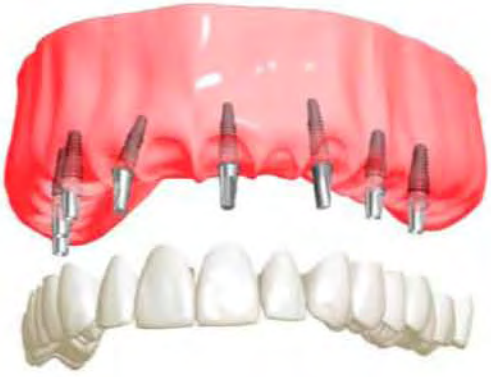
IMPLANT SYSTEM

PROSTHETIC MANUAL

VERSION 1



Sm

SM Implant System

DIO

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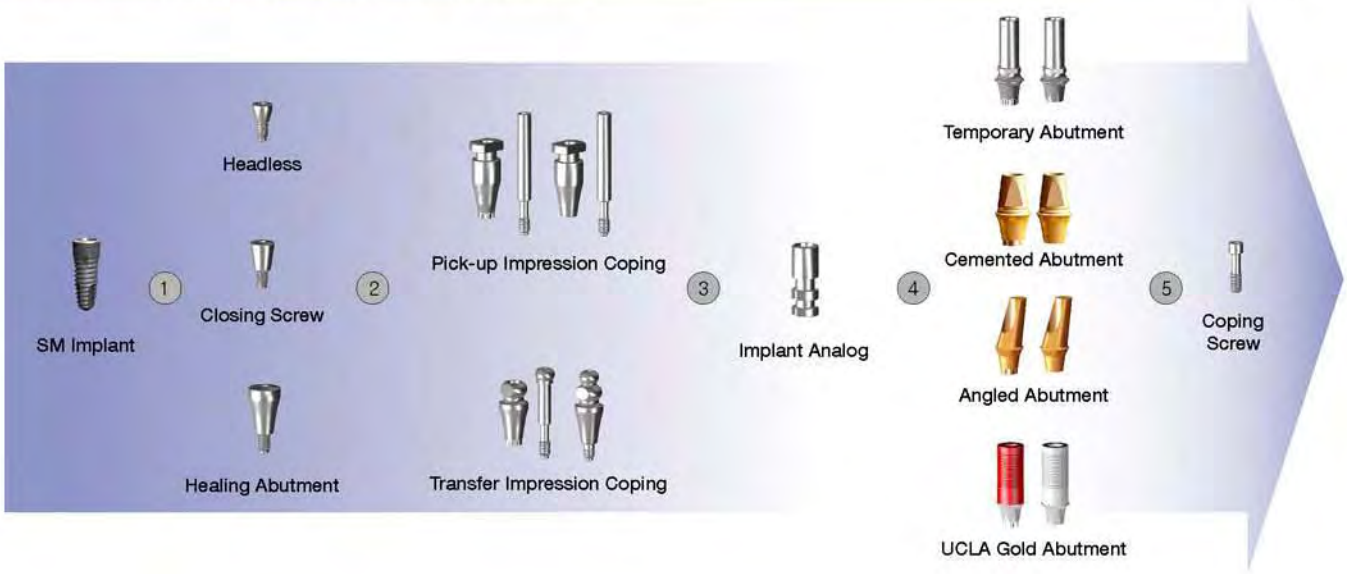

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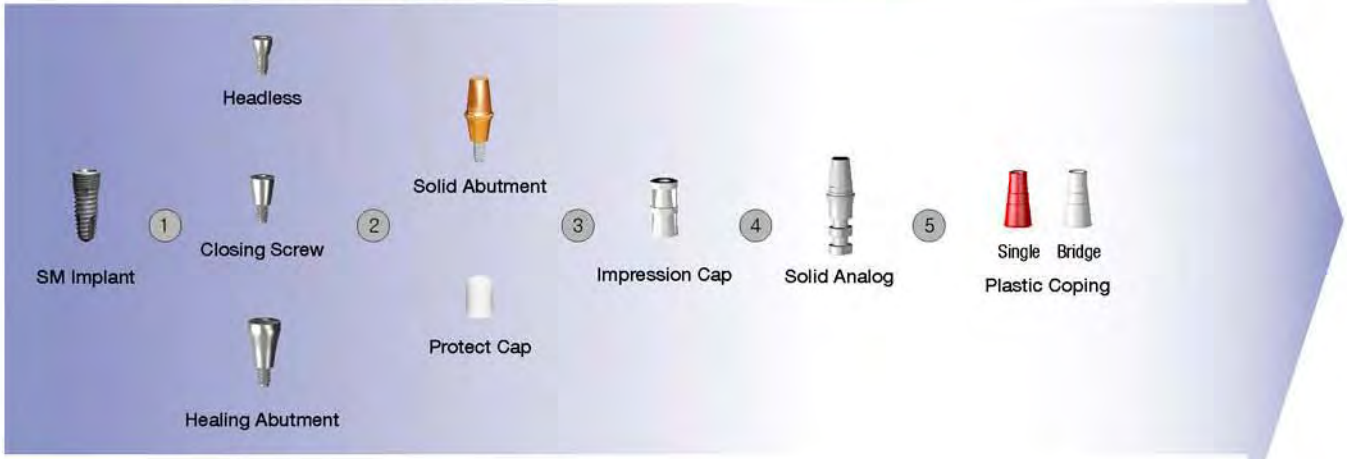

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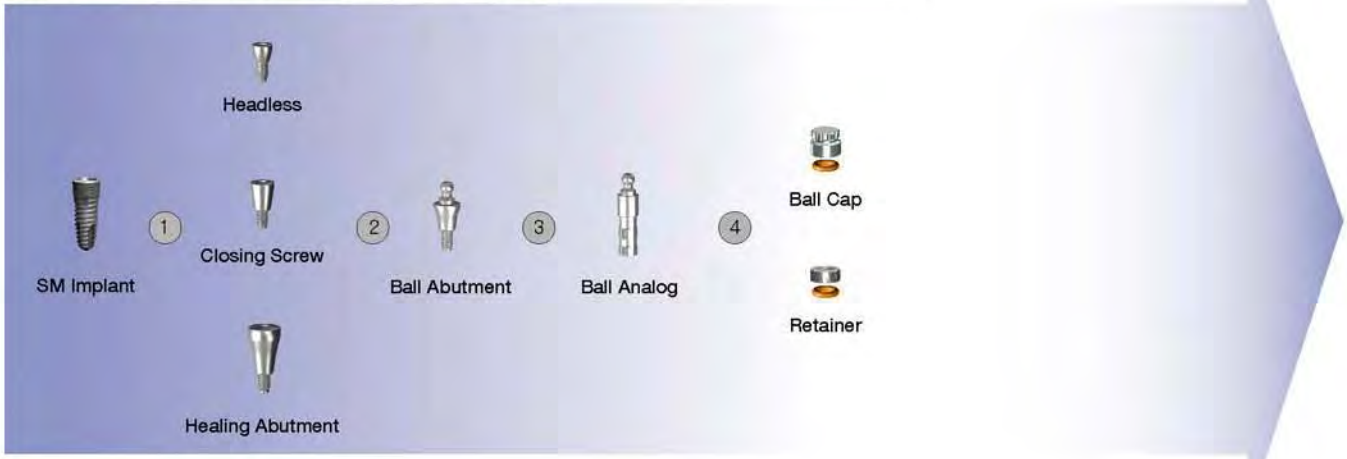


SM Fixture System

Cemented Abutment

#46 #47 Resin Facing

Cemented Type

SCRP Type

SM Fixture : Regular(Ø4.5) SFR4508 X 2

Healing Abutment : Regular(Ø5.0), Cuff 2mm SAH5024

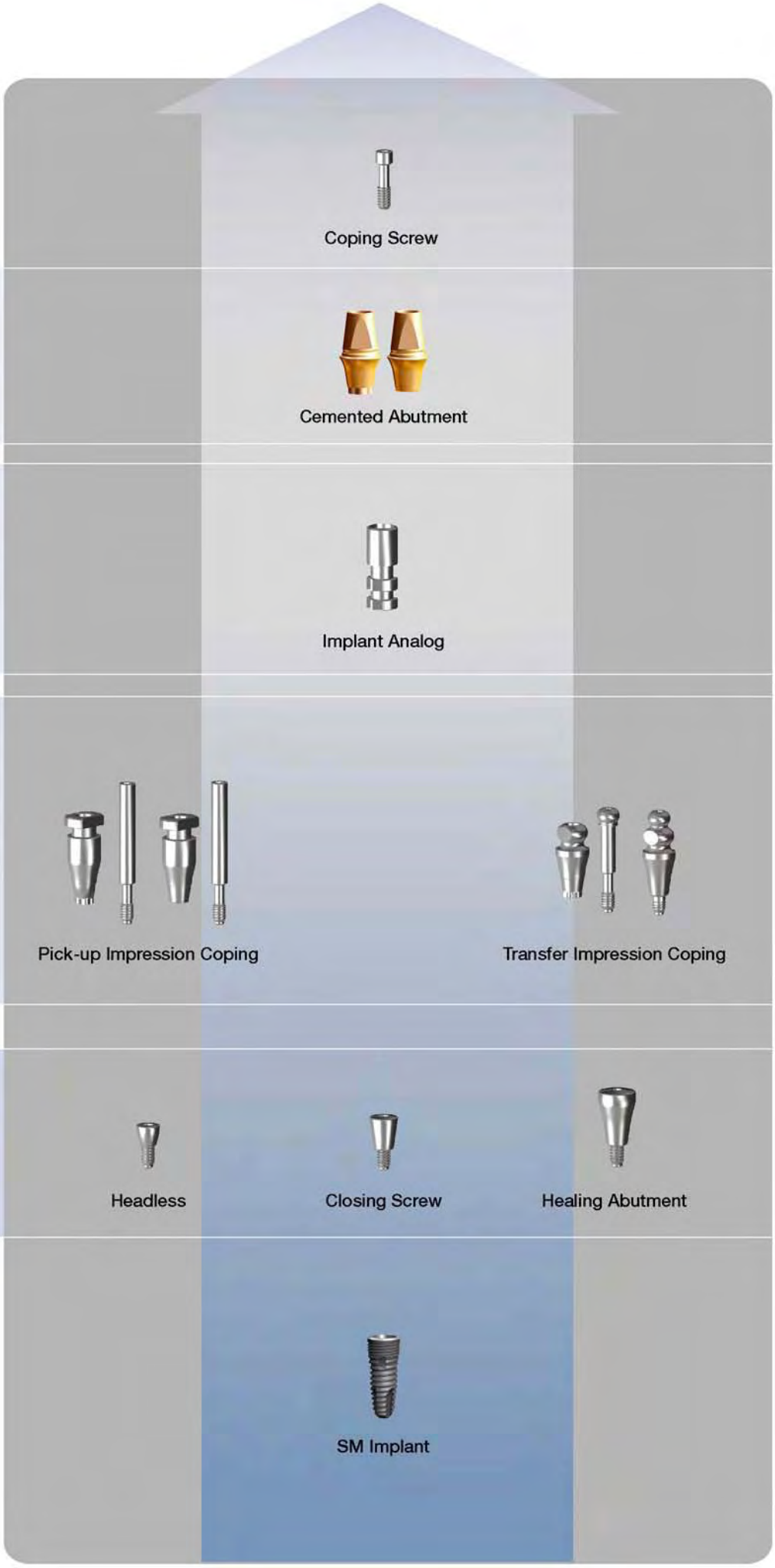
Transfer Impression Coping : Non-torx Type, Regular(Ø4.8) SIT4810N X 2

Pick-up Impression Coping : Non-torx Type, Regular(Ø4.8) SIP4810N X 2

Fixture Analogue : Regular(Ø4.5) SAF4512 X 2

Cemented Abutment : Torx Type Regular(Ø4.8) Cuff 2mm, Length 4mm SAC4824T X 2

Cemented Abutment System 1



Clinical Procedure

Fabricate the implant prosthesis using a cemented abutment.

Healing Abutment

◎ Diameter : Narrow Ø4.0 / Regular Ø5.0 / Wide Ø6.0(mm)
◎ Cuff : 1 / 2 / 3 (mm)
◎ Length : 3 / 4 / 5 / 6.5 / 8 (mm)
◎ Use 1.2 Hex Driver
◎ Use for regular/wide Implants

Healing Abutment

▶ SM Fixture Regular(Ø4.5) SFR4508
Healing Abutment SAH5024

Exposing the top of implant after the healing abutment has been removed

▶ Remove the healing abutment with the 1.2 Hex Driver.

Attaching the Transfer Coping

▶ The transfer impression copings for regular size is available in torx(two-piece) type and non-torx(one-piece) type depending on prosthesis Type(Single / Bridge)
Place the flat side of the impression coping toward the buccal, and then press it on to the implant to be fully seated.
Tighten the coping screw with the 1.2 hex driver.

Block-out the coping screw

▶ Prior to injecting the impression material, block out the hex holes in the top of the coping screw with an appropriate material to prevent the ingress of resin.

Clinical Procedure

Torx Non-torx

Cemented Abutment

◎ Type : Torx(Single Use)/Non-Torx(Bridge Use)
◎ Diameter : Narrow Ø3.9 / Regular Ø4.8 / Wide Ø5.8(mm)
◎ Cuff : 1.0 / 2.0 / 3.0 / 4.5 / 6.0(mm)
◎ Length : 4 / 6(mm)
Indication line of 4mm is marked on 6mm abutment.
◎ Use for Regular/Wide Implants

Impression

◎ Implant-level Indirect Transfers for closed Tray, Transfer Impression Technique.
Indirect transfer impression coping is designed to replicate the soft tissue profile as well as the position of the implant and torx that enhances fabricating a working model.
It provides the coordinating information for fabricating a custom tray and a diagnosis working model.
Since the impression coping is remaining as connected to the implant after the removal of closed tray, disconnect the impression coping and send the impression body with the analog to the laboratory.

Torx Non-torx

Transfer Impression Coping

◎ Type : torx(Single Use) / Non Torx(Bridge Use)
◎ Diameter : Narrow Ø3.9 / Regular, Wide Ø4.8(mm)
◎ Length : 10(mm)
◎ As the flat sides are constructed, it efficiently applies to the narrow interdental.
◎ Use 1.2 Hex Driver

Try-in the impression tray

▶ Select an appropriate tray to the patient's mouth and verify the fit by trying-in.

Impression Material Injection

▶ Inject rubber impression material around the impression coping and fill the closed tray with heavier body impression material, and then transfer the impressions.

Transferring the impression

The inside of the impression body after the impression has been taken.

Detach the impression coping from the patient's mouth

Re-attaching the healing abutment

The inside of the impression body after the impression has been taken.

▶ Remove the impression coping from the implant and replace the healing abutment immediately.
Make interocclusal records and an impression of opposing arch,
and then deliver the impression body, the transfer coping, and the analog to laboratory.

§ Implant Analog

▶ ◎ Diameter : Narrow Ø3.8 / Regular, Wide Ø4.5(mm)
◎ Length : 12 (mm)

Inserting the impression coping

▶ Attach the impression coping to corresponding implant analog(SAF4512).
Align the flat side of the transfer assembly with its corresponding hole in the impression body and insert the transfer assembly into the impression body.

The transfer assembly inserted in the impression body

Following the connection of the transfer assembly, inject soft tissue replication material around the junctions of the assembled implant analogs.

Fabricate the diagnosis working model by pouring the dental stone inside of the impression body, and then fabricate a custom tray to take the final impression.

⊙ Impression

▷ ◎ Open Tray Technique
The key function of impression coping is to replicate the accurate soft tissue profile and depth, and the location of implant and torx connection.

§ Pick-up Impression Coping

◎ Type : Torx / Non Torx
◎ Diameter : Narrow Ø3.9 / Regular ,Wide Ø4.8(mm)
◎ Length : 7 / 10(mm)
◎ Guide Pin : 10 / 15 / 20(mm)

Attaching the Pick-up Impression Coping

▶ Pick-up Impression Coping SIP4810N.

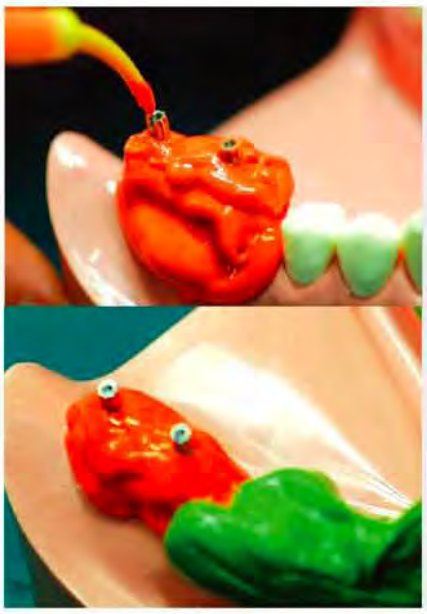
Remove the Healing Abutment with the 1.2 hex driver, and then attach the Pick-up Impression Coping to the exposed top of the implant with an appropriate guide pin.

Connect the impression copings with adjacent teeth using an unshrinkable GC pattern resin to prevent a positional change when taking the impression.

Ensuring the correct position of the custom tray holes

▶ Verify the position of the holes and the guide pins by trying-in the fabricated custom tray on the patient's mouth.

Apply an appropriate amount of adhesive materials inside of the custom tray for the impression to be fixed stably.



Impression Procedures

▶ Inject the light body impression material around the impression copings.

Loading the tray

▶ Fill the tray with heavier body impression material (Over Medium-Body).

Making the Impression Body

▶ Place the tray properly on the patient's mouth and remove the overflowed impression material to avoid the block out of the holes.

Remove the Impression Body

▶ Remove the tray by unscrewing the guide pin using the 1.2 hex driver after the impression material gets hardened.

Final Impression body

▶ The Pick-up Impression Copings inserted in the final impression body Confirm the correct contour of the impression body and send the interocclusal records, an impression of opposing arch, and implant analog to the laboratory

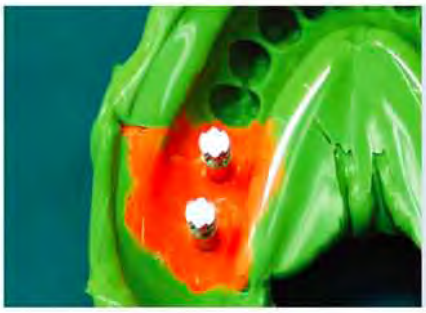
Re-attaching the Healing Abutment

▶ Following the impression procedures, re-attach the Healing Abutment to the exposed top of the implants.

MEMO

Attaching the Implant Analog

▶ Attach the Implant Analog(SAF 4512) of choice to the Pick-Up Impression Coping using the 1.2 hex driver by adjusting the guide pin.



The implant analog inserted in the impression body

Fabricating the gum model

▶ Inject the soft tissue replication material around the junctions of the Impression Coping and Analog. Apply the utility wax around the impression body edges in order to fabricate a working stone model.

Pouring the dental stone

▶ Pour the dental stone in the impression body
Remove the tray by unscrewing the guide pin using 1.2 Hex Driver after the dental stone gets hardened.

The final working model

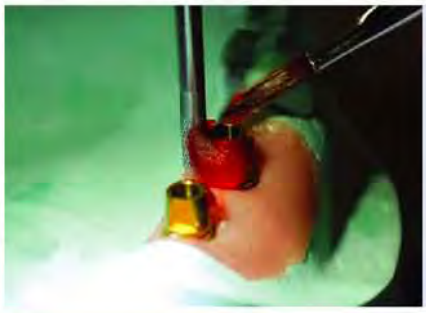
▶ Implant analog and artificial gum are constructed in the final working model that replicates the condition of the patient's mouth.

Placing the Cemented Abutment

▶ Select an appropriate height of the Cemented Abutment (SAC 4824T) and tighten the abutment onto the Implant analog with the 1.7 Torx driver.
Determine if the modification needs to be made.

Modifying the Cemented Abutment

▶ With an appropriate tool, modify the vertical contours and marginal parts to be fitted onto the gum profile.



Fix the abutments with the GC pattern resin for milling adjustment and abutments transferring.

Fabricating the transfer Guide

▶ The direct milling work on the working model can cause the damages to the model or run-out of the analogs, and also the milling bars may not reach into the narrow space between the abutments or the adjacent teeth. Therefore it is recommended to transfer the abutments to the milling index using a transfer guide and modify the abutments.

Preparing the milling index

▶ Place the milling index that is filled with mixing stone on the survey table.

Place the cemented abutment in the milling index.

Modifying the abutment

▶ Modify the abutments in accordance with insertion path and esthetical location. Margins parts shall be modified according to the gum profile.
Modify the abutments to the gingival level for premolars or molars and 0.5 ~ 1.0mm lower to the gingival level for centrals or laterals. RPM of milling bur needs to be set according to abutment materials and conditions of the milling bur. (10000 ~ 15000 for initial milling, 5000~8000rpm for polishing)

Modified Cemented Abutment

Placing the modified Cemented Abutments in the working model using the repositioning jig

Tighten the modified abutment into the working model

Block-out the holes.

▶ Block-out the holes of the Abutment to prevent the ingress of resin to the Abutment screw access hole.

Apply the GC pattern Resin around the Cemented Abutment

The Repositioning Jig

Resin Core Build-up

▶ Build up the resin cap by applying the GC pattern resin over the modified abutments.

Wax-up

▶ Wax-up the crown as big as 80% of the natural crown size.

Making a buccal facing window

▶ Make the buccal facing window on the wax crown for the even wax pattern Bead it in order to enhance the bonding with facing resin

Spruing

▶ Attach a sprue to the non-centric cusp and invest

Remove the porosities and sprue cuttings, and then place the framework on the working model.

Completing the final prosthesis

▶ Face the hard resin around the buccal surface

Clinical Procedure

Place the abutment on the patient's mouth by using the repositioning jig.

▶ Insert the abutment in the repositioning jig.
Place it on the patient's mouth and tighten the screw.

Torque the abutments

▶ Torque the abutments to 30Ncm with a torque wrench.

Cementation

▶ Pour an appropriate amount of cement in the final prosthesis and finish the cementation.

The final prosthesis seated on the patient's mouth

Laboratory Procedure

Fabricate the implant prosthesis in cement-screw combination form
resin cap

▶ Apply the low-shrinkable resin to prevent shrinkage and expansion due to temperature deviation.

Placing the guide pin in the cemented abutment hole

▶ Place the guide pin toward abutment screw access hole and avoid the area around the centric cusp.

Wax-up

▶ Wax up the crown in most suitable form to the condition of the patient's mouth.

Spruing

▶ Attach sprue wax with reservoirs to the thickness part of each unit within the framework pattern.

▶ Attach sprue wax on the casting body cone and invest.

Cast Framework

▶ Avoid the central ring area when waxing-up the pattern since the central investment ring area has a high temperature.

After casting is completed, remove the sprue cutting and the porosities on the cast framework, and verify its passive fit on the corresponding Implant Analog in the working model.

Finishing the final prosthesis

▶ Face the buccal surface with the hard resin
The access hole to the abutment /implant analog is to be verified.

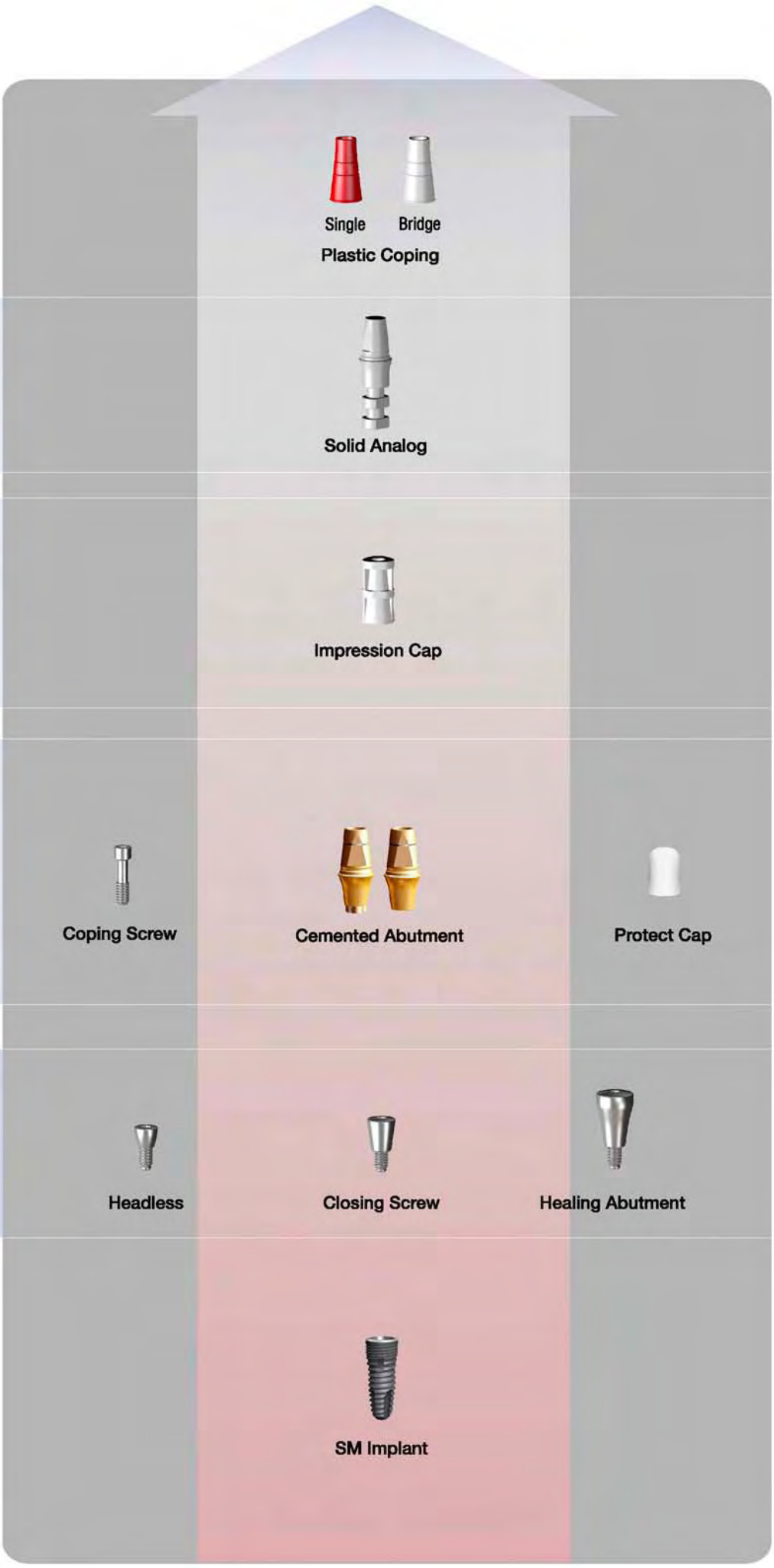
Clinical Procedure

Tighten the abutment screws to 35Ncm with a torque wrench after a passive fit, occlusion of the restoration, and esthetics of restoration have been confirmed.

The final prosthesis tightened on the patient's mouth.

Fill the screw hole with composite resin material and adjust the occlusion of the restoration with the resin material if required.

Cemented Abutment System 2



Clinical Procedure

Healing Abutment

◎ Diameter : Narrow Ø4.0 / Regular Ø5.0 / Wide Ø6.0(mm)
◎ Cuff : 1 / 2 / 3 (mm)
◎ Length : 3 / 4 / 5 / 6.5 / 8 (mm)
◎ Use 1.2 Hex Driver
◎ Use for Regular/Wide Implants

The Healing Abutment tightened on the patient's mouth

▶ One or two weeks after second surgery, remove the healing abutment to transfer the impression at a time of choice.

Removing the Healing Abutment

Exposing the top of the implant

Cemented Abutment

◎ Type : Torx(Single Use)/Non-Torx(Bridge Use)
◎ Diameter : Narrow Ø3.9 / Regular Ø4.8 / Wide Ø5.8(mm)
◎ Cuff : 1.0 / 2.0 / 3.0 / 4.5 / 6.0(mm)
◎ Length : 4 / 6(mm)
Indication line of 4mm is marked on 6mm abutment.
◎ Use for Regular/Wide Implants
Inserting the Cemented Abutment

Two types of Cemented Abutment connection are available for each use: Torx type for single implant and Non-torx type for bridge. When the towx type is used, insert the Cemented Abutment, then interdigitate its torx with the mating internal torx of the implant and rotate it slightly to verify its passive fit.

Tighten the abutment screws to 30Ncm with a torque wrench

The Cemented Abutment tightened on the patient's mouth

Attach the Impression Cap to the Abutment

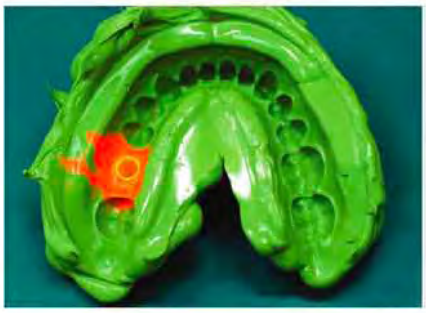
▶ When attaching the impression cap, align its flat surface with the abutment's flat surface, and then press it lightly.

Inject the light body impression material through the hole on the side of the cap.

Impression Material Injection

▶ Inject rubber impression material around the impression coping and fill the tray with heavier body impression material, and then transfer the impressions.

Impression transferring



Final Impression Body

Covering the abutment with the Protect cap

▶ Attach the protection cap to the abutment after the impression has been transferred. Protection cap segregates the abutment from the gingival and prevents a plaque generating on the abutment.

The temporary resin crown can be fabricated by using the protect cap.

Laboratory Procedure

Attaching the Solid Analog

▶ After ensuring the inserting position of the solid analog, insert it into the impression cap until the clicking sound indicates that it has been fully seated.

The Solid Analog inserted in the impression body

Structuring the Artificial Gum

▶ After the analog has been inserted, place the soft tissue replication material around the analog.

Fabricating the Diagnosis Model

▶ Pour the dental stone inside of the impression body and wait until the dental stone gets hardened.

Fabricating the working model

Plastic Coping for waxing-up the crown

▶ The use of resin wax for waxing-up the artificial crown might, cause the shrinkage deviation. Thus the plastic coping is to be used for waxing-up the artificial crown. Adjust the height and the margins of the plastic coping with the rubber point.

Adjusting the height of the plastic coping with the rubber point

Waxing-up

▶ Wax-up the artificial crown as big as 80% of the natural crown size.

Fabricating a putty index

▶ Fabricate a putty index in order to give even thickness to the porcelain.

Trimming the artificial crown

▶ Place the fabricated index, and trim the artificial crown to achieve its even thickness.

Preparing the spruing

▶ T-handle prevents the cast framework from rotating during the casting procedures.

Wax up the contour and occlusal surface on the cast body that opaque is applied.

The cast body

Apply the opaque over the cast body

Prepare the ceramic press casting

▶ Prepare the casting using an authentic pulse material
▶ Casting will be done in ceramic furnace.

Cast body through the ceramic pressing procedure.

Remove the inserted material and adjust it to fit in the patient's mouth

Finish the final prosthesis

▶ 최적의 구강 내 상태가 확인되면 Stain과 Glazing으로 마무리 한다.

Clinical Procedure

Cementation

▶ Pour an appropriate amount of cement on the final prosthesis and finish the cementation.

The final prosthesis seated on the patient's mouth

SM Fixture System

Temporary Abutment

#46 #47 Resin Facing

Angled Type

SM Fixture : Regular(∅4.5) SFR 4512

Healing Abutment : Regular(∅5.0) Cuff 2 mm SAH5024

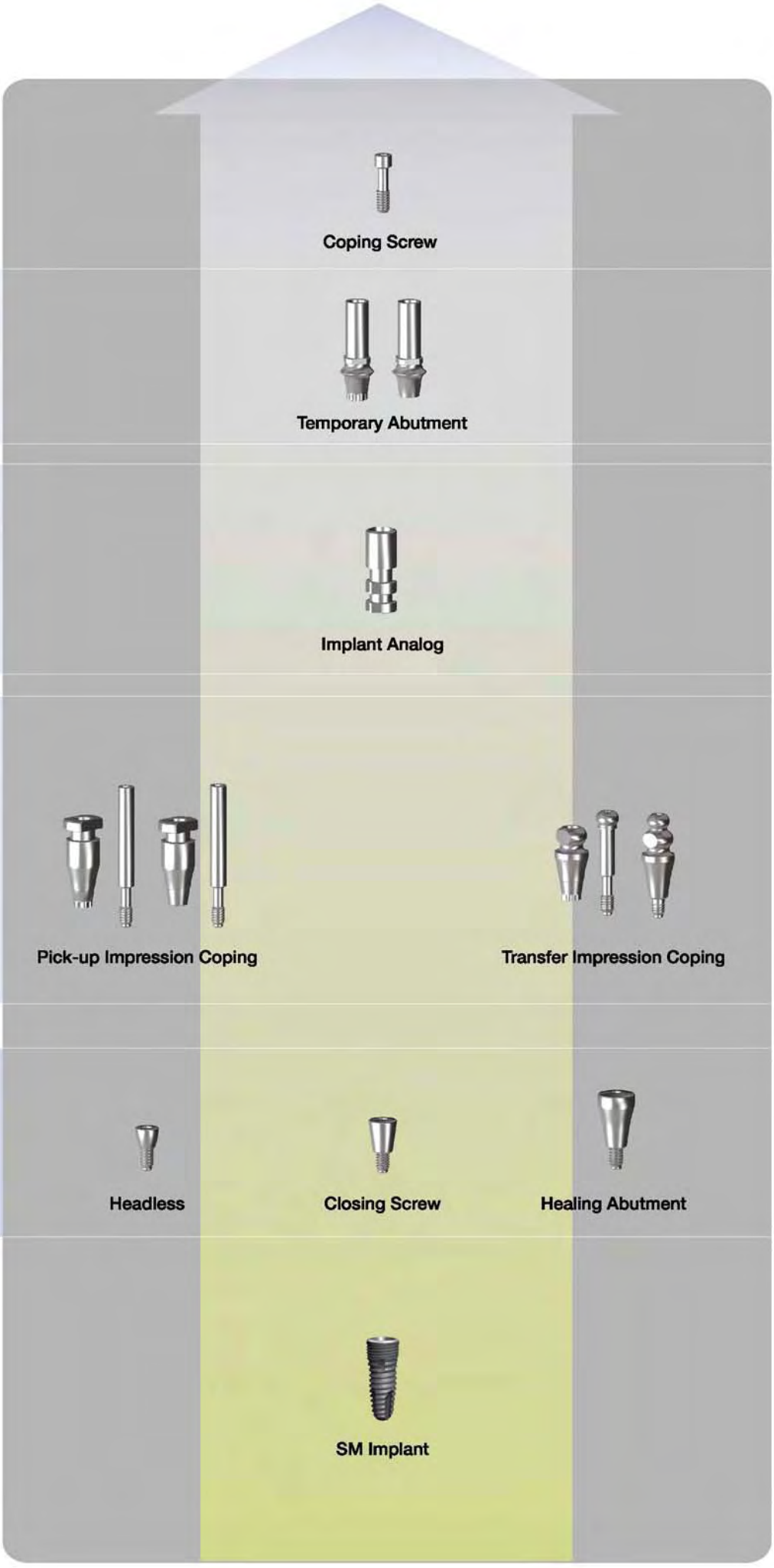
Transfer Impression Coping : Torx Type, Regular(∅4.8) SIT 4810T

Pick-up Impression Coping : Torx Type, Regular(∅4.8) SIP 4810T

Fixture Analogue : Regular(∅4.5) SAF 4512

Temporary Abutment : Torx Type, Cuff 1 mm, Length 10 mm , SAT 4810T

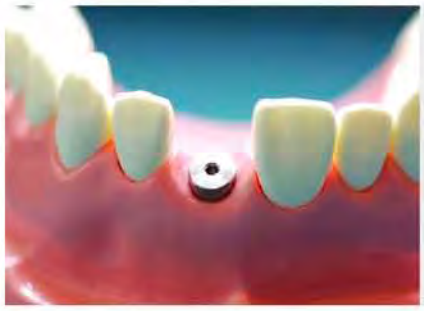
Angled Abutment System



Clinical Procedure

Healing Abutment

◎ Diameter : Narrow Ø4.0 / Regular Ø5.0 / Wide Ø6.0(mm)
◎ Cuff : 1 / 2 / 3 (mm)
◎ Length : 3 / 4 / 5 / 6.5 / 8 (mm)
◎ Use 1.2 Hex Driver
◎ Use for Regular/Wide Implants



One or two weeks after second surgery, remove the healing abutment to transfer the impression at a time of choice.

Exposed the top of the implant

Pick-up Impression Coping

◎ Type : Torx(Single Use) / Non Torx(Bridge Use)
◎ Diameter : Narrow Ø3.9 / Regular, Wide Ø4.8(mm)
◎ Length : 7 / 10(mm)
◎ As the flat sides are constructed, it efficiently applies to the narrow interdental.
◎ Use 1.2 Hex Driver

Placing the Impression Coping

Tighten the Impression Coping (Buccal Facing)

▶ Pick-up Impression Coping:Regular(ø 4.8) SIP 4810N
Remove the healing Abutment using a 1.2 hex driver and tighten the impression coping of choice into the exposed top of the implant.

Impression Coping (Lingual Facing)

Connect the impression coping with adjacent teeth using an unshrinkable GC pattern resin to prevent a positional change when transferring the impression.

Custom Tray

▶ Ensure the correct position of the access holes and the guide pin by trying-in the custom tray that is fabricated in the laboratory.
Apply the adhesive material inside of the impression body to enhance the stable fixation with the impression material.

Apply the adhesive material inside of the custom tray

Inject light-body impression material around the impression coping.

Fill the custom tray with the heavier-body impression

Impression transferring

Exposed guide pin on the custom tray

Detaching the guide pin

The Transferred Impression body

§ **Fixture Analog**

▶ ◎ Diameter : Narrow Ø3.8 / Regular, Wide Ø4.5(mm)
◎ Length : 12 (mm)

Attaching the Implant Analog

▶ Insert the implant analog of choice into the impression body with the 1.2 hex Driver by adjusting the guide pin.

The inserted Implant Analog in the impression body

Fabricating the gum model

▶ Inject the soft tissue replication material around the junctions of the Impression Copings and Analogs. Apply the utility wax around the impression body edges in order to fabricate a working stone model.

Pouring the dental stone

▶ Pour the dental stone in the impression body
Remove the tray with the 1.2 Hex Driver after the dental stone gets hardened.

Working Model

▶ The Implant analog and the artificial gum are constructed in the final working model that replicates the condition of the patient's mouth.

Temporary Abutment

◎ Diameter : Narrow Ø3.9 / Regular Ø4.8 / Wide Ø5.8(mm)
◎ Length : 10(mm)

Attach Temporary Abutment of choice on the working model using a 1.7 torx driver and trim the height to be corresponding with adjacent teeth.

Wax-up the artificial crown over the abutment, and then fabricate the provisional prosthesis with the putty and the temporary resin. Deliver the provisional prosthesis to the clinician.

Clinical Procedure

Tighten it into the implant using a 1.7 torx drive

Fill the hole with the identically shaded resin that was applied in the laboratory and trim the prosthesis.

SM Fixture System

Angled Abutment

#46 #47 Resin Facing

Angled Type

SM Fixture : Regular(∅4.5) SFR 4512

Healing Abutment : Regular(∅5.0) Cuff 2 mm SAH 5024

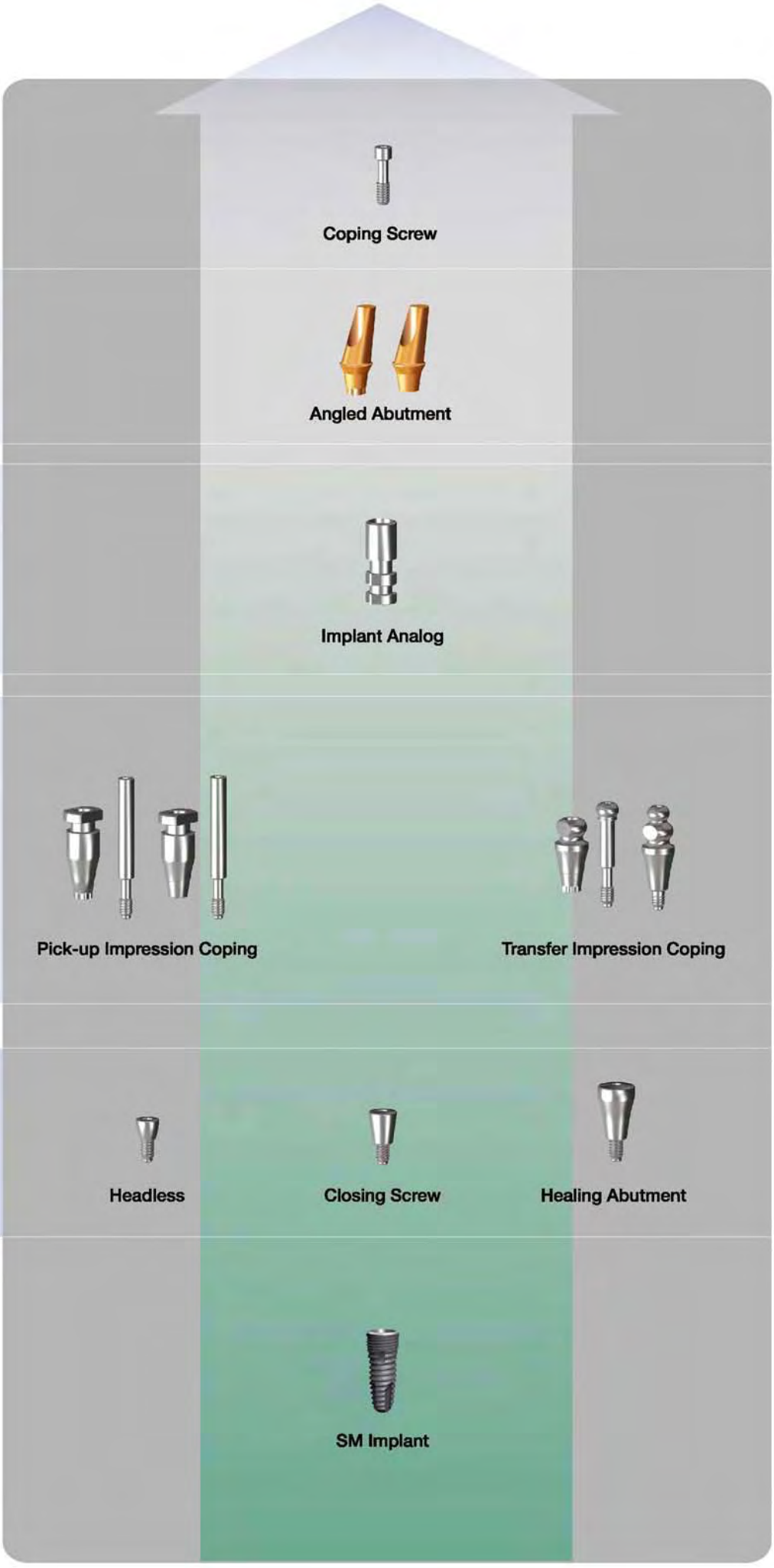
Transfer Impression Coping : Torx Type, Regular(∅4.8) SIT 4810T

Pick-up Impression Coping : Torx Type, Regular(∅4.8) SIP 4810T

Fixture Analogue : Regular(∅4.5) SAF 4512

Angled Abutment : Torx Type, Cuff 3 mm, Angle 15˚, SAA 48315A or SAA 48315B

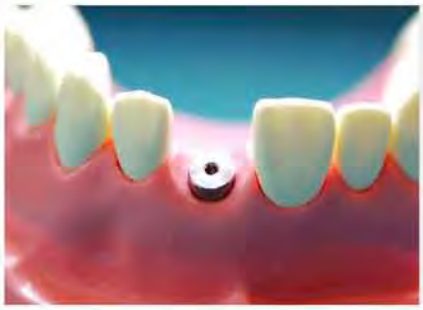
Angled Abutment System



Clinical Procedure

Healing Abutment

- ◎ Diameter : Narrow Ø4.0 / Regular Ø5.0 / Wide Ø6.0(mm)
- ◎ Cuff : 1 / 2 / 3 (mm)
- ◎ Length : 3 / 4 / 5 / 6.5 / 8 (mm)
- ◎ Use 1.2 Hex Driver
- ◎ Use for Regular/Wide Implants



One or two weeks after second surgery, remove the healing abutment to transfer the impression at a time of choice.

Exposed the top of the implant

Pick-up Impression Coping

- ◎ Type : Torx(Single Use) / Non Torx(Bridge Use)
- ◎ Diameter : Narrow Ø3.9 / Regular, Wide Ø4.8(mm)
- ◎ Length : 7 / 10 / 13(mm)
- ◎ As the flat sides are constructed, it efficiently applies to the narrow interdental.
- ◎ Use 1.2 Hex Driver

Placing the Impression Coping

Attach the Impression Coping (Buccal)

▶ Pick-up Impression Coping:Regular(ø4.8) SIP 4810N
Remove the healing Abutment using a 1.2 hex driver. Place the impression coping in the implant and tighten the guide pin of choice.

Attached Impression Coping (Lingual)

Connect the impression coping with adjacent teeth using an unshrinkable GC pattern resin to prevent a possible positional change when transferring the impression.

Custom Tray

▶ Ensure the correct position of the access holes and the guide pin by trying-in the custom tray that is fabricated in the laboratory.
Apply the adhesive material inside of the impression body to enhance the stable fixation with the impression material.

Apply the adhesive material inside of the custom tray

Inject light-body impression around the impression coping.

Fill the custom tray with the heavier-body impression

Impression transferring

Exposed guide pin on the custom tray

Detaching the guide pin

The Impression body

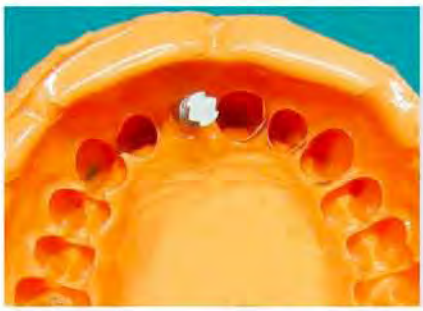
Laboratory Procedure

§ **Implant Analog**

▶ ◎ Diameter : Narrow Ø3.8 / Regular, Wide Ø4.5(mm)
◎ Length : 12 (mm)

Attaching the Implant Analog

▶ Insert the properly chosen Implant Analog into the impression body with the 1.2 hex driver by adjusting the Guide Pin in the Pick-up Impression Coping.



The Implant Analog inserted in the impression body

Fabricating the gum model

▶ Inject the soft tissue replication material around the junctions of the impression coping and analog. Apply the utility wax around the impression body edges in order to fabricate a working stone model.

Pouring the dental stone

▶ Pour the dental stone inside of the impression body
Remove the tray with a 1.2 hex driver after the dental stone gets hardened.

Working Model

▶ The Implant analog and the artificial gum are constructed in the final working model that replicate the condition of the patient's mouth.

§ Angled Abutment

▶
- ◎ Type : Torx (Single Use) / Non-Torx (Bridge Use)
- ◎ Diameter : Narrow Ø3.9 / Regular Ø4.8 / Wide Ø5.8(mm)
- ◎ Cuff : 1.5 / 3(mm)
- ◎ Length : 8(mm)
- ◎ Angle : 15°, 25°

Attaching the Angled Abutment

▶ Attach the Angled Abutment of choice using a 1.7 torx driver, and determine if the modification is required.

Modification of the Angled Abutment

▶ Attach the Abutment on either Implant Analog or Implant Model, and modify the length or the margins of the abutment with cut-off disks or carbide burs, if required.

After the appropriate modification, attach the Angled Abutment on the working model using a 1.7 torx driver.

Connect the Angled Abutment with adjacent teeth using an unshrinkable GC pattern resin to prevent a positional change when transferring the impression.

Fabricating the Ceramic crown

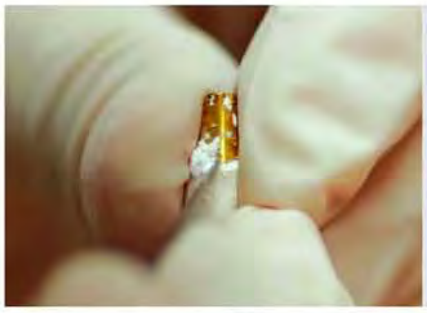
The die fabricated with the spacer

▶ Black-out or relief the die with an appropriate wax

Black-out or relief the die with an appropriate wax

Drying

▶ Dry it for 3 minutes



Trimming

▶ Trim the margins using a carving knife..

Sintering

▶ Dry it after the margins are trimmed. Separate it as the wax melts. Sinter it at 1,140 C

Preparing the glass infiltration

Glass infiltrated (1,120 C)

Remove the excess of glass

▶ Remove the glass using a stone point and sandblast the inside of it
→ Deglassing(1,000℃)

Finished Ceramic Coping

1st Build-Up

▶ Build-up the crown with an appropriately shaded ceramic material

1st Firing

▶ Fire it as described in the material manufacturer's guidelines.

2nd Build-up

▶ Build-up the esthetical enamel layer replica.

2nd Firing

▶ Fire it as described in the material manufacturer's guidelines.

Final prosthesis

▶ Replicate the most suitable contour to the patient and glaze it.

Clinical Procedure

Detaching the Repositioning Jig

▶ Detach the repositioning jig from the working model.

Place the abutment

▶ Place the abutment into the implant with the repositioning jig.
Remove the jig and take the radiograph to ensure that the abutment is correctly seated.

Insert the screw with a hand driver

Tightening

▶ Tighten the screw to 35Ncm using a torque wrench.

The abutment seated on the patient's mouth.

Cementation

▶ Pour an appropriate amount of cement on the final prosthesis and finish the cementation.

The final prosthesis seated on the patient's mouth

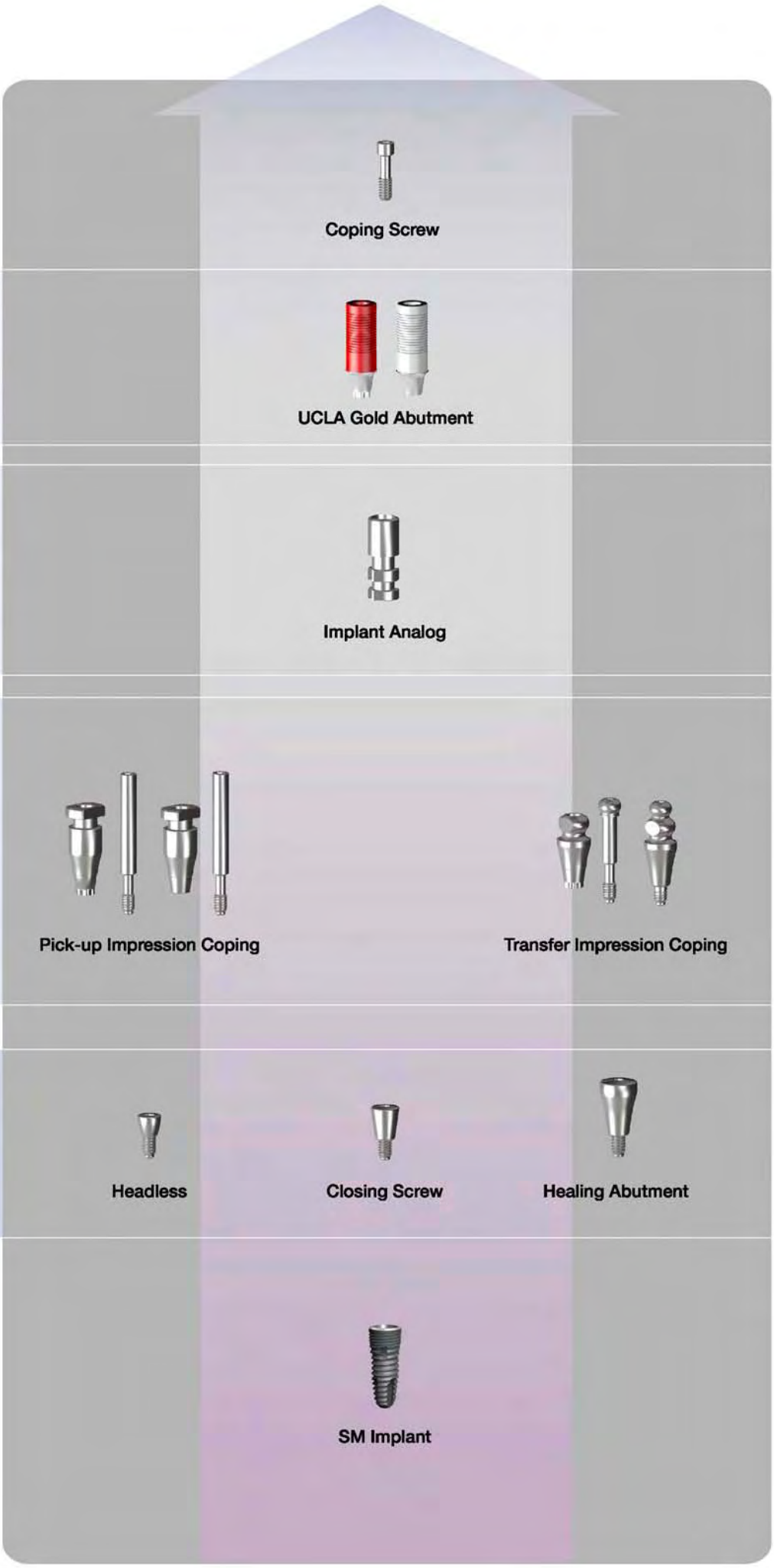
SM Fixture System

UCLA Gold Abutment

#46 #47 Resin Facing

SM Fixture : Regular(∅4.5) SFR4508 X 2
Healing Abutment : Regular(∅5.0), Cuff 2mm, SAH4512
Transfer Impression Coping : Non-torx Type, Regular(∅4.8) SIT4810N X 2
Pick-up Impression Coping : Non-torx Type, Regular(∅4.8) SIP4810N X 2
Fixture Analog : Regular(∅4.5) SAF4512 X 2
UCLA Gold Abutment : Torx Type Regular(∅4.8) Cuff 1mm, Lenght 10mm SAG4810T

UCLA Abutment System



Clinical Procedure

Healing Abutment

◎ Diameter : Narrow Ø4.0 / Regular Ø5.0 / Wide Ø6.0(mm)
◎ Cuff : 1 / 2 / 3 (mm)
◎ Length : 3 / 4 / 5 / 6.5 / 8 (mm)
◎ Use 1.2 Hex Driver
◎ Use for regular/wide Implants

The healing abutment seated on the patient's mouth

Expose the top of implant by removing the Healing Abutment with the 1.2 hex driver.

Pick-up Impression Coping

◎ Type : Torx(Single Use) / Non Torx(Bridge Use)
◎ Diameter : Narrow Ø3.9 / Regular, Wide Ø4.8(mm)
◎ Length : 7 / 10(mm)
◎ As the flat sides are constructed, it efficiently applies to the narrow interdental.
◎ Use 1.2 Hex Driver

Place the impression coping on the implant and tighten the guide pin of choice using the 1.2 hex driver.

Try-in the fabricated custom tray on the patient's mouth and ensure the correct location of the hole.

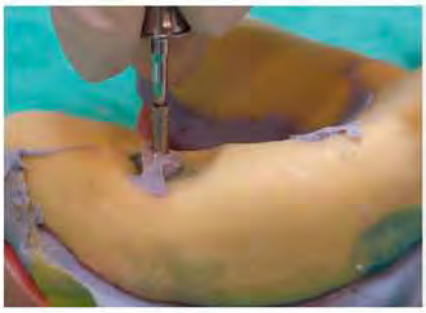
Connect the Angled Abutment with adjacent teeth using an unshrinkable GC pattern resin to prevent a positional change when taking the impression.

Apply the adhesive material inside of the custom tray for stable fixation of impression material.

Inject light-body impression material around the impression coping.

Fill the custom tray with the heavier-body impression material.

Place the loaded custom tray on the patient's mouth and remove excess impression material from the top of the guide pin.



Remove the guide pin from the impression body with 1.2 hex driver and remove the tray from the mouth.

Confirm the accuracy of the impression body. Fabricate an opposing arch impression and make the interocclusal records. Send the impression body with other required components such as implant analog to the laboratory.

Re-attach the Healing Abutment to the implant when the impression transferring is completed.

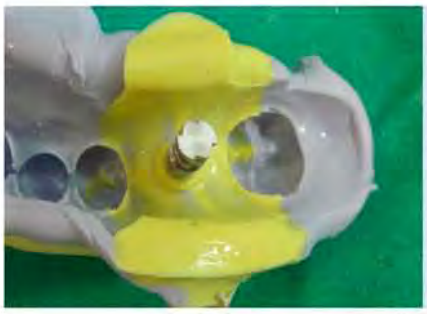
Laboratory Procedure

§ **Implant Analog**

▶ ◎ Diameter : Narrow Ø3.8 / Regular, Wide Ø4.5(mm)
◎ Length : 12 (mm)

Attaching the Implant Analog

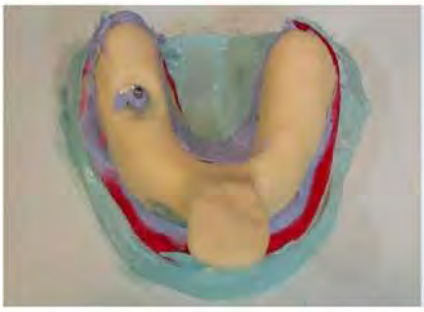
▶ Insert the implant analog of choice into the impression body with a 1.2 hex Driver by adjusting the guide pin.



The Implant Analog inserted in the impression body

Fabricating the gum model

▶ Inject the soft tissue replication material around the junctions of the impression copings and analogs. Apply the utility wax around the impression body edges in order to fabricate a working stone model.



Pouring dental stone

▶ Pour dental stone inside of the impression body
Remove the tray with the 1.2 Hex Driver after dental stone gets hardened.

The finished working model

Fabricating the temporary restoration: Fabricate the temporary prosthesis using the temporary abutment in case of that the esthetics and functions need to be maintained.

Attach the temporary abutment of choice to the implant analog using a 1.7 torx driver and adjust its height by cutting with a proper tool.

Wax-up the screw-typed temporary crown with the temporary and putty resin and send it to the clinician.

Clinical Procedure

Remove the Healing Abutment using a 1.2 hex driver and place the temporary crown. Tighten the screw and fill the hole with a material of choice. Adjust the occlusion.

Laboratory Procedure

§ **UCLA Gold Abutment**

◎ Diameter : Narrow Ø3.9 / Regular, Wide Ø4.8(mm)

◎ Length : 10(mm)

Attach the single typed UCLA Abutment of choice to the implant analog using a 1.7 torx driver.

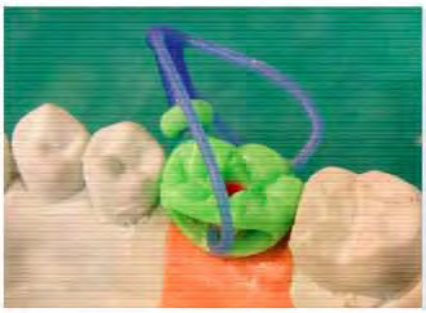
Indicate the line for the part to be cut.

Attach the abutment to the analog or an abutment holder and modify it using a cutting disk.

Modification is completed for the next procedure

1st wax-up in order to maintain the correct location of the screw hole

Form the window on sides of the crown that corresponds to the final prosthesis



Attach an optimal sprue wax according to the prosthesis size and the amount of casting metal to be applied.

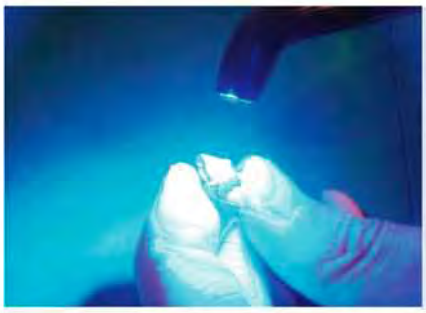
Fix the framework

Cast the framework as described in the material manufacturer's guidelines.

The finished cast framework

Apply the resin adhesive liquid inside the cast framework

Face the cast framework with a properly shaded resin



Photopolymerization as described in the resin manufacturer's guidelines

Adjust the occlusion and send it to the clinician after the conventional polishing.

Clinical Procedure

Seat the final prosthesis on the implant using a 1.7 torx driver

Confirm that the occlusal and esthetic values are qualified, and tighten the torque to 35 Ncm using a torque wrench.

Clinical Procedure

The final prosthesis seated on the patient's mouth

Fill the screw hole with a material of choice and modify the occlusal with resin as required.

SM Fixture System

Solid Abutment(No Modification)

#46 #47 Resin Facing

Cemented Type

SCRP Type

SM Fixture : Wide(∅5.3) SFW 5308

Healing Abutment : Wide(∅6.0) Cuff 2 mm SAH 6024

Impression Cap : Wide(∅5.8) SASI 5810

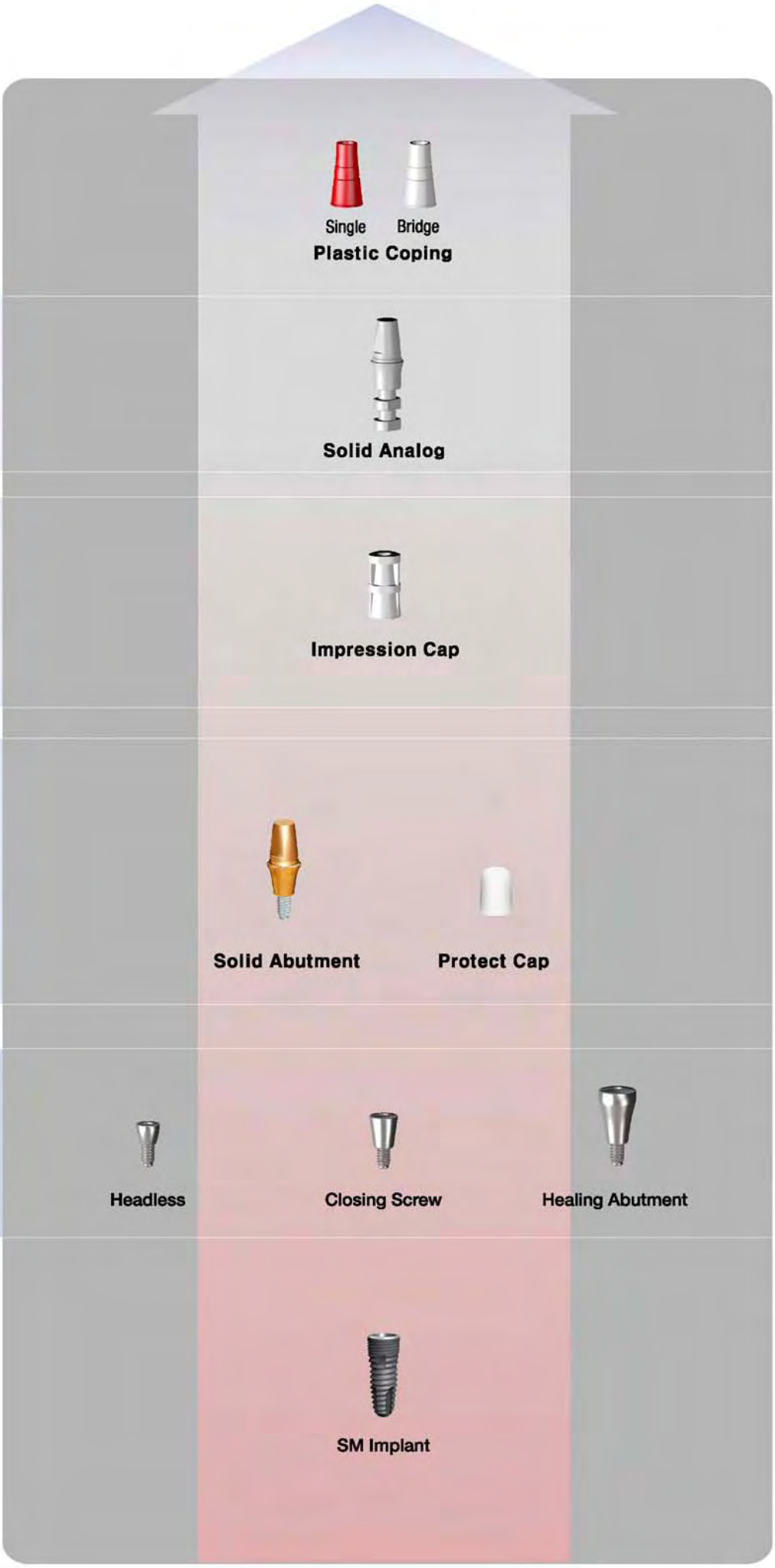
Protect Cap : Wide(∅5.8) SASC 5804

Solid Analogue : Wide(∅5.8) SASA 5804

Plastic Coping : Wide(∅5.8) SASP 5810S

Solid Abutment : Wide(∅5.8) Cuff 2mm, Length 6mm SAS 5826

Solid Abutment System(No Modification)



Solid Abutment

- ◎ Diameter : Narrow Ø3.9 / Regular Ø4.8 / Wide Ø5.8(mm)
- ◎ Cuff : 1.0 / 2.0 / 3.0 / 4.5 / 6.0(mm)
- ◎ Length : 4.0 / 6.0(mm)
- ◎ Use 1.2 Hex Driver
- ◎ Use for Regular/Wide Implants

One or two weeks after second surgery, remove the healing abutment to transfer the impression at a time of choice.

Removing the Healing Abutment

Exposed the top of the implant

Select an appropriate height of Solid Abutment, and attach it to the Solid Driver.

Inserting the abutment in the implant

Tighten the abutment to 35 Ncm with a torque wrench.

Y (Yellow) G (Gray)

§ Impression Cap

▶ ◎ Type : Yellow (Use for 4mm Solid Abutment) / Gray (Use for 6mm Solid Abutment)
◎ Diameter : Narrow Ø3.9 / RegularØ4.8 / Wide Ø5.8(mm)
◎ Length : 10(mm)
◎ To be used when making an impression in order to fabricate a prosthesis.

Attaching the Impression Cap to the abutment

▶ When attaching the impression cap, align its flat surface with the abutment's flat surface, then press it lightly.

Injecting the light body impression material around the cap

▶ Inject the light body impression material through the hole on the side of the impression cap.

Impression material Injection

▶ Inject rubber impression material around the impression cap and fill the tray with heavier body impression material, and then transfer the impression.

Impression taking

Final Impression Body

§ **Protect Cap**

▶ ◎ Diameter : Narrow Ø3.9 / RegularØ4.8 / Wide Ø5.8(mm)
◎ Length : 4 / 6(mm)
◎ The protector of the seated solid abutment

Cover the solid abutment with the protection cap.

▶ Attach the protection cap to the abutment after the impression has been transferred. Protection cap segregates the abutment from the gingival, protects the abutment, and also prevents a plaque generating on the abutment.

Fabricating the temporary crown using the protect cap.

Laboratory Procedure

Solid Analog

◎ Diameter : Narrow Ø3.9 / Regular Ø4.8 / Wide Ø5.8(mm)
◎ Length : 4 / 6(mm)

Inserting the Solid Analog

▶ After ensuring the inserting location for the solid analog, insert it into the impression cap until the clicking sound indicates that it has been fully seated.

The Solid Analog seated on the impression body

Structuring the artificial gum

▶ After the analog has been seated, place the soft tissue replication material around the analog.

Fabricating the diagnosis model

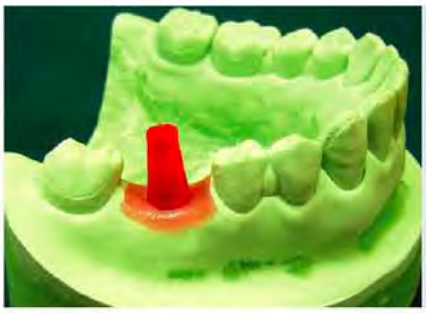
▶ Pour the dental stone inside of the impression body and wait until the dental stone gets hardened.

Fabricating the working model

§

Plastic Coping

▶ ◎ Type : Red(Use for Single Implant) / White (Use for Bridge)
◎ Diameter : Narrow Ø3.9 / RegularØ4.8 / Wide Ø5.8(mm)
◎ Length : 10(mm)



Use of the Plastic Coping

▶ The use of resin wax for waxing-up the artificial crown, might cause the shrinkage deviation. Thus the plastic coping is to be used for waxing-up the artificial crown. Adjust the height or the margins of the plastic coping with the rubber point.

Adjusting the height of the plastic coping with a rubber point

Waxing-up

▶ Wax-up the artificial crown as big as 80% of the natural crown size.

Fabricating a putty index

▶ Fabricate a putty index in order to give even thickness to the porcelain.

Trimming the artificial crown

▶ Place the fabricated index, and trim the artificial crown to achieve its even thickness.

Preparing the spruing

▶ T-handle prevents the cast framework from rotating during the casting procedures.

Spruing

▶ Wax up the contour and occlusal surface of the cast body that opaque is applied.

Trimming the framework with the reamer

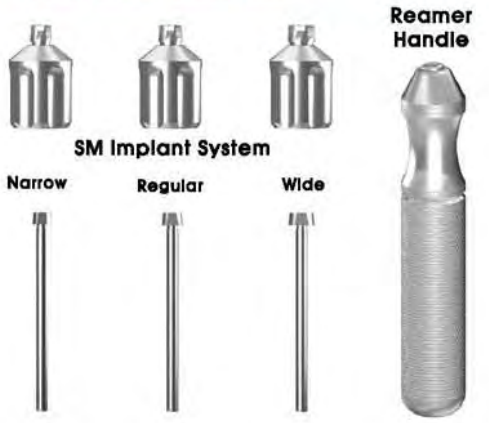
*Prior to seating the SM Solid Analog on the working model, remove the projections on the surface inside of the framework using the reamer or a proper tool.

The finished cast framework

• The correct use of the Reamer •

1. Prepare the corresponding size of the reamer tip to the abutment
2. Fix the framework and cut-off the projections while rotating the reamer in blades direction.
3. Ream the framework until there is no further cutting actions.

*The reamer is recommended to be used for metal framework, thus the cutting force gets reduced when the reamer is applied to non-metal framework.



Apply the opaque over the cast body

Prepare the ceramic press casting

▶ Prepare the casting using an authentic pulse material
▶ Casting will be done in ceramic furnace.

Cast body through the ceramic pressing procedure.

Remove the inserted material and adjust it to fit in the patient's mouth

Finish the final prosthesis

▶ After confirming the optimal fit, finish it with staining and glazing.

Cementation

▶ Pour an appropriate amount of cement on the final prosthesis and finish the cementation.

The final prosthesis seated on the patient's mouth

SM Fixture System

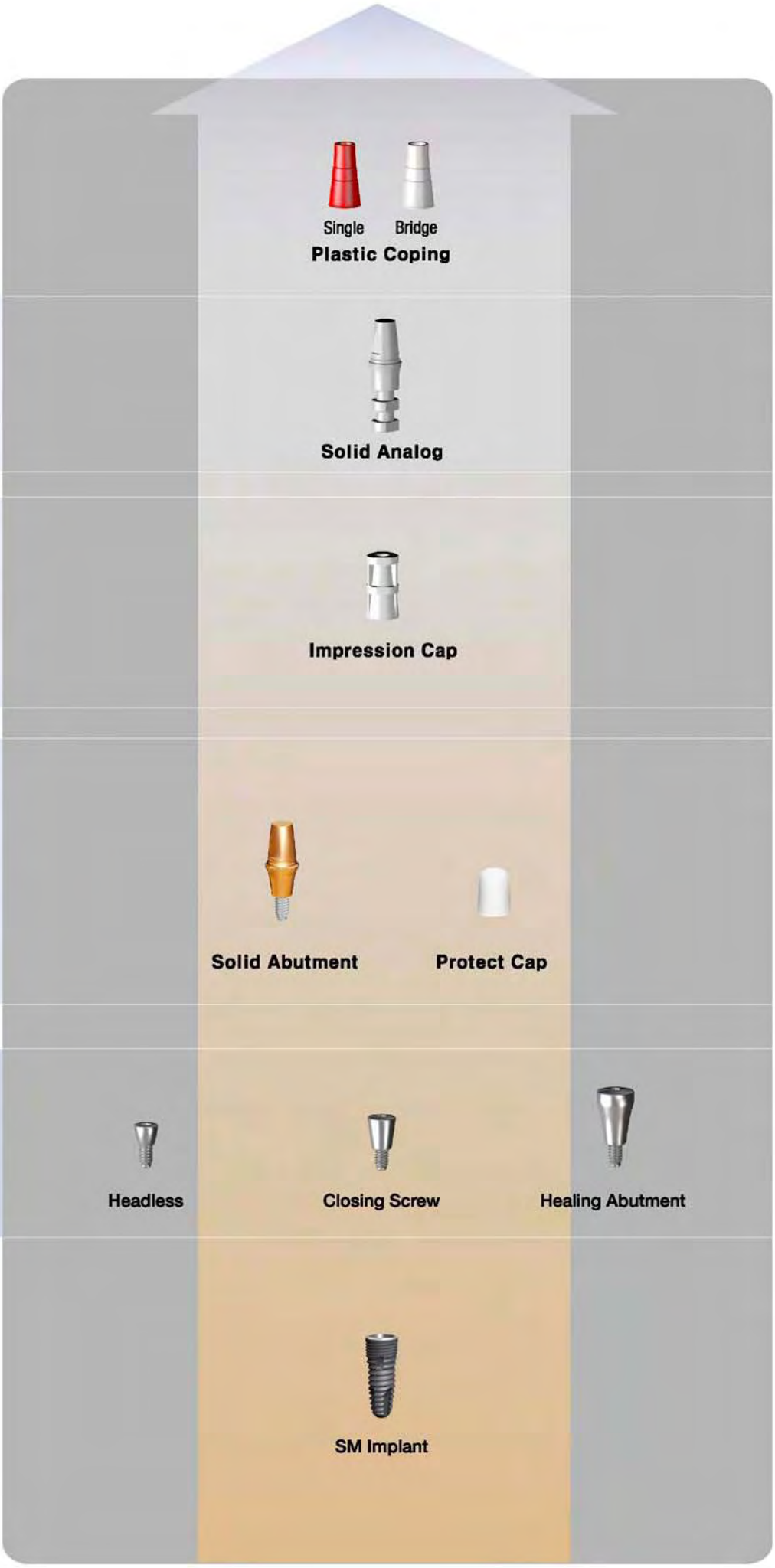
Solid Abutment (Modification)

#46 #47 Resin Facing

Cemented Type

SM Fixture : Wide(∅5.3) SFW 5308
Healing Abutment : Wide(∅6.0) Cuff 2 mm SAH6024
Impression Cap : Wide(∅5.8) SASI 5810
Protect Cap : Wide(∅5.8) SASC 5804
Solid Analogue : Wide(∅5.8) SASA 5804
Plastic Coping : Wide(∅5.8) SASP 5810S
Solid Abutment : Wide(∅5.8) Cuff 2mm, Length 6mm SAS 5826

Solid Abutment System(Modification)



Healing Abutment

◎ Diameter : Narrow Ø4.0 / Regular Ø5.0 / Wide Ø6.0(mm)
◎ Cuff : 1 / 2 / 3 (mm)
◎ Length : 3 / 4 / 5 / 6.5 / 8 (mm)
◎ Use 1.2 Hex Driver
◎ Use for regular/wide Implants

Healing Abutment

▶ SM Fixture Wide(Ø5.3) SFW5308
Healing Abutment SAH6024

Exposing the top of implant after the Healing Abutment has been removed

▶ Remove the Healing Abutment with the 1.2 hex driver.

Solid Abutment

◎ Type : Torx
◎ Diameter : Narrow Ø3.9 / Regular Ø4.8 / Wide Ø5.8(mm)
◎ Cuff : 1.0 / 2.0 / 3.0 / 4.5 / 6.0(mm)
◎ Length : 4 / 6(mm)
Indicating line for 4mm is marked on 6mm abutment.

Placing the abutment on the patient's mouth

▶ Place the Solid Abutment using the Solid Driver and tighten it.

Solid Abutment

▶ Solid Abutment SAS 5826

Impression

◎ Implant-level Indirect Transfers for closed Tray, Transfer Impression Technique.
Indirect transfer impression coping is designed to replicate the soft tissue profile as well as the position of the implant and torx that enhances fabricating a working model. It provides the coordinating information for fabricating a custom tray and a diagnosis working model. Since the impression coping is remaining as connected to the implant after the removal of closed tray, disconnect the impression coping and send the impression body with the analog to the laboratory.

Try-in the impression tray

▶ Select an appropriate tray to the patient's mouth and verify its fit by trying-in.

Syringe the light body impression material around the abutment.

Impression Material Injection

▶ Inject rubber impression material around the abutment and fill the tray with heavier body impression material, and then transfer the impression.

The finished impression body

Laboratory Procedure

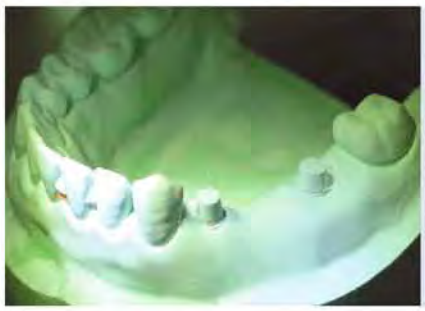
§ **Solid Analog**

▶ ◎ Diameter : Narrow Ø3.9 / Regular Ø4.8 / Wide Ø5.8(mm)
◎ Length : 4 / 6(mm)

The Abutments that require the path adjustment

Adjust the path on the working model

▶ Fabricate the working model for path adjustment, adjust the path by milling.



The path adjusted working model

Fabricate the reduction guide cap with the resin

▶ Fabricate the reduction guide caps with the GC pattern resin and connect the caps with the resin to prevent a positional change of the caps.

Place the reduction guide caps on the patient's mouth, and determine the amount that needs to be reduced.

Cut-back the abutment according to the indication of the reduction guide caps.

The modified abutments

Inject light body impression material around the abutment

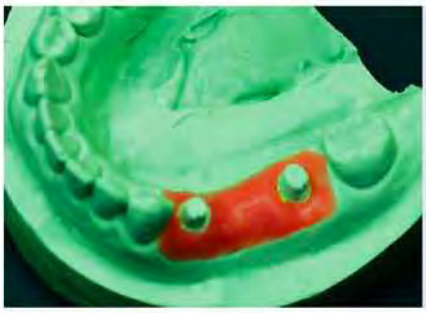
Fill the tray with heavier body impression material, and then transfer the impression

Laboratory Procedure

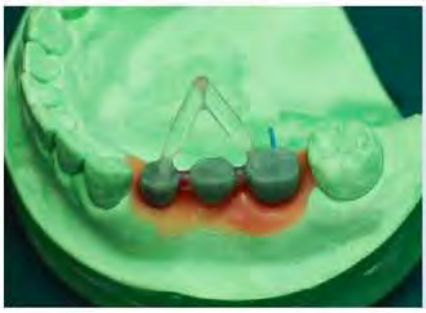
The final impression body

Making the working model

▶ Fill the dental stone in the impression body, and then detach the impression body when the stone gets hardened.



The finished working model



Waxing-up

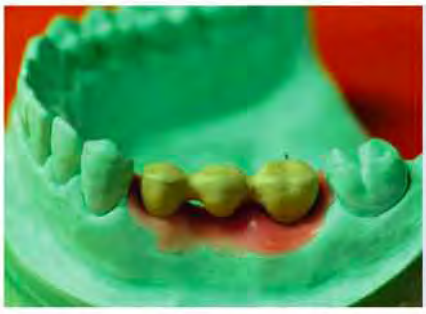
▶ Wax-up the artificial crown as big as 80% of the natural crown size

Spruing

▶ Be aware of the wax pattern being placed in the middle part of the ring since the concentrated heat affects the middle part of the ring.

Cast framework

Confirm a passive fit on the working model



Apply the opaque layer

Build-up the artificial crown

Firing

▶ Apply the ceramic material with the corresponding shade to the patient and fire it as described in the material manufacturer's guidelines

Finishing the final prosthesis

▶ Replicate the most suitable contour to the patient and glaze it.

Cementation

▶ Pour an appropriate amount of cement in the final prosthesis and finish the cementation.

The final prosthesis seated on the patient's mouth

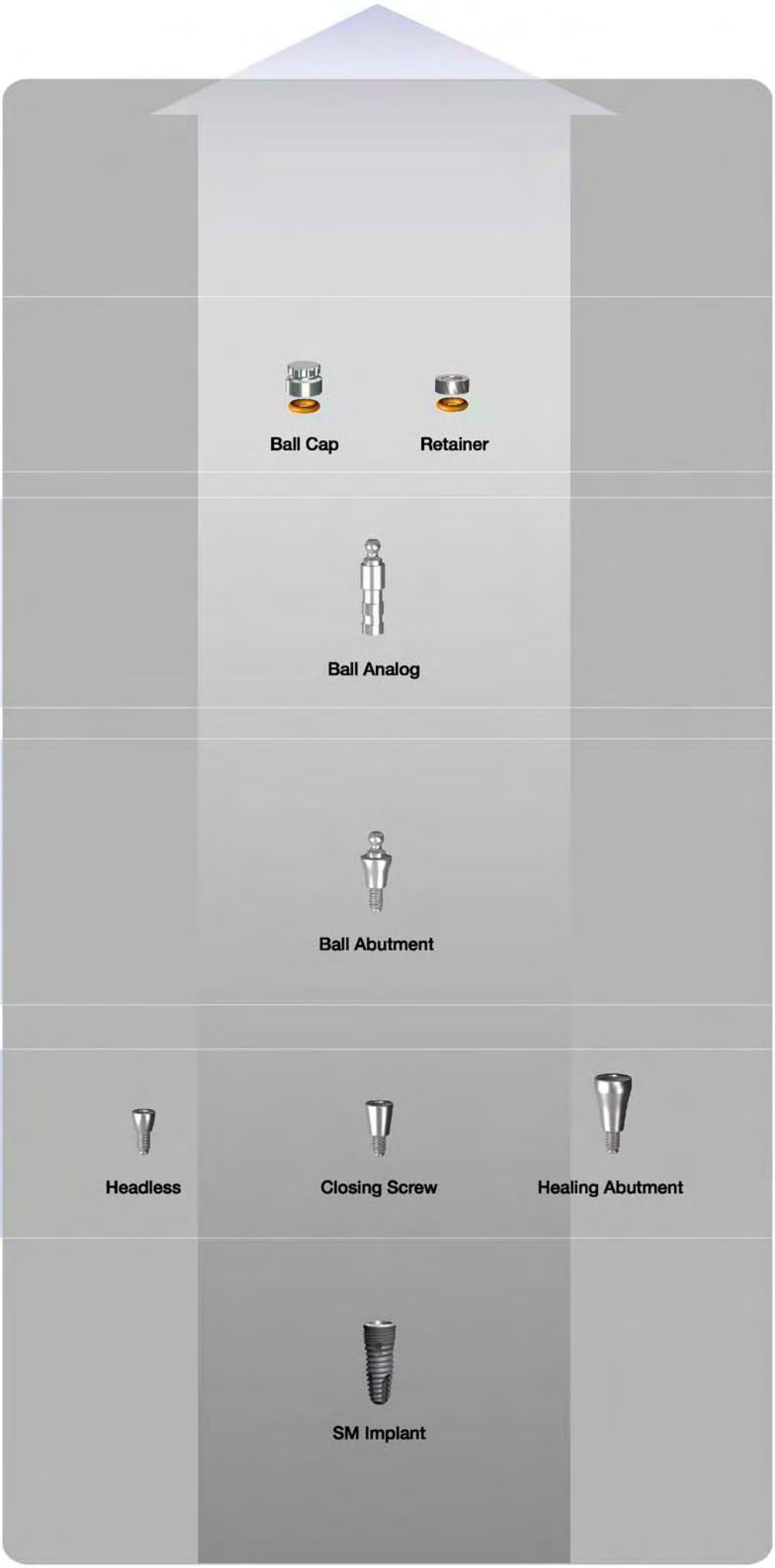
SM Fixture System

Ball Abutment (Overdenture)

#46 #47 Resin Facing

SM Fixture : Regular(∅4.5) SFR 4512
Healing Abutment : Regular(∅5.0) Cuff 2 mm SAH 5024
Ball Abutment : Regular(∅4.5) SAB 4502
Ball Analogue : (∅3.5) SABA 3510
Retainer : (∅5.0) RT 0520

Ball Abutment System(Overdenture)



Clinical Procedure

§

Healing Abutment

◎ Diameter : Narrow Ø4.0 / Regular Ø5.0 / Wide Ø6.0(mm)
◎ Cuff : 1 / 2 / 3 (mm)
◎ Length : 3 / 4 / 5 / 6.5 / 8 (mm)
◎ Use 1.2 Hex Driver
◎ Use for regular/wide Implants

Healing Abutment

▶ SM Fixture Regular(Ø4.5) SFR4508
Healing Abutment SAH5024

Exposing the top of implant after the Healing Abutment has been removed

▶ Remove the Healing Abutment with the 1.2 Hex Driver.

Ball Abutment

◎ Diameter : Narrow Ø3.9 / Regular, Wide Ø4.5 (mm)
◎ Cuff : 2 / 4(mm)
◎ Use for Regular/Wide Implants

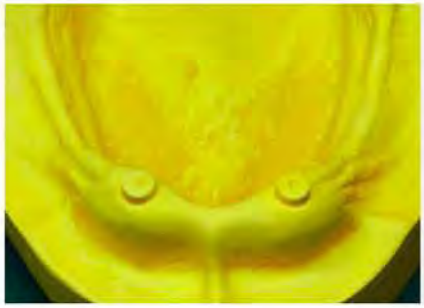
Inserting the ball abutment into the implants

▶ Select Ball Abutment components according to the transmucosal height requirements. Place the selected Ball Abutments into the implants and tighten to 30Ncm with a ratchet driver. Verify the fit and contour through a radiograph.

Ball Abutment

▶ Ball Abutment SAB 4502

⦿ Indirect Technique



The stone model for the custom tray

▶ Make an alginate impression body and pour the dental stone in the impression body to fabricate a working model for custom tray.

Transferring the impression to fabricate the custom tray

Inject light body impression material around the abutments.

▶ Fabricate the custom tray with light-cured or autopolymerizing tray material.

Apply the adhesive layer to the custom tray in order to enhance the stable fixation with the impression body.

Fill the heavier impression material in a single direction to prevent any porosities.

Impression transferring

▶ Place the loaded tray in the patient's mouth and transfer the impression.

The impression body

▶ Confirm the fit and contour and send it to the laboratory.

MEMO

Laboratory Procedure

Ball Analogue

◎ Diameter : Ø3.5 (mm)
◎ Length : 10 (mm)

Ball Analogue 연결

▶ 인상체 내면에 Ball Analogue를 위치시킨다.

Boxing

Stone 주입

▶ 기포가 생기지 않도록 세심하게 석고를 주입한다.

작업 모형 완성

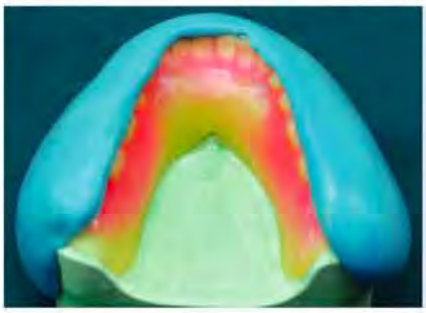
▶ 모형을 Boxing한 라인만큼 Margin과 Pad가 확실히 인기 되었는지 확인 후 트리밍해서 작업 모형을 완성시킨다.

Fabricating the Wax Rim

▶ Fabricate the wax rim to evaluate the occlusal registration of the patient.
Send the wax rim back to the laboratory after the occlusal registration is confirmed.

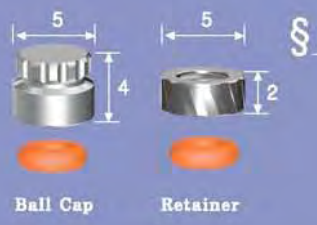
Making a stabilized denture wax try-in

▶ Fabricate a stabilized denture wax try-in.
Place it into the patient's mouth and verify the occlusion and a passive fit.



Fabricate the putty index

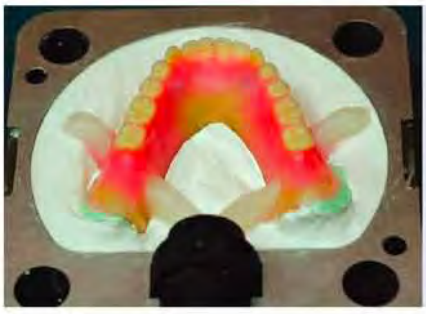
▶ When a passive fit is confirmed, fabricate the index with putty resin.
(The printing process to replicate the dental alignment for next procedures)



Retainer / Ball Cap

▶ ◎ Diameter : Ø5.0
◎ Length : Ball Cap 4(mm) / Retainer 2(mm)

Place the putty index on the working model and modify the ball abutments, if required.



Place a stabilized denture wax try-in on the flask

▶ When adjustments are done, place the denture in the working model and carry out the 1st casting procedure after sealing.

2nd casting procedure around the dental.

3rd casting procedure

Block-out the undercuts around the abutments

▶ Block-out the undercuts beneath the O-ring to prevent any ingress of resin.

Clean the flasks until there is no wax remaining.

Curing process through the Vacuum Pressing

▶ Repeat the injections of the resin during the dough stage at a proper pressure.

Finish the Curing

▶ Final polishing needs to be conducted after the final occlusal adjustment has been carried out.

Denture Polishing

Finished denture

▶ Occlusion of the finished denture will be verified in the patient's mouth, thus the mounted articulator and the denture need to be sent together to the clinician.

MEMO

Replace the O-ring

▶ Replace the O-ring with the one for final use.

Attaching the denture on the abutments

▶ Evaluate the final retention

The final prosthesis seated on the patient's mouth

⊙ Direct Relining Technique

Apply the die spacer on top of the balls

▶ To print the locations of the ball abutments on the bottom surface of the prosthesis.

Location marks on the prosthesis

▶ Move on to next procedure when the location marks are confirmed.

Relieve the holes over the retainers

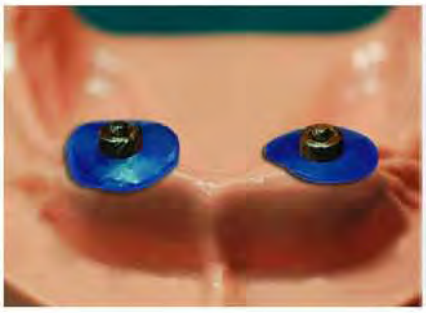
▶ Relieve the appropriate size of the holes for the resin to ingress slowly

Try-in the prosthesis on the patient's mouth

▶ Ensure that the hole locations are corresponding with the ball abutments.

Sterile the area around the O-ring abutments

Attach the retainers to the O-ring abutments



Place the rubber dam underneath the O-ring abutments

Block out

▶ Block out the bottom part of retainers and ball portion using a photopolymerization resin that is use for block-out.

Trimming the inside of the denture by a carving knife.

▶ Clean the inside of the denture in case of that dregs stick to it.

Inject the resin and place it on the patient's mouth.

* Special care is required to avoid an improper seat of denture.

Remove the rubber dam from inside of the denture.

Place the prosthesis on the patient's mouth.

Hole Polishing

▶ After placement of the prosthesis and confirmation of the final occlusion, finish it with final polishing.

Note

Note

Note

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