1.

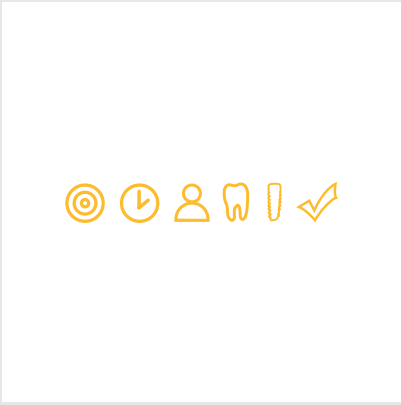
Step-by-Step

Cemented Crown

Internal Hex. Implant System

MIS®

MAKE IT SIMPLE



Note: This guide is for educational use only.

Committed to your success, MIS provides comprehensive product information, manuals and training courses. The following step-by-step guide aims to guide you through the restoration of a cemented single-unit crown on an internal hex. implant.

For prompt attention to your questions, comments, and requests, contact MIS specialists directly at: service@mis-implants.com. The MIS website is located at www.mis-implants.com.This online site highlights current products and reflects all new discoveries and developments.

Cemented Single Crown Restoration Procedure

The fabrication of a single cemented crown on an implant is a staged process. Although MIS offers components for both closed and open tray impression techniques, this brochure demonstrates the use of an open tray impression. The impression and choice of materials presented in this guide should be considered recommendations only.

Advantages of Cemented Restorations

A prefabricated abutment (straight or angled) can be used ▪ Better esthetic occlusal surface is achieved ▪ Long-term stable occlusion.

General Information

1. Pre-operative planning is of the utmost importance. The restorative dentist should actively participate in decisions regarding choice of implant, restorative type (cemented or screw retained) and the three-dimensional positioning of the implant. This is a prosthetic driven procedure.

2. The position of the fixture is crucial. In cases where it is necessary to use an angled abutment, a flat surface of the hex. must be parallel to the mesio-distal plane.

3. The use of prefabricated abutments ensures accurate fit between abutments and implants.

Restorative Components Table

Indications for Using MIS Restorative Components

* For recommendation purposes only.

Location ▸	Anterior Maxilla	Anterior Mandible	Incisors to Premolars	Canine, Premolars and Molars	Premolars and Molars				
Crown Implant Inclination Ratio	Crown/implant angulation between 15-25 degrees	Crown axis parallel to implant axis	Crown/implant angulation up to 15 degrees	Crown/implant angulation between 15-25 degrees	Crown/implant angulation between 15-25 degrees	Crown axis parallel to implant axis	Crown axis parallel to implant axis	Crown/implant angulation up to 4 degrees	Crown/implant angulation up to 4 degrees
Gingival Profile	Buccal-low level Palatal-high level	Horizontal gingival level	Buccal-low level Palatal-high level	Buccal-low level Lingual-high level	Buccal-low level Lingual-high level	Grinding the abutment shoulder to meet the gingival contour	Grinding the abutment shoulder to meet the gingival contour	Buccal-low level Palatal-high level	Horizontal gingiva level
Gingival Height	Up to 2mm buccal Up to 4mm lingual/palatal	Very low gingival height	Up to 2.5mm buccal Up to 3.2mm lingual/palatal	Up to 2 mm buccal Up to 4 mm lingual	Up to 4mm buccal Up to 6mm lingual/palatal	Grinding the abutment to meet the gingival height	Grinding the abutment to meet the gingival height	Up to 4mm buccal Up to 6mm lingual/palatal	According to gingival height available in heights of 1,2,3,4mm
Catalog Number	MD-A1510 MD-A2510	MD-CTP10	MK-SPC4 MK-SIC6	MD-AN151 MD-AN251	MD-P1530 MD-P2530	MD-MAC10 MD-WMAC1	MD-MACF1	MD-A0010 MD-P0030	MD-CPK41 MD-CPK63 MD-CPK42 MD-CPK64 MD-CPK43 MD-CPK81 MD-CPK44 MD-CPK82 MD-CPK61 MD-CPK83 MD-CPK62 MD-CPK84
Abutment description ▸	Esthetic angulated abutment	Direct conical titanium post	Zircon abutment	Angulated abutment	Esthetic angulated abutment	Cementing abutment	Friction fit cementing post platform switching	Esthetic abutment	Anatomic transgingival abutment
									
									

Step 1.

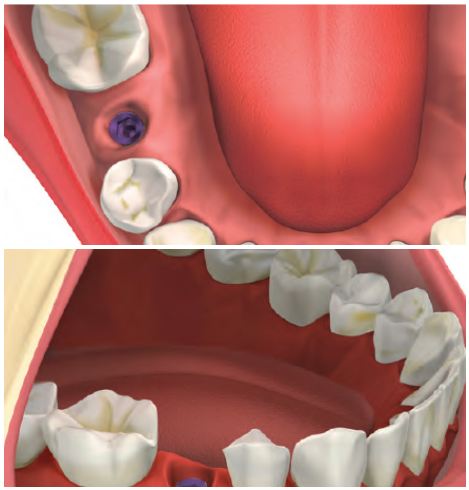
Components:

Implant
MF7-11375

Healing Cap
MH-03375

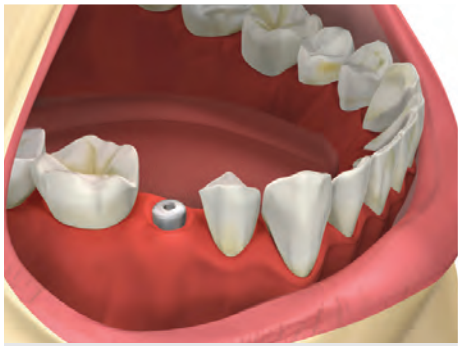
Prosthetic Instrument
MT-RDL30

A.
Implant exposure



Implant exposure

B.
Connecting the healing cap



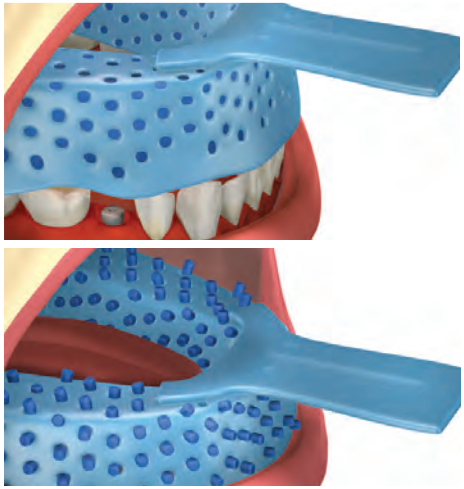
Connecting the healing cap

After exposure, a healing cap of a height consistent with tissue thickness is placed on the implant. It is recommended that the healing cap extends about 2mm above the gingiva. The healing cap is placed and removed using an MT-RDL30 hex. driver. Healing caps are made of titanium alloy and are available in several heights*. Standard and anatomic caps, Ø4mm for standard caps and Ø5.5mm for anatomic caps (SP). The titanium healing caps should extend at least 1mm above the gingiva.

Note:
* Narrow Platform: 2,3,4,5,6, 8mm (Anatomic 2,3,4,5,6mm) Standard Platform: 3,4,5, 6mm (Anatomic 3,4,5,6mm) Wide Platform: 3, 4, 5mm (Anatomic 3, 4, 5mm)

C.

Preliminary impression



Custom open tray preparations

If a custom made tray is to be used, a preliminary impression of the relevant arch should be taken.

Step 2.

A.
Preliminary stone model

Stone model

After implant integration, the healing cap is removed and the process of impressions can begin.

B.
Fabrication of a custom tray

Custom open tray

A custom tray is fabricated so that there is adaquate space for impression material. Open a 6mm diameter hole above each implant.

Step 3.

Components:

Implant
MF7-11375

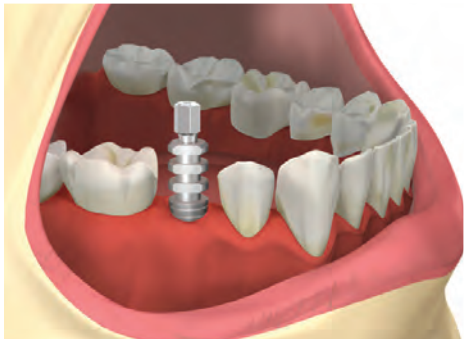
Healing Cap
MH-03375

Impression Coping
MD-I0375
MD-G0213

Prosthetic Instrument
MT-RDL30

A.

Impression coping



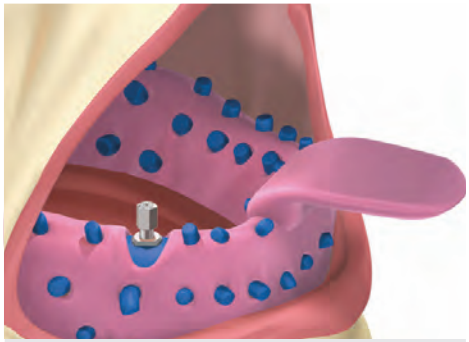
Impression coping in place

When an open tray impression technique is to be used, an impression coping is placed on the implant so that the hex. is fully engaged (seated). The MD-I0375 impression coping is attached by screwing an MD-G0213 guide pin using an MT-RDL30 hex. driver. It is critical that there is no gap between the impression coping and the implant.

A periapical or bitewing radiograph of the implant can be used to confirm that the impression coping is correctly seated.

B.

Open tray impression with impression material in the mouth



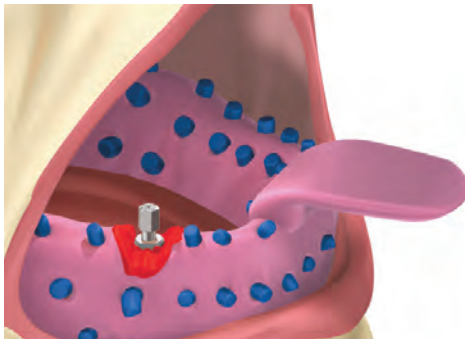
Note that the impression coping extends through the tray

Prior to impression taking, ensure that the tray covers the entire required area, and that the impression coping can penetrate through the holes.

The guide must extend through the impression tray in order to allow it to be unscrewed with an MT-RDL30 hex. driver before tray is removed.

C.

Securing impression coping



Impression tray with Duralay

It is recommended to secure the impression coping to the tray with a resin material (such as Duralay or Pattern-Resin) in order to reduce the risk of movement within the impression tray. Prior to tray removal it is critical that the guide pin is completely released from the implant.

D.

Impression evaluation

The hexagon of the impression coping

After releasing the guide pin, remove the impression tray from the patient's mouth. The hexagon of the impression coping should be visible. The hex. needs to be clear of any impression material.

Step 4.

Components:

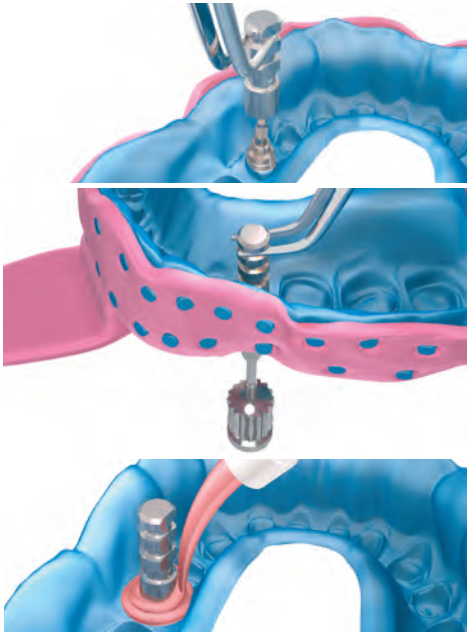
Impression Coping
MD-I0375
MD-G0213

Analog
MD-RSM10

Prosthetic Instrument
MT-RDL30

A.

Simulated gingiva

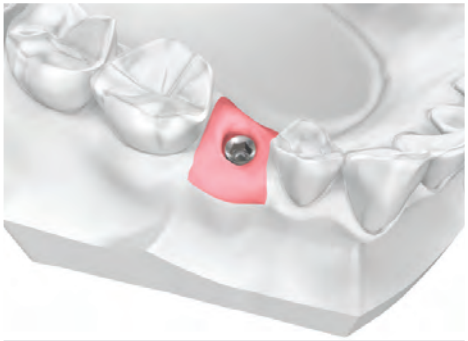


Simulated gingiva material between analog and impression coping

The analog MD-RSM10 can now be attached to the impression coping MD-I0375 by screwing in the guide pin MD-G0213. It is critical to confirm that the coping is firmly attached to the analog, with no misalignment and free of gaps. Soft gingiva simulating materials can be used around the impression coping and analog to enable easy access to the analog while adjusting and fabricating the abutment and crown.

B.

Stone model with simulated gingiva and analog



Stone model with simulated gingiva

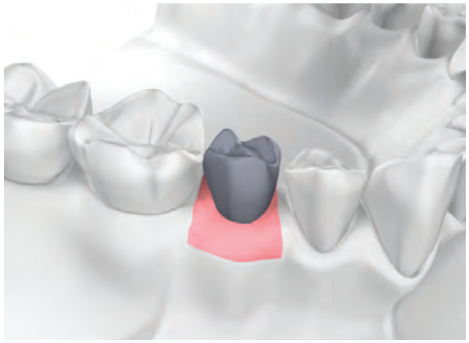
The final impression is poured in stone. When the stone sets, the impression coping MD-I0375 can be released by removing the guide pin MD-G0213.

Step 5.

Components:

Analog
MD-RSM10

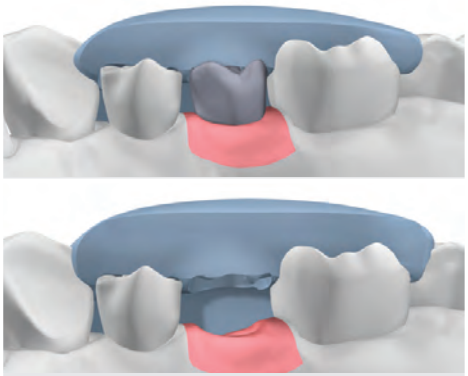
A.
Diagnostic wax-up



A wax-up on the stone model

On the stone model, a wax duplicate of the missing tooth is prepared so that it fits freely on the analog.

B.
Silicone index



Silicone index

A silicone key (index) serves as a guide replica of the missing tooth.

Step 6.

Components:

Analog
MD-RSM10

Abutment
MD-MAC10

Prosthetic Screw
MD-S0220

Prosthetic Instrument
MT-RDL30

Technical
Screwdriver
MT-HTS10

Prosthetic Holder
MT-MSD20

A.

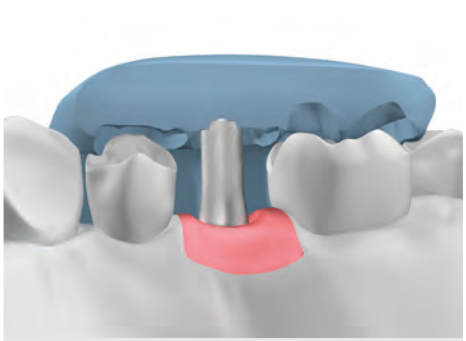
Placing the abutment on the stone model

The abutment on the stone model

An abutment of proper angulation and gingival height is selected and screwed to the analog. In this case, a straight, MD-MAC10 abutment is used.

B.

Adjusting of abutment based on the silicone index



Measuring the abutment with the silicone index

The silicone index can be used for adjustment of the height.

Note:
The buccal side of the abutment should be marked for easier orientation in the patient's mouth.

C.

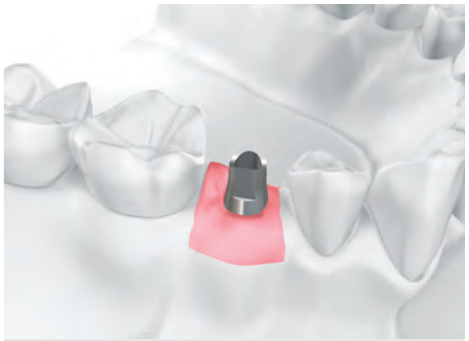
Adjustment of the abutment

Grinding the abutment with MIS abutment holder

The MIS abutment holder is used to enable easy and safe adjustment of the abutment. With this tool, shortening or grinding the abutment to the desired length is easily accomplished, thus preventing damage to the stone model, and reducing patient discomfort if done intra-orally.

D.

Abutment on the stone model



The adjusted abutment on the stone model

The adjusted abutment MD-MAC10 is positioned on the stone model.

Step 7.

Components:

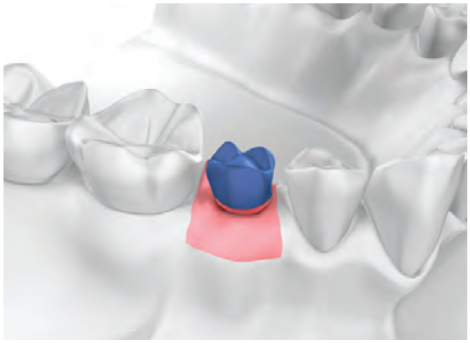
Analog
MD-RSM10

Abutment
MD-MAC10

Prosthetic Screw
MD-S0220

Prosthetic Instrument
MT-RDL30

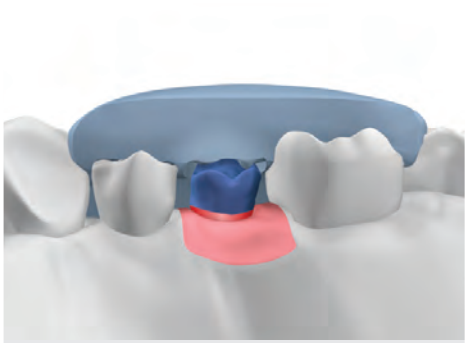
A.
Wax carving



Wax carving

The desired coping shape is carved on adjusted abutment.

B.
Silicone index with wax-up



Silicone index with wax-up

The silicone index is used for final adjustment of the wax pattern.

Step 8.

Components:

Implant
MF7-11375

Analog
MD-RSM10

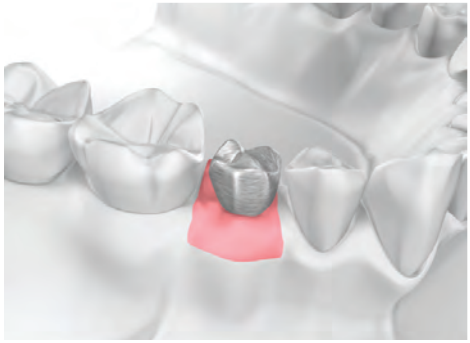
Abutment
MD-MAC10

Prosthetic Screw
MD-S0220

Prosthetic Instrument
MT-RDL30

A.

Metal casting



Metal casting

After casting, the metal coping is evaluated.

B.

Metal coping try-in

Check the casting in the mouth

Following the removal of the healing cap and the placement of the abutment, the metal coping is evaluated. It is critical that the abutment is placed in correct orientation. At the end of the try-in procedure, the abutment is removed and the healing cap is screwed again to the implant. If needed, a pick-up impression is taken at this stage.

Step 9.

Components:

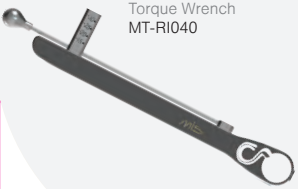
Implant
MF7-11375

Healing Cap
MH-03375

Impression Coping
MD-I0375
MD-G0213

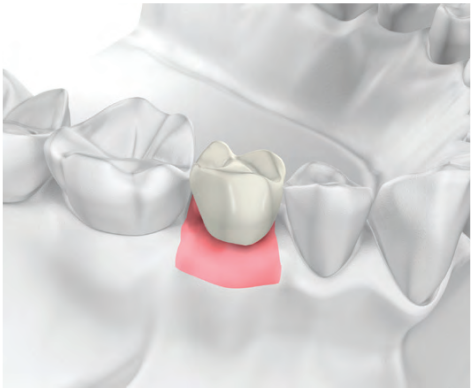
Analog
MD-RSM10

Prosthetic Instrument
MT-RDL30



Torque Wrench
MT-RI040

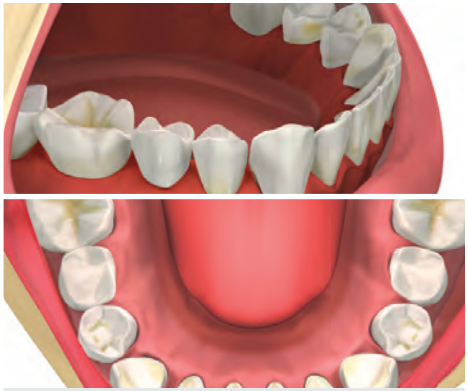
A.
Porcelain fabrication



Porcelain on the stone model

Following the selection of the appropriate shade, porcelain is baked onto the metal casting. The porcelain crown is adjusted on the stone model.

B.
Porcelain try-in



Porcelain in the mouth

Following removal of the healing cap and seating of the abutment, the abutment is tightened to 30Ncm for a titanium screw or 20Ncm for a gold screw using the torque wrench. This will minimize the risk of the screw loosening.

The crown is evaluated for shade, proximal and occlusal contact and fit. After proper adjustments, the final crown can be cemented.

Note:
It is recommended that titanium abutmetns are sandblasted prior to cementation.

Restorative procedure

NARROW PLATFORM

Prosthetic options

	Healing caps		Impression copings	Analog	Zircon abutments	Anatomic transgingival abutments	Cementing posts	Angulated abutments	Plastic cylinders	Gold plastic cylinders
	Standard	Anatomic								
M4 Ø3.30mm	Ø4mm H-2,3,4,6,8  MH-N2330 MH-N3330 MH-N4330 MH-N6330 MH-N8330	Ø4.3mm H-2,3,4,5,6  MH-52330 MH-53330 MH-54330 MH-55330 MH-56330	 MN-I0330  MN-IT100  MN-PF330  MN-IC600  MN-IT300	 MN-RSM10	 MK-NIZ6  MK-NIC6	 MN-CPK41 MN-CPK42 MN-CPK43 MN-CPK44 MN-CPK61 MN-CPK62 MN-CPK63 MN-CPK64  MN-ICH40 (Anti-rotation)  MN-IC040	 MN-MAC10	 MN-AN020	 MN-CPH13  MN-CP013	 MN-GP010  MN-GPC10
SEVEN Ø3.30mm					Screw  MN-S0160		Screw  MN-S0160			

Restorative procedure

STANDARD PLATFORM

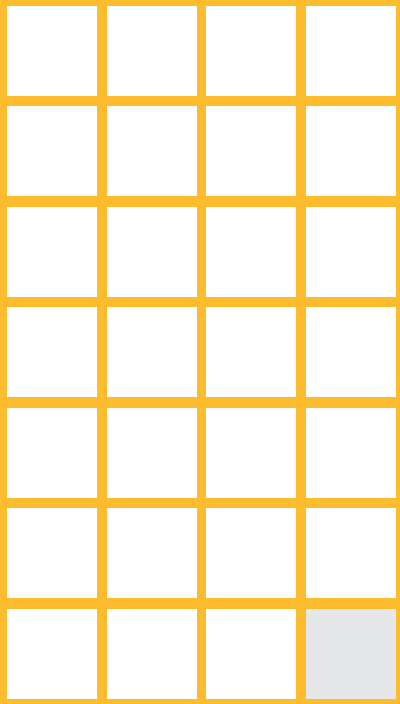
Prosthetic options

	Healing caps		Impression copings	Analog	Zircon abutments	Anatomic transgingival abutments	Cementing posts	Esthetic abutments	Angulated abutments	Esthetic angulated abutments	Plastic cylinders	Gold plastic cylinders
	Standard	Anatomic										
M4 Ø3.75mm Ø4.20mm	Ø4mm H-3,4,5,6 MH-03375 MH-04375 MH-05375 MH-06375	Ø5.5mm H-3,4,5,6 MH-53375 MH-54375 MH-55375 MH-56375	MD-I0375 MD-IT100 MD-PF375 MD-IC800 MD-IT300	MD-RSM10	MK-SIZ6 MK-SPZ4 MK-SIC6 MK-SPC4 Screw MD-S0200 MD-S0220 MD-S0222 MD-S0224	MD-CPK41 MD-CPK42 MD-CPK43 MD-CPK44 MD-CPK61 MD-CPK62 MD-CPK63 MD-CPK64 MD-CPK81 MD-CPK82 MD-CPK83 MD-CPK84 MD-ICH40 (Anti-rotation) MD-IC040	MD-CTP10 MD-MAC10 MD-WMAC1 MD-MACF1 Screw MD-S0200 MD-S0220 MD-S0222 MD-S0224 MD-G0220	MD-A0010 MD-P0030	MD-AN151 MD-AN251 Screw MD-S0200 MD-S0220 MD-G0220	MD-A1510 MD-A2510 MD-P1530 MD-P2530	MD-CPH13 MD-CPH50 MD-CP013 MD-CP050	MD-GPC10 MD-GP010
SEVEN Ø3.75mm Ø4.20mm												

Restorative procedure

WIDE PLATFORM

	Healing caps		Impression copings	Analog	Prosthetic options							
	Standard	Anatomic			Zircon abutments	Anatomic transgingival abutments	Cementing posts	Esthetic abutment	Angulated abutment	Esthetic angulated abutment	Plastic cylinders	Gold plastic cylinders
M4 Ø5mm Ø6mm	Ø5mm H-3,4,5 MH-W3500 MH-W4500 MH-W5500	Ø6.30mm H-3,4,5 MH-W3630 MH-W4630 MH-W5630	MW-I0470 MW-IT100 MW-PF550 MW-IC800 MW-IT300	MW-RSM10	MK-WPZ4 MK-WPC4 Screw MD-S0200 MD-S0220 MD-S0222 MD-S0224	MW-CPK41 MW-CPK42 MW-CPK43 MW-CPK44 MW-CPK61 MW-CPK62 MW-CPK63 MW-CPK64 MW-CPK81 MW-CPK82 MW-CPK83 MW-CPK84 MW-ICH40 (Anti-rotation) MW-IC040	MW-CTP10 MW-MAC10 MW-WMAC1 Screw MD-S0200 MD-S0220 MD-S0222 MD-S0224 MD-G0220	MW-P0010	MW-AN151 Screw MD-S0200 MD-S0220 MD-G0220	MW-P1510	MW-CPH13 MW-CPH60 MW-CP013 MW-CP060	MW-GPC10 MW-GP010
SEVEN Ø5mm Ø6mm												



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The MIS Quality System complies with International Quality Standards: ISO 13485:2003 - Quality Management System for Medical Devices, ISO 9001: 2008 – Quality Management System and CE Directive for Medical Devices 93/42/EEC. MIS products are cleared for marketing in the USA and CE approved.