3.

Step-by-Step Cemented Bridge
Using Esthetic Abutments

Internal Hex. Implant System

MIS®
Make It Simple
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 research and development of new products and technologies. Our commitment extends to passing on procedural and product information through training and instruction.
Using 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 manual will present the cementation method, specifying the stages of the closed tray impression technique. The impression method and choice of materials should be considered as recommendations only. The cemented bridge method has advantages and disadvantages:

Advantages
A prefabricated abutment (straight or angled) can be used. ■ A perfect esthetic occlusal surface is achieved - in the case of screwed bridge procedure, the screws are invisible. ■ The laboratory process is simplified and costs reduced. ■ A passive fit is achieved between the bridge and the abutments.

Disadvantages
The method is not suitable for limited interocclusal dimensions. ■ Excess cement must be totally removed. ■ Difficulty in bridge removal after cementation. ■ The use of fabricated abutments is not suitable for all clinical cases, particularly those requiring custom-made abutments.

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

2. To ensure successful implant bridge construction it is essential to establish parallelism between abutments, proper teeth alignment as well as passive fit.
**Indications for Using MIS Restorative Components**

* For recommendation purpose

<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>Gingival Profile</td>
<td>Buccal-low level Palatal-high level</td>
<td>Buccal-low level Palatal-high level</td>
<td>Grinding the abutment shoulder to meet the gingival contour</td>
<td>Grinding the abutment shoulder to meet the gingival contour</td>
</tr>
<tr>
<td>Gingival Height</td>
<td>Up to 2mm buccal Up to 4mm palatal</td>
<td>Very low gingival height</td>
<td>Grinding the abutment to meet the gingival height</td>
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<td>Catalog Number</td>
<td>MD-A1510 MD-A2510</td>
<td>MD-P1530 MD-P2530</td>
<td>MD-CTP10</td>
<td>MD-GPC10 MD-GP010</td>
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<tr>
<td>Abutment description</td>
<td>Esthetic angulated abutment</td>
<td>Conical post abutment</td>
<td>Zircon - Zro2 esthetic abutment</td>
<td>Standard post abutment</td>
</tr>
</tbody>
</table>

For Anterior Maxilla:
- MD-CTP10
- MD-AN151 MD-AN251
- MD-AN151 MD-AN251

For Anterior Mandible:
- MD-A1510 MD-A2510
- MD-P1530 MD-P2530
- MD-CTP10

For Canine, Premolars and Molars:
- MD-GPC10 MD-GP010
- MD-AN151 MD-AN251
- MD-AN151 MD-AN251

For Premolars and Molars:
- MD-GPC10 MD-GP010
- MD-AN151 MD-AN251
- MD-AN151 MD-AN251

* For recommendation purpose
MIS offers a wide variety of esthetic abutments for cases of cemented restoration. This variety provides many options, with an emphasis on simplicity and convenience of restoration work. A simple procedure allows the adjustment of abutments as appropriate to the restored tooth.

The series of MIS esthetic abutments includes two types of abutments:
1. Direct abutment, with longitudinal axis aligned to the implant.
2. Angulated abutment, with longitudinal axis placed at an angle to the implant.

The esthetic titanium abutments are designed with a sloping shoulder end, which enables esthetic results in the buccal area by concealing the crown margins under the gingival. The sloping shoulder is contiguous with the abutment body; its purpose is to provide a total fit between the abutment and the metal coping.

On the lingual or palatinal side, the crown margins allow for control over the removal of excess cement. The abutment body is eccentric, and therefore the width of the shoulder is greater in the buccal area and will better accept the ceramic thickness. These abutments are available in either standard or wide platforms and are offered in two heights: 1mm (shoulder height) and 3mm (height on the anterior portion of the abutment).

Under proper anatomical conditions, the abutment may be used in six different positions for cemented restorations.
Step 1.

A. Implant exposure

After the healing period, the restoration phase is started.

B. Place the closed tray MD-IT300 impression coping abutments on the implants

Components:

- Implant MF7-11375
- Closed tray impression coping MD-IT300
- Prosthetic screw MD-S0220
- Prosthetic Instrument MD-HHR13

Recomended tightening moment is up to 10Ncm.

Recommendation:
Recemended tightening moment is up to 10Ncm.
Step 2.

Components:

- Implant MF7-11375
- Closed tray impression coping MD-IT300
- Prosthetic screw MD-S0220
- Impression coping plastic cap MD-IC800

A. Placing impression coping plastic caps (transfer copying)

Insert the impression coping plastic caps MD-IC800 on the closed tray impression coping abutments MD-IT300.

The hatch on the top of the plastic transfer indicates the location of the flat area (anti-rotation). Indicate the right location of the impression coping plastic cap on the abutment, it is a snap engagement.

B. Taking the impression

For optimal impression the plastic coping must be fully seated and completely covered by impression material.

Recommendation:

The use of silicone impression material with high shore hardness (the hardness of a wide variety of rubber and soft plastics, as determined by the shore test) is recommended to ensure retention and stability of the impression transfer coping plastic caps in the impression material.
Step 3.

A. **Removing the closed tray impression coping abutments**

Components:
- Implant
  - MF7-11375
- Healing cap
  - MH-03375
  - MH-05375
- Long hand screwdriver for 0.05” hex.
  - MT-HHR13

Removing the closed tray impression coping abutments

It is necessary to remove the closed tray impression abutments (MD-IT300) from the implants, in order to connect the titanium healing caps.

B. **Placing standard or anatomic healing caps**

Connecting standard or anatomic healing caps

Healing caps of appropriate heights and diameters are selected according to tissue thickness and placed on the implants.

The titanium healing caps are available in heights of 3mm to 6mm, in standard diameter (4mm) and anatomic diameter (5.5mm).
Step 4.

A. Inverted closed tray impression 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.

Components:
- Closed tray impression coping MD-IT300
- Prosthetic screw MD-S0220
- Analog MD-RSM10
- Impression coping plastic cap MD-IC800
- Long hand screwdriver for 0.05” hex. MT-HHR13

B. Connecting implant analogs and impression abutments

The implant analogs (MD-RSM10) are attached with the MD-S0220 screw to the closed tray impression abutments (MD-IT300), using the MT-HHR13 hex. driver.

The whole is now placed in the impression coping plastic caps (MD-IC800). A proper alignment free of gaps should be verified.
At this stage, injecting silicone material around the neck of the analogs and impression abutments simulates the gingiva and facilitates access to the implant analogs for laboratory work.

Use the final impression to create a master cast model. After the stone model has hardened, the closed tray is removed, leaving the impression coping plastic caps inside the tray.

The closed tray impression coping abutments (MD-IT300) on the master model should be removed from the implant analogs (MD-RSM10) with the MT-HHR13 hex. driver.

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

A. Preparing diagnostic wax-up for silicone index

B. Silicone index

Components:

Analog MD-RSM10

A wax-up of the missing teeth is prepared on the master model, filling the space between adjacent and opposite teeth.

A silicone index is prepared, serving as a negative replica of the wax-up.
Step 6.

A. Placing the esthetic abutments

Components:
- Analog MD-RSM10
- Esthetic abutment MD-P0030
- Esthetic angulated abutment MD-A1510
- Prosthetic screw MD-S0220
- Prosthetic Instrument MD-HHR13

Using the silicone index, esthetic abutments with appropriate angulations and gingival highest are selected.

B. Adjusting the abutments

Place the selected abutments on the implant analogs (that are inside the stone model), by tightening an MD-S0220 screw using the MT-HHR13 hex. driver. The directions of the abutments slope fit the straight facet of the implants. The sloping shoulder is contiguous with the abutment body in order to provide a perfect fit between the abutments and the metal cast.
Step 7.

A. **Adapting the esthetic abutments**

The esthetic abutments are adapted in height according to the silicone index. The parallelometer is used for the periphery adjustment. The desired margin contour and height are achieved by grinding the abutments.

Components:

- Analog
  - MD-RSM10
- Esthetic abutment
  - MD-P0030
- Esthetic angulated abutment
  - MD-A1510
- Prosthetic screw
  - MD-S0220
- Prosthetic Instrument
  - MD-HHR13

B. **Measuring the grounded abutments**

The silicone index is used to measure the grounded abutments.
Step 8.

Wax carving

After adjustment and polishing of the abutments, wax carving takes place, leaving approximately 2mm of space for the porcelain, according to the silicone index.

Silicone index with wax-up

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

Components:

- Analog
  MD-RSM10

- Esthetic abutment
  MD-P0030

- Esthetic angulated abutment
  MD-A1510

- Prosthetic screw
  MD-S0220
Step 9.

A. Metal casting

Components:
- Implant MF7-11375
- Analog MD-RSM10
- Esthetic abutment MD-P0030
- Esthetic angulated abutment MD-A1510
- Prosthetic screw MD-S0220
- Prosthetic Instrument MD-HHR13

Conventional metal casting techniques are followed. Metal framework is realized.

B. Attaching the abutment analogs

The metal framework is verified and adapted on the abutments according to conventional laboratory techniques.

Note:
The laboratory technician must assure that perfect adaptation and passive fit have been achieved in this stage. The cast bridge on the stone model must be checked to ensure that it fits the abutments' exterior.
C. **Metal framework in the patient’s mouth**

Accuracy of metal framework is verified in the patient’s mouth. Special attention must be given to the passive fit of the metal framework on the prosthetic abutments, using an x-ray for confirmation.
Step 10.

A. Porcelain on the plaster model

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

Components:
- Implant MF7-11375
- Analog MD-RSM10
- Esthetic abutment MD-P0030
- Esthetic angulated abutment MD-A1510
- Prosthetic screw MD-S0220
- Crown set MK-0022

B. Porcelain in mouth

Prior to placing the bridge, the healing caps are removed from the patient's mouth. The esthetic abutments are connected, and proximal contacts and occlusion of the porcelain bridge in the mouth are checked and adapted as required.

After the laboratory work is completed, the bridge is cemented on the esthetic abutments.
<table>
<thead>
<tr>
<th>Healing cap</th>
<th>Impression coping</th>
<th>Analog</th>
<th>Anatomic transgingival abutment</th>
<th>Cementing post</th>
<th>Esthetic abutment</th>
<th>Angulated abutment</th>
<th>Esthetic angulated abutment</th>
<th>Plastic cylinder</th>
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Restorative procedure

STANDARD PLATFORM
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<tr>
<th>Healing cap</th>
<th>Impression coping</th>
<th>Analog</th>
<th>Anatomic transgingival abutment</th>
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Restorative procedure

WIDE PLATFORM

Prosthetic options

Screw

Screw

Screw

MD-S0200 MD-S0220 MD-S0222 MD-S0224

MD-S0200 MD-S0220 MD-S0222 MD-S0224

MD-S0200 MD-S0220

MD-G0220

MD-G0220

MD-G0220

MD-G0220

MD-G0220
Fin.