the trial abutments kit, proposed for this purpose (see buying guide).

This selection can be conducted either by the laboratory technician or the clinician directly in mouth.

1. Preparation (laboratory)
Tighten the abutment on the model with the help of the wrench supplied with the implant analog and the wrench ref. IN CHELV. Keep the screw supplied with the abutment for final tightening in mouth. Indicate with a pencil the area of possible rework. In the vestibular area, mark the collar in order for the surrounding to be located 1 mm below the gingival limit.

Note: When rework is finished, we recommend marking the vestibular side of the abutment in order to facilitate repositioning of the abutment in mouth.

The prosthetic lab can also make a repositioning key in wax, to facilitate placing the abutment.

Reworks can be undertaken directly on the cast model or with the abutment tightened on a manipulation analog ref. HEAN004 (Anthofit® HE) or ref. HEAN008 (Anthofit® OI).

2. Making the crown (laboratory)
Option 1/ Collar has been reworked
Coat the abutment with an isolating material then a spacing dye. Proceed to making the frame by addition of wax or thermo-moulding. Allow for a slight flattened area of the wax on the lingual side in order to support the ceramic. Cast the frame following the recommendations of the metal manufacturer, then proceed to building the ceramic.

Option 2/ Collar has not been reworked
Select the appropriate over-castable frame matching the abutment. Anti rotation frames are designed for unitary reconstructions while rotational frames are designed for plural reconstructions (see buying guide).

Place the frame on the abutment. Adjust the frame in height and proceed to making the final frame by addition of wax on the lingual side in order to support the ceramic. Cast the frame following the recommendations of the metal manufacturer then proceed to building the ceramic.
3. Reconstruction (clinician)

Remove the healing screw using the wrench ref. IN CHELV or IN CHECV. Position the TiN-Plus® abutment on the implant. In the Anthofit OI, range the TiN-Plus® abutments are provided with a clip which, by a firm pressure during its insertion, allows validation of the correct position in the implant.

Manually tighten the abutment using the screw supplied.

Assess the right positioning of the abutment by way of radiography.

Fit the crown by assessing the correct points of occlusion, the edge of the gingival around the abutment, the inter-proximal contact points as well as the aesthetics obtained.

If necessary, perform rework.

Remove the crown and tighten the abutment using Black Tite® screw at a torque of 35 N.cm, and with the mandrel ref. IN MHEL or IN MHECV and the Torq Control® ref. 15500 or with the prosthetic dynamometrical wrench ref. IN CCD. Make sure that the mandrel is in line with the screw hole so that the screw or internal thread are not damaged.

Fill the screw access shaft with small sponges or balls of cotton coated with ionometric glass, composite or temporary filling cement. This allows easy removal of the crown should this become necessary. Cement the crown on the abutment with temporary or definitive cement. Temporary cement allows for easier de-cementing if needed.

It is also possible to replace the definitive crown with a temporary crown.

A second impression will be directly taken on top of the abutment once the soft tissues have been stabilised.

Definitive prosthesis will be realised following conventional procedures in prosthesis on natural teeth.
B/ USE OF THE ZIRCONIA Z Plus® ABUTMENT

Conseils d’utilisation

> Be aware that the Z Plus® abutment is decontaminated and non-sterilised. It may be sterilised by cold with a chlorhexidine solution (Anthogyr recommendations).
> Warning! No gamma sterilization or autoclave.
> Warning! Use of fluoridric acid is forbidden.
> Scaling with metal instruments onto the abutment is forbidden.
> Warning! Do not use for prosthetic unitary extensions.
Use of Z Plus® abutment is prohibited on an implant of 3.5 mm in posterior area (molars).
> Wear protective gloves while handling Z Plus® abutment (clinicians and technicians).

Necessary material:

- Short tightening wrench (ref. IN CHCV)
- Long tightening wrench (ref. IN CHELV)
- Short mandrel (ref. IN MHECV)
- Long mandrel (ref. IN MHELV)
- Gripping manipulator (ref. OICE010)
- Z Plus® abutment (ref. OICE010)

⚠️ Allow for a thin diamond cutter 30 µm for reworks of zirconium ceramic abutment. Select the appropriate abutment matching with implant diameter: use the following tables.

<table>
<thead>
<tr>
<th>OI Implant Ø 3,5 mm</th>
<th>Ø 4 mm</th>
<th>Ø 5 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zirconium abutment</td>
<td></td>
<td></td>
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<tr>
<td>OICE003</td>
<td>OICE001</td>
<td>OICE002</td>
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</tbody>
</table>

<table>
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<tr>
<th>HE Implant Ø 4.1 mm</th>
<th>Ø 5.0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zirconium abutment</td>
<td></td>
</tr>
<tr>
<td>HEDE001</td>
<td>HEDE002</td>
</tr>
</tbody>
</table>

1. Laying of the titanium insert

Once the plaster impression is taken with the analog of the implant, select the suitable Z Plus® abutment.
Place the titanium insert of the selected Z Plus® abutment on the analog. Manually screw the insert with the wrench ref. IN CHELV and the screw supplied with the analog.
2. Define the shape of the zirconium abutment
Place the ceramics on the insert WITHOUT GLUING IT. Mark on the abutment the area to customize.

3. Shapping of the abutment
Remove the abutment from the insert and place it on the gripping mandrel for trim, ref. OICE010 supplied separately. Set the abutment firmly on the manipulator using the screw of the master mode and the wrench ref. IN CHELV. Rework using the thin diamond cutter 30 µm mounted on a multiplier contra-angle, with water spray at high speed (150000-200000 rpm).

It is important not to heat up the zirconium while milling.
Replace the abutment on the insert to check the shape of the abutment. Repeat this step as many times as necessary to obtain the result wished.

4. Gluing
Glue together the insert and the abutment using the titanium/zirconium glue, following the manufacturer’s instructions.
Once the gluing has been made, disconnect the abutment and remove manually the glue surplus.

5. Realisation of the prosthesis
Replace the false stump on the master model using the wrench IN CHELV and achieve the ceramic porcelain definitive crown (or temporary crown) following the procedures in force.

6. Assembly in the mouth
Option A
Place and screw the Z Plus® abutment in the mouth using the wrench IN CHELV and the Black Tite® screw delivered with Z Plus® abutment until attainment of a primary blocking.

Apply a torque of 35 N.cm using:
- the wrench IN CHELV + prosthetic dynamometrical wrench IN CCD.
- the mandrel IN MHECV or IN CHELV + TorqControl® ref. 15500.

Fill the prosthetic abutment with a soft and translucent material after having protected the screw head cotton.
Seal the ceramic porcelain definitive crown.
Option B

Place and screw the Z Plus® abutment in the mouth using the wrench IN CHELV and the Black Tite® screw delivered with Z Plus® abutment until attainment of a primary blocking.

Apply a torque of 35 N.cm using:
- wrench IN CHELV + prosthetic dynamometrical wrench IN CCD.
- mandrel IN MHECV or IN CHELV + Torq Control® ref. 15500.

Fill the prosthetic abutment with a soft and translucent material after having protected the screw head with cotton.

Seal the temporary crown. One week later, remove the temporary crown and proceed to a second impression-taking and pay attention to duly record the abutment shoulder. Replace the temporary crown. Achieve a definitive crown following the procedures in force to seal later.

IMPORTANT
- Restrict rework so as to keep sufficient thickness of zirconium (> to 0.5mm).
- The minimum seating height is fixed at 3mm.
- Do not rework or damage the cone at the abutment base in order to preserve the surface for gingival space.
- A bad setting of the abutment on the manipulator may damage it during milling.
- Fix the abutments OICE002/OICE003 or HECE001/HECE002 without insert on the manipulator end with the groove.
- Fix the abutment ref. OICE001 without insert on the manipulator end without the groove.
- Preferably rework with thin diamond cutters 30 µm with water spray at high speed = contra-angle red ring multiplier 5 => 150000 - 200000 rpm.

Anthogyr recommends the glues titanium/zirconium: MULTILINK of IVOCLAR or the glue PANAVIA F2.0 of KURRAY.

Gluing of the metal base to the abutment (follow glue manufacturer’s user instructions in case of doubts or if the following indications are not exhaustive):
- Clean the abutment and insert with water and then air dry.
- Make the «Primer».
- Apply the Primer on the pieces.
- Glue the components.
- Simple Auto-polymerization or with additional photo-polymerization.
- Eliminate the glue surplus.

Read the glue manufacturer’s instructions for use.

The Z Plus® abutment can also be used to fashion the screwed prosthesis as the thicknesses of the ceramic material in the crown or in the zircon abutments are greater than a minimum of 0.5 - 0.6 mm. This application is the responsibility of the practitioner and prosthodontist. Anthogyr does not take any responsibility should the device fail.

C / USE OF CASTABLE ABUTMENTS

Necessary material:

- Short tightening wrench (ref. IN CHECV)
- Long tightening wrench (ref. IN CHELV)
- Short mandrel (ref. IN MHECV)
- Long mandrel (ref. IN MHELV)
- Castable abutments
- Laboratory screw
Castable abutments come in different forms: gold-based over-castable or 100% castable. Select the appropriate abutment to match with the implant diameter: see buying guide.

> Anthofit® OI straight or tapered:

- Red = Ø 3.5 mm
- Yellow = Ø 4.0 mm
- Blue = Ø 5.0 mm

> Anthofit® HE straight

- R Code = Prosthetic Ø 4.1 mm Regular for implants Ø 3.5, 3.75 and 4.0 mm
- L Code = Prosthetic Ø 5.0 mm Large only for implant Ø 5.0 mm

1. Preparation (laboratory)

Tighten the abutment on the model with the screw supplied, or the laboratory screw supplied independently (ref. OICA005), and the wrench ref. IN CHELV. Keep the Black Tite® screw supplied with the abutment for final tightening in mouth.

Reduce and adjust the castable part by addition of wax in order to create a customised abutment. In the vestibular area allow for the limit of the collar to be placed 1mm below the gingival limit.

Carefully remove the abutment from the cast model. Coat and cast (or overcast) the abutment following the recommendations of metal manufacturers. For gold-based overcastable abutments, the gold’s characteristics are as follow:

- Material: Pivozyl (Au 8%, Ag 37%, Pt 25%, Pd 30%)
- Melt range: 1285°C – 1355°C

Once casting is done, remove the coating, sand the abutment on its upper part and polish the collar. Assess the insertion shaft and correct positioning of the fixation screw and correct if necessary using a cylindrical bur with square end (Ø maxi of 2.7 mm).

2. Making of the crown (laboratory)

Replace the abutment on the cast model with the screw supplied with the analog. Coat the abutment with an isolating material and spacing dye.

Make the frame by adding wax or by thermo-moulding. Allow for a slight flattened area of the wax on the lingual side in order to support the ceramic. Cast the frame following the recommendations of the metal manufacturer, then proceed to building the ceramic.

3. Reconstruction (clinician)

Remove the healing screw with the wrench ref. IN CHELV or IN CHECV. Position the custom made abutment on the implant. Manually tighten the abutment using a new screw, also supplied with the implant. Assess correct positioning of the abutment by control radiography.

Fit the crown by assessing the correct points of occlusion, the correct edge of the bordering gingival, inter-proximal contact points as well as aesthetics obtained.
Remove the crown and tighten the abutment with the Black Tite® screw at 35 N.cm, with the mandrel ref. IN MHELV or IN MHECV and the dynamometrical manual wrench Torq Control® ref.15500 or prosthetic dynamometrical wrench ref. IN CCD. Ensure the mandrel is parallel with the screws shaft in order to avoid any risk of damaging the screw or its internal thread.

Fill in the screw access shaft using small sponges or balls of cotton coated with ionometric glass, composite or temporary obstruction cement. Cement the crown on the abutment with the help of temporary or definitive cement.

5. Screw-retained prosthesis

Recommendations

- Screw retained prosthesis direct on implant are suitable for both plural and unitary reconstructions.
- The use of the conical abutment is only suitable for plural construction. Do not use conical abutment for unitary construction.
- Be aware that for screw-retained prosthesis, the implant axes must be directed toward the occlusal side of the teeth to be reconstructed in order to avoid an inaesthetic vestibular emergence of the screw access path.

A/ USE OF OVER GOLD-BASED OVERCASTABLE AND 100% CASTABLE ABUTMENTS

Necessary material:

- Short tightening wrench (ref. IN CHECV)
- Long tightening wrench (ref. IN CHELEV)
- Short mandrel (ref. IN MHECV)
- Long mandrel (ref. IN MHELV)
- Castable abutments
- Laboratory screws
1. Preparation (laboratory)

Tighten the abutment on the model with the laboratory screw supplied independently (ref. OICA005), and the wrench ref. IN CHELV. Keep the Black Tite® screw supplied with the abutment for final tightening in mouth.

Reduce and adjust the castable part by adding wax in order to create a customised abutment. In the vestibular area, allow for the limit of the collar to be placed 1 mm below the gingival limit. Allow for a slight flattened area of the wax on the lingual side in order to support the ceramic.

Carefully remove the abutment from the cast model. Coat and cast (or overcast) the abutment following the recommendations of metal manufacturers.

For gold-based overcastable abutments, the gold’s characteristics are as follow:
- Material: Pivozyl (Au 8%, Ag 37%, Pt 25%, Pd 30%)
- Melt range: 1285°C - 1355°C

Once casting is done, remove the coating, sand the abutment on its upper part and polish the collar.

Assess the insertion shaft and correct positioning of the fixation screw and correct if needed using a cylindrical bur with square end.

2. Making of the crown (laboratory)

Replace the abutment on the cast model with the laboratory screw. Place the opaque directly and build the ceramic. Then polish the transgingival metallic area of the prosthesis.
3. Reconstruction (clinician)

Remove the healing screw with the help of the wrench ref. IN CHELV or IN CHECV. Manually tighten the prosthesis with the use of a new screw, supplied conjointly. Assess the right positioning of the abutment by way of control radiography.

Assess the right points of occlusion, the correct edge of the bordering gingival, inter-proximal contact points as well as aesthetics obtained.

Proceed to the definitive tightening of the abutment using the Black Tite® screw at 35 N.cm, with the help of the mandrel ref. IN MHELV or IN MHECV and the dynamometrical manual wrench Torq Control® ref. 15500 or the prosthetic dynamometrical wrench ref. IN CCD.

Fill in the screw access shaft using small sponges or balls of cotton coated with composite resin. If necessary, proceed to occlusal adjustment.

### B/ USE OF THE CONICAL ABUTMENT

**→** Temporary prosthesis

Necessary material:

- Short tightening wrench (ref. IN CHECV)
- Long tightening wrench (ref. IN CHELV)
- Short mandrel (ref. IN MHECV)
- Long mandrel (ref. IN MHELV)
- Laboratory screw (ref. OICO018)
- Temporary abutment

⚠️ Plural reconstructions only. Select the temporary abutment that matches the conical abutment.

<table>
<thead>
<tr>
<th>OI Implant</th>
<th>Ø 3,5 mm</th>
<th>Ø 4 mm</th>
<th>Ø 5 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conical abutment</td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
<tr>
<td>Temporary abutment</td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
</tbody>
</table>
1. Preparation (laboratory)
Using the cast model, make a wax model of the planned prosthetic reconstruction.
Make a thermo-shaped guide of the model and side teeth.
Remove the shaped guide and wax model.

2. Reconstruction (laboratory)
Tighten the temporary abutment on the cast model with the laboratory screw ref. OICO018 and with tightening wrench IN CHELV.
Adjust abutment where required. Coat with opaque if necessary.
Drill the upper part of the guide to allow the laboratory screw to pass through it.

Coat the abutment with acrylic resin and fill the guide with this same resin.
Reposition the guide on the cast model and allow the resin to harden, following manufacturer recommendations.
Remove the laboratory screw and guide from the cast model.
Remove the temporary prosthetic construction from the guide and replace it on the cast model.
Adjust the occlusion and polish.

3. Reconstruction (clinician)
Remove the protection cap with the wrench ref. IN CHELV or IN CHECV.
Position prosthesis on the implant.
Manually tighten the abutment using the screw provided with the abutment’s analog.
Assess abutment positioning by radiography. Assess the right points of occlusion, the correct edge of the bordering gingival, inter-proximal contact points as well as aesthetics obtained.
Tighten definitely the prosthesis at 15 N.cm, using the mandrel ref. IN MHELV or IN MHECV and the dynamometrical manual wrench Torq Control® ref. 15500 or tightening wrench ref. IN CHECV or IN CHELV and with prosthetic dynamometrical wrench ref. IN CCD.

Fill in the screw access shaft using small sponges or balls of cotton coated with composite resin. If necessary, proceed to occlusal adjustment.

**Definitive prosthesis**

Necessary material:

- Short tightening wrench (ref. IN CHECV)
- Long tightening wrench (ref. IN CHELV)
- Short mandrel (ref. IN MHECV)
- Long mandrel (ref. IN MHELV)
- Laboratory screw (ref. OICO018)
- Gold-based overcastable or 100% castable cap

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For plural reconstructions only. Select the temporary abutment that matches the conical abutment.

### OI Implant

<table>
<thead>
<tr>
<th>Ø 3.5 mm</th>
<th>Ø 4 mm</th>
<th>Ø 5 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conical abutment</td>
<td>OICO002 OICO004 OICO006</td>
<td>OICO001 OICO003 OICO005</td>
</tr>
<tr>
<td>Cap</td>
<td>Castable Castable Castable</td>
<td>Gold Gold Gold</td>
</tr>
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### HE Implant

<table>
<thead>
<tr>
<th>R</th>
<th>L</th>
</tr>
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<tbody>
<tr>
<td>Conical abutment</td>
<td>HECO001 HECO002 HECO003</td>
</tr>
<tr>
<td>Cap</td>
<td>Castable Castable Castable</td>
</tr>
</tbody>
</table>
1. Preparation (laboratory)
Tighten the abutment on the model with the laboratory screw (ref. OICO018 supplied separately) and the wrench ref. IN CHELV.

Keep the Black Tite® screw supplied with the abutment for final tightening in mouth.

Reduce and adjust the castable cap by adding wax so as to create a customised homothetic frame. Allow for a slight flattened area of the wax on the lingual side in order to support the ceramic.

Carefully remove the frame from the cast model. Coat and cast (or overcast) the abutment following the recommendations of metal manufacturers.

For gold-based overcastable abutments, the gold’s main characteristics are as follow:
> Material: Pivozyl (Au 8%, Ag 37%, Pt 25%, Pd 30%)
> Melt range: 1285°C – 1355°C

Once casting is done, remove the coating, sand the abutment. Assess the passivity of the frame. Assess the insertion shaft and correct positioning of the fixation screw and correct if needed using a cylindrical bur with square end.

**Note** > Allow the clinician to assess the passivity of the frame and control by radiography.

2. Reconstruction (laboratory)
Place the frame on the model using the screw supplied with the analog. Build up the opaque and then build the ceramic. Polish the collar’s gold base with the analogs in place.

3. Reconstruction (clinician)
Remove the protection cap with the wrench ref. IN CHELV or IN CHECV.
Position the prosthesis on the implant.

Manually tighten the prosthesis using the new screw supplied with the cap.

Tighten definitively the prosthesis at 15 N.cm using the mandrel ref. IN MHELV or IN MHECV and the dynamometrical manual wrench Torq Control® ref.15500 or the tightening wrench ref. IN CHECV or IN CHELV and the prosthetic dynamometrical wrench ref. IN CCD.

Fill the screw access shaft using small sponges or balls of cotton coated with composite resin. If necessary, proceed to occlusal adjustment.
6. Stabilisation of a total prosthesis

Total prosthesis

Pick-up impression technique directly on implants
- Bar directly on implant

Pick-up impression technique directly on conical abutments
- Bar directly on conical abutments

Ball attachments
- Indirect technique
- Direct technique

Recommendations

> The bar must be parallel with the occlusion plan even if differences in gingival or bone levels exist.
> The degree of mobility of the prosthesis must be assessed according to the number of segments and clips put in place.
> In order to guarantee a reliable durability without defects, ball attachments must be placed as parallel as possible and perpendicular to the occlusion plan.

A/ USE OF BALL ATTACHMENTS

Indirect technique

Necessary material:

- Long tightening wrench (ref. IN CHELV)
- Mandrel (ref. IN MOLIO)
- Wrench (ref. IN COIO)
- Ball Attachment
- Ball Analog
- Female part Dalbol® system (ref. OI DA005)
- Activating Dalbol® matrix mandrel (ref. OI DA006)
Select the appropriate attachment:

<table>
<thead>
<tr>
<th>OI Implant</th>
<th>Ø 3.5 mm</th>
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<tbody>
<tr>
<td>Ball attachment</td>
<td><img src="image1" alt="Image" /></td>
<td><img src="image2" alt="Image" /></td>
<td><img src="image3" alt="Image" /></td>
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<tr>
<td>Ball analog</td>
<td><img src="image4" alt="Image" /></td>
<td><img src="image5" alt="Image" /></td>
<td><img src="image6" alt="Image" /></td>
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<tr>
<td>Female attachment Dalbo® system</td>
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<td><img src="image8" alt="Image" /></td>
<td><img src="image9" alt="Image" /></td>
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</tbody>
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<tr>
<th>HE Implant</th>
<th>R</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ball attachment</td>
<td><img src="image10" alt="Image" /></td>
<td><img src="image11" alt="Image" /></td>
</tr>
<tr>
<td>Ball analog</td>
<td><img src="image12" alt="Image" /></td>
<td><img src="image13" alt="Image" /></td>
</tr>
<tr>
<td>Female attachment Dalbo® system</td>
<td><img src="image14" alt="Image" /></td>
<td><img src="image15" alt="Image" /></td>
</tr>
</tbody>
</table>

1. Selection and placing of the abutments
Select the right height for the male attachment (≥ height of the gingival +1mm). Remove the healing screws with the wrench ref. IN CHELV or IN CHECV and manually tighten the abutments with the IN COIO wrench. Assess by radiography that the abutment is properly tightened on the implant (no spaces between the implant and prosthesis).

Tighten the attachments with the wrenches ref. IN COIO or IN COILO and the dynamometrical manual wrench Torq Control® ref. 15500 or the wrench ref. IN COIO and the prosthetic dynamometrical wrench ref. IN CCD.

2. Impression taking (clinician)
Use a custom made or commercially available closed impression tray. Pread the impression material (heavy or medium) around the attachments with the help of a syringe.

Load the impression tray with material following manufacturer recommendations.

For impression taking, one can use the red female plastic part supplied with the Dalbo® attachments as an impression transfer, by clipping it on the attachment.

Remove the impression tray, verifying that the impression material has taken an accurate image around each attachment. Insert the attachment analogs in the intrados of the impression by pressing them firmly until the ball is totally buried, then cast the plaster model.
3. Preparation (laboratory)
On the plaster model, make an occlusion strip in wax with a resin base. Register the inter-maxillary relation (clinician).

Position the cast models and wax strip on the articulator with the help of the inter occlusion registration. Proceed to aesthetical pre-mounting with the help of artificial teeth in acrylic resin mounted on the occlusion wax. Aesthetical, occlusal and phonetical verification are conducted in mouth by the clinician.

After validation of trials, make a plaster or silicon key and remove the wax and resin base by boiling. Verify that the attachments are well placed within the prosthetic path. Position the spacing disks (flexible metal) on the attachments and modify their shape to match that of the ridges. Ensure the wing-based Dalbo® retentive insert is well placed within the female titanium matrix. If not, tighten the insert in the matrix using the screwdriver ref. INDLB001. Position the whole on the analogs.

4. Reconstruction (laboratory)
Make the definitive prosthesis following the total prosthetic principle with the Dalbo® in place.

5. Reconstruction (clinician)
Place the prosthesis in mouth on the Dalbo®.
Make occlusion and soft tissue adjustments if necessary.
Inform the patient about prosthesis insertion and removal procedures, oral hygiene and prosthetic maintenance procedures.
Retention of the wing-based insert can be adjusted by screwing or unscrewing using the wrench ref. INDLB001. The insert can be replaced using the same technique.

Note: For further information please refer to the Dalbo® instruction for use, available on the Internet on: www.cmsa.ch
Direct technique

Necessary material:

- Long tightening wrench (ref. IN CHELV)
- Mandrel (ref. IN MOLO)
- Wrench (ref. IN COIO)
- Ball Attachment
- Ball Analog
- Female part Dalbo® system (ref. OI DA005)
- Activating Dalbo® matrix mandrel (ref. IN DLBO01)

1. Reconstruction (clinician)

Select the right height for the male attachment (height of the gingival +1mm). Remove the healing screws with the wrench ref. IN CHELV or IN CHECV and manually tighten the abutments with the IN COIO wrench. Assess by radiography that the abutment is properly tightened on the implant (no space between the implant and prosthesis).

Tighten the attachments with the mandrels ref. IN MOICO or IN MOILO and with the dynamometrical wrench Torq Control® ref. 15500 or with the wrench ref. IN COIO and with the prosthetic dynamometrical wrench ref. IN CCD.
The direct method can be used for stabilisation of already existing removable prosthesis as well as new ones. Make an opening through the prosthesis’ acrylic resin on the lingual side within the emergent axis of the attachments.

Place a piece of rubber bung on the attachment so as to protect the gingival. Verify that the retentive wing-based Dalbo® system insert is completely inside the titanium female matric. If not, tighten the insert in the matrix with the screwdriver ref. INDLB001.

Position the whole on the ball attachments in mouth. Protect the counter shapes with wax to prevent resin from running under the female attachments. Position the prosthesis in mouth and check there is no interference with attachments. This verification done, cover the perforation with a wax sheet (lingual side).

Place auto- or photo- polymer acrylic resin on the Dalbo® attachments and within the prosthesis cavities. Position the prosthesis in mouth while requiring the patient to close his/her mouth keeping a centred occlusion.

Allow the resin to harden following manufacturer recommendations.

Remove the prosthesis, fine-tune and polish it then replace in on the Dalbo®. Make occlusal and soft tissue adjustments if necessary. Inform the patient about prosthesis insertion and removal procedures, oral hygiene and prosthetic maintenance procedures.

The retention of the wing-based insert can be adjusted by screwing or unscrewing with a mandrel ref. INDLB001. The insert can be replaced using the same technique.

Note: For further information please refer to the Dalbo® instruction for use, available on the Internet on: www.cmsa.ch
B/ REALISATION OF A BAR DIRECTLY ON IMPLANT

Necessary material:

Select the appropriate abutment:

<table>
<thead>
<tr>
<th>OI Implant</th>
<th>HE Implant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 3.5 mm</td>
<td>R Castable</td>
</tr>
<tr>
<td>Ø 4 mm</td>
<td>R Castable</td>
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<tr>
<td>Ø 5 mm</td>
<td>R Castable</td>
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<tr>
<td>Castable abutments</td>
<td>HECAS02</td>
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<tr>
<td>HICA002</td>
<td>HICA004</td>
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<tr>
<td>Analogs</td>
<td>Castable</td>
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<tr>
<td>OIAN001</td>
<td>L Castable</td>
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<td>OIAN002</td>
<td>L Castable</td>
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<tr>
<td>OIAN003</td>
<td></td>
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<tr>
<td>Castable rotational abutment</td>
<td>HEA002</td>
</tr>
</tbody>
</table>

1. Preparation (laboratory)
On the plaster model, make an occlusion strip in wax space for protruding healing screws. Alternatively we advise building the wax occlusion strip on the model using the same healing screws as those placed in mouth. Healing screws will be used as markers and stabilisations for the repositioning of the wax strip.

2. Registration of the intermaxillary (clinician)
Register the intermaxillary relation in mouth with healing screws in place.
3. Realisation of the bar (laboratory)
Mount the model in an articulator and proceed to aesthetical pre-mounting. Make a key from the pre-mounting and make the bar respecting the prosthetic emergence.

To make the bar, position the castable abutments on the implant analog with the laboratory screws ref. OICA005 and the mandrel ref. IN CHELV.
Reduce the abutments and link them together with castable resin. Mould.

4. Trial of the bar (clinician)
Remove the healing screws with the wrench ref. IN CHELV and test the bar.
Verify that the bar is perfectly adapted to the implants. To do this, tighten one side with the M2 screws supplied with the analogs and verify that the bar is passive. Do the same on the other side.

In case of non-passivity, detach and re-mount the bar in mouth with Duralay resin. Corrections can be made at the laboratory by welding.

5. Secondary impression (clinician)
Take a second impression with the bar in place. Tighten the bar with the long screws provided with the Pick-up transfers and use an open impression tray.
Register the peripheral relation. Once the impression is removed, place the healing screws on the implants with the wrench ref. IN CHELV.

6. Realisation (laboratory)
Make the definitive prosthesis in the laboratory (clips included) respecting total prosthesis procedures.

7. Reconstruction
Place the bar in mouth with the Black Tite® screws supplied initially with the castable abutments. Manually tighten the screws. Place the prosthesis on the bar in mouth. Make occlusal and soft tissue adjustments if necessary. Once the adjustments have been made, screw the bar at 35 N.cm using mandrel ref. IN MHELV or ref. IN MHECV and the Torq Control® dynamometric wrench ref. 15500 or key ref. IN CHECV or ref. IN CHELV and the prosthetic dynamometrical wrench ref. IN CCD. Inform the patient about prosthesis insertion and removal procedures, oral hygiene and prosthetic maintenance procedures.
C/ Realisation of a bar directly on conical abutments

Necessary materials:

- Short tightening wrench (ref. IN CHECV)
- Long tightening wrench (ref. IN CHELV)
- Short mandrel (ref. IN MHCV)
- Long mandrel (ref. IN MHLEV)
- Laboratory screw
- Gold or castable cap

Select the appropriate abutment:

### HE Implant

<table>
<thead>
<tr>
<th>HE Implant</th>
<th>R</th>
<th>L</th>
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<td><img src="image" alt="HE Implant Conical abutment" /></td>
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</table>

### OI Implant

<table>
<thead>
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<th>Ø 5 mm</th>
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<tr>
<td>Conical abutment</td>
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<td><img src="image" alt="OI Implant Conical abutment" /></td>
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<tr>
<td>Cap</td>
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<td><img src="image" alt="OI Implant Cap" /></td>
<td><img src="image" alt="OI Implant Cap" /></td>
</tr>
</tbody>
</table>

1. Preparation (laboratory)

On the plaster model, make an occlusion strip in wax space for protruding abutment protection caps.
3. Realisation of the bar (laboratory)
Mount the model in an articulator and proceed to aesthetical pre-mounting.
Make a key from the pre-mounting and make the bar respecting the prosthetic emergence.

To make the bar, position the castable or cast-on abutments on the abutment analogs with the laboratory screws ref. OICO018 and the wrench ref. IN CHELV.
Reduce the abutments and link them together with castable resin. Mould.

Testing the bar (clinician)
Remove the protection caps with the wrench ref. IN CHELV and test the bar.
Verify correct adaptation of the bar on the abutments.

To do this, tighten one side with M2 screws supplied with the analogs and verify that the bar is passive. Redo the same operation on the opposite side.

5. Secondary impression (clinician)
Take a second impression with the bar in place. Tighten the bar with the long screws provided with the Pick-up transfers and use an open impression tray, as described previously in the impression technique.
Register the peripheral relation. Once the impression is removed, place the protection caps on the implants with the wrench ref. IN CHELV.
6. Realisation (laboratory)
Make the definitive prosthesis in the laboratory (clips included) respecting total prosthesis procedures.

7. Reconstruction
Place the bar in mouth with the Black Tite® screws supplied initially with the castable abutments. Tighten the screws manually. Place the prosthesis on the bar in mouth. Make occlusal and soft tissue adjustments if necessary.
Once the adjustments have been made, tighten the bar at 15N.cm using mandrel ref. IN MHELV or IN MHECV and the dynamometrical wrench Torq Control® ref. 15500 or the wrench ref. IN CCD. Inform the patient about prosthesis insertion and removal procedures, oral hygiene and prosthetic maintenance procedures.
## Complications

<table>
<thead>
<tr>
<th>Complications</th>
<th>Possible reasons</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding while drilling</td>
<td>- Lesion of an arteriolar</td>
<td>- Rapidly place the implant in order to stop the bleeding</td>
</tr>
<tr>
<td>Insufficient primary stability of the implant</td>
<td>- Low bone density</td>
<td>- Plan for the placement of an implant of bigger diameter</td>
</tr>
<tr>
<td></td>
<td>- Maladapted crestal flattening</td>
<td>- Postpone the implant placement</td>
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<tr>
<td></td>
<td>- Excessive tapping</td>
<td></td>
</tr>
<tr>
<td>Exposure of threads at end of surgery</td>
<td>- Crest too thin</td>
<td>- If dehiscence of a few mm: cover the threads with bone fragments collected during drilling</td>
</tr>
<tr>
<td></td>
<td>- Maladapted positioning of the implant on the vestibular-lingual side</td>
<td>- If more important dehiscence: withdrawal of implant followed by graft or Guided Bone Regeneration</td>
</tr>
<tr>
<td>Persistent post surgery pains</td>
<td>- Osteitis due to over-aggressive bone preparation or bacterial contamination</td>
<td>- Remove implant</td>
</tr>
<tr>
<td>Lack of sensivity on an adjacent tooth</td>
<td>- Apex touched</td>
<td>- Radio control and endodontic treatment of the tooth</td>
</tr>
<tr>
<td>Lack of or difficult labial or foramen sensibility</td>
<td>- Alteration or crushing of the dental nerve</td>
<td>- Radio control</td>
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<tr>
<td></td>
<td></td>
<td>- Coronal repositioning or immediate withdrawal of the implant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Immediate withdrawal of the implant if the nerve is touched</td>
</tr>
<tr>
<td>Operculisation after a few weeks</td>
<td>- Implant insufficiently buried</td>
<td>- Leave the screw as it is</td>
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<tr>
<td></td>
<td>- Maladapted flap-closing</td>
<td>- Prescribe very thorough hygienic measures to the patient</td>
</tr>
<tr>
<td></td>
<td>- Gingiva too thin</td>
<td>- Prosthetic rebasing</td>
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<tr>
<td></td>
<td>- Compression of the temporary prosthesis</td>
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<tr>
<td>Infectious complication</td>
<td>- Defective asepsis</td>
<td>- Radio control to assess the absence of bone lesion coupled with an antibiotic treatment</td>
</tr>
<tr>
<td>Excessive bone loss or regular presence of fistula</td>
<td>- Infection</td>
<td>- Withdrawal of the implant</td>
</tr>
<tr>
<td>Soaring of the lingual floor in the hours after the surgery</td>
<td>- Sub-lingual artery section</td>
<td>- Emergency treatment at the hospital</td>
</tr>
<tr>
<td>Accidental swallowing of an instrument by the patient</td>
<td>- Lack of safety measures</td>
<td>- Radio control until expulsion</td>
</tr>
<tr>
<td>Accidental inhalation of an instrument by the patient</td>
<td>- Lack of safety measures</td>
<td>- Emergency treatment at the hospital</td>
</tr>
<tr>
<td>Painful and mobile implant a few months post surgery</td>
<td>- Unsatisfactory osteo-integration</td>
<td>- Withdrawal of the implant</td>
</tr>
<tr>
<td>Slightly sensitive yet perfectly immobile implant during the second surgical phase</td>
<td>- Imperfect osteo-integration</td>
<td>- Withdrawal of the implant</td>
</tr>
<tr>
<td>Difficult tightening of a component</td>
<td>- Thread component damaged</td>
<td>- Change the component</td>
</tr>
<tr>
<td></td>
<td>- Implant’s internal thread damaged</td>
<td>- Internal boring of the implant with the alteration kit</td>
</tr>
</tbody>
</table>
Cleaning and sterilization

WARNING!

All re-usable products (instruments and kits) must be pre-disinfected, sterilised, cleaned, disinfected and sterilised before the first and after each subsequent surgery.

All products for single use supplied non-sterile must be cleaned, disinfected and sterilized before entering the mouth. They may be disinfected or sterilized using a heat disinfector and an autoclave with the product placed outside of its original packaging in a suitable bag for the procedure. In the event of any specific component restrictions, always disinfect and cold sterilize with CHLORHEXIDINE (see labelling).

No products supplied sterile (sterilized by gamma irradiation) must be resterilized. Observe the sterile parts within the bags or blisters/closures when unpackaging, placing the contents on a sterile drape. Observe the product expiration date.

A. GENERAL INFORMATION

1. PRELIMINARIES

All cleaning-disinfection and sterilization protocols must be followed by correctly trained protected staff in accordance with current regulations. In order to avoid any risk of infection or injury, it is essential that appropriate clothing be worn (protective mask, gloves and glasses).

When following the protocol, it is mandatory to follow current regulations, referring to the “Good Hospital Pharmacy Practice” recommendations, the “Good Disinfection Practice” guide, the “Good Sterilisation Practice” Guide and the guide for “correct execution of treatments applying to reusable medical devices” in reference FD S98-135 of April 2005.

All cleaning-disinfection and sterilization protocols must be appropriate for the risks of infection. The user or medical staff must ensure that the protocol used achieves the sterility objective. The protocol must enable all chemical and organic residues on the treated device to be removed (in particular ensure that used products are correctly rinsed).

2. COMPATIBILITY WITH MATERIALS

In order not to deteriorate or damage components, it is mandatory that only cleaning and decontamination products which are compatible with the different combinations of materials treated are used. Detergent and disinfectant solutions must be of neutral pH or weakly alkaline.

**WARNING** For aluminium alloys, the use of sodium hydroxide solution is strictly prohibited.
For the stainless steels, the use of sodium hypochlorite (bleach) is strictly prohibited : high risk of corrosion.
Components finished in y should never be cleaned with hydrogen peroxide [H₂O₂] or hydrogen peroxide as there is a risk of chemical stripping.
B. PRODUCTS

1. DETERGENT-DISINFECTANT PRODUCTS

In order to guarantee sufficient decontamination before sterilization, the detergents and disinfectants must be chosen according to the risks of infection depending on their field of activity: standard microbial activity (bacteria, fungicide, virucide) and their cleaning capacity.

The detergents and disinfectants used must be consistent with the cleaning method use.

The user must refer to the manufacturer’s instructions for each cleaning and disinfecting product:

- Observe the concentrations, temperatures and exposure times.
- Observe solution replacement and lifespan of the products.
- Observe instructions for disposal of used products.
- Never mix products.

WARNING! Do not use substances liable to bind proteins (alcohol, aldehydes, etc.).

For more information, the user may refer to guide FD S98-135, the “Guide for prevention of healthcare related infections in dental surgery and stomatology” July 2006 and the positive list of dental disinfectants 2009 published by SFHH and ADF.

2. WATER QUALITY

The water used for pre-disinfection, cleaning, decontamination, rinsing and sterilization must meet current regulations. The user may refer to document FD S 98-135 §9-4.

The water quality must be compatible with the sterility objective and equipment used.

It is important that conductivity, pH, water hardness, ion and impurity concentration and microbiological pollution be monitored.

WARNING! Any used component intended to be returned to the after sales service must be sent sterile after pre-disinfection, cleaning and decontamination in accordance with current legislation, with proof of sterility.
C. PROTOCOLS

1. PRE-DISINFECTION
   Pre-disinfection must be performed immediately after each surgery on all dismantled re-usable components (See Instructions for dismantling and assembly p.50):
   -> Pre-disinfect separately, detaching systematically whenever possible all assembled devices.
   -> Completely immerse in the pre-disinfection solution.
   -> Rinse with osmosed, demineralized water to avoid any deposits.
   -> Carefully dry immediately with soft, sterile wipes (combined with medical grade compressed air).

2. CLEANING – DISINFECTION
   Dismantled components must be cleaned separately (kits and dismantlable ratchet keys, (See « Dismantling and Assembly Instructions », p.9,10, and 11).
   Cleaning by brushing
   -> Brush meticulously with a soft brush (for example nylon).
   -> Completely immerse in a detergent disinfectant solution following the manufacturer’s recommendations.
   -> Rinse with osmosed, demineralized water to avoid any deposits.
   -> Carefully dry immediately with soft, sterile, fluffless wipes (combined with medical grade compressed air).
   -> Check the result and repeat the cleaning procedure if necessary.

   Ultrasound cleaning (only for reusable products)
   -> Place the components in a low frequency ultrasound tank (25 to 50 kHz).
   -> Fill with detergent disinfectant solution compatible with the procedure.
   -> Clean the components by ultrasound following the manufacturer’s recommendations.
   -> Rinse with osmosed, demineralized water to avoid any deposits.
   -> Carefully dry immediately with soft, sterile, fluffless cloths (combined with medical grade compressed air).
   -> Check the result and repeat the cleaning procedure if necessary.

3. HEAT DISINFECTION (REUSABLE PRODUCTS ONLY)
   Heat disinfection must only be used for assembled reusable components or a complete kit, placed flat with cover open.
   -> Perform a 10 minute heat-disinfection cycle at 95°C (203°F).
   -> Perform a drying cycle. Do not exceed 140°C (284°F).
   -> Carefully dry immediately with soft, sterile, fluffless wipes (combined with medical grade compressed air).
   -> Check the result and repeat the heat disinfection if necessary.
4. STERILIZATION

No components may be sterilized without prior cleaning-disinfection and drying (+pre-disinfection for reusable components).

Steam sterilization for reusable devices and authorized disposable components

→ Place each component in an individual sealed pouch (NF EN ISO 11607) suitable for steam sterilization. Complete surgical kits should be packed in flat sterilization packaging pouches (with covers closed).
→ Use the following parameters for a steam autoclave: 135°C (275°F), 2.13 bars (30.88 psi), 20-minute minimum exposure time.

When a gravity-type autoclave is used, 15 minutes at 132°C (270°F) is recommended, followed by a drying time of 15 to 30 minutes.

→ Both sterilization date and expiry date should be mentioned on the pouches. The expiration date should be in accordance with the target shelf life established for each type of packaging under specific storage conditions (one month maximum).
→ Only use the above sterilization methods for sterilization of instruments, components, and accessories.
→ Manufacturer’s recommendations for use and maintenance of the autoclave should always be followed.
→ Place the pouches so that they do not collide during the sterilization procedure.
→ Strictly follow the recommendations of the pouch manufacturer regarding storage conditions of sterile components.


Cold sterilisation

If autoclave sterilization is not permitted, disinfect and cold sterilise by immersing in a solution of CHLOREXIDINE.
## Materials

<table>
<thead>
<tr>
<th>References</th>
<th>Descriptions</th>
<th>Titanium alloys</th>
<th>Stainless steel</th>
<th>NITi</th>
<th>Peek</th>
<th>PTFE</th>
<th>Aluminium alloys</th>
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<tbody>
<tr>
<td>IN JPA</td>
<td>paralleling pin</td>
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Recommended bibliography

With thanks to their authors:

- Decision making in implant practice
  F. Renouard & B. Ranger

- Aesthetics and emergence profile in implantology
  V. Bennani & C-A. Baudoin

- Manual of clinical implantology
  M. Davarpanah & H. Martinez

- Efficiency in implantology
  Hervé Berdugo

- Managing implant complications
  Marc Bert