Step-by-Step
Cemented Bridge
Using CPK Abutments
Internal Hex. Implant System
Questions, comments or requests will be addressed promptly by contacting MIS specialists directly through our e-mail address: service@mis-implants.com. MIS’s internet website can be accessed at www.mis-implants.com. This on-line site highlights current products and reflects all new discoveries and developments.

MIS® is proud to present this multiple unit cemented bridge internal hexagon implant reconstruction procedure. This manual explains, step by step, the procedure while using MIS components. MIS scientists and engineers are committed to the research and development of new products and technologies. Our commitment extends to passing on procedural and product information through training and instruction.
A Cemented Bridge on Multiple Implants

Cementation of an implant-retained bridge is a staged process. There are two ways to secure a bridge: with screws or cementation. This brochure will present the cemented method, specifying the stages while using the closed tray impression technique. The impression and choice of materials should be considered as recommendations only. The cemented bridge method has both advantages and disadvantages:

**Advantages**
A prefabricated abutment can be used ■ Perfect optimal esthetic occlusal surface is achieved – in the case of a cemented bridge, the screws are invisible ■ Reduces costs and makes the technician’s laboratory work simpler ■ Passive fit is achieved between the bridge and the abutments

**Disadvantages**
Not suitable for limited interocclusal dimensions ■ Cement excess must be totally removed ■ Difficult to remove after cementation ■ Implants must be parallel before placing the CPK abutments ■ Using of fabricated abutments is not suitable for all clinical cases that need custom made abutments

**General Information**
1. Initial planning is of utmost importance. The dentist performing the prosthetic stage of the treatment should be an active participant, together with the surgeon, in the decisions affecting the choice of the implants, the type of the prosthesis (cemented or screw retained) and the three dimensional positioning of the implant. It is a prosthetic driven procedure.

2. Bridge reconstruction on implants is considered in cases where a number of teeth are missing. For a proper and easy bridge reconstruction it is essential to pay attention to parallel insertion and accurate spacing between the implants according to the teeth needed to be replaced.
### Indications for Using MIS Restorative Components

<table>
<thead>
<tr>
<th>Location</th>
<th>Anterior Maxilla</th>
<th>Anterior Mandible</th>
<th>Canine, Premolars and Molars</th>
<th>Premolars and Molars</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gingival Profile</strong></td>
<td>Buccal-low level Palatal-high level</td>
<td>Horizontal gingival level</td>
<td>Buccal-low level Palatal-high level</td>
<td>Any gingival profile</td>
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<tr>
<td><strong>Gingival Height</strong></td>
<td>Up to 2mm buccal</td>
<td>Up to 4mm buccal</td>
<td>Up to 2mm buccal</td>
<td>Up to 2mm</td>
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<td>MD-CTP10 MD-AP010 MD-P0030 MD-MAC10 MD-WMAC1</td>
<td>MD-MACF1 MD-GPC10 MD-GP010 MD-AN151 MD-AN251</td>
<td>MD-CPK41 MD-CPK63 MD-CPK42 MD-CPK64 MD-CPK43 MD-CPK65 MD-CPK44 MD-CPK66 MD-CPK45 MD-CPK67 MD-CPK46 MD-CPK68 MD-CPK47 MD-CPK69 MD-CPK48 MD-CPK70</td>
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<tr>
<td><strong>Abutment description</strong></td>
<td>Esthetic angulated abutment</td>
<td>Conical post abutment</td>
<td>Zircon - Zro2 esthetic abutment</td>
<td>Standard post abutment</td>
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<td></td>
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<td>Esthetic abutment</td>
<td>Friction fit post platform switching</td>
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<td>Screw-retained gold-plastic abutment</td>
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<td>Angulated abutment</td>
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<td>Anatomic transgingival abutment</td>
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*For recommendation purpose*
This manual is a guide for the use of the CPK system, designed especially for reconstruction on parallel inserted implants. The Complete Prosthetic Kit (CPK) has been designed to enable an easy impression and transfer technique. The CPK includes ready-made components for the entire cemented restoration procedure, and is especially designed to provide high esthetics and flexibility in a variety of prosthetic cases. Furthermore, the kit is suitable for restoration in all the various locations in the mouth.

It combines all the necessary components for the dentist to take an impression after implantation, as well as all the elements used by the technician for fabricating crowns and bridges. The Complete Prosthetic Kit enables a simple restorative process by offering 4 vertical heights of standard or wide platforms, without any necessary adjustments, nor additional elements.
Anatomic cementing transgingival abutment
MD-CPK61

Abutment analog
MD-RSM60

Impression coping plastic cap
MD-IC800

Plastic healing cap
MM-CHC60

Burn-out anti-rotation plastic cap
MD-ICH40

Burn-out plastic cap
MD-ICO40

* The CPK abutment can be used for internal hexagon implants.
* The CPK procedure is illustrated in this brochure.
Kit options table

**STANDARD PLATFORM**

<table>
<thead>
<tr>
<th>Option</th>
<th>Kit Options</th>
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<tbody>
<tr>
<td>1.</td>
<td>MD-CPK41, MD-RSM40, MD-CHC40, MD-ICH40, MD-ICO40, MD-IC800</td>
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<td>2.</td>
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<tr>
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<td>MD-CPK62, MD-RCM60, MD-CHC60, MD-ICH40, MD-ICO40, MD-IC800</td>
</tr>
<tr>
<td>6.</td>
<td>MD-CPK82, MD-RCM80, MD-CHC80, MD-ICH40, MD-ICO40, MD-IC800</td>
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</tbody>
</table>
Anatomic transgingival abutment dimensions:

- Option 7.
- Option 8.
- Option 9.
- Option 10.
- Option 11.
- Option 12.

L - crown height
H - gingival height
### Kit options table

#### WIDE PLATFORM

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</table>
Anatomic transgingival abutment dimensions:

- L - crown height
- H - gingival height
Step 1.

**Implant exposure**

The restoration phase begins after the healing period.

Using the CPK system enables the dentist and technician to make a primary model before placing the healing caps and thus to shorten the restoration procedure.

**Placing the anatomic cementing transgingival abutments on the implants**

Place the anatomic cementing transgingival abutments on the implants according to tissue deepness. The abutments are available in four transgingival heights of 1, 2, 3 and 4mm.

The MD-CPK61 (anatomic cementing transgingival abutment) is attached by tightening an MD-S0220 with the help of the MT-HDL30 hex. driver. The recommended tightening moment with the torque wrench is 35 Ncm.
**Step 2.**

**Components:**

- **Implant**
  - MF7-11375

- **Anatomic cementing transgingival abutment**
  - MD-CPK61

- **Prosthetic screw**
  - MD-S0220

- **Impression coping plastic cap**
  - MD-IC800

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**A. Placing impression coping plastic caps (transfer coping) for closed tray technique**

The closed tray impression technique is used for a cemented bridge. Insert the impression coping plastic caps MD-IC800 on the anatomic cementing transgingival abutments MD-CPK61.

To ensure correct placement, the impression copings should be placed on the anatomic cementing transgingival abutments in a way that the groove on the top of the plastic is located in the same flank of the flat area of the abutments. Correct location is indicated by stable seating of the plastic (snap engagement).

**B. Taking the impression**

In order to achieve an optimal impression, the coping must be completely covered by impression material and the tray fully seated.

**Recommendation:**

Use a silicone impression material with high shore hardness to ensure stability and retention of the impression coping in the impression material.
Step 3.

A. (Optional A)
Connecting the plastic healing caps

Components:
- Implant MF7-11375
- Anatomic cementing transgingival abutment MD-CPS61
- Prosthetic screw MD-S0220
- Plastic healing cap MM-CHC60
- Healing cap MH-03375
- Long hand screwdriver for 0.05" hex. MT-HHR13

Temporary plastic healing caps MM-CHC60 are temporarily cemented to the anatomic cementing transgingival abutments in the patient’s mouth. In this stage, it’s possible to fabricate a cemented temporary crown or bridge on the anatomic cementing transgingival abutments.

The advantage of using the plastic healing caps is that the gingival height is already fitted to the abutments. This procedure avoids re-opening and re-tightening the abutments, as necessary when using the titanium healing caps.

B. (Optional B)
Connecting standard or anatomic healing caps

In order to connect the titanium healing caps, it is necessary to remove the anatomic cementing transgingival abutments from the implants. The healing caps are made of titanium and are available in 3 to 6 mm heights (standard and anatomic caps), 4 mm diameter (standard) and 5.5 mm (anatomic) diameter caps.

Healing caps of height and diameter consistent with tissue thickness are placed on the implants. The healing cap must be 1 mm above the gingiva. The healing caps can be removed approximately three weeks after placement of healing of gingiva, using an MT-HHR13 hex. driver.
Step 4.

Components:

- **Impression coping plastic cap**
  - MD-IC800
- **Abutment analog**
  - MD-RSM60

**A. Closed impression tray with impression coping plastic caps**

The impression coping plastic caps are clearly visible in the impression.

It is important to confirm proper seating of the impression copings by visually checking that no impression material is present in the inside surface of the impression coping plastic cap.

**B. Attaching the abutment analogs**

The standard abutment analogs MD-RSM60 can now be attached to the impression coping plastic caps.

Proper seating of the standard abutment into the impression coping plastic cap should be checked. No gaps or misalignment should be evident. (snap engagement).

**Note:**

Indicate the right location of the impression coping plastic cap on the abutment.
C. Simulation of gingiva

Injecting impression material between analogs and impression copings

At this stage, injecting simulated gingival material around the neck of the analogs and impression copings simulates the gingiva and facilitates access to the analogs for laboratory work.

Note:
It is recommended to isolate the impression material from the simulated gingiva with a special isolation material, in order to avoid connection between the two materials.
Step 5.

A. **Stone model with abutment analogs and simulated gingiva**

Components:

- Abutment analog MD-RSM60

Use the final impression to create a master cast model (stone cast type 4 or apoxy material).

After the stone model has hardened, the closed tray is removed. The impression coping plastic caps remains inside the tray.
Step 6.

A. Preparation of diagnostic wax-up using a silicone index

On the stone model, above the anatomic cementing transgingival abutments, a wax-up of the missing teeth is prepared in a way that it will fill the space between the adjacent and opposing teeth.

B. Silicone index taken of the wax-up

A silicone key (index) is prepared, and then serves as a negative replica of the missing teeth.

Components:
- Abutment analog MD-RSM60
Step 7.

A. Placing the burn-out plastic caps on the stone model

Components:
- Abutment analog MD-RSM60
- Burn-out plastic cap MD-IC040

Following the construction of the silicone index, the burn-out plastic caps (MD-IC040) are positioned on the abutment analogs.

B. Occlusal adjustment of burn-out plastic caps

Components:
- Burn-out anti-rotation plastic cap MD-ICH40

The occlusal adjustment of the burn-out plastic cap can be accomplished by simply removing excess height with a hot surgical blade.

Optional
- Burn-out anti-rotation plastic cap MD-ICH40

The CPK system includes a burn-out anti-rotation plastic cap for single unit cemented crown cases.
C. **Filling the burn-out plastic cap**

The adjustment burn-out plastic cap window is filled with burn-out wax.

D. **Verifying spacing**

The silicone index is used to verify the correct position and height of the burn-out plastic caps.
Step 8.

A. Wax carving

Components:

- Abutment analog
  MD-RSM60

- Burn-out plastic cap
  MD-IC040

When the burn-out plastic caps are correctly positioned, it is possible to carve the wax to the desired shapes leaving approximately 2mm of space for the porcelain.

B. Silicone index with wax-up

Silicone index with wax-up

The silicone index is used to verify that the space that was left is correct for the porcelain.

Note:
In order to achieve an accurate fit between the cast bridge and analog abutments, make sure that when the wax bridge is removed from the abutments, no unnecessary residue is left inside.
Step 9.

A. Metal casting

Follow conventional metal casting techniques, by spruing, investing and casting the framework pattern.

The investment and the burn-out process following manufacturer instructions. This process will ensure total plastic burn-out. Then raise the heat to the desired casting temperature.

B. Grinding the interior of the metal framework

To ensure accurate sitting of the cast framework on the prosthetic abutments, it is essential to grind and remove the metal undercut with a micromotor.

The plastic copings for CPK abutment are fitted utilizing a snap mechanism. This allows the abutment to be perfectly positioned and fixed on the analog.

Components:

- Implant MF7-11375
- Anatomic cementing transgingival abutment MD-CPK61
- Prosthetic screw MD-S0220
- Abutment analog MD-RSM60
- Shoulder reamer with its guide pin MT-CS450 MT-GP450
C. Shoulder reamer assembly sequence

The snap mechanism can be removed using the finishing tool "shoulder reamer". The assembly is composed of two parts: the guide pin(1) and the shoulder reamer(2).

C. (continue) The finishing grinding with the shoulder reamer

The finishing grinding with the shoulder reamer can be done with the help of prosthetic holder MK-0001 or by hand.

It is important to completely remove all casting residues in order to have the correct positioning of the framework on the prosthetic abutment.

Note:
It is recommended to use MIS shoulder reamer only for final fitting of the framework. It is easy to work with MIS shoulder reamer on the casted sprue and only for final fitting.
D. **Seating the metal framework on the stone model**

Check and adapt the metal framework according to conventional laboratory techniques.

E. **Check the metal framework in the patient’s mouth**

After casting is completed, check the fit of the metal framework in the patient’s mouth.

Special attention must be given to the passive fit of the metal framework on the prosthetic abutments.

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**Note:**
The technician must confirm that a passive fit has been achieved in this stage. Check the cast bridge on the stone model to ensure that it fits the abutment analogs exterior.
Step 10.

**A. Porcelain build-up**

Following the selection of the appropriate shade, the porcelain is fired onto the metal cast and the porcelain bridge is placed on the stone model (the process is performed according to routine laboratory procedures).

**Porcelain on the stone model**

**B. Porcelain try-in**

Prior to placing the bridge, remove the temporary plastic healing caps from the patient’s mouth.

The completed bridge is checked in the mouth. Proximal and occlusal contacts should be adjusted before cementation to the anatomic transgingival abutments using MIS cement crown set.

**Porcelain in the mouth**

Components:

- Implant
  - MF7-11375
- Anatomic cementing transgingival abutment
  - MD-CPK61
- Prosthetic screw
  - MD-S0220
- Abutment analog
  - MD-RSM60
- Crown set
  - MK-0022
## Anatomic transgingival abutments

<table>
<thead>
<tr>
<th>Healing cap</th>
<th>Impression coping</th>
<th>Analog</th>
<th>Cementing post</th>
<th>Esthetic abutment</th>
<th>Angulated abutment</th>
<th>Plastic cylinder</th>
<th>Gold plastic cylinder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>Anatomic</td>
<td>Analog</td>
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<td>Ø4mm</td>
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### Prosthetic options

- Standard Anatomic
- Angulated abutment
- Esthetic angulated abutment
- Cementing post
- Plastic cylinder
- Gold plastic cylinder

- Screw
- Screw
- Screw

- MD-S0200
- MD-S0200
- MD-S0200

- MD-S0220
- MD-S0220
- MD-S0220

- MD-S0224
- MD-S0224
- MD-S0224

- MD-G0220
- MD-G0220
- MD-G0220

- MD-CP013
- MD-CP050
### Prosthetic options

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<th>Healing cap</th>
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### Restorative procedure

**WIDE PLATFORM**

- **Anatomic transgingival abutments**
- **Angulated abutment**
- **Esthetic angulated abutment**
- **Cementing post**
- **Esthetic abutment**
- **Gold plastic cylinder**
- **Impression coping Analog Standard Anatomic**
- **Screw**
- **Plastic cylinder**