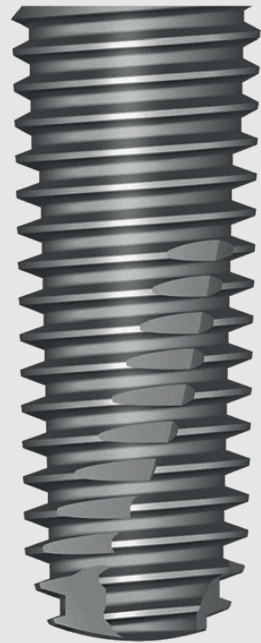




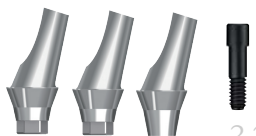

# Biotem Implant AR Type PROSTHETIC PROCEDURE




**BIOTEM**  
DENTAL IMPLANT SYSTEM

# Contents


## Cement retained restoration

<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="background-color: #800040; color: white; padding: 2px;"><b>Solid abutment</b></p>  <p style="text-align: right; font-size: 24px; color: #800040;">06</p> </div>	<p>When abutment reduction is unnecessary ..... 09</p> <p>When abutment reduction is necessary ..... 16</p>
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="background-color: #800040; color: white; padding: 2px;"><b>Cemented abutment</b></p>  <p style="text-align: right; font-size: 24px; color: #800040;">19</p> </div>	<p>Fixture level Impression ..... 23</p> <p>Abutment level Impression ..... 30</p>
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## Screw retained restoration

<div style="border: 1px solid black; padding: 5px;"> <p style="background-color: #800040; color: white; padding: 2px;"><b>CCM abutment</b></p>  <p style="text-align: right; font-size: 24px; color: #800040;">67</p> </div>	<p>Screw retained restoration ..... 70</p>
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## Overdenture retained restoration

<div style="border: 1px solid black; padding: 5px;"> <p style="background-color: #800040; color: white; padding: 2px;"><b>Stud Abutment</b></p>  <p style="text-align: right; font-size: 24px; color: #800040;">94</p> </div>	<p><b>Ball Abutment</b> ..... 97</p>
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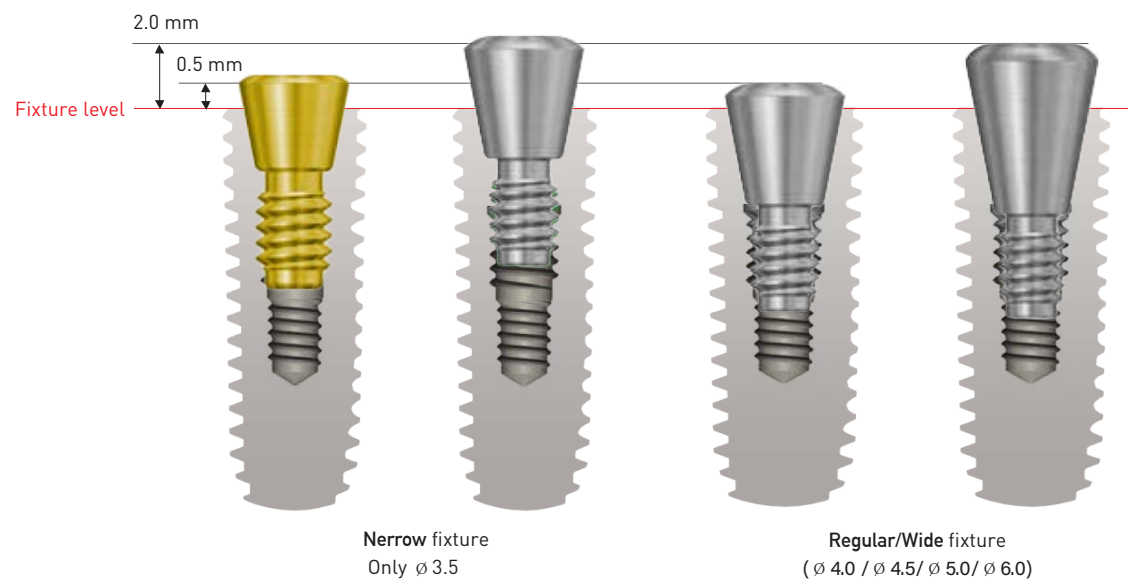
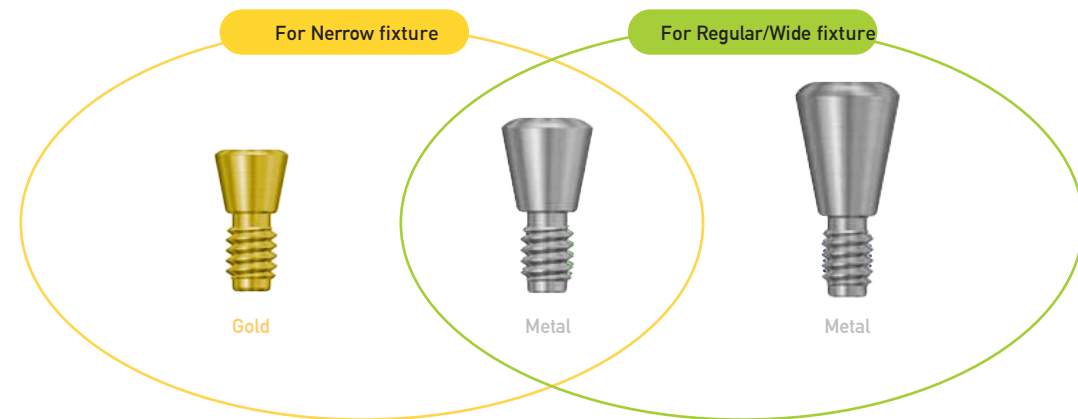
## AR Cover screw

### Feature & benefit

- Coloring convenient for installation position verification at second surgery.
- Feature composition according to the installation depth of the fixture

### Material

- Ti -Gr4 • Coloring : anodizing **Narrow** • Tightening torque : manual(about 5~8Ncm)



## AR Healing abutment

### Feature & benefit

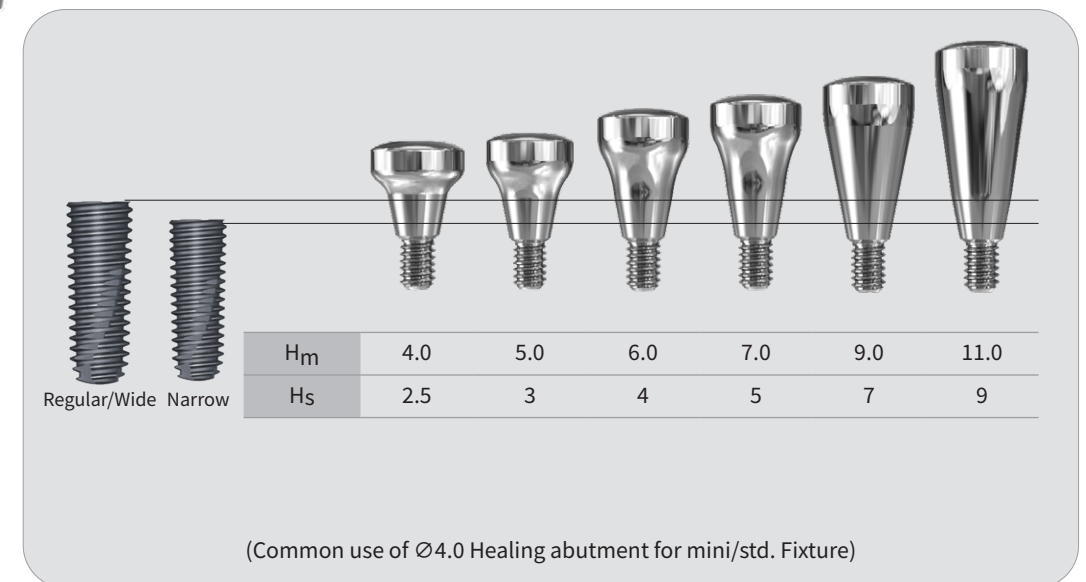
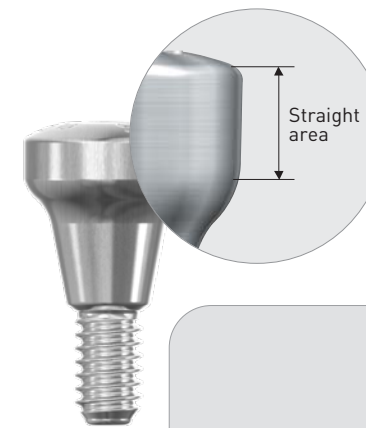
- Wide range of application and emergence profile that is advantageous for keeping a design.

### Selection method

- Common use of mini/standard for  $\phi 4.0$ .
- After checking the inter-occlusal space between the opposing tooth select a height that leaves 1-2 mm exposure above the gingiva.
- Select a diameter similar to the abutment that will be used.  
Generally, it is convenient to connect the abutment when using a 0.5 mm larger diameter.

### Material

- Ti CP-Gr4 - Tightening torque : manual (about 5~8Ncm)



# AR Solid abutment



**• Indication**

- Single/bridge/full arch restorations
- All position
- Only cement retained restoration

**• Contraindication**

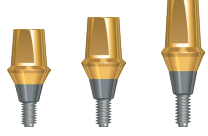


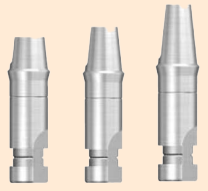




- Misalignment bridge case
- Over angulated case

**• Feature & benefit**

- Snap on impression at abutment level
- Abutment design reflecting the tooth position/restorative prosthesis
- Margin esthetic effect with gold coloring

- Material** - Ti-G4
- Surface** - TiN coating
- Tightening torque** - 30 Ncm

## Product list for prosthetic procedure

Product list	
Abutment	
Protect cap	
Impression coping	
Lab analog	
Burn-out cylinder	
Finishing reamer	
Driver	
Torque wrench	

- Exclusive matching components for each rigid abutment of 4/5.5/7mm height. Every component can be verified by color as 4mm-yellow, 5.5mm-grey, 7mm-blue. Essential to check the color before using the impression coping/lab analog .
- Common use of 1.2 hex driver/outer driver with the exception of  $\varnothing$  4.0 diameter. Possible to gain an extra-stable connection by using a outer driver. (Use  $\varnothing$  4.0-only outer driver)

When abutment reduction is unnecessary

## Note for prosthetic process

### Abutment diameter selection

- The Solid abutment has 4/5.5/7mm height, and besides to the 1/2/3/4/5/6mm gingival height there are a variety of margin diameters as  $\phi 4.0$ / $\phi 4.5$ / $\phi 5.5$ / $\phi 6.5$  considering the prosthesis for each tooth position. It is possible to conveniently fabricate an esthetic prosthesis by referring to the recommendation table below.

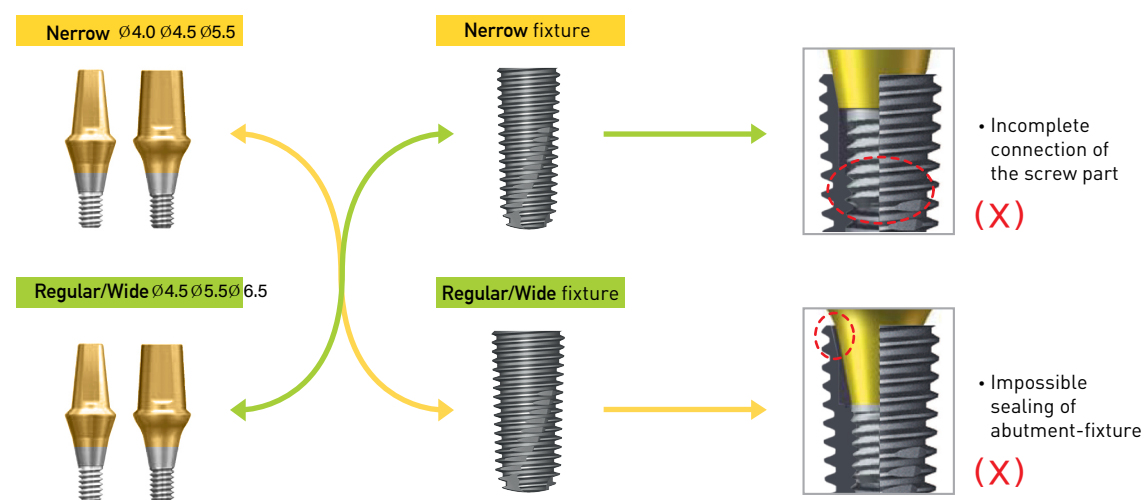


Position	Solid abutment diameter
	$\phi 4.0$ $\phi 4.5$ $\phi 5.5$
	$\phi 4.0$
	$\phi 4.5$ $\phi 5.5$ $\phi 6.5$

$\phi 7.0$  is used for GS Ultra Wide fixture

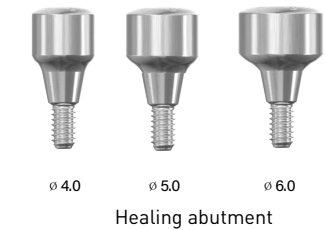
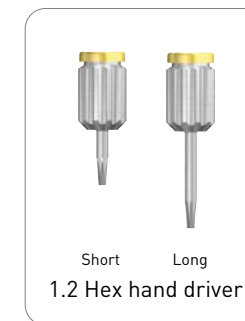
### Narrow & Regular/Wide abutment

- The  $\phi 4.0$ / $\phi 4.5$  feature has identical diameter but the applied fixture is differentiated into Narrow/Regular. It is essential to verify the fixture that has been used and use a matching abutment.



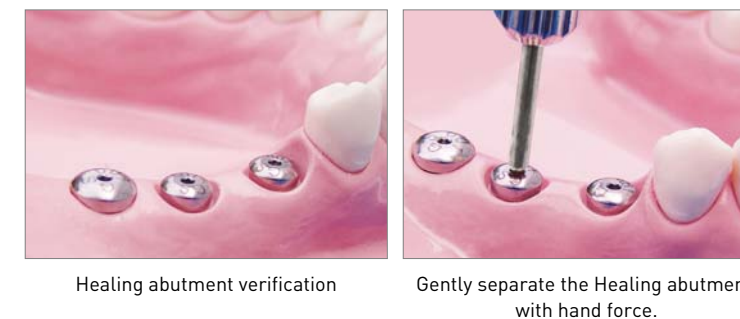
## Step1 Healing abutment separation

### Components & tools



### Prosthetic procedure

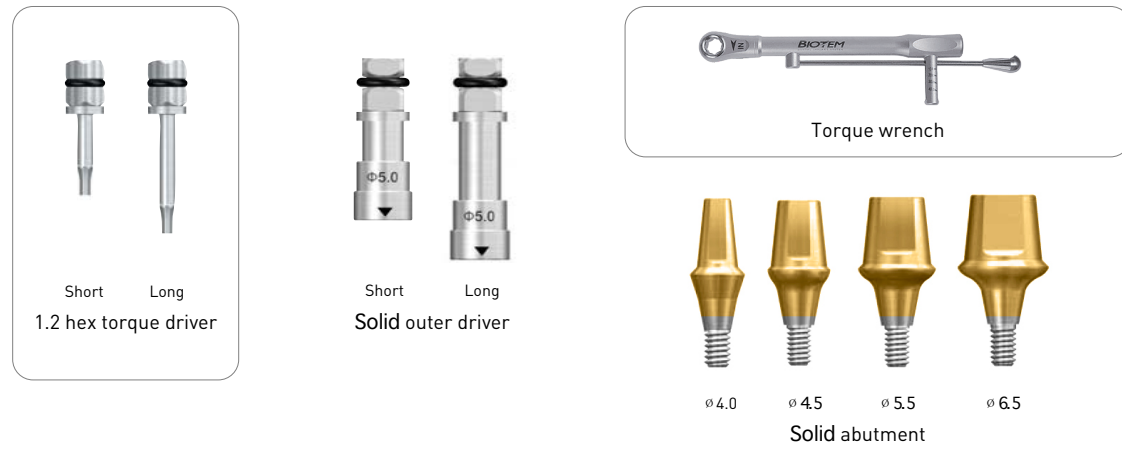
Separate the Healing abutment with hand force using a 1.2 hex hand driver.



When abutment reduction is unnecessary

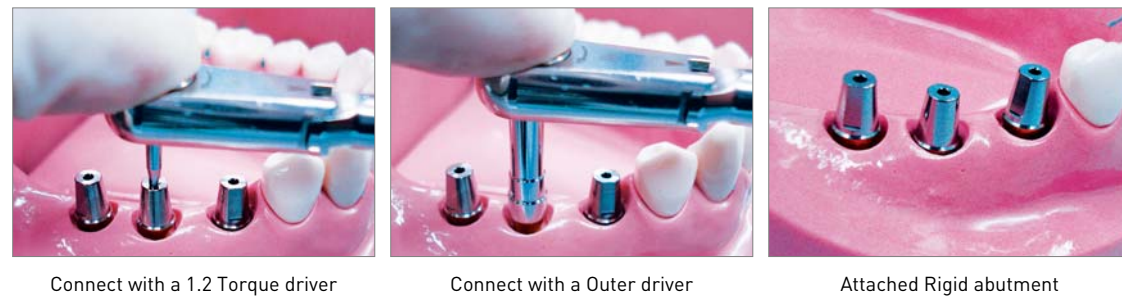
## Step2 Abutment selection and connection

### Solid abutments & tools



### Prosthetic procedure

Select an appropriate abutment considering the prosthesis and oral environment of the patient and connect it using a 1.2 hex or outer driver. The torque used is 30Ncm. Always verify the exactness of the connection by taking an x-ray after the final connection of the abutment.



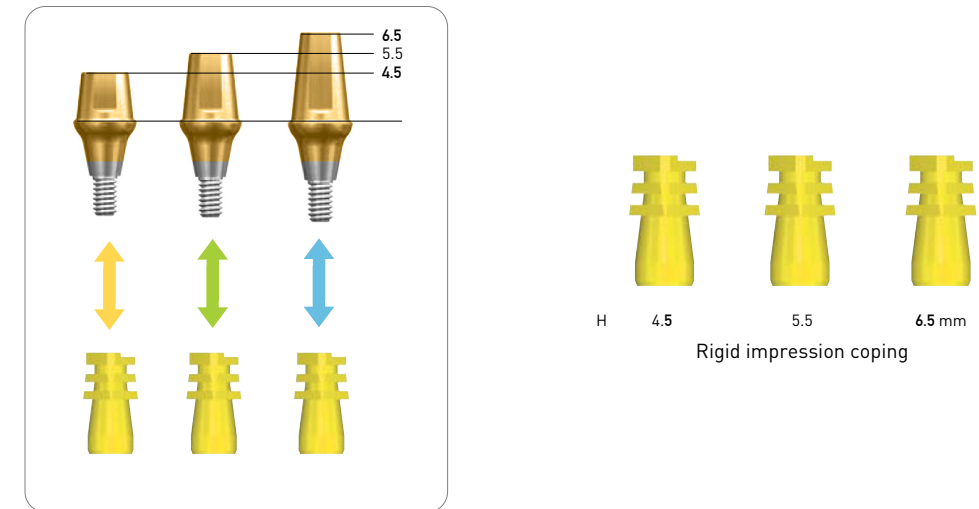
Connect with a 1.2 Torque driver

Connect with a Outer driver

Attached Rigid abutment

## Step3 Impression

### Solid impression copings



### Prosthetic procedure

Select an impression coping of identical features with the abutment and press with your hand to connect. Do not forget to use an abutment height of 4.5/5.5/6.5 mm and exclusive impression coping. After connecting the coping, take an impression following the conventional method using a ready made tray.



Impression coping connection

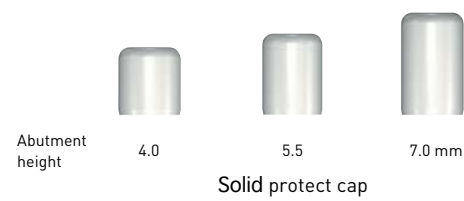
Impression material injection

Impression taking completed

When abutment reduction is unnecessary

**Step4** Protect cap connection and fabrication of the temporary prosthesis.

**Solid protect caps**



**Prosthetic procedure**

After taking the impression press the protect cap on until the prosthesis is completed. In cases when a temporary prosthesis is necessary it is convenient to customize the protect cap to make a temporary prosthesis.



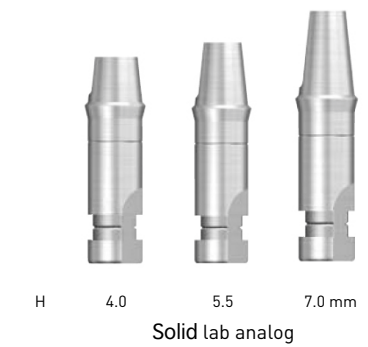
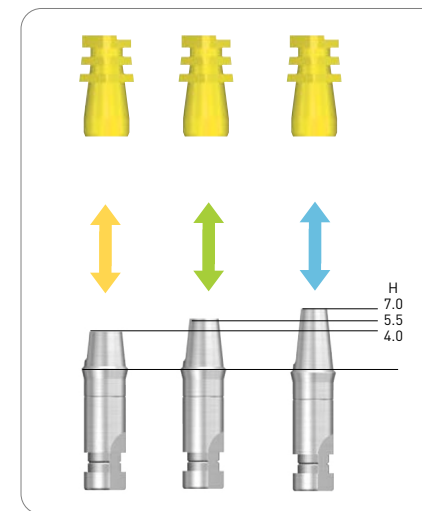
Protect cap connection



Temporary prosthesis fabrication using a protect cap

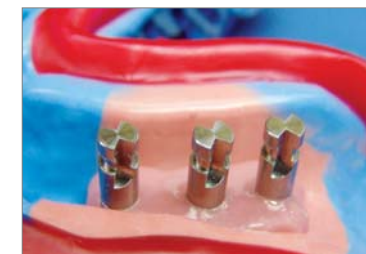
**Step5** Working model fabrication

**Solid lab analogs**



**Prosthetic procedure**

Check the color of the impression coping in the impression body and connect an exactly matching lab analog to its surface. Apply separator around the analog and replicate the gingival area with exclusive material. Use the border of the lab analog as a reference line. Pour dental stone following the conventional method to complete a working model.



Lab analog connection & gingival area replication

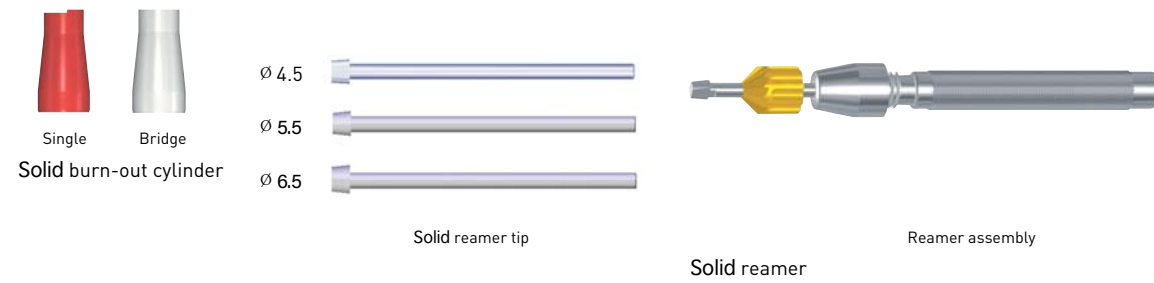


Completed working model

When abutment reduction is unnecessary

## Step6 Burn-out cylinder connection wax-up & casting

### Solid burn-out cylinder



### Prosthetic procedure

You can fabricate a prosthesis with precise fit using a burn-out cylinder. Press to connect the appropriate burnout cylinder for single/bridge according to the lab analog of the working model. After reduction and modification of the burnout cylinder proceed with the wax-up and casting procedures following the conventional method. Use a reamer tip of identical diameter with the abutment to reduce the margin of the casting body until no further reaming is possible, then check the fit of the prosthesis.



Burn-out cylinder connection

Full wax-up

Cut back & spruing



Margin reaming (only precious alloy)

Reaming check

Completed prosthesis after resin facing

## DENTAL CLINIC WORKING

## Step7 Prosthesis setting

After checking the prosthesis that has arrived from the lab, remove the temporary prosthesis or protect cap from the mouth. Set the final prosthesis taking care in removing the cement.



Final setting of the prosthesis



When abutment reduction is unnecessary

### Step1 Abutment connection ~ casting

When the vertical dimension or path is not suitable after connecting the Solid abutment the abutment can be modified to solve this problem. (When a large amount of path modification is necessary use a Milling or Angled abutment) It is possible to alter the path intra-orally and take a direct impression for conventional prosthesis fabrication, but In this case inferior margin fit and over-reduction of the abutment can occur. If you use the components for the prosthesis fabrication procedure as below an exact prosthesis will be completed.



### Step2 Lab analog reduction ~ prosthesis setting



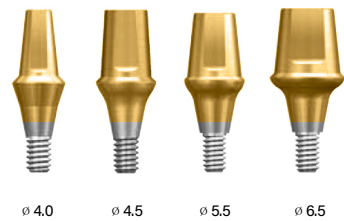
## Osstem Proper use of Torque wrench and Reamer

### Proper usage of Torque wrench

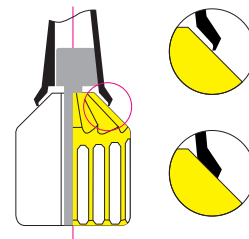


1. Check the torque guide of the abutment (ex. Cemented abutment Narrow - 20Ncm)
2. Set a tightening torque at the lower part of the Torque wrench.  
\*Exactly corresponding to the marking Line.
3. After connecting the Torque wrench and Torque driver, exactly position it on the screw head.  
\* When connecting: 'IN', when removing: 'Out' should be facing upwards.
4. Press the upper part of the Torque driver and rotate in the direction of the arrow until the neck of the Torque wrench is bent. **After the neck is bent stop applying pressure. Over torque can occur when the force is continued.**

### Proper usage of Reamer



AR Solid reamer tip



1. After verifying the diameter of the abutment prepare the appropriate reamer tip for connection.
  2. After fixing the reamer tip to the prosthesis, turn the reamer bite in the direction of the blade to cut the tip.
  3. Continue reaming until the tip is completely removed.
- \* The reamer cannot be used for nonprecious metal prosthesis, so use the laboratory bur and rubber point to remove the tip.

# AR Cemented abutment



#### • Indication

- Single/bridge/full arch restorations
- All position
- Cement/combi retained restoration

#### • Contraindication

- When large amounts of abutment modification is necessary.

#### • Feature & benefit

- A structure of abutment and screw that is more convenient to repair and maintain than Solid abutment.
- A design that minimizes customizing.
- Two types of impression taking possible : Fixture level/abutment Level

#### • Material

- Abutment : Ti-G4

- Screw : Ti

#### • Surface

- Abutment : TiN coating



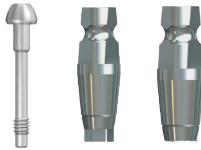




#### • Tightening torque

- Narrow : 20Ncm

- Regular/Wide : 30Ncm

## Product list for prosthetic procedure










### For fixture level impression

Product list	
Abutment	
Abutment screw	
Impression coping	Transfer Type 
	Pick-up Type 
Lab analog	
Driver	
Torque wrench	

- When taking a fixture level impression the abutment is selected on a working model, so the chair time is decreased. Both transfer/pick-up impression is possible and can be selected depending on the preference of the operator or case condition. When the number of installed implants is large, or the path is excessively deflected, however, the tray may not be separable from the impression after taking a pick-up type. Thus, generally using a transfer type is convenient.

## Product list for prosthetic procedure

### For abutment level impression

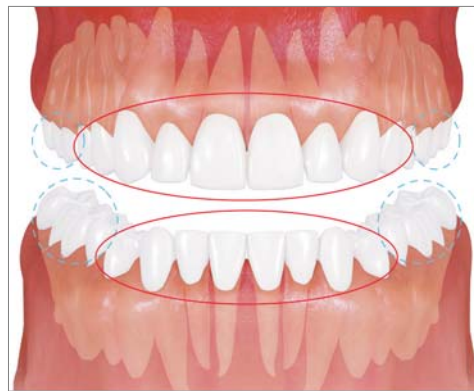
Product list	
Abutment	
Abutment screw	
Protect cap	
Impression coping	
Lab analog	
Burn-out cylinder	
Finishing reamer	
Driver	
Torque wrench	

- When reducing the Cemented abutment is unnecessary, an impression may be taken at the abutment level as with a rigid abutment. At this time, Cemented abutment is compatible with Solid component.

## Note for prosthetic process

### Abutment diameter selection

The Cemented abutment has 4/5.5/7mm height, and besides the 1/2/3/4/5/6mm gingival height there are a variety of margin diameters as  $\phi 4.5/\phi 5.5/\phi 6.5$  considering the prosthesis for each tooth position. It is possible to conveniently fabricate an esthetic prosthesis by referring to the recommendation table below

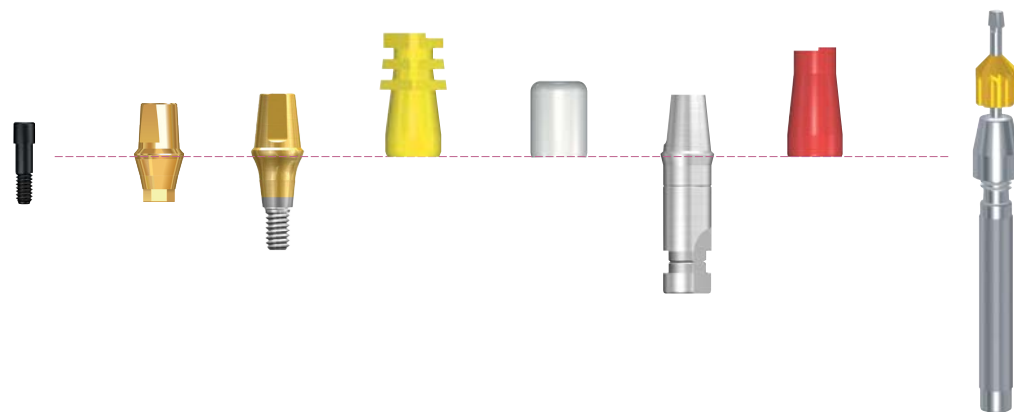


Position	Transfer abutment Diameter
	$\phi 4.5$
	5.5/ $\phi 6.5$

$\phi 6.5$  is used for AR Wide fixture

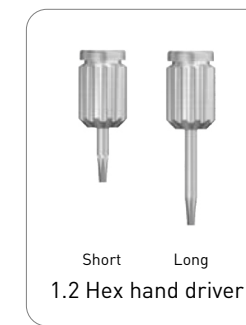
### Abutment level impression

With a Solid abutment it is easy to fabricate a temporary prosthesis/abutment level impression and has exact and convenient prosthesis components which make it advantageous for producing an internal submerged type prosthesis. But it is easy to repair the prosthesis when various problems occur. When using a cemented abutment the screw hole makes it easier to solve these problems. The Solid abutment and Cemented abutment have an identical upper margin design which makes it possible to use the same impression and prosthesis components, even when the cemented abutment which is easy to repair is used. The prosthetic procedures are carried out in the same manner.



## Step1 Healing abutment separation

### Components & tools



### Prosthetic procedure

Separate the Healing abutment using a 1.2 Hex hand driver.



Healing abutment verification

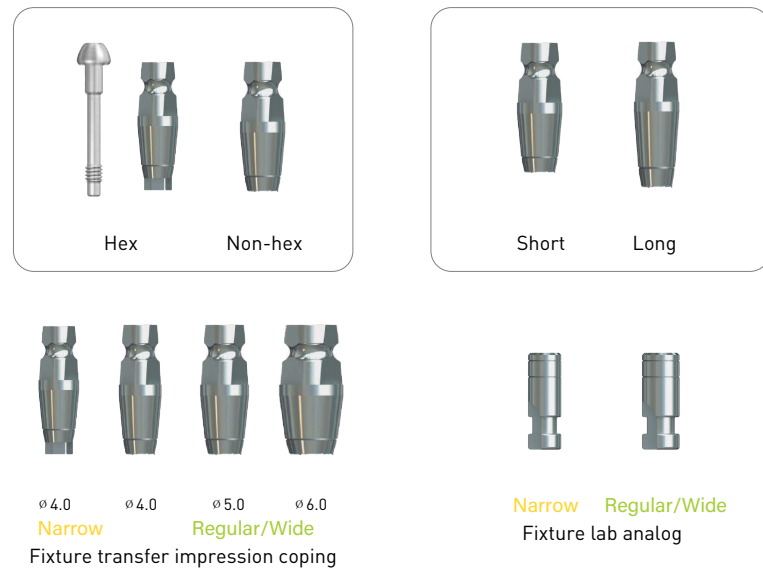


Gently separate the Healing abutment with hand force.

Fixture level impression

### Step2 Impression coping connection

#### Fixture transfer impression copings



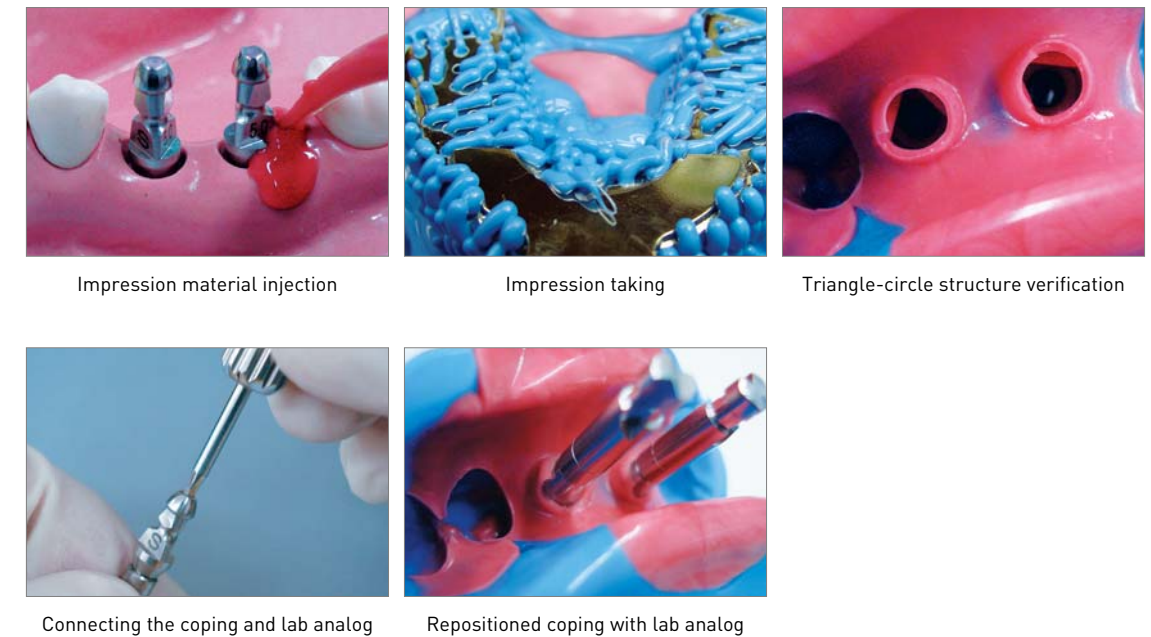
#### Prosthetic procedure

Predict the diameter and type (Hex, Non-Hex) of the abutment to be used and select an impression coping that will be connected using a 1.2 Hex hand driver with hand force. When the vertical dimension is insufficient apply the short feature. We recommend you to block-out the driver hole of the impression coping. It is essential to take a periapical X-ray to verify the exactness of the impression coping connection.



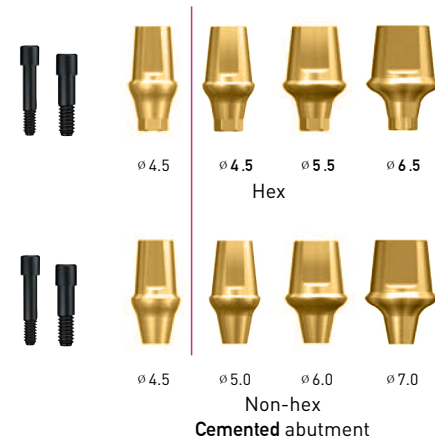
### Step3 Impression taking & lab analog connection

First inject impression material around the impression coping to take an impression. Remove the impression body from the mouth after the impression material has set. Then, separate the impression coping from the removed impression body. Connect a fixture lab analog and impression coping of identical connection. Check the triangle-circle structure replicated on the impression and match the internal surface of the coping to reconnect it as it was before impression taking. Remember to check whether the setting is exact after connection.



### Step4 Working model fabrication & abutment selection

#### Cemented abutments

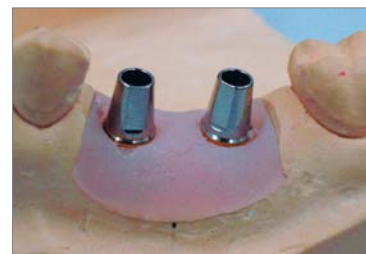


#### Prosthetic procedure

Select and connect an abutment with suitable features considering gingiva height and interocclusal relationship. The path and position of margin can be modified at the lab following orders from the clinic.



Completed working model



Connect the selected abutment

### Step5 Wax-up ~ porcelain build-up

When adjustment of the abutment is completed, proceed with wax-up to casting following conventional methods, and porcelain build up in case of a PFM. Generally, pattern resin that shows little contraction is used for cap fabrication and wax-up is followed.



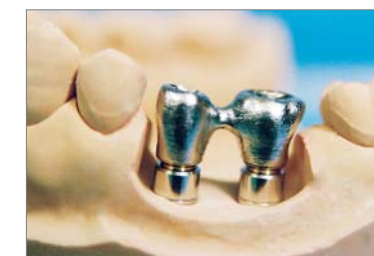
Resin-cap fabrication



Full wax-up



Cut-back



Casting



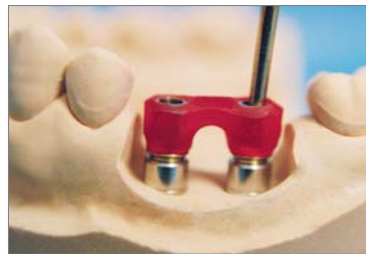
Porcelain firing



Completed prosthesis

## Step6 Fabrication of transfer jig

When the prosthesis is finished a transfer jig is made to transfer and connect the abutment on the model inside the mouth in the same condition. It is especially important when using the AR Type, which is relatively hard to exactly transfer the abutment. It is mandatory for non-hex abutment, and even when using a hex type the jig helps you to exactly settle and verify the abutment in the clinic. Remove the gum on the model, and make it with pattern resin after cleansing the abutment surface.



Transfer jig fabrication

## Step7 Prosthesis setting

### Tools



### Prosthetic procedure

Connect the abutment intra-orally in the same condition using a Transfer Jig. Take a periapical x-ray to check the connection of the abutment. Set the tightening torque at 20Ncm for a Narrow abutment and 30 Ncm for Regular and tighten the screw.



Abutment connection using a jig



Abutment screw tightening



Final prosthesis setting

# Abutment level impression

## Step1 Abutment connection ~ wax-up

If the fixture path is good and Cemented abutment reduction is unnecessary, the components for the Solid abutment can be used for a abutment level impression and prosthesis fabrication.



Abutment screw tightening



Solid impression coping connection



Impression taking



Impression body verification



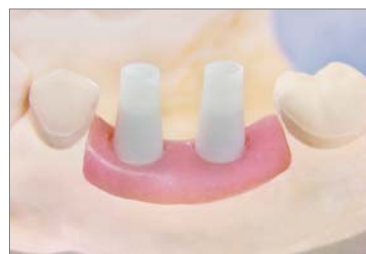
Solid lab analog connection



Solid protect cap connection



Working model fabrication



Burn-out cylinder connection



Wax-up

## Step2 Casting ~ prosthesis setting



Cut-back



Margin reaming



Connected casting body



Completed prosthesis



Final prosthesis setting



# AR Angled abutment



**• Indication**

- Single/bridge restorations
- When path modification is necessary.
- Cemented retained restoration

**• Contraindication**

- Posterior bridge crown (Only Angled abutment)

**• Feature & benefit**



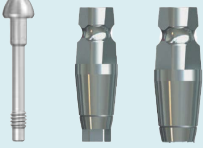
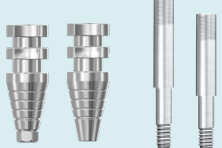



- 15~25° Axial angulation
- Minimize the amount of reduction with A/B two hex types
- Margin esthetic effect with gold coloring

**• Material** - Abutment : Ti-G4

**• Surface** - Abutment : TiN coating

**• Tightening torque** - Narrow : 20Ncm - Regular/Wide : 30Ncm

## Product list for prosthetic procedure

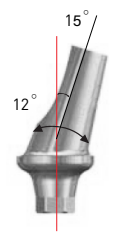


Product list	
Abutment	
Abutment screw	
Impression coping	Transfer Type 
	Pick-up Type 
Lab analog	
Driver	
Torque wrench	

- When using a hex type abutment the internal hex structure of the fixture can cause interference between the Angled abutment and adjacent teeth and tissue. Before selecting an angled abutment at the clinic or lab, choose an appropriate A/B Hex type using a selector to minimize reduction during prosthesis fabrication.

## Note for prosthetic process

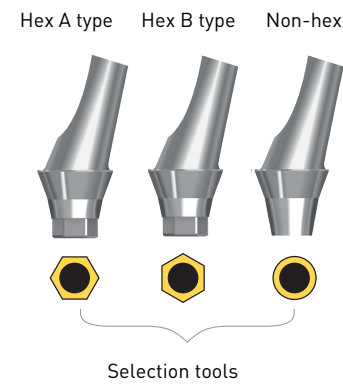
### Path modification with Angled abutment

- In cases such as the anterior part where path modification according to anatomical structure and path compensation for bridge crown misalignment is necessary, the Angled abutment can be useful. The AR Angled abutment has a 15° axial taper and 6° tapered body which allows path compensation up to 25° without abutment reduction. But the single use of an angled abutment for the restoration of a posterior bridge case is prohibited since over cantilever force may be produced.

Angle	15°	25°
		
Design concept	No undercut	No undercut

### Application of Angled abutment selector.

- The AR angled abutment has two directions: A/B. This enables choosing an appropriate direction after the abutment has been connected; thus enabling the minimization of the amount of reduction.
- An abutment with an appropriate direction may be chosen intra-orally



## Step1 Healing abutment separation

### Components & tools



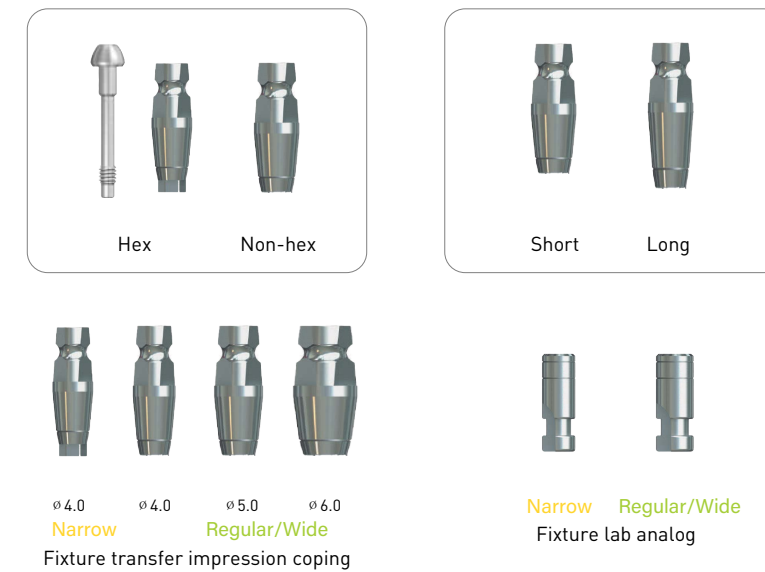
### Prosthetic procedure

Separate the Healing abutment using a 1.2 Hex hand driver.



## Step2 Impression

### Fixture transfer impression copings



### Prosthetic procedure

Predict the diameter and type (hex, non-hex) of the abutment to be used and select an impression coping that will be connected using a 1.2 Hex hand driver with hand force. When the vertical dimension is insufficient apply the short feature. We recommend you to block-out the driver hole of the impression coping. It is essential to take a periapical x-ray to verify the exactness of the impression coping connection.



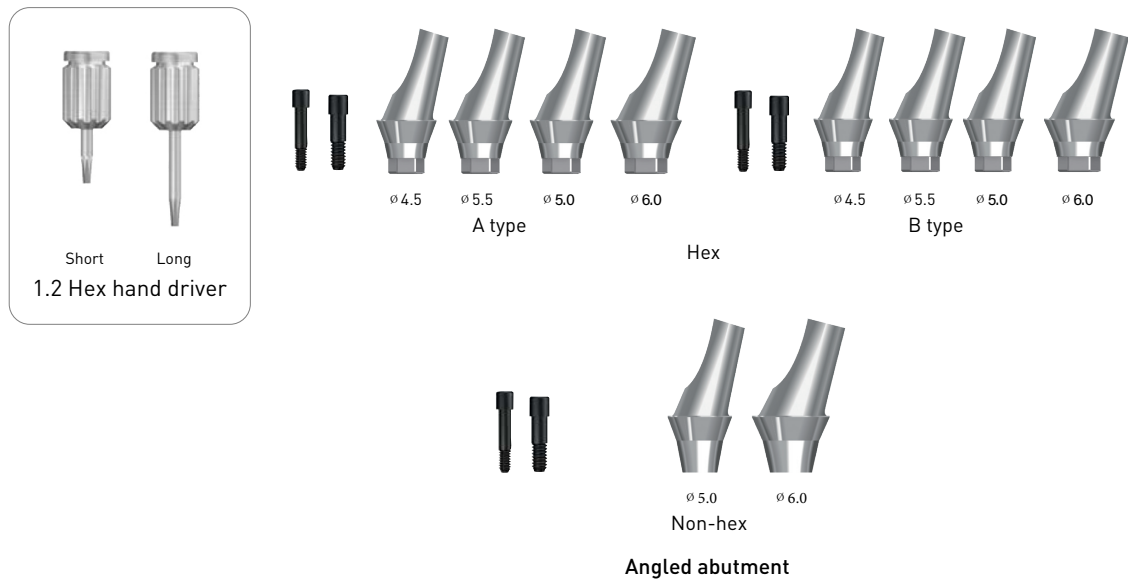
Connecting the impression coping

Impression taking

Repositioning the coping  
with lab analog

### Step3 Working model fabrication & abutment selection

#### Angled abutments



#### Prosthetic procedure

Make a working model from the impression body following the conventional method and connect the abutment. If the abutment hex type has not been selected at the clinic it is possible to do it with a selector on the model. By choosing the correct abutment the amount of reduction will be minimized and quick and exact prosthesis fabrication is made possible.

#### Good



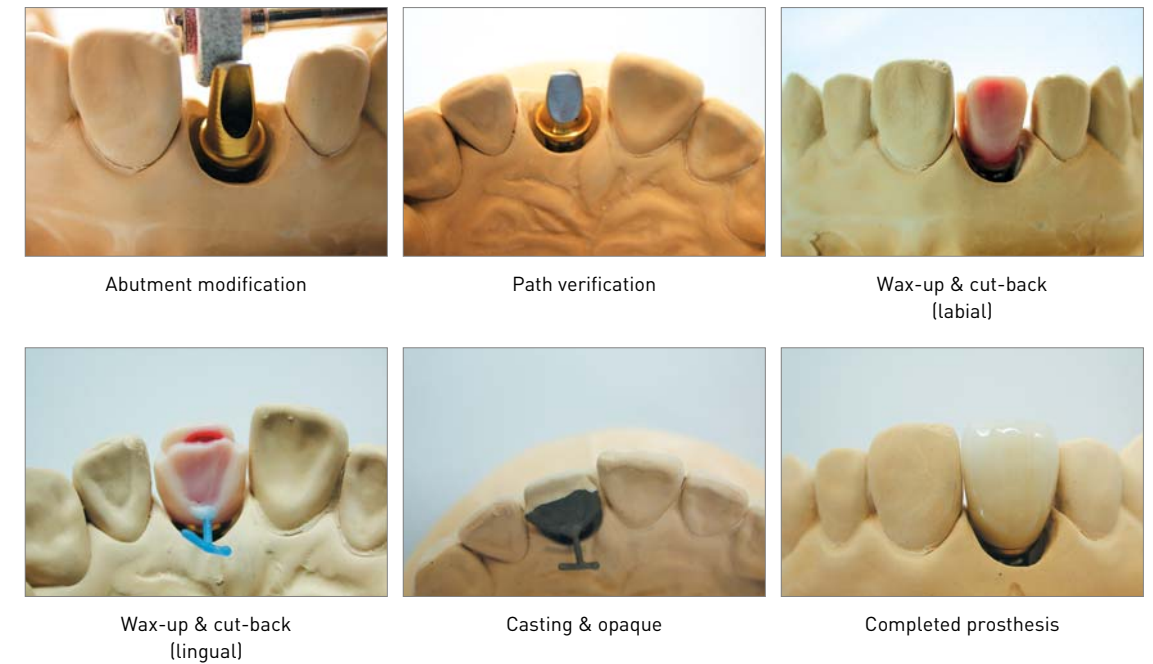
A type selector connection  
(good)

B type selector connection  
(not-good)

Connect the selected abutment

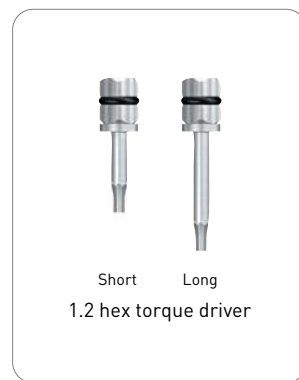
### Step4 Abutment modification ~ porcelain build-up

Eliminate the undercut area with a stone wheel and adjust the abutment. Complete the conventional steps from wax-up to casting, and in the case of a PFM, porcelain build up.



## Step5 Prosthesis setting

### Tools



### Prosthetic procedure

Connect the abutment intra-orally 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 20 Ncm for a Narrow abutment and 30 Ncm for Regular/Wide and tighten the screw.



Abutment connection



Abutment screw tightening



Final prosthesis setting

# AR

## Milling

# abutment



**• Indication**

- Single/bridge/full arch restorations
- All position
- When fabricating large-volume prosthesis or extensive path modification is necessary
- Cement/Combi retained restoration

**• Feature & benefit**

- The large abutment volume allows free customization and secures appropriate support after reduction.
- Margin esthetic effect of gold coloring.

**• Material** - Abutment : Ti -G4 - Screw : Ti

**• Surface** - Abutment : TiN coating

**• Tightening torque** - Narrow : 20Ncm - Regular/Wide : 30Ncm

## Product list for prosthetic procedure

Product list	
Abutment	
Abutment screw	
Impression coping	Transfer Type 
	Pick-up Type 
Lab analog	
Driver	
Torque wrench	

- The limitations of prosthesis fabrication that occur from Cemented abutment/Angled abutment usage can be overcome by Milling abutments. It can be used through customizing for expression of the gingival scallop form, overcoming bridge misalignment and fabrication of single crowns bigger than normal size.

## Note for prosthetic process

### Milling ST abutment usage

- The Milling abutment's large volume and design is useful for margin configuration establishment and path modification convenience. The  $\varnothing 4.5$  diameter Milling abutment can be customized and used for areas with narrow interdental space such as the mandibular anterior area.



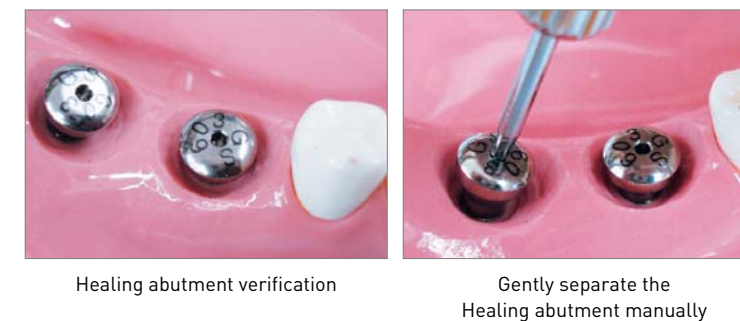
## Step1 Healing abutment separation

### Components & tools



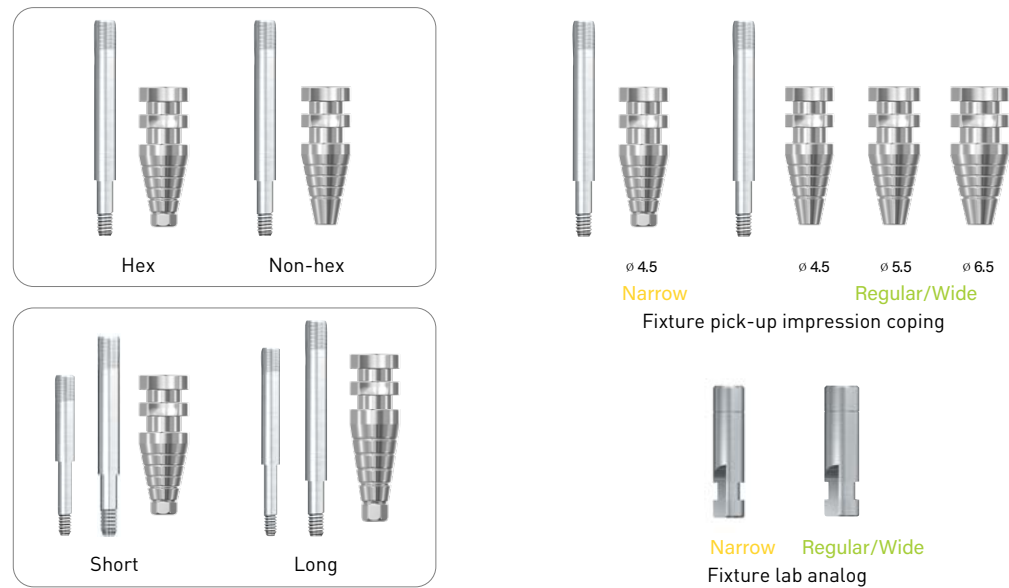
### Prosthetic procedure

Separate the Healing abutment using a 1.2 Hex hand driver with hand force.



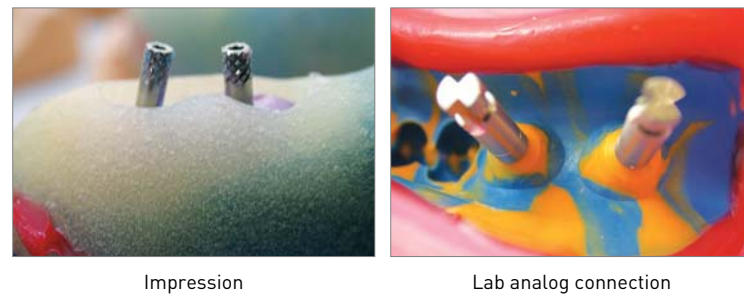
## Step2 Impression

### Fixture pick-up impression copings



### Prosthetic procedure

Prepare a custom open tray, predict the vertical space, abutment diameter, type (hex, non-hex) and select an impression coping. Gently connect the guide pin using a 1.2 Hex hand driver manually. Do not forget to take an x-ray to check the exactness of the coping connection. Inject impression material around the hole of the upper part of the coping and loosen the guide pin after the material has set to remove the impression body. Connect a fixture lab analog of identical connection.



Impression

Lab analog connection

## Step3 Working model fabrication & abutment modification

### Milling abutments



### Prosthetic procedure

Make a working model from the impression body following conventional methods and connect the abutment. Connect a Milling abutment and adjust the path.



Completed working model

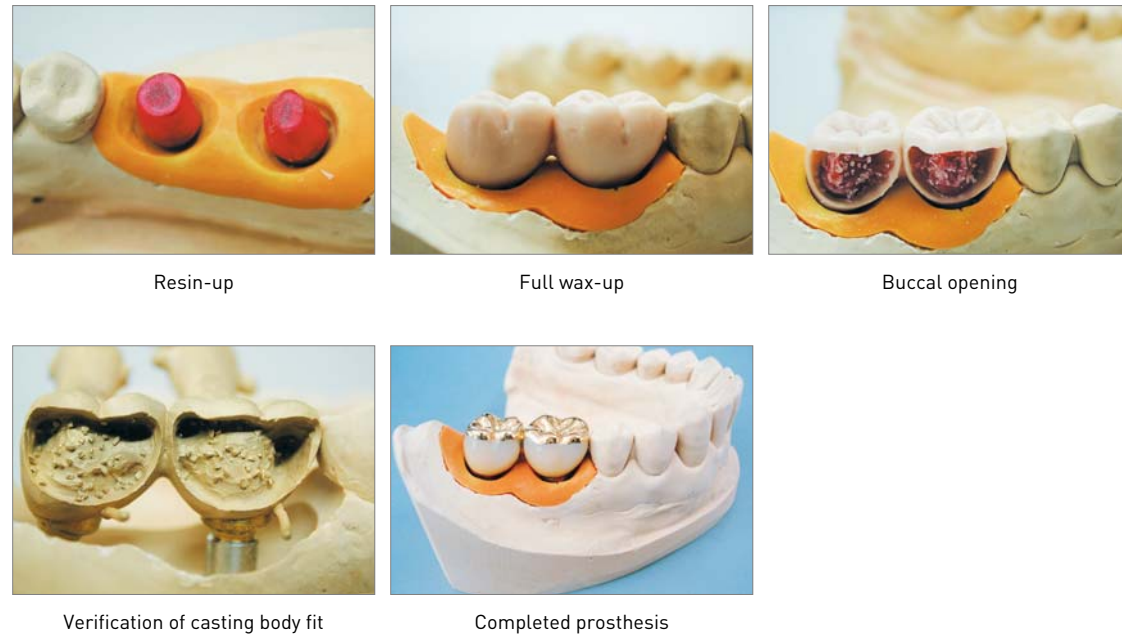
Path adjustment

Transfer jig fabrication



### Step4 Wax-up ~ prosthesis completion

Go through the conventional steps for resin, wax-up and casting.  
Deliver the completed prosthesis with the transfer jig to the clinic.



Resin-up

Full wax-up

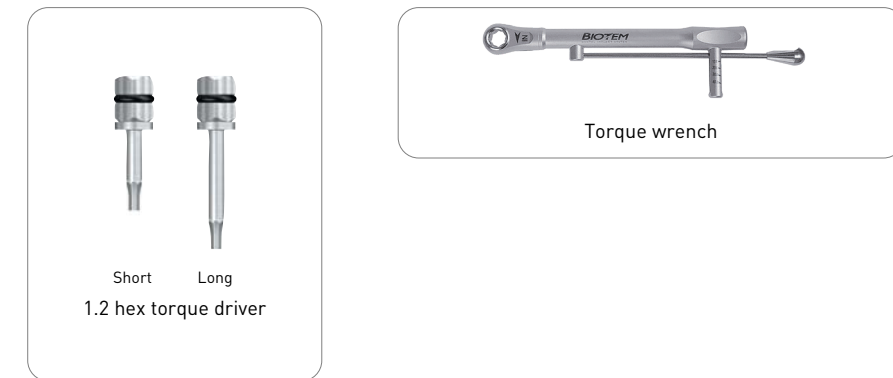
Buccal opening

Verification of casting body fit

Completed prosthesis

### Step5 Prosthesis setting

#### Tools



Short Long  
1.2 hex torque driver

Torque wrench

#### Prosthetic procedure

Connect the abutment intra-orally in the same condition as with the model using the transfer jig. Check whether the torque is set to an appropriate level, then remove the transfer jig and place the prosthesis. Always verify the exactness of the connection by taking an x-ray after the final connection of the abutment.



Abutment connection

Abutment screw tightening

Transfer jig removal

Final prosthesis setting

## Step1 Healing abutment separation

### Components & tools



### Prosthetic procedure

Separate the Healing abutment using a 1.2 Hex hand driver with hand force.

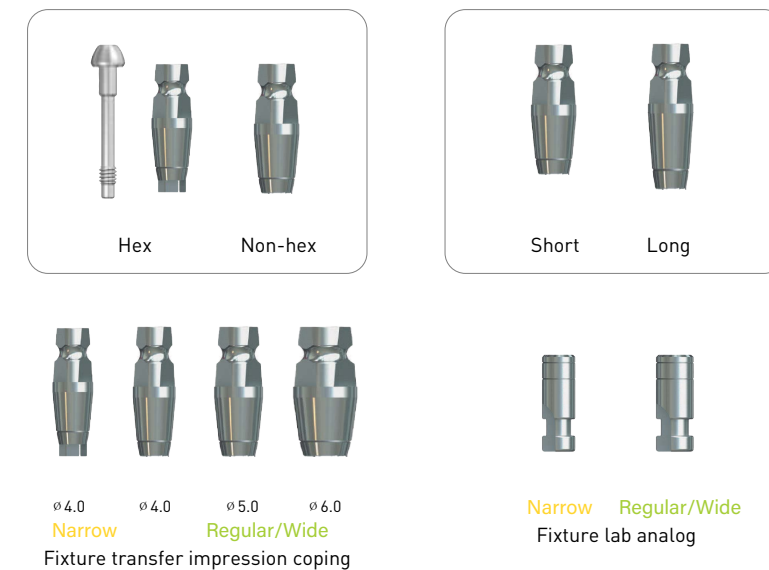


Healing abutment verification

Gently separate the Healing abutment manually

## Step2 Impression

### Fixture transfer impression coping



### Prosthetic procedure

Predict the diameter and type (hex, non-hex) of the abutment to be used and select an impression coping that will be connected using a 1.2 Hex hand driver with hand force. When the vertical dimension is insufficient apply the short feature. We recommend you to block-out the driver hole of the impression coping. It is essential to take a periapical x-ray to verify the exactness of the impression coping connection.



Impression coping connection

Impression

Coping repositioning with lab analog

# AR CCM abutment



- **Indication**

- Single/bridge/full arch restorations
- All position
- When fabricating a cement-retained prosthesis is difficult due to the limitations of spaces and paths
- Prosthesis whose precise customization is necessary
- Cement/screw/Combi retained restoration

- **Contraindication**

- Non precious alloy casting

- **Feature & benefit**

- Enables fabricating a prosthesis with a minimum of 4 mm vertical space from the fixture installation level
- Non-hex feature composition for bridge cases

- **Material**

- Abutment : Chrome cobalt molybden casting
- Screw : Ti



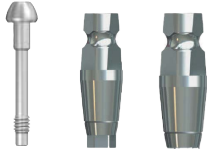




- **Surface**

-

- **Tightening Torque**

- Narrow : 20Ncm
- Regular/Wide : 30Ncm

## Product list for prosthetic procedure

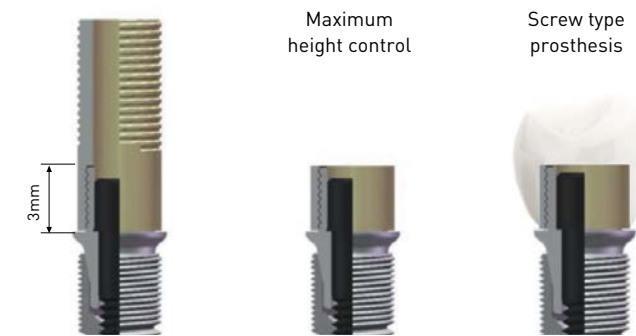
Product list	
Abutment	
Abutment screw	
Impression coping	Transfer Type 
	Pick-up Type 
Lab analog	
Driver	
Torque wrench	

- The goldcast abutment allows free and easy customization; a prosthesis of any type, screw/cement/combi may be fabricated through gold casting.
- Problems that limit the fabrication of a conventional prosthesis may be addressed, such as the anterior region where precise customization is necessary and posterior cases with narrow vertical space.

## Note for prosthetic process

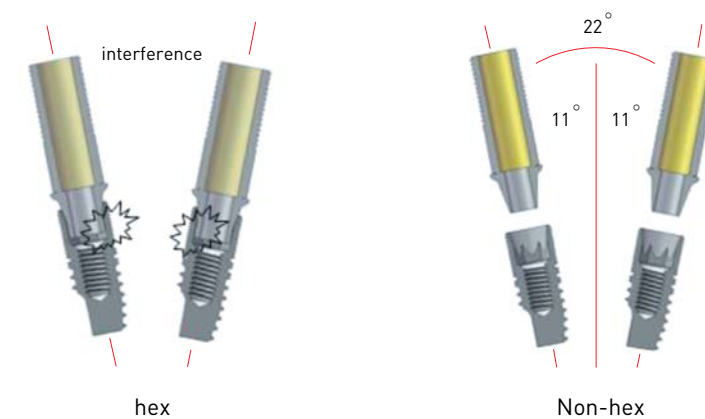
### CCM abutment

- When a cement retained type prosthesis is impossible because of limitations in vertical space between the opposing tooth, a screw retained type must be made. A prosthesis can be fabricated 4mm space from the fixture level with the CCM abutment.



### Screw Retained type restoration for AR Type

- Compared to the IR/BR Type it is difficult to fit screw retained type prosthesis with the AR Type which is an internal submerged type. It can be impossible to gain a passive fit with a hex type CCM abutment when the path is wrong in a bridge case or difficult to connect the prosthesis. A non-hex type must be used for a bridge and the passivity of the fit must be checked with a x-ray. Use a Convertible abutment when the path error exceeds 22°.



Screw retained restoration

DENTAL CLINIC WORKING

Step1 Healing abutment separation



Components & tools



Prosthetic procedure

Separate the Healing abutment using a 1.2 Hex hand driver with hand force.



Healing abutment verification

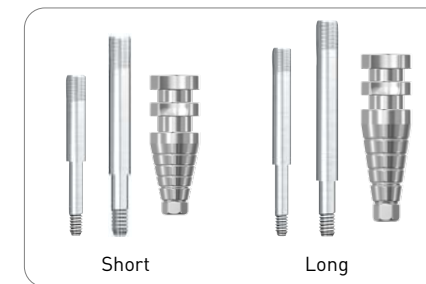
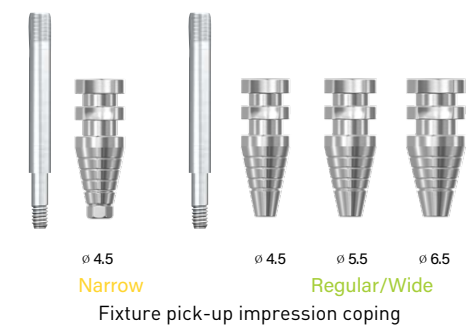
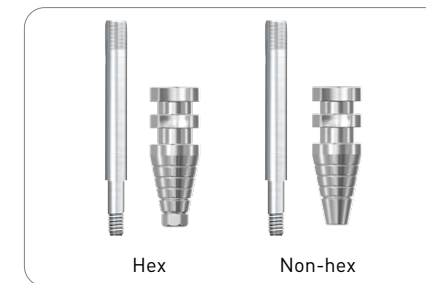


Gently separate the Healing abutment manually

Step2 Impression

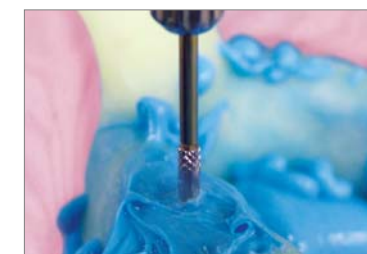


Fixture pick-up impression coping



Prosthetic procedure

Prepare a custom open tray, predict the vertical space, abutment diameter, type (hex, non-hex) and select an impression coping. Gently connect the guide pin using a 1.2 Hex hand driver manually. Do not forget to take a x-ray to check the exactness of the coping connection. Inject impression material around the hole of the upper part of the coping and loosen the guide pin after the material has set to remove the impression body. Connect a fixture lab analog of identical connection.



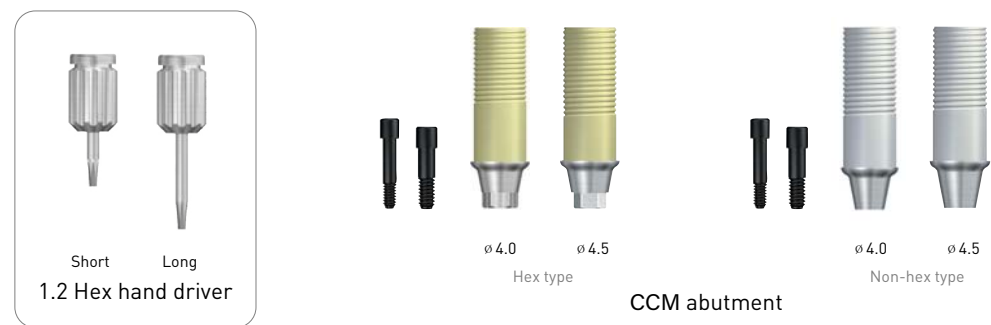
Impression



Lab analog connection

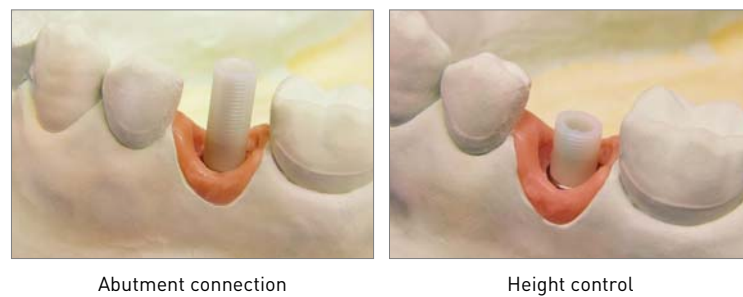
### Step3 Working model fabrication & abutment modification

#### CCM abutments



#### Prosthetic procedure

Make a working model from the impression body following conventional methods and connect the abutment. Select a non-hexed type for a bridge case. Eliminate the plastic area considering prosthesis fabrication space and path.



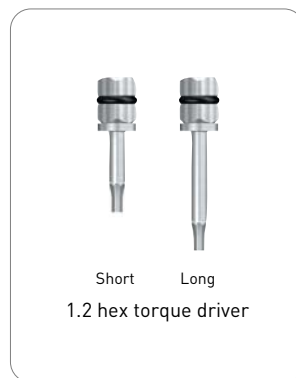
### Step4 Wax-up ~ prosthesis completion

While maintaining the screw hole do wax-up on the abutment after finishing height adjustment and customizing. It is convenient to use the guide pin of the pick-up impression coping. Cast the precious alloy metal following appropriate procedures for the gold crown/PFG. Non-precious metal alloy may damage the abutment and its use is prohibited.



## Step5 Prosthesis setting

## Tools



## Prosthetic procedure

Check the prosthesis and verify the recommended tightening torque.

Set the torque at 20 Ncm for Narrow and 30 Ncm for Regular/Wide and connect the final prosthesis. Insert cotton into the screw hole on the occlusal surface and final block out with resin.



Prosthesis connection

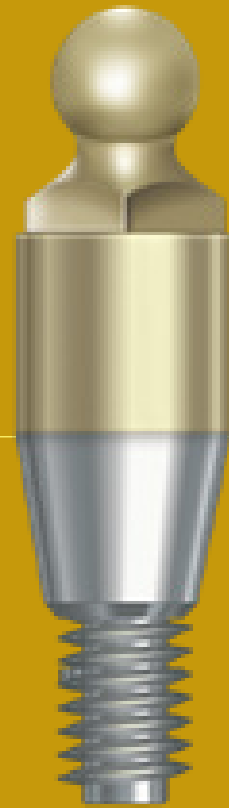


Abutment screw tightening



Hole block-out

# AR Ball abutment



- **Indication**

- Stud type overdenture

- **Contraindication**

- Path error over 20° (based on two fixtures)

- **Feature & benefit**

- Fabrication of a functional overdenture with a small number of implant installation.
- O-ring/Dalbo, two types of attachments.
- 4N and 6N retention of O-ring
- Gold coloring considering esthetics

- **Material**

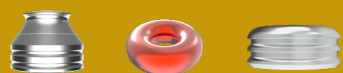
- Abutment : Ti-G4
- Processing O-ring :NBR
- Denture O-ring :Silicone

- **Surface**












- Abutment : TiN coating

- **Tightening torque**

- Abutment : 30Ncm



## Product list for prosthetic procedure

Product list		
	Ball Abutment	Locator
Abutment		
Lab analog		
Retainer (cap) + process O-ring / Denture Cap		
Denture O-ring		
Locator Driver		
Abutment driver		
Torque wrench		

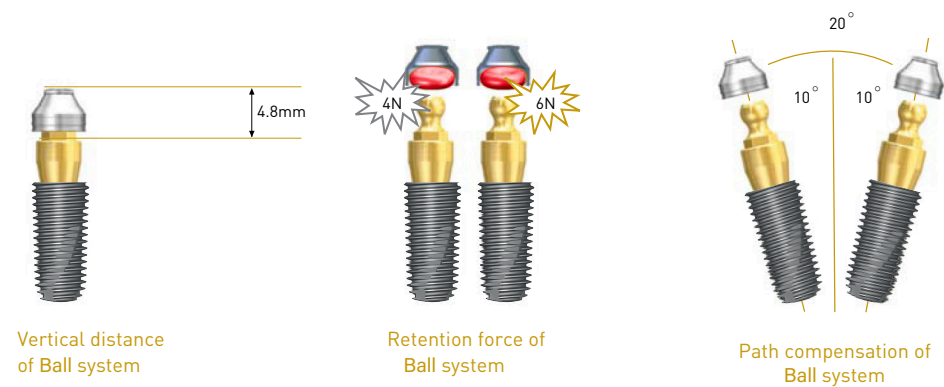
- By using the Ball abutment it is possible to fabricate a functional implant overdenture with 2 implants. You can use not only the O-ring silicone but also the Locator attachment of CM and select and apply the abutment right for the patients condition.



## Note for prosthetic process

### Ball Abutment System

- In normal cases, use a retainer cap with good removability. When vertical dimension is limited, the dimension may be decreased by 1.5 mm using a retainer. The initial retention of the red-colored O-ring is about 6 N. You can conveniently regain retention when decreased by usage by changing the O-ring. The O-ring system allows path adjustment of up to 20°, although the replacement cycle decreases with increasing deflection; hence the need for caution during path adjustment at the fixture installation step.



### Locator Abutment System

- The Locator system is maintained by precious metal lamella and the retention can be conveniently adjusted between 2~15 N level using an exclusive driver. The retention can be regained by turning the driver in the clockwise direction. The Locator system can compensate a path up to 20° but be cautious since a value larger than this may cause fracture of the lamella.

## Step1 Healing abutment separation

### Components & tools



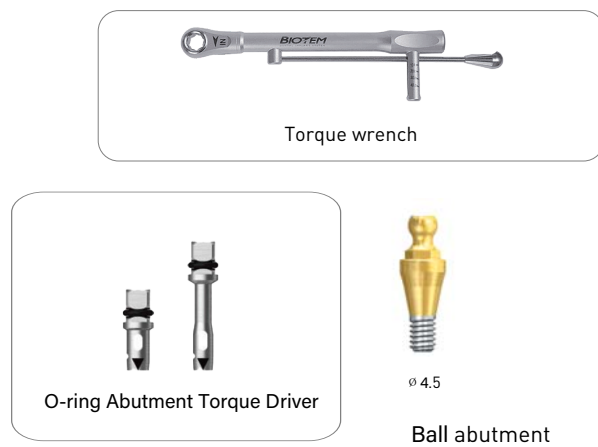
### Prosthetic procedure

- Remove the Healing abutment using a 1.2 Hex hand driver.
- Since the diameter of the Ball abutment is  $\varnothing 4.5$ , it is convenient to use the exclusive Healing abutment for prosthesis fabrication.

# Ball & Locator System

## Step2 Abutment selection and connection

### Stud abutments & tools



### Prosthetic procedure

Select an abutment of appropriate gingival height considering the prosthesis and oral environment of the patient. Connect the abutment to the fixture using an exclusive O-ring driver with 30Ncm force. Always take an x-ray to check the exactness of the connection.



Tightening with exclusive driver

Connected Stud abutment

# DENTAL LAB WORKING

## Step3 Impression ~ working model fabrication

### O-ring lab analog



O-ring lab analog

### Prosthetic procedure

Prepare a conventional custom tray for prosthesis impression taking and first inject impression material around the abutment. Take a functional impression same as denture fabrication. after the impression body has set place the lab analog using the replicated hex structure as a guide.



Impression

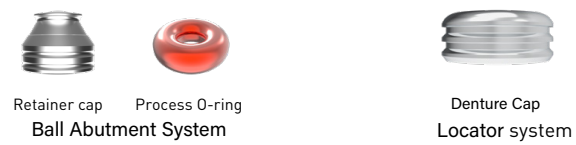
Lab analog connection

Working model fabrication

# Ball & Locator System

## Step4 Retainer cap /duplicate aid setting ~ curing

### Processing components



### Prosthetic procedure

Connect the retainer cap with an attached processing O-ring to the lab analog exposed on the working model and block-out the lower area. Complete the prosthesis by following the conventional steps for denture fabrication from wax denture to curing. Use the included Duplicate aid when using the Dalbo system.

#### O-ring



Retainer cap connection

Block-out of lower area

Completed overdenture

#### Dalbo



Duplicate aid connection

Block-out of lower area

Completed overdenture

# DENTAL CLINIC WORKING

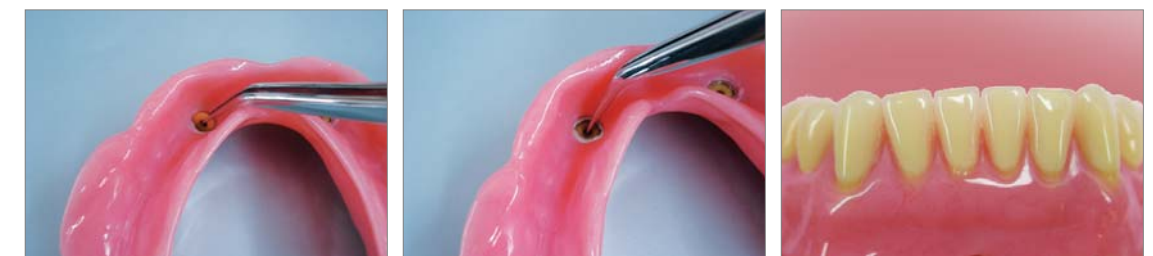
## Step5 Prosthesis setting (Ball Abutment System)

### Final O-rings



### Prosthetic procedure

Remove the processing O-ring of the retainer using tweezers and place the prosthesis after selecting between 6N and connecting the O-ring of appropriate retention.



O-ring replacement I

O-ring replacement II

Placed overdenture

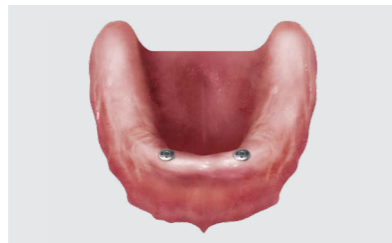
# Prosthetic Process

## Abutment Level Impression

### 01 Lab Side

#### Remove healing abutment

- Fabricate diagnostic model using preliminary impression
- Fabricate individual tray from diagnostic model
- Remove healing abutment using 1.2 hex hand driver by hand



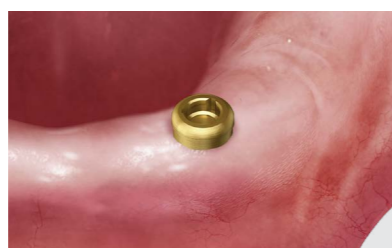
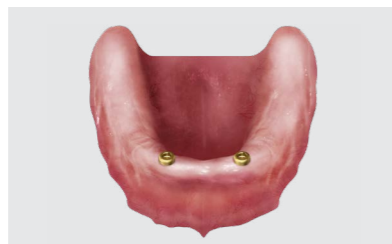
1.2 Hex Hand Driver



### 02

#### Abutment selection

- Select abutment specification by oral condition and final prosthesis
- Use specification that matches gingiva height or 1mm higher, considering space for denture cap connection
- Connect using exclusive locator driver (30Ncm)
- Check right connection with x-ray



Locator Abutment



O-ring Driver



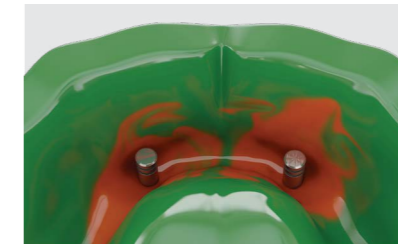
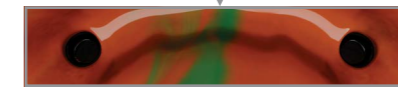
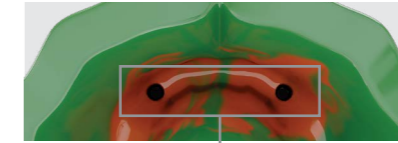
Torque Wrench



### 03

#### Impression

- Impression coping connection
- Denture impression taking in normal way using pre-fabricated individual tray
- Direct impression taking by injecting impression material around abutment
- Connect lab analog to impression body
- Fabricate working model in normal way by pouring stone inside the impression body



Locator® Impression Coping



Locator® Lab Analog



### 04 Lab Side

#### Denture cap connection

- Place block out spacer and set denture cap
- Check if block out is appropriate



Denture Cap



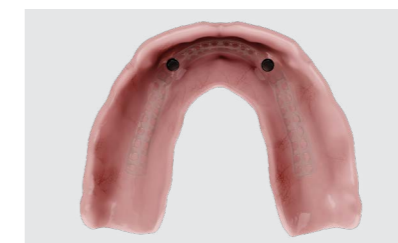
Male



### 05 Lab Side

#### Denture fabrication

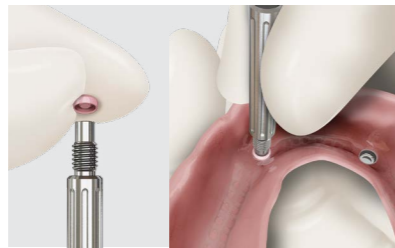
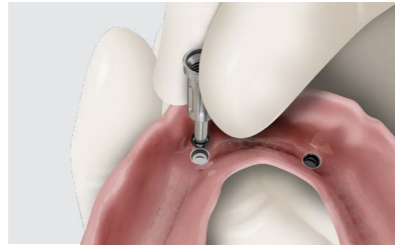
- Denture fabrication in normal way by wax denture, curing, polishing



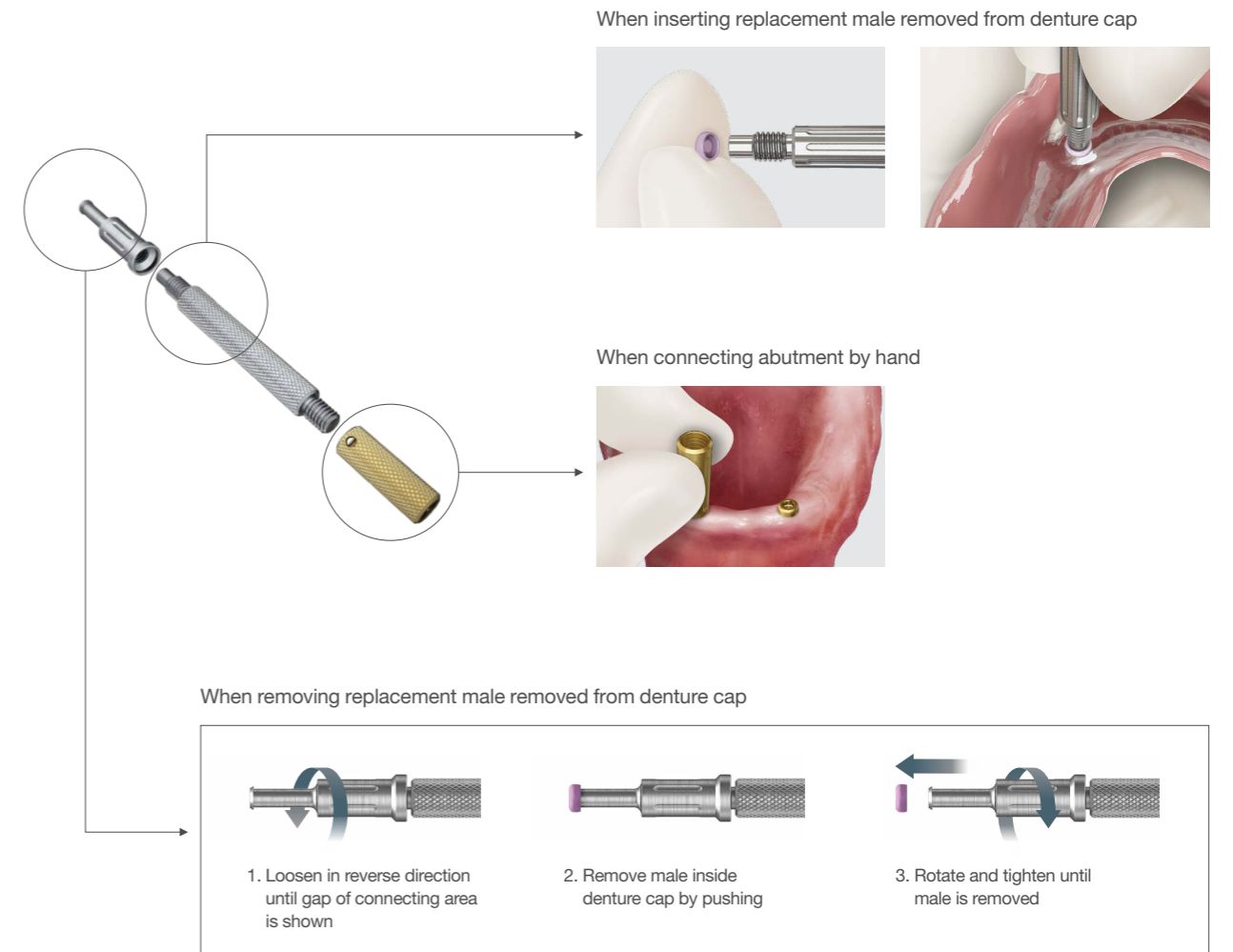
06

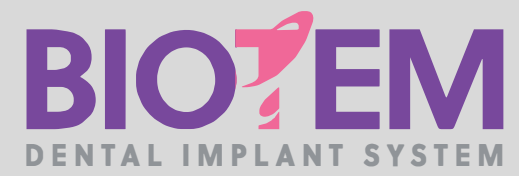
**Connect final prosthesis**

- Check delivered prosthesis from the lab
- Connect inside mouth, and check occlusion and shape
- Remove black processing male (For lab) with core tool
- Connect replacement male and set denture in mouth



※ **Locator core tool instruction**





# Prosthetic Procedure

for **AR Type Implant System**