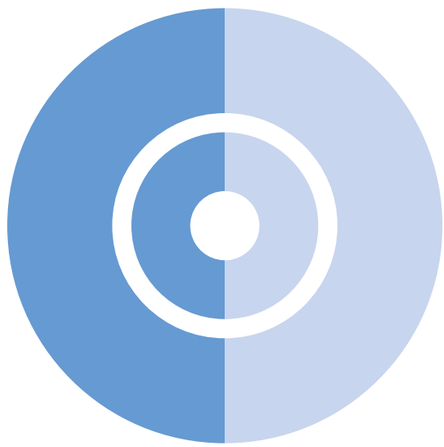
Luna

Surgical & Prosthetic Manual

SHINHUNG

2164-1100620/3000/Rev. 0



Luna

Luna System

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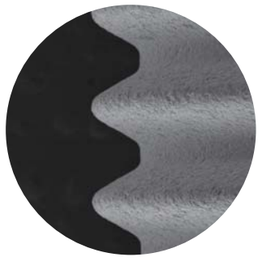
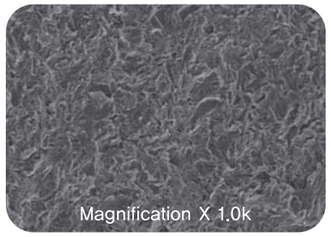
RBM^{Plus} Surface

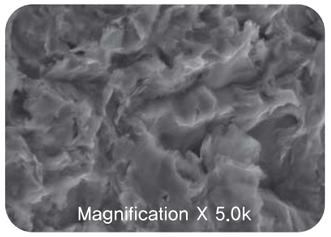
Characteristics of RBM^{Plus} Surface

1. RBM surface proven stable in the long term
2. Osseointegration Securely ensured in various clinical cases
3. Use of HA Blast media ensuring biocompatibility and stability
4. Realization of optimal roughness(Ra 1.5㎛)
5. Clean RBM surface through 30 steps cleaning and UV- cleaning process
6. Safety RBM surface ensured through 5 steps stability test

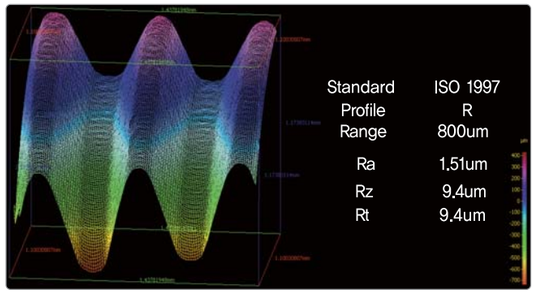
SEM *Scanning Electron Microscopy*



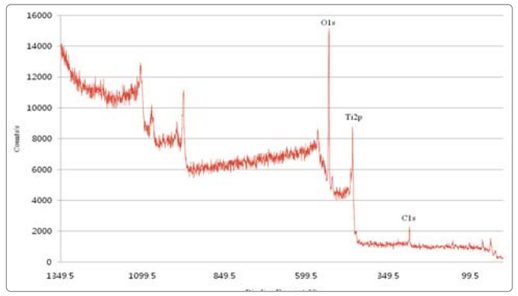




Roughness



XPS *X-ray Photoelectron Spectroscopy*



IC *Ion Chromatograph*

Test Items	RBM Plus	A Company	B Company
F^-	N.D.	0.09	0.01
Cl^-	N.D.	0.07	0.09
NO_3^-	N.D.	0.41	0.06
PO_4^{3-}	N.D.	N.D.	0.06
SO_4^{2-}	N.D.	0.05	0.03

Note : (1)N.D. = Not detected
(2)Unit = ppm(mg/kg)

5-Step *Self Inspection*

- 5th Step Cytotoxicity Test
- 4th Step Surface Extraction Test
- 3rd Step Cleaning Stability Test
- 2nd Step SEM/EDX, Roughness Test
- 1st Step Macroscopic Test for all Products

Mg TITANATE Surface

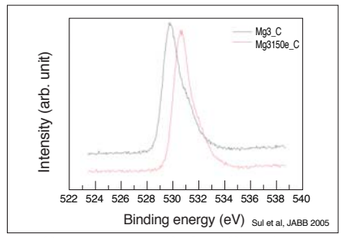
PCT/KR2004/000460, KR10-0487119, KR10-0814355, PCT/KR2004/000519, KR10-0487132

The world's first new material, Mg TITANATE implant, developed based on Biochemical Bonding Theory of Osseointegration accelerates fast and strong Biochemical Bonding in early stage (before 6th week) and ultimately creates synergy with Mechanical Interlocking in later stage (since 6th week).

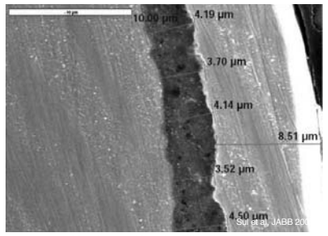
(Sul YT Thesis, Göteborg University. Sul et al CIDRR 2003, Biomaterials 2005, IJP 2005)

Surface Innovation

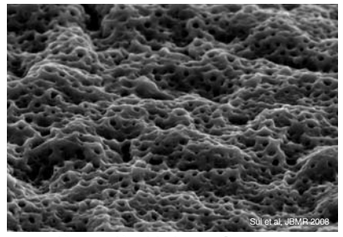
1. Osseoattractive Surface Chemistry
2. Optimal Oxide Thickness
3. Porous Double Layer Structure
4. Crystal Structure



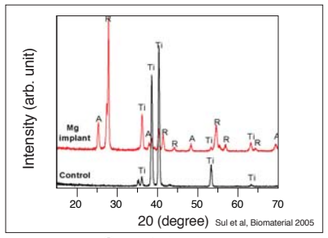
Osseoattractive Surface Chemistry



Optimal Oxide Thickness

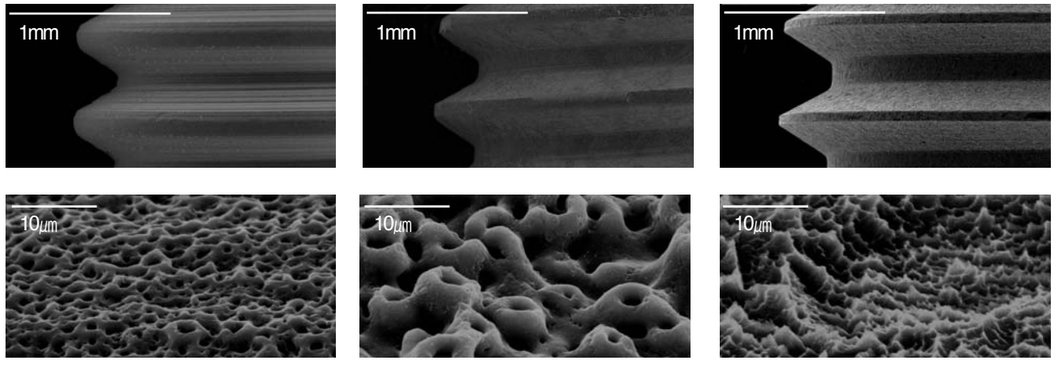


Porous Double Layer Structure



Crystal structure

Comparison in Surface Structure



Mg TITANATE | A(oxidized surface) | B(acid etched surface)

Case Planning & Preperation

Pre-surgical Examination

Prior to any surgery a general health examination is required which should cover the overall health status of the patient as well as including clinical and X-ray exams. Additionally the shape of the maxillae and mandible, condition of mucosa, dental treatment history, the TMJ status and verification of the bone density and alveolar bone height may also be required. Pathologic symptoms in oral cavity and alveolar bone should be treated prior to implant procedure.
The following contra indications for implant surgery should be well noted:

Contraindications for implant surgery

- When a patient's overall physical condition is unsuitable for surgery or when any incomplete outcome of the procedure is expected
- When a patient is mentally handicapped or patient has unachievable expectation of treatment result
- When a patent suffers from drug or alcohol abuse
- When a patient has inappropriate alveolar bone quantity or quality for implant installation
- When X-rays indicate that the area to be treated is in pathologic condition

Treatment planning before surgery

Articulate both maxillary and mandibular models and examine the occlusal condition and inter-arch distance. The surgical stent made with diagnostic cast enables you to see the optimal area and direction for implant placement in terms of anatomical shape, function, esthetics, hygiene, and phonetics.

Surgical Protocol

Decide on a one stage or two stage procedures. Consider if early loading is an option and check bone quality

Information to patient

Full information on pre-surgical examination results, risk of surgery, and expected results must be provided to every patient

Osseointegration of implant

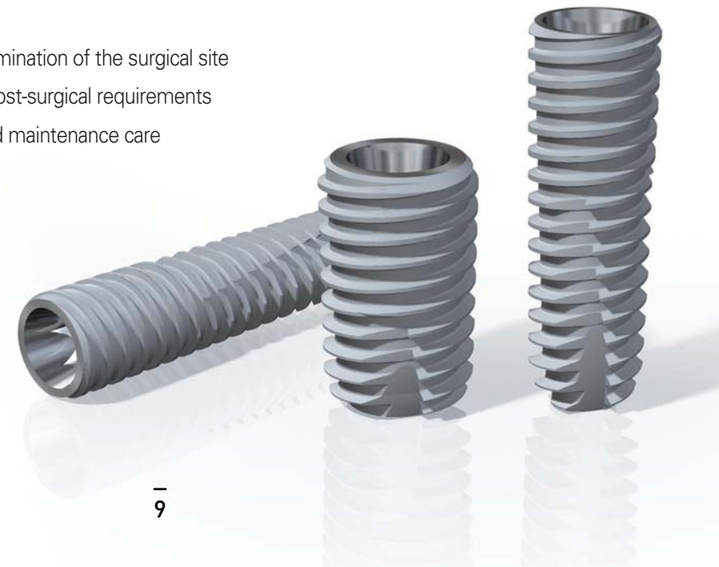
- Any implant early initial stability depends on the quality of bone and surgical condition
- Excess stress during the healing period should not be placed on the bone

Influencing Factors of osseointegration implant

- Bone quantity
- Bone quality
- Diameter of drilling
- Depth of drilling

Post-surgical consideration

- Infection control
- Prevention of contamination of the surgical site
- Awareness of the post-surgical requirements
- Follow up check and maintenance care



Luna System

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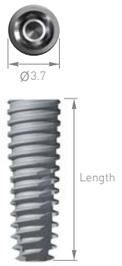
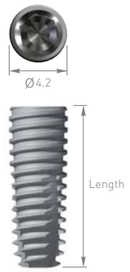
Luna Fixture



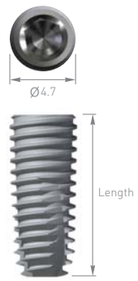
NP Ø3.5

Length(mm)	8.5	10	11.5	13	15



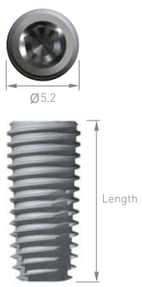
RP Ø4.0

Length(mm)	7	8.5	10	11.5	13	15



RP Ø4.5

Length(mm)	7	8.5	10	11.5	13	15



RP Ø5.0

Length(mm)	7	8.5	10	11.5	13	15

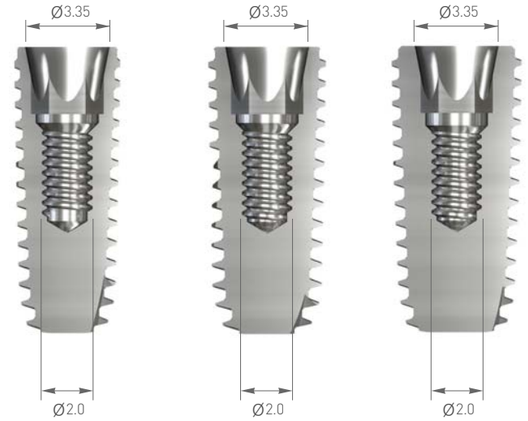
Fixture Specification

NP(Narrow Platform)

Ø3.5 Fixture

RP(Regular Platform)

Ø4.0 Fixture Ø4.5 Fixture Ø5.0 Fixture



Color Coding

NP(Narrow Platform) / Color : Purple

RP(Regular Platform) / Color : Blue

*Fixture 내부 체결구조에 따라 NP는 Purple, RP는 Blue로 쉽게 구별이 가능합니다.

NP

RP

Scale 1:1.5

Drill Sequence

(● : optional)

FIXTURE	BONE QUALITY	Ø2.0	F3.5 Drill	F4 Drill	F4.5 Drill	F5 Drill	Counterbore 1 STEP	Counterbore 2 STEP
								
3.5	SOFT	●						
	MEDIUM	●	●				●	
	DENSE	●	●					●
4.0	SOFT	●	●				●	
	MEDIUM	●	●	●			●	
	DENSE	●	●	●				●
4.5	SOFT	●	●	●			●	
	MEDIUM	●	●		●		●	
	DENSE	●	●		●			●
5.0	SOFT	●	●		●		●	
	MEDIUM	●	●		●	●	●	
	DENSE	●	●		●	●		●

Drill Depth Guide / Medium Bone Fixture Ø5.0 X 11.5 mm

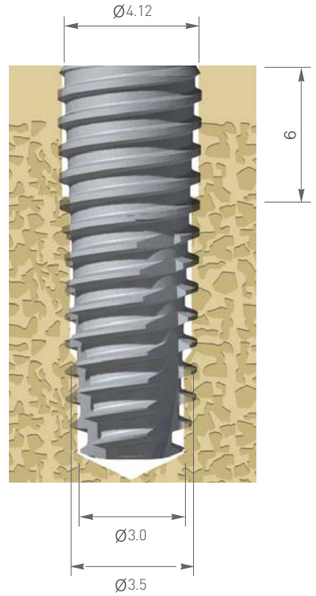
Fixture : Ø4.0 x 11.5 mm

Soft Bone

Drill Ø2.5/3.0 x 11.5 mm

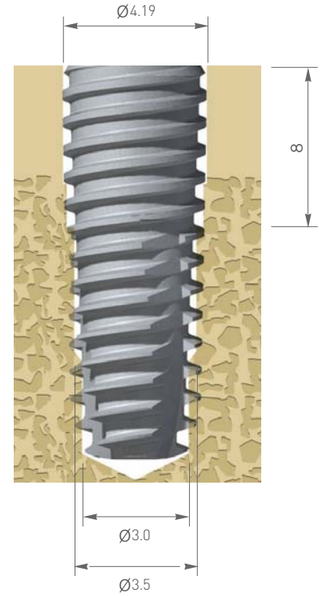
Medium Bone

Drill Ø3.0/3.5 x 11.5 mm
Counterbore 4.0



Dense Bone

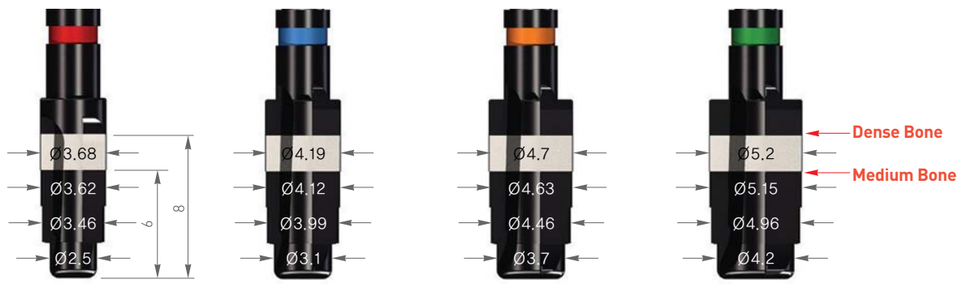
Drill Ø3.0/3.5 x 11.5 mm
Counterbore 4.0



Counterbore

Counterbore has the advantage of achieving the desired torque by adjusting the drilling depth according the thickness of cortical bone and bone density.

SCB35	SCB40	SCB45	SCB50



Surgical Kit & Instruments

Surgical Kit

Surgical Kit Code LSK01

2.0 Drill

Fixture 3.5 Drill

Fixture 4.0 Drill

Direction Indicator Short

Direction Indicator Long

H/P Fixture Driver NP Short

H/P Fixture Driver NP Long

H/P Fixture Driver RP Short

H/P Fixture Driver RP Long

T/W Fixture Adapter NP Short

T/W Fixture Adapter NP Long

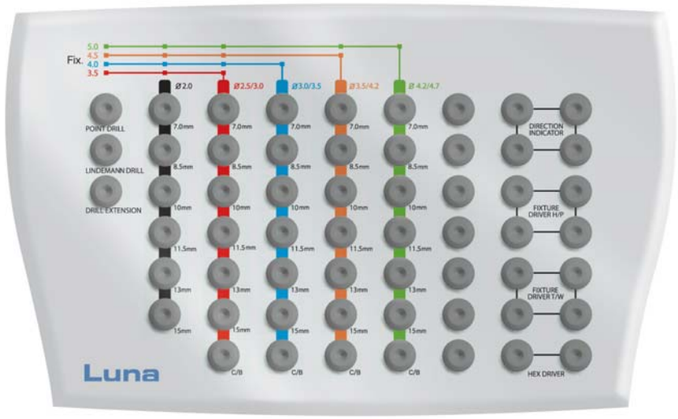
T/W Fixture Adapter RP Short

T/W Fixture Adapter RP Long

Point Drill

Lindermann Drill

Drill Extension



Counterbore

Fixture 4.5 Drill

Fixture 5.0 Drill

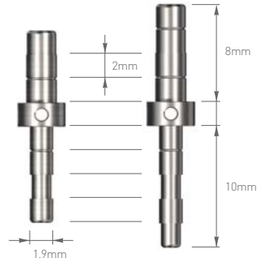
Hex driver Short (10mm)

Hex driver Long (16mm)

Surgical Kit & Instruments

Instruments

Direction Indicator

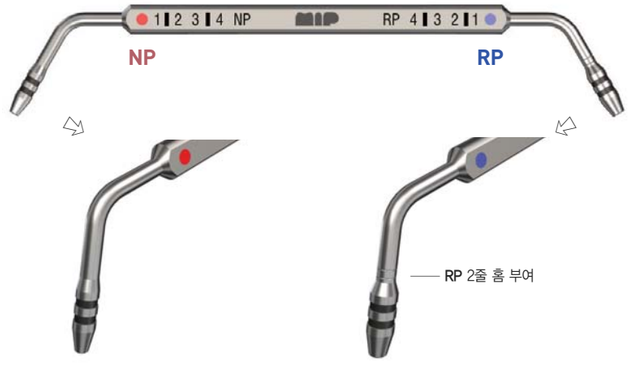


T/W Slot Adapter

Fixture Driver

Depth Gauge

Gingiva Gauge

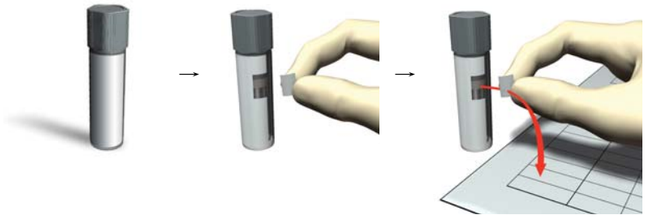


Titanium Square Bowl

Surgical Procedure

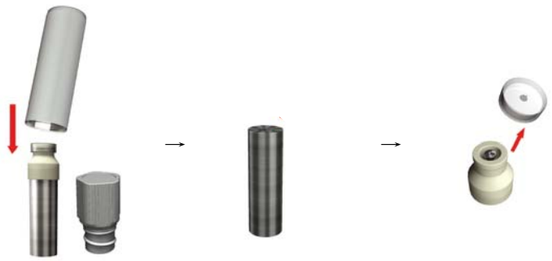
Packaging

- Each implant is packaged in a double aseptic vial system.
- The outer package has a label imprinted with the product name of the implant.
- Two peel-off labels on outer vial can be affixed directly to patient's chart.
- The outer implant vial is colored white, and the two labels indicate the diameter and length of the implant.



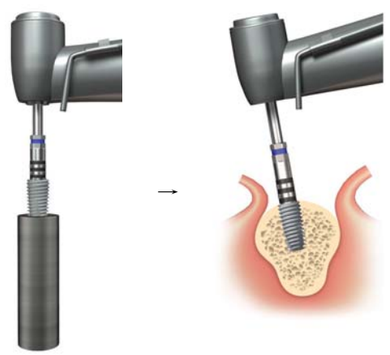
Detaching the cover screw cap from titanium case (inner vial)

- Open the outer non-sterile packaging of the implant and remove the sterile titanium case containing the implant and cover screw
- The diameter and length of the fixtureare imprinted on the titanium case.
- Remove the cap containing the cover screw.



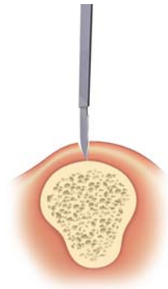
Implant placement

- Connect the fixture driver to the contra-angle and pick up the implant.
- Insert the implant, ensuring that the speed of the handpiece is no more than 20~40rpm (low speed)
- If needed, use a manual torque wrench.



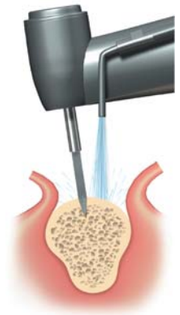
1. Incision

- Make an incision and lift the flap
- In case of flapless surgery, remove the tissue plug, using tissue punch.



2. Point Drill

- Mark the implant position on the bone, using a point drill
- Recommended speed 1,200~1,500RPM



3. Ø2.0mm Drill

- Drill the site using Ø2.0mm Stopper drill to a suitable depth
- Recommended speed 1,200~1,500RPM (Drilling Torque: 35~45Ncm)

4. Depth Gauge

- Check the depth of drilling after using Ø2.0mm Stopper Drill.
- Laser marking on the depth gauge indicates 7, 8.5, 10, 11.5, 13, 15mm respectively.

5. Direction Indicator

- Check the orientation, location and occlusion using direction indicator

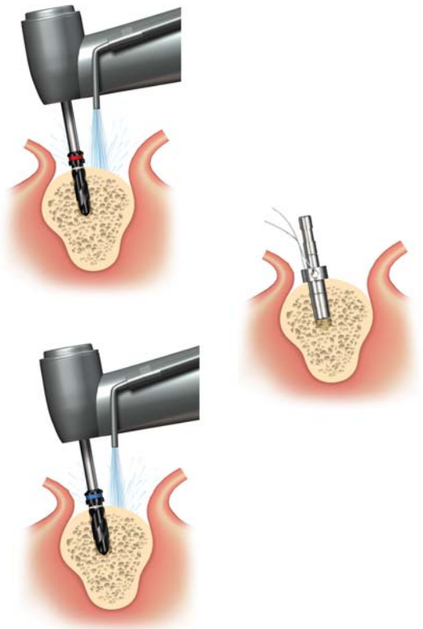
Surgical Procedure

*Option (Lindermann Drill)

Lindermann Drill can be used for changing the direction of initial drilling and cutting extraction ridge of the tooth

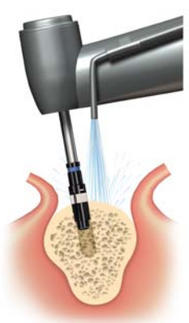
6. Final Drilling

- In order to check the drilling direction use the Direction Indicator and the appropriate drill, step by step, depending on the bone design.
- Recommend is 1000~1200RPM
  (Drilling Torque: 30~45Ncm)
- Recommended speed 1,200~1,500RPM
- Drilling Torque: 30~45Ncm
- The straight stopper drill is used for 7mm and 8.5mm fixture and the diameter of this drill is smaller than over 10mm step drill. In case cortical bone is thick, 7mm drill can be used as an intermediate procedure after 2.0 drill.



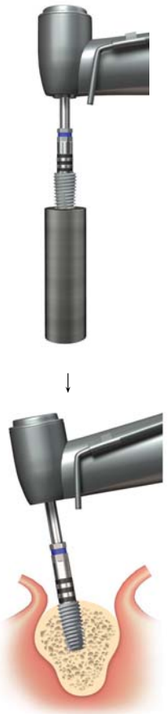
7. Counterbore

- Use the Counterbore appropriately according to the bone density and thickness of cortical bone.
- Recommend Speed is 500~800RPM
  (Drilling Torque: 30~45Ncm)



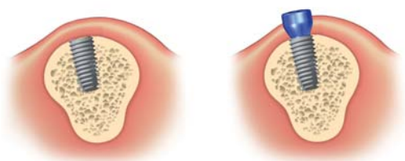
8. Fixture Installation

- After connecting the fixture with a Handpiece Fixture Driver, insert the implant at low speed (20~40RPM)
- If needed, use a manual torque wrench.
- Do not exceed 45Ncm



9. Suture

- After connecting the Cover Screw, suture the flaps.
- In case of one-stage surgery, suture the flaps after connecting the Healing abutment or Temporary abutment.



Luna System

CONTENTS

Restoration Guide

Cement-Retained

		Single	Multiple	Overdenture
Simple Abutment		△	○	
Duo Abutment		○	○	
Contour Abutment		○	○	
Goldcast Abutment		○	○	
Angled Abutment		○	○	

Screw-Retained

Goldcast Abutment		○	○	
Screw Abutment			○	

Ball-Retained

Ball Abutment				○

※ Note : △ 제한적 케이스에 적용

Torque Guide

Cover Screw Impression Coping Transfer Impression Coping Pick-up Healing Abutment Screw Abutment Healing Cap		Manual 10Ncm 이하
Screw Abutment Cylinder		 20Ncm
Simple Abutment Screw Abutement Ball Abutment		 30Ncm
Duo Abutment (NP) Contour Abutment (NP) Angled Abutment (NP) Goldcast Abutment (NP) Temporary Abutment (NP)		 20Ncm
Duo Abutment (RP) Contour Abutment (RP) Angled Abutment (RP) Goldcast Abutment (RP) Temporary Abutment (RP)		 30Ncm

Prosthetic Procedures

Abutment Level

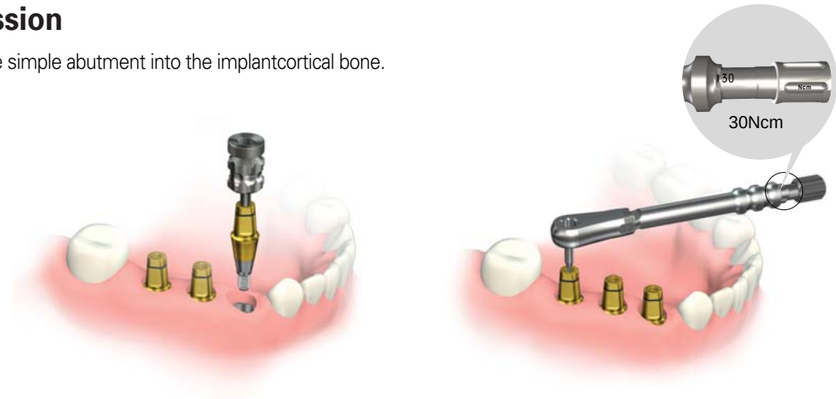
Simple Abutment

Indication

- For normal cement-retained prosthesis.
- One body (abutment & screw) structure
- Tightening torque : 30Ncm

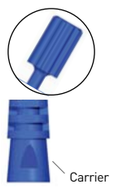
Impression

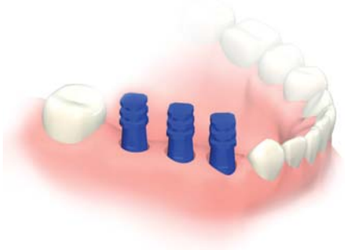
- Position the simple abutment into the implantcortical bone.



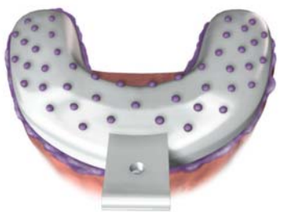
- Unless additional preparation is needed, place the impression cap onto the simple abutment.

The Carrier cap can be used as an Impression cap





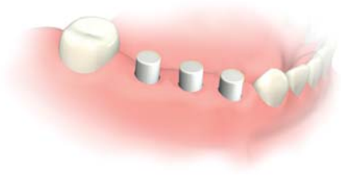
- Take an abutment level impression



Simple Abutment

· After taking an impression, insert the laboratory analog into the impression cap.

· After the impression taking, place the healing cap over abutment.



· Using soft tissue silicon, reproduce the soft tissue on the model.

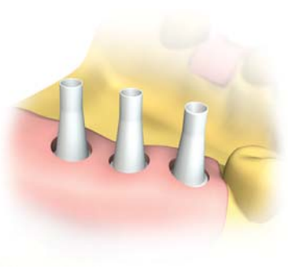
Note

◎ Simple abutments should be placed at abutment level. When the interocclusal distance is not sufficient and an adjustment of the abutment is necessary, adjust following the laser marking.

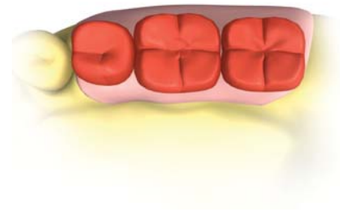
◎ Simple abutments are recommended for multiple cases.

Laboratory Procedure

· Connect a burn-out cylinder onto the simple abutment analog of the model.



· Wax-up



· Complete the final restoration as routine lab procedure.

Placing final restoration

· Cement the final restoration on the abutment.

Prosthetic Procedures

Fixture Level

Duo Abutment | Contour Abutment | Angled Abutment | Goldcast Abutment | Temporary Abutment

Analog

Hex | Non-Hex

Impression Coping Transfer

Hex | Non-Hex

Impression Coping Pick-up

Cover Screw | Healing Abutment

Fixture

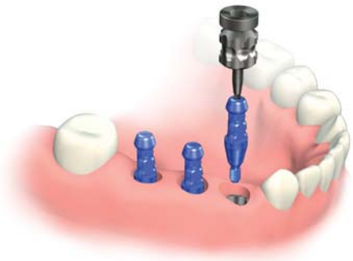
Duo Abutment

Indication

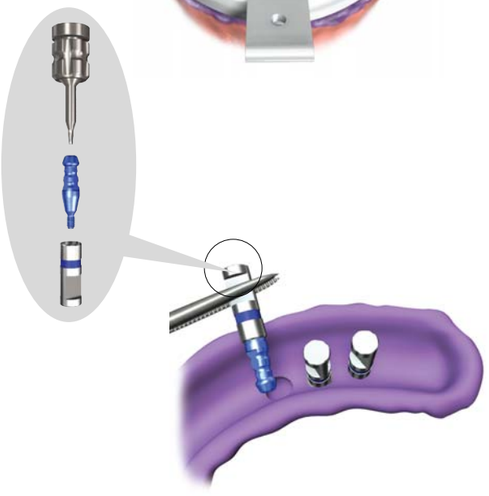
- For normal cement-retained prosthesis.
- Separated the abutment & screw structure
- Tightening torque : 30Ncm

Impression

- Position the Impression coping into the implant and take a fixture level impression.



- After taking an impression, take the impression coping out of the mouth and connect with an analog.

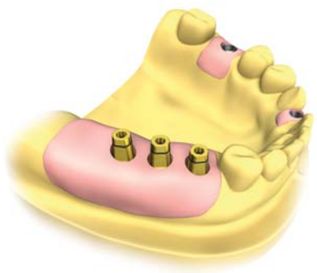


- Place the impression coping with an analog into the indent of impression material.

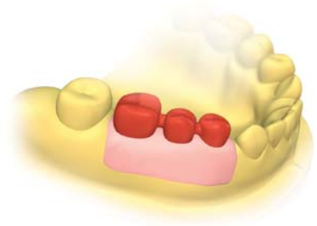
Duo Abutment

· Reproduce the anatomy of soft tissue on the model using soft tissue modeling silicon

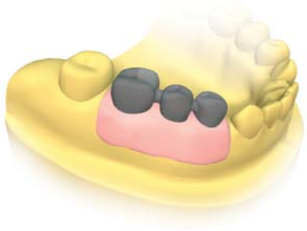
· After taking an impression, take the impression coping out the mouth and connect with an analog.



· Cut the burn out cylinder appropriately and wax-up

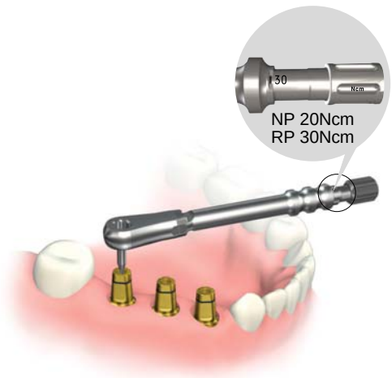


· Embed and cast



· Connect a Duo Abutment into an implant in the mouth.

· Tighten the final restoration using a Torque wrench (NP 20Ncm /RP 30Ncm)



Placing the final restoration

· Cement the final restoration on the abutment.

Note

◎ Duo abutments are available in both fixture level and abutment level types as pictured.

◎ When connecting a duo abutment intra-orally, if it is in contact with the opposing tooth or the intraocclusal distance is insufficient, the intra-oral abutment prep is likely to fail. Therefore if possible, make appropriate adjustments on the model using a fixture level impression.

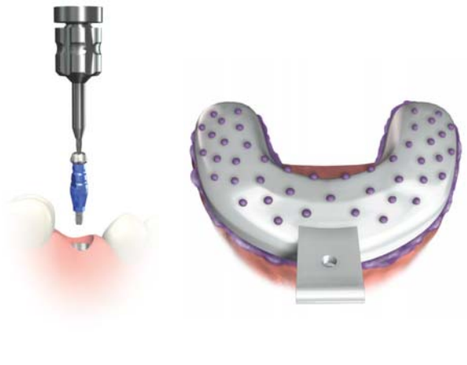
Contour Abutment

Indication

- Suitable for customizing
- Suitable for single and multiple implant case
- Tightening torque : NP 20Ncm
  RP 30Ncm

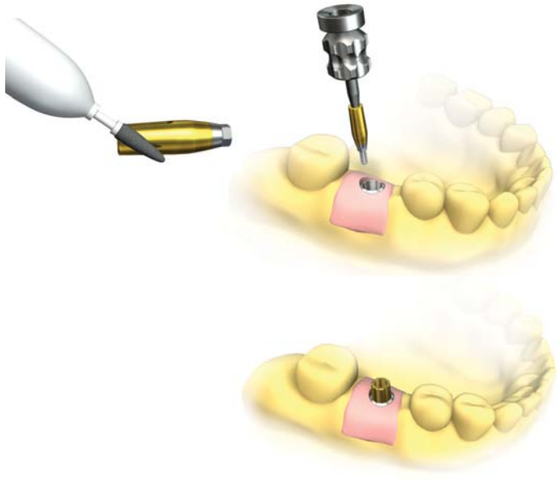
Impression

- Position the Impression coping onto the implant and take a fixture level impression.

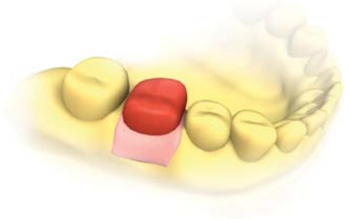


Laboratory Procedure

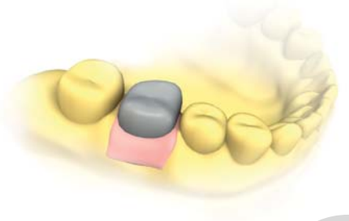
- After milling the Contour Abutment appropriately, connect the abutment onto a model and make any appropriate adjustments



- Wax-up

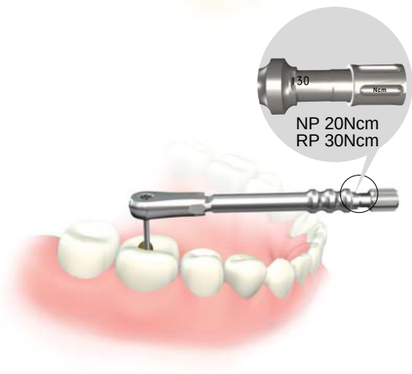


- Embed and cast



- Connect the Contour Abutment onto the implant in the mouth.

- Tighten the final restoration using a Torque wrench (NP 20Ncm /RP 30Ncm)



Placing the final restoration

- Cement the final restoration on the abutment

Angled Abutment

Indication

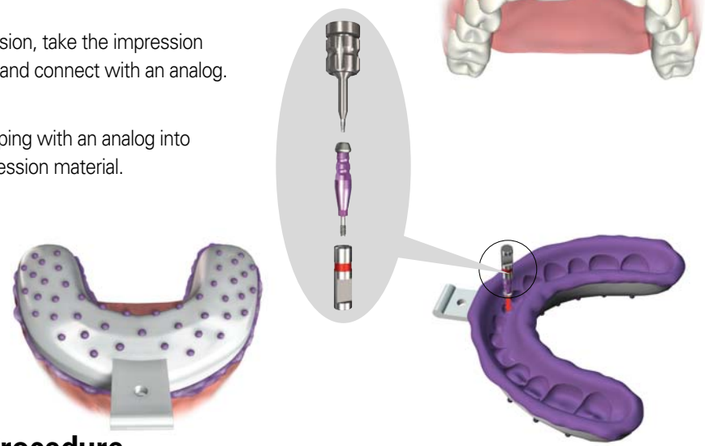
- Use when angle correction is required.
- Applicable to both single and multiple implants
- For cement-retained prosthesis.
- Tightening torque : NP 20Ncm
  RP 30Ncm

Impression

- Position the Impression coping onto the implant and take the fixture level impression.

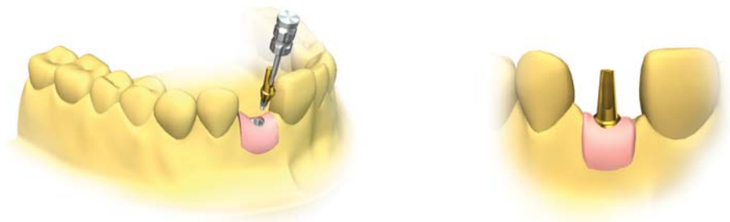
- After taking an impression, take the impression coping out the mouth and connect with an analog.

- Put the impression coping with an analog into the indent of the impression material.



Laboratory Procedure

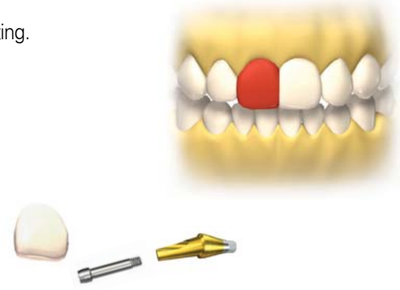
- Connect the Angled abutment onto the model



- Mill the Angle abutment correctly.

- Wax-Up

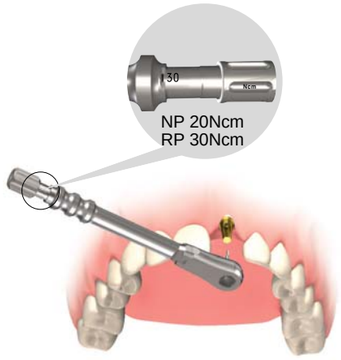
- Complete the final restoration by embedding and casting.



Connection of final restoration

- Position the restoration onto the implant and tighten the screw using a Hex Driver

- Tighten the final restoration using a Torque wrench (NP 20Ncm /RP 30Ncm)



- Cement the final restoration on the abutment

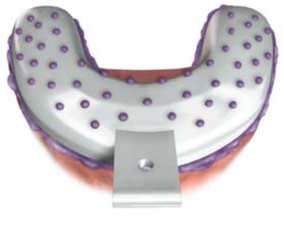
Goldcast Abutment (Hex)

Indication

- For screw-retained prosthesis of single implants.
- For cement-retained prosthesis of single implants.
- Tightening torque : NP 20Ncm
  RP 30Ncm

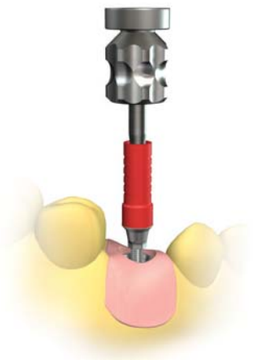
Impression

- Position the Impression coping onto the implant and take the fixture level impression.

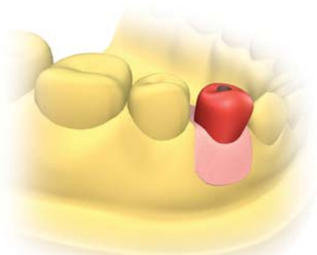


Laboratory Procedure

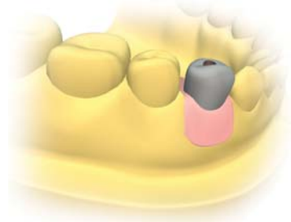
- Connect the Goldcast Abutment onto the model



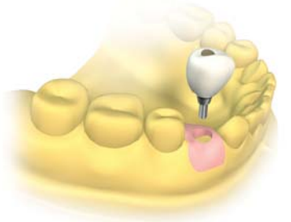
- Cut the plastic sleeve to a correct level and wax-up.



- Embed and cast

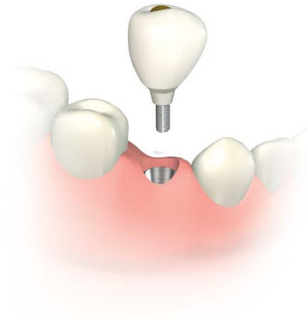


- Complete the final restoration

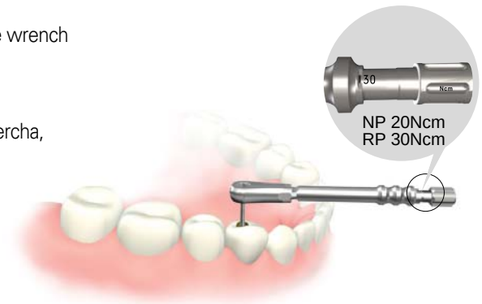


Connection of final restoration

- Position the restoration onto the implant and tighten the screw using a Hex Driver.



- Tighten the final restoration using a Torque wrench (NP 20Ncm /RP 30Ncm)
- Fill the screw access channel with gutta percha, silicon, or temporary filling material.



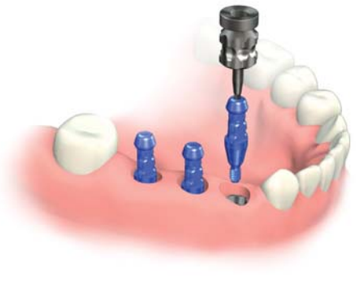
Goldcast Abutment (Non-Hex)

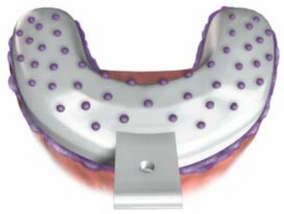
Indication

- For screw-retained prosthesis of multiple implant.
- For cement-retained prosthesis of multiple implant.
- Tightening torque : NP 20Ncm
  RP 30Ncm

Impression

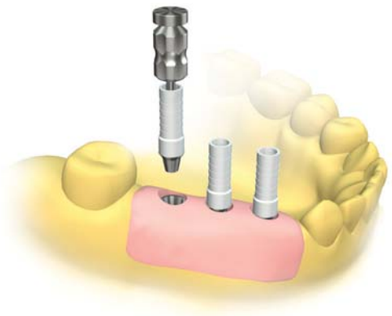
- Place the impression copings onto the implants and take a fixture level impression



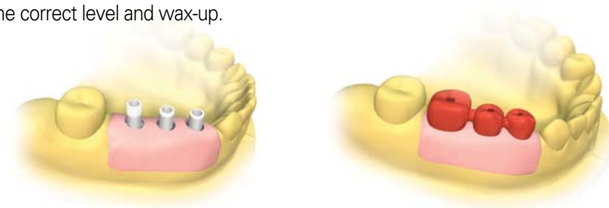


Laboratory Procedure

- Connect the Goldcast Abutments onto the model

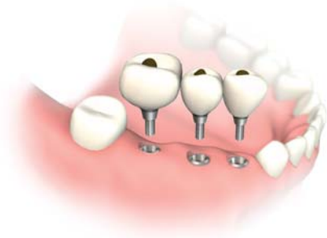


- Cut the plastic sleeves to the correct level and wax-up.



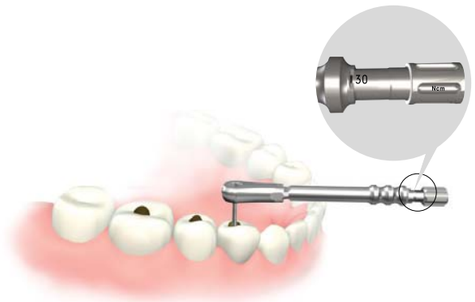
- Embed and cast

- Complete the final restoration



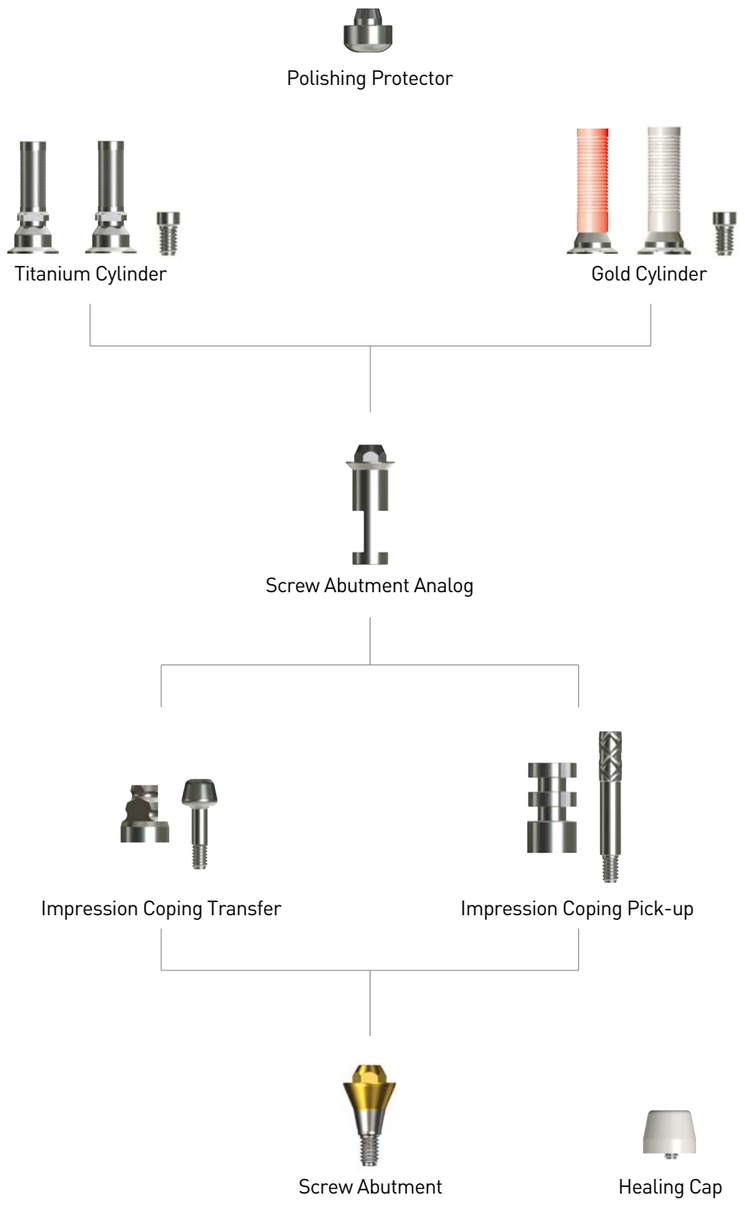
Connection of final restoration

- Position the restorations onto the implants and tighten the screws using a Hex Driver.
- Tighten the final restoration using a Torque wrench (NP 20Ncm /RP 30Ncm)
- Fill the screw access channel with gutta percha, silicon, or temporary filling material.



Prosthetic Procedures

Abutment Level



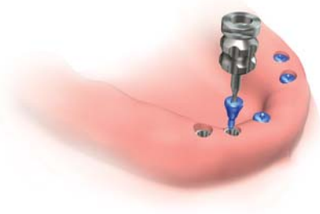
Screw Abutment

Indication

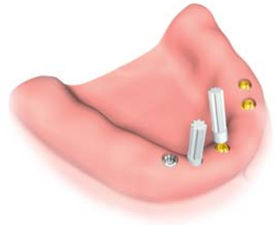
- For screw-retained multiple prosthesis.
- Tightening torque : abutment : 30Ncm
  Cylinder screw: 25Ncm

Placing abutment

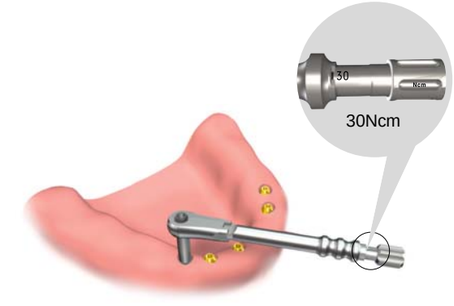
- After removing the healing abutment,
  place the abutment onto the implant using a plastic holder.



- After the abutment placement, gently remove
  the plastic holder



- Tighten the abutment screw to 30Ncm,
  using a manual torque wrench and screwdriver.

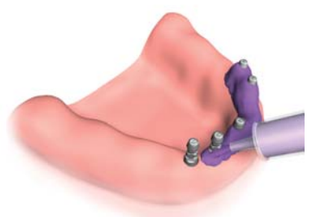


Screw Abutment

Placing abutment Close Tray

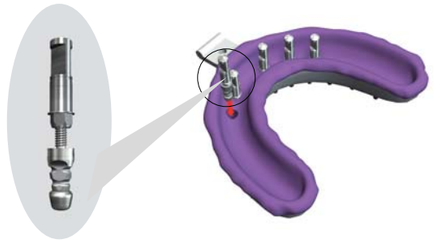
· Connect the impression coping onto the abutment.

· Take an impression



· After taking an impression, remove the impression coping and then insert the abutment analog in the impression coping.

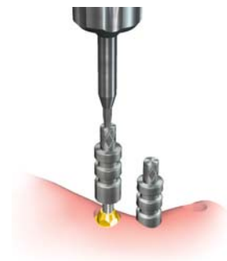
· Insert the impression coping with the analog onto the indent of the impression.



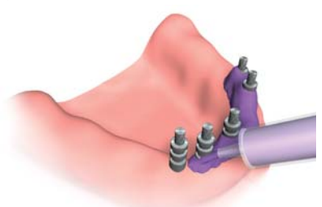
· Place the healing cap on the abutment

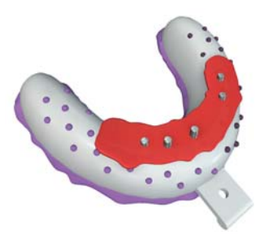
Impression abutment level Open Tray

· Place the impression coping onto the abutment.



· Take an impression, using an individual tray customized so that the guide pins can be exposed.





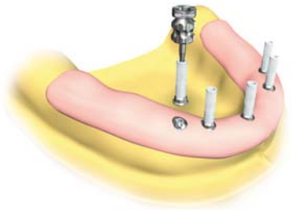
· Loosening the guide pin, extract the impression and insert the abutment analog into the impression coping.

· Place a temporary restoration or healing cap on the abutment

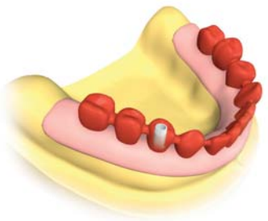
Screw Abutment

Laboratory Procedure

· Place the gold cylinder on the abutment analog of the model



· Complete the final restoration by a wax-up, embedding, and casting.

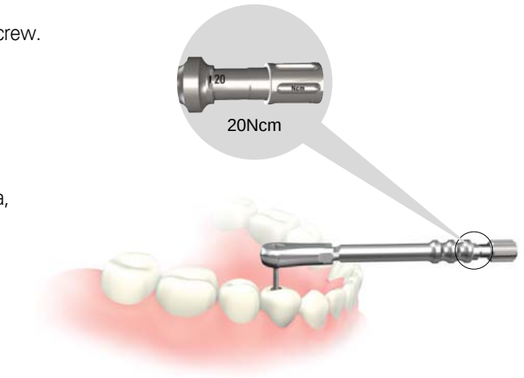


Connection of final restoration

· Position the final restoration, using a cylinder screw.

· Tighten the cylinder screw to 20 Ncm using the manual torque wrench and screwdriver.

· Fill the screw access channel with gutta percha, silicon, or temporary filling material.



Prosthetic Procedures

Abutment Level

Ball Abutment

Indication

- For fully edentulous arches.
- The retention strength is adjustable using a special activator.
- Tightening torque : 30Ncm

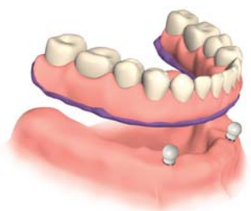
Placing abutment

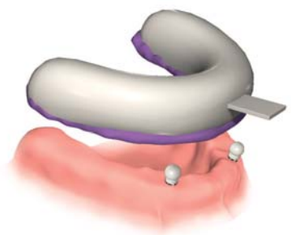
- After placing a ball abutment using the special driver, tighten it to 30 Ncm with a manual torque wrench.

Impression

- Place the impression cap onto the ball abutment.

- Take an impression using a custom tray or the patient's denture.

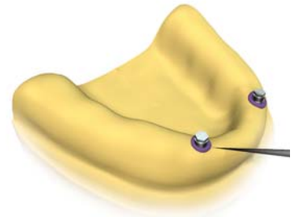




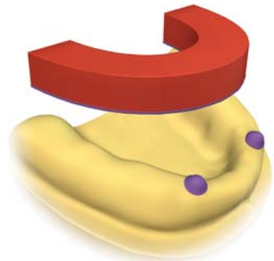
Ball Abutment

Laboratory procedure

- Place the socket onto the analog and fill the undercut around the socket with impression material.



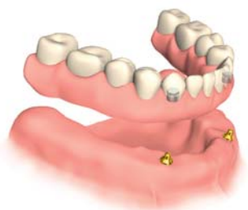
- Create an occlusal rim



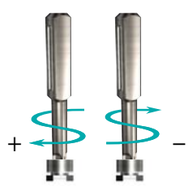
Connection of final restoration

- Connect the gold cap inside of prefabricated overdenture.

- Place the final prosthesis after occlusal relation checking.

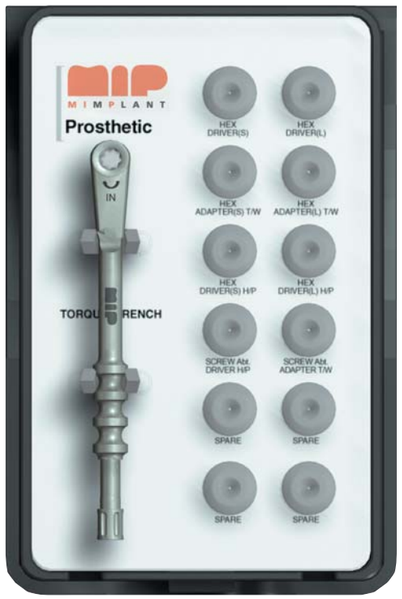


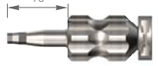
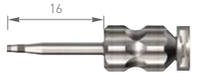
- The desired retention force should be adjusted, using the activator.



Prosthetic Kit

⦿Prosthetic Kit SLPK01



Hex Driver Short (10mm)		SHS01S
Hex Driver Long (16mm)		SHS00L
Handpiece Hex Driver Short		SHHS00S
Handpiece Hex Driver Long		SHHS00L
Torque Wrench Hex Adapter Short		TWHA00S
Torque Wrench Hex Adapter Long		TWHA00L
Handpiece Screw Abutment Driver Short		SMA01S
Torque Wrench Screw Abutment Adapter Short		TWMA00S
Torque Wrench		TW00