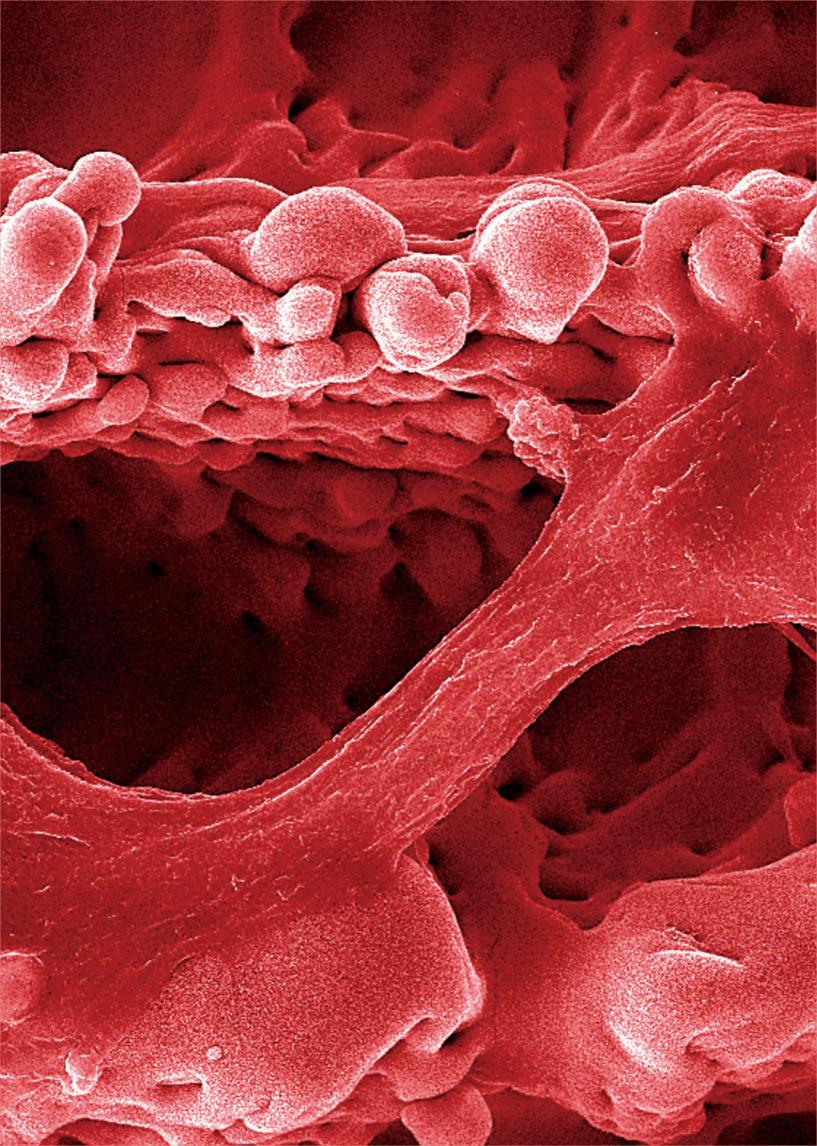
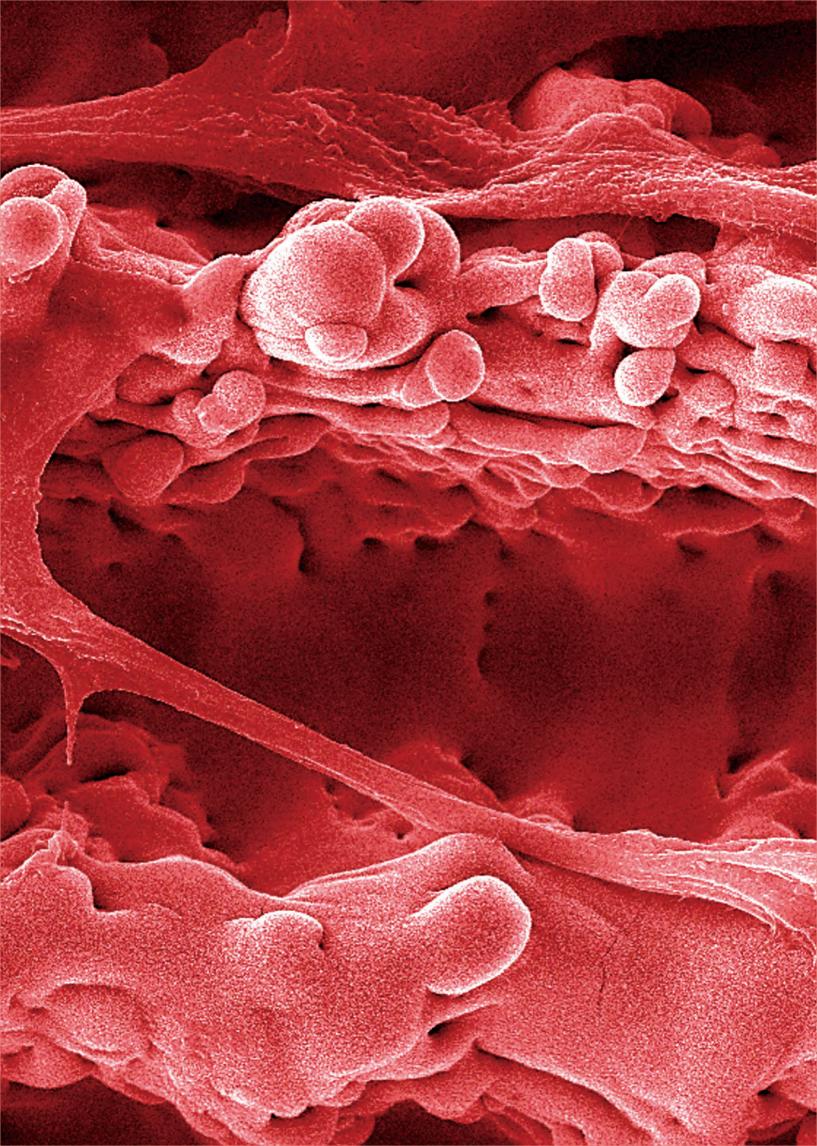
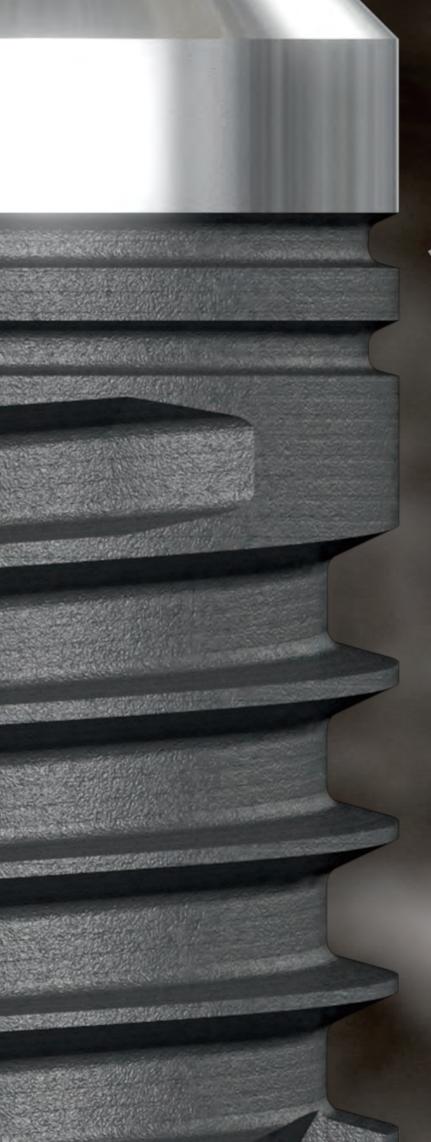


BIOMATE & BIOMATE PLUS DENTAL IMPLANT SYSTEM









## DENTAL IMPLANT SYSTEM

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Switzerland; The worldwide-recognized authority on mechanical design and craftsmanship. The craftsmanship is not only presents high precision, but also combines professional knowledge and ultimate beauty format.

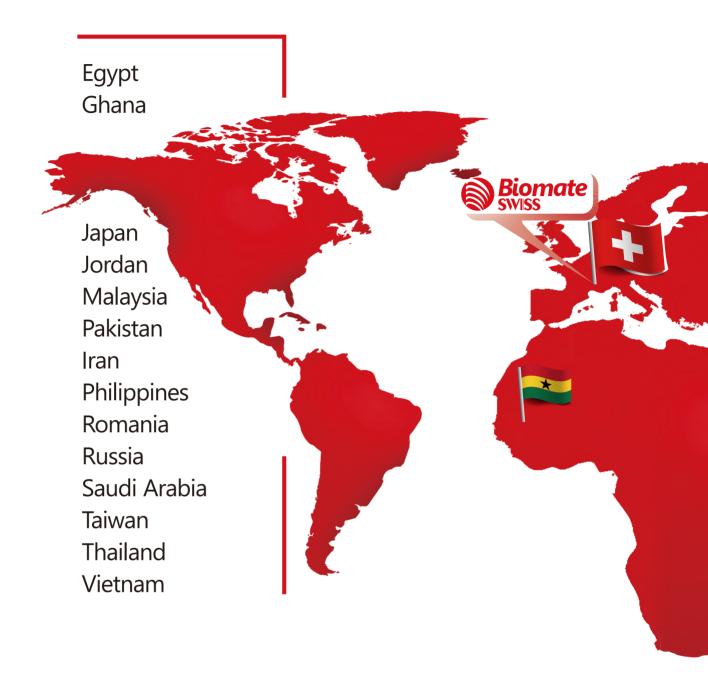
The credit of Biomate SWISS implant system is because of its excellent surface treatment. This surface treatment is a collection of historical quenching, vision and view point of worldwide.



With the primary mission of "being the best support team of dentists, and allowing patients to regain confidence and charming smiles", Biomate Swiss implant system listens closely to users' needs, provides localized and considerate services, and creates customized products and services.

We strive to become the physician's most trustworthy partner to help restore the smiles on the faces of our patients with our innovations and services.

Combining exclusive technology and professional certification, to develop PDL®(Precision Dimension Laser) core laser technology, market the Biomate SWISS implant system globally, and create a global operation model that integrates hardware and teaching services.



The first medical device manufacturer in Taiwan that won a number of European innovation and invention awards.











## PDL<sup>®</sup>Surface Treatment

BIOMATE Dental Implant is Designed with New Concept and New Technique, It Possesses the Best Stability to Ensure Long-Term Efficacy.

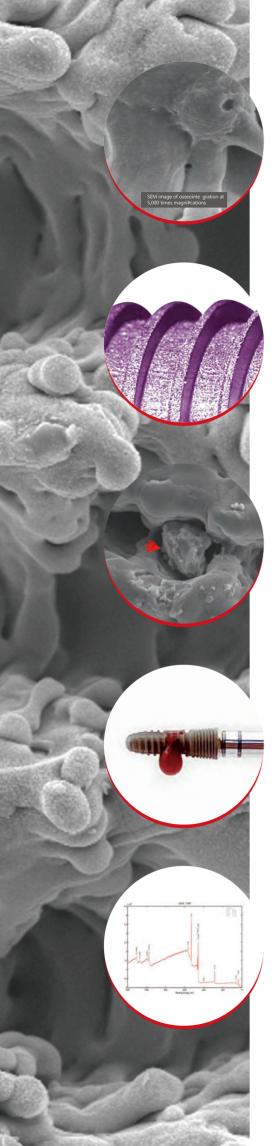
PDL® (Precision Dimension Laser) Surface Treatment applies precise parametric design. Through this high efficacy laser Iuminous energy, the structure can be formed on the implant surface with qualitative micro and complex 3D pores, it even carves out multiple micro-channel in linear arrangement which is suitable for the adhesion and growth of osteocytes that help increase the contact surface area of the bone and fixture, optimizing the effect of cell proliferation and osseointegration.

## Better Biocompatibility

With PDL® surface treatment, a micro composite structure multiple micro-channel on the surface of the implant will guide the predecessor cells of osteoblast moving to the surface of the implant and distributing according to the track structure. The feature can increase rapid distribution and stability of the cells. When the cells are moving nearby complex 3D pores, they will randomly attach to the pores and differentiate to osteoblast which can accelerate the growth of new bone and shorten the time of osseointegration.

## Completely Cleanly production process

The production interface adopts the environmental friendly manufacturing process without any chemical media. Thus, the risk of chemical material remains can be prevented.



## **Osseointegration**

The complex micro 3D pores of BIOMATE fixture surface can effectively help to:

- · Optimize the adhesion and growth of osteocytes
- · Accelerate the healing of wound
- · Improve osseointegration

## Contact Area

PDL®(Precision Dimension Laser) Surface Treatment applies precise parametric design and through high efficacy laser luminous energy to strike qualitative micro, complex 3D texture that help increase the contact surface area of the bone and fixture, optimizes the effect of cell proliferation and osseointegration.

## Cell Adhesion

The structure surface of multiple micro channel created by PDL  $^{\circledR}$  technique can help the adhesion of hydrophilic protein like cells, fibrin and so on. There is special metal solution and molecular arrangement in the micro pore. When osteocyte enters the pore, it can stably adhere to the structure, plus with the special pore size of Biomate which can accelerate the cells extension and differential, it can significantly improve the osseointegration (the red arrow in the picture shows the cell. SEM report shows the PDL  $^{\circledR}$  treated surface is highly suitable for the growth of osteocytes).

## Hemocompatibility

Proven by experiment, the complex micro texture of BIOMATE-PLUS fixture surface has the best hemocompatibility, which absorbs blood rapidly to the fixture surface during implantation. This feature can effectively accelerate bone regeneration and osseointegration.

## Cleanliness

Unlike SLA surface treatment that risk of sand & acidic residue after treatment, PDL® surface treatment modifies the fixture surface with laser that does not leave any toxic residue.

Surface Elements:Ti, N, O, C Analysis of Chemical Bond:TiO2 Evidence shows there is no residual on surface. The surface is fully clean.

## A Total Solution

#### Digital Surgical Guide & Customized Prosthetics Service

Biomate SWISS possesses leading CAD CAM(Computer-aided design / Computer-aided manufacture) dental facilities. This technique integrate 3D photographing and computerized digital application, helping to quickly and accurately produce different type of dental restorations.

Allow to produce digital artificial teeth product with high added-value.

#### Provide Customized Abutment Service

Solid Titanium customized abutment

Zirconia plus Titanium base customized abutment

**BIOnavi.** Digital Implant System

**Bi@mate ArchFixation** 

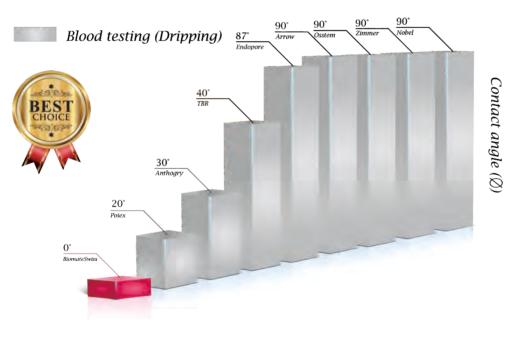


# IRB Clinical Trial

#### 8

## IRB Clinical Trial





#### Description:

As shown on the above bar chart, Biomate SWISS fixture with the patent functional laser surface treatment shows best hemocompatibility.

## Biomate Implant System

#### Suitable for:

- ✓ Surgery needs initial stability
- ✓ Immediate replacement and immediate loading
- √ D3~D4 bone

#### Material:

- Medical grade 4 pure titanium
- In the posterior area, please use implants of over diameter 4.1mm (inclusive) size



Material: Medical grade 4 pur	e titanium		Unit:mm , S	cale 1 : 1.5 / mm
	L8	L10	L12	L14
SD D3.3 Hex 2.0				
	1AA-001	1AA-002	1AA-003	1AA-004
SD D4.1 Hex 2.0				
	1AA-005	1AA-006	1AA-007	1AA-008
RD D4.8 Hex 2.5				
	1AA-009	1AA-010	1AA-011	1AA-012
RD D5.5 Hex 2.5				
	1AA-013	1AA-014	1AA-015	1AA-016

## Biomate Plus implant System

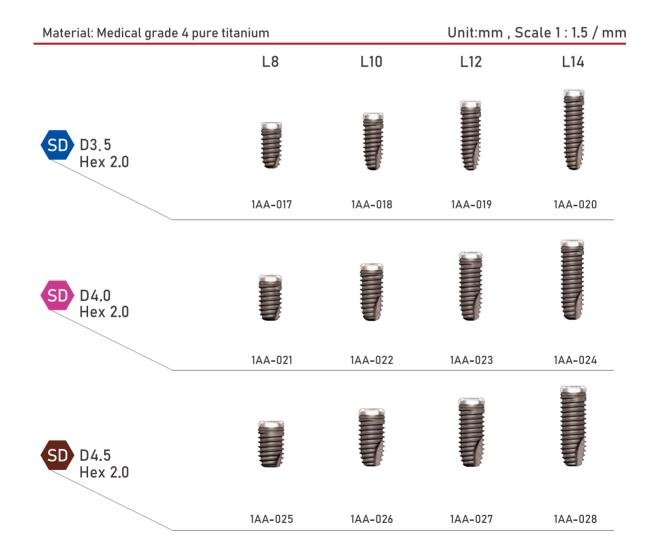
#### Suitable for:

- ✓ All Bone densities(D1~D4)
- ✓ Minimally invasive surgery

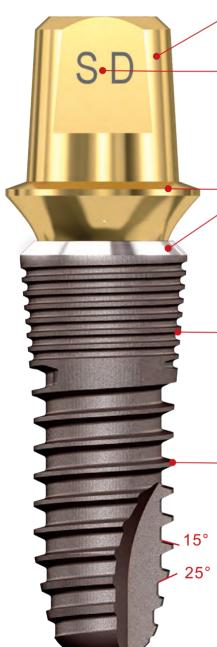
#### Material:

- Medical grade 4 pure titanium
- In the posterior area, please use implants of over diameter 4.0mm (inclusive) size





## Biomate Implant Design



#### **Cross Section Design**

 Cross section design for preventing denture rotation.



#### 0.3mmPlatform Switch Design

- · The anti-bacterial and polishing design on the platform avoid the growth of dental plaque and decrease bone absorption.
- · Avoid bone loss and gum recession.



#### Minor External Expansion Design (Ø4.1 \ Ø4.8 \ Ø5.5)

 Increase fixture stability in primary stage and helpful for stability in extracted socket.



#### Root Form Design

• Tapered body for use in anatomically constricted area.



#### Self-Tapping Thread Design

· Ensure better primary stability and avoid excessive force causing cortical bone absorption and promotes bone tapering during insertion.

#### **Arced Root Design**

- Arc shape at the bottom of the fixture.
- Avoid damaging vital structure like inferior alveolar nerve or maxillary sinus.



#### **Anodized Coloring Treatment**

#### Medical coloring treatment technique

- An oxide layer formed by anodic treatment color the abutment gold, increasing the aesthetic of the gum.
- Coloring treatment can improve the affinity of the abutment and gum, thus solidify the connection of fibro-tissue.



#### Various Abutment Specifications

- Various abutment configurations to suit different oral conditions.
- M1.6 abutment screw is designed to be compatible to all abutments.
- Screw Driver Hex 1.25mm is designed to match all abutment configuration (Ball abutment / Positioner abutment / Multi Unit abutment excluded).



## Internal Hexagon & 10° Morse Taper

#### Internal Hex Design

 Avoid abutment rotation, increasing stability of the connection between the fixture and the abutment.

#### **Abutment Screw**

 The abutment screw connects the abutment firmly to the fixture; such component is not subject to load, eliminating the risk of breakage.

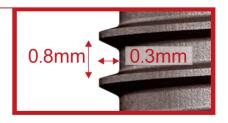


#### 10° Morse Tapper Design

 Ensure firm connection between the fixture and the abutment, eliminating the possibility of unscrewing and micromovement, avoiding mechanical stimulation to surrounding tissue as well as preventing the intrusion of cell and bacteria.

#### Trapezoid Thread Design

- The lower part of the thread carries a larger angle of 25 degree allowing easier insertion of implant.
- The upper part carries a smaller angle of 15 degree preventing implant from dislodging.
- The space between the threads also forms an asymmetric trapezoid shape with a 0.3mm depth and 0.8mm apart. During the insertion of implant, the lower slope of this asymmetric trapezoid space (the upper part of the thread) squeezing the bone upward and compacting the bone into the space.
- The asymmetric trapezoid also benefits the laser processing on implant surface which providing good environment for optimal bone



## Biomate Plus Implant Design

#### Single pore dimension of abutment design

• With the simplification of the restoration components for Biomate & Biomate-Plus implant system. We can complete the locked function of restoration components by only using 1.25mm Hex Driver HP/RT.



**Cross Section Design** 

· Cross section design for preventing denture rotation.

#### 0.3mm Platform Switch Design

- The anti-bacterial and polishing design on the platform avoid the growth of dental plaque and decrease bone absorption.
- Avoid bone loss and gum recession.

#### 0.7mm vertical machined surface

 May adjust different insertion depth according to the requirement of implant area.

#### 0.8mm non-continuous parallel thread

· Excellent effect for maintaining the height of bone level.

#### **Root Form Design**

 Tapered body for use in anatomically constricted area.



#### Self-Tapping Thread Design

 Ensure better primary stability and avoid excessive force causing cortical bone absorption and promotes bone tapering during insertion.

#### **Arced Root Design**

25°

- Arc shape at the bottom of the fixture.
- · Avoid damaging vital structure like inferior alveolar nerve or maxillary sinus.



Biomate Plus Implant Design

0.3<sub>mm</sub>

0.7<sub>mm</sub>

#### **Anodized Coloring Treatment**

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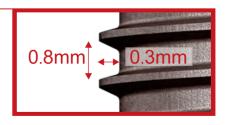


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- The asymmetric trapezoid also benefits the laser processing on implant surface which providing good environment for optimal bone



## Biomate Dimension Table

Diameter 3.3 is designed for anterio	r area, not recom	mended for poster	rior area.	Unit : mm
Fixture		SD	R	
Diameter	3.3	4.1	4.8	5.5
Length		8 10 12 14	1 1:	3 0 2 4
Platform	3.3	4.1	4.8	5.5
Body Diameter	2.8	2.8	3.3	4.0
Bevel Height	0.3	0.4	0.4	0.4
Final Drill	2.8 (Blue)	2.8 (Blue)	3.3 (Purple)	4.0 (Orange)
Counter Sink	/	4.1 (Green)	4.8 (Purple)	5.5 (Orange)
Healing Abutment	H TG/H		H I G/H	
Diameter	4.0	4.5 5.0	5.0	6.0
Height		2 3 5 7	5	3
Simple Abutment (Hex / Non Hex)	H I SD		H G/H	
Diameter	4.0	4.5 5.0	5.0	6.0
Height		4.0 5.5 7.0	4. 5. 7.	.0 .5 .0
Gingival Height		1 2 3 4	1 2 3 4	<u>2</u> 3

# Biomate Plus Dimension Table

## Biomate Plus Dimension Table

			Unit : mm
Fixture	SD	SD	SD
Diameter	3.5	4.0	4.5
Length	8 10 12 14	8 10 12 14	8 10 12 14
Platform	3.5 (Dark blue)	4.0 (Pink)	4.5 (Brown)
Body Diameter	2.8 (Blue)	3.3 (Purple)	4.0 (Orange)
Bevel Height	1.0	1.0	1.0
Final Drill	2.8 (Blue)	3.3 (Purple)	4.0 (Orange)
Profile Drill	3.5 (Dark blue)	4.0 (Pink)	4.5 (Brown)
Healing Abutment		H I I I G/H	
Diameter	4.0	4.5	5.0
Height		2 3 5 7	
Simple Abutment (Hex / Non Hex)		H SO D	
		SD	T
Diameter	4.0	4.5	5.0
Height		4.0 5.5 7.0	
Gingival Height		1 2 3 4	

## Product Configurations

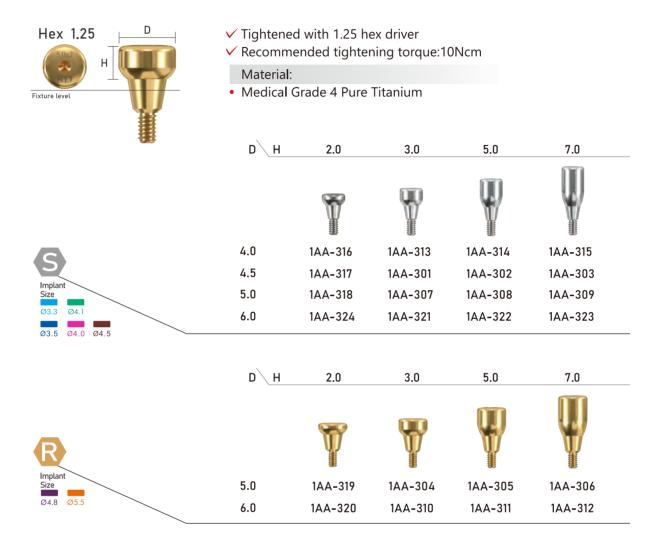
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#### **Product Configurations**

## PROSTHETIC FLOW DIAGRAM 3

CAD CAM / Ti-Base / Temporary / Premilled	
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ScanBody	
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Premilled Abutment	
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Multi-Unit 17° Angled Abutment	
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Multi-Unit Comfort Cap	
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Multi-Unit Polishing Protector	47
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Multi-Unit Impression Coping Pick-up	48
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PROSTHETIC FLOW DIAGRAM 5	
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Housing Retainer with O-ring / Housing with O-ring /	
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Positioner Abutment / Positioner Torque Driver / Positioner Core Tool .	
Positioner Male Processing Kit	
Positioner Replacement Male	
Positioner Extended Replacement Male	
Positioner Black Processing Male	
Positioner Block Out Spacers	
Positioner Impression Coping	
Positioner Lab Analog	

#### Healing Abutment ( mark )



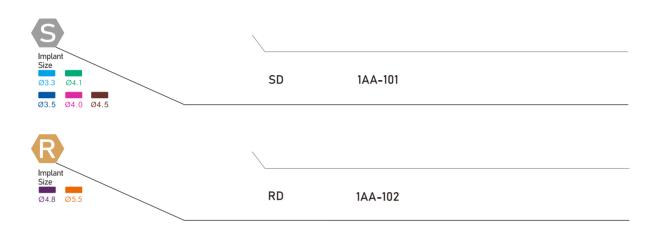
#### Cover Screw

✓ Hand tightened with 1.25 hex driver

#### Material:

• Medical Grade 4 Pure Titanium



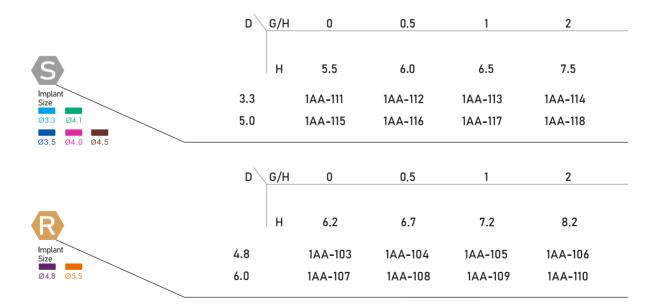


#### Membrane Screw

- ✓ Used for securing membranes to implant.
- ✓ Threaded into the cover screw inner thread.
- ✓ Hand tightened with 1.25 hex driver

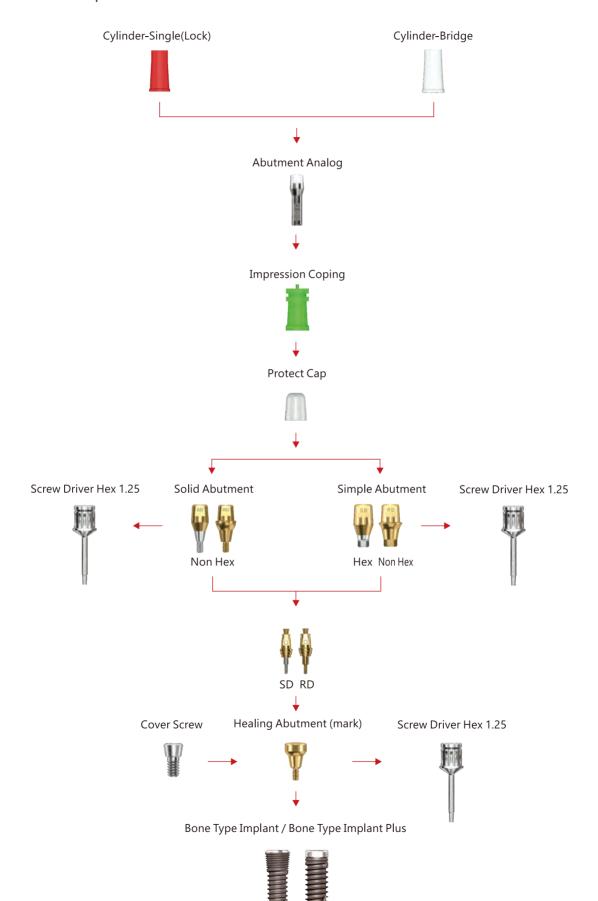
#### Material:

Medical Grade 4 Pure Titanium



#### Solid Abutment / Simple Abutment

**Abutment Level Impression** 



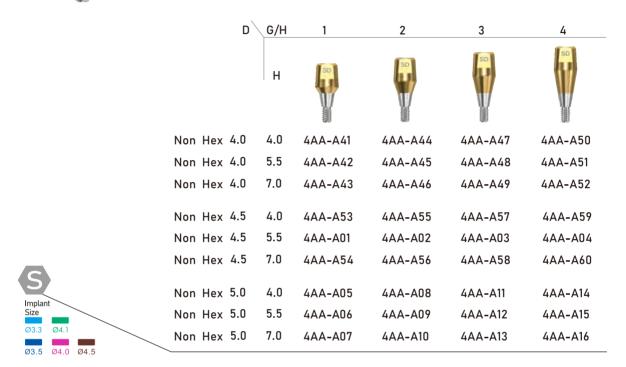
- ✓ Tightened with 1.25 hex driver
- ✓ Recommended tightening torque:25Ncm

#### Material:

**Solid Abutment** 

Fixture level

• Medical Grade 4 Pure Titanium



		D G/I	<del>1</del> 1	2	3	4
		н	RD	RD	RD	RD
	Non Hex	5.0 4.0	4AA-A17	4AA-A20	4AA-A23	4AA-A26
	Non Hex	5.0 5.5	4AA-A18	4AA-A21	4AA-A24	4AA-A27
	Non Hex	5.0 7.0	4AA-A19	4AA-A22	4AA-A25	4AA-A28
	Non Hex	6.0 4.0	4AA-A29	4AA-A32	4AA-A35	4AA-A38
Implant Size No	Non Hex	6.0 5.5	4AA-A30	4AA-A33	4AA-A36	4AA-A39
Ø4.8 Ø5.5	Non Hex	6.0 7.0	4AA-A31	4AA-A34	4AA-A37	4AA-A40

#### Solid Abutment Components

#### Protect Cap

- ✓ Used for Solid/Simple abutment protection and reducing patient discomfort
- ✓ Used as a temporary crown base





DH	4.0	5.5	7.0
4.0	6AA-087	6AA-051	6AA-049
4.5	6AA-052	6AA-019	6AA-050
5.0	6AA-053	6AA-020	6AA-021
6.0	6AA-088	6AA-022	6AA-023

#### Impression Coping

- ✓ Components for Solid/Simple abutment impression
- ✓ The top lug is designed to align with the cross section of the body of abutment for accurate positioning

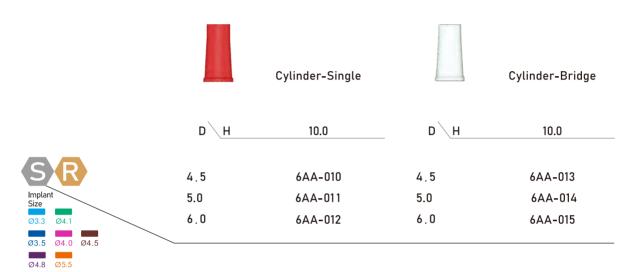


	υ\H	10.0	
SIR	4.0	6AA-048	
	4.5	6AA-016	
Implant Size	5.0	6AA-017	
Ø3.3 Ø4.1	6.0	6AA-018	
Ø3.5 Ø4.0 Ø4.5			

#### Solid Abutment Components

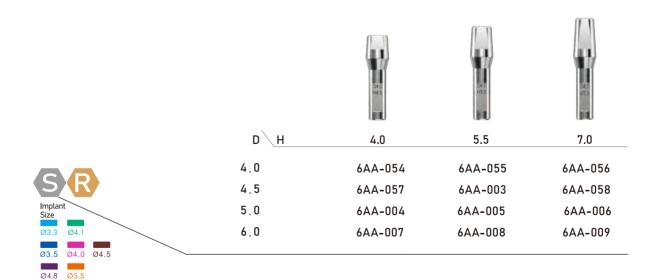
#### Cylinder-Single / Cylinder-Bridge

- ✓ Enabling the production of copping with abutment analog
- ✓ Used after casting, after cleaning the margin for proper fitting

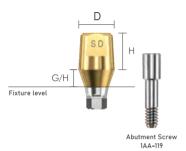


#### Abutment Analog

✓ Solid/Simple abutment reproduction on model after impression



#### Simple Abutment

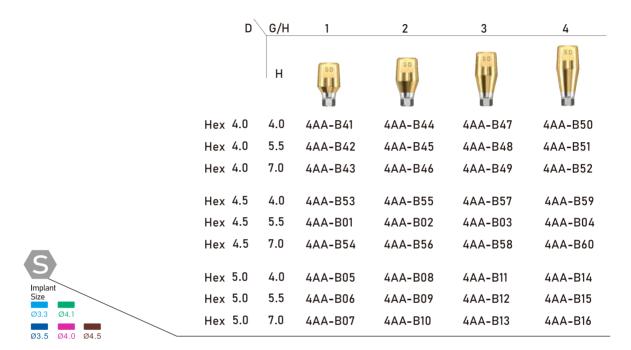


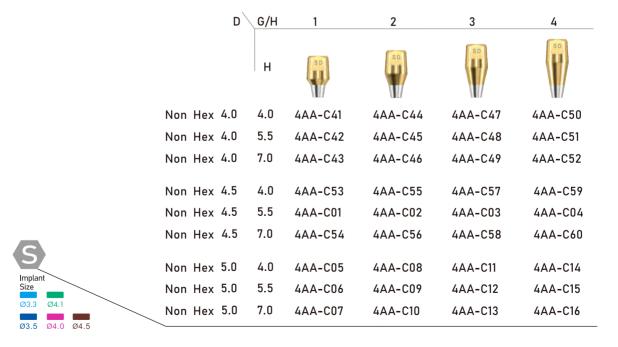
Simple abutment is the same as solid abutment above margin, so all components of solid abutment can be shared with simple abutment

- ✓ Abutment for producing cement-retained/combination prosthesis
- ✓ Coating:SD/Semi-Golden; RD/Golden
- ✓ Tightened with 1.25 hex driver
- Recommended tightening torque:30Ncm

#### Material:

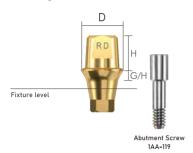
Medical Grade 4 Pure Titanium





# simple Abutmen

#### Simple Abutment



Implan

Simple abutment is the same as solid abutment above margin, so all components of solid abutment can be shared with simple abutment

- ✓ Abutment for producing cement-retained/combination prosthesis
- ✓ Coating:SD/Semi-Golden; RD/Golden
- ✓ Tightened with 1.25 hex driver
- ✓ Recommended tightening torque:30Ncm

#### Material:

Non Hex 6.0

Non Hex 6.0

Non Hex 6.0

4.0

5.5

7.0

4AA-C29

4AA-C30

4AA-C31

4AA-C32

4AA-C33

4AA-C34

4AA-C35

4AA-C36

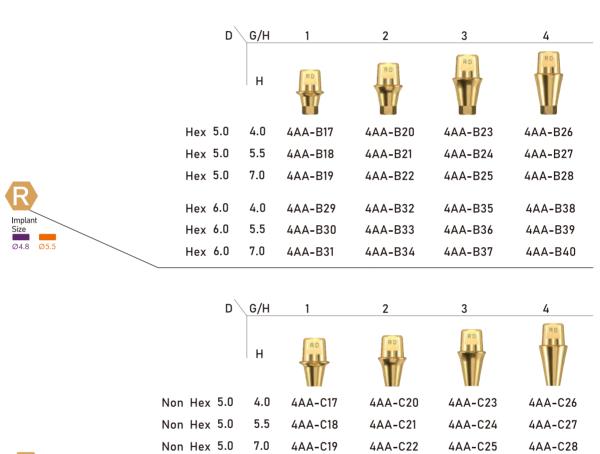
4AA-C37

4AA-C38

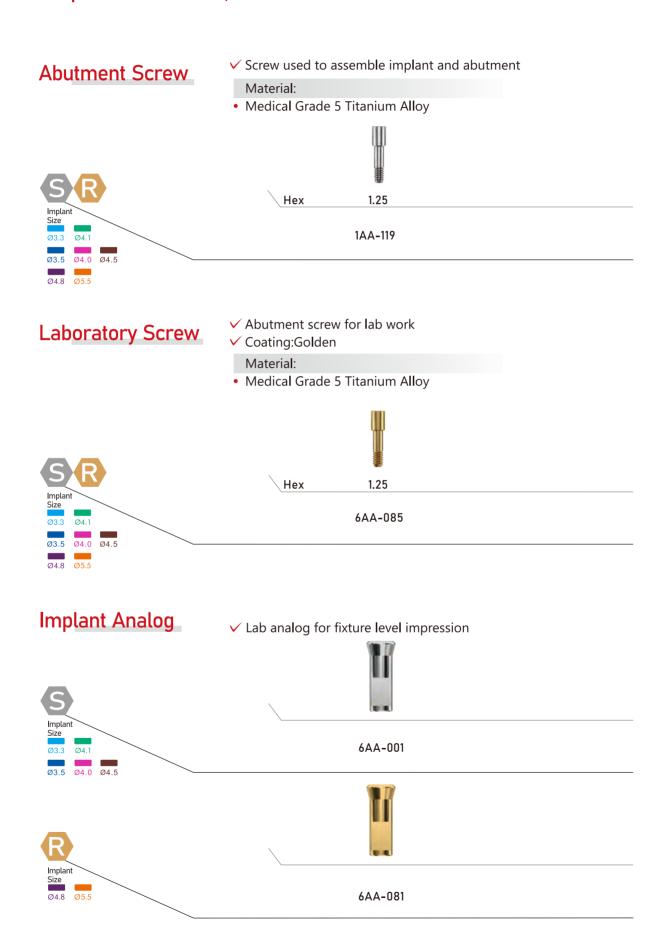
4AA-C39

4AA-C40

Medical Grade 4 Pure Titanium

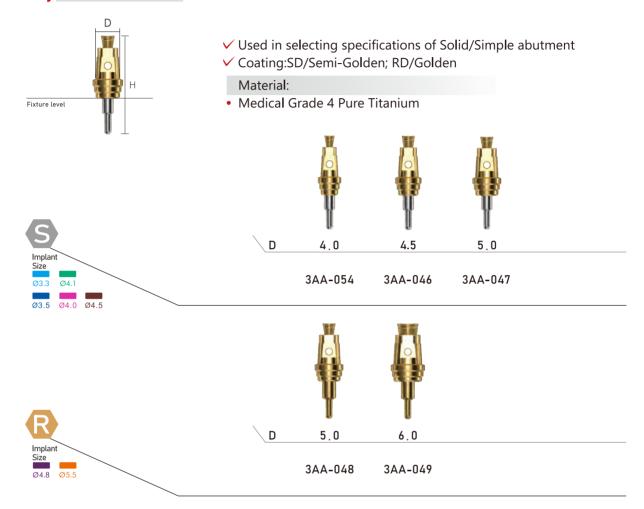


#### Simple Abutment Components



#### Simple Abutment Components

#### Try-in Abutment



- Impression Post-Open Tray 
  Variable Components for fixture level impression taking with open tray
  - ✓ Multi-undercutting design that is stably fixed within the impression body
  - ✓ Hand tightened with 1.25 hex driver



	D\H	10.8	
	Hex 4.0	6AA-024	
S	Hex 5.0	6AA-025	
Implant Size	Non Hex 4.0	6AA-035	
Ø3.3 Ø4.1	Non Hex 5.0	6AA-036	
Ø3.5 Ø4.0 Ø4.5			



10.8

D	Hex 5.0	6AA-059	
R	Hex 6.0	6AA-060	
Implant Size	Non Hex 5.0	6AA-063	
Ø4.8 Ø5.5	Non Hex 6.0	6AA-064	

 $D \setminus H$ 

## Impression Post-Open Tray Screw Screw used to assemble implant and impression

post-open tray



30

- Impression Post-Close Tray 
  V Components for fixture level impression taking with closed tray
  - ✓ Undercutting design for stable fastening and accurate repositioning
  - ✓ Hand tightened with 1.25 hex driver

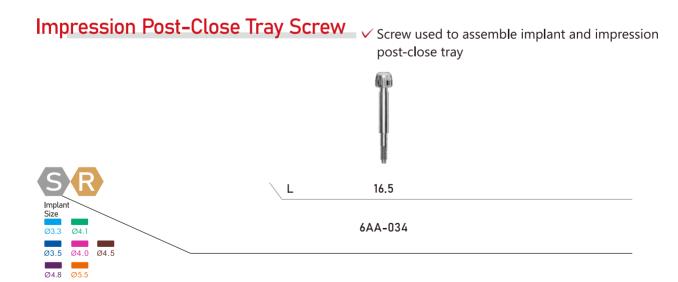


	D\H	10.5	
	Hex 4.0	6AA-030	
S	Hex 5.0	6AA-031	
Implant Size	Non Hex 4.0	6AA-039	
Ø3.3 Ø4.1	Non Hex 5.0	6AA-040	
Ø3.5 Ø4.0 Ø4.5			



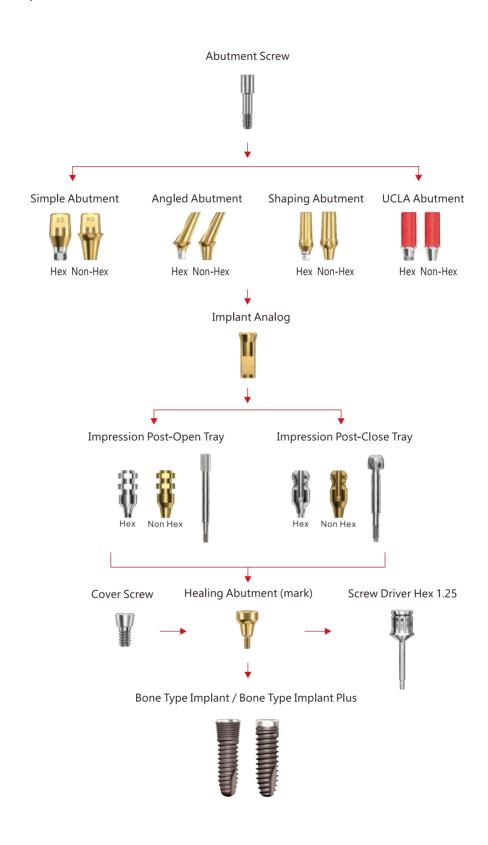
	D\H	10.5	
	Hex 5.0	6AA-061	
R	Hex 6.0	6AA-062	
Implant Size	Non Hex 5.0	6AA-065	
Ø4.8 Ø5.5	Non Hex 6.0	6AA-066	

 $D \setminus H$ 



#### Simple / Angled / Shaping / UCLA

Fixture Level Impression



31

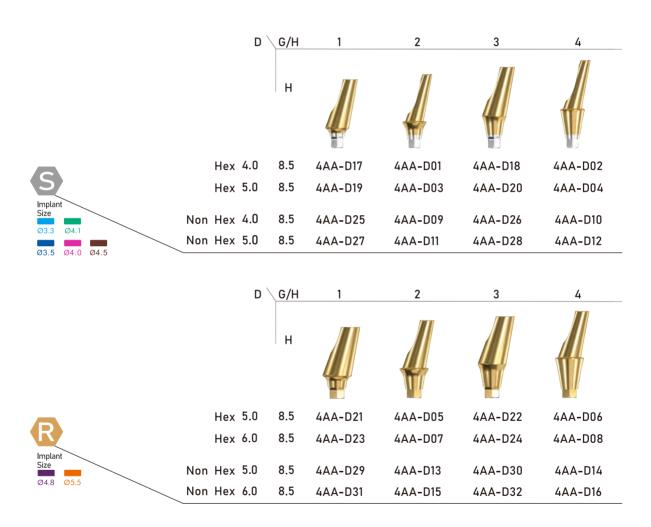
# 15°Angled Abutment



- ✓ Used when a prosthesis's path adjustment is necessary at 15°
- ✓ Coating:SD/Semi-Golden; RD/Golden
- ✓ The angled direction is pointed to hexagonal edge
- ✓ Accurate specification selected by angled Try-in Abutment
- ✓ Tightened with 1.25 hex driver
- ✓ Recommended tightening torque:30Ncm

#### Material:

• Medical Grade 4 Pure Titanium



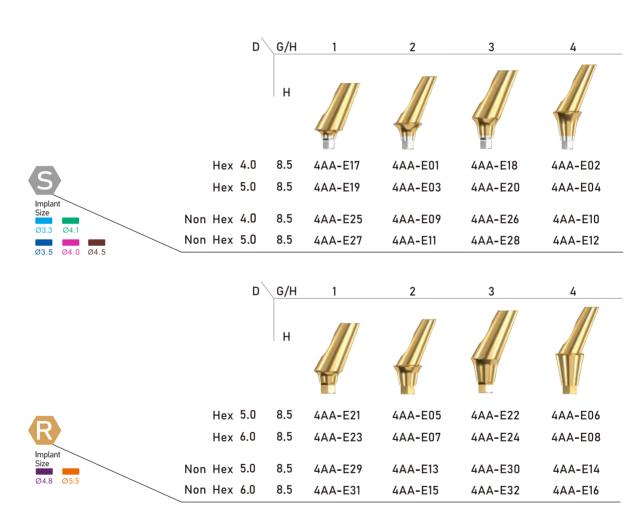
# 25°Angled Abutment



- ✓ Used when a prosthesis's path adjustment is necessary at 25°
- ✓ Coating:SD/Semi-Golden; RD/Golden
- ✓ The angled direction is pointed to hexagonal edge
- ✓ Accurate specification selected by angled Try-in Abutment
- ✓ Tightened with 1.25 hex driver
- ✓ Recommended tightening torque:30Ncm

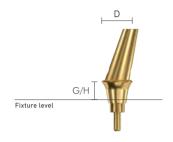
#### Material:

• Medical Grade 4 Pure Titanium



# Angled Abutment Components

# 15° Angled Try-in Abutment



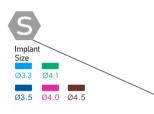
✓ Used in selecting diameter, and G/H of angled abutment when in oral cavity or in model

#### Material:

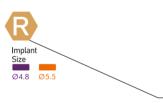
Medical Grade 4 Pure Titanium







D G/H	2	4		
4.0	3AA-068	3AA-072		
5.0	3AA-070	3AA-071		



D G/H	2	4
5.0	3AA-069	3AA-073
6.0	3AA-074	3AA-075

# 25° Angled Try-in Abutment





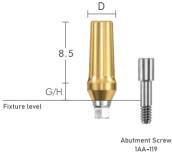
S			
Implan Size	ıt \	\	
Ø3.3	Ø4.1		\
Ø3.5	Ø4.0	Ø4.5	

D G/H 3AA-076 4.0 3AA-077 5.0 3AA-078 3AA-079



D G/H 2 4 5.0 3AA-080 3AA-081 6.0 3AA-082 3AA-083

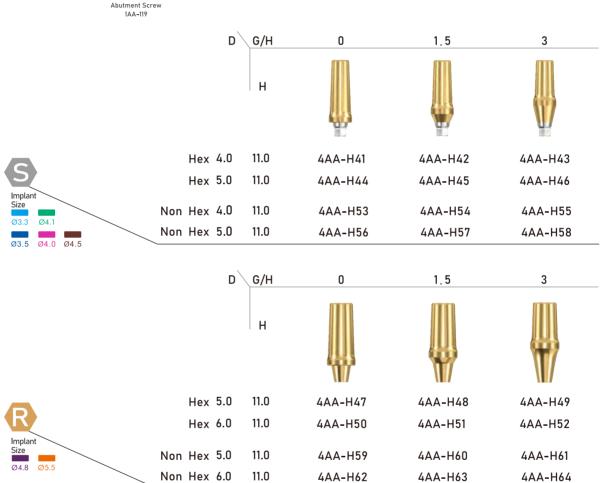
# **Shaping Abutment**



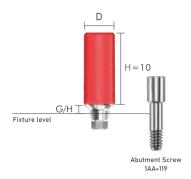
- ✓ Used when an abutment's path must be altered or a prosthesis's margin area must be customized
- ✓ Coating:SD/Semi-Golden; RD/Golden
- ✓ Tightened with 1.25 hex driver
- ✓ Recommended tightening torque:30Ncm

#### Material:

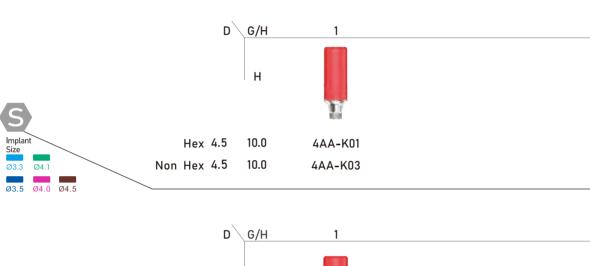
• Medical Grade 4 Pure Titanium

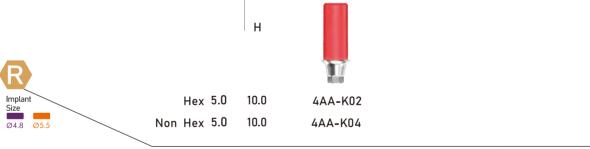


#### **UCLA Abutment**



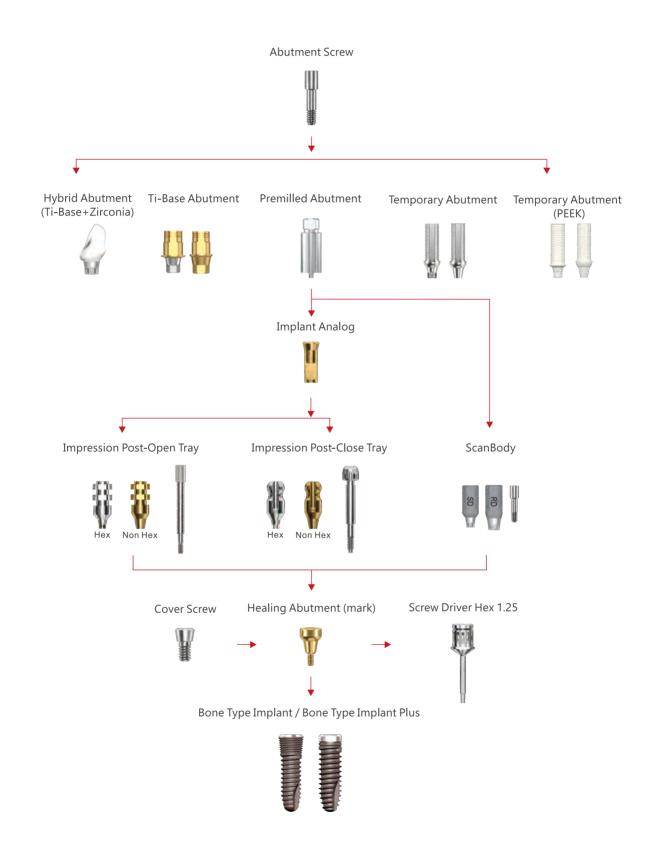
- ✓ Used in producing cement-retained/combination/screw-retained prosthesis
- ✓ Used when path, asthetics, or space have limitations
- After customization, prosthesis must be produced by casting using dental-quality CCM
- ✓ Tightened with 1.25 hex driver
- Recommended tightening torque:30Ncm Material:
- Upper part/POM; Lower part/ CCM(Co-Cr-Mo)





# CAD CAM / Ti-Base / Temporary / Premilled

Fixture Level Impression

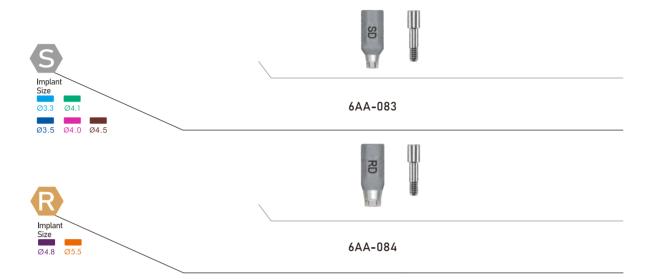


# ScanBody

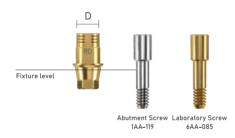
- ✓ Scan body for intra oral scan
- ✓ Hand tightened with 1.25 hex driver

#### Material:

• Medical Grade 4 Pure Titanium



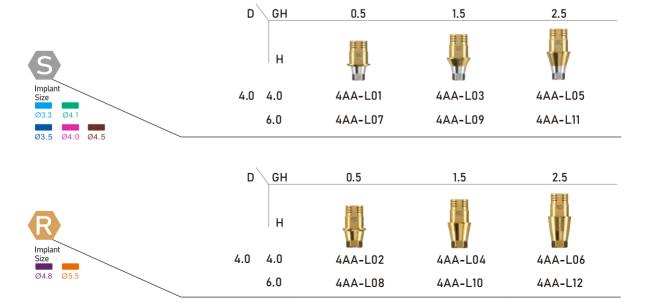
#### Ti-Base Abutment



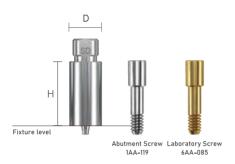
- ✓ Abutment for producing cement-retained/combination/ screw-retained prosthesis
- ✓ Used for producing Ti+Zr custom abutment with CAD/CAM equipment
- ✓ Biomate's offical implant library provided
- ✓ Use fixture level or intra oral scan body impression
- ✓ Tightened with 1.25 hex driver
- Recommended tightening torque:30Ncm

#### Material:

Medical Grade 4 Pure Titanium



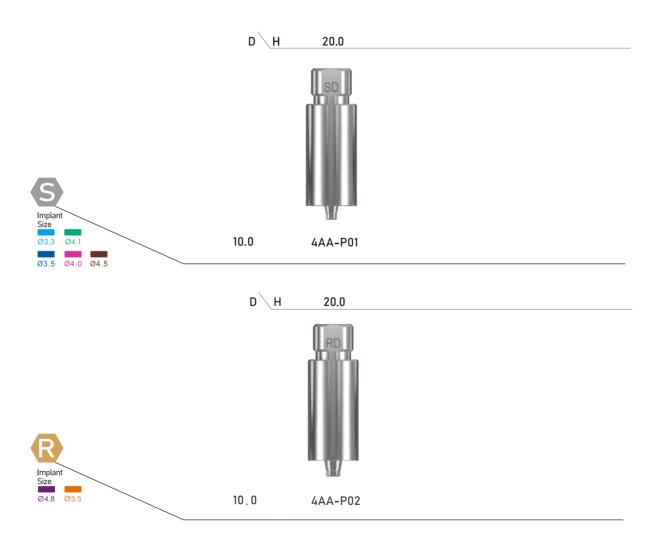
#### **Premilled Abutment**



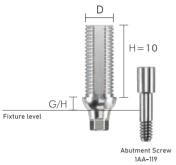
- ✓ Milling equipment for dental work to product custom abutment
- ✓ Biomate's offical implant library provided
- ✓ Use fixture level or intra oral scan body impression
- ✓ Tightened with 1.25 hex driver
- ✓ Recommended tightening torque:30Ncm

#### Material:

• Medical Grade 4 Pure Titanium



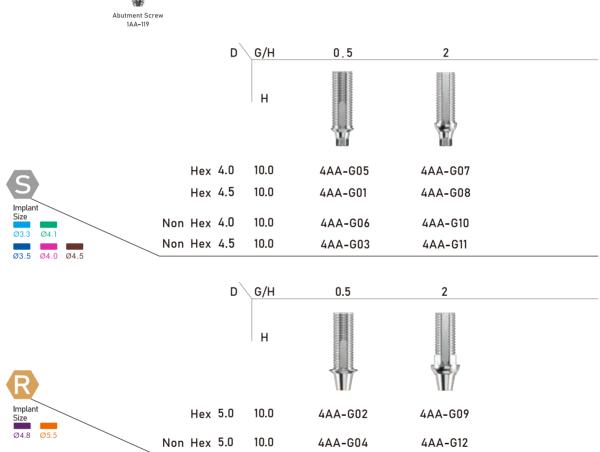
# **Temporary Abutment**



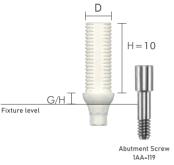
- ✓ Used in producing temporary prosthesis
- ✓ Structure enabling easy customization
- ✓ Tightened with 1.25 hex driver
- ✓ Recommended tightening torque:30Ncm

#### Material:

• Medical Grade 4 Pure Titanium



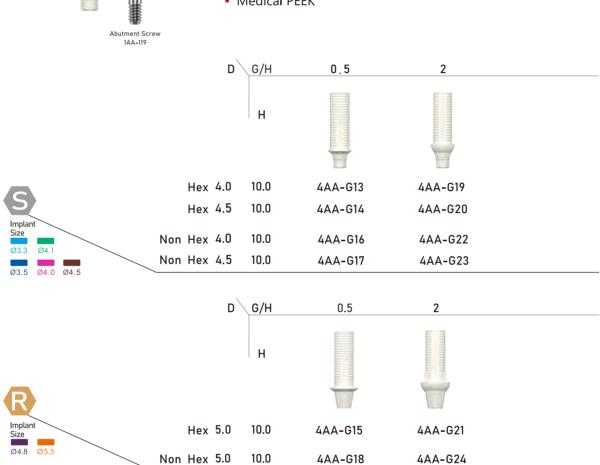
# Temporary Abutment ( PEEK )



- ✓ Used in producing temporary prosthesis
- ✓ Structure enabling easy customization
- ✓ Tightened with 1.25 hex driver
- ✓ Recommended tightening torque:30Ncm

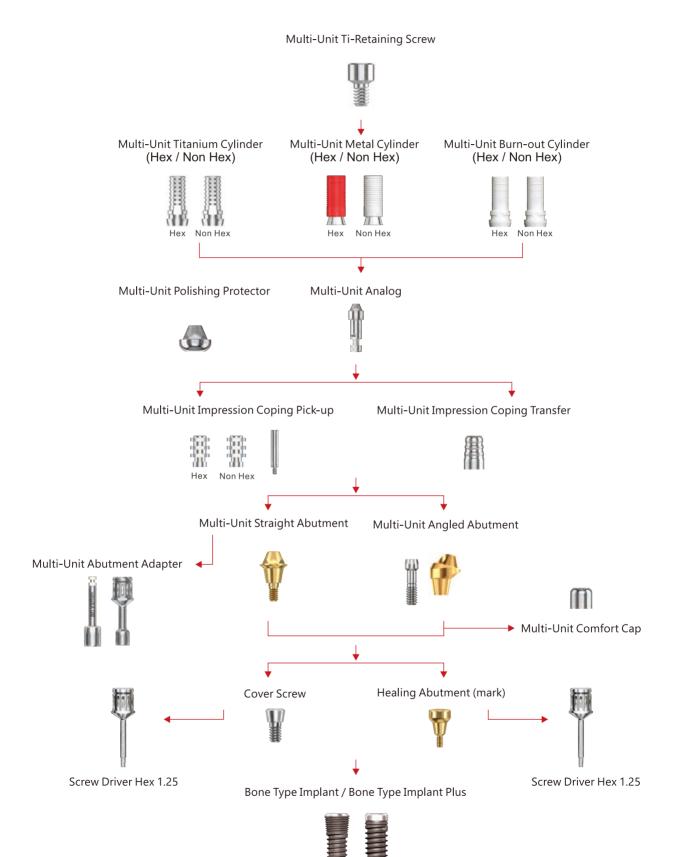
#### Material:

Medical PEEK

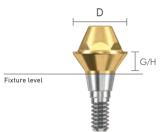


#### Multi-Unit Straight / Multi-Unit Angled

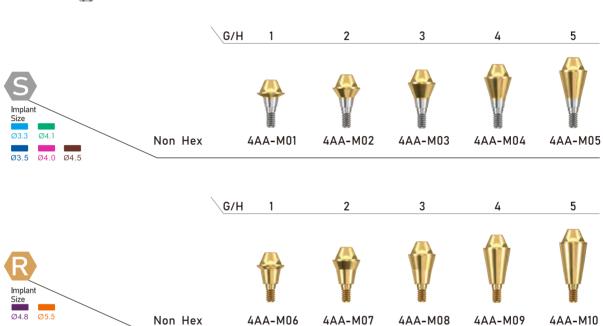
**Abutment Level Impression** 



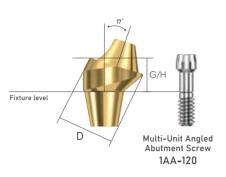
# Multi-Unit Straight Abutment



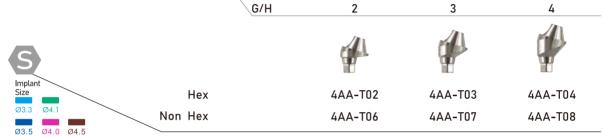
- ✓ Used for producing screw-retained prosthesis in multiple case
- ✓ Tightened with multi-unit adapter
- ✓ Coating:SD/Semi-Golden; RD/Golden
- Recommended tightening torque:Single/30Ncm; Biomate Archfixation/35Ncm
  - Material:
- Medical Grade 5 Titanium Alloy

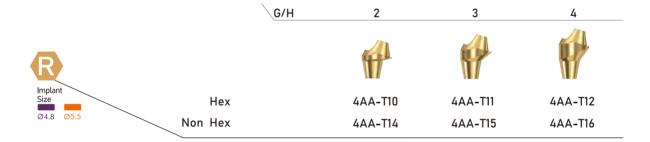


# Multi-Unit 17° Angled Abutment

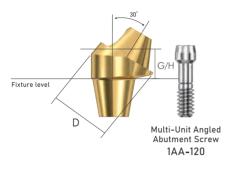


- ✓ Used for producing screw-retained prosthesis in multiple case
- ✓ Up to 60°path compensation(two implant standard)
- ✓ Coating:SD/Semi-Golden; RD/Golden
- Recommended tightening torque: Single/30Ncm; Biomate Archfixation/15Ncm
  - Material:
- Medical Grade 5 Titanium Alloy





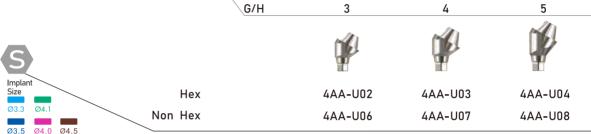
# Multi-Unit 30° Angled Abutment



- ✓ Used for producing screw-retained prosthesis in multiple case
- ✓ Up to 60°path compensation(two implant standard)
- ✓ Coating:SD/Semi-Golden; RD/Golden
- ✓ Recommended tightening torque: Single/30Ncm; Biomate Archfixation/15Ncm

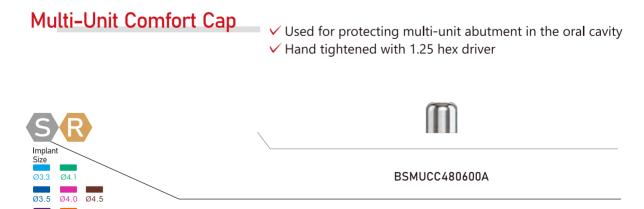
#### Material:

Medical Grade 5 Titanium Alloy





#### Multi-Unit Straight / Multi-Unit Angled Components



#### Multi-Unit Straight / Multi-Unit Angled Components

#### Multi-Unit Titanium Cylinder / Multi-Unit Titanium Cylinder (S)

- ✓ Used for producing temporary prosthesis in multi-unit abutment
- ✓ (S) specification suitable for overdenture with thinner diameter
- ✓ Tightened with 1.25 hex driver
- ✓ Recommended tightening torque:10-15Ncm

#### Material:

• Medical Grade 4 Pure Titanium

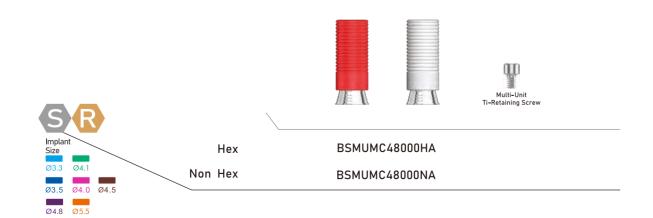


#### Multi-Unit Metal Cylinder

- ✓ Used for producing screw-retained prosthesis in multi-unit abutment
- ✓ Used to produce customized prosthesis by casting with CCM
- ✓ Tightened with 1.25 hex driver
- ✓ Recommended tightening torque:10-15Ncm

#### Material:

Upper part/POM; Lower part/ CCM(Co-Cr-Mo)



Multi-Unit Titanium Cylinder

Multi-Unit Metal Cylinder

#### Multi-Unit Straight / Multi-Unit Angled Components

# Multi-Unit Burn-out Cylinder

- ✓ Used for producing screw-retained prosthesis in multi-unit abutment
- ✓ Used to produce customized prosthesis by casting with nonprecious metal alloy
- ✓ Tightened with 1.25 hex driver
- ✓ Recommended tightening torque:10-15Ncm

#### Material:

POM



- Multi-Unit Polishing Protector 

  Protecting the joint in the polishing procedure after producing a prosthesis using multi-unit metal/burn-out cylinder
  - ✓ Hand tightened with 1.25 hex driver

#### Material:

Medical Grade 4 Pure Titanium



BSMUPP480000A

# Multi-Unit Analog Lab analog for multi-unit abutment

- ✓ Hand tightened with 1.25 hex driver

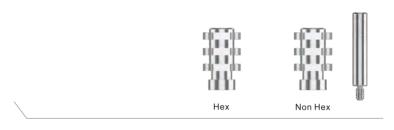


BSMUAL480000A

#### Multi-Unit Straight / Multi-Unit Angled Components

#### Multi-Unit Impression Coping Pick-up

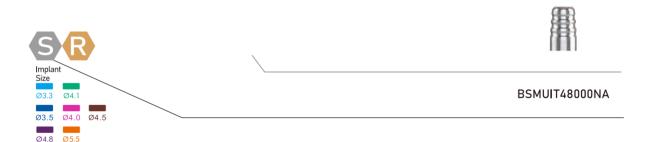
- ✓ Components for multi-unit abutment impression taking with open tray
- ✓ Multi-undercutting design that is stably fixed within the impression body
- ✓ Hand tightened with 1.25 hex driver



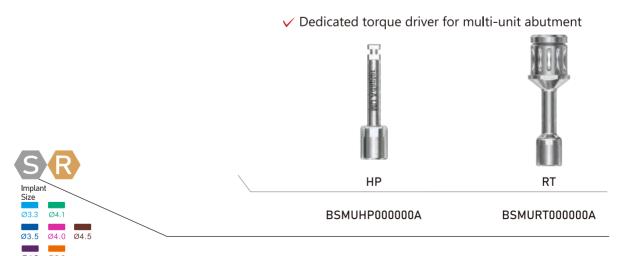
BSMUIP48000HA BSMUIP48000NA

# Multi-Unit Impression Coping Transfer

- ✓ Components for multi-unit abutment impression taking with close tray
- ✓ Undercutting design for stable fastening and accurate repositioning
- ✓ Hand tightened with 1.25 hex driver

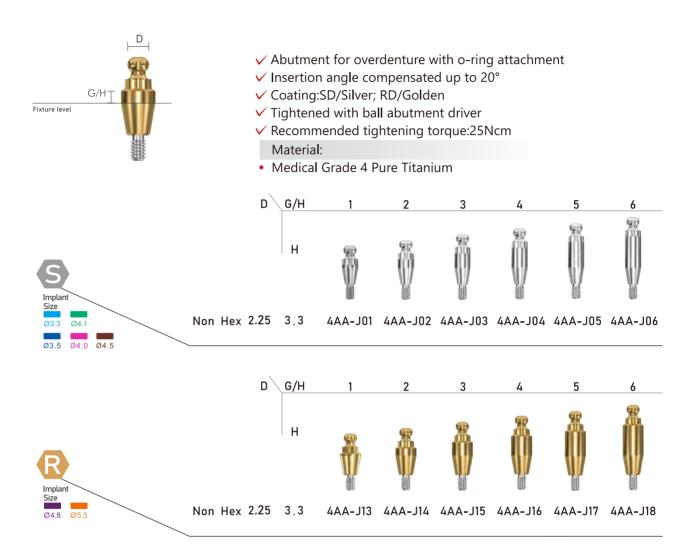


# Multi-Unit Abutment Adapter



# Ball Abutmen

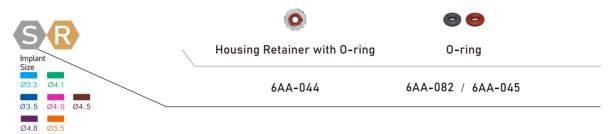
#### **Ball Abutment**



# Ball Abutment Components

# Housing Retainer with O-ring Vused when vertical dimension is shorter

than the housing cap



### Housing with 0-ring

- ✓ O-ring attachment for ball abutment
- ✓ O-ring replaced in metal housing



#### Ball Abutment Analog ✓ Lab analog for ball abutment

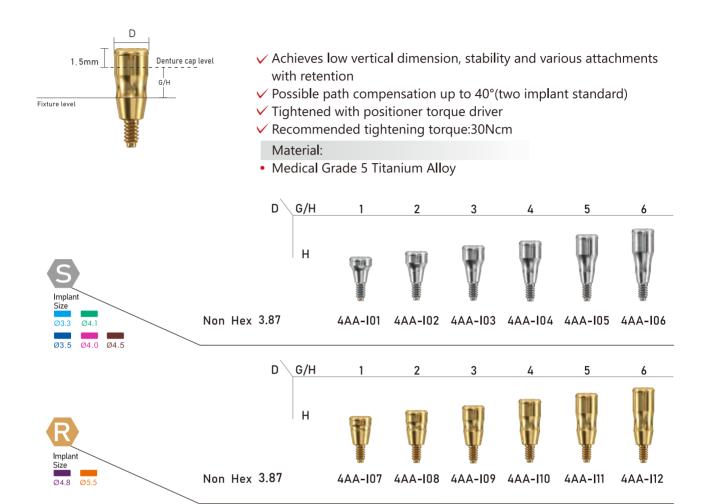


#### Ball Abutment Driver

✓ Dedicated driver for ball abutment



#### **Positioner Abutment**



#### Positioner Abutment Components

### Positioner torque driver

✓ Dedicated driver for positioner abutment



#### Positioner Core Tool

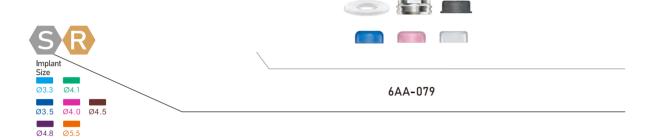
✓ Used in attaching and changing replacement males



#### Positioner Abutment Components

#### Positioner Male Processing Kit

- ✓ Component
  - -Block out spacer/ denture cap connected black processing male
  - -Replacement male blue/pink/clear
- ✓ Used by selecting the male with the adequate retention force for each case
- ✓ Positioner core tool for replacing the male



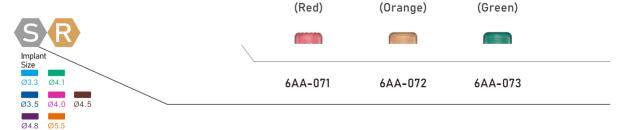
#### Positioner Replacement Male

- ✓ Retention: Approximately Blue: 1.5 lbs/Pink: 3 lbs/Clear: 5 lbs
- ✓ Placement angled compensation up to 20°(two implant standard)
- ✓ Packing unit: single color replacement male 4ea



#### Positioner Extended Replacement Male

- ✓ Retention:Approximately Red:1 lbs/Orange:2 lbs/Green:4 lbs
- ✓ Placement angled compensation up to 20°~40°(two implant standard)
- ✓ Packing unit: single color replacement male 4ea



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#### Positioner Abutment Components

#### Positioner Black Processing Male Male used in prosthesis fabrication process ✓ Packing unit:4ea

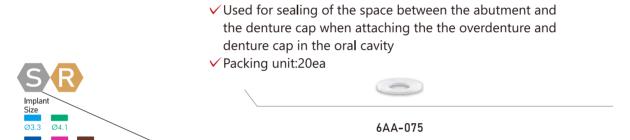


#### Positioner Block Out Spacers

Ø4.0 Ø5.5

Ø4.0

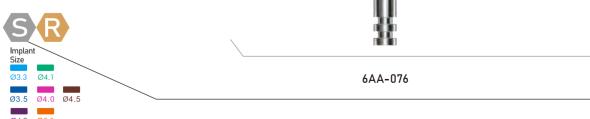
Ø4.8 Ø5.5



# Positioner Impression Coping Pick-up impression coping for positioner abutment with close tray ✓ Packing unit:4ea 6AA-078

Positioner Lab Analog 

Lab analog for positioner abutment ✓ Packing unit:4ea





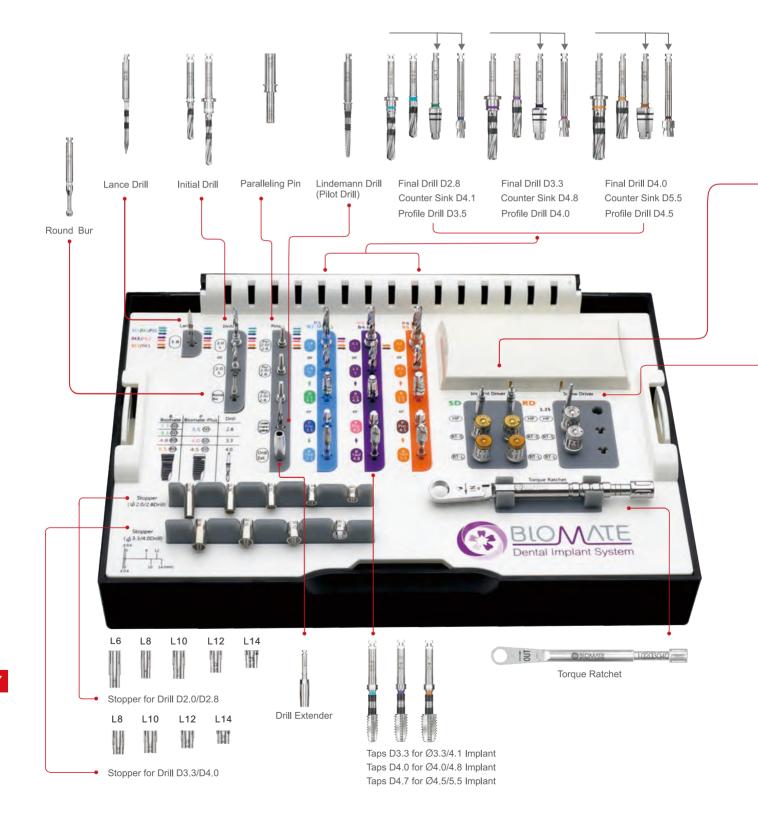


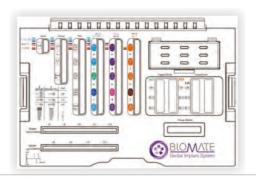
# Surgical Kits

#### **BIOMATE PLUS SC KIT**

#### Color management:

- ◆ BIOMATE PLUS/ Dark Blue(Ø3.5) 、 Pink(Ø4.0) 、 Brown(Ø4.5)









Implant Driver HP

Implant Driver RT



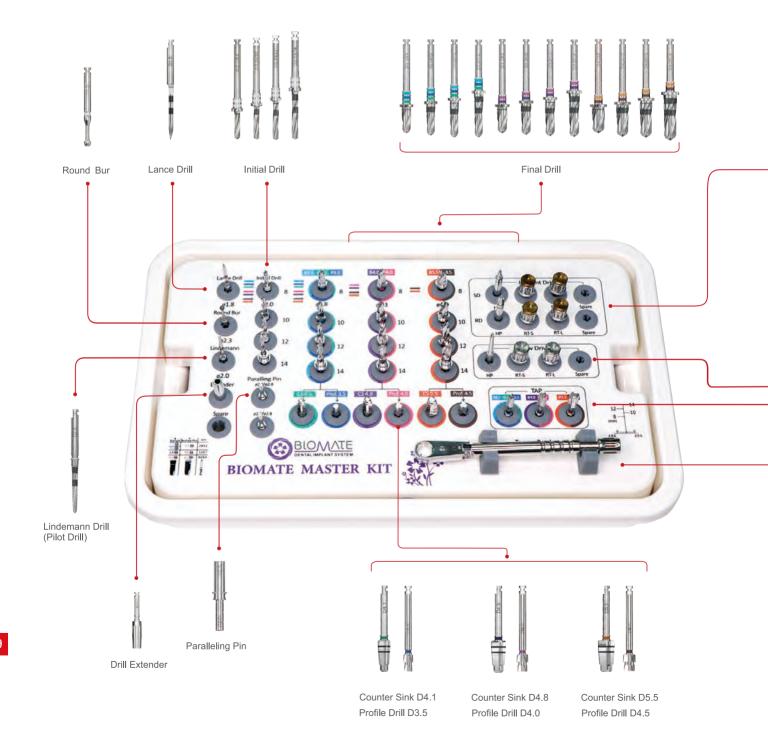
Screw Driver HP Screw Driver RT

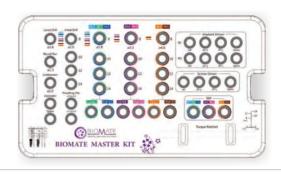
	Description	Cata	alog No.
1	BIOMATE PLUS SC KIT	3AA-137	Full Instruments
2	Lance Drill D1.8	3AA-038	1EA
	Initial Drill D2.0-S	3AA-006	1EA
3	Initial Drill D2.0-L	3AA-007	1EA
4	Round Bur D2.3	3AA-001	1EA
5	Paralleling Pin D2.0- D2.8	3AA-052	3EA
6	Lindemann Drill (Pilot Drill) D2.0xL14	3AA-037	1EA
7	Drill Extender	3AA-035	1EA
	Final Drill D2.8-S forø3.3/4.1 Implant	3AA-008	1EA
	Final Drill D2.8-L for Ø3.3/4.1 Implant	3AA-009	1EA
8	Final Drill D3.3-S for Ø4.8 Implant	3AA-010	1EA
Ü	Final Drill D3.3-L for Ø4.8 Implant	3AA-011	1EA
	Final Drill D4.0-S forø5.5 Implant	3AA-012	1EA
	Final Drill D4.0-L for ø 5.5 Implant	3AA-013	1EA
	Counter Sink D4.1	3AA-014	1EA
9	Counter Sink D4.8	3AA-015	1EA
	Counter Sink D5.5	3AA-016	1EA
	Profile Drill D3.5	3AA-065	1EA
10	Profile Drill D4.0	3AA-066	1EA
	Profile Drill D4.5	3AA-067	1EA
	Taps D3.3 for ø3.3/4.1 Implant	3AA-017	1EA
11	Taps D4.0 for Ø4. 0/4.8 Implant	3AA-018	1EA
'''	Taps D4.7 for ø4. 5/5.5 Implant	3AA-019	1EA
	Implant Driver Hex2.0 HP	P-L 3AA-05	6 1EA
	Implant Driver Hex2.0 RT	-S 3AA-03	0 1EA
12	Implant Driver Hex2.0 RT	-L 3AA-03	9 1EA
12	Implant Driver Hex2.5 HP	P-L 3AA-05	7 1EA
	Implant Driver Hex2.5 RT	-S 3AA-03	2 1EA
	Implant Driver Hex2.5 RT	-L 3AA-04	0 1EA
	Screw Driver Hex1.25-HF	P-L 3AA-04	1 1EA
13	Screw Driver Hex1.25-RT	-S 3AA-04	2 1EA
	Screw Driver Hex1.25-RT	-L 3AA-04	3 1EA
	Stopper L6 for Drill D2.0/D	2.8 3AA-02	0 1EA
	Stopper L8 for Drill D2.0/D	2.8 3AA-02	1 1EA
	Stopper L10 for Drill D2.0/D	2.8 3AA-02	2 1EA
	Stopper L12 for Drill D2.0/D		
14	Stopper L14 for Drill D2.0/D	2.8 3AA-02	4 1EA
	Stopper L8 for Drill D3.3/D	4.0 3AA-02	5 1EA
	Stopper L10 for Drill D3.3/D		
	Stopper L12 for Drill D3.3/D	4.0 3AA-02	7 1EA
	Stopper L14 for Drill D3.3/D		8 1EA
15	Torque Ratchet 10-40Ncr	n 3AA-03	4 1EA

# **BIOMATE MASTER KIT**

#### Color management:

- $\blacklozenge \mathsf{BIOMATE/Blue}(\varnothing 3.3) \land \mathsf{Green}(\varnothing 4.1) \land \mathsf{Purple}(\varnothing 4.8) \land \mathsf{Orange}(\varnothing 5.5)$
- ◆ BIOMATE PLUS/ Dark Blue(Ø3.5) 、 Pink(Ø4.0) 、 Brown(Ø4.5)









Implant Driver HP

Implant Driver RT







Taps D3.3 for Ø3.3/4.1 Implant Taps D4.0 for Ø4.0/4.8 Implant Taps D4.7 for Ø4.5/5.5 Implant



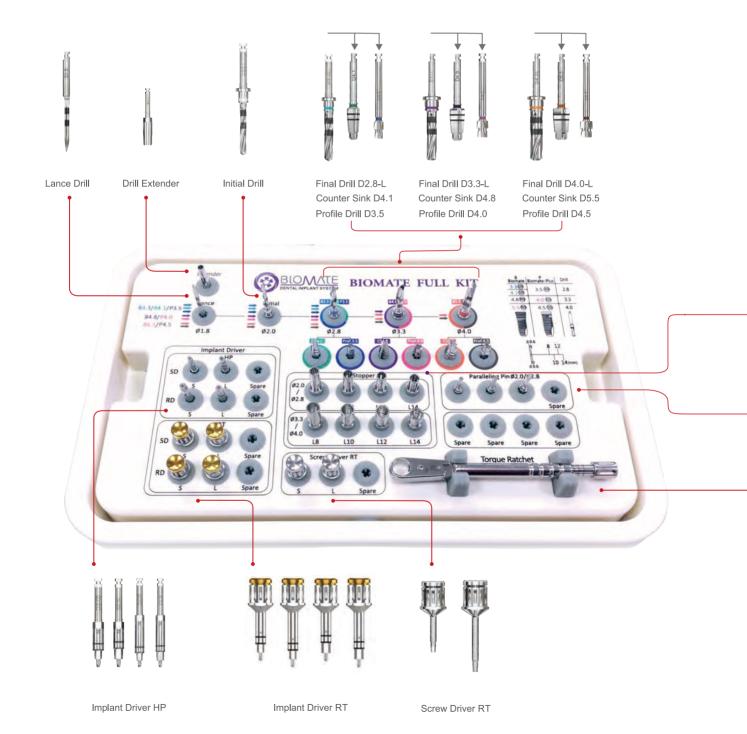
Torque Ratchet

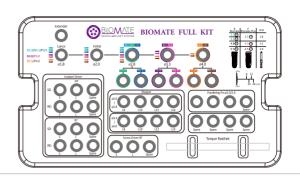
	Description	Cata	ılog No.
1	BIOMATE MASTER KIT	3AA-154	Full Instruments
2	Lance Drill D1.8	3AA-038	1EA
	Initial Drill D2.0-8mm	3AA-184	1EA
	Initial Drill D2.0-10mm	3AA-185	1EA
3	Initial Drill D2.0-12mm	3AA-186	1EA
	Initial Drill D2.0-14mm	3AA-187	1EA
4	Round Bur D2.3	3AA-001	1EA
5	Paralleling Pin D2.0-D2.8	3AA-052	2EA
6	Lindemann Drill (Pilot Drill)D2.0xL14	3AA-037	1EA
7	Drill Extender	3AA-035	1EA
	Final Drill D2.8-8mm	3AA-188	1EA
	for Ø 3.3/4.1 Implant Final Drill D2.8-10mm	3AA-189	1EA
	for Ø 3.3/4.1 Implant Final Drill D2.8-12mm for Ø 3.3/4.1 Implant	3AA-190	1EA
	Final Drill D2.8-14mm for Ø3.3/4.1 Implant	3AA-191	1EA
	Final Drill D3.3-8mm for Ø4.8 Implant	3AA-192	1EA
8	Final Drill D3.3-10mm for Ø4.8 Implant	3AA-193	1EA
Ü	Final Drill D3.3-12mm for Ø4.8 Implant	3AA-194	1EA
	Final Drill D3.3-14mm for Ø4.8 Implant	3AA-195	1EA
	Final Drill D4.0-8mm for ø 5.5 Implant	3AA-196	1EA
	Final Drill D4.0-10mm forø5.5 Implant	3AA-197	1EA
	Final Drill D4.0-12mm for Ø5.5 Implant	3AA-198	1EA
	Final Drill D4.0-14mm for Ø5.5 Implant	3AA-199	1EA
	Counter Sink D4.1	3AA-014	1EA
9	Counter Sink D4.8	3AA-015	1EA
	Counter Sink D5.5	3AA-016	1EA
	Profile Drill D3.5	3AA-065	1EA
10	Profile Drill D4.0	3AA-066	1EA
	Profile Drill D4.5	3AA-067	1EA
	Taps D3.3 for Ø3.3/4.1 Implant Taps D4.0	3AA-017	1EA
11	for ø4.0/4.8 Implant	3AA-018	1EA
	Taps D4.7 for Ø4.5/5.5 Implant	3AA-019	1EA
	Implant Driver Hex2.0 HP-		6 1EA
	Implant Driver Hex2.0 RT-	S 3AA-030	) 1EA
12	Implant Driver Hex2.0 RT-		9 1EA
12	Implant Driver Hex2.5 HP-	L 3AA-05	7 1EA
	Implant Driver Hex2.5 RT-	S 3AA-03	2 1EA
	Implant Driver Hex2.5 RT-	L 3AA-040	) 1EA
	Screw Driver Hex1.25-HP	L 3AA-04	1 1EA
13	Screw Driver Hex1.25-RT-		2 1EA
	Screw Driver Hex1.25-RT-	L 3AA-04;	3 1EA
		3AA-03	4 1EA

# **BIOMATE FULL KIT**

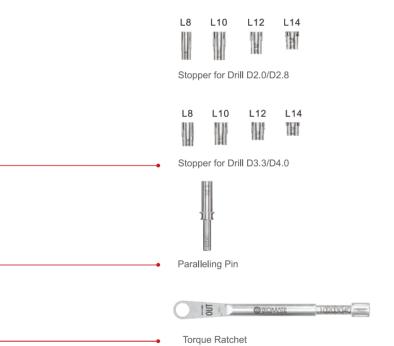
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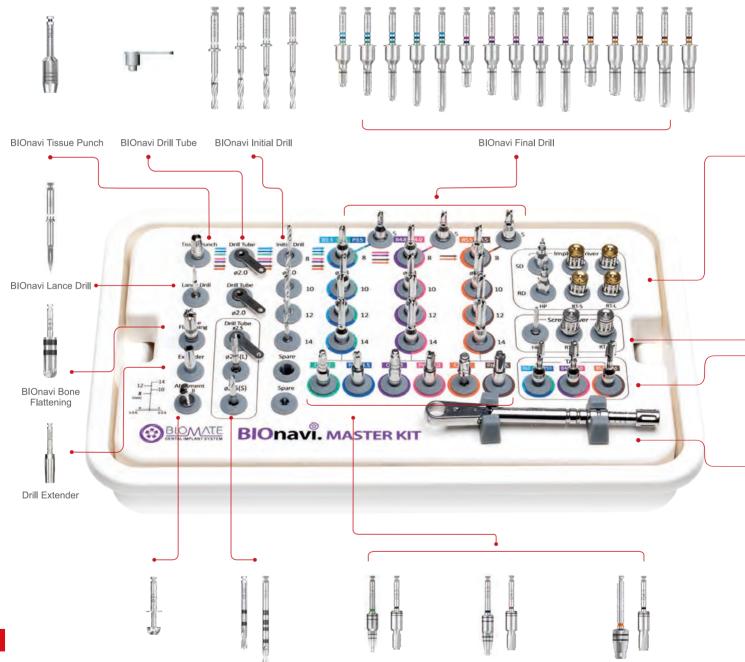
- $\blacklozenge \mathsf{BIOMATE/Blue}(\varnothing 3.3) \cdot \mathsf{Green}(\varnothing 4.1) \cdot \mathsf{Purple}(\varnothing 4.8) \cdot \mathsf{Orange}(\varnothing 5.5)$
- ◆ BIOMATE PLUS/ Dark Blue(Ø3.5) 、 Pink(Ø4.0) 、 Brown(Ø4.5)











BIOnavi Profile Drill D3.5

BIOnavi Counter Sink D4.8

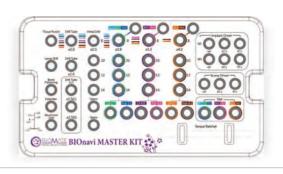
BIOnavi Profile Drill D4.0

Counter Sink D5.5

BIOnavi Profile Drill D4.5

BIOnavi Abutment Drill BIOnavi Point Straight Drill BIOnavi Counter Sink D4.1

BIOnavi MASTER KIT







BIOnavi Implant Driver-HP

BIOnavi Implant Driver-RT





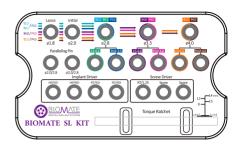
Screw Driver -HP Screw Driver -RT

BIOnavi Taps D3.3 for Ø3.3/3.5/4.1 Implant BIOnavi Taps D4.0 for Ø4.0/4.8 Implant BIOnavi Taps D4.7 for Ø4.5/5.5 Implant



Torque Ratchet

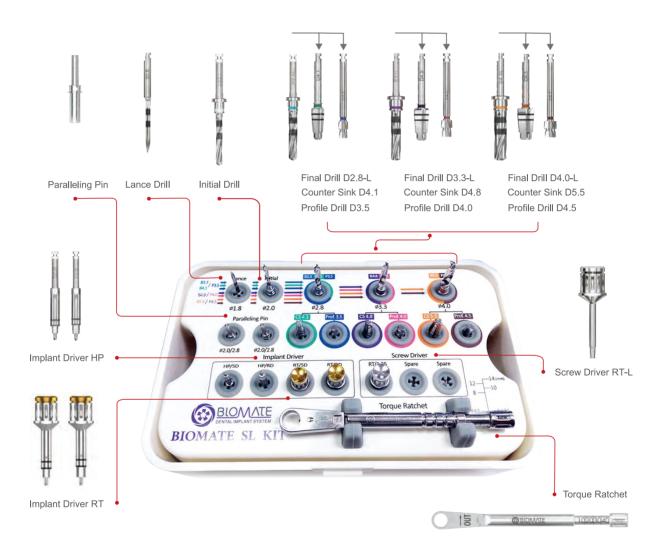
	Description	Cat	alog No.
1	BIOnavi MASTER KIT	3AA-159	Full Instruments
2	BIOnavi Tissue Punch D3.0	3AA-N35	1EA
3	BIOnavi Bone Flattening	3AA-N03	1EA
4	BlOnavi Drill Tube D2.0/D5.3	3AA-N04	2EA
	BlOnavi Drill Tube D2.5/D5.3	3AA-N05	1EA
5	BIOnavi Lance Drill D2.0	3AA-N51	1EA
	BIOnavi Initial Drill D2.0-8mm	3AA-N24	1EA
6	BIOnavi Initial Drill D2.0-10mm	3AA-N25	1EA
	BIOnavi Initial Drill D2.0-12mm	3AA-N26	1EA
	BIOnavi Initial Drill D2.0-14mm	3AA-N27	1EA
	BIOnavi Final Drill D2.8-5mm for Ø3.3/3.5/4.1 Implant	3AA-N58	1EA
	BIOnavi Final Drill D2.8-8mm for ø 3.3/3.5/4.1 Implant	3AA-N06	1EA
	BIOnavi Final Drill D2.8-10mm for Ø3.3/3.5/4.1 Implant	3AA-N07	1EA
	BIOnavi Final Drill D2.8-12mm for Ø3.3/3.5/4.1 Implant	3AA-N08	1EA
	BIOnavi Final Drill D2.8-14mm for Ø3.3/3.5/4.1 Implant	3AA-N09	1EA
	BIOnavi Final Drill D3.3-5mm for Ø4.0/4.8 Implant	3AA-N59	1EA
	BIOnavi Final Drill D3.3-8mm	3AA-N10	1EA
	for Ø4.0/4.8 Implant BIOnavi Final Drill D3.3-10mm	3AA-N11	1EA
7	for Ø4.0/4.8 Implant BIOnavi Final Drill D3.3-12mm		
	for Ø4.0/4.8 Implant BIOnavi Final Drill D3.3-14mm	3AA-N12	1EA
	forø4.0/4.8 Implant	3AA-N13	1EA
	BIOnavi Final Drill D4.0-5mm for Ø4.5/5.5 Implant	3AA-N60	1EA
	BIOnavi Final Drill D4.0-8mm for Ø4.5/5.5 Implant	3AA-N14	1EA
	BIOnavi Final Drill D4.0-10mm for Ø4.5/5.5 Implant	3AA-N15	1EA
	BIOnavi Final Drill D4.0-12mm for ø4.5/5.5 Implant	3AA-N16	1EA
	BIOnavi Final Drill D4.0-14mm for Ø4.5/5.5 Implant	3AA-N17	1EA
	BIOnavi Counter Sink D4.1	3AA-N52	1EA
8	BIOnavi Counter Sink D4.8	3AA-N53	1EA
	Counter Sink D5.5	3AA-016	1EA
	BIOnavi Profile Drill D3.5	3AA-N30	1EA
9	BIOnavi Profile Drill D4.0	3AA-N31	1EA
	BIOnavi Profile Drill D4.5	3AA-N49	1EA
	BIOnavi Implant Driver-Stopper Hex 2.0-HP-S	3AA-N18	1EA
	BIOnavi Implant Driver-Stopper Hex 2.0-RT-S	3AA-N19	1EA
10	BIOnavi Implant Driver-Non Stopper Hex 2.0-RT	3AA-N22	1EA
	BIOnavi Implant Driver-Stopper Hex 2.5-HP-S	3AA-N20	1EA
	BIOnavi Implant Driver-Stopper Hex 2.5-RT-S	3AA-N21	1EA
	BIOnavi Implant Driver-Non Stopper Hex 2.5-RT BIOnavi Abutment Drill	3AA-N23	1EA
11		3AA-N01	1EA
12	Screw Driver Hex1.25-HP-L Screw Driver Hex1.25-RT-S	3AA-041 3AA-042	1EA
12	Screw Driver Hex1.25-RT-L	3AA-042	1EA
	BIOnavi Taps D3.3	3AA-N33	1EA 1EA
13	for Ø3.3/4.1 Implant BIOnavi Taps D4.0	3AA-N34	1EA
13	for Ø4.8 Implant BIOnavi Taps D4.7	3AA-N50	1EA
14	for ø5.5 Implant Drill Extender-L	3AA-035	1EA
15	BIOnavi Point Straight Drill-S	3AA-N28	1EA
	BIOnavi Point Straight Drill-L	3AA-N29	1EA
16	Torque Ratchet 10-40Ncm	3AA-034	1EA
	· · · · · · · · · · · · · · · · · · ·		



# **BIOMATE SL KIT**

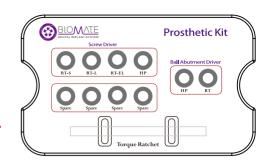
#### Color management:

- ◆ BIOMATE PLUS/ Dark Blue(Ø3.5) 、 Pink(Ø4.0) 、 Brown(Ø4.5)

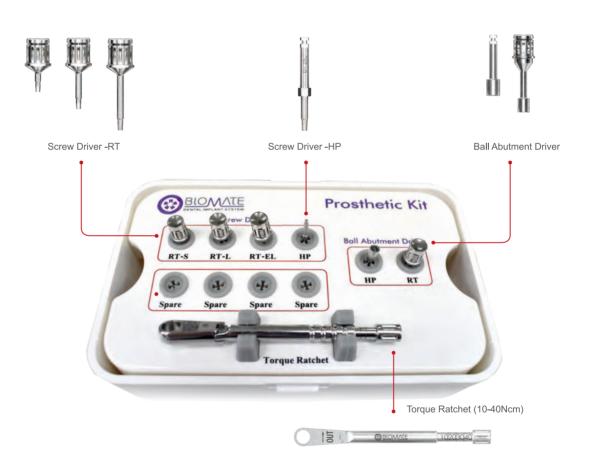


Description		Catalog No.		
1	BIOMATE SL KIT	3AA-063	Full Instruments	
2	Lance Drill D1.8	3AA-038	1EA	
3	Initial Drill D2.0-L	3AA-007	1EA	
4	Paralleling Pin D2.0- D2.	8 3AA-052	2EA	
	Final Drill D2.8-L for Ø3.3/4.1 Implant	3AA-009	1EA	
5	Final Drill D3.3-L forø4.8 Implant	3AA-011	1EA	
	Final Drill D4.0-L forø5.5 Implant	3AA-013	1EA	
	Counter Sink D4.1	3AA-014	1EA	
6	Counter Sink D4.8	3AA-015	1EA	
	Counter Sink D5.5	3AA-016	1EA	

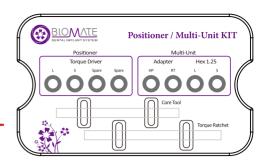
Description		Catalog No.	
	Profile Drill D3.5	3AA-065	1EA
7	Profile Drill D4.0	3AA-066	1EA
	Profile Drill D4.5	3AA-067	1EA
	Implant Driver Hex2.0	HP-L 3AA-056	1EA
8	Implant Driver Hex2.0	RT-L 3AA-039	1EA
0	Implant Driver Hex2.5	HP-L 3AA-057	1EA
	Implant Driver Hex2.5	RT-L 3AA-040	1EA
9	Screw Driver Hex1.25	-RT-L 3AA-043	1EA
10	Torque Ratchet 10~40	Ncm 3AA-034	1EA
10	Torque Ratchet 10~40	Ncm 3AA-034	1EA



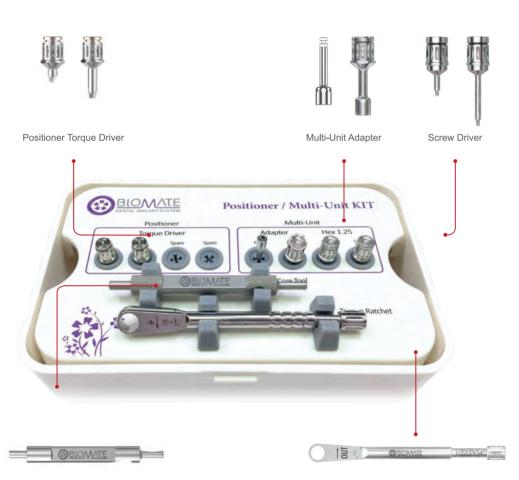
# **BIOMATE PROSTHETIC KIT**



Description		Catalog No.	
1	BIOMATE PROSTHETIC KIT	3AA-089	Full Instruments
	Screw Driver Hex 1.25-HP-L	3AA-041	1EA
2	Screw Driver Hex 1.25-RT-S	3AA-042	1EA
2	Screw Driver Hex 1.25-RT-L	3AA-043	1EA
	Screw Driver Hex 1.25-RT-EL	3AA-148	1EA
2	Ball Abutment Driver Hex-HP	3AA-050	1EA
3	Ball Abutment Driver Hex-RT-L	3AA-053	1EA
4	Torque Ratchet 10-40Ncm	3AA-034	1EA



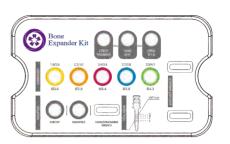
# POSITIONER / MULTI-UNIT KIT



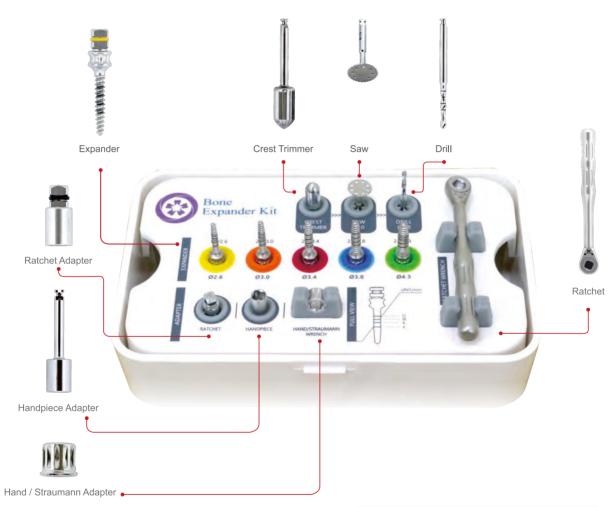
Positioner Core Tool

Torque Ratchet (10-40Ncm)

	Description	Catalog	No.
1	Positioner Multi-Unit KIT	BSSIPM00000FA	Full Instruments
2	Positioner Torque Driver-S	3AA-085	1EA
	Positioner Torque Driver-L	3AA-086	1EA
3	Multi-Unit Abutment Adapter-H	P BSMUHP000000A	1EA
3	Multi-Unit Abutment Adapter-R	T BSMURT000000A	1EA
4	Screw Driver Hex 1.25-RT-S	3AA-042	1EA
	Screw Driver Hex 1.25-RT-L	3AA-043	1EA
5	Positioner Core Tool	3AA-087	1EA
6	Torque Ratchet 10-40Ncm	3AA-034	1EA

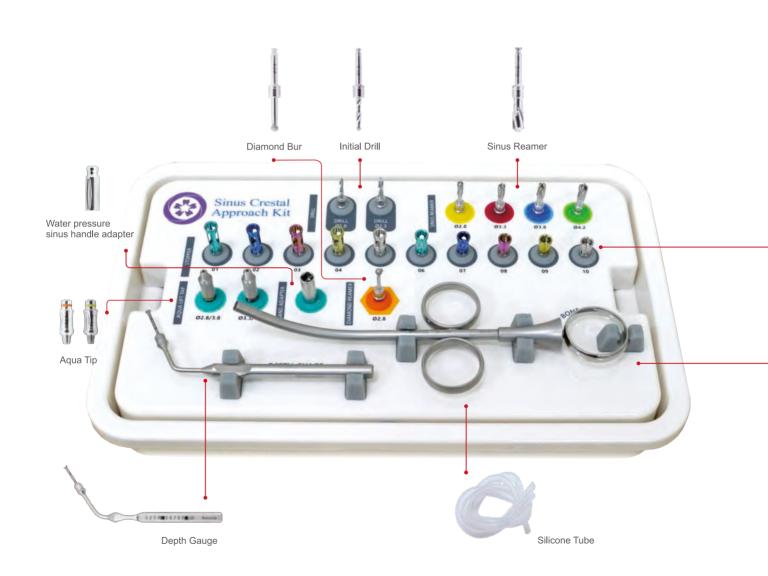


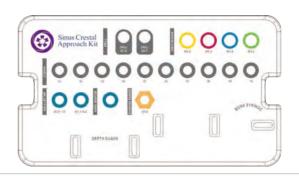
#### **BONE EXPANDER KIT**



	Description	Catalog No.			
1	BONE EXPANDER KIT	3AK-A00	Full Instruments		
2	Crest Trimmer	3AK-A01	1EA		
3	Saw	3AK-A02	1EA		
4	Drill D1.8	3AK-A03	1EA		
	Expander D2.6	3AK-A04	1EA		
	Expander D3.0	3AK-A05	1EA		
5	Expander D3.4	3AK-A06	1EA		
	Expander D3.8	3AK-A07	1EA		
	Expander D4.3	3AK-A08	1EA		
6	Ratchet	3AK-A09	1EA		
7	Ratchet Adapter	3AK-A10	1EA		
8	Handpiece Adapter	3AK-A11	1EA		
9	Hand / Straumann Adapter	3AK-A12	1EA		

#### SINUS CRESTAL APPROACH KIT





	Description	Cata	alog No.
1	Sinus Crestal Approach Kit	3AK-B00	Full Instruments
	Initial Drill D1.8	3AK-B13	1EA
2	Initial Drill D2.3	3AK-B14	1EA
	Sinus Reamer D2.8	3AK-B15	1EA
	Sinus Reamer D3.3	3AK-B16	1EA
3	Sinus Reamer D3.8	3AK-B17	1EA
	Sinus Reamer D4.2	3AK-B18	1EA
	Stopper 1mm	3AK-B01	1EA
	Stopper 2mm	3AK-B02	1EA
	Stopper 3mm	3AK-B03	1EA
	Stopper 4mm	3AK-B04	1EA
4	Stopper 5mm	3AK-B05	1EA
4	Stopper 6mm	3AK-B06	1EA
	Stopper 7mm	3AK-B07	1EA
	Stopper 8mm	3AK-B08	1EA
	Stopper 9mm	3AK-B09	1EA
	Stopper 10mm	3AK-B10	1EA
5	Aqua Lift Tap D2.8 (2.8~3.8)	3AK-B20	1EA
5	Aqua Lift Tap D3.3 (3.3~4.2)	3AK-B21	1EA
6	Hand Adapter	3AK-B19	1EA
7	Diamond Bur D2.8	3AK-B11	1EA
8	Bone Syringe D3.5 / D4.0	3AK-B23	1EA
9	Depth Gauge	3AK-B22	1EA
10	Silicone Tube	3AK-B12	1EA



Stopper 1mm-10mm



Bone Syringe

BIOnavi Master Kit	Description	Dimension	Catalog No.
© MARCHE BICHARD, MACCIER MIT	BIOnavi Master Kit	Full Instruments 51PCS+1BOX	3AA-159
BIOMATE Prosthetic Kit	Description	Dimension	Catalog No.
Providence Co	Prosthetic Kit	Full Instruments 7PCS+1BOX	3AA-089
Positioner / Multi-Unit Kit	Description	Dimension	Catalog No.
Produced 1 dates to a 671	Positioner / Multi-Unit Kit	Full Instruments 8PCS+1BOX	BSSIPM00000FA
Sinus Crestal Approach Kit	Description	Dimension	Catalog No.
	Sinus Crestal Approach Kit	Full Instruments 23PCS+1BOX	3AK-B00
Bone Expander Kit	Description	Dimension	Catalog No.
	Bone Expander Kit	Full Instruments 12PCS+1BOX	3AK-A00
Implant & Screw Remover R	Kit (S) Description	Dimension	Catalog No.
Im	nplant & Screw Remover Kit (s)	Full Instruments 24PCS+1BOX	3AK-D00

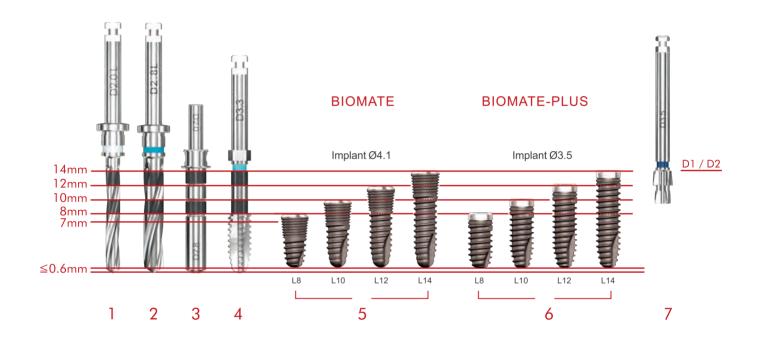
#### Surgical Instruments

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Depth Gauge	
Ball Abutment Driver	



## Depth Marks on Biomate Instruments

Laser marks are made on the bladed end of the drills to indicate drilled depth for the practitioner



- 1. Initial Drill D2.0-L
- 2. Final Drill D2.0-L corresponds with Ø4.1mm/Ø3.5mm fixtures
- 3. Guide Pin D2.8mm
- 4. Taps D3.3mm corresponds with  $\varnothing$  4.1mm/ $\varnothing$ 3.5mm fixtures
- 5.  $\varnothing$  4.1mm fixtures with length of 8mm,10mm,12mm,14mm
- 6.  $\varnothing$  3.3mmfixtures with length of 8mm,10mm,12mm,14mm
- 7. Profile Drill D3.5mm corresponds with  $\emptyset$ 3.5mm fixtures

## Surgical Instruments

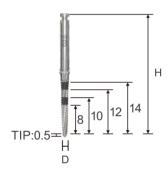
## **Round Bur** Lance Drill 12

Name	TIP	Diameter(D)	Height(H	l) Catalog No.	
Round Bur	_	D2.3	26	3AA-001	
Lance Drill	0.5	D1.8	33	3AA-038	

- Used in the initial stage of surgery to mark the position for implantation
- Used with rotation speed set at 1,200 rpm, torque 20 Ncm, feed water
- · Round Bur can mark and smooth out a flat bone surface for drilling
- The pointed design on the Lance Drill provides a stable drilling into the cortical

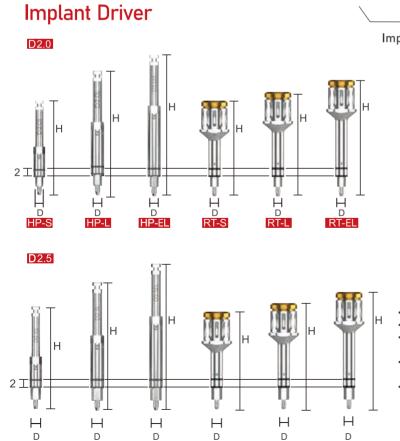
#### Lindemann Drill (Pilot Drill)

TIP:0.5=



Name	TIP	Diameter(D)	Height(H	H) Catalog No.	
Lindemann Drill (Pilot Drill)	0.5	D2.0xL14	32	3AA-037	

- Its side-cut design can correct the deviated position and angle of the initial
- Used with rotation speed set at 1,200 rpm, feed water
- Also called a Sidecut or a Lindemann

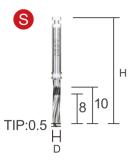


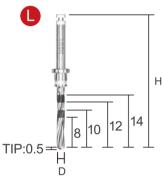
Name	Diameter(D) He	ight(H)	Catalog No.
plant Driver	Hex2.0-HP-S	27	3AA-029
	Hex2.0-HP-L	32	3AA-056
	Hex2.0-HP-EL	37	3AA-124
	Hex2.0-RT-S	24	3AA-030
	Hex2.0-RT-L	26	3AA-039
	Hex2.0-RT-EL	29	3AA-126
	Hex2.5-HP-S	27	3AA-031
	Hex2.5-HP-L	32	3AA-057
	Hex2.5-HP-EL	37	3AA-125
	Hex2.5-RT-S	24	3AA-032
	Hex2.5-RT-L	26	3AA-040
	Hex2 5-RT-FI	29	3AA-127

- Hex D2.0 corresponds with D3.1/4.1 fixture to lock the fixture into the bone
- Hex D2.5 corresponds with D4.8/5.5 fixture to lock the fixture into the bone
- HP instruments are used with implant motor, RT instruments are used with the torque ratchet
- Line markings are 2mm apart to help determine the gingival height during minimal invasive surgery
- The dots indicate each flat surface of the internal hexagon of the fixture to help determine which direction the abutment is facing

## Initial Drill / Final Drill

#### **Initial Drill**

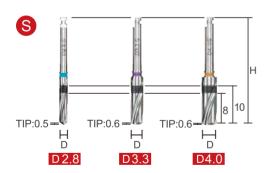


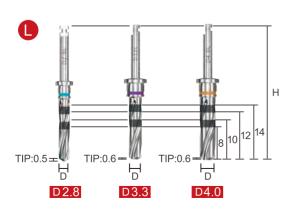


Name	TIP	Diameter(D)	Height(H)	Catalog No.
Initial Drill	0.5	D2.0-S	27	3AA-006
Initial Drill	0.5	D2.0-L	35	3AA-007

- The size of the initial drill is D2.0
- The measured length excludes the tip
- Used with rotation speed set at 1,200 rpm, torque 20 Ncm, feed water
- Used for drilling the hole to the required depth in the bone after locating point of implantation
- Initial Drill S is used when there is limited workspace in patient's mouth
- Initial Drill L can be used with a stopper when there are neighboring teeth

#### Final Drill

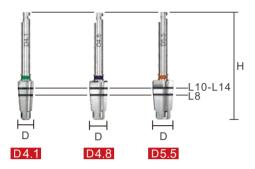




Name	TIP	Diameter(D)	Height(H	l) Catalog No.	Fixture Ø
Final Drill	0.5	D2.8-S	27	3AA-008	Ø3.3 Ø4.1 Ø3.5
Final Drill	0.5	D2.8-L	35	3AA-009	Ø3.3 Ø4.1 Ø3.5
Final Drill	0.6	D3.3-S	27	3AA-010	Ø4.8 Ø4.0
Final Drill	0.6	D3.3-L	35	3AA-011	Ø4.8 Ø4.0
Final Drill	0.6	D4.0-S	27	3AA-012	Ø5.5 Ø4.5
Final Drill	0.6	D4.0-L	35	3AA-013	Ø5.5 Ø4.5

- Each drill corresponds to different diameters of fixtures
- The measured length excludes the tip
- Used with rotation speed set at 1,200 rpm, torque 20 Ncm, feed water
- Final Drill S is used when there is limited workspace in patient's mouth
- Final Drill L can be used with a stopper when there are neighboring teeth
- Final Drill D2.8 is used for enlarging the hole after using Initial Drill • Final Drill D3.3 is used for enlarging the hole after using Final Drill D2.8
- Final Drill D4.0 is used for enlarging the hole after using Final Drill D3.3

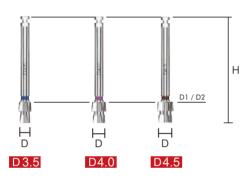
#### **Counter Sink**



Name	Diameter(D)	Height(H	l) Catalog No.	Fixture Ø
Counter Sink	D4.1	29	3AA-014	Ø4.1
	D4.8	29	3AA-015	Ø4.8
	D5.5	29	3AA-016	Ø5.5

- Used to trim the cortical bone with rotation speed 1,200rpm, torque 20Ncm, feed water; each drill corresponds to different diameters of fixtures
- Drill to the second laser mark for L10-L14 Implant or the first for L8mm Implant
- Counter Sink D4.1 is used after Final Drill D2.8
- Counter Sink D4.8 is used after Final Drill D3.3
- Counter Sink D5.5 is used after Final Drill D4.0

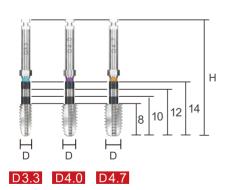
#### **Profile Drill**



Name	Diameter(D)	Height(H	H) Catalog No.	Fixture Ø
Profile Drill	D3.5	28	3AA-065	Ø3.5
	D4.0	28	3AA-066	Ø4.0
	D4.5	28	3AA-067	Ø4.5

- Used to trim the cortical bone with rotation speed 1,200rpm, torque 20Ncm, feed water; each drill corresponds to different diameters of fixtures
- Profile Drill
- Profile Drill D3.5 is used after Final Drill D2.8
- Profile Drill D4.0 is used after Final Drill D3.3
- Profile Drill D4.5 is used after Final Drill D4.0

#### **Taps**



Name	Diameter(D)	Height(H	H) Catalog No.	Fixture Ø
Taps	D3.3	29	3AA-017	Ø3.3 Ø4.1 Ø3.5
	D4.0	29	3AA-018	Ø4.8 Ø4.0
	D4.7	29	3AA-019	Ø5.5 Ø4.5

- Used on D1 bone to create threads inside the hole; each drill corresponds to different diameters of fixtures
- Used with rotation speed set at 20 rpm, torque 35 Ncm; set the implant motors to reversed rotation to withdraw the instrument after drilling
- Taps D3.3 is used after drilling with Final Drill D2.8 and Counter Sink D4.1
- Taps D4.0 is used after drilling with Final Drill D3.3/ Profile Drill D4.0
- Taps D4.7 is used after drilling with Final Drill D4.0/ Counter Sink D5.5

# Stopper For Drill / Drill Extender Handpiece Adapter

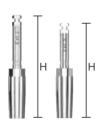
#### Stopper For Drill

#### D2.0 / D2.8

L6	L8	L9	L10
L11	L12	L13	L14 [Н]_н

D3.3 / [	04.0		
L6	L8	L9	L10
H	H	BE BE	H
L11	L12	L13	L14
H	H	H	H E

#### **Drill Extender**



#### Handpiece Adapter



Name	Diameter(D)	Height(H)	Catalog No.
Stopper For Drill L6	D2.0/D2.8	14	3AA-020
Stopper For Drill L8	D2.0/D2.8	12	3AA-021
Stopper For Drill L9	D2.0/D2.8	11	3AA-090
Stopper For Drill L10	D2.0/D2.8	10	3AA-022
Stopper For Drill L11	D2.0/D2.8	9	3AA-091
Stopper For Drill L12	D2.0/D2.8	8	3AA-023
Stopper For Drill L13	D2.0/D2.8	7	3AA-092
Stopper For Drill L14	D2.0/D2.8	6	3AA-024
Stopper For Drill L6	D3.3/D4.0	14	3AA-064
Stopper For Drill L8	D3.3/D4.0	12	3AA-025
Stopper For Drill L9	D3.3/D4.0	11	3AA-093
Stopper For Drill L10	D3.3/D4.0	10	3AA-026
Stopper For Drill L11	D3.3/D4.0	9	3AA-094
Stopper For Drill L12	D3.3/D4.0	8	3AA-027
Stopper For Drill L13	D3.3/D4.0	7	3AA-095
Stopper For Drill L14	D3.3/D4.0	6	3AA-028

- The Stopper is a safety sleeve that can be fit onto the Initial Drill-L or the Final Drill-L through the tip to prevent drilling too deep
- Stopper D2.0/2.8 is used with Initial Drill D2.0 and Final Drill D2.8
- Stopper D3.3/4.0 is used with Final Drill D3.3/4.0

	Name	Diameter(D)	Height(H)	Catalog No.
[	Orill Extender	L	27	3AA-035
		S	25	3AA-058

· Used for extending drills to avoid neighboring teeth

N	а	m	е

#### Height(H) Catalog No.

#### Handpiece Adapter

16 3AA-045

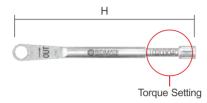
- · Adapt instrument for use on handpeice to the torque ratchet
- Switching from motorized mode to manual mode
- How to use:







#### **Torque Ratchet**



Name Diameter(D) Height(H) Catalog No.

Torque Ratchet 10-40Ncm 83 3AA-034

- Wrench to apply a constant torque (10/20/30Ncm) to screws and abutments
- When the set torque is applied, the neck of the Torque Wrench is bent for indication
- If a continuous force is applied while the neck is bent, excessive torque is applied, resulting in screw fracture
- •Twist the adjustable end to set the required torque value; loosen fully to achieve inifinite torque



#### **BioSmart Torque Ratchet**



- Name Diameter(D) Catalog No.

  BioSmart Torque Ratchet 80Ncm BSSITR000000A
- A set of a two-way Torque Wrench and a Torque Connector
- Applying forward/reverse torque by rotating the Torque Wrench handle without removing the connector
- Applying torque according to the line marked with the torque value to be applied by pulling the bar
- Torque applied up to 80Ncm (15/30/45/80Ncm scale display)
- · Washed and sterilized after use for storing

#### Paralleling Pin

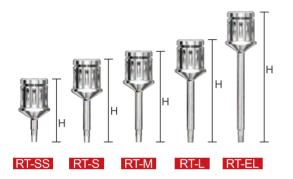


Name	Diameter(D)	Height(H)	Catalog No.
Paralleling Pin	D2.0/2.8	18	3AA-052

• Placed in the hole to inspect the occlusion and the distance of the implant with neighboring teeth

#### **Screw Driver**

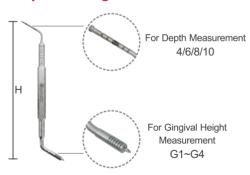




Name	Diameter(D)	Height(H)	Catalog No.
Screw Driver	Hex 1.25-HP-S	19	3AA-033
	Hex 1.25-HP-L	25	3AA-041
	Hex 1.25-HP-EL	31	3AA-145
	Hex 1.25-RT-SS	14.8	3AA-146
	Hex 1.25-RT-S	19.8	3AA-042
	Hex 1.25-RT-M	21.8	3AA-147
	Hex 1.25-RT-L	24.8	3AA-043
	Hex 125-RT-FI	31.8	3AA-148

- Used for connecting the healing components (Cover Screw/Healing Abutment) or the prosthetic components (Abutments) with the fixtures
- HP instruments are used with implant motor, RT instruments are used with the torque ratchet

#### **Depth Gauge**



\	Name		Height(H)	Catalog No.
	Depth Gauge	_	139	3AA-044

• Used to inspect the height of the healing abutment and abutment after implant, and the depth of the hole

#### **Ball Abutment Driver**



\	Name	Diameter(D)	Height(H)	Catalog No.
	Ball Abutment Driver	Hex-HP	18.5	3AA-050
		Hex-RT-S	20.0	3AA-051
		Hex-RT-L	26.0	3AA-053

- Used for Ball Abutment
- Hex-HP is used with handpiece at 30 Ncm
- Hex-HP is used with handpiece at 25 Ncm

#### Surgical Procedure

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and Maintenance	93



Implant position of each case is different. Evaluation should be made in consideration of occlusion, neighboring teeth, thickness of the soft tissue, and the type of prosthetic components that will be used.

#### Distance between the bevel of the fixture and the neighboring teeth should be more than 1.5 mm

Distance between Biomate Implant and Neighboring Teeth					
Natural Teeth/Implant	3.3	4.1	4.8	5.5	
Natural Teeth	3.2	3.6	3.9	4.3	

Distance between Biomate Plus Implant and Neighboring Teeth				
Natural Teeth/Implant	3.5	4.0	4.5	
Natural Teeth	3.3	3.5	3.8	

#### Ø3.3 Prosthetic Platform



Osteotomy Center from Adjacent Tooth

#### Ø4.1 Prosthetic Platform



Osteotomy Center from Adjacent Tooth

#### Ø4.8 Prosthetic Platform Ø5.5 Prosthetic Platform



Osteotomy Center from Adjacent Tooth

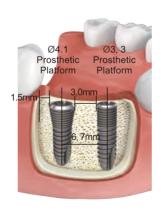


Osteotomy Center from Adjacent Tooth

#### If two fixtures are placed next to each other, the distance between the bevels of the two fixtures should be more than 3.0 mm



Measurement is Dependent on the Two Prosthetic **Platform Diameters** 



Measurement is Dependent on the Two Prosthetic **Platform Diameters** 

Distance between Biomate and Neighboring Teeth					
Fixture/ Fixture	3.3	4.1	4.8	5.5	
3.3	6.3	6.7	7.1	7.4	
4.1	6.7	7.1	7.5	7.8	
4.8	7.1	7.5	7.8	8.2	
5.5	7.4	7.8	8.2	8.5	

Distance between Biomate-Plus Fixture

and Neighboring Teeth					
Fixture/ Fixture	3.5	4.0	4.5		
3.5	6.5	6.8	7		
4.0	6.8	7	7.3		
4.5	7	7.3	7.5		

## Operation Steps for Implanting Ø4.1 x L12 Fixture Operation Steps for Implanting Ø3.5 x L12 Fixture

STEP.1 STEP.2 STEP.3











#### Incision

Select a suitable scalpel to incise the gingiva and the periosteum at the desired implant sit in order to expose the alveolar bone.

Note: The incision direction is subject to the patient's real bone condition, and the healing mode must also be considered (transgingival or submerged)

#### **Marking the Implant Position**

After detaching mucosa, the Lance Drill is used to determine the implant site on the bone. The drilling depth is variable and is maximum the length of the implant.

Use the implant motor for the drilling procedure. Recommend speed max. 1,200 rpm (revolutions per minute) at 20Ncm; adjust appropriate water flow for cooling the drilling site.

Note: Surgical guide may be used to assist in marking the implant position.

#### **Initial Drilling**

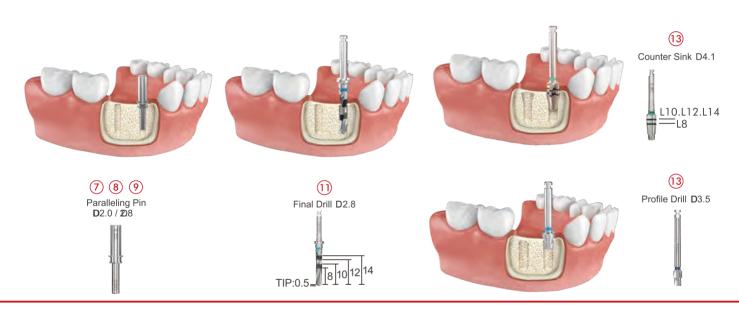
Using the D2.8 mm Initial Drill, the implant length and axial alignment are then determined. The required drilling depth can be checked optically using the depth marking on the drills or using the optionaldepth pin.

Recommended speed setting is 1,200 rpm at 20Ncm. The cavity is rinsed again with physiological saline solution.

Note: Stopper D2.0/2.8 may be used according to the needed depth.



STEP.4 STEP.5 STEP.6



#### **Axial Alignment**

Check the alignment with neighboring teeth and the occlusion by using paralleling pin. Alignment can be adjusted in subsequent steps.

Note: The incision direction is subject to the patient's real bone condition, and the healing mode must also be considered (trans-gingival or submerged)

#### **Initial Extension Drilling**

The initial drill hole is extended by using D2.8 mm final drill. Alignment can still be adjusted slightly at this stage. Recommended speed setting is 1,200 rpm at 20Ncm. Cooling is to use a chilled, sterile, physiological saline solution.

Note: Stopper D2.0/2.8 may be used according to the needed depth.

#### $\textbf{Expanding with Counter Sink} \quad \textbf{(Only for BIOMATE)}$

Use Counter Sink D4.1 for trimming the cortical bone according to the patient's bone density. Enlarge the rim of the hole to correspond to the outer diameter of the fixture's platform.

#### **Expanding with Profile Drill**

Use Profile Drill D3.5 for trimming the cortical bone according to patient's bone density. Enlarge the rim of the hole to correspond to the outer diameter of the fixture's platform. Recommended speed setting is 1,200 rpm at 20 Ncm (feed water).

Note: Counter Sink is available for D1-D3 but not needed for D4 bone; Profile Drill is available for D1-D2 bone, D3-D4 bone may be skipped with this step.

## The Procedure

#### Operation Steps for Implanting Ø4.1 x L12 Fixture Operation Steps for Implanting Ø3.5 x L12 Fixture

STEP.7

STEP.8











#### **Threading with Taps**

BIOMATE fixture is applied with self-tapping design. However, for patients with high bone density (D1 bone), Taps D3.3 is Recommended. The reason of threading the drilled hole is to avoid excessive stress that might damage the bone and result a bone loss. Recommended speed is 20 rpm at 35 Ncm; set up a reversed rotation to withdraw tap after drilling.

Note: Taps is avaliable for D1 bone, D2-D4 bone may be skipped with this step.

After drilling procedure, conduct implantation. Open the outer package to take out the sterile blister package. Peel the blister package open to obtain the fixture bottle and gently pull it open. Use Implant Driver D2.0-HP/RT to take the fixture out.

#### STEP.8









#### Note 1:

The hexagon and taper design of the fixture and the Implant Driver are made complimentary to each other. Gently press the Implant Driver to ensure it is firmly connected to the fixture before taking it out of the bottle.

#### Note 2:

Hold the Implant Driver with the fixture upside down to prevent the fixture from contacting other matter or dropping before placing it in the patient's mouth.

Note 3: BIOMATE implant has a mount free design.







#### STEP.9

#### STEP. 10









Use the Implant Driver with implant motor or torque ratchet to screw the fixture into the bone with recommended torque 35Ncm. When the fixture cannot be fully screwed in, assess the necessity of unscrewing the fixture. Verify the diameter of the hole before a second approach.

Note: Using excessive force to screw in the fixture may damage the bone and cause bone infarction due to excessive stress. It is recommended to unscrew the fixture and re-drill the hole.



 Please turn Screw Driver D1.25-HP/RT( Tightened with 1.25 hex driver) counterclockwisely for 2 to 3 laps to take out the cover screw.



#### STEP.11 Post-Implantation Procedure

#### Two Stage Surgery





#### One Stage Surgery

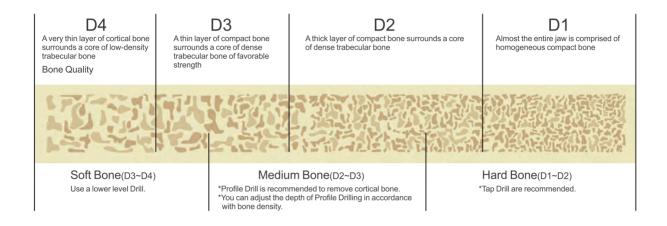




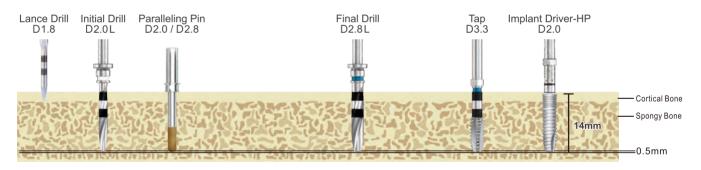
- After implantation, use Screw Driver D1.25-HP/RT to take out the cover screw in the bottle cover. Ensure the Cover Screw is attached firmly with the Screw Driver to avoid the risk of dropping.
- Use the D1.25 screw driver to hand -tighten the Cover Screw into the fixture by torque ratchet(10Ncm).
  - Note 1: Do not use excessive force to prevent damaging the internal socket of the fixture.
  - Note 2: Healing abutment & cover screw, please keep the sterilization condition during surgery.

- According to dentist's evaluation of patient's oral condition, a corresponding Healing Abutment can be placed right after implantation to omit incision a second time.
- Use the D1.25 screw driver to handtighten the Healing Abutment into the fixture by torque ratchet(10Ncm).
- Note 1: Do not use excessive force to prevent damaging the internal socket of the fixture.
- Note 2: Healing abutment & cover screw, please keep the sterilization condition during surgery.

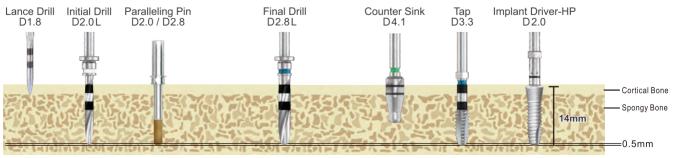
## Biomate Drilling Sequence of Instruments



#### **Ø3.3 x L14**/ (Periodontal flap surgery)

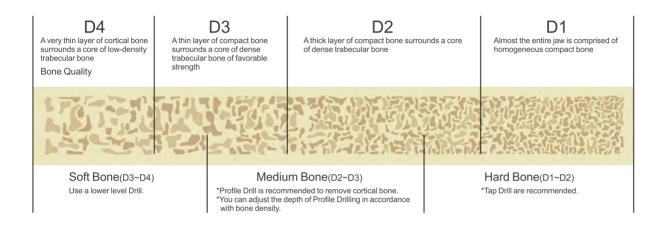


#### **Ø4.1 x L14** (Periodontal flap surgery)

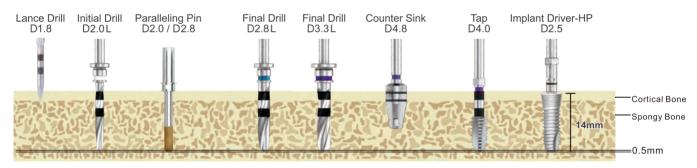


#### • Recommended:

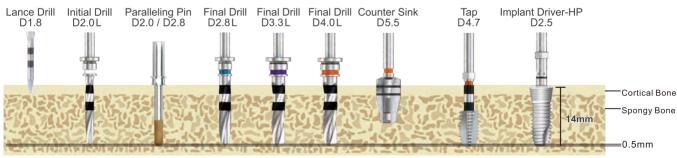
If you prefer to submerge the implant, we recommend Biomate Implant with 0.5-1.00 mm submerged. If you follow up the drill mark, please exceed the mark on initial drill, final drill and counter sink in case of 0.5-1.00 mm submerged.



#### **Ø4.8 x L14** (Periodontal flap surgery)



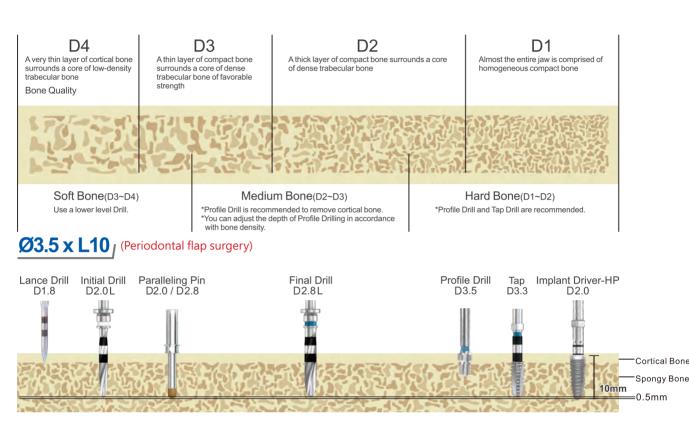
#### **Ø5.5** x L14 (Periodontal flap surgery)



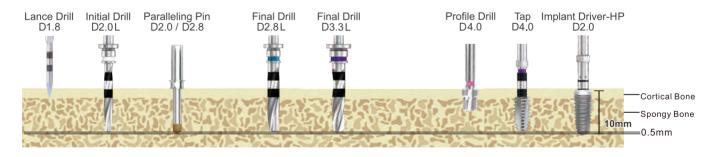
#### • Recommended:

If you prefer to submerge the implant, we recommend Biomate Implant with 0.5-1.00 mm submerged. If you follow up the drill mark, please exceed the mark on initial drill, final drill and counter sink in case of 0.5-1.00 mm submerged.

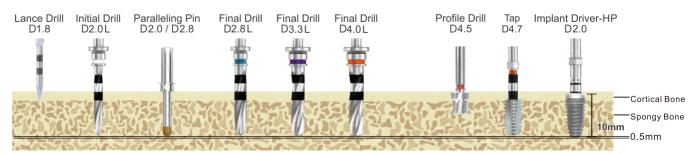
### Biomate Plus Drilling Sequence of Instruments



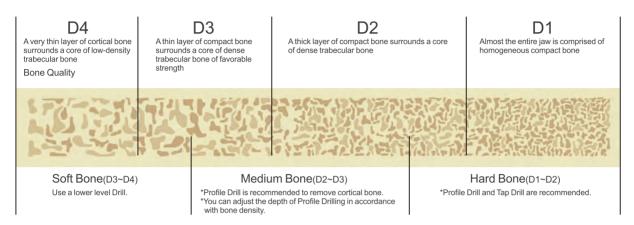
#### **Ø4.0 x L10** (Periodontal flap surgery)



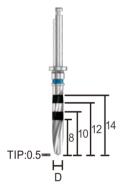
#### **Ø4.5 x L10** (Periodontal flap surgery)



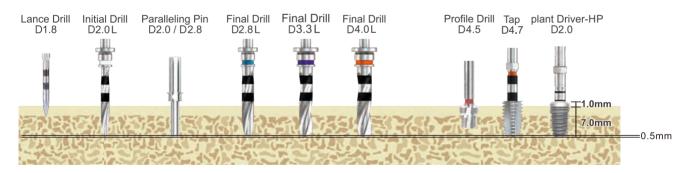
• Recommended: If you prefer to submerge the implant, we recommend Biomate Plus Implant with 0.5mm submerged. If you follow up the drill mark, please exceed the mark on initial drill, final drill and profile drill in case of 0.5mm submerged.



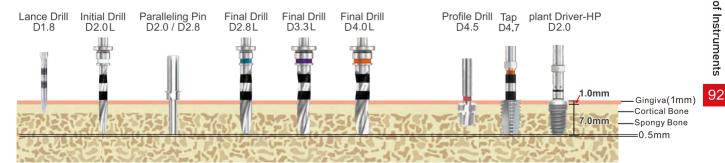
\*When the bone height is not enough to 8mm, it is recommended to use ø4.5xL8 implant, which makes the 1.0mm smooth surface appear above the bone plane. (ø4.5xL7)



#### **Ø4.5 x L8** (Periodontal flap surgery)



#### **Ø4.5 x L8** (Periodontal flap surgery)



• Recommended: If you prefer to submerge the implant, we recommend Biomate Plus Implant with 0.5mm submerged. If you follow up the drill mark, please exceed the mark on initial drill, final drill and profile drill in case of 0.5mm submerged.

## Fixture Packaging and Label & Instrument Cleansing and Maintenance

#### Instrument Cleansing and Maintenance

Attention! Instruments are not sterilized when delivered, please autoclave prior to use.

Please follow the instructions to clean and sterilize used surgical instruments.

01. During surgical process, soak used surgical instruments into saline solution.

Cleaning 02.After surgical process, use soft brush to clean remained blood stain and residues with clean water.

Soak surgical instruments into a container with quadruple enzyme cleaner that is covering all the instruments, and then put the container into a ultrasonic cleaning machine for 9 minutes. Finally, rinse the instruments with ultra-pure water several times and dry them.

-Do not use detergent containing aldehydes that can regulate and preserve protein.

-Please see manual of quadruple enzyme cleaner. ( 3M TM Rapid : Water, 1:100)

Package 03. Put the cleaned instruments back into surgical kit, and cover it with a surgical towel.

(Avoid collision among drills in order not to affect the cutting ability.)

Sterilization 04.Put the surgical kit with towel covered into sterilization pot(see manual of sterilization pot)

Recommended temperature: 132°C. Sterilization time: At least 4 minutes. Drving time: At least 30 minutes

Storage 05. After sterilization, keep the kit in a dust-proof and moisture-proof space. (Validity: Do not exceed 7 days)

Notes: Before using the surgical instrument, have to check. Discard the surgical instruments immediately if there is a defect as following:

- -The blade becomes dull or damaged.
- -Deformation(such as bending/twisting/folding)
- -Surface corrosion

#### Recommendation for Use

To ensure quality use of instruments, instruments with cutting capability are recommended to be used less than 10 times. Please clean with sterile saline to prevent damage from excessive friction during surgery.

Sterilization Identification





#### Fixture Package and Label

Fixture Product Packaging





Implant internal label



Implant external label & sealing sticker



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