

US system Prosthetic Procedure

US Implant System

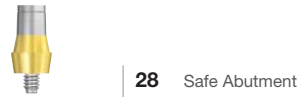
2013 PROSTHETIC PROCEDURE

OSSTEM[®]
IMPLANT

Contents

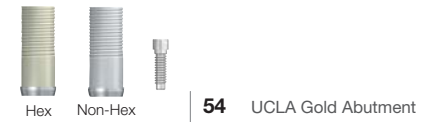
Cement retained restoration

- 06 Cement retained bridges with the Cement abutment system
- 18 Cement retained crown with the Angled abutment system
- 30 Cement retained crown with the Safe abutment system



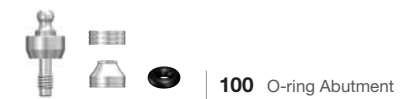
Screw retained restoration

- 54 Screw retained crown with the UCLA gold abutment system



Overdenture retained restoration

- 102 Overdenture with the O-ring abutment system



US

Cement Abutment

- **Indication**
Cement abutments can be used in both anterior and posterior areas of the mouth for cement retained crown and bridge restorations.
- **Features & benefits**
 - A wide range of application owing to a variety of sizes considering the mean crown length of natural teeth and occlusal clearance for prosthesis. (Gingival height 1, 2, 3, 4mm / Diameter 4, 5, 6, 7mm / Height 4, 5.5, 7mm)
 - Comes in the gold color, through TiN coating, to provide maximum esthetics, should the collar of abutment be exposed
 - Designed to prevent rotation for single prosthesis
 - A chamfer margin to facilitate prosthetic fabrication
- **Material**
 - Abutment : Ti CP-Gr3
 - Screw : Ti-6Al-4V
- **Tightening torque : 30Ncm**



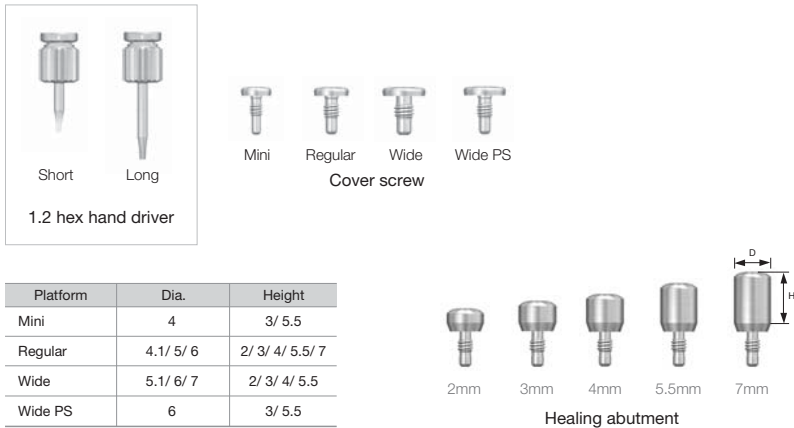
Rigid abutment

Product list for prosthetic procedure

Product list	
Abutment	
Abutment screw	
Impression coping	Transfer type (for close tray)
	Pick-up type (for open tray)
Lab analog	
Driver	
Torque wrench	

Step1 Separating the Healing abutment

Components & instruments



Platform	Dia.	Height
Mini	4	3/ 5.5
Regular	4.1/ 5/ 6	2/ 3/ 4/ 5.5/ 7
Wide	5.1/ 6/ 7	2/ 3/ 4/ 5.5
Wide PS	6	3/ 5.5

Prosthetic Procedure

Separate the Cover screw or Healing abutment using a 0.9 or 1.2 hex hand driver. To prevent the patient from swallowing the hand driver, tie dental floss to the spinner on the handle of the driver. Prepare an impression coping based on the fixture platform.



Healing abutment attached to 5, 6

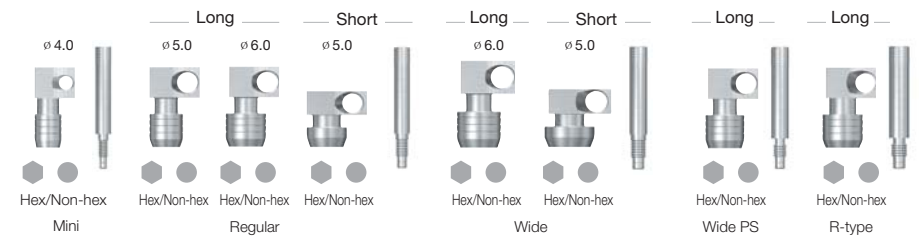
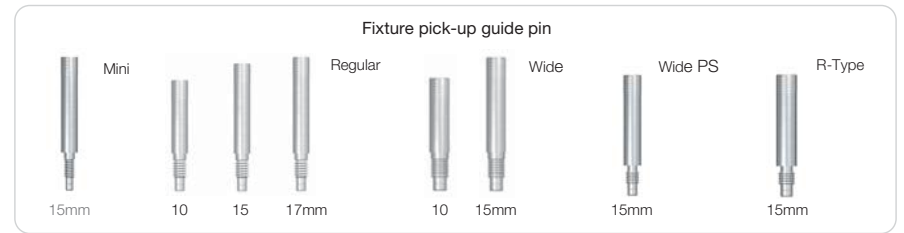


Left : Separating the Healing abutment using a driver
Right : Hand driver with dental floss tied to the handle

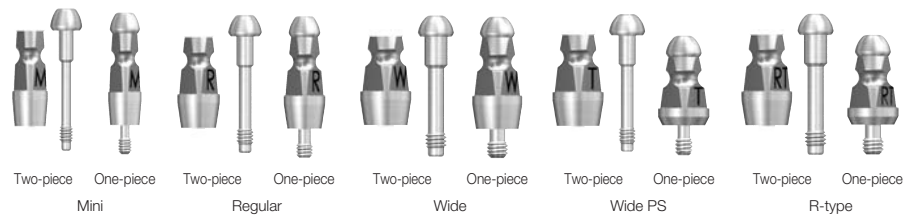


The Healing abutments have been removed

Impression system



Fixture pick-up impression coping for open tray



Fixture transfer impression coping for close tray

Step2 Taking the impression

Prosthetic procedure



Connecting the implant and coping

Position a hex type pick-up impression coping on the fixture platform and connect the guide pin. Tighten using a 1.2 hex hand driver. Check the connection between the implant and impression coping via X-ray.

Note:

For Cement abutment, use a hex type impression coping for single implants regardless of the number of implants.

Prepare an open tray with adequate holes to allow the guide pin to protrude, and then take an impression using the rubber impression material. Check the impression for defects before sending it to the lab.



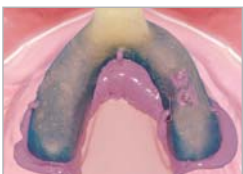
Individual open tray



Checking the pin hole



applying with impression material adhesive



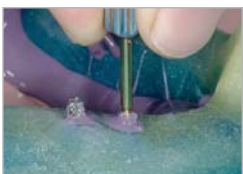
Taking the impression



Area where guide pin heads protrude

Caution:

Wipe off the impression material around the guide pin hole in order to avoid any complication when separating the tray



Separating the guide pin after the impression material is hardened



The impression



Step3 Fabricating the working model

Fixture lab analogs



Prosthetic procedure

Attach a lab analog to the impression coping inside the impression and fasten using a 1.2 hex hand driver. The area between the analog and coping should be free from impression material or other impurities. Check the position of the analog in the copings, and then inject artificial gum around it. Wait until the gum is hardened before pouring stone to create a working model.



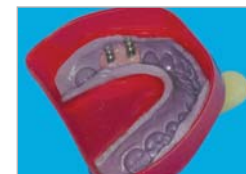
Fixing the lab analog to the impression coping



Lab analog positioned on the impression



Forming artificial gum



Pouring stone after boxing

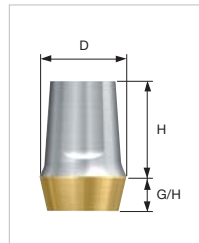
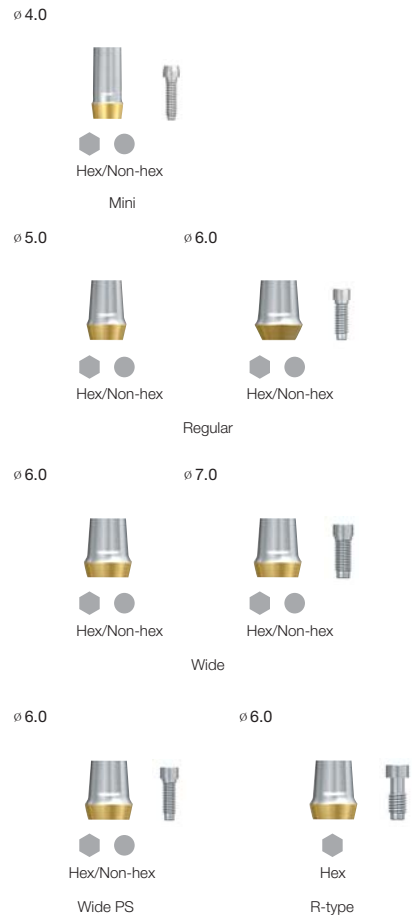


Completed working model

Important:

When tightening the Fixture pick-up guide pin, grasp the retention section of the lab analog in order to prevent the impression coping from rotating. It is easy to make a mistake at this step that can lead to an incorrect prosthesis.

Cement abutments



Cement abutment

Platform	Dia.	G/H	Height
Mini	ø 4	2/ 4mm	7mm
Regular	ø 5/ ø 6	1/ 2/ 3/ 4mm	4/ 5.5/ 7mm
Wide	ø 6/ ø 7	1/ 2/ 3/ 4mm	4/ 5.5mm
Wide PS	ø 6	2/ 4mm	7mm
R-type	ø 6	2/ 4mm	7mm

Step4 Wax up

Prosthetic procedure

Select a Cement abutment based on the space between the implant platform and proximal teeth, gingival depth and grafting depth of the implant. Fasten the Cement abutment to the analog with a screw using a 1.2 hex hand driver. The abutment may be modified according to the required shape. Fill the screw access hole with wax and apply the entire abutment with a separator, then resin up and wax up the abutment for the bridge framework.



Selecting the abutments



Forming the Margin



Adjusting the abutment height



Connecting to a dummy lab analog



Resin application on the abutment



External surface contouring



Forming the resin cores with uniform thickness



Connecting resin core



Waxing up for PFM bridge

Step5 Casting & porcelain build-up

Prosthetic procedure

Construct the PFM in the conventional manner.



Spruing



Casting body



Trying the fit of the abutment on the casting body



Checking the compatibility with the abutment



Checking the compatibility with the surrounding soft tissue



Degassing



Opaque



Build-up



Firing



Final grazing



Completed prosthesis

Step6 Placing the abutment

Instruments



Short long
1.2 hex torque driver



Torque wrench

Prosthetic procedure

Prepare a transfer jig that will help transport the Cement abutment into the oral cavity without disturbing its position on the working model. Once the final prosthesis is completed, send together with the transfer jig as a positioning guide to the clinic. After removing the Healing abutment or temporary bridge in the oral cavity, connect the Cement abutment first through the transfer jig using a 1.2 hex hand driver and check the fit via X-ray. And then it is tightened on 30Ncm with the 1.2 torque driver and a torque wrench



Using the transfer jig



Removing the abutment from the model



Abutment post attached to the transfer jig



Tightening the implant and abutment



Connect the abutment with 30Ncm force.

*Important:
Tightening torque = 30Ncm

Step7 Cementation & delivering

Prosthetic procedure

Check the passive fit of the prosthesis margin, and verify the occlusion and esthetics. Block out the screw access hole with a cotton pellet and adjust the occlusion if necessary, then cement the abutment on the right location using temporary cement.



Screw hole filling



Cementation



Mounting inside the oral cavity



Final prosthesis

Patient follow-up:

Upon the completion of prosthetic treatment, provide the patient an instruction on oral hygiene and make an appointment for next visiting schedule for a regular checkup. Later, if the progress and hygienic condition are satisfactory, perform the cementation with permanent cement.

Note:

Apply a minimum amount of cement on the margin of the prosthesis only.

Selection of the cement type abutment

The selection of an abutment for cement-retained prosthesis has a crucial impact on the esthetics and functions of prosthesis.

It is very important that the mesiodistal distance of teeth, gingival depth and crown height be considered for the selection of the abutment.

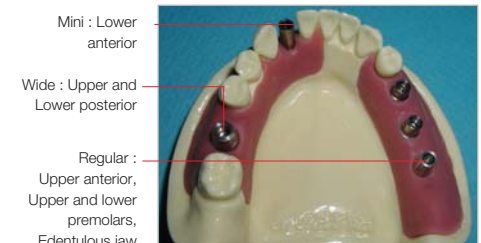
Selection abutment

Considering the average crown length of natural teeth and space for prosthetic fabrication, select the optimal abutment height.

- Space required for prosthesis occlusion fabrication : Metal framework + porcelain + cement = 1.5 ~ 2 mm



Measuring the occlusion gap



- Mini : Lower anterior
- Wide : Upper and Lower posterior
- Regular : Upper anterior, Upper and lower premolars, Edentulous jaw

Application of each part based on the diameter

<Selection criteria for cemented abutment based on the average crown length of natural teeth>

		Maxilla		Mandibularis	
		Crown Length	Abutment Height	Crown Length	Abutment Height
Anterior	Central Incisor	10.5	R 7.0	9.0	R 7.0 / M 7.0
	Lateral Incisor	9.0	R 7.0	9.5	R 7.0 / M 7.0
	Canine	10.0	R 7.0	11.0	R 7.0
Posterior	1st premolar	8.5	R 5.5	8.5	R 5.5
	2nd premolar	8.5	R 5.5	8.0	R 5.5
	3rd premolar	7.5	W 5.5	7.5	W 5.5
	4th premolar	7.5	W 4.0	7.0	W 4.0

M : mini R : regular W : wide

(Unit : mm)

US

Angled Abutment

• Indication

Angled abutments can be used as cement retained restorations for anterior and posterior teeth when modification of the fixture path is necessary.

• Features & benefits

- The angles of 15 and 25 make path calibration for the grafted fixture convenient.
- The double hex structure makes it easy for positioning of abutment in the cylindrical direction.
- Since the cross section of the abutment top is oval, which is similar to the shape of a natural tooth, the amount of deletion during the preparation of prosthesis is minimized, and the wax-up space is reduced, enabling easier laboratory work.
- A wide variety of sizes, like the cemented abutment, having a gold color by the TiN coating and the rotation-preventing cross section (Diameter 4, 5, 6mm / gingival height 2, 4mm / height 7.5mm)







• Material

- Abutment : Ti CP-Gr3
- Screw : Ti-6Al-4V

• Tightening torque : 30Ncm

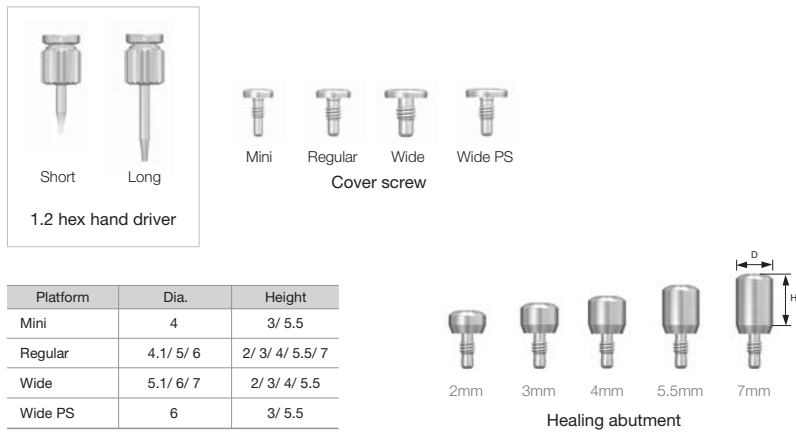


Product list for prosthetic procedure

Product list	
Abutment	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">15° </div> <div style="text-align: center;">25° </div> </div>
Abutment screw	
Impression coping	Transfer type (for close tray)
	Pick-up type (for open tray)
Lab analog	
Driver	
Torque wrench	

Step1 Separating the Healing abutment

Components & instruments

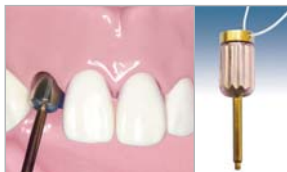


Prosthetic procedure

Separate the Cover screw or Healing abutment using a 0.9 or 1.2 hex hand driver. To prevent the patient from swallowing the hand driver, tie dental floss to the spinner on the handle of the driver. Prepare an impression coping based on the fixture platform.



Connection of the Healing abutment with 2

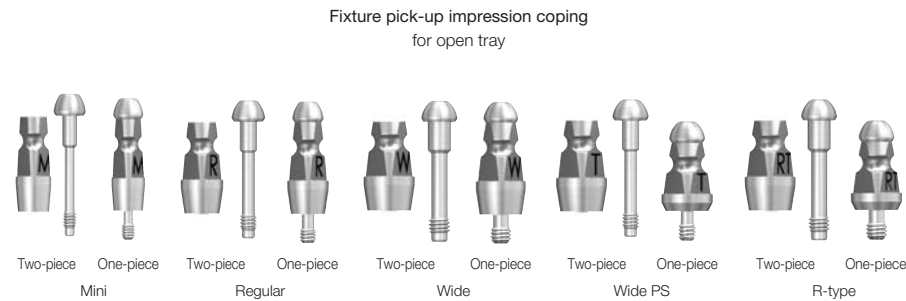
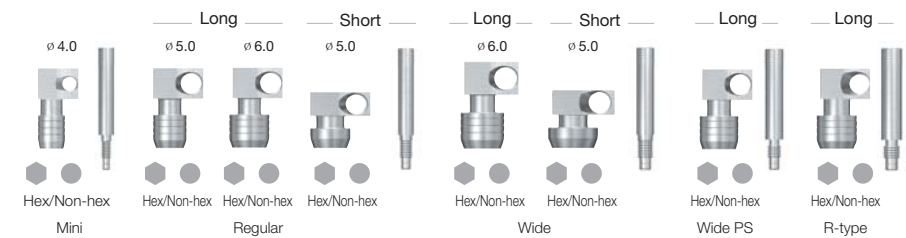
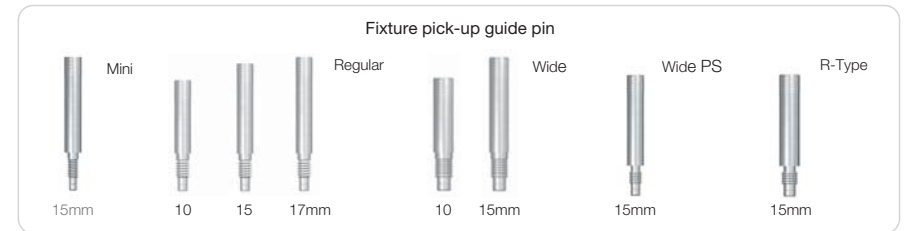


Left : Separating the Healing abutment with a driver
Right : Dental floss connected to a hand driver



Separated Healing abutment

Impression system



Fixture transfer impression coping for close tray

Step2 Taking the impression

Prosthetic procedure



Connecting the implant and coping

Position a hex type pick-up impression coping on the fixture platform and connect the guide pin. Tighten using a 1.2 hex hand driver. Check the connection between the implant and impression coping via X-ray.

Prepare an open tray with adequate holes to allow the guide pin to protrude, and then take an impression using the rubber impression material. Check the impression for defects before sending it to the lab.



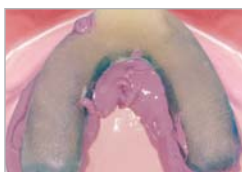
Individual open tray



Checking the pin hole



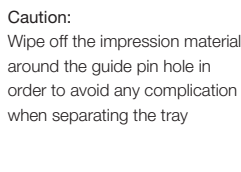
applying with impression material



Taking the impression



Area of exposed guide pin head

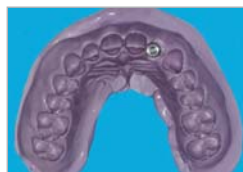


The impression

Caution:
Wipe off the impression material around the guide pin hole in order to avoid any complication when separating the tray



Separating the guide pin after the impression material is hardened



Step3 Fabricating the working model

Fixture lab analogs



Prosthetic procedure

Attach a lab analog to the impression coping inside the impression and fasten using a 1.2 hex hand driver. The area between the analog and coping should be free from impression material or other impurities. Check the position of the analog in the copings, and then inject artificial gum around it. Wait until the gum is hardened before pouring stone to create a working model.



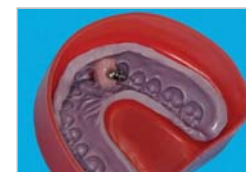
Fastening the impression coping and lab analog



Lab analogs positioned in the impression



Forming artificial gum



Injecting the stone after boxing



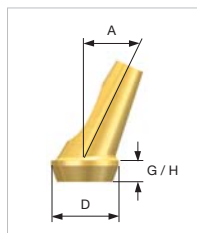
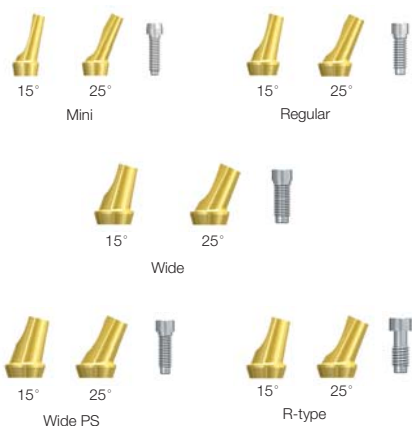
Completed working model

Important:

When tightening the Fixture pick-up guide pin, grasp the retention section of the lab analog in order to prevent the impression coping from rotating. It is easy to make a mistake at this step that can lead to an incorrect prosthesis.

Step4 Wax up

Angled abutments



Angled abutments

Platform	Dia.	Angle	G/H
Mini	ø 4.0	15° / 25°	2/ 4mm
Regular	ø 5.0	15° / 25°	2/ 4mm
Wide	ø 6.0	15° / 25°	2/ 4mm
Wide PS	ø 6.0	15° / 25°	2/ 4mm
R-type	ø 6.0	15° / 25°	2/ 4mm

Prosthetic procedure

Select the abutment that fits the space between the implant platform and antagonist tooth, the gingival thickness and the depth and angle of grafting. If the grafting direction of the implant is not parallel to the surrounding teeth, choose an angled abutment. Connect the screw to the analog with a 1.2 hex hand driver. The abutment may be prepared and corrected to fit the form as necessary. Fill the screw hole with wax and coat the entire abutment with a separator, then resin up and wax up the abutment for the framework.



Selecting an Angled abutment



Completed connection



Correcting the shape

Prosthetic procedure



Adjusting the length



Creating the margin



Connecting the corrected abutment



Fastening with a dummy lab analog



Resin build up



Making the resin core thickness uniform



Completed resin core



Waxing up for PFM crown

Step5 Casting & porcelain build-up

Prosthetic procedure

Construct the PFM in the conventional manner.



Spuring



Wax pattern positioned at the center of the ring



Investment



Casting body



Trying the fit of the casting body on the abutment



Trying the fit on the abutment post after casting



Fitted casting body



Trying the fit on the working model after casting



Checking the compatibility with the surrounding soft tissue



Degassing



Opaque



Build-up



Contouring



Final prosthesis

Step6 Placing the abutment

Instruments



Short long

1.2 hex torque driver



Torque wrench

Prosthetic procedure

Have a transfer jig ready on the working model to help mount the Angled abutment in a clinical practice. Once the transfer jig is prepared, send the final prosthesis and prepared transfer jig, which is a positioning guide, to the clinic. After removing the Healing abutment mounted in the oral cavity, transfer the Angled abutment into the oral cavity from the working model using the transfer jig, and tighten with a 1.2 hex hand driver. Then, confirm the fit via X-ray. After confirming the fit between the implant and abutment, check on the fit of the margin between the abutment and prosthesis as well as the occlusion and esthetics, followed by the initial contract using a 1.2 hex hand driver before completely contracting the abutment using a 1.2 torque driver and a torque wrench at a torque of 30Ncm.



Making the transfer jig



Separating the abutment from the working model



Abutment post connected to the transfer jig



Tightening the implant and abutment



Connect the abutment with 30Ncm with force.

***Important:**
Tightening torque = 30Ncm

Step7 Cementation & delivering

Prosthetic procedure

Check the passive fit of the prosthesis margin, and verify the occlusion and esthetics. Block out the screw access hole with a cotton pellet and adjust the occlusion if necessary, then cement the abutment on the right location using temporary cement.



Screw hold filling



Cementation



Attaching in the oral cavity (viewed from the labial side)

Patient follow-up:

Upon the completion of prosthetic treatment, provide the patient an instruction on oral hygiene and make an appointment for next visiting schedule for a regular checkup. Later, if the progress and hygienic condition are satisfactory, perform the cementation with permanent cement.

Note:

Apply a minimum amount of cement on the margin of the prosthesis only.

Safe Abutment

• Indication

Safe abutments can be used as cement retained restorations exclusive for single cases of the posterior teeth that need protection from screw loosening.

• Features & benefits

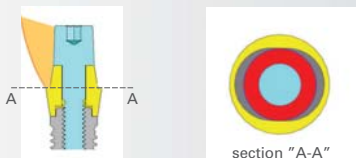
- Use for making single prosthesis to prevent screw loosening.
- Oval-shaped single prosthesis to prevent screw loosening.
- Screw loosening is prevented, since screws are fixed to the prosthesis.
- A wide variety of sizes, like the cemented abutment, having a gold color by the TiN coating (Diameter 4.8, 6.0mm / gingival height 1, 2.5, 4mm / height 4, 5.5, 7mm)

• Material

- Abutment : Ti CP-Gr3
- Screw : Ti-6Al-4V

• Tightening torque : 30Ncm

※ Safe abutment Structure



Product list for prosthetic procedure

Product list	
Abutment	
Carrier	
Protect cap	
Impression coping	Transfer type (for close tray)
	Pick-up type (for open tray)
Lab analog	
Driver	
Torque wrench	

Step1 Separating the Healing abutment

Components & instruments



Platform	Dia.	Height
Regular	4.1/ 5/ 6	2/ 3/ 4/ 5.5/ 7
Wide	5.1/ 6/ 7	2/ 3/ 4/ 5.5



Prosthetic procedure

Separate the Cover screw or Healing abutment using a 1.2 hex hand driver.
To prevent the patient from swallowing the hand driver, tie dental floss to the spinner on the handle of the driver.
Prepare an impression coping based on the fixture platform.



Healing abutment attached to 6

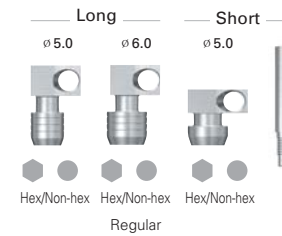
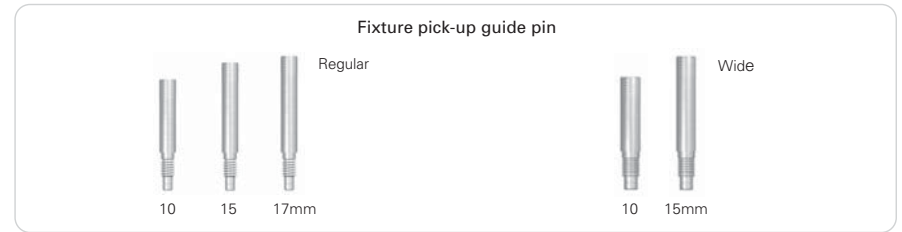


Left : Separating the Healing abutment using a driver
Right : Hand driver with dental floss tied to the handle

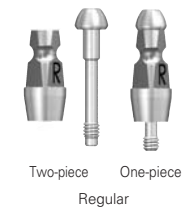
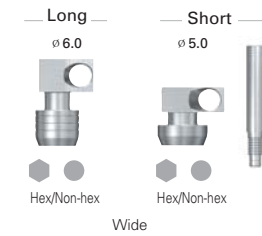


The Healing abutments have been removed

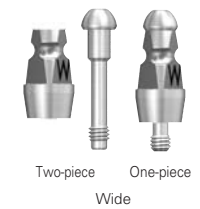
Impression system



Fixture pick-up impression coping for open tray



Fixture transfer impression coping for close tray



Step2 Taking the impression

Prosthetic procedure



Connecting the implant and coping

Position a hex type pick-up impression coping on the fixture platform and connect the guide pin. Tighten using a 1.2 hex hand driver. Check the connection between the implant and impression coping via X-ray.

Prepare an open tray with adequate holes to allow the guide pin to protrude, and then take an impression using the rubber impression material. Check the impression for defects before sending it to the lab.



Individual open tray



Checking the pin hole



applying with impression material adhesive



Taking the impression



Area of exposed guide pin head



Separating the guide pin after the Impression material is hardened



The impression

Caution:

Wipe off the impression material around the guide pin hole in order to avoid any complication when separating the tray

Step3 Fabricating the working model

Fixture lab analogs



Regular



Wide

Prosthetic procedure

Attach a lab analog to the impression coping inside the impression and fasten using a 1.2 hex hand driver. The area between the analog and coping should be free from impression material or other impurities. Check the position of the analog in the copings, and then inject artificial gum around it. Wait until the gum is hardened before pouring stone to create a working model.



Lab analogs positioned in the impression



Forming artificial gum



Completed working model

Important:

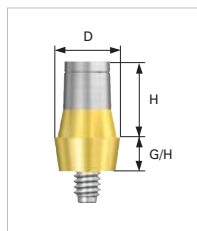
When tightening the fixture pick-up guide pin, grasp the retention section of the lab analog in order to prevent the impression coping from rotating. It is easy to make a mistake at this step that can lead to an incorrect prosthesis.

Step4 Wax up

Safe abutments



Regular



Wide

Safe abutments

Platform	Dia.	G/H	Height
Regular	∅ 4.8	1/ 2.5/ 4mm	4/ 5.5/ 7mm
Wide	∅ 6.0	1/ 2.5/ 4mm	4/ 5.5mm

Prosthetic procedure

Select a Safe abutment based on the space between the implant platform and proximal teeth, gingival depth and grafting depth of the implant. Fasten the Safe abutment to the analog with a Safe abutment screw using a 1.2 hex hand driver. Only the body of abutment may be modified according to the required shape. Apply the entire abutment with a separator, then resin up and wax up the abutment for the framework.



Selecting the Safe abutment



Forming the margin

Caution:

It is possible to modify the Safe abutment body but the screw must not be altered. When modifying the Safe abutment screw, the position of the altered part changes every time the screw is connected and causes errors in the prosthesis.

Prosthetic procedure



Resin build up



Full wax up



Labial surface opening & beading

Caution:

When it is necessary to modify the Safe abutment screw to adjust the path it can only be done intraorally. The modified abutment should not be removed. If the safe abutment is removed and reconnected the position of the altered screw part changes and causes errors in the prosthesis. So if the safe abutment has been modified intraorally you must take a direct impression.

Step5 Constructing the crown

Prosthetic procedure

Construct the PFG in the conventional manner.



Spruing



Casting body



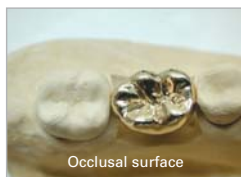
Fitting on the model



Resin facing



Final prosthesis



Occlusal surface

Step6 Cementation & delivering

Instruments



Short long
1.2 hex torque driver



Torque wrench

Prosthetic procedure

Check the margin passive fit of the final prosthesis and verify the occlusion and esthetics. Make the primary connection of the prosthesis using a 1.2 hex hand driver, followed by the complete connection at 30Ncm with a 1.2 torque driver and a torque wrench.



Tightening the implant and abutment



Connect the abutment with 30Ncm force.

***Important:**
Tightening torque = 30Ncm



Final prosthesis

Check the passive fit of the prosthesis margin, and verify the occlusion and esthetics. Adjust the occlusion if necessary, then cement the abutment on the right location using temporary cement.

Patient follow-up:

Upon the completion of prosthetic treatment, provide the patient an instruction on oral hygiene and make an appointment for next visiting schedule for a regular checkup. Later, if the progress and hygienic condition are satisfactory, perform the cementation with permanent cement.

US

ZioCera Abutment

• Indications

- All Ceramic prosthesis for the anterior and premolar area that requires high levels of esthetics.
- Cement Type/ Screw Type/ Combi Type

• Features & benefits

- Zirconium Material with superior strength
- Straight/17° Angled two types that are more convenient for the operator.
- Natural Dentin Color Abutment shade establishment
- A Design easy to Customize

• Material

- Abutment : Zirconium
- Screw : Ti-6Al-4V

• Tightening torque :

- Mini: 20Ncm
- Regular: 30Ncm



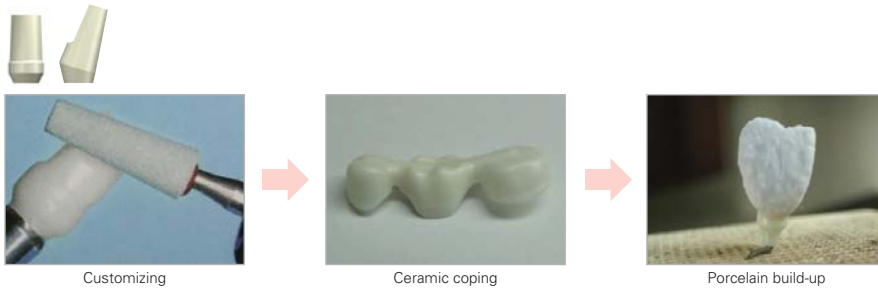
Product list for prosthetic procedure

Product list	
Abutment	
Abutment screw	
Impression coping	Transfer type (for close tray)
	Pick-up type (for open tray)
Lab analog	
Driver	
Torque wrench	

Note for Prosthetic Process

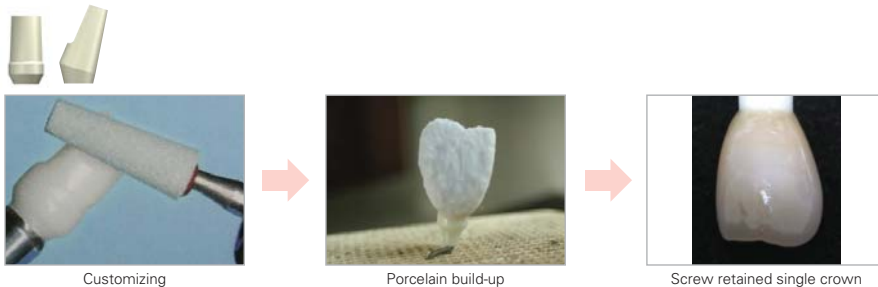
■ Cement retained type restoration with ZioCera abutment

The ZioCera Abutment is generally used as a supporting structure for an all ceramic prosthesis of cement retained type. After customizing the abutment on a working model with a zirconium exclusive bur, create the internal shell using systems such as CAD-CAM, In-Ceram, Empress and build-up with exclusive porcelain powder to create the most esthetic implant prosthesis.



■ Screw retained type restoration with ZioCera abutment

When there is 1~1.5mm space between the adjacent tooth after abutment connection you can fabricate a screw retained type prosthesis using a ZioCera abutment. In case of a screw retained type, there is no need of a coping making it economical and quick prosthesis fabrication is possible. In such cases as the maxillary anterior portion where an angled abutment is necessary because of anatomical structures, by using an ZioCera Angled abutment it is more convenient to fabricate a screw retained type prosthesis. (however, the porcelain must be zirconium exclusive powder.)



Step1 Separating the Healing abutment

Components & instruments

Platform	Dia.	Height
Mini	4	3/ 5.5
Regular	4.1/ 5/ 6	2/ 3/ 4/ 5.5/ 7

Prosthetic procedure

Separate the cover screw or healing abutment using a 0.9 or 1.2 hex hand driver. To prevent the patient from swallowing the hand driver, tie dental floss to the spinner on the handle of the driver. Prepare an impression coping based on the fixture platform.

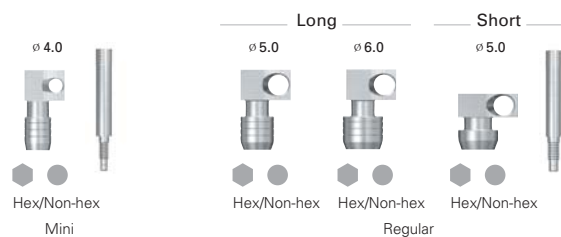
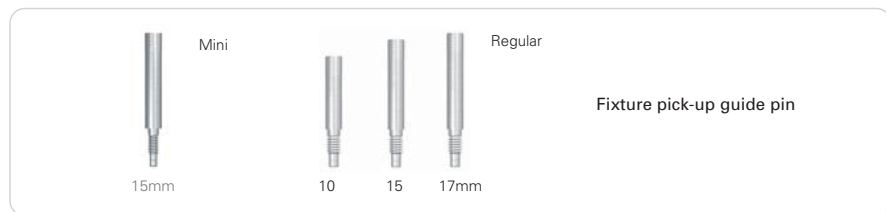


Healing abutment verification

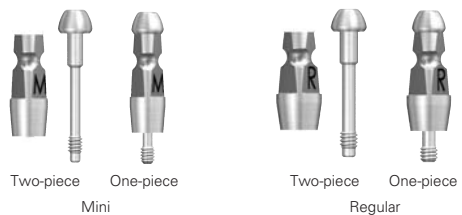


Separate the Healing abutment

Impression system



Fixture pick-up impression coping for open tray



Fixture transfer impression coping for close tray

Step2 Fabricating the working model

Fixture lab analogs



Prosthetic procedure

Position a hex type transfer impression coping on the fixture platform and connect the guide pin. Tighten using a 1.2 hex hand driver. Check the connection between the implant and impression coping via X-ray.

Prepare the rubber impression material and inject around the impression coping completely. Place the tray filled with impression material and take the impression. After the impression material is hardened, separate the tray from the oral cavity.

The impression coping is removed from the mouth and connected with the appropriate Fixture lab analog. The coping with analog is then indexed into its corresponding position (the triangle circle structure replicated on the coping) in the impression. Do not forget to check the passivity of the connection between the impression coping and lab analog.

Send it to the lab.



Connecting the implant and coping



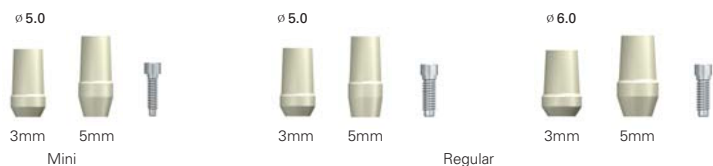
Impression taking



Coping repositioning with lab analog

Step3 Fabricating the working model & abutment selection

ZioCera abutments



ZioCera abutment



ZioCera Angled abutment

Prosthetic procedure



Abutment connection on working model

Make a working model from the impression body following the conventional method and connect the abutment. Check the path on the model and select an appropriate abutment. Since the ZioCera Abutment is more difficult to customize than the titanium abutment, it is important to minimize tool wear and reduce time by choosing the correct abutment.

Step4 Abutment modification ~ Porcelain build-up

Prosthetic procedure

Unlike the titanium abutment you must use exclusive polishing tools for ZioCera abutment customizing. And also during the reduction procedures you must soak the abutment in water or feed water to minimize thermal shock. The ZioCera abutment is an all ceramic abutment different from a PFG and needs a ceramic coping. Fabricate an esthetic coping using CAD-CAM, In-ceram, Empress system and complete the final prosthesis using coping exclusive porcelain.



Connecting the abutment and lab analog



Abutment modification



Customized abutment



Alignment verification



Wax-up



Completed ceramic coping



Porcelain build-up



completed All Ceramic

Step5 Cementation & delivering

Instruments



Prosthetic procedure

Connect the abutment intraorally after verifying the abutment direction on the model. Take a periapical x-ray to check the connection of the abutment. Set the tightening torque at 20Ncm for a mini abutment and 30Ncm for a regular abutment and tighten the screw.

Block out the screw access hole with a cotton pellet and adjust the occlusion if necessary, then cement the abutment on the right location using temporary cement.



Abutment connection



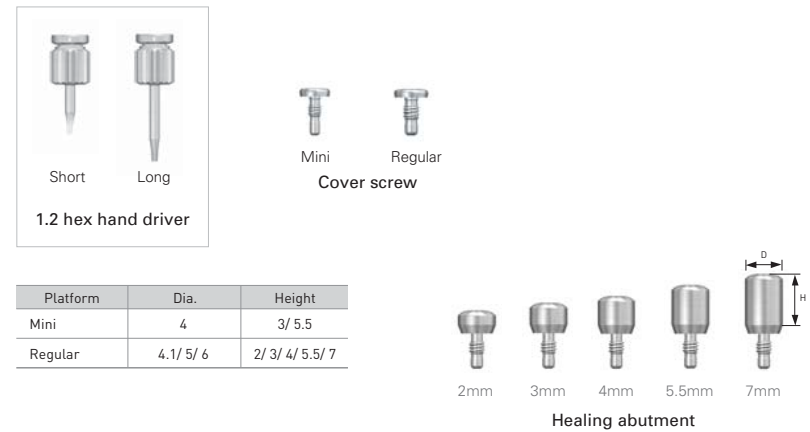
Abutment screw tightening



Final prosthesis setting

Step1 Separating the Healing abutment

Components & instruments



Prosthetic procedure

Separate the cover screw or healing abutment using a 0.9 or 1.2 hex hand driver.

To prevent the patient from swallowing the hand driver, tie dental floss to the spinner on the handle of the driver. Prepare an impression coping based on the fixture platform.

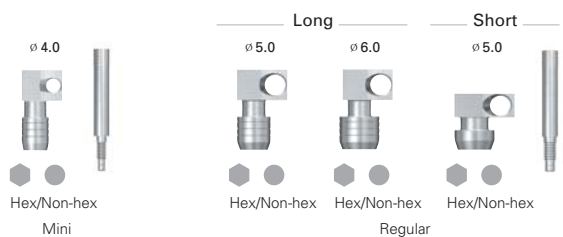
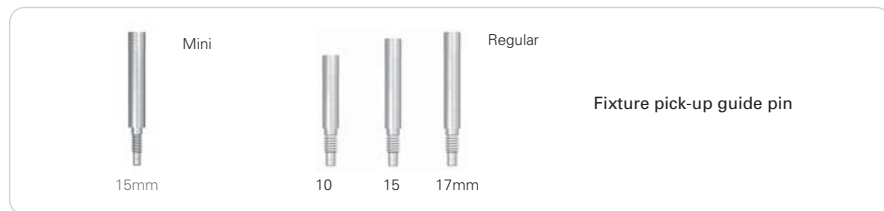


Healing abutment verification

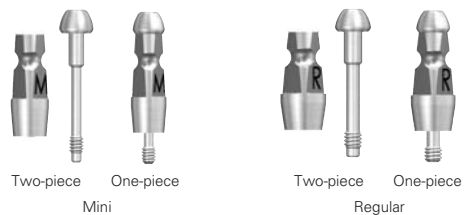


Separate the Healing abutment

Impression system



Fixture pick-up impression coping for open tray



Fixture transfer impression coping for close tray

Step2 Taking the impression

Prosthetic procedure

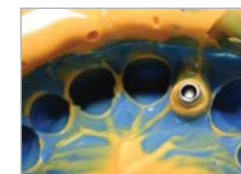
Position a hex type pick-up impression coping on the fixture platform and connect the guide pin. Tighten using a 1.2 hex hand driver. Check the connection between the implant and impression coping via X-ray. Prepare an open tray with adequate holes to allow the guide pin to protrude, and then take an impression using the rubber impression material. Check the impression for defects before sending it to the lab.



Impression Coping connection



Impression Taking



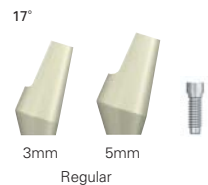
Coping repositioning

Step3 Fabricating the working model & abutment selection

ZioCera abutments



ZioCera abutment



ZioCera Angled abutment

Prosthetic procedure



Abutment connection on working model

Make a working model from the impression body following the conventional method and connect the abutment. Check the path on the model and select an appropriate abutment. Since the ZioCera Abutment is more difficult to customize than the titanium abutment, it is important to minimize tool wear and reduce time by choosing the correct abutment.

Step4 Abutment modification ~ Porcelain build-up

Prosthetic procedure

After customizing the ZioCera abutment when the space left between the opposing tooth and adjacent tooth is less than 1~1.5mm you can fabricate a screw retained type prosthesis using zirconium exclusive porcelain. In this case unlike the cement retained type, there is no need to make a separate ceramic coping so the prosthesis fabrication procedure is economical and quick. When the porcelain thickness exceeds 2mm the porcelain may crack and then a cement retained type prosthesis must be made.



Connecting the abutment and lab analog



Abutment modification



Customized abutment



Alignment verification



Porcelain build-up



Completed screw retained restoration



completed all ceramic

Step5 Placing the abutment

Instruments



1.2 hex torque driver



Torque wrench

Prosthetic procedure

Verify the Abutment direction on the working model and connect the abutment intraorally. It is essential to take a periapical x-ray to check the exactness of the connection. When a mini abutment has been used set the tightening torque at 20Ncm, and 30Ncm for a Standard feature and tighten the screw.



Abutment connection



Abutment screw tightening



Final prosthesis setting

UCLA Gold Abutment

• Indication

UCLA Gold abutments can be used in both anterior and posterior areas of the mouth for screw retained crown and bridge restorations.

A customized abutment of implant-level convenient to use when the vertical clearance is small for prosthesis fabrication, random angle placement and esthetic protshesis fabrication with subgingival margin.

• Features & benefits

- Minimum vertical clearance: 4mm (abutment height: 2.9 mm)
- Easy removal and good retrievability of prosthesis, owing to the screw retained restoration
- Capable of milling the abutment on the model
- Good for minimizing metal protrusion even with small gingival depth, with its collar of 1.2 mm
- Simple laboratory procedures owing to the capability to cast for prosthetic fabrication
- Flexible customization of the abutment owing to the capability to adjust the abutment height and angle deviation







• Material

- Abutment : Gold alloy
- Screw : Ti-6Al-4V

• Tightening torque 30Ncm

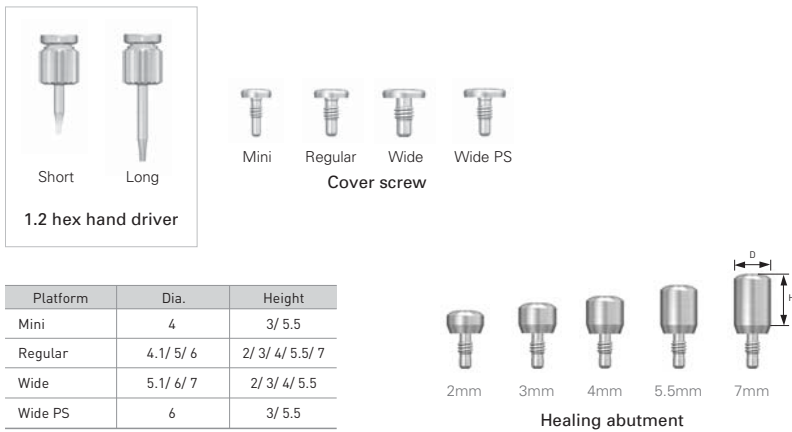


Product list for prosthetic procedure

Product list	
Abutment	
Abutment screw	
Impression coping	Transfer type (for close tray)
	Pick-up type (for open tray)
Lab analog	
Polishing protector	
Driver	
Torque wrench	

Step1 Separating the Healing abutment

Components & instruments



Prosthetic procedure

Separate the Cover screw or Healing abutment using a 0.9 or 1.2 hex hand driver. To prevent the patient from swallowing the hand driver, tie dental floss to the spinner on the handle of the driver. Prepare an impression coping based on the fixture platform.



Healing abutment attached to 6

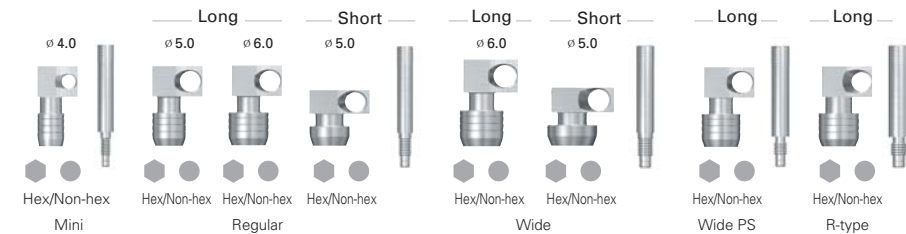
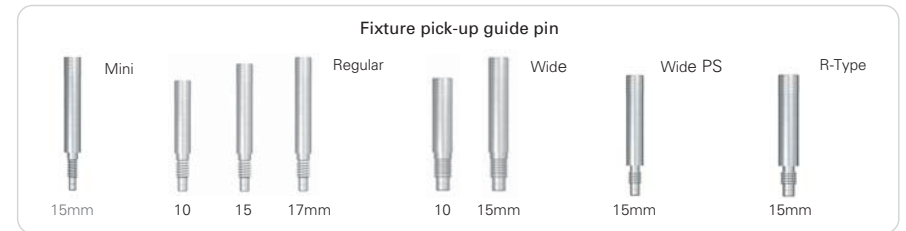


Left : Separating the Healing abutment using a driver
Right : Hand driver with dental floss tied to the handle

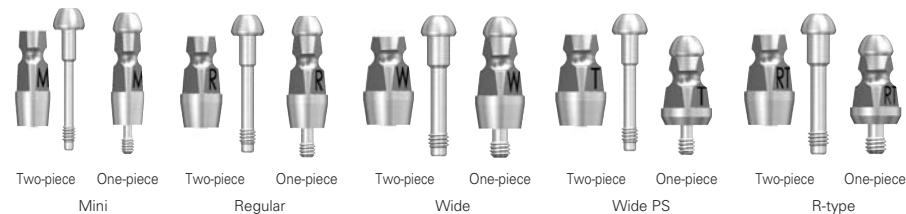


The Healing abutments have been removed

Impression system



Fixture pick-up impression coping for open tray



Fixture transfer impression coping for close tray

Step2 Taking the impression

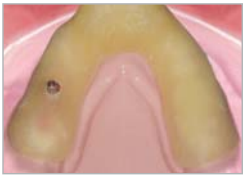
Prosthetic procedure



Connecting the implant and coping

Position a hex type pick-up impression coping on the fixture platform and connect the guide pin. Tighten using a 1.2 hex hand driver. Check the connection between the implant and impression coping via X-ray.

Prepare an open tray with adequate holes to allow the guide pin to protrude, and then take an impression using the rubber impression material. Check the impression for defects before sending it to the lab.



Individual open tray



Checking the pin hole

Caution:

Wipe off the impression material around the guide pin hole in order to avoid any complication when separating the tray



Injecting the impression material



Taking the impression



applying with impression material



Separating the guide pin after the impression material is hardened



The impression



Step3 Fabricating the working model

Fixture lab analogs



Mini



Regular



Wide



Wide PS



R-type

Prosthetic procedure

Attach a lab analog to the impression coping inside the impression and fasten using a 1.2 hex hand driver. The area between the analog and coping should be free from impression material or other impurities. Check the position of the analog in the copings, and then inject artificial gum around it. Wait until the gum is hardened before pouring stone to create a working model.



Fixing the lab analog to the impression coping



Lab analog positioned on the impression



Forming the artificial gum



Pouring stone after boxing



Completed working model

Important:

When tightening the fixture pick-up guide pin, grasp the retention section of the lab analog in order to prevent the impression coping from rotating. It is easy to make a mistake at this step that can lead to an incorrect prosthesis.

Step4 Wax up

UCLA Gold abutments



Color-coding:

In order to facilitate identification, the UCLA gold abutments are color-coded.

Hex = ivory

Non-hex = white

Prosthetic procedure

Select a UCLA Gold abutment based on the implant platform (use the hex type for single crown and non-hex type UCLA Gold abutment for bridge fabrication). Connect the screw to the analog using a 1.2 hex hand driver. Set the abutment height based on the space with proximal teeth. Wax up the plastic sleeve of the UCLA Gold abutment directly (perform full-crown wax-up for gold crown and coping-shaped wax-up for PFM).



Attaching the abutment using a driver



Adjusting the height using a bur



Wax-up

Step5 Constructing the crown

UCLA polishing protectors



Prosthetic procedure

Construct the prosthesis in the conventional manner.



Spruing



Investment



Casting body



Connecting the polishing protector



Polishing



Resin veneering



Checking the fit



Final prosthesis



Step6 Delivering

Instruments



Short long
1.2 hex torque driver



Torque wrench

Prosthetic procedure

Check the passive fit between the prosthesis and fixture via X-ray and verify the contact with proximal teeth, occlusion and esthetics. Make the primary connection of the prosthesis using a 1.2 hex hand driver followed by a complete connection at 30Ncm using a 1.2 torque driver and a torque wrench. Fill the screw access hole with a cotton pellet and temporary filling material and complete the occlusal surface with resin.



Screwing after prosthetic fitting



Connecting the prosthesis completely using a 1.2 hex torque driver and a torque wrench

***Important:**

Tightening torque = 30Ncm



Covering the screw head with protecting material



Access hole resin filling

Patient follow-up:

Upon the completion of prosthetic treatment, provide the patient an instruction on oral hygiene and make an appointment for next visiting schedule for a regular checkup.

US

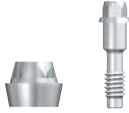




Esthetic Abutment

• Features and Advantages

- A screw-retained restoration type, which fastens the prosthesis with a cylinder screw
- Ideal for use of occlusal clearance of 7.5 mm or higher, with its conical height of 1.8 mm and gold cylinder height of 5.7 mm
- Capable of compensating path deviations of up to 30°, with its tilt angle of 15° at the conical part of the abutment
- High accuracy of the impression body and precise setting of the prosthesis by taking the impression at the abutment level
- Available in regular size abutment, with collar heights of 1, 2, 3 and 4mm, and in hex and non-hex type cylinder
- The regular size is compatible with Brånemark, 3i and Restore.

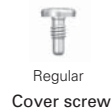


Product list for prosthetic procedure

Product list	
Abutment & screw	
Cylinder & screw	
Impression coping	Transfer type (for close tray)
	Pick-up type (for open tray)
Lab analog	
Driver	
Torque wrench	

Step1 Separating the Cover screw or Healing abutment

Components & instruments



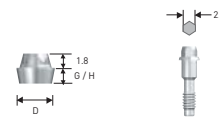
Platform	Dia.	Height
Regular	4.1/ 5/ 6	2/ 3/ 4/ 5.5/ 7
Wide	5.1/ 6/ 7	2/ 3/ 4/ 5.5



Healing abutment

Step2 Separating the Cover screw or Healing abutment

Esthetic abutments & instruments



Esthetic abutments

GH	D	φ 4,8
1.0		EAR100
2.0		EAR200
3.0		EAR300
4.0		EAR400



Prosthetic Procedure

Separate the cover screw or healing abutment using a 1.2 hex hand driver. To prevent the patient from swallowing the hand driver, tie dental floss to the spinner on the handle of the driver. Prepare an esthetic abutment considering the gingival depth and fixture platform.



Healing abutment attached to 5]



Left : Separating the Healing abutment using a driver
Right : Hand driver with dental floss tied to the handle



The Healing abutments have been removed

Prosthetic Procedure

Attach the esthetic abutment to the fixture using a 2.0 internal hex driver and check the connection via X-ray. Then, complete the procedure by applying 30 Ncm of torque using a torque wrench (※refer to p.85 torque guide).



Attaching the abutment body



Screwing with a 2.0 int. hex driver



Guide torque (30 Ncm)

Step3 Connecting the impression copings

Impression system

Esthetic pick-up impression coping



Prosthetic Procedure

Position a hexed pick-up impression coping for single tooth over the abutment and tighten the guide pin. Tighten with a 1.2 hex hand driver. Check the connection between the abutment and coping via x-ray if it is obscured under the gingiva.



Positioning the impression coping



Connecting with guide pin



Fastening with pattern resin including the adjacent teeth

Step4 Taking the abutment level impression

Esthetic healing cap



Esthetic healing cap

Prosthetic Procedure

Prepare an open tray with sufficient holes to allow the guide pin to protrude, then take an impression using rubber impression material. Check the impression body for defects before sending to the workroom.



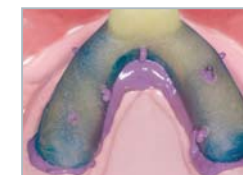
Individual open tray



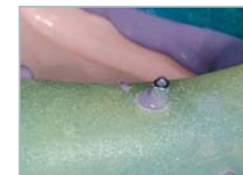
Checking the pin hole



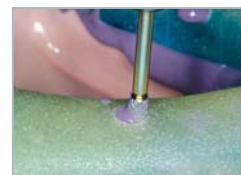
Injecting the impression material



Taking the impression



Area where guide pin heads protrude



Separating the guide pin after the impression material is hardened



Impression body



While constructing the upper prosthesis, keep the healing cap connected to eliminate the foreign body sensation felt by the patient and protect the abutment and abutment screw.

Step5 Fabricating the working model

Esthetic lab analog



Esthetic lab analog

Prosthetic Procedure

Insert the esthetic lab analog into the impression coping in the impression body. Push the guide pin into the coping and fasten using a 1.2 hex hand driver. Check the position of the analog in the copings, and then inject artificial gum around it. Wait until the gum is hardened before pouring stone to create a working model.



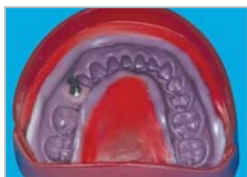
Fastening the lab analog and impression coping



Lab analogs positioned in the impression body



Forming artificial gum



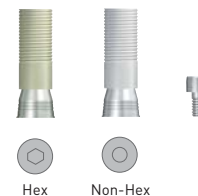
Pouring stone after boxing



Completed working model

Step6 Waxing up

Esthetic gold cylinder



Esthetic gold cylinder

Prosthetic Procedure

Position the hexed gold cylinder for single crowns on the abutment and connect using a 1.2 hex hand driver. Set the plastic sleeve to an appropriate height, then wax up the metal part of the prosthesis.

(※ When using a gold cylinder, the casting metal must be ceramic gold or gold alloy. Using a non-precious metal will result in the deformation of the gold cylinder during casting and affect the accuracy of the prosthesis.)



Working model



Connecting the hexed gold cylinder



Adjusting the height using a bur



Wax-up

Step7 Making the ceramic crown

Esthetic polishing protector



Esthetic polishing protector

Prosthetic Procedure

Construct the planned ceramic prosthesis in the conventional manner.



Spruing



Investment



Casting body



Trying the fit of the casting body on the abutment



Porcelain build up



Contouring



After contouring



Polishing



After polishing



Final prosthesis



Step8 Delivering and Screwing

Prosthetic procedure

Check the margin passive fit of the final prosthesis and verify the occlusion and esthetics. Make the primary connection of the prosthesis using a 1.2 hex hand driver, followed by the complete connection at 10 Ncm with a 1.2 torque driver and a torque wrench (refer to p.85 torque guide). Cover the screw head with the protecting material and fill the access hole with occlusal material intraorally as a final step of the procedure.



Screwing



Connecting the prosthesis completely using a 1.2 hex torque driver and a torque wrench



Attached prosthesis



Covering the screw head with the protecting material



Access hole resin filling

Patient follow-up

Upon the completion of prosthetic treatment, provide the patient an instruction on oral hygiene and make an appointment for next visiting schedule for a regular checkup.

US


Esthetic-low Abutment

• Features and advantages

- A screw-retained restoration type, which fastens the prosthesis with a cylinder screw
- Ideal for prosthetics of up to 5.7 mm of occlusal clearance, with its conical height of 1.0 mm and gold cylinder height of 3.5 mm
- Capable of compensating path deviations of up to 48°, with its tilt angle of 45° at the conical part of the abutment
- High accuracy of the impression body and precise setting of the prosthesis by taking the impression at the abutment level
- Available in regular size abutment, with collar heights of 1, 2, 3 and 4mm, and in hex and non-hex type cylinder.
- The regular size is compatible with Brånemark, 3i and Restore. The wide size is compatible with Brånemark and 3i (T- type).

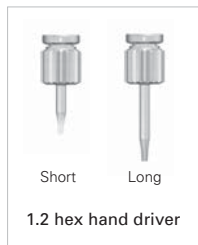


Product list for prosthetic procedure

Product list	
Abutment & screw	
Cylinder & screw	
Impression coping	Transfer type (for close tray)
	Pick-up type (for open tray)
Lab analog	
Driver	
Torque wrench	

Step1 Removing the Cover screw or Healing abutment

Components & instruments



Platform	Dia.	Height
Regular	4.1/ 5/ 6	2/ 3/ 4/ 5.5/ 7
Wide	5.1/ 6/ 7	2/ 3/ 4/ 5.5
Wide PS	6	3/ 5.5



Prosthetic Procedure

Separate the cover screw or healing abutment using a 1.2 hex hand driver. To prevent the patient from swallowing the hand driver, tie dental floss to the spinner on the handle of the driver. Prepare an esthetic low abutment considering the gingival depth and space with antagonist teeth.



Healing abutment attached to 5, 6



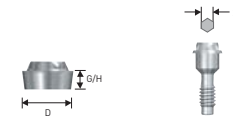
Left : Separating the healing abutment using a driver
Right : Hand driver with dental floss tied to the handle



The healing abutments have been removed

Step2 Connecting the Esthetic-low abutment inside the oral cavity

Esthetic-low abutments & instruments



	Regular	Wide	Wide PS
G/H \ D	ø 4.8	ø 5.5	
1.0	MER100	MEW100	TMEW100
2.0	MER200	MEW200	TMEW200
3.0	MER300	MEW300	TMEW300
4.0	MER400	MEW400	TMEW400



Prosthetic Procedure

Attach the esthetic-low abutment to the fixture using a 2.7 internal hex driver and check the connection via X-ray, and make a complete connection by applying 30 Ncm of torque using a torque wrench (※ refer to p.85 torque guide).



Connecting the abutment body



Screwing with a 2.0 int. hex driver

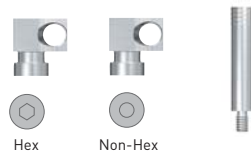


Guide torque (30 Ncm)

Step3 Connecting the impression copings

Impression system

Esthetic-low pick-up impression coping



Esthetic-low Transfer impression Coping



Prosthetic Procedure

Position a non-hexed pick-up impression coping for the bridges over the abutment and tighten the guide pin. Tighten using a 1.2 hex hand driver. Check the connection between the abutment and coping via X-ray in case the connection of the coping and abutment is at under-gingiva.



Positioning the impression coping



Connecting with the guide pin



Attaching with pattern resin after tying with dental floss

Step4 Taking the abutment level impression

Esthetic-low healing cap



Esthetic-low healing cap

Prosthetic Procedure

Prepare an open tray with sufficient holes to allow the guide pin to protrude, and then take an impression using the rubber impression material. Check the impression body for defects before sending to the workroom.



Individual open tray



Checking the pin hole



Injecting impression material



Taking the impression



Area where guide pin heads protrude



Separating the guide pin after the impression material is hardened



Impression body



While constructing the upper prosthesis, keep the healing cap connected to eliminate the foreign body sensation felt by the patient and protect the abutment and abutment screw.

Step5 Fabricating the working model

Esthetic-low lab analog



Esthetic-low lab analog

Prosthetic Procedure

Insert the esthetic-low lab analog into the impression coping in the impression body. Push the guide pin into the coping and fasten using a 1.2 hex hand driver. Check the position of the analog in the copings, and then inject artificial gum around it. Wait until the gum is hardened before pouring stone to create a working model.



Fastening the lab analog and impression coping



Lab analogs positioned in the impression body



Forming artificial gum



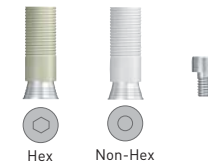
Pouring stone after boxing



Completed working model

Step6 Waxing up

Esthetic gold cylinder



Hex Non-Hex
Esthetic Gold Cylinder

Prosthetic Procedure

Position the non-hexed gold cylinder for bridges on the abutment and connect using a 1.2 hex hand driver. Set the plastic sleeve to an appropriate height, and then wax up the metal part of the prosthesis.

(※ When using a gold cylinder, the casting metal must be ceramic gold or gold alloy. Using a non-precious metal will result in the deformation of the gold cylinder during casting and affect the accuracy of the prosthesis.)



Connecting the gold cylinder



Adjusting the height using a disk



Refining the height using a bur



Resin-up



One screw test



Wax-up



Occlusal view



Step7 Making the gold bridge

Esthetic-low polishing protector



Esthetic-low polishing protector

Prosthetic Procedure

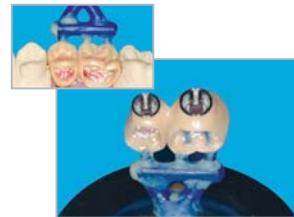
Construct the planned screw-type implant gold bridge in the conventional manner. (For best results, confirm the passive fit in the oral cavity before completing the prosthesis.)



Forming the resin veneering area



Beading



Spruing



Casting body



Attaching the polishing protector



Polishing



After polishing



Screwing



Final prosthesis

Step8 Delivering and screwing

Prosthetic procedure

Check the margin passive fit of the final prosthesis and verify the occlusion and esthetics. Make the primary connection of the prosthesis using a 1.2 hex hand driver, then the complete connection at 10 Ncm using a 1.2 torque driver and a torque wrench (refer to p.85 torque guide). Cover the screw head with the protecting material and fill the access hole with occlusal material in the oral cavity as a final step of the procedure.



Screwing



Connecting the prosthesis completely using a 1.2 hex torque driver and a torque wrench



Access hole resin filling



Connected prosthesis



Covering the screw head with the protecting material

Patient follow-up






Upon the completion of prosthetic treatment, provide the patient an instruction on oral hygiene and make an appointment for next visiting schedule for a regular checkup.

Standard Abutment

• Features and Advantages

- A screw-retained restoration type that connects the prosthesis with a cylinder screw
- Exclusively used for bridge work for edentulous cases. The regular-type cylinders are available in non-hexed-type only.
- Fastened 1~2 mm higher than the gingiva, the exposed metal surface is slightly unaesthetic but good for maintaining tissue and oral hygiene.
- The abutment and cylinder are connected at a 45° angle; thus compensating path deviations among fixtures.
- The collar height can be selected among 3, 4, 5.5, 7 and 8.5 mm according to the gingival depth, with the cylinder heights of 3 mm and 4 mm for a wide range of application.
- The regular size is compatible with Brånemark, 3i and Restore.

Product list for prosthetic procedure

Product list	
Abutment & screw	
Cylinder & screw	
Impression coping	Transfer type (for close tray)
	Pick-up type (for open tray)
Lab analog	
Driver	
Torque wrench	

Step1 Removing the cover screw or healing abutment

Components & instruments

Platform	Dia.	Height
Mini	4	3/ 5.5
Regular	4.1/ 5/ 6	2/ 3/ 4/ 5.5/ 7
Wide	5.1/ 6/ 7	2/ 3/ 4/ 5.5
Wide PS	6	3/ 5.5

Prosthetic Procedure

Separate the cover screw or healing abutment using a 0.9/1.2 hex hand driver. To prevent the patient from swallowing the hand driver, tie dental floss to the spinner on the handle of the driver. Prepare an esthetic low abutment considering the gingival depth and space with antagonist teeth.



Edentulous mandibular ridge with healing abutments attached
 Left : Separate the healing abutment using a driver
 Right : Hand driver with dental floss tied to the handle
 Oral cavity with healing abutments removed

Step2 Connecting the Standard abutment in the oral cavity

Standard abutments & instruments

H	D	Abutment
3.0	4.5	SAR300
4.0	4.5	SAR400
5.5	4.5	SAR550
7.0	4.5	SAR700
8.5	4.5	SAR850

Prosthetic Procedure

Connect the selected standard abutment to the fixture using a 2.0 internal hex driver and check the connection via X-ray. Complete the procedure by applying 30 Ncm of torque using a torque wrench (* refer to p.85 torque guide).



Connecting with a 2.0 internal hex driver
 Guide torque (30 Ncm)
 The abutments have been attached

Step3 Connecting the Transfer impression coping

Components for impression

Standard transfer impression coping



Standard lab analog



※ Using transfer impression copings

Prosthetic Procedure



Positioning the transfer impression coping



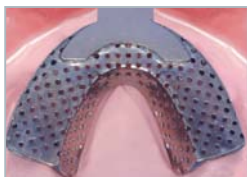
Completed transfer impression coping connection



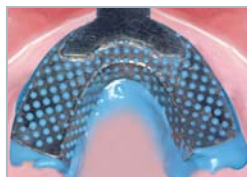
View from the lingual side

Step4 Taking the Transfer Impression for Diagnostic Model Fabrication

Prepare a ready-made impression tray that fits the patient, and then take an impression using alginate for diagnostic model fabrication. Check the impression body for defects before sending to the laboratory.



Taking the impression



Impression body

Step5 Connecting the Healing cap

Standard healing cap



Standard healing cap

Prosthetic Procedure

Connect the healing cap using a 1.2 hex hand driver to resolve the foreign body sensation felt by the patient and protect the hole on the standard abutment screw.



Connecting the healing cap



Connection completed

Step6 Fabricating the working model

Prosthetic Procedure

First, connect the transfer coping, removed from the oral cavity, with the lab analog before pouring stone around the analog to create a working model.



Removing the transfer coping from oral cavity



Connecting the transfer coping to the lab analog



Connected transfer coping and lab analog



Inserting into the inner side of the impression body



Transfer coping and lab analog positioned in the impression body



Inserting stone



Completed diagnostic model



"Coping removed" state



Step7 Preparing for the pick-up impression

Standard pick-up impression coping



Standard pick-up impression coping

※ Using the pick-up impression coping

Prosthetic Procedure

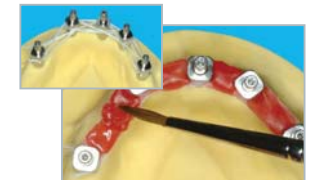
Perform preliminary work on the diagnostic model in preparation for final impression taking. Attach the pick-up impression copings to the lab analogs inserted in the model and connect with the pattern resin. When working with the pattern resin, surround the impression coping at 360° and keep the resin to the middle section of the coping. Do not cover the guide pin or rupture the gingiva; to compensate the resin shrinkage, cut the pattern using a disk before sending to the clinic. The individual pick-up impression copings prepared on the diagnostic model may be connected separately to each implant intraorally and religated after cutting the resin away.



Attaching the pick-up impression copings with guide pins



Pick-up impression copings completely attached



Linking with pattern resin after tying with dental floss



Checking the pin holes



Individual open tray



Separating with a disk



Separated pattern resin



Numbering

Step8 Taking the pick-up impression

Prosthetic Procedure

Prepare an individual tray with holes at appropriate position and height to allow the pick-up impression copings to protrude. Inject the impression material around the copings and fill the prepared open tray before positioning in the oral cavity and take the impression. Remove the impression material in the guide pin hole completely to facilitate the loosening of the guide pin screws when detaching the tray. When the material has completely set, loosen the guide pin using a 1.2 hex hand driver, remove the tray, and check for defects before sending to the laboratory.



Connecting in the mouth



Religating the resin pattern



Religation completed



Trying the fit on the individual open tray



Coating the impression material adhesive



Fine injection of impression material



Taking the impression



Removing the guide pin after impression material setting



Impression body taken through pick-up impression

Step9 Fabricating the working model

Prosthetic Procedure

Insert the analogs into the impression copings in the impression body. Push the guide pins into the coping and fasten using a 1.2 hex hand driver. Check the position of the analog in the copings before pouring stone around it.



Connecting the lab analog and impression coping



Lab analogs positioned in the impression body



Injecting the stone after boxing



Completed working model

Step10 Making the wax denture and trying the esthetic fit

Connect the impression block made of pattern resin on the completed working model using a 1.2 hex hand driver. When connecting the left side, the right side may be detached. Therefore, check whether there is an even fit on both sides. Make a recording base and occlusal wax rim for sending to the clinic together with the model for bite registration. Determine the vertical dimension by positioning the occlusal wax rim in the oral cavity and register a bite for sending to the workroom. The laboratory arranges the denture teeth according to the record wax. Send the arranged teeth back to the clinic in order to check the occlusion and evaluate the functional and esthetic aspects of the denture. (※ In case adjustment is necessary, redo the set and repeat the fitting procedure until the condition is suitable.)

Prosthetic Procedure



The impression block connected with resin



Refastening the impression block correctly for sending to the clinic (to check the compatibility between the final model and intraoral environment)



Wax rim fabrication at the laboratory



One-screw test to check for possible deformities during impression taking with impression block



Trying the fit of wax rim and determining the vertical dimension



Arranging the denture teeth and making the wax denture at the laboratory



Trying the esthetic fit of the wax denture

Step11 Waxing up

Standard gold cylinder



Standard gold cylinder

Prosthetic Procedure

Position the standard gold cylinder on the abutment and connect the screw using a 1.2 hex hand driver. Set the plastic sleeve to an appropriate height, and wax up the lower part of the prosthesis.

(※ When using a gold cylinder, the casting metal must be ceramic gold or gold alloy. Using a non-precious metal will result in the deformation of the gold cylinder during casting and affect the accuracy of the prosthesis.)



Registering the putty index



Connecting the gold cylinder



Cutting according to the tooth arrangement



Connecting the gold cylinders with pattern resin



Framework wax-up



Completion of the wax-up procedure

Step12 Denture arrangement and final curing

Standard polishing protector



Standard Polishing Protector

Prosthetic Procedure

Construct the planned prosthesis in the conventional manner. Cast the waxed-up framework pattern and try its fit on the working model. Conduct a one-screw test to check the fit. If the fit is not passive, cut the framework and try welding or soldering to secure the best compatibility. When the fit of the metal framework is suitable, arrange the denture teeth and cure the resin to complete the prosthesis.



Beading



Spruing



Casting body



One screw test



Connecting the polishing protector



Polishing



Polishing completed



Rearranging the teeth using the putty index



Tooth arrangement completed



Investment material into the lower compartment for curing



Investment material into the upper compartment for curing



Wax wash



Coating the separator



Setting up the teeth on the upper compartment



Joining the lower and upper compartments



Pouring the pink resin



Completed prosthesis after curing

Step13 Delivering and screwing

Prosthetic Procedure

Check the passive fit of the final prosthesis and verify the occlusion and esthetics. Make a primary connection using a 1.2 hex hand driver followed by the complete connection at 10 Ncm using a 1.2 torque driver and a torque wrench (※ refer to p.85 torque guide). Cover the screw head with protecting material and fill the access hole with occlusal material intraorally as a final step of the procedure.



Setting the final prosthesis in the oral cavity

Patient follow-up

Upon the completion of prosthetic treatment, provide the patient an instruction on oral hygiene and make an appointment for next visiting schedule for a regular checkup.

O-ring Abutment

- **Indication**

- Used for prosthetic treatment using overdenture
- Ideal for severe bone resorption of the jaw or when prosthesis with a fixed type of implant is not feasible
- Used when the use of denture is difficult due to the low holding and stability of the complete denture.

- **Features & benefits**

- Functional overdenture fabrication with a small number of implant installation.






- **Material**

- Abutment : Ti-6Al-4V

- **Tightening torque : 30Ncm**

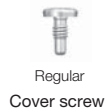
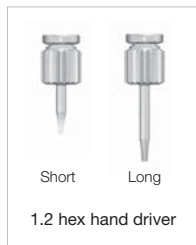


Product list for prosthetic procedure

Product list	
Abutment	
Lab analog	
Retainer (Cap) + O-ring	
Abutment driver	
Torque wrench	

Step1 Separating the Healing abutment

Components & instruments



Platform	Dia.	Height
Regular	4.1/ 5/ 6	2/ 3/ 4/ 5.5/ 7



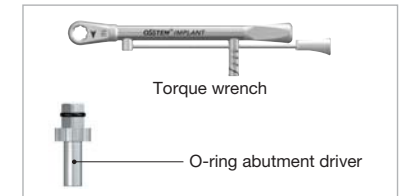
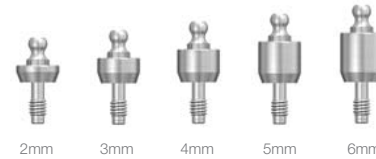
Prosthetic procedure

Once the customized tray is prepared, have the patient visit the clinic. Separate the Cover screw or Healing abutment using a 1.2 hex hand driver, and rinse with air-water syringe. Check the occlusion gap to select an abutment with an appropriate height. To prevent the patient from swallowing the hand driver, tie dental floss to the spinner on the handle of the driver.



Step2 Selecting and placing the abutment

O-ring abutments & instruments



*Important: Tightening torque = 30Ncm

Prosthetic procedure

Check the depth of the gingival tissue on the implant and select the abutment with an appropriate height. The shoulder of the abutment must be positioned above the tissue (about 1.5~2 mm). Using a O-ring abutment driver, connect the abutment to the implant. Check the connection via X-ray, then tighten the abutment at a torque of 30Ncm using a torque wrench connected to the driver. The O-ring abutment is in place and ready for the impression to be taken. Once the abutment has been torqued in, it should not be removed.



Note:

Since the O-ring abutment driver cannot hold the abutment, place the abutment on the implant first before using the driver.

Step3 Taking the impression

Prosthetic procedure

Inject the rubber impression material carefully around the abutment first before filling the customized tray with the impression material and placing in the oral cavity for impression taking. Check the impression for defects before sending to the lab. If the patient has a denture, the area of abutment fastening may be modified for use for temporary denture.



Injecting the impression material around the abutment



Taking the impression



The impression

Preliminary procedure : Before mounting the abutment, take a full-mouth impression of the extension of the edentulous jaw using the alginate impression material for sending to the laboratory for the preparation of a customized tray.

Note:

Allot an allowance of about 2 mm for the abutment.



Preliminary impression body using a ready-made tray



Preliminary model



The impression

Step4 Fabricating the working model

O-ring lab analog



O-ring lab analog

Prosthetic procedure

Once the impression is delivered to the laboratory, push the lab analog into the impression coping until insertion in the ball portion is complete. Pour stone carefully without disturbing the position of the analog to create the working model. Make a base plate and a wax occlusal rim to take the occlusion for sending to the clinic together with the model.



Inserting the analog



Completed analog fastening



Boxing



Completed working model



Making the wax rim

Step5 Fabricating wax denture

Prosthetic procedure

Place the occlusal rim inside the oral cavity and take the intermaxillary occlusion, and resend it to the lab, where the denture teeth shall be arranged on the wax rim based on the delivered occlusion record. Resend the wax denture to the clinic to have the occlusion on the arranged teeth checked and the functionality and esthetics of the denture examined.



Trying the fit of the wax rim inside the oral cavity



Making wax denture at the lab



Trying the esthetic fit of wax denture inside the oral cavity

Note:

In case any correction is required, set up with a new occlusion record and try the fit until a satisfactory occlusion is made.

Step6 Constructing resin denture

O-ring components



Retainer cap



Retainer



O-ring

Prosthetic procedure

Once the fit on the wax denture inside the oral cavity is completed, construct the final resin denture. Insert the O-ring into the Retainer cap and place the Retainer cap on the analog. Block out the lower part of the Retainer cap in order to prevent the acrylic resin from leaking into the bottom of the Retainer cap.



Placing the Retainer cap assembly



Block-out

Caution:

When using the Retainer, add about 2 mm to the height of the Retainer with putty to ensure the movement of the Retainer on the artificial teeth.

Invest the artificial teeth together with the properly positioned Retainer assembly and complete the resin denture making with the conventional procedures of flasking, curing, and finishing.



Flasking



Resin-cured denture



Retainer cap placed in the denture

Step7 Delivering

Prosthetic procedure

Replace the old o-ring inside the Retainer with the new o-ring reserved for final use. Adjust the occlusion and tissue contact areas as necessary. While connecting the attachments, instruct the patient on oral hygiene and precautions during the attachment and detachment of the denture. Replace the o-ring when the accumulated fatigue prevents it from properly functioning, or approximately once a year.



Replacement of O-ring



Placed overdenture

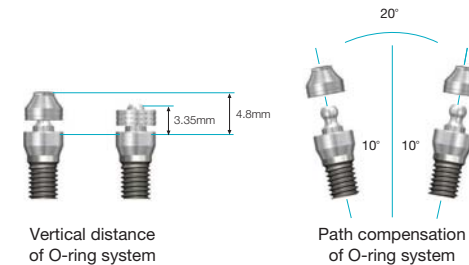
Patient follow-up:

Upon the completion of prosthetic treatment, provide the patient an instruction on oral hygiene and make an appointment for next visiting schedule for a regular checkup.

Note for prosthetic procedure

- O-ring system of O-ring abutment

The O-ring system is composed of two types of retainers and two types of o-rings. Generally use the retainer cap that has good fit. You can decrease the interference between the attachment and prosthesis when the vertical dimension is limited by applying a retainer. When the retention is decreased by usage you can regain retention by easily replacing the o-ring. The path for the O-ring system can be compensated up to 20° and a degree bigger than this will cause frequent o-ring replacement or difficulty in prosthesis removal so caution must be taken.



Screw Tightening Torque Guide of US System

[Unit: Ncm]

Type of product		Mini	Regular	Wide
Cover screw Healing abutment Impression coping		Manual (5~8)	Manual (5~8)	Manual (5~8)
Cement abutment Angled abutment Safe abutment UCLA abutment O-ring abutment Esthetic abutment Esthetic-low abutment Standard abutment		20	30	30
Esthetic gold cylinder Esthetic-low gold cylinder Standard gold cylinder		-	20	20

※Cautio

- If the prosthesis is not properly tightened to the recommended tightening torque, it will be loosened or fractured. Therefore it should be tightened to the recommended torque.
- If the prosthesis is not tightened by specified tools, it will be damaged or have short-term stability. Therefore it should be tightened by specified tools.

Torque Wrench User Guide



(Fig1. Torque wrench)



(Fig2. Application of torque)

• Application of tightening torque


- ① Check the direction to apply the torque.
: "Arrow IN" means fastening direction and "Arrow OUT" means loosening direction.
- ② Connect the driver with torque wrench wheel (A).
- ③ Insert the driver connected with torque wrench at the material.
- ④ Anchor "A" with a finger and pull "C" in order to apply the intended torque. As shown in Fig. 2, make the arrow of intended torque match with the center line of the bar in order to apply the intended torque accurately.

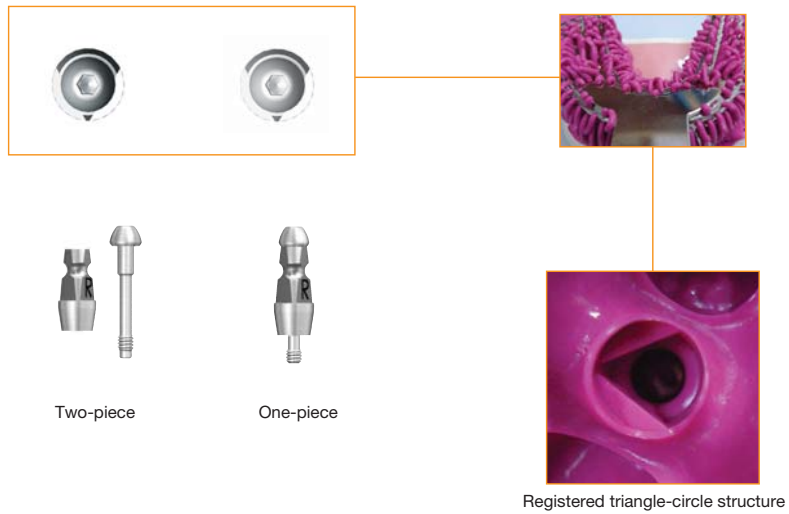
Note) Tightening torque is different depending upon the kind of prosthesis and screw. In Fig. 2, the last line under the torque means the maximum torque and means about 40Ncm.

• Application of limitless torque

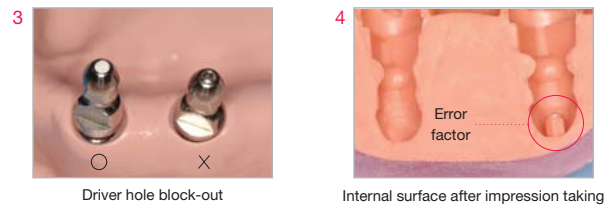
- ① Follow the tightening torque application processes,
 - ① through ③
- ② Anchor "A" with a finger and apply the torque using "C."

Benefit of Fixture Transfer Impression Coping



The Fixture transfer impression coping allows easy and exact coping repositioning after impression taking by using the triangle-circle structure () for superior direction and position identification. And also the long/short (12.5mm/9.5mm) two features overcome path and intermaxillary interference. The vertical impression error can be prevented by blocking out the driver hex hole after connecting the coping.



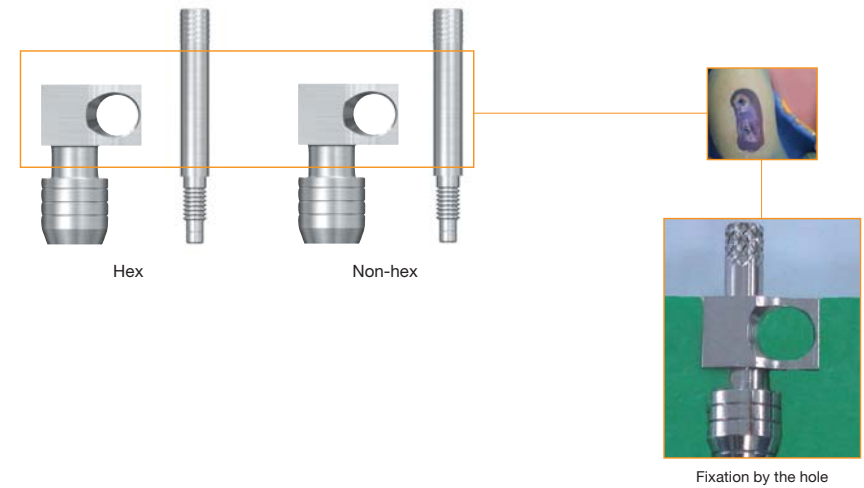
► Error prevention by driver hole block out



Benefit of Fixture Pick-up Impression Coping

You can take an exact impression even when the conventional pattern resin connecting procedure is omitted since the Fixture pick-up impression coping has a hole () structure that allows stable impression material fixation in the rotation/vertical direction. We overcame the interference caused by upper part asymmetry () and interference between tray and opposing tooth.

You should be careful to align the coping parallel to the ridge in free end cases to prevent the interference with the tray.



► Pick-up impression coping arrangement



OSSTEM[®]
IMPLANT