



# AnyRidge<sup>®</sup>

The 21st Century premium implant system

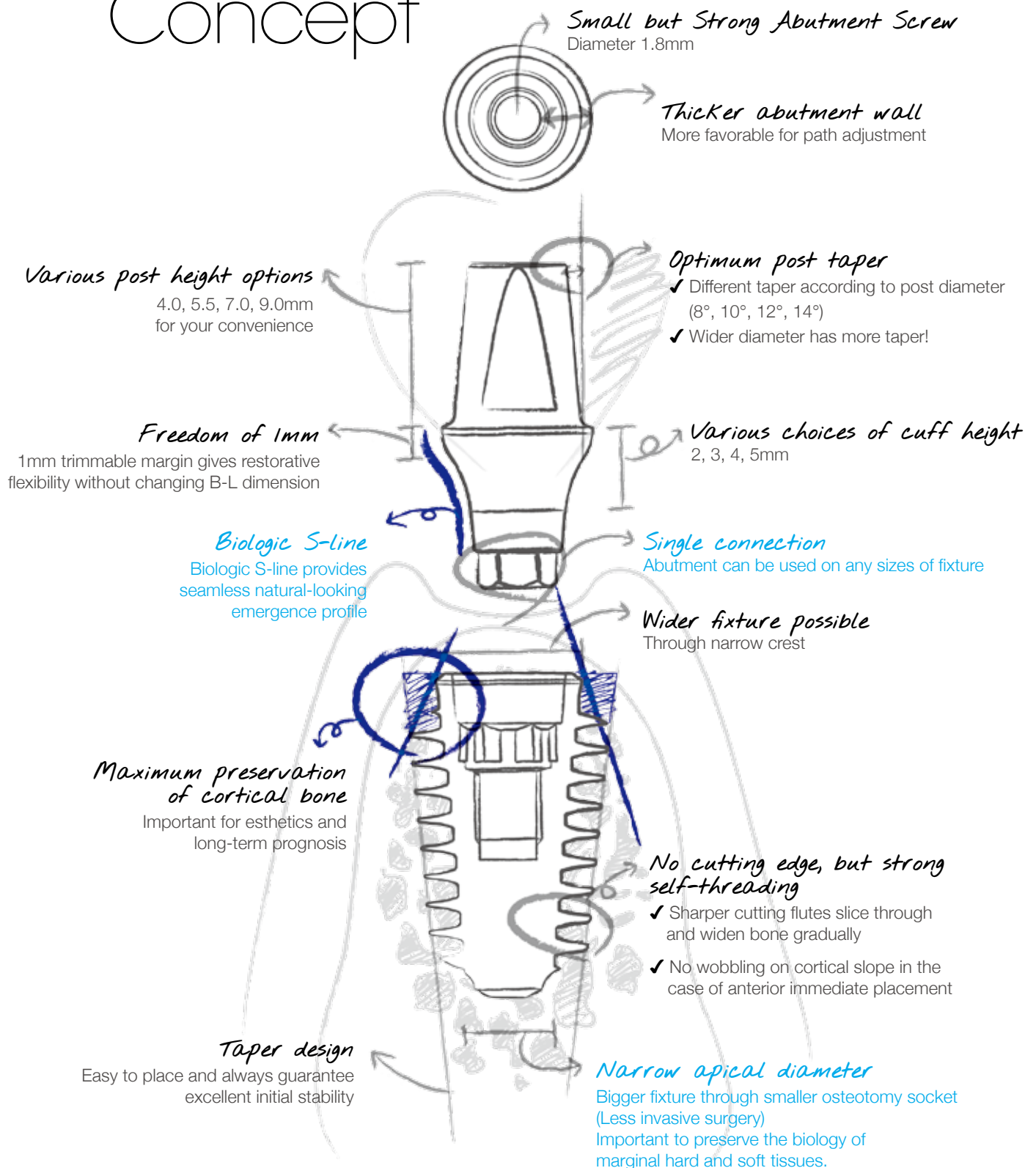
Volume AR C4.0

# AnyRidge®

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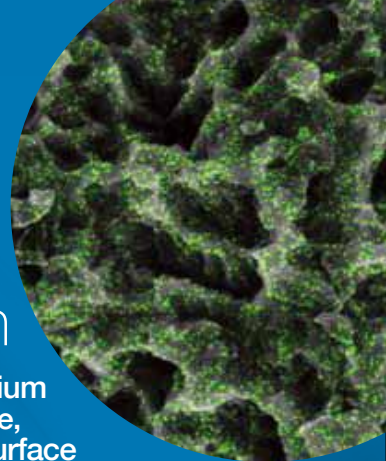
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# ➔ Design Concept



# S-L-A surface with Ca<sup>2+</sup> Incorporation

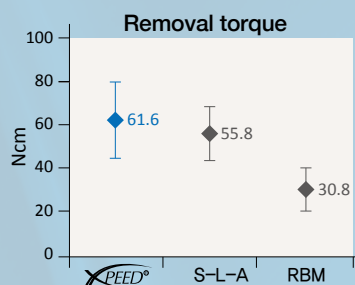
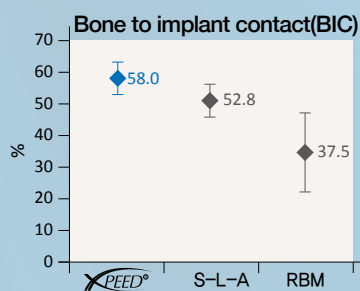
MegaGen has developed surface treatment based on S-L-A technique with calcium incorporation process. Calcium ion creates a CaTiO<sub>3</sub> nanostructure on the surface, and activates osteoblasts in the live bone. The name of this unique specialized surface treatment is XPEED®.



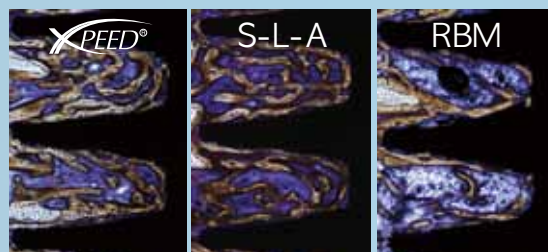
## Fast & Strong Osseointegration

### Bigger BIC resulting bigger removal torque after osseointegration

XPEED® demonstrates bigger BIC and requires bigger removal torque than the RBM or conventional S-L-A surface treatments.



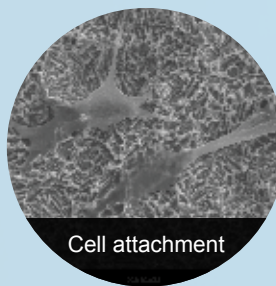
### Histological analysis



Test result after 4 weeks with rabbit

Histological sections of Ti implants with XPEED®, S-L-A, RBM surfaces shows the XPEED® makes the highest BIC. Bone contact was measured over surface of Ti implants.

## Blue colored surface as the evidence of purity

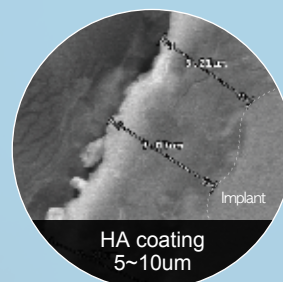
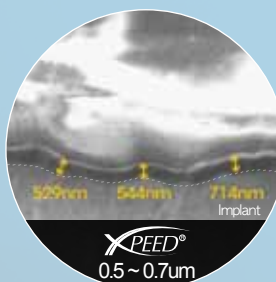


Cell attachment

During the manufacture process of XPEED® treatment, the S-L-A surface is completely neutralized to remove any acid residue. The blue color of XPEED® surface is the symbol of purity.

## Nano-thickness











XPEED® is different from conventional HA coating technique. Because Ca<sup>2+</sup> ions are incorporated XPEED® will not result peeling or absorption after fixture placement.



# ➔ Characteristic & Advantages

## 1) Surgery

Excellent initial stability, even at compromised bone density. AnyRidge® Fixture cuts through bone smoothly and condenses it simultaneously.

Ø3.5 Ø2.8	Ø4.0 Ø3.3	Ø4.5 Ø3.3	Ø5.0 Ø3.3	Ø5.5 Ø3.3	↻ Fixture diameter ↻ Core diameter
					
Ø6.0 Ø4.8	Ø6.5 Ø4.8	Ø7.0 Ø4.8	Ø7.5 Ø4.8	Ø8.0 Ø4.8	↻ Fixture diameter ↻ Core diameter
					Core diameter measured at 3.5mm under the platform Core diameter

### 1. Fixture placement

#### • Soft bone

The super self-tapping threads have a single core diameter that facilitates minimal site preparation by utilizing a smaller osteotomy to place a wider fixture with special threads.

#### • Hard bone

AnyRidge® Fixture with its super self-tapping thread design is easier to place than other traditional implants at hard bone.

*\*Caution! : The osteotomy socket drilling size should almost reach the size of fixture to avoid getting struck in the bone during placement!*

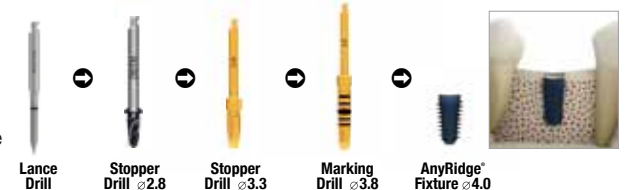
### 2. Customized drilling Sequence

- AnyRidge® Fixture has no fixed protocol for drilling. Make your own drilling protocol according to patient's bone quality to attain your preferred initial stability. Or you can simply drill an osteotomy socket adequate to the given conditions and then decide the diameter of the fixture according to the bone density.

Example 1) A 5mm diameter fixture can be placed in a 2.9mm osteotomy socket at D4 bone. Excellent initial stability will be attained.



Example 2) At hard bone, you are advised to make an osteotomy almost to the size of a fixture.



- Improved drill design is the secret of simplified drilling sequence. You can even harvest autogenous bone with these specially designed drills. (Recommended speed : 50 RPM, 50 Ncm with saline solution irrigation)
- The best way to get ideal initial stability with the AnyRidge system is by placing an implant with a surgical engine, leaving one or two threads above the crest. Then use a Ratchet Wrench to place the platform at the desired position.

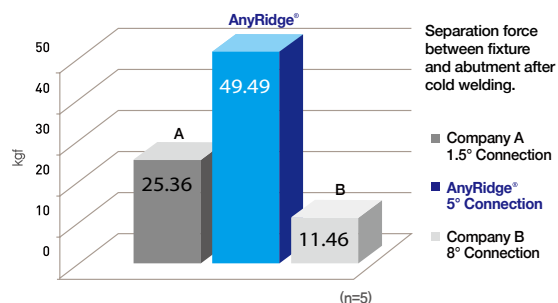
## 2) Prosthetics

Better esthetic outcomes from wide variety of prosthetic options!  
Stop worrying about screw loosening!

### 1. No screw loosening, less biologic width!

#### • Magic Five (5° Internal connection)

Now you can be free from worrying about screw loosening with our unique connection 5 degree morse taper which gives perfect hermetic sealing. Biologic width is minimized due to no micro gap, and crestal bone health is well maintained.



Performed Retention Test to evaluate the fixture-abutment retention force using Universal Testing Machine -R&D center in Megagen Implant Co.,Ltd.(2009)-

### 2. Biologic S-line

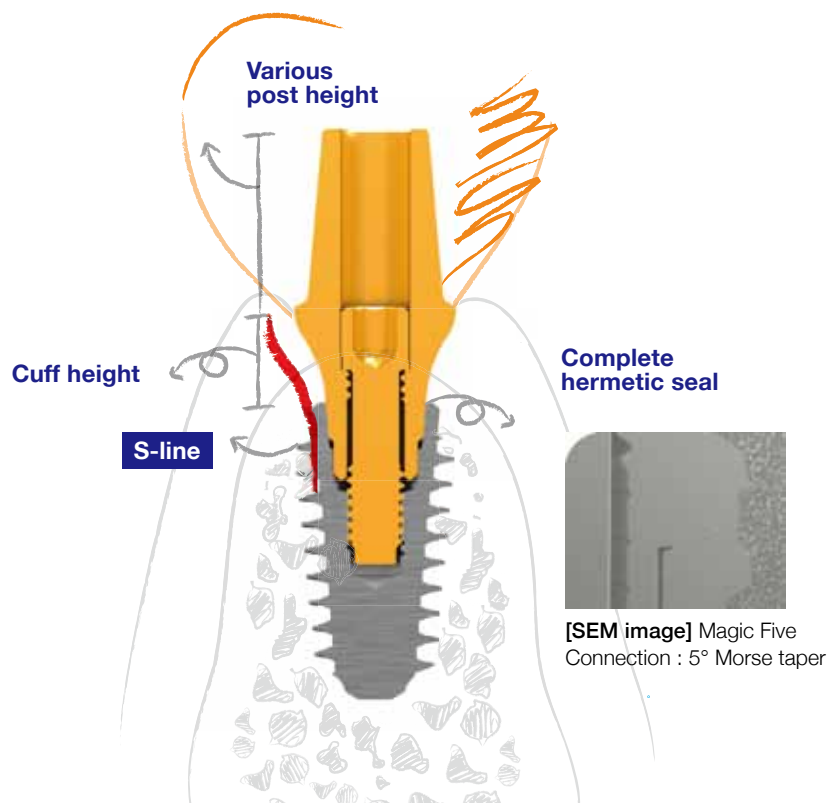
Helps to achieve beautiful, natural-looking esthetics.

### 3. Optimum hex height

Your fingers will feel the difference of the AnyRidge connection. It starts with impression taking and lasts until final restoration.

### 4. All indications, wide abutment options

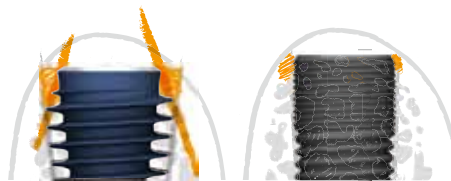
Every case, every shape, every size was considered to satisfy the clinician's needs.



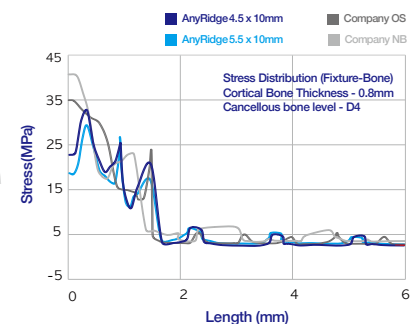
### 3) Maintenance

Unique and sturdy design provides long term stability!

#### 1. More cortical bone preservation is guaranteed



AnyRidge fixtures do not depend on the cortical bone for initial stability! Decreased stress on the cortical bone helps to prevent bone resorption following fixture placement.

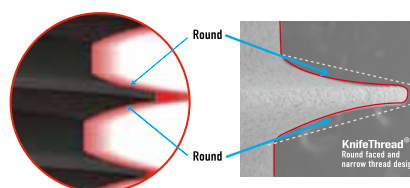


Performed Finite element analysis to evaluate the fixture-bone stress using ABAQUS 6.8 -R&D center in Megagen Implant Co.,Ltd.(2009)-

- **More cortical bone = More soft tissue volume = Beautiful gingival line**

Advanced coronal design allows maximum cortical bone preservation around implants. Beyond osseointegration, AnyRidge can assure a beautiful gingival line by preserving and maintaining more cortical bone.

#### 2. Innovative thread design



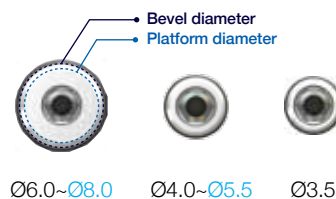
Thanks to its unique knife thread and super self-tapping design, better initial stability can be attained in any compromised bone situation. It offers progressive bone condensing, ridge expansion, maximized compressive force resistance and minimized shear force production.

# AnyRidge® Fixture Products

## 1) Dimension

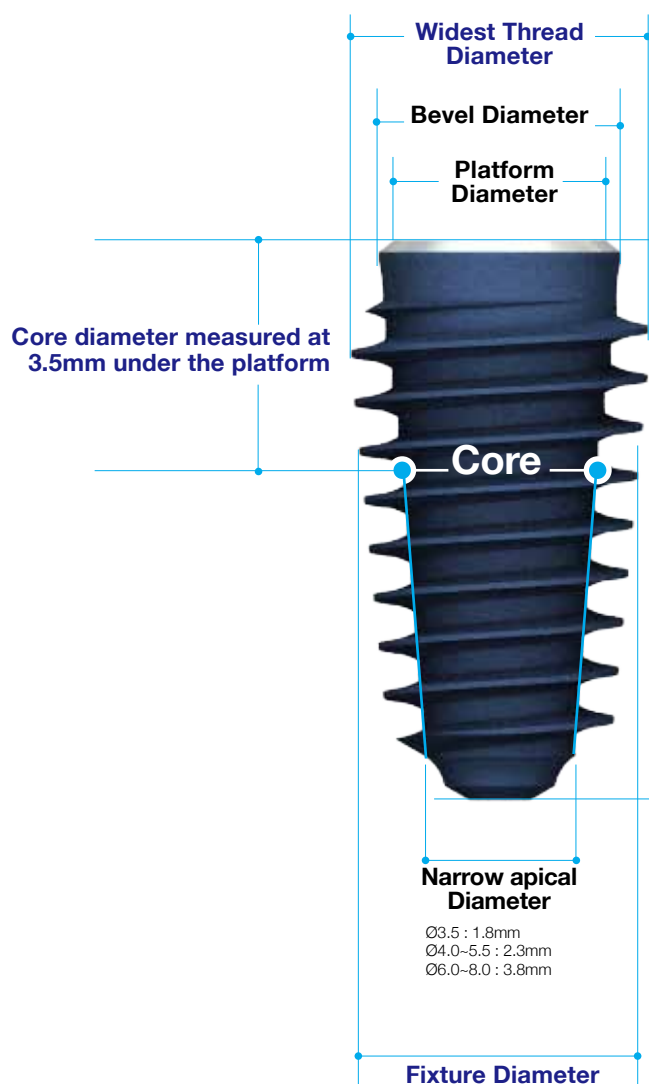


### Relationship between platform diameter and Bevel diameter



3 different sizes

- 3.5mm fixture : 3.5mm(platform) / 3.8mm(bevel)
- 4.0~5.5mm fixture : 3.5mm(platform) / 4.0mm(bevel)
- 6.0~8.0mm fixture : 5.0mm(platform) / 5.5mm(bevel)



**Widest thread diameter is**  
0.5mm wider than fixture size at 3.5mm  
0.4mm wider than fixture size at 4.0~8.0mm

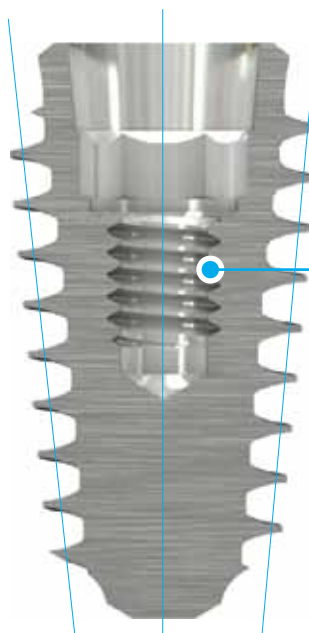
**\*For example**  
Ø3.5 = Fixture diameter + 0.5mm  
Ø4.0~Ø8.0 = Fixture diameter + 0.4mm

### Length

**\*Actual length of fixture**  
Ø3.5~5.5 fixture : 0.8mm shorter than the written length  
Ø6.0~8.0 fixture : 0.6mm shorter than the written length

### Important concept!

It has been proven that 0.5~1.0mm subcrestal placement shows better crestal bone response. With AnyRidge system, a fixture goes down to the ideal position without further drilling avoiding damage to important anatomic structures.



### Female screw

1.8mm diameter X 0.35mm pitch



[SEM image]

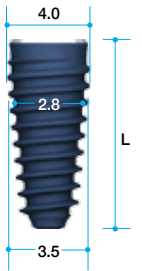
2) Size

Small Ø3.5

- Cover Screw included.

Fixture Diameter (mm)	Length (mm)	Ref.C
3.5	7	FANIHX3507C
	8.5	FANIHX3508C
	10	FANIHX3510C
	11.5	FANIHX3511C
	13	FANIHX3513C
	15	FANIHX3515C

- Availability of 7mm product is subject to local approval.
- Europe certified only. Not for Korean domestic users.

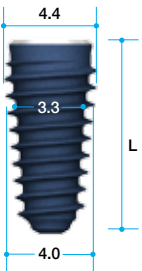


Regular Ø4.0

- Cover Screw included.

Fixture Diameter (mm)	Length (mm)	Ref.C
4.0	7	FANIHX4007C
	8.5	FANIHX4008C
	10	FANIHX4010C
	11.5	FANIHX4011C
	13	FANIHX4013C
	15	FANIHX4015C

- Availability of 7mm product is subject to local approval.
- Europe certified only. Not for Korean domestic users.

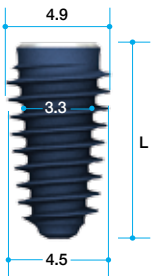


Regular Ø4.5

- Cover Screw included.

Fixture Diameter (mm)	Length (mm)	Ref.C
4.5	7	FANIHX4507C
	8.5	FANIHX4508C
	10	FANIHX4510C
	11.5	FANIHX4511C
	13	FANIHX4513C
	15	FANIHX4515C

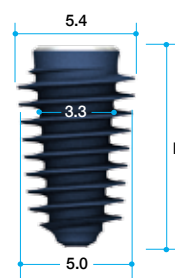
- Availability of 7mm product is subject to local approval.



## Wide Ø5.0

- Cover Screw included.

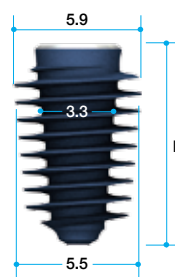
Fixture Diameter (mm)	Length (mm)	Ref.C
5.0	7	FANIHX5007C
	8.5	FANIHX5008C
	10	FANIHX5010C
	11.5	FANIHX5011C
	13	FANIHX5013C
	15	FANIHX5015C



## Wide Ø5.5

- Cover Screw included.

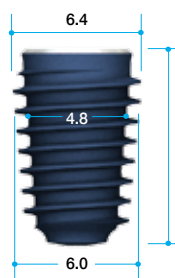
Fixture Diameter (mm)	Length (mm)	Ref.C
5.5	7	FANIHX5507C
	8.5	FANIHX5508C
	10	FANIHX5510C
	11.5	FANIHX5511C
	13	FANIHX5513C
	15	FANIHX5515C



## Super Wide Ø6.0

- Cover Screw included.

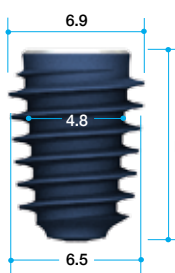
Fixture Diameter (mm)	Length (mm)	Ref.C
6.0	7	FALIHX6007C
	8.5	FALIHX6008C
	10	FALIHX6010C
	11.5	FALIHX6011C
	13	FALIHX6013C



## Super Wide Ø6.5

- Cover Screw included.

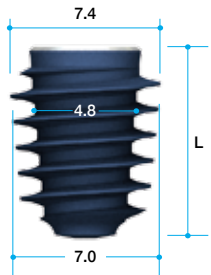
Fixture Diameter (mm)	Length (mm)	Ref.C
6.5	7	FALIHX6507C
	8.5	FALIHX6508C
	10	FALIHX6510C
	11.5	FALIHX6511C
	13	FALIHX6513C



Super Wide Ø7.0

- Cover Screw included.

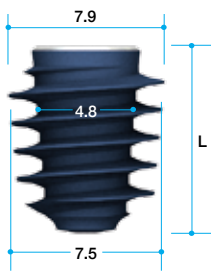
Fixture Diameter (mm)	Length (mm)	Ref.C
7.0	7	FALIHx7007C
	8.5	FALIHx7008C
	10	FALIHx7010C
	11.5	FALIHx7011C
	13	FALIHx7013C



Super Wide Ø7.5

- Cover Screw included.

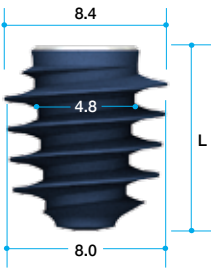
Fixture Diameter (mm)	Length (mm)	Ref.C
7.5	7	FALIHx7507C
	8.5	FALIHx7508C
	10	FALIHx7510C
	11.5	FALIHx7511C
	13	FALIHx7513C



Super Wide Ø8.0

- Cover Screw included.

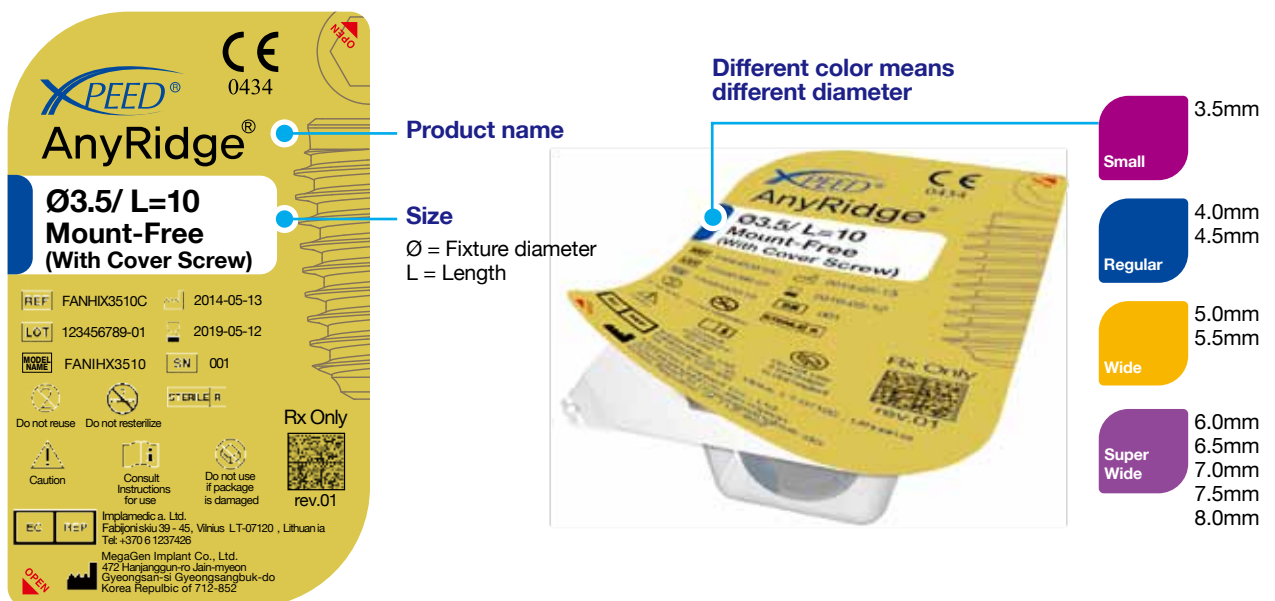
Fixture Diameter (mm)	Length (mm)	Ref.C
8.0	7	FALIHx8007C
	8.5	FALIHx8008C
	10	FALIHx8010C
	11.5	FALIHx8011C
	13	FALIHx8013C



### 3) Fixture Package - Ampule



### - Coding



## 4) Cover Screw and Healing Abutment

### Cover Screw

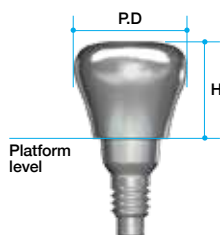
\* Included in fixture package.

Height (mm)	Ref.C
0.8	AANCSF3508
1.6	AANCSF3516
2.6	AANCSF3526

- Use with a Hand Driver(1.2 Hex).
- Used for submerged type surgery.
- Protects the inner structure of a fixture.
- Different heights can be chosen according to the position of fixture below the crest.
- 1.6mm and 2.6mm height of Cover Screw can be purchased separately.



### Healing Abutment



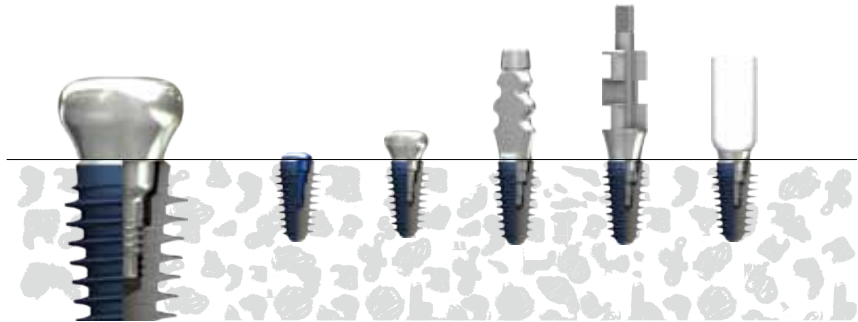
Profile Diameter	Height (mm)	Ref.C
Ø4.0	3	AANHAF0403
	4	AANHAF0404
	5	AANHAF0405
	6	AANHAF0406
	7	AANHAF0407
Ø5.0	3	AANHAF0503
	4	AANHAF0504
	5	AANHAF0505
	6	AANHAF0506
	7	AANHAF0507
Ø6.0	3	AANHAF0603
	4	AANHAF0604
	5	AANHAF0605
	6	AANHAF0606
	7	AANHAF0607

Profile Diameter	Height (mm)	Ref.C
Ø7.0	3	AANHAF0703
	4	AANHAF0704
	5	AANHAF0705
	6	AANHAF0706
	7	AANHAF0707
Ø8.0	3	AANHAF0803
	4	AANHAF0804
	5	AANHAF0805
	6	AANHAF0806
	7	AANHAF0807
Ø10.0	3	AANHAF1003
	4	AANHAF1004
	5	AANHAF1005
	6	AANHAF1006
	7	AANHAF1007

- Use with a Hand Driver(1.2 Hex).
- Used for non-submerged type surgery or for two stage surgery.
- Choose appropriate diameter and height of Healing Abutment according to situation.
- Helps to form suitable emergence profile during period of gingival healing.

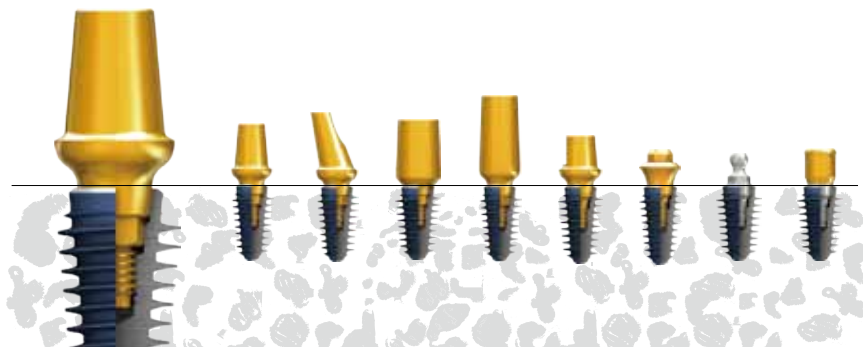
## ►► Connection with a Fixture

### 1. All transitional and temporary components have a 'Ledge' on the bottom



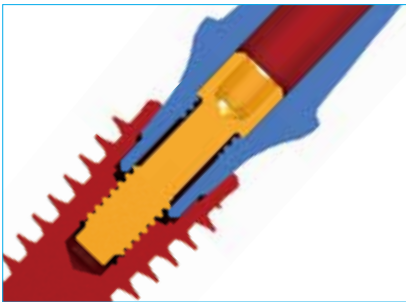
- Cover Screws, Healing Abutments, Impression Coping (transfer and pick-up type), Temporary Cylinders have ledges on the bottom which prevent from cold welding with a fixture.
- Hand Drivers(1.2 Hex) or Impression Drivers can be used easily to screw these components in and out.

### 2. All permanent abutments will make a strong connection with a fixture, even with finger force!

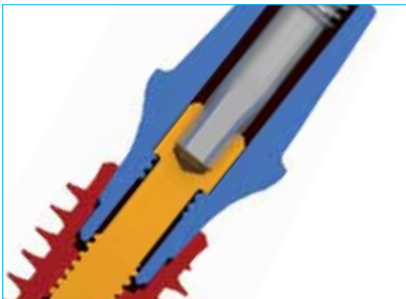


- 25~35Ncm torque force is recommended when permanent abutments are connected into a fixture.
- A fixed abutment cannot be removed with finger force even after complete removal of the Abutment Screw, because of perfect cold welding. When the removal of a permanent abutment is needed, the specially designed Abutment Removal Driver should be used.

## ►► How to Remove a Permanent Abutment from a Fixture?



1. Use a Hand Driver(1.2 Hex) to unscrew Abutment Screw.
2. Continue to turn counter-clockwise until you feel clicks of disengagement.



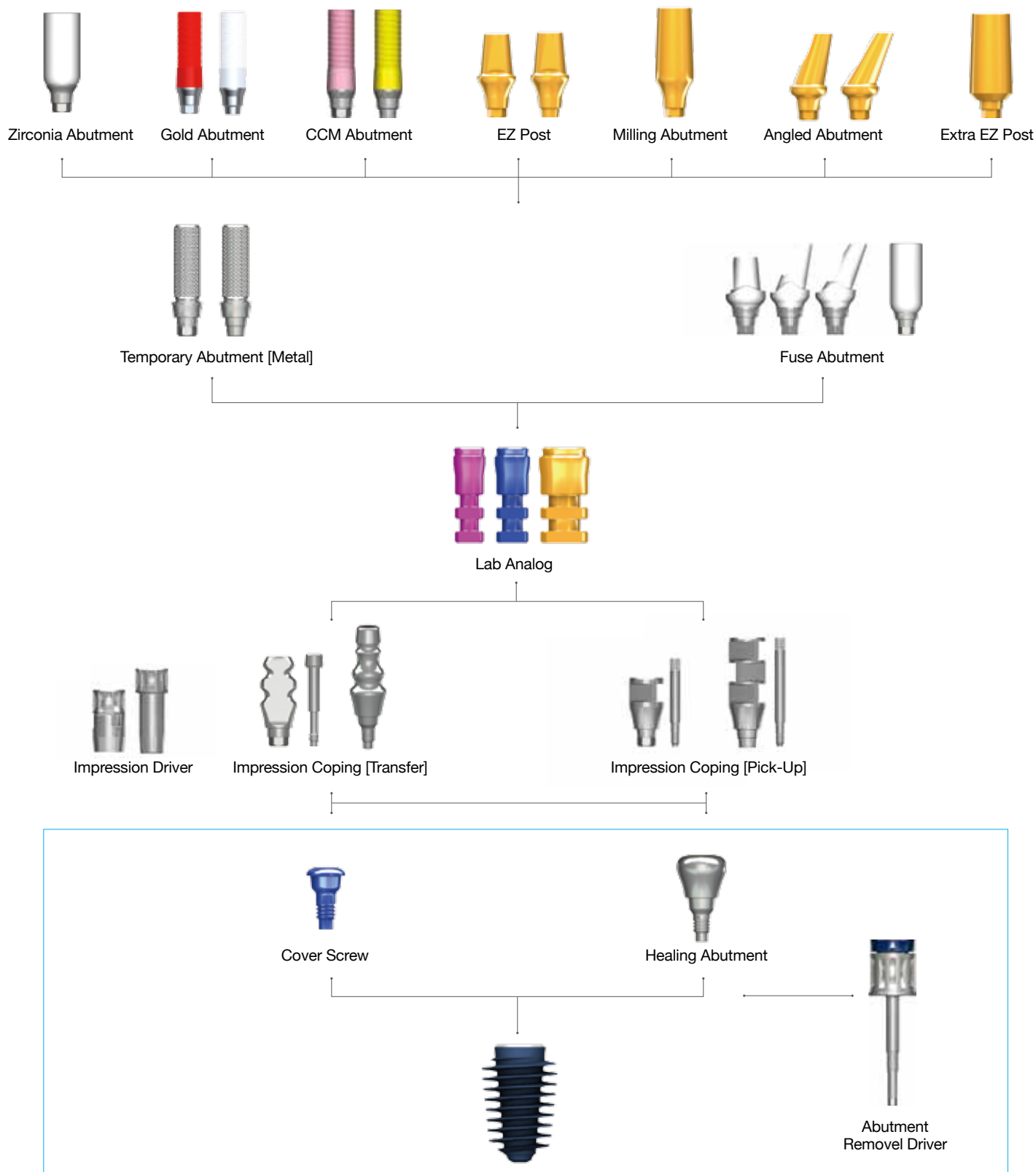
3. Push down the Hand Driver once again to catch and fix the Abutment Screw.
4. Lift-up the Hand Driver with light force and continue to turn counter-clockwise until the Abutment Screw engages with the inner screws on the abutment.



5. Remove the Abutment Screw completely from the abutment
6. Insert an 'Abutment Removal Driver' and continue to turn clockwise until the abutment comes out of fixture. You can feel some resistance during screw-down of the Abutment Removal Driver, but don't worry, simply exert more force to disconnect the abutment from the fixture.

# ➡ AnyRidge® Abutment Option

1) Fixture level prosthesis

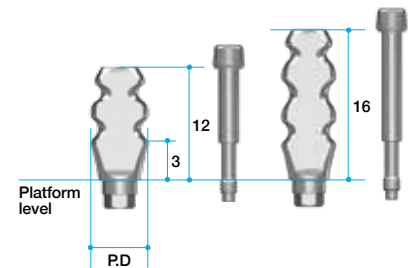


## Impression Coping

(Transfer Type)  
(For Closed-tray Technique)

Profile Diameter	Height (mm)	Type	Ref.C
Ø4.0	12	2-Piece	AANITH4012T
	16		AANITH4016T
Ø5.0	12		AANITH5012T
	16		AANITH5016T
Ø4.0	12	2-Piece Hand driver (1.2 Hex)	AANITH4012HT
	16		AANITH4016HT
Ø5.0	12		AANITH5012HT
	16		AANITH5016HT

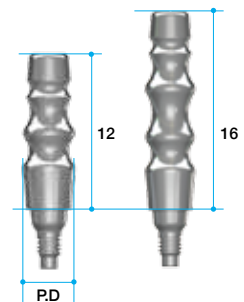
- Streamlined shape ; easy to transfer.
- Anti-rotation grooves match with hex structure of fixtures.
- Should be tightened with Impression Driver or Hand Driver(1.2 Hex).



## Impression Coping

(Transfer Type)  
(For Closed-tray Technique)

Profile Diameter	Height (mm)	Type	Ref.C
Ø4.0	12	1-Piece	AANITN4012
	16		AANITN4016
Ø5.0	12		AANITN5012
	16		AANITN5016
Ø4.0	12	1-Piece Hand driver (1.2 Hex)	AANITN4012H
	16		AANITN4016H
Ø5.0	12		AANITN5012H
	16		AANITN5016H



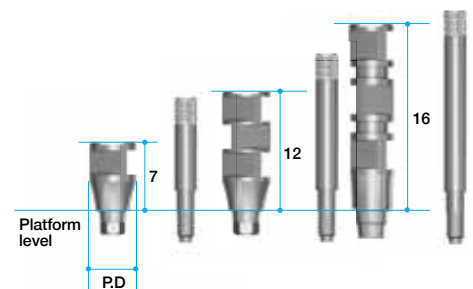
## Impression Coping

(Pick-up Type)  
(For Open-tray Technique)

- Guide Pins : AANGPP0010 (7mm : Short) /  
AANGPP0015 (12mm : Long) / AANGPP0020  
(20mm : Extra-long)

Profile Diameter	Height (mm)	Type	Ref.C
Ø4.0	12	2-Piece	AANIPH4012T
	16		AANIPH4016T
	12		AANIPN4012T
	16		AANIPN4016T
Ø5.0	7		AANIPH5007T
	12		AANIPH5012T
	7		AANIPN5007T
	12		AANIPN5012T

- Square structure ; strong anti - rotation function.
- Designed for easy and accurate pick-up impression.
- Extra-long guide pin can be purchased separately.



# ➡ AnyRidge® Abutment Option

## 1) Fixture level prosthesis

### Lab Analog

(Fixture Level)

Type	Color	Ref.C
Basic	Blue	AANLAF4055

- All sizes of fixtures have a uniform connection.
- Only one fixture analog is sufficient.  
(Exceptional case)



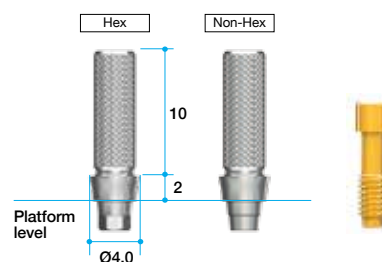
### Temporary Abutment

(Titanium)

- Multi Post Screw(AANMSF) included.

Profile Diameter	Cuff Height (mm)	Type	Ref.C
Ø4.0	2	Hex	AANTMH4012T
		Non-Hex	AANTMN4012T

- For making provisional restoration.
- Grooved on the post allows strong resin adherence.

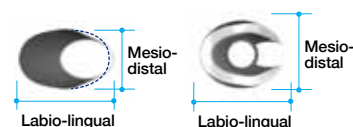
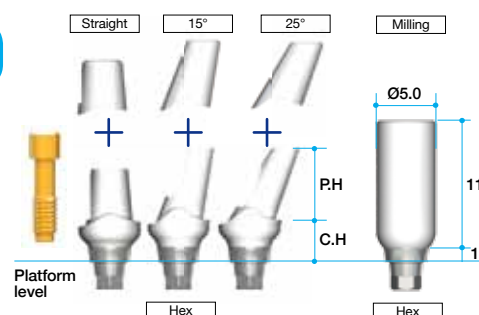


### Fuse Abutment

- Straight, 15°, 25° ; Multi Post Screw(AANMSF) included  
+ Fuse Cap included.

- Milling ; Multi Post Screw(AANMSF) included.

Diameter Labio-lingual Mesio-distal	C.H (mm)	P.H (mm)	Type	Ref.C
Ø5.5	3	5.5	Straight	AFAP5535P
			15°	AFAA5315P
			25°	AFAA5325P
Ø5.0	1	11	Milling	AANTAH5012T



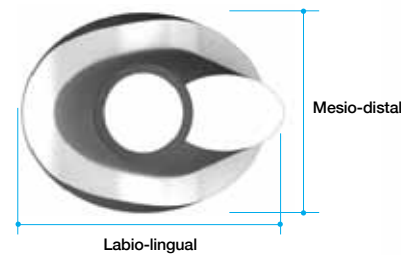
# Fuse Abutment™

## Design concept of Fuse Abutment™

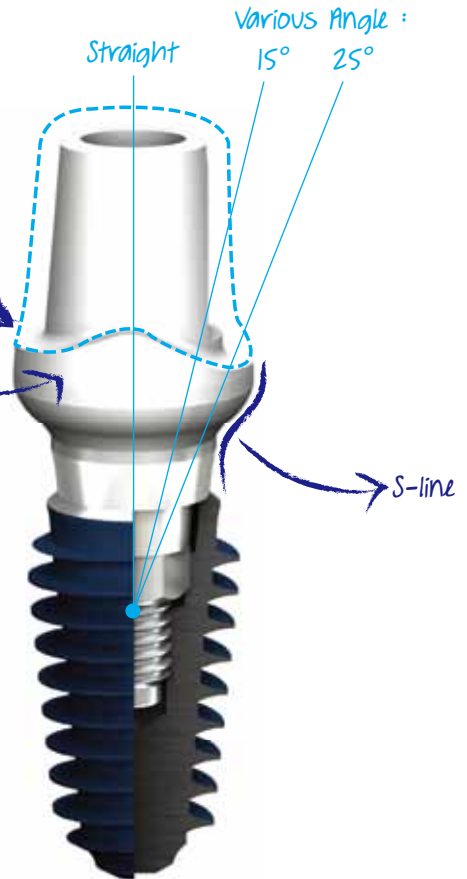
Similar to a customized abutment for excellent esthetics!

Perfect margin fitness with a prosthetic cap

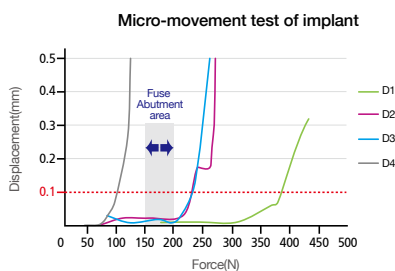
Scalloped outline



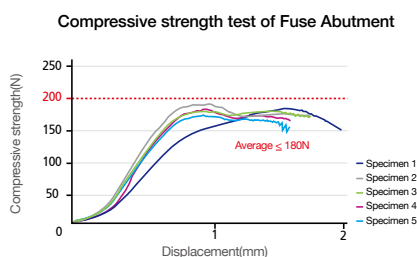
Elliptical Occlusal view like a natural tooth



## Rationale of Fuse Abutment™



Performed compressive strength test to evaluate the micro movement for bone density using universal testing machine  
-R&D center in Megagen Implant Co.,Ltd.(2012)-



Performed compressive strength test to evaluate the yield strength for Fuse Abutment using universal testing machine  
-R&D center in Megagen Implant Co.,Ltd.(2012)-

In 1992, Brunski JB. reported that an implant may have higher possibility of fibrointegration than osseointegration between bone and implant surface when movements more than 100µm occurs on the fixture during osseointegration period. (John B. Brunski, Bio-mechanical factors affecting the bone-dental implant interface. Clinical Materials, Vol. 10, 153-201) Therefore, the implant is needed to be protected not to move when immediate loading is carried out. However, it is not easy to manage loading on the fixture, even when we use a resin temporary with a titanium cylinder. It was thought that it's partly because of the metal component of temporary cylinder, which can deliver excessive forces to the fixture. This is one of the reasons which make clinicians hesitate the immediate loading procedure. So it is necessary to develop a special temporary cylinder. It should be broken under the force which can lead fibrointegration or failure of osseointegration to protect the fixture. and it will be preferred if it is easy to make a temporary crown on this particular temporary cylinder. We tried to measure the force causing movement of 100µm on a fixture which was placed securely into adequate density of bone without defect. First, AnyRidge implants were placed into the in-

ternationally recognized standard bone block with more 40Ncm torque force and an abutment was connected on each implant. Instron equipment was used to measure the force to move a fixture 100µm. The average force was 220N (22.4 kgf). Therefore, if the new temporary abutment can be fractured under this force, it may protect the fixture from movement or failure.



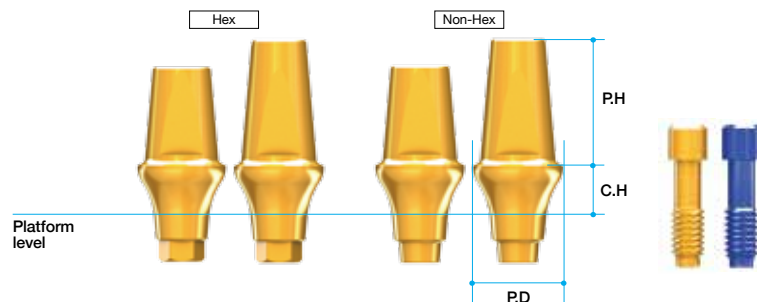
From this experiment, we could developed a special temporary abutment which has lower fracture threshold of less than 200 N (20.4 kgf). It was named as Fuse Abutment. Also it has an anatomic profiles to make temporary prosthetics more esthetic.

# ➡ AnyRidge® Abutment Option

## 1) Fixture level prosthesis

### EZ Post

- Multi Post Screw(AANMSF/AANMST) included.



Profile Diameter	Cuff Height(mm)	Post Height(mm)	Type	Ref.C
Ø4.0	2	5.5	Hex	AANEPH4025L
	3			AANEPH4035L
	4			AANEPH4045L
	5			AANEPH4055L
	2	7		AANEPH4027L
	3			AANEPH4037L
	4			AANEPH4047L
	5			AANEPH4057L
Ø4.0	2	5.5	Non-Hex	AANEPN4025L
	3			AANEPN4035L
	4			AANEPN4045L
	5			AANEPN4055L
	2	7		AANEPN4027L
	3			AANEPN4037L
	4			AANEPN4047L
	5			AANEPN4057L
Ø5.0	2	5.5	Hex	AANEPH5025L
	3			AANEPH5035L
	4			AANEPH5045L
	5			AANEPH5055L
	2	7		AANEPH5027L
	3			AANEPH5037L
	4			AANEPH5047L
	5			AANEPH5057L
Ø5.0	2	5.5	Non-Hex	AANEPN5025L
	3			AANEPN5035L
	4			AANEPN5045L
	5			AANEPN5055L
	2	7		AANEPN5027L
	3			AANEPN5037L
	4			AANEPN5047L
	5			AANEPN5057L

- Use with a Hand Driver (1.2 Hex).
- Esthetic gold coloring.
- Two different post heights. (5.5, 7.0mm)

Profile Diameter	Cuff Height(mm)	Post Height(mm)	Type	Ref.C
Ø6.0	2	5.5	Hex	AANEPH6025L
	3			AANEPH6035L
	4			AANEPH6045L
	5			AANEPH6055L
	2	7		AANEPH6027L
	3			AANEPH6037L
	4			AANEPH6047L
	5			AANEPH6057L
Ø6.0	2	5.5	Non-Hex	AANEPN6025L
	3			AANEPN6035L
	4			AANEPN6045L
	5			AANEPN6055L
	2	7		AANEPN6027L
	3			AANEPN6037L
	4			AANEPN6047L
	5			AANEPN6057L
Ø7.0	2	5.5	Hex	AANEPH7025L
	3			AANEPH7035L
	4			AANEPH7045L
	5			AANEPH7055L
	2	7		AANEPH7027L
	3			AANEPH7037L
	4			AANEPH7047L
	5			AANEPH7057L
Ø7.0	2	5.5	Non-Hex	AANEPN7025L
	3			AANEPN7035L
	4			AANEPN7045L
	5			AANEPN7055L
	2	7		AANEPN7027L
	3			AANEPN7037L
	4			AANEPN7047L
	5			AANEPN7057L

- Four different profile diameters. (Ø4.0, 5.0, 6.0, 7.0)
- Four different cuff heights. (2.0, 3.0, 4.0, 5.0mm)

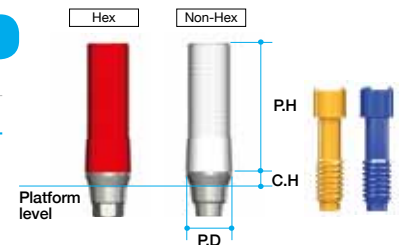
## UCLA Abutment

(Gold)

- Multi Post Screw(AANMSF/AANMST) included.

Profile Diameter	Cuff Height(mm)	Post Height(mm)	Type	Ref.C
Ø4.0	1	11	Hex	AANGAH4012L
			Non-Hex	AANGAN4012L

- Useful to make a customized abutment in difficult situations.
- Precious and non-precious alloys.
- Melting point of gold alloy : 1400 - 1450°C
- Threaded sleeves for convenient Resin / Wax-up.

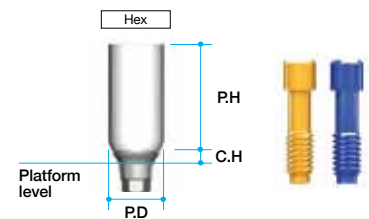


## Zirconia Abutment

- Multi Post Screw(AANMSF/AANMST) included.

Profile Diameter	Cuff Height(mm)	Post Height(mm)	Type	Ref.C
Ø4.0	1	11	Hex	AANZAH4012L
Ø5.0				AANZAH5012L

- For aesthetic use.
- Natural white color with pre-sintered zirconia sleeve.

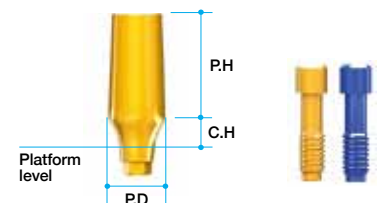


## Milling Abutment

- Multi Post Screw(AANMSF/AANMST) included.

Profile Diameter	Cuff Height(mm)	Post Height(mm)	Ref.C
Ø4.0	2	9	AANMAH4029L
	3		AANMAH4039L
	4		AANMAH4049L
	5		AANMAH4059L
Ø5.0	2	9	AANMAH5029L
	3		AANMAH5039L
	4		AANMAH5049L
	5		AANMAH5059L
Ø6.0	2	9	AANMAH6029L
	3		AANMAH6039L
	4		AANMAH6049L
	5		AANMAH6059L
Ø7.0	2	9	AANMAH7029L
	3		AANMAH7039L
	4		AANMAH7049L
	5		AANMAH7059L

- Long post enables easier customization by milling.

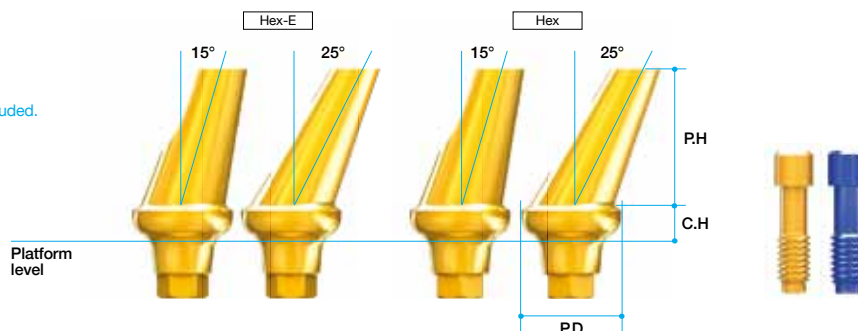


# ➡ AnyRidge® Abutment Option

## 1) Fixture level prosthesis

### Angled Abutment

- Multi Post Screw(AANMSF/AANMST) included.



Profile Diameter	Cuff Height(mm)	Post Height(mm)	Type	Angle	Ref.C	Profile Diameter	Cuff Height(mm)	Post Height(mm)	Type	Angle	Ref.C
Ø4.0	2	7	Hex	15°	AANA AH4215L	Ø6.0	2	7	Hex	15°	AANA AH6215L
	3				AANA AH4315L		3				AANA AH6315L
	4				AANA AH4415L		4				AANA AH6415L
	5				AANA AH4515L		5				AANA AH6515L
	2		Hex-E		AANA AE4215L		2		Hex-E		AANA AE6215L
	3				AANA AE4315L		3				AANA AE6315L
	4				AANA AE4415L		4				AANA AE6415L
	5				AANA AE4515L		5				AANA AE6515L
	2		Hex	25°	AANA AH4225L		2		Hex	25°	AANA AH6225L
	3				AANA AH4325L		3				AANA AH6325L
	4				AANA AH4425L		4				AANA AH6425L
	5				AANA AH4525L		5				AANA AH6525L
	2		Hex-E		AANA AE4225L		2		Hex-E		AANA AE6225L
	3				AANA AE4325L		3				AANA AE6325L
	4				AANA AE4425L		4				AANA AE6425L
	5				AANA AE4525L		5				AANA AE6525L
Ø5.0	2	7	Hex	15°	AANA AH5215L	Ø7.0	2	7	Hex	15°	AANA AH7215L
	3				AANA AH5315L		3				AANA AH7315L
	4				AANA AH5415L		4				AANA AH7415L
	5				AANA AH5515L		5				AANA AH7515L
	2		Hex-E		AANA AE5215L		2		Hex-E		AANA AE7215L
	3				AANA AE5315L		3				AANA AE7315L
	4				AANA AE5415L		4				AANA AE7415L
	5				AANA AE5515L		5				AANA AE7515L
	2		Hex	25°	AANA AH5225L		2		Hex	25°	AANA AH7225L
	3				AANA AH5325L		3				AANA AH7325L
	4				AANA AH5425L		4				AANA AH7425L
	5				AANA AH5525L		5				AANA AH7525L
	2		Hex-E		AANA AE5225L		2		Hex-E		AANA AE7225L
	3				AANA AE5325L		3				AANA AE7325L
	4				AANA AE5425L		4				AANA AE7425L
	5				AANA AE5525L		5				AANA AE7525L

- Two different angulations. (15°, 25°)
- Four different profile diameters. (Ø4.0, 5.0, 6.0, 7.0)
- Four different cuff heights. (2, 3, 4, 5mm)
- Can cover 12 different directions.  
[six to the surface(Hex), six to the edge of hex(Hex-E)]

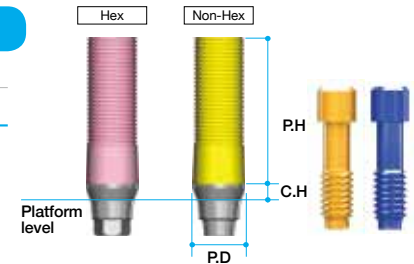
- Esthetic gold coloring.
- Minimized screw head length needs minimum height to prevent milling problems.

## CCM Abutment

- Multi Post Screw(AANMSF/AANMST) included.

Profile Diameter	Cuff Height(mm)	Post Height(mm)	Type	Ref.C
Ø4.0	1	11	Hex	AANCAH4012L
			Non-Hex	AANCAN4012L

- Useful to make a customized abutment in difficult situations.
- Can be casted with non-precious alloys(Ni-Cr, Cr-Co alloys).
- Non-precious melting temperature : Depend on Manufacturer
- Threaded sleeves for convenient Resin / Wax-up.
- Melting temperature of CCM : 1380 - 1420°C

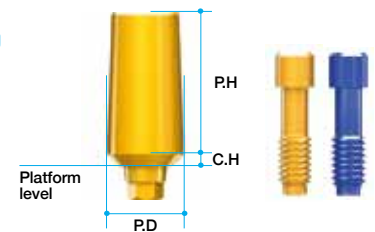


## Extra EZ Post

- Multi Post Screw(AANMSF/AANMST) included.

Profile Diameter	Cuff Height(mm)	Post Height(mm)	Ref.C
Ø4.5	1	7	AANEEH4517L
Ø5.5			AANEEH5517L
Ø6.5			AANEEH6517L

- Only when satisfactory emergence profile cannot be obtained due to thin gingiva or shallow positioned fixture.
- Useful when fixture is exposed over the gum line.



## Lab Analog for use Extra EZ Post

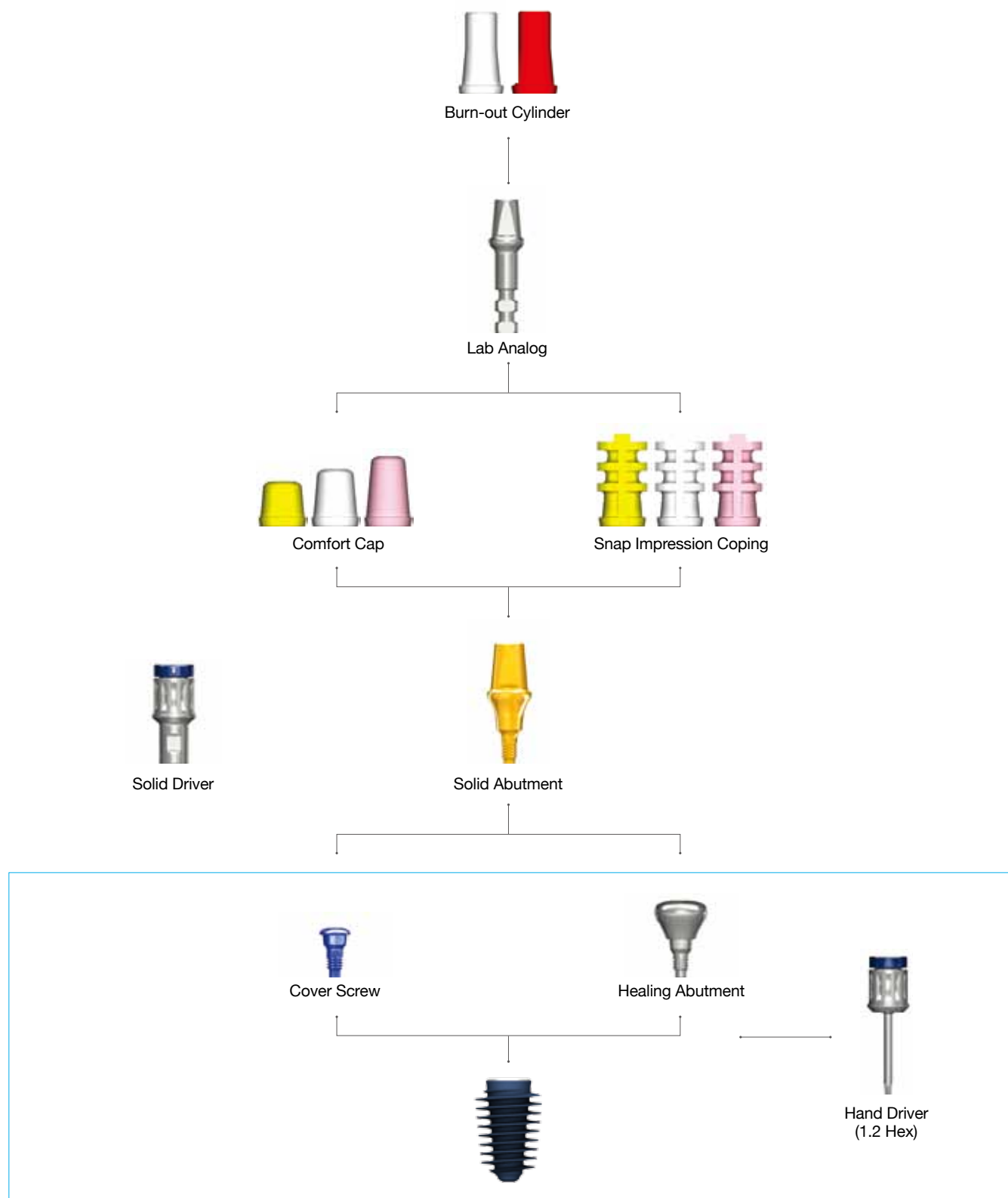
Profile Diameter	Color	Ref.C
Ø3.5	Magenta	AANLAF35
Ø4.0 ~ Ø5.5	Blue	AANLAF4055
Ø6.0 ~ Ø8.0	Yellow	AANLAF6080

- AANLAF35 used for AANEEH4517.
- AANLAF4055 used for AANEEH5517.
- AANLAF6080 used for AANEEH6517.

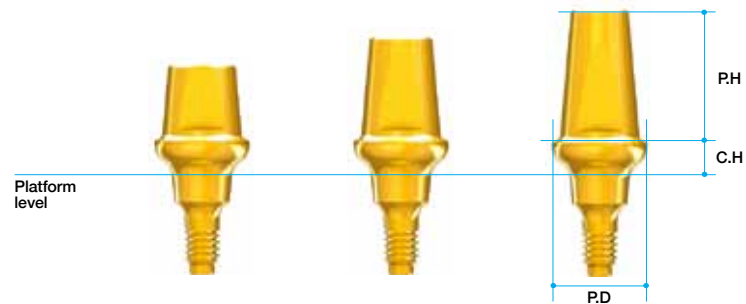


# ➡ AnyRidge® Abutment Option

## 2) Abutment Level : Solid Abutment Prosthesis



## Solid Abutment



Profile Diameter	Cuff Height(mm)	Post Height(mm)	Ref.C
Ø4.0	2	4	AANSAL4024
	3		AANSAL4034
	4		AANSAL4044
	5		AANSAL4054
	2	5.5	AANSAL4025
	3		AANSAL4035
	4		AANSAL4045
	5		AANSAL4055
	2	7	AANSAL4027
	3		AANSAL4037
	4		AANSAL4047
	5		AANSAL4057
Ø5.0	2	4	AANSAL5024
	3		AANSAL5034
	4		AANSAL5044
	5		AANSAL5054
	2	5.5	AANSAL5025
	3		AANSAL5035
	4		AANSAL5045
	5		AANSAL5055
	2	7	AANSAL5027
	3		AANSAL5037
	4		AANSAL5047
	5		AANSAL5057

Profile Diameter	Cuff Height(mm)	Post Height(mm)	Ref.C
Ø6.0	2	4	AANSAL6024
	3		AANSAL6034
	4		AANSAL6044
	5		AANSAL6054
	2	5.5	AANSAL6025
	3		AANSAL6035
	4		AANSAL6045
	5		AANSAL6055
	2	7	AANSAL6027
	3		AANSAL6037
	4		AANSAL6047
	5		AANSAL6057
Ø7.0	2	4	AANSAL7024
	3		AANSAL7034
	4		AANSAL7044
	5		AANSAL7054
	2	5.5	AANSAL7025
	3		AANSAL7035
	4		AANSAL7045
	5		AANSAL7055
	2	7	AANSAL7027
	3		AANSAL7037
	4		AANSAL7047
	5		AANSAL7057

- Used in cement retained restoration only.
- Solid Abutment should be placed into patient's mouth before taking impression.
- Onebody (screw + abutment)
- Should be tightened with a Solid Driver and a Torque Wrench : 35Ncm

- Four different profile diameters. (Ø4.0/5.0/6.0/7.0)
  - Should be tightened with special Solid Driver.
  - Wider profile has bigger post angulation. (4mm - 8°, 5mm - 10°, 6mm - 12°, 7mm - 14°)
- Four different cuff heights. (2/3/4/5mm)
- Three different post heights. (4/5.5/7mm)

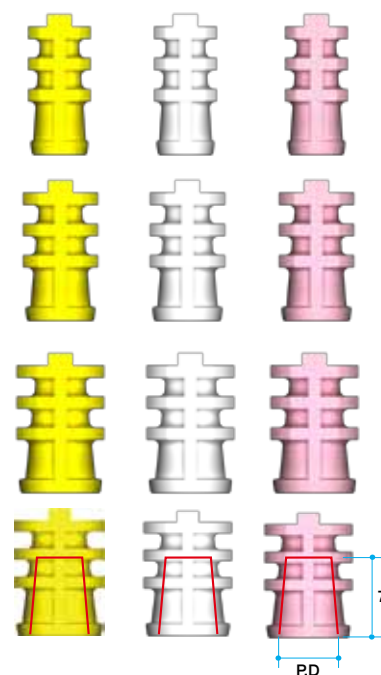
# ➡ AnyRidge® Abutment Option

## 2) Abutment Level : Solid Abutment Prosthesis

### Snap Impression Coping

Profile Diameter	Ref.C
Ø4.0	AANSIF440
	AANSIF455
	AANSIF470
Ø5.0	AANSIF540
	AANSIF555
	AANSIF570
Ø6.0	AANSIF640
	AANSIF655
	AANSIF670
Ø7.0	AANSIF740
	AANSIF755
	AANSIF770

- For impression on Solid Abutments.
- 3 color coded for different post heights.
- 4 different diameters for profile diameters. (Ø4, 5, 6, 7)
- Do not use when abutment is trimmed.



### Comfort Cap

Profile Diameter	Post Height(mm)	Ref.C
Ø4.0	4	AANCCF440
	5.5	AANCCF455
	7	AANCCF470
Ø5.0	4	AANCCF540
	5.5	AANCCF555
	7	AANCCF570
Ø6.0	4	AANCCF640
	5.5	AANCCF655
	7	AANCCF670
Ø7.0	4	AANCCF740
	5.5	AANCCF755
	7	AANCCF770

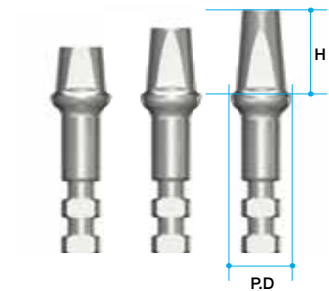
- Protects the Solid Abutment and minimizes irritation to tongue and oral mucosa.
- Can be applied under temporary prosthetics.
- Color coded according to post heights.



## Lab Analog (Solid Level)

Profile Diameter	Height(mm)	Ref.C
Ø4.0	4	AANSLF440
	5.5	AANSLF455
	7	AANSLF470
Ø5.0	4	AANSLF540
	5.5	AANSLF555
	7	AANSLF570
Ø6.0	4	AANSLF640
	5.5	AANSLF655
	7	AANSLF670
Ø7.0	4	AANSLF740
	5.5	AANSLF755
	7	AANSLF770

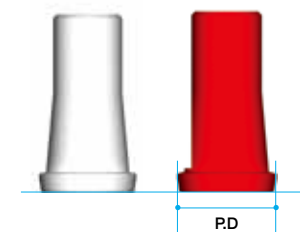
- Directly connected to the Snap Impression Coping in the impression to make a stone model.



## Burn-out Cylinder

Profile Diameter	Type	Ref.C
Ø4.0	Multiple	AANBCB470
Ø5.0		AANBCB570
Ø6.0		AANBCB670
Ø7.0		AANBCB770
Ø4.0	Single	AANBCS470
Ø5.0		AANBCS570
Ø6.0		AANBCS670
Ø7.0		AANBCS770

- Fits with a Lab Analog(solid level).
- Easy to wax-up and accurate casting.
- White Cylinder for multiple unit.
- Red Cylinder for single crown.



# All-In-One Package

Choose an appropriate abutment, and then the rest will follow without headaches.

## 1. All-In-One Package composition

Solid abutment + Snap impression coping + Comfort Cap + Lab Analog + Burn-out Cylinder(Single/Bridge)

## 2. All-In-One Package order

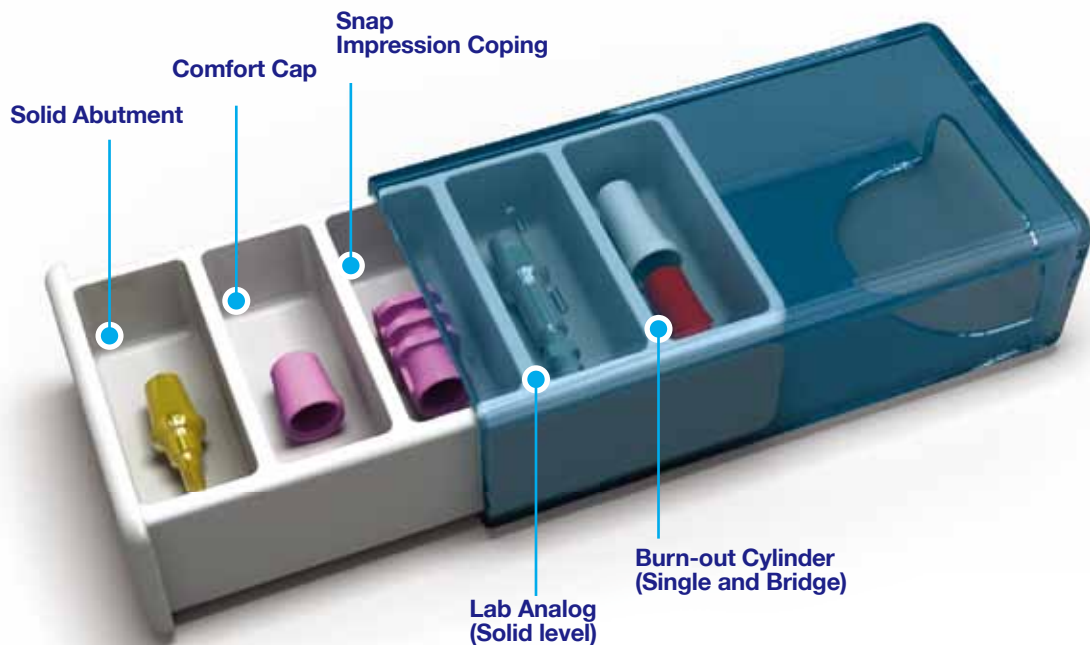
Solid Abutment Reference Code + 'A'

Ex) Solid Abutment **AANSAL5025**

= Profile Diameter = 5.0 / Cuff Height =2.0 / Post height = 5.5

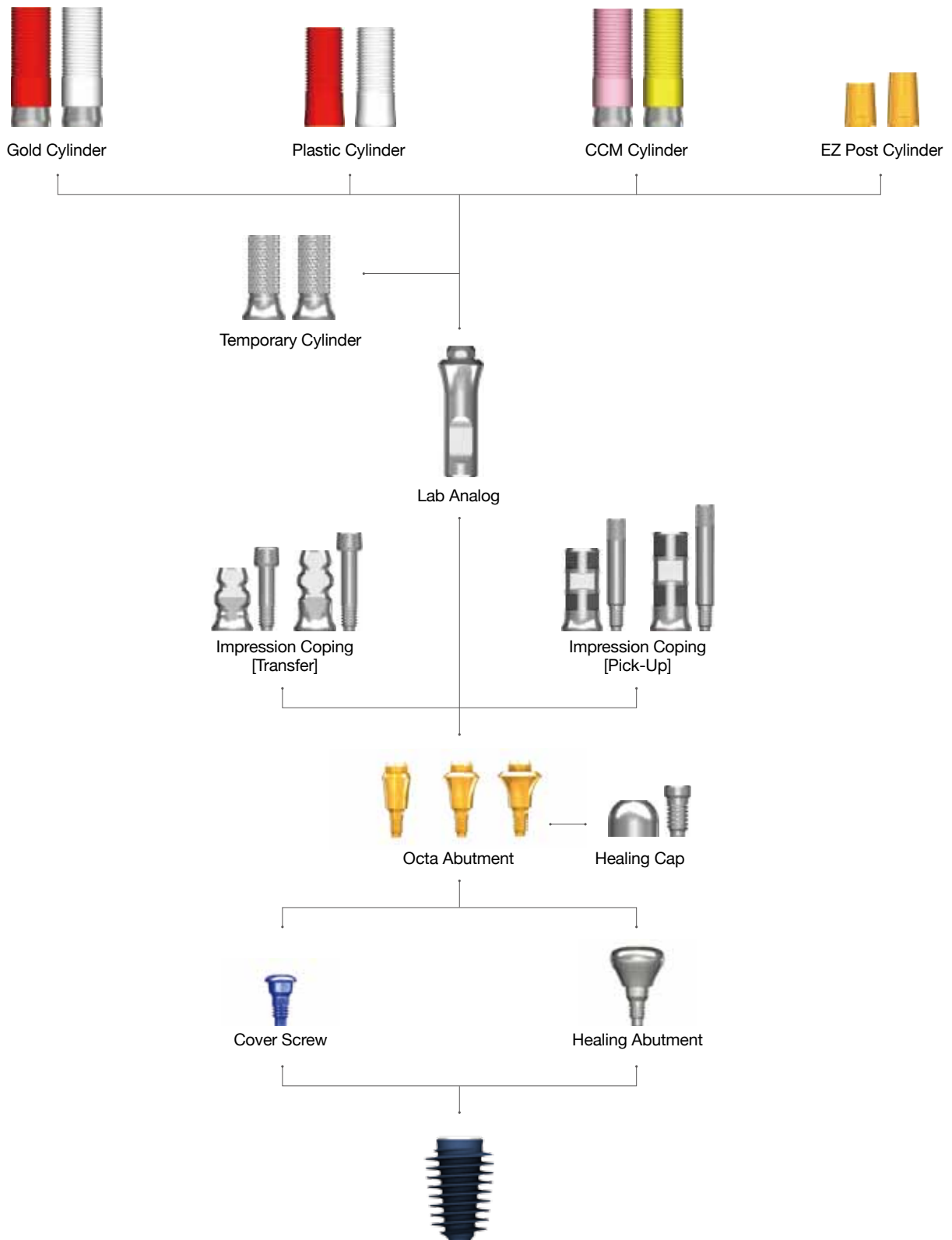
All In one Package Order **AANSAL5025A**

= AANSAL5025 + AANSIF555 + AANCCF555 + AANSLF555 + AANBCS570 + AANBCB570



# ➔ AnyRidge® Abutment Option

## 2) Abutment Level : Octa Abutment Prosthesis



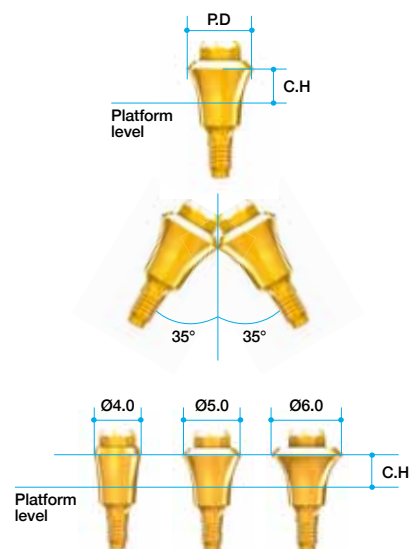
# ➔ AnyRidge® Abutment Option

## 2) Abutment Level : Octa Abutment Prosthesis

### Octa Abutment

Profile Diameter	Cuff Height (mm)	Ref.C
Ø4.0	1	AANOAF4010
	2	AANOAF4020
	3	AANOAF4030
	4	AANOAF4040
	5	AANOAF4050
Ø5.0	1	AANOAF0010
	2	AANOAF0020
	3	AANOAF0030
	4	AANOAF0040
	5	AANOAF0050
Ø6.0	1	AANOAF6010
	2	AANOAF6020
	3	AANOAF6030
	4	AANOAF6040
	5	AANOAF6050

- Used in manufacturing multiple screw-retained prosthetics.
- Compatible with Strauman's Octa Abutment system.
- Use an Octa Abutment Driver : 35Ncm
- Maximum path angle : 70°



### Healing Cap & Octa Cylinder Cap

- Cylinder Screw(IRCS200) included.

Profile Diameter	Ref.C
Ø4.0	AANOHC4000T
Ø5.0	IHC400T
Ø6.0	AANOHC6000T

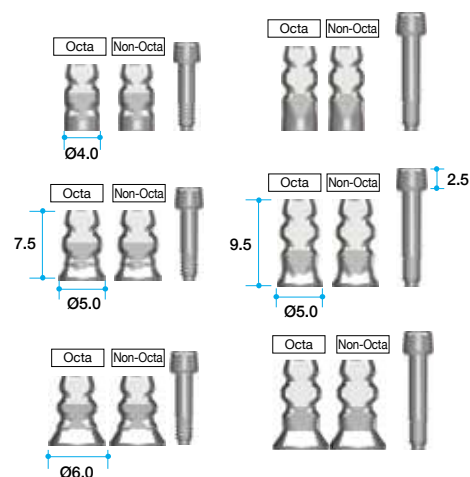
- Protects Octa Abutment and minimizes irritation to tongue and oral mucosa.



### Octa Impression Coping (Transfer)

- Guide Pin included.

Profile Diameter	Height (mm)	Type	Ref.C
Ø4.0	7.5	Octa	AAOITO4010T
		Non-Octa	AAOITN4010T
	9.5	Octa	AAOITO4012T
		Non-Octa	AAOITN4012T
Ø5.0	7.5	Octa	AAOITO5010T
		Non-Octa	AAOITN5010T
	9.5	Octa	AAOITO5012T
		Non-Octa	AAOITN5012T
Ø6.0	7.5	Octa	AAOITO6010T
		Non-Octa	AAOITN6010T
	9.5	Octa	AAOITO6012T
		Non-Octa	AAOITN6012T

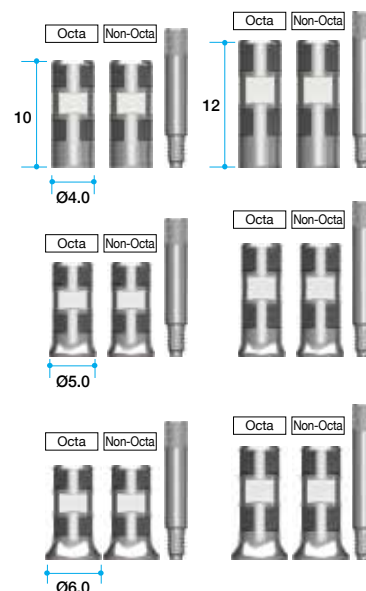


## Impression Coping

(Pick-Up)

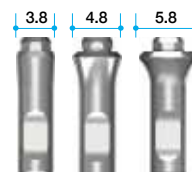
- Guide Pin included.

Profile Diameter	Height (mm)	Type	Ref.C
Ø4.0	10.0	Octa	AAOIPO4010T
		Non-Octa	AAOIPN4010T
	12.0	Octa	AAOIPO4012T
		Non-Octa	AAOIPN4012T
Ø5.0	10.0	Octa	AAOIPO5010T
		Non-Octa	AAOIPN5010T
	12.0	Octa	AAOIPO5012T
		Non-Octa	AAOIPN5012T
Ø6.0	10.0	Octa	AAOIPO6010T
		Non-Octa	AAOIPN6010T
	12.0	Octa	AAOIPO6012T
		Non-Octa	AAOIPN6012T



## Lab Analog

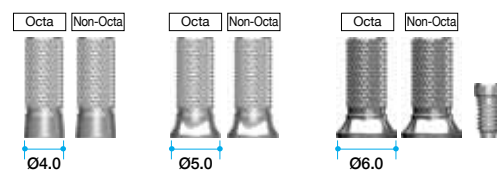
Profile Diameter	Ref.C
Ø3.8	AANOLA4000
Ø4.8	IOA300
Ø5.8	AANOLA6000



## Temporary Cylinder

- Cylinder Screw(IRCS200) included.

Profile Diameter	Type	Ref.C
Ø4.0	Octa	AANOTCO4010T
	Non-octa	AANOTCN4010T
Ø5.0	Octa	AANOTCO5010T
	Non-octa	AANOTCN5010T
Ø6.0	Octa	AANOTCO6010T
	Non-octa	AANOTCN6010T

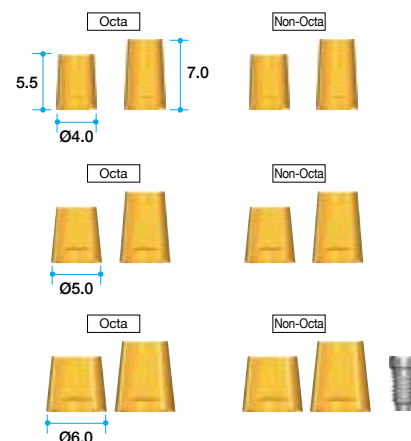


## EZ Post Cylinder

(Octa)

- Cylinder Screw(IRCS200) included.

Profile Diameter	Post Height (mm)	Type	Ref.C
Ø4.0	5.5	Octa	AAOECO4005T
	7.0		AAOECO4007T
	5.5	Non-Octa	AAOECN4005T
	7.0		AAOECN4007T
Ø5.0	5.5	Octa	AAOECO5005T
	7.0		AAOECO5007T
	5.5	Non-Octa	AAOECN5005T
	7.0		AAOECN5007T
Ø6.0	5.5	Octa	AAOECO6005T
	7.0		AAOECO6007T
	5.5	Non-Octa	AAOECN6005T
	7.0		AAOECN6007T

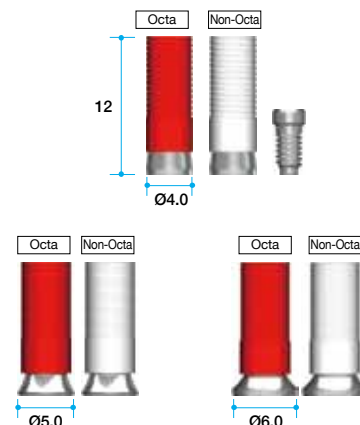


## Gold Cylinder

- Cylinder Screw(IRCS200) included.

Profile Diameter	Type	Ref.C
Ø4.0	Octa	AANGCO4000T
	Non-octa	AANGCN4000T
Ø5.0	Octa	IOGO100T
	Non-octa	IOGN100T
Ø6.0	Octa	AANGCO6000T
	Non-octa	AANGCN6000T

- For customizing abutment for screw retained multi-unit restoration.
- Available in both octa(red) and non-octa(white).
- Melting point of gold alloy : 1400 - 1450°C
- Threaded sleeves allow for better retention of resin or wax.
- Available in three diameters (Ø4.0, 5.0, 6.0).
- Recommend torque : 30Ncm

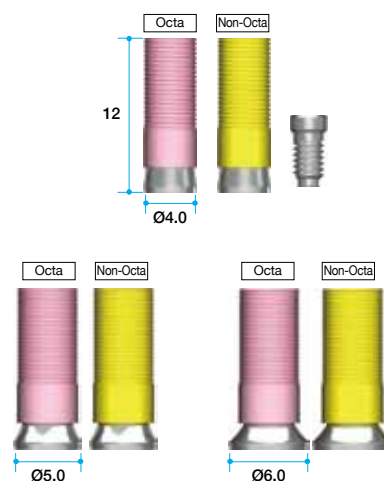


## CCM Cylinder

- Cylinder Screw(IRCS200) included.

Profile Diameter	Type	Ref.C
Ø4.0	Octa	AANCCO4000T
	Non-octa	AANCCN4000T
Ø5.0	Octa	AANCCO5000T
	Non-octa	AANCCN5000T
Ø6.0	Octa	AANCCO6000T
	Non-octa	AANCCN6000T

- Threaded sleeves allow for better retention of resin or wax.
- Available in both octa (pink) and non-octa (yellow) and three diameters (Ø4.0, 5.0, 6.0).
- Recommend torque : 30Ncm
- Can be casted with non-precious alloys (Ni-Cr, Cr-Co alloys).

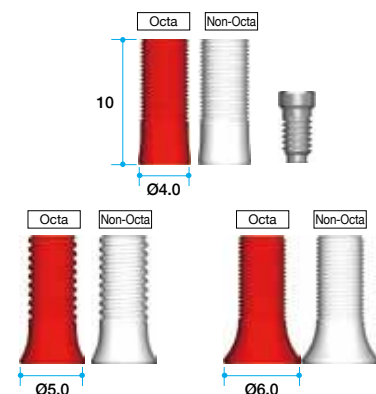


## Plastic Cylinder

- Cylinder Screw(IRCS200) included.

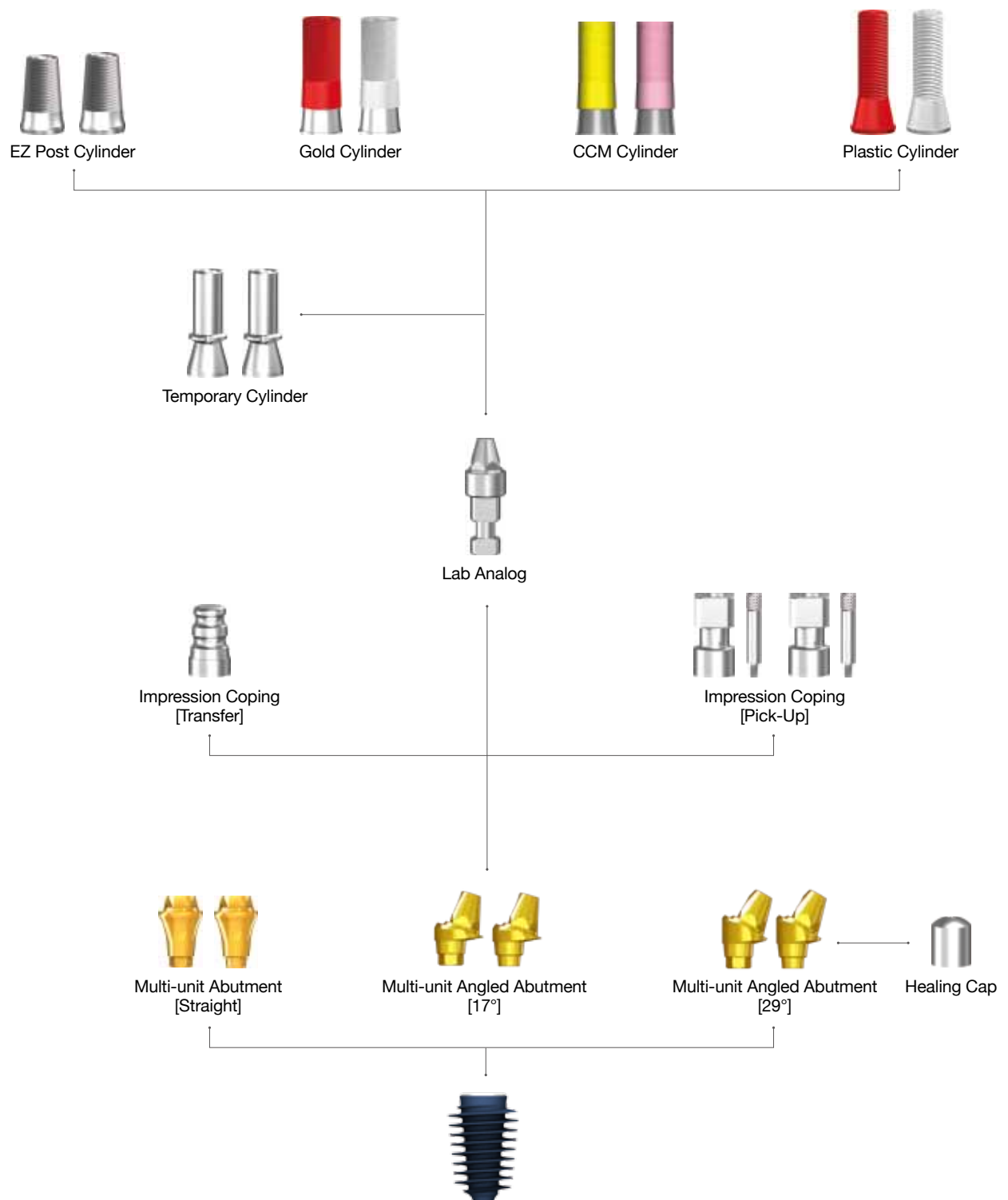
Profile Diameter	Type	Ref.C
Ø4.0	Octa	AAOTCO4010T
	Non-octa	AAOTCN4010T
Ø5.0	Octa	IOPH100T
	Non-octa	IOPN100T
Ø6.0	Octa	AAOTCO6010T
	Non-octa	AAOTCN6010T

- Economical option.
- Used for customizing abutment for screw retained multi-unit restorations.
- Available in both octa (red) and non-octa (white)
- Threaded sleeves allow for better retention of resin or wax.



# ➡ AnyRidge® Abutment Option

## 2) Abutment Level : Multi-unit Prosthesis



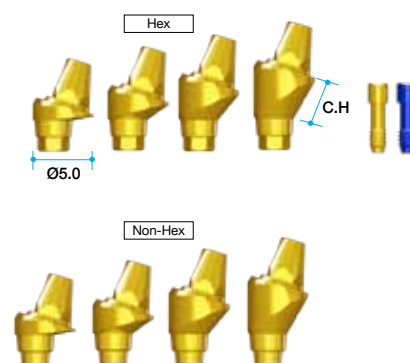
# ➡ AnyRidge® Abutment Option

## 2) Abutment Level : Multi-unit Prosthesis

### Multi-unit Angled Abutment (17°)

- Multi Post Screw(MUMMSF/MUMMST) included.

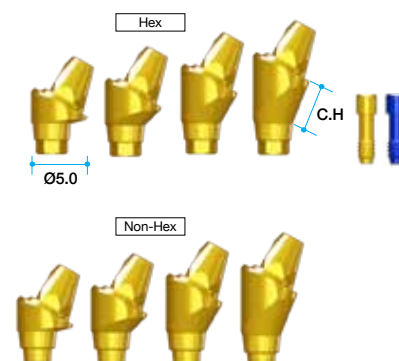
Cuff Height (mm)	Type	Ref.C
1.0	Hex	AANMUH50117L
2.0		AANMUH50217L
3.0		AANMUH50317L
4.0		AANMUH50417L
1.0	Non-Hex	AANMUN50117L
2.0		AANMUN50217L
3.0		AANMUN50317L
4.0		AANMUN50417L



### Multi-unit Angled Abutment (29°)

- Multi Post Screw(MUMMSF/MUMMST) included.

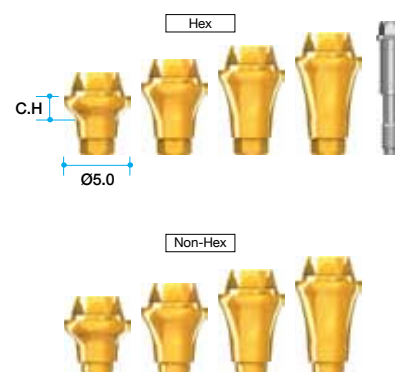
Cuff Height (mm)	Type	Ref.C
1.0	Hex	AANMUH50129L
2.0		AANMUH50229L
3.0		AANMUH50329L
4.0		AANMUH50429L
1.0	Non-Hex	AANMUN50129L
2.0		AANMUN50229L
3.0		AANMUN50329L
4.0		AANMUN50429L



### Multi-unit Abutment (Straight)

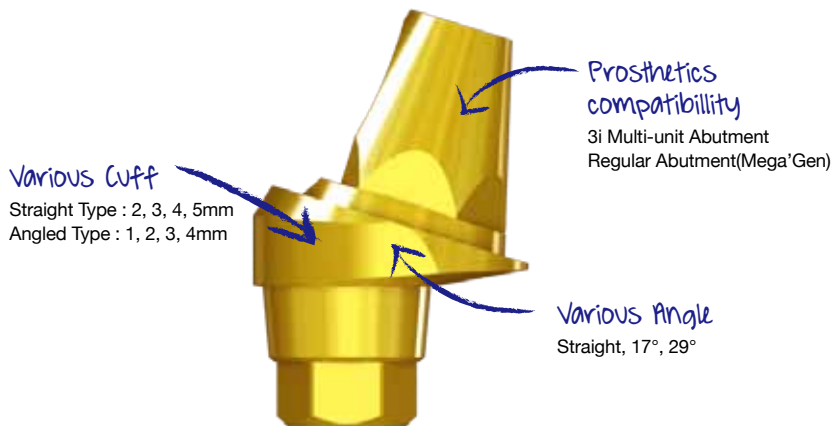
- Multi-unit Abutment Screw included.

Cuff Height (mm)	Type	Ref.C
2.0	Hex	AANMUH5020T
3.0		AANMUH5030T
4.0		AANMUH5040T
5.0		AANMUH5050T
2.0	Non-Hex	AANMUN5020T
3.0		AANMUN5030T
4.0		AANMUN5040T
5.0		AANMUN5050T



• Use with Multi-unit Driver.

# Multi-unit Abutment™



## Multi-unit Abutment Design Concept

MEGAGEN IMPLANT develops the special abutment named as Multi-unit Abutment, which can be the solution for the patients with no teeth. With 4 fixtures placed onto patient's ridge and over-denture placed onto those four fixtures, a patient who has no teeth can fully recover his or her dental condition. Multi-unit Abutments are composed of 2 x straight type abutment for anterior position and 2 x angled type abutment on posterior position.

## Features

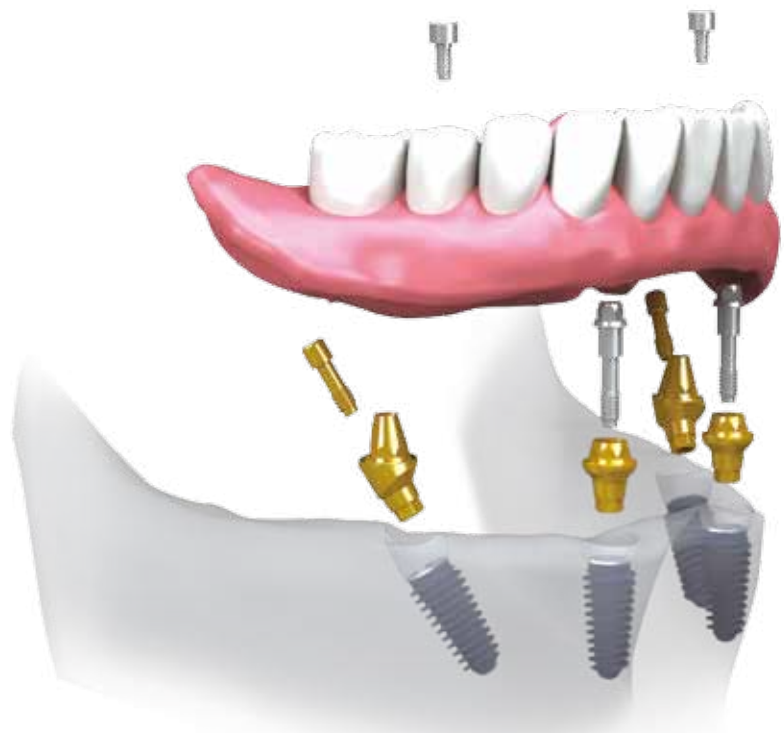
You could see how Multi-unit Abutment functions and what benefits you could get by using Multi-unit Abutment *with the points below*:

- 2 fixtures which are slantly implanted on posterior position are Osseo-integrated with cancellous bone. These fixtures function as dispersing vertical load on alveolar bone.
- Multi-unit Abutment is only 4 fixtures + 4 abutments. It means that dental surgeon has enough places for surgery. Therefore, it will be easy for you to find and place 4 fixtures onto ridge where abundant cancellous bone exists.
- Doctor use bone material if patients have no enough alveolar bone. However, Multi-unit Abutment's angle fixture can overcome the client's insufficient bone by getting good holding strength by its angle.
- In addition, angle fixture is used to avoid touching a patient's maxillary nerve and mandibular sinus.
- Using 4 fixtures means shortened healing time. Also, it leads to lessened inconvenience.

## Doctor's Benefits

Doctor could enjoy Multi-unit Abutment's benefits described as below:

- It can be used with its cylinder. It means that doctor can change or replaces the final prosthetic easily.
- Multi-unit Abutment has two type of angle fixture: 17°, 29°. It means that doctor has various options to one's angle taste.
- Multi-unit Abutment has various cuff heights (1~5): it means that doctor can be flexible from prosthetic angle and fixture's placement depth with cuff's variety.
- MegaGen's Multi-unit Abutment is perfectly compatible with Multi-unit Abutment made by 3i.
- MegaGen's Multi-unit Abutment is perfectly compatible with MegaGen's ExFeel External Regular Abutment.



# ➡ AnyRidge® Abutment Option

## 2) Abutment Level : Multi-unit Prosthesis

### Healing Cap

Profile Diameter	Ref.C
Ø5.0	REC600



### Impression Coping (Transfer)

Profile Diameter	Ref.C
Ø4.8	RITE480



### Impression Coping (Pick-Up)

- Guide Pin (RICG150) included

Height (mm)	Type	Ref.C
9.4	Hex	RIEH480T
	Non-Hex	RIEN480T



### Lab Analog

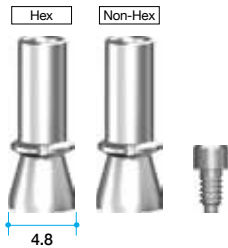
Profile Diameter	Ref.C
Ø4.8	RELA300



# Temporary Cylinder

- Cylinder Screw (TASH140) included

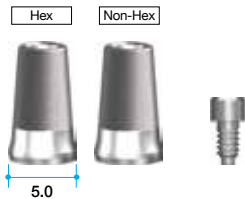
Profile Diameter	Type	Ref.C
Ø4.8	Hex	ETH100T
	Non-Hex	ETN100T



# EZ Post Cylinder

- Cylinder Screw (TASH140) included

Profile Diameter	Type	Ref.C
Ø5.0	Hex	RCA900T
	Non-Hex	RCA800T

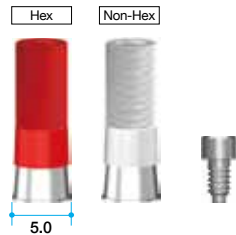


# Gold Cylinder

- Cylinder Screw (TASH140) included

Profile Diameter	Sleeve Color	Ref.C
Ø5.0	Red	REGC200T
	White	REGC100T

- Useful to make a customized abutment in difficult situations.
- Precious and non-precious alloys.
- Melting point of gold alloy : 1400 - 1450°C
- Threaded sleeves for convenient Resin / Wax-up.

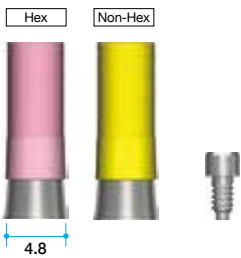


# CCM Cylinder

- Cylinder Screw (TASH140) included

Profile Diameter	Sleeve Color	Ref.C
Ø4.8	Pink	RCA5013HT
	Yellow	RCA5013NT

- Useful to make a customized abutment in difficult situations.
- Can be casted with non-precious alloys (Ni-Cr, Cr-Co alloys).
- Non-precious melting temperature : Depend on Manufacturer
- Threaded sleeves for convenient Resin / Wax-up.
- Melting temperature of CCM : 1380 - 1420°C



# Plastic Cylinder

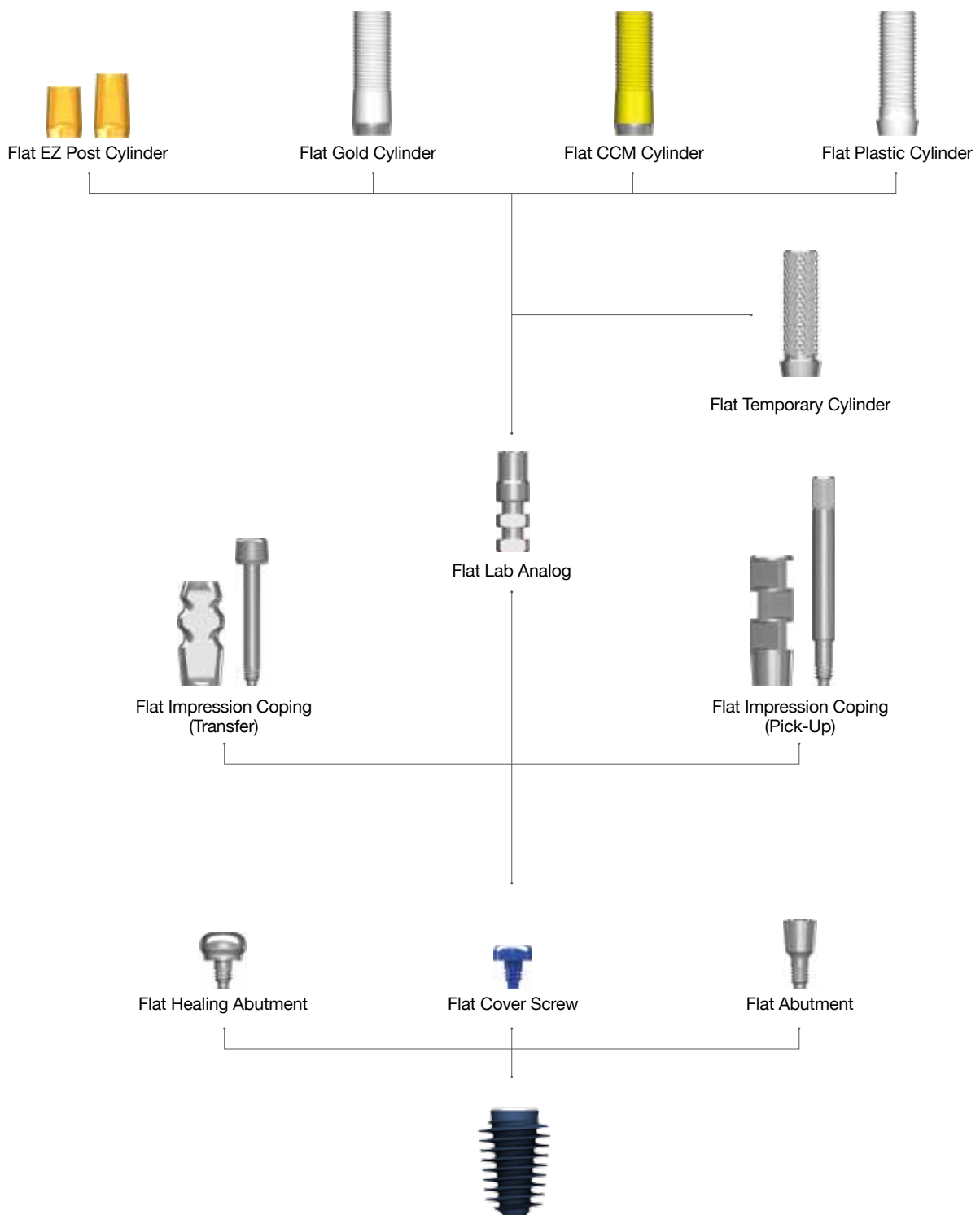
- Cylinder Screw (TASH140) included

Profile Diameter	Sleeve Color	Ref.C
Ø5.2	Red	RPEH100T
	White	RPEN100T



# ➡ AnyRidge® Abutment Option

## 2) Abutment Level : Flat Abutment Prosthesis

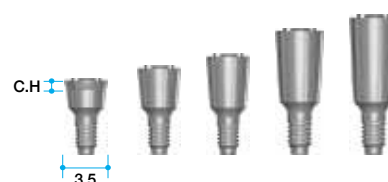


# ➡ AnyRidge® Abutment Option

## 2) Abutment Level : Flat Abutment Prosthesis

### Flat Abutment

Profile Diameter	Cuff Height (mm)	Ref.C
Ø3.5	1	AANFAL3510
	2	AANFAL3520
	3	AANFAL3530
	4	AANFAL3540
	5	AANFAL3550



### Flat Cover Screw

Profile Diameter	Ref.C
Ø3.5	FCS3510



### Flat Healing Abutment

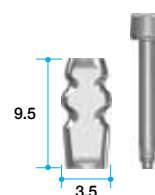
Height(mm)	Ref.C
2	FHA402
3	FHA403
4	FHA404



### Flat Impression Coping (Transfer)

- Guide Pin (FGPT) included.

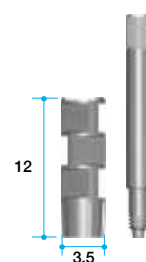
Profile Diameter	Height (mm)	Ref.C
Ø3.5	9.5	FIT4012T



### Flat Impression Coping (Pick-Up)

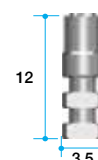
- Guide pin (FGPP15) included.

Profile Diameter	Height (mm)	Ref.C
Ø3.5	12	FIP4012T



### Flat Lab Analog

Profile Diameter	Height (mm)	Ref.C
Ø3.5	12	FLA3512



## Flat Temporary Cylinder

- Flat Cylinder Screw (FAS) included.

Profile Diameter	Ref.C
Ø4.0	FTC4012T



## Flat EZ Post Cylinder

- Flat Cylinder Screw (FAS) included.

Height (mm)	Ref.C
5.5	FEC4005T
7.0	FEC4007T

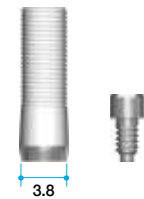


## Flat Gold Cylinder

- Flat Cylinder Screw (FAS) included.

Profile Diameter	Ref.C
Ø3.8	FGC4012T

- Useful to make a customized abutment in difficult situations.
- Precious and non-precious alloys.
- Melting point of gold alloy : 1400 - 1450°C
- Threaded sleeves for convenient Resin / Wax-up.

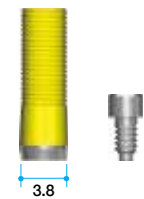


## Flat CCM Cylinder

- Flat Cylinder Screw (FAS) included.

Profile Diameter	Ref.C
Ø3.8	FCC4012T

- Useful to make a customized abutment in difficult situations.
- Can be casted with non-precious alloys (Ni-Cr, Cr-Co alloys).
- Non-precious melting temperature : Depend on Manufacturer
- Threaded sleeves for convenient Resin / Wax-up.
- Melting temperature of CCM : 1380 - 1420°C



## Flat Plastic Cylinder

- Flat Cylinder Screw (FAS) included.

Profile Diameter	Ref.C
Ø4.0	FPC4012T



# ➡ AnyRidge® Abutment Option

## 3) Overdenture Prosthesis : Meg-Rhein Overdenture System



Retentive Cap set



Lab Analog



Impression Coping



Meg-Rhein Abutment



## Meg-Rhein Package

- 1 Meg-Rhein Abutment
- 1 Plastic Carrier
- 1 Stainless Steel Housing
- 3 Retentive Caps (Black, Yellow, Pink)

Cuff Height (mm)	Ref.C
0	ADR00P
1	ADR01P
2	ADR02P
3	ADR03P
4	ADR04P
5	ADR05P
6	ADR06P

- Perfect compatibility with the Rhein83 from Italy.
- Recommend torque ; 35Ncm.



## ➡ Meg-Rhein Option

### 4 Retentive Caps

(White)

Ref.C
140CET

- White cap(1.8kg) - For refill (4ea/pack)



### 4 Retentive Caps

(Violet)

Ref.C
140CEV

- Violet cap(2.7kg) - For refill (4ea/pack)



### 2 Stainless Steel Housing

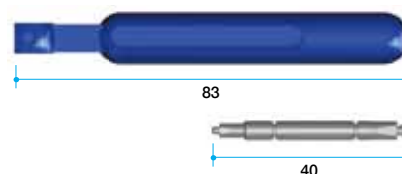
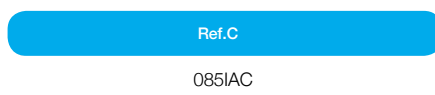
Ref.C
141CAE

- 2ea/pack

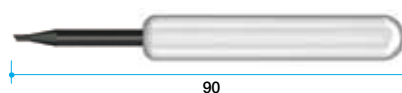
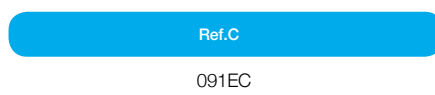


## ➡ Meg-Rhein Option

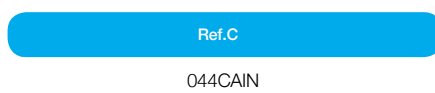
### Insertion Tool



### Removal Tool



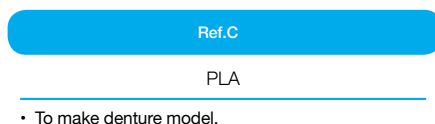
### Stainless Impression Coping (Pick-Up)



- 2ea/pack.
- Italy - Rhein 83 products.
- For accurate (pick-up type) impression.
- Metal with groove design to prevent from swaying.



### Lab Analog

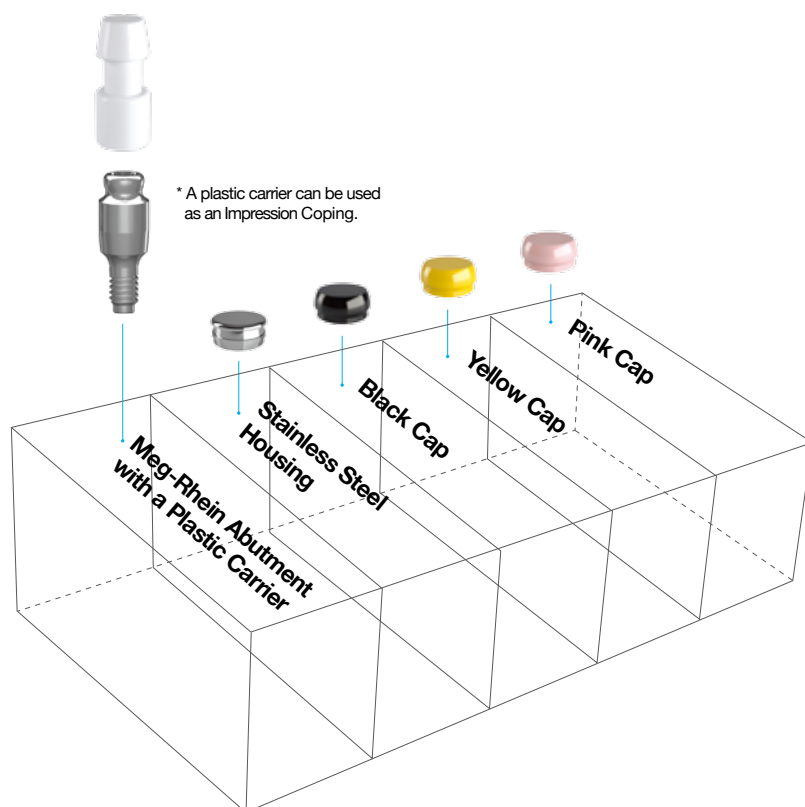


- To make denture model.



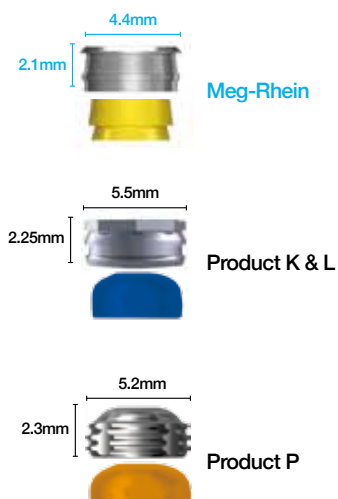
# Overdenture System

## Meg-Rhein Package



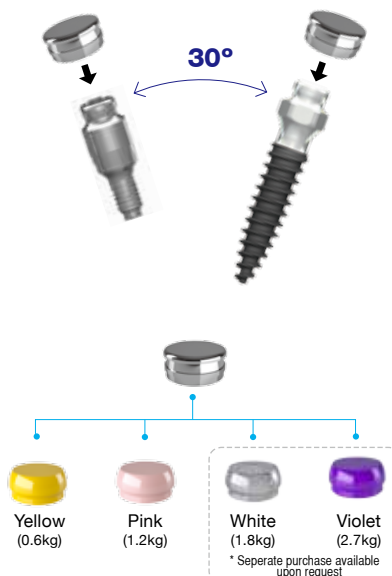
## Advantage

1. Small & Easy-to-use Housing System

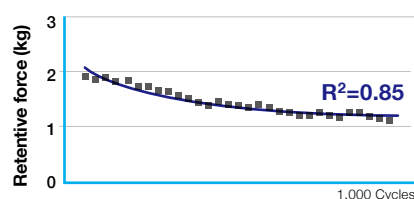
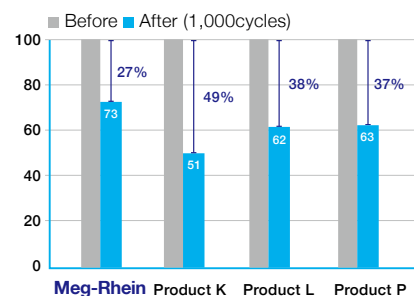


**\*Smaller & more convenient than others, with proven Italian technology.**

2. Tilting Angle & Various Retentive Caps of the Meg-Rhein



3. Low Reduction Rate & Uniform Variance of Retentive Force



$R^2$ (Coefficient of determination) becomes more reliable when it is close to "1".

# ➔ AnyRidge® Abutment Option

## 4) Abutment Selection Guide kit (KANASG3000)

- Colors indicate different cuff heights (Yellow : 2mm, White : 3mm, Pink : 4mm, Red : 5mm)
- Store 2pieces in each container
- Use autoclave to sterilize



Straight type  
(EZ Post & Solid Abutment select)



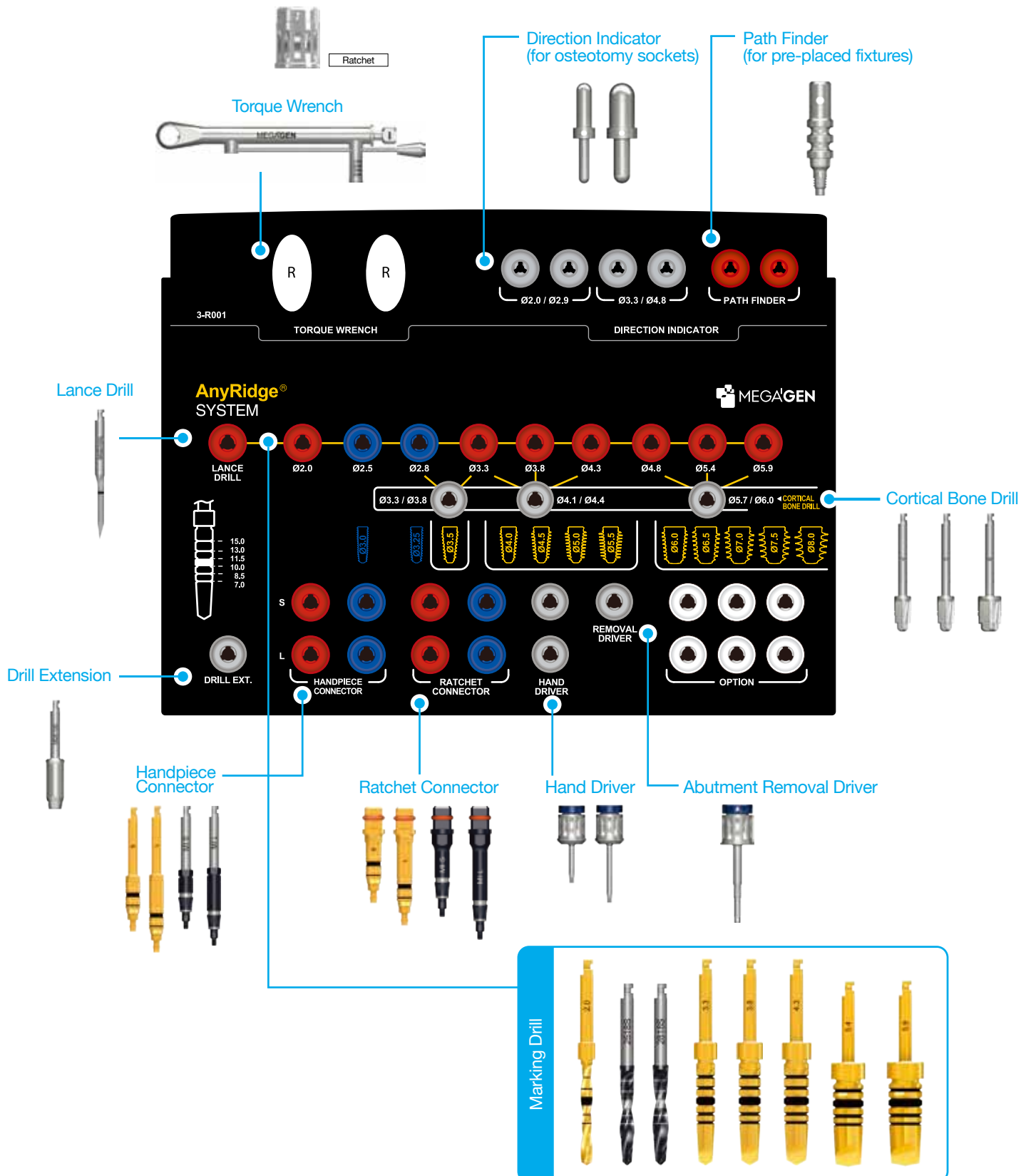
Angle type(15°)  
(Angled Abutment select)



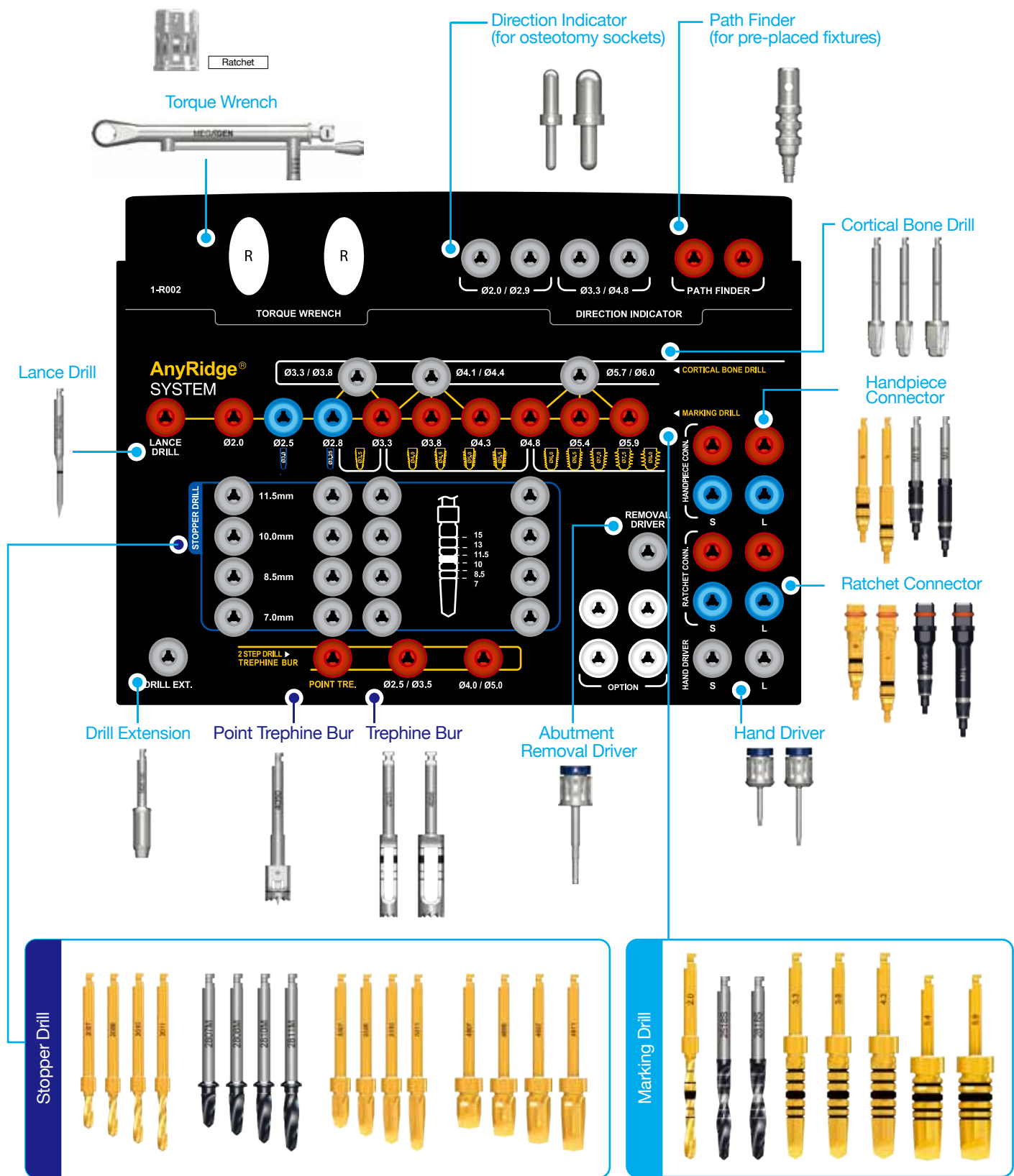
Angle type(25°)  
(Angled Abutment select)

# ➔ AnyRidge® Surgical Kit

1) Surgical Kit : Standard Type (KARIN3003)



2) Surgical Kit : Full Type (KARIN3001)

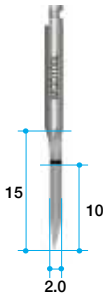


➔ Surgical Components

Lance Drill

Diameter	Type	Ref.C
Ø2.0	Long	MGD100L

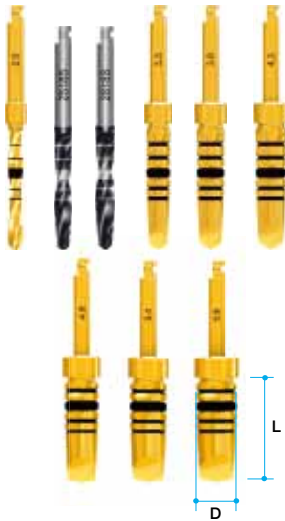
- Useful to make an indentation on cortical bone to confirm the exact drilling location.
- Advisable to go into the bone to the full length of a fixture.



Marking Drill

Diameter	Length (mm)	Ref.C
Ø2.0	18	TANTDF2018
Ø2.5		SD2518S
Ø2.8		SD2818S
Ø3.3		TANSDF3318
Ø3.8		TANSDF3818
Ø4.3		TANSDF4318
Ø4.8	15	TANSDF4815
Ø5.4		TANSDF5415
Ø5.9		TANSDF5915

- Each drill has calibrations from 7.0 to 18.0mm. (TANSDF4815, TANSDF5415, TANSDF5915 have calibrations up to 15.0mm)
- Easy to recognize by dual marking systems. (Groove and laser marking)



Stopper Drill

Diameter	Length (mm)	Ref.C
Ø2.0	7	TANTDF2007
	8.5	TANTDF2008
	10	TANTDF2010
	11.5	TANTDF2011
Ø2.8	7	SD2807M
	8.5	SD2808M
	10	SD2810M
	11.5	SD2811M
Ø3.3	7	TANSDF3307
	8.5	TANSDF3308
	10	TANSDF3310
	11.5	TANSDF3311
Ø4.8	7	TANSDF4807
	8.5	TANSDF4808
	10	TANSDF4810
	11.5	TANSDF4811



## ➔ Surgical Components

### Point Trephine Bur

Diameter	Ref.C
Ø5.0 (In.Ø4.0)	SPTB4050

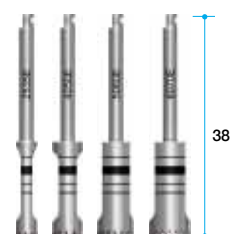
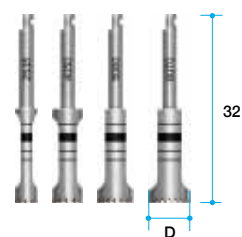


### Trephine Bur

\* Separate sale item.

Diameter	Type	Ref.C
Ø3.5 (in Ø2.5)	Short	TANTBL2535
Ø5.0 (in Ø4.0)		TANTBL4050
Ø6.0 (in Ø5.0)		*TANTBL5060
Ø7.0 (in Ø6.0)		*TANTBL6070
Ø3.5 (in Ø2.5)	Long	*TANTBE2535
Ø5.0 (in Ø4.0)		*TANTBE4050
Ø6.0 (in Ø5.0)		*TANTBE5060
Ø7.0 (in Ø6.0)		*TANTBE6070

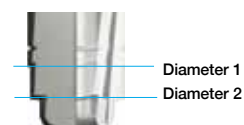
- Minimizes the drilling steps needed, especially for wider fixtures.
- Helpful for collecting autogenous bone.
- Useful for removing failed and fractured fixtures.
- Depth markings are 7, 8.5, 10, 11.5, 13mm, same depths as fixtures. (No Y dimension so markings are actual length).
- Markings on the drill shaft represent the inside / outside diameter of Trephine Burs.



### Cortical Drill

Fixture size	Ref.C
Ø3.5	TANCDL3500
Ø4.0~ Ø5.5	TANCDL4055
Ø6.0~ Ø8.0	TANCDL6080

- Removes cortical bone and enlarges socket, especially in hard bone.
- Similar function with Countersink of other systems.
- Each drill has two steps of diameter for convenience.

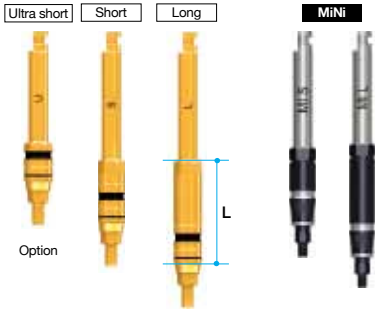


# Handpiece Connector

\* Separate sale item.

Length (mm)	Type	Ref.C
5	*Ultra short	TANHCU
10	Short	TANHCS
15	Long	TANHCL
10	Short (MiNi)	HCS17
15	Long (MiNi)	HCL17

- Delivers torque for the placement of a fixture with a handpiece.
- Easy and secure pick-up and delivery.
- Used to place implant without mount.
- Marks on the shaft can indicate the position of fixture platform, especially in flapless surgery.

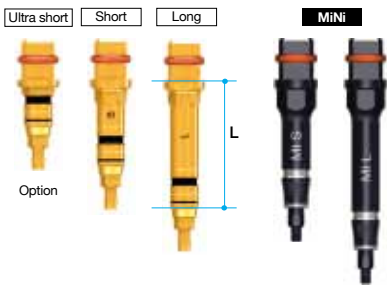


# Ratchet Connector

\* Separate sale item.

Length (mm)	Type	Ref.C
6	*Ultra short	TANREU
10	Short	TANRES
15	Long	TANREL
15	Short(MiNi)	RCS17
20	Long (MiNi)	RCL17

- Delivers torque for the placement or removal of a fixture with a Ratchet Wrench.
- Secure a Ratchet Extension or Torque Wrench to a fixture before exerting force.
- Too much torque force can result in damage to hex of a fixture.
- Marks on the shaft can indicate the position of fixture platform, especially for flapless surgery.



# Hand Driver (1.2 Hex)

\* Separate sale item.

Length(mm)	Type	Ref.C
5	*Ultra-short	TCMHDU1200
10	Short	TCMHDS1200
15	Long	TCMHDL1200
20	*Extra-long	TCMHDE1200

- Used for all Cover Screws, all Abutment Screws and all Healing Abutments.
- Available in 4 lengths for added convenience.
- Hand Driver can be directly inserted into the to Torque Wrench without using an adapter.
- Hex tip can withstand 35-45Ncm of torque without distorting.



## Abutment Removal Driver

\* Separate sale item.

Length (mm)	Ref.C
17.5	TANMRD18
25.0	*TANMRD25

- Used to remove final abutment ; use after removing Abutment Screw.
- Insert straight into the abutment and rotate clockwise.
- Long Abutment Removal Driver is to disconnect an abutment with a cemented crown.



## Drill Extension

Ref.C
MDE150

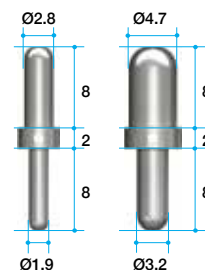
- Extends drills & other handpiece tools.
- No more than 35Ncm torque : Can be distorted when too much force is applied.



## Direction Indicator

Length (mm)	Ref.C
Ø1.9 / Ø2.8	MDI2029
Ø3.2 / Ø4.7	MDI3348

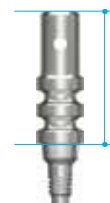
- Confirms drilling direction and location during drilling.
- To check drilling position.



## Path Finder

Length (mm)	Ref.C
10	TANPFF3580

- After placing a fixture, a Path Finder can be connected to check pre-placed fixture is parallel.
- Gingival depth can be measured with the grooves, especially for flapless surgeries.

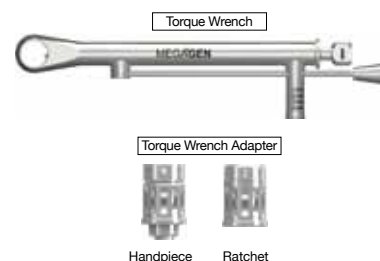


## Torque Wrench & Adapter

\* Separate sale item.

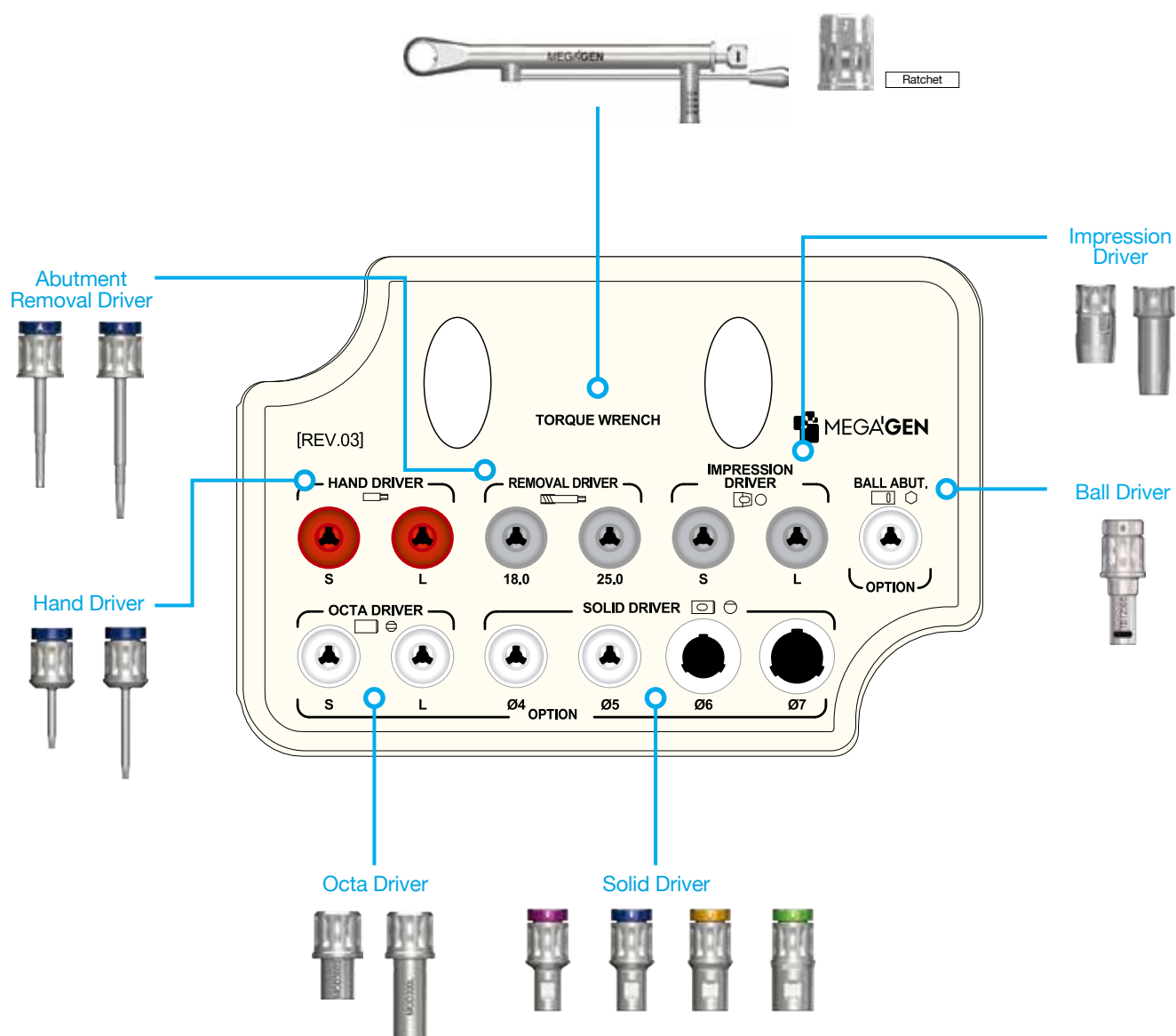
Type	Ref.C
Torque Wrench	MTW300A
*Torque Wrench Adapter(Handpiece)	TTA100
Torque Wrench Adapter(Ratchet)	TTAR100

- Torque Wrench has torque options from 15Ncm to 45Ncm and is used for final tightening of the Abutment Screw into the fixture.



# ➔ AnyRidge® Surgical Kit

## 2) Prosthetics Kit (KANPK3000)



## ➔ Surgical Components

### Solid Driver

\* Separate sale item.

Solid Abutment Profile Diameter	Length(mm)	Ref.C
Ø4	8.5	TANSDS400
	13.5	*TANSDL400
Ø5	8.5	TANSDS500
	13.5	*TANSDL500
Ø6	8.5	TANSDS600
	13.5	*TANSDL600
Ø7	8.5	TANSDS700
	13.5	*TANSDL700

- For the delivery of Solid Abutments.
- Color coded for different profile diameters. (Ø4-magenta, Ø5-blue, Ø6-yellow, Ø7-green)
- Two different heights. (8.5 / 13.5mm)
- Directly connectable to Torque Wrench.



### Octa Driver

Length (mm)	Ref.C
7	MOD300S
13	MOD300L

- For seating the Octa Abutment onto the fixture. Can also be connected to Torque Wrench.



### Ball Driver

\* Separate sale item.

Type	Ref.c
*Handpiece Connector(Short)	TBH250S
*Handpiece Connector(Long)	TBH250L
*Ratchet Connector(Short)	TBR250S
*Ratchet Connector(Long)	TBR250L
*Toque Driver(Short)	TBT250S
Toque Driver(Long)	TBT250L

- For seating the Ball Abutment onto the fixture.
- Can connect to a Handpiece, Ratchet or Torque Wrench.
- Available in long or short.



### Impression Driver

Length (mm)	Ref.C
Short	TCMID
Long	TCMIDE

- For transfer type of Impression Coping.
- Works with friction only.
- Small but powerful grip.

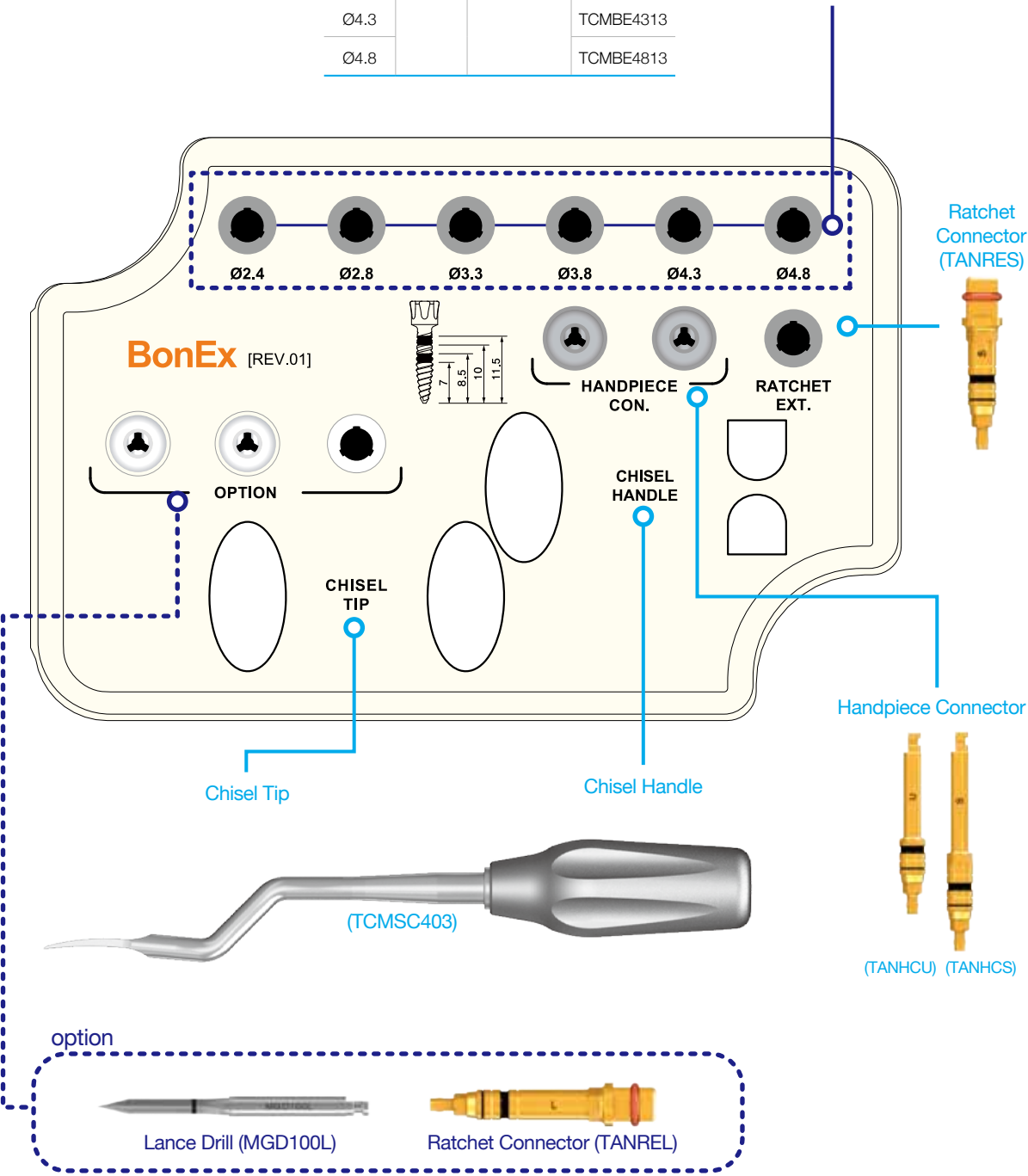


# ➡ AnyRidge® Surgical Kit

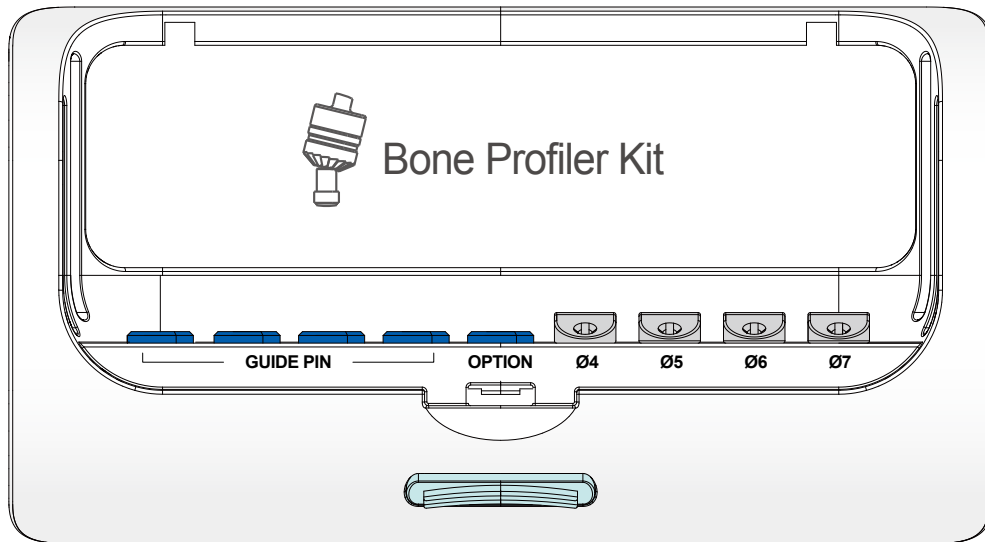
## 3) BonEx Kit (KBECS3000)

### Expander

Diameter	Length (mm)	Marking line (mm)	Ref.C
Ø2.4	13	7 / 8.5 / 10 / 11.5	TCMBE2413
Ø2.8			TCMBE2813
Ø3.3			TCMBE3313
Ø3.8			TCMBE3813
Ø4.3			TCMBE4313
Ø4.8			TCMBE4813



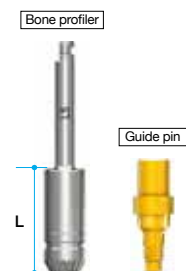
#### 4) Bone Profiler Kit (KARBP3000)



#### Bone Profiler & Guide pin

Profile Diameter	Length (mm)	Ref.C
Ø4	13	TANBPL40G
Ø5		TANBPL50G
Ø6	8	TANBPS60G
Ø7		TANBPS70G

- Removes bone around the fixture to allow adequate size of Healing Abutment.
- Place a Guide Pin into a fixture and choose a Bone Profiler to fit the situation.
- Each package includes a Bone Profiler, a Guide Pin.



## ➔ Optional surgical components

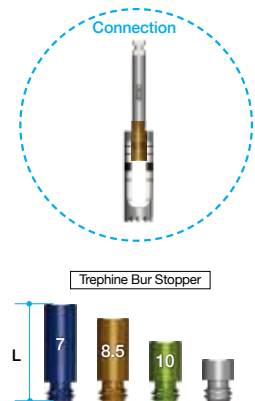
: not included in a surgical kit

: may be purchased separately and placed in the spaces provided in the surgical kit

### Trephine Bur Stopper

Length (mm)	Ref.C
7.0	TANTSF2307
8.5	TANTSF2308
10.0	TANTSF2310
11.5	TANTSF2311

- Controls the depth of trephination with a Stopper placed into the Trephine.
- Especially useful in cases with limited height bone.



### Manual Inserter

Ref.C
TANMI

- Specially designed for manual placement of AnyRidge fixture.
- Especially useful at immediate implant placement on maxilla anterior.



### Reamer Drill & Center Pin

Diameter	Type	Ref.C
Ø10.0	Reamer Drill	TANRD
Ø4.0	Center Pin	TANRDJ40
Ø5.0		TANRDJ50
Ø6.0		TANRDJ60
Ø7.0		TANRDJ70

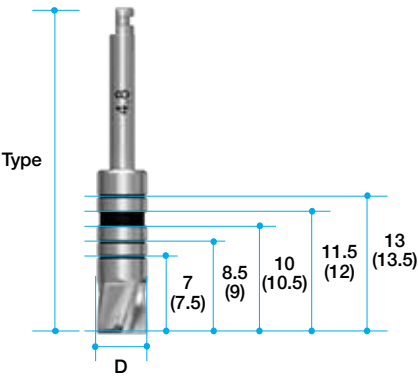
- Removes inner lip of the cast after casting Burn-out Cylinders of Solid Abutment.
- Center Pin have 4 different diameters according to the profile diameter of Solid Abutments.



# Bottom Drill

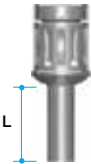
Diameter	Type	Ref.C
Ø3.3	Short (32mm)	TCMBDS33
Ø3.8		TCMBDS38
Ø4.8		TCMBDS48
Ø5.8		TCMBDS58
Ø6.8		TCMBDS68
Ø3.3	Long (38mm)	TCMBDL33
Ø3.8		TCMBDL38
Ø4.8		TCMBDL48
Ø5.8		TCMBDL58
Ø6.8		TCMBDL68

- It removes remaining bone in osteotomy socket after trephine drilling.
- It imprints the sizes of fixtures, for example 7, 8.5, 10, 11.5 and 13mm, by laser marker.



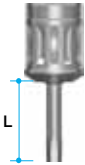
# Multi-unit Driver (2.0 Hex) (For Multi-unit Abutment)

Length(mm)	Type	Ref.C
10	Short	TCMMUDS20
15	Long	TCMMUDL20



# Hand Driver (1.6 Hex)

Length(mm)	Type	Ref.C
10	Short	TCMHDS1600
15	Long	TCMHDL1600



# Ratchet Wrench

Ref.C
MRW040S

- Used to exert more force than handpiece.
- No bearing system : No breakage and corrosion problems.
- Attaches to Ratchet Extension.
- Arrow laser marking indicates direction of force.



# ➔ Extra Option Products

## 1) i-Gen

### i-Gen Screw

Type	Cuff Height (mm)	Ref.C
M1.8	1.0	IA1810
	2.0	IA1820
	3.0	IA1830

- Dentsply-Frident (Ankylos C/X Implant)
- Zimmer (TSV)
- Nobel Biocare (Nobel Replace Tapered Groovy)



### i-Gen Cover Screw

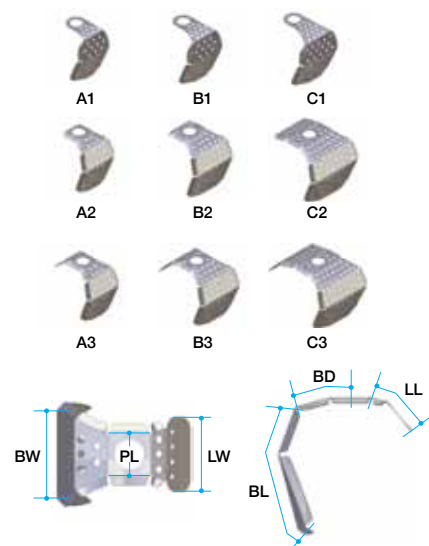
- Use Hand Driver(1.2 Hex)

Type	Height (mm)	Ref.C
Hex 1.2	1.0	ICS3510



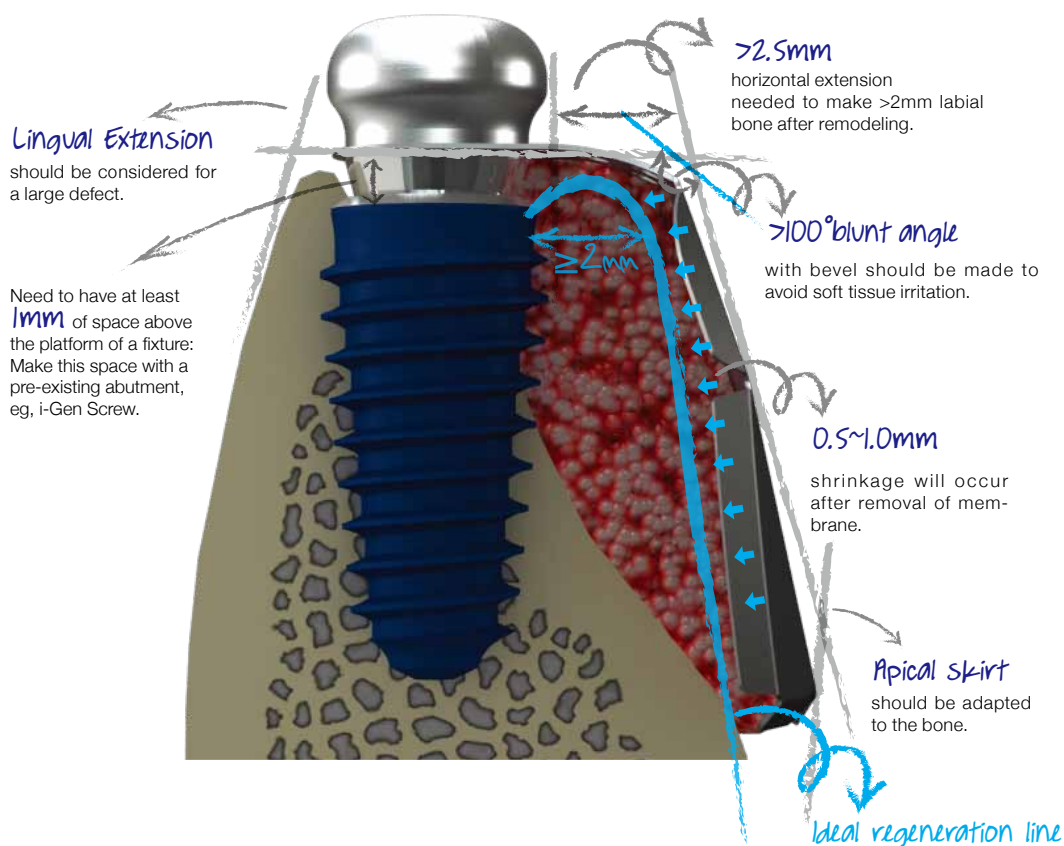
### i-Gen Membrane

Type	PL Proximal Length	BW Buccal Width	BL Buccal Length	BD Buccal Distance	LW Lingual Width	LL Lingual Length	Ref.C
A1	4	9	11	4.5	-	-	IG1W4509
A2	4	10	11	5.5	-	-	IG1W5510
A3	4	11	11	6.5	-	-	IG1W6511
B1	5	9	11	4.5	-	-	IG2W0918
B2	6.5	11	11	5.5	-	-	IG2W1120
B3	9	13	11	6	-	-	IG2W1323
C1	5	9	11	4.5	6	4.25	IG3W0921
C2	6.5	11	11	5.5	8	4.25	IG3W1125
C3	9	13	11	6	10	9	IG3W1328



## Design concept of i-Gen

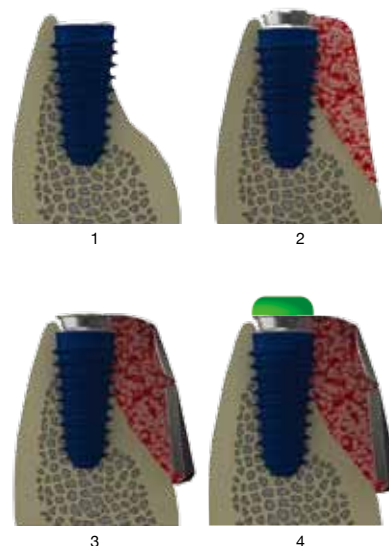
Compatible with other implant brands now!



## Ideal + Regeneration membrane ⇒ i-Gen membrane

1. Place an implant into the recipient site.
2. Connect a i-Gen Screw to the implant and bone grafting. Usually 1 mm cuff height is good enough for vertical space, but 2 or 3 mm cuff height of i-Gen Screw can be chosen according to situation. The amount of graft material should be enough to fill the space between i-Gen and the fixture.
3. Selection of i-Gen and placement. According to the size and shape of bone defect, an i-Gen can be chosen from 9 different shapes. Match the hole of i-Gen with the screw hole of i-Gen Screw.
4. Fixate i-Gen with a i-Gen Screw. Choose a i-Gen Cover Screw or Flat Healing Abutment to fix i-Gen membrane depend on the need of one or two stage surgery. And tight adaptation of soft tissue flap is recommended.

\* Flat Healing Abutment : P40



2) MEG-TORQ / MEGA ISQ



The SmartPeg is attached to an implant. It screws effortlessly into the implant's inside thread.



The hand-held probe stimulates the SmartPeg magnetically, without actually being connected to it or even touching it.



An ISQ value is generated and shown on the display. It reflects the level of stability on the universal ISQ scale from 1 to 100. The higher the ISQ value, the more stable the implant.

SmartPeg

Thread (mm)	Ref.C
1.8	OSSTELL-AR67

- Recommend torque : 8~10Ncm
- Uses Right Angled Driver (3.0 Hex Driver)



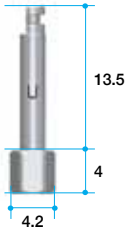
MEG-TORQ

Ref.C
MEG-TORQ



Right Angle Driver  
(3.0 Hex)

Diameter (mm)	Ref.C
4.2	RDI30U



MEGA ISQ

Ref.C
OSSTELL-ISQ



### 3) EZ Seal

# How to seal a screw hole?

# Try Easy Seal!

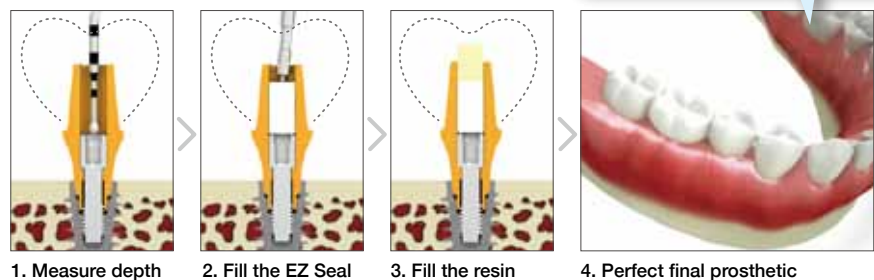
Foul odor? Bacterial colony? Metal hue? Hard to remove?  
Inconvenient process?

## Easy to fill & Remove

- ✓ Convenient size
  - : Diameter (Ø2.1, Ø2.2, Ø2.4, Ø3.1)
  - Length (1, 2, 3, 4, 5mm and free)
- ✓ Convenient tools
  - : EZ carrier
- ✓ Retrievable material (Silicon)



**Implant completed in a simple and convenient way!**



Choose appropriately  
for your system!



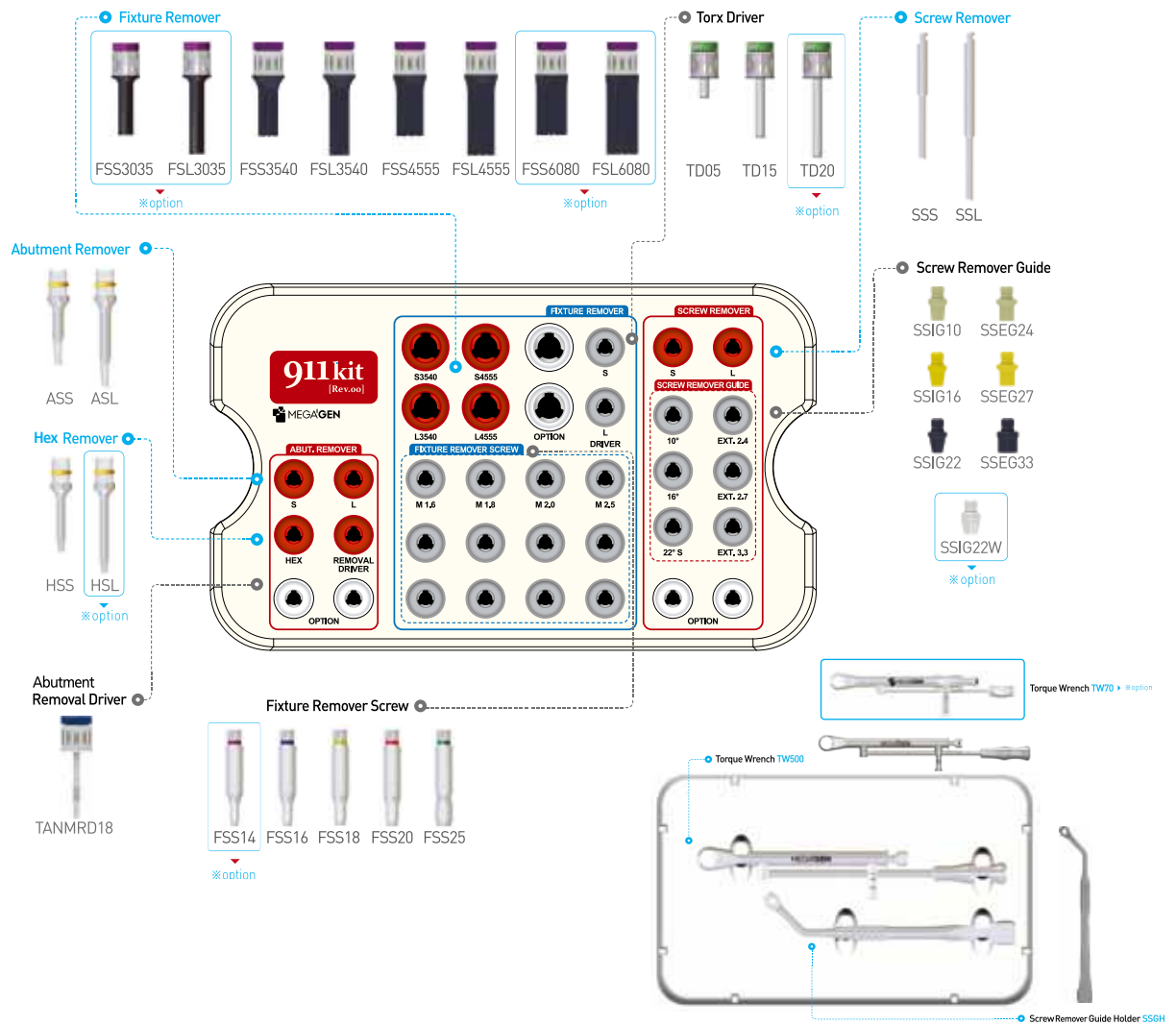
Ref. C : EZSP21K  
System : AnyRidge

Ref. C : EZSP22K  
System : AnyOne

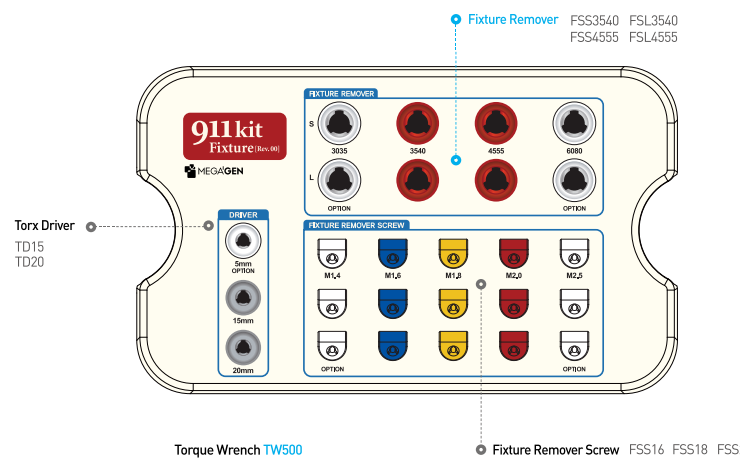
Ref. C : EZSP24K  
System: EZ Plus, MegaFix

Ref. C : EZSP31K  
System : Rescue

## 4) 911kit (KPSCS3000)



## - 911 Fixture Removal kit (KPSFS3000)



# ➡ 911kit Components






## Fixture Remover

Applied Fixture Diameter	Length(mm)	Ref.C
Ø3.0~Ø3.6	15	FSS3035
	20	FSL3035
Ø3.7~Ø4.6	15	FSS3540
	20	FSL3540
Ø4.7~Ø5.6	15	FSS4555
	20	FSL4555
Ø5.7~Ø7.0	15	FSS6080
	20	FSL6080

- To remove the fixture. When selecting a Fixture Remover, consider the outer diameter of a Fixture. In case of AnyRidge Fixture that the thread is formed under platform, select a Fixture Remover according to platform size



## Fixture Remover Screw

Applied Fixture Thread		Ref.C
M1.4(MiNi)		FSS14
M1.6(EZ Plus, ExFeel Ø3.3)		FSS16
M1.8(AnyRidge)		FSS18
M2.0(AnyOne, MegaFix, EZ Plus, ExFeel)		FSS20
M2.5(Rescue)		FSS25

- To connect fixture and Fixture Remover.
- Recommended tightening torque FSS14, FSS16 : 40~50 Ncm FSS18, FSS20, FSS25 : 70~80 Ncm.



## Torx Driver

Length (mm)	Ref.C
5	TD05
15	TD15
20	TD20

- To connect fixture to Fixture Remover Screw



## Torque Wrench

Type	Ref.C
300Ncm	TW500
70Ncm	TW70

- TW500 : To check torque force when removing fixture.
- TW70 : To check torque force when tightening Fixture Remover Screw.



Abutment Remover

Length (mm)	Ref.C
22	ASS
27	ASL

- On fractured abutment.
- Use screw size M1.8 & M2.0.



Screw Remover

Length (mm)	Ref.C
30	SSS
45	SSL

- To remove fractured screw.
- Use screw size M1.8 & M2.0.



Screw Remover Guide

Applied Fixture Diameter	Length(mm)	Ref.C
Internal	10	SSIG10
	16	SSIG16
	22	SSIG22
	22	SSIG22W
External	Hex 2.4	SSEG24
	Hex 2.7	SSEG27
	Hex 3.3	SSEG33

- To secure the Screw Remover from moving side to side when removing the screw.



Screw Remover Guide Holder

Ref.C
SSGH

- Tool to supporting the Screw Remover Guide.



Hex Remover

Length (mm)	Ref.C
22	HSS
27	HSL

- To remove hex-damaged Abutment Screw, Cover Screw or Healing Abutment.



## Fixture Remover

- Fixture Remover Screw: Single use only
- Do not use in case of a gap in Fixture Remover



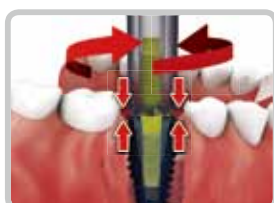
Remove the prosthesis of the fixture to be removed, and the surrounding bone.



Select a Fixture Capture Screw of the same size as the fixture internal screw. Use the Torx Driver to turn the screw clockwise (40Ncm~70Ncm) to place in the fixture. (Use of torque less than 40Ncm for M1.6, and 60Ncm for other products may lead to loosening)



Select a Fixture Remover that fits the fixture diameter. Turn the fixed Fixture Remover Screw counterclockwise until it touches the fixture. (For a torque of greater than 300Ncm, it is recommended to use a Trephine bur)



Fixture and Fixture Remover are tightly connected as rising force and descending force are combined. (Suction is needed; debris may happen on removal of a fixture)



Using Torque Wrench, turn counterclockwise and pull out fixture and Fixture Remover. (No more than maximum torque per fixture)



Removed fixture can be pulled out, turning Fixture Remover and fixture clockwise, holding onto vice plier.

## Abutment Remover

- Can use for abutments that use M1.8 & M2.0 screws.
- Cannot use for abutment that use M1.6 and M2.5



Insert the Abutment Remover in the fractured abutment hole.



Use the Ratchet Wrench to turn clockwise in order to join the abutment and the Abutment Remover as one body. (Ratchet Wrench is included in surgical kit)



Move the Abutment Remover sideways while pulling up to remove it. (Use of excessive force may traumatize the fixture or the bone)



Secure the separated abutment in a vice or vice pliers. Use the Ratchet Wrench to turn counterclockwise to separate the abutment with the Abutment Remover.

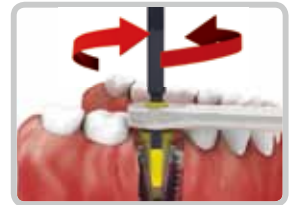
## Screw Remover



Remove the broken Abutment Screw and the abutment.



Select the correct Screw Remover Guide that fits the fixture connection to join.



Secure the Screw Remover Guide and insert the Screw Holder in the Screw Remover Guide hole.



Push the Screw Remover downwards while rotating counter clockwise to separate it from the fixture internal screw.  
(rpm:30~50, Torque : 30Ncm)



Remove the pieces of broken screw from the fixture internal screw using forceps.



When separating the holder from the guide, push in the direction of the arrow to separate.

## Hex Remover



In case Abutment Screw, Cover Screw or Healing Abutment's hex is fractured.



Use the Ratchet Wrench to turn counterclockwise to join the abutment with the Abutment Remover as one body. (Use a torque of less than 40Ncm., Ratchet Wrench is included in surgical kit.)

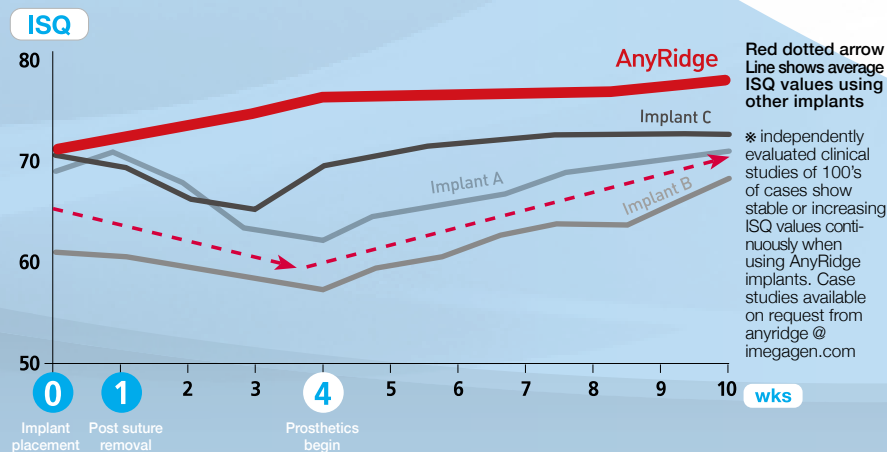


Place the removed abutment in the vice. Use the Ratchet Wrench to turn clockwise to separate the abutment with the Hex Remover.

# Early Loading Guide with AnyRidge®

Begin Prosthetic process in only 4 weeks

With Confidence! objective evidence with ISQ values





ANYRIDGE®

MEGA ISQ™

The contents are a series of articles contributed to the Dental News for 4 weeks.

# Protocol for an objective evidence of Implant stability

Published in the Dental News  
April 7 through 28, 2014.

## 1. Loading Time Determining Criteria and Conditions for Early Loading \_ Dr. Chang Hoon Han

## 2. Clinical Case Report 1 \_ Dr. Chang Hoon Han

## 3. Clinical Case Report 2 \_ Dr. Seung Yup Lee

## 4. New Protocol for an Objective Evidence of Implant Stability \_ Dr. Kwang Bum Park

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- Adjunct Professor, School of Dentistry, Chonnam National University
- Adjunct Professor, Dental Hospital, Chonnam National University
- Director, Easy Plant Dental Clinic



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- Dental School, Kyung Pook National University
- M.D. & Ph.D. in Dentistry
- Adjunct Professor, Dental School, Kyung Pook National University
- Fellow, Department of Periodontics, UCLA
- Faculty, Harvard School of Dental Medicine



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- Member, Korean Association of Oral and Maxillofacial Surgeons
- Director, Daegu Mir Dental Hospital





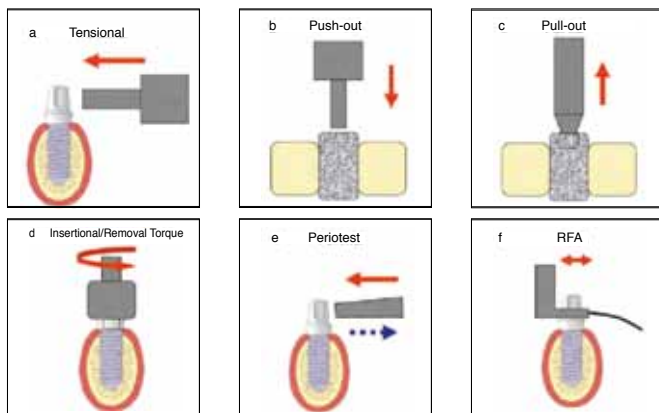
# Loading time Determining Criteria and Conditions for Early Loading

- Dr. Chang Hoon Han

## Loading time

To assess stability and osseointegration level of implants, many methods have been studied including the tensional test, push-out/pull-out test, histomorphometric analysis, removal torque test, radiographic analysis, cutting resistance measurements, insertion torque test, percussion test, periotest, and resonance frequency analysis (RFA). First let's go over some of the methods that can easily be used clinically.

The percussion test is the simplest method to use clinically. It assesses the status of implant with the characteristics of sound by tapping the mount of implant or abutment using a dental instrument. However it relies on subjective judgment, thus, has the disadvantage of not being able to assess the stability of implant accurately. The radiographic test provides important information on the pre-op bone quality and quantity, and can relatively easily measure the changes of marginal bone surrounding the implant. However, its downside is it is difficult to standardize resolutions, grey-scale and radiograph taking method for accurate interpretation.



Next, there is the periotest (Simens AG, Bensheim, Germany) to measure the mobility of a natural tooth by assessing the damping effect of PDL. The periotest values (PTV) range -8 ~ +50. However, the values of successful implants are around -5~+5, which means its sensitivity is low, and there is a considerable variation of values depending on such things as the height of abutment, and the position and direction of the force applied.



(Figure 1) Periotest ®



(Figure 2) Periotest ® M

A More objective method would be the Resonance Frequency Analysis (RFA). In early days, the second generation of Osstell™ was cumbersome to use as it required connection of L-shaped transducer to the implant.



(Figure 3) Osstell™



(Figure 4) The application of Osstell™ electronic transducer to the implant

## Loading Determining Criteria and Conditions for Early Loading

More recently developed Osstell™ Mentor and the most recently launched the fourth generation Osstell™ ISQ or Mega ISQ use a small magnetic resonance rod called Smartpeg™, making clinicians measure the stability of implants more simply.



(Figure 5) Osstell Mento™



(Figure 6) MegaGen Mega ISQ™

Principles of measuring implant stability using the RFA devices of the third or later generations will be discussed. First, we need to check and get ready the type of Smartpeg prefabricated for each type of implant system. Smartpeg is connected to an implant using a Smartpeg mount which is a screwdriver specific to the implant whose stability we are going to measure. Then, when the probe on the RFA device is brought near to the magnetic material at the top of Smartpeg, a magnetic field is formed between the coil in the probe connected to the device and the Smartpeg. Now the device senses the vibration from the Smartpeg and displays it with a number from 1 to 100. The value is called Implant Stability Quotient (ISQ).

Usually the ISQ values at the time of implant placement are 55~75 in maxilla and 65~85 in mandible. ISQ value of an implant less than 60 at the time of implant placement can be considered as low in stability, and the surgeon should try to select a bigger diameter implant or implant designed for high initial stability. Successfully osseointegrated implants show over time the ISQ values of 60~85 in maxilla and 70 ~ 95 in mandible.



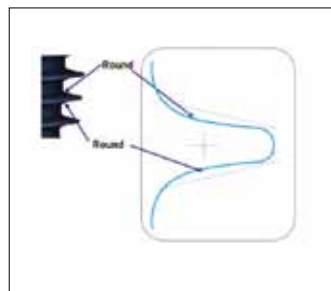
Generally 5 to 10 Ncm of force is recommended to connect Smartpeg to an implant. If an excessive force is applied, the screws on the Smartpeg will be damaged and error rate of the measured values will rise.

Manufacturers of Smartpegs recommend to discard them after a one time

use, and explain that the more they are used, the more unstable the measurements would become. However, a local study on the reuse of Smartpegs concludes that ISQ values do not change even as they are used repeatedly with 400 times of connecting and disconnecting the Smartpegs, and that they can be reused as long as their screw lines remain intact and magnetism stay unchanged. Another local study on the reuse of Smartpegs shows two or more times of high pressure steam sterilization reduces the stability of ISQ values. The author of this paper also experiences that Smartpegs can be reused after disinfection by a low temperature plasma sterilizer, provided their screw lines are not damaged and magnetism is not lost.

These RFA devices are very useful in determining the loading time as changes of the initial stability of an implant can be measured repeatedly during a treatment period. And it can be said that RFA devices are required for long term maintenance of implants as implant stability changes can be continuously monitored.

Implant stability can be divided into primary and secondary stability. The primary stability is mechanical stability obtained at the time of implant placement and is affected by bone quality and quantity at the implant site, the form, diameter, and length of an implant, and placement method. The secondary stability refers to the implant stability resulting from the bone regeneration and remodeling in the interface between the implant and the tissue after the implant is placed. The primary stability obtained shortly after the implant placement gradually decreases while the secondary stability increases, and the total stability is lowered with a dipping phenomenon. As demonstrated by many studies, ISQ values representing the stability of an implant go down until week 3 after the implant placement, fluctuate slightly up to week 6 to 8, and then slowly go up afterwards. So it has been reported that an implant should not be loaded around week 3, but recently many studies report that immediate or early loading can be tried when the bone quality at the implant site is favorable and the initial stability at the time of implant placement is good. For successful immediate or early loading, implants with the thread design and surface that can provide high initial stability and minimize the stability dipping should be chosen.

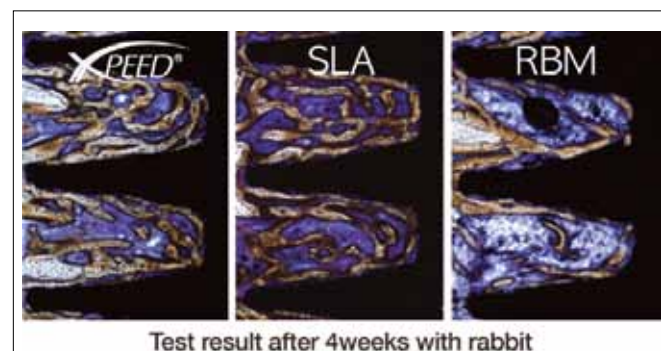


(Figure 7) KnifeThread®

The author uses the implant design that has narrow threads (knife threads) of the rounded face, which facilitates high initial stability at the time of implant placement.

The KnifeThread® design structure does not damage the unique architecture of cancellous bone and can minimize the compressive force on the surrounding bone.

Also the implant surface is treated with XPEED®, and processed with neutralization in the final step to remove the possibility of residual acid which has been a problem in the existing SLA surface treatment. Calcium ions on the fixture surface forms a calcium titanate nano-structure layer by a chemical reaction in uniform 0.5µm thickness, solving the problem of surface peeling during the placement or absorption of coated layer after the placement. So better BIC and removal torque values can be achieved compared to other RBM or SLA surface treatments.



(Figure 8) XPEED® surface treatment

This design and surface treatment minimizes the dipping of stability and shortens the time necessary for osseointegration, making them a good choice for immediate or early loading.



# Clinical Case Report 1 - Dr. Chang Hoon Han

One of the methods that can most objectively assess the level of clinical implant stability and osseointegration is Resonance Frequency Analysis (RFA) using the OsstellTM device.

The OsstellTM device indicates the Implant Stability Quotient (ISQ) values ranging from 1 to 100. The primary stability, the mechanical stability obtained at the time of implant placement, gradually decreases while the secondary stability by bone remodeling in the surrounding bone slowly increases, creating the dipping phenomenon where the total stability goes down. As reported by many studies, ISQ values representing implant stability go down until week 3 after implant placement, fluctuate slightly up to week 6 to 8, and then slowly go up afterwards.

However the implants with thread design and surface that can minimize the compressive force on the surrounding bone do not have large post-op ISQ value reductions and the stability is maintained. If such implants are used clinically, immediate or early loading can be done because they can minimize the stability dipping and shorten the time necessary for osseointegration. For successful immediate or early loading, we need to pay attention to insertion torque together with ISQ values at the time of placement, and more than 45 N/cm of insertion torque and 75 or higher ISQ values are recommended. Let's look at some cases of immediate or early loading in light of insertion torque and ISQ value changes.

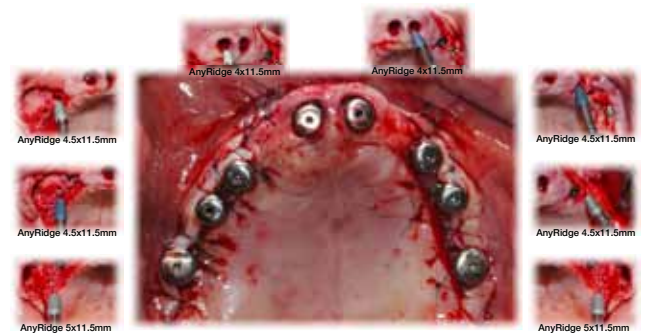
## Case 1 : 60 years of age / Male

The patient was a 60 year old man and it was planned to place implants 4 months after the bilateral sinus graft (figure 1). Eight implants were placed in the upper jaw in a one stage approach with immediate placement after extraction for the central incisor area (figure 2). ISQ values were measured right after the placement and also at one week intervals using OsstellTM. The initial stability at numbers 16, 24 and 26 where sinus lift was performed was low and ISQ values were also lower than other regions.

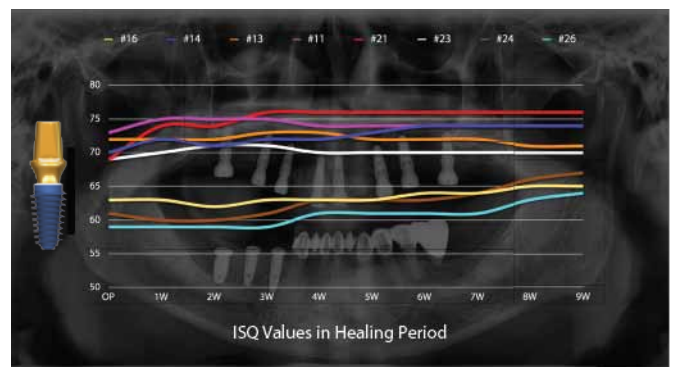
However as time progressed, the stability did not go down much and maintained, and from week 3 continuously went up. In the upper central incisor area where immediate placement was performed, the initial stability was high and the ISQ values continuously increased as well from about 70 post-op (figure 3). Final prosthesis was delivered 9 week post-op (figure 4), and the results have been good during the follow-up period without distinct symptoms (figure 5).



(Figure 1)



(Figure 2)



(Figure 3)



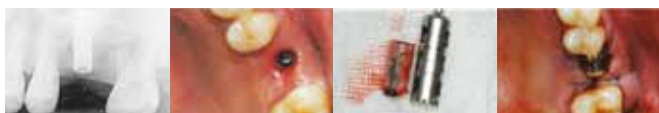
(Figure 4)



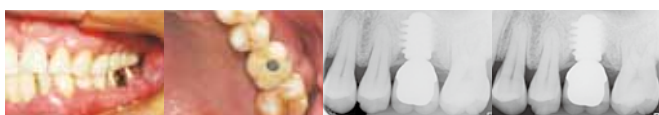
(Figure 5)

## Case 2 : 43 years of age / Male

The patient was a 43 year old male. The broken implant screw at number 26 could not be removed despite various attempts, so it was decided to explant the fixture (figure 6). As the previous implant diameter was 5mm, the fixture was pulled out with a 6mm diameter trephine drill, and 8mm implant was immediately placed. The insertion torque at the time of placement was 50 N/cm and the ISQ value was 75 (figure 7). Impression was taken at 1 week post-op and the final prosthesis was delivered at week 2. The ISQ values at week 1 and at the time of prosthesis delivery were 75, little difference from the immediate post-op (figure 8). During the follow-up period, good results were observed without any particular symptoms (figure 9).



(Figure 6)

(Figure 7) AnyRidge 8x10 mm  
IT 50N / ISQ 75

(Figure 8) OP + 2 weeks, SQ 75 → 75 (Figure 9) OP + 2 weeks, OP + 16months

### Case 3 : 47 years of age / Female

A 47 year old female patient lost the upper left first molar region. The pre-op CT showed relatively favorable bone quality and quantity. A 6 mm diameter implant was placed and the insertion torque was 50 N/cm and ISQ value was 72 at the time of placement (figure 10).

Impression was taken right after surgery, final prosthesis was delivered one week later, and the ISQ value increased to 77 (figure 11). During the follow-up period, good results were observed without any particular symptoms (figure 15).



(Figure 10) AnyRidge 6x10 mm, IT 50N / ISQ 72

(Figure 11) OP + 1 weeks, ISQ 72 → 77 / OP + 1 weeks

(Figure 12) OP + 19months

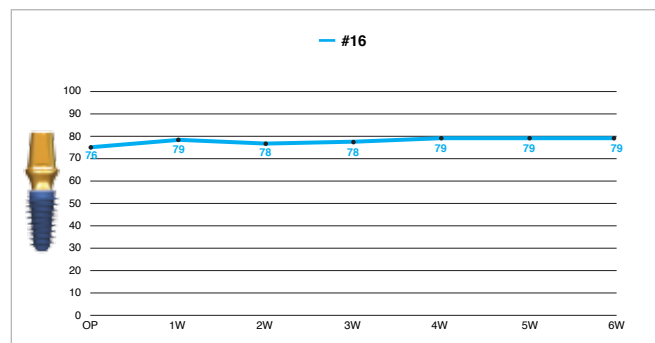
### Case 4 : 41 years of age / Female

A 41 year old female patient lost the upper right first molar region. The pre-op CT showed relatively favorable bone width and the height of the residual bone was about 6mm. Sinus lift was performed using a crestal approach and simultaneously 4.5x10mm implant was placed. The insertion torque was 45 N/cm and ISQ value was 76 at the time of placement (figure 13). Impression was taken right after surgery and final prosthesis was delivered one week later, and the ISQ value increased to 79 (figure 14). At one week intervals after the delivery of the final prosthesis, the prosthesis was disconnected and changes in ISQ values under loading were checked. The ISQ values were confirmed to be stable with no big changes even after the loading (figure 15).



(Figure 13) AnyRidge 4.5x10 mm, IT 45N / ISQ 76

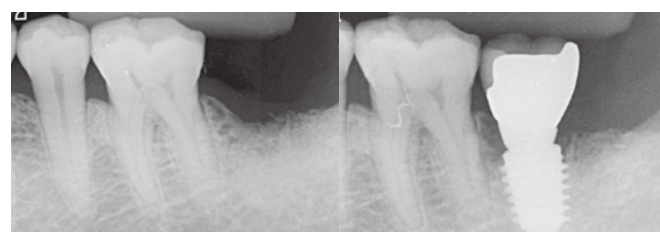
(Figure 14) OP + 1 weeks, ISQ 76 → 79



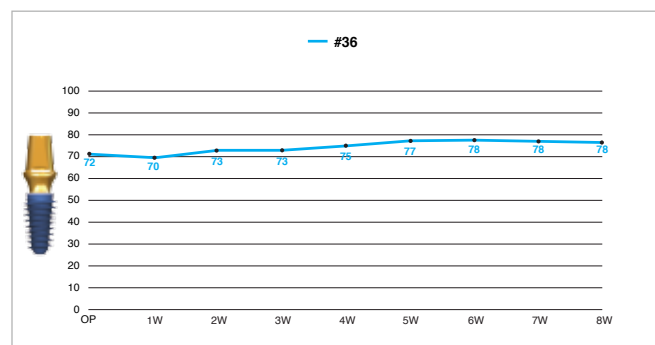
(Figure 15) ISQ Value in Healing Period

### Case 5 : 56 years of age / Male

A 56 year man received the final prosthesis 1 week post-op in the lower left second molar region (figure 16). At one week intervals after the delivery of final prosthesis, the prosthesis was disconnected and changes in ISQ values under loading were checked. The ISQ values were confirmed to be stable without big changes even after the loading (figure 17).



(Figure 16) OP + 1 weeks



(Figure 17) ISQ Value in Healing Period



# Clinical Case Report 2 - Dr. Seung Yup Lee

No clear objective criteria are established regarding appropriate implant loading time after surgery. The reality is most clinicians rely on radiographs or their data based on their experience for a specific surgery. A rule of thumb for the loading time is 3 to 6 months for the upper jaw and 2 to 4 months for the lower. Then, what are the more objective decision criteria for implant loading time?

One of the methods that can most objectively assess the level of clinical implant stability and osseointegration is Resonance Frequency Analysis (RFA) using OsstellTM device. The OsstellTM device indicates the Implant Stability Quotient (ISQ) values ranging from 1 to 100.

The primary stability, the mechanical stability obtained at the time of implant placement, gradually decreases while the secondary stability by bone remodeling in the surrounding bone slowly increases after implant placement, creating the dipping phenomenon where the total stability goes down. As reported by many studies, ISQ values go down until week 3 after the placement of an implant, fluctuate slightly up to week 6 to 8, and then slowly go up afterwards. Then, can we determine the implant loading time based on ISQ values as they represent implant stability? If there is no dipping phenomenon where ISQ values gradually decrease after placing the implant and the values are stable above a certain level without decreasing or even increasing, would immediate or early loading be possible?

To put the conclusion first, ISQ values are one of the important objective indicators to determine the implant loading time but it cannot be the absolute criteria. In other words, the high immediate post-op ISQ values cannot guarantee the success of immediate or early loading. Even so, the ISQ values measured after a certain period of wound healing after surgery may have some clinical implications. If that is the case, what factors other than ISQ values need to be considered for immediate or early loading? First is the implant thread design and surface that can obtain high initial stability and minimize the compressive force on the surrounding bone. In fact, implants with such design show no considerable reduction in ISQ values in the initial stage after placing implants and the stability is maintained or even increased. If these implants are clinically applied, they would minimize the dipping of stability and reduce osseointegration time, which makes immediate or early loading possible.

Along with the implant design, one of the important factors to be considered for immediate or early loading is the ITV (Insertion TorqueValue) at the time of placement. It may be even more important than ISQ values. Based on successful clinical results of immediate loading, 45 N/cm or higher insertion torque and 75 or higher ISQ values are recommended. Next comes the bone density. This should be considered together with ITV. Appropriate ITVs can be obtained by clinically modifying the drilling sequence when implants are inserted through accurately determining the bone density. Lastly patient's occlusal factors and eating habit including a parafunction should also be taken into account.

Let's look at some clinical cases for factors we need to consider for immediate or early loading.



(Figure 1) Generally initial stability obtained at the time of placement varies depending on bone quality and loading time is roughly determined based on the stability.



(Figure 2) If we can achieve high initial stability at the time of implant placement regardless of bone quality, we can start loading almost at similar time which would benefit both patients and surgeons.

## Case 1

The patient was a 30 year old man. An Implant was planned for the lower left second molar region which was extracted three years before. As oral and radiograph examination revealed sufficient bone width and quantity, flapless surgery was planned using a surgical stent. The immediate post-op ISQ values were very high with 80 or above on both buccal and lingual sides, so the initial stability was excellent. Therefore a customized abutment and a temporary crown fabricated considering the final prosthesis from the diagnostic stage of surgery were connected. As the patient complained a little discomfort three weeks later, loading was immediately stopped since the new ISQ measurements were lower below 60. Two month post-op, the ISQ value was above 75 again and stable, so the final prosthesis was delivered.



(Figure 3) Initial Visit



(Figure 4) Immediate Post-op, ISQ value: B/86, L/88

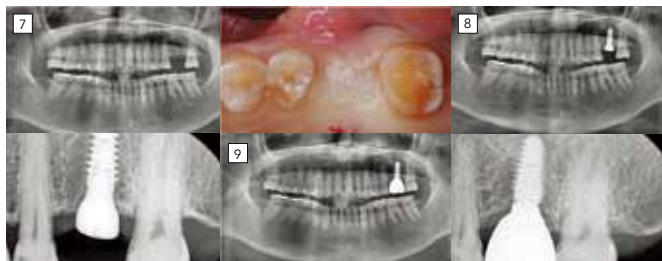


(Figure 5) 3 Week Post-op, ISQ value: B/56, L/59

(Figure 6) 2 Month Post-op, ISQ value: B/75, L/78

## Case 2

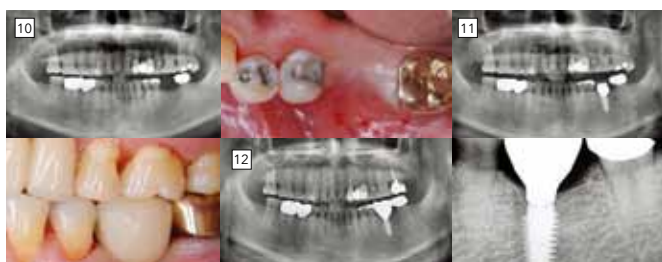
An implant was planned in the upper left first molar region for a female patient in her 50s. Oral examination and radiograph showed sufficient vertical as well as horizontal bone quantity and well preserved keratinized tissue, therefore it was decided to have flapless surgery with a surgical stent. Both immediate post-op buccal and lingual ISQ values were low, below 70, so immediate or early loading was not chosen. According to the conventional healing protocol, we waited 3 months and measured the ISQ values again and they were 75 or above. As the values were stable, the implant was loaded with the customized abutment and temporary crown. After that, based on the stable ISQ measurements, final prosthesis was delivered.



(Figure 7) Initial Examination, (Figure 8) Immediate Post-op  
(Figure 9) 4 month post-op, ISQ value: B/75, L/76

## Case 3

A male patient in the 40s presented with slightly deficient keratinized tissue but good enough vertical and horizontal bone quantity, so flapless implant placement surgery with a surgical stent was planned for the lower left first molar region. The immediate post-op ISQ values were high with 75 or higher both buccally and lingually. A customized abutment and a temporary crown fabricated considering the form of the final prosthesis from the diagnostic stage for the surgery were connected. The values were maintained without distinct decreases as time went by. Final prosthesis was delivered 4 week post-op. Favorable results were obtained during the 7 month follow-up.

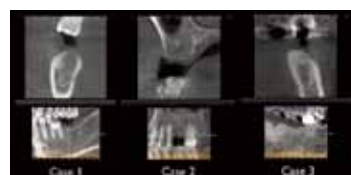


(Figure 10) Initial Examination

(Figure 11) Immediate post-op, ISQ value : B/78, L/78

(Figure 12) 7 month follow-up, ISQ value : B/77, L/79

## Discussion

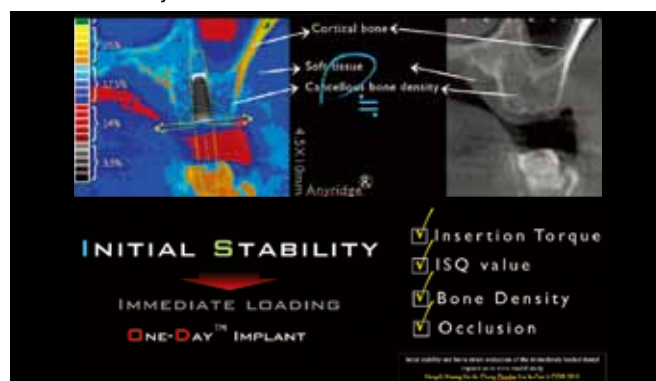


◀ (Figure 13) CT Views of Each

What are the differences among the cases? Although in all three cases the implant treatment was successful, the first two cases can be viewed

as failures in terms of immediate or early loading. As stated before, among the determining factors of immediate or early loading, ISQ values are important but not absolute. So, in addition to the ISQ values, other factors to achieve strong ITV (initial torque value) should be considered to perform a modified drilling protocol based on the accurate estimation of the bone density. Lastly proper adjustment of occlusion is also important. The best way to determine the bone density would be CT. Carl Misch (in 1988) also introduced it as the most useful method to determine cortical bone thickness and trabecular bone pattern.

However, the black and white image on the conventional CT provides not enough information to determine accurate bone density. So, color coding relative density differences in anatomical structures with various colors would be of great help for clinicians to identify the relative bone density.



(Figure 14) Case 2. Color Coding using R2GATE software

The second case is color coded using R2GATE software for more accurate determination of relative density differences of the anatomical structures with color details compared to the conventional CT view (Figure 14).

As in the figure, the bone density at the implant site is estimated to be not high.

There still remain numerous issues in applying immediate loading, that is, the One Day Implant treatment in all cases. However, highly predictable treatment is definitely possible if implants with the thread design and surface that can achieve high initial stability, yet minimize the compressive force on the surrounding bone are used to maintain proper ITV and stable ISQ values and occlusion can be appropriately controlled.



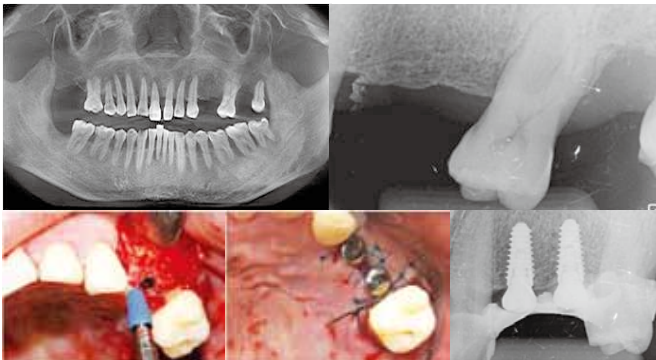
# New Protocol for an Objective Evidence of Implant Stability

- Dr. Kwang Bum Park

In a series of articles for the last three weeks, Dr. Chang Hoon Han and Dr. Seung Yup Lee have shown objective ways to determine implant stability in bone and relevant clinical cases. It is well known that implants can be loaded earlier than before thanks to the advancement of implant design and surgical approaches, and the improvement of innovative surface treatment techniques. We are not really surprised or greatly impressed when we see speakers talk about 2 month or 3 month loading in a lecture or symposium. It is because many people have already published enough data on immediate loading.

In spite of that, if we look back on what we individually have been doing in clinics, we need to contemplate on how often we really have used the immediate or early loading. No matter what others are saying, we, clinicians, prefer to remain in the comfort zone using the familiar method that we are used to and think minimizing side effects would be the best way. Breaking the habit would prove to be really challenging. The loading protocol concept professor Branemark proposed, that is, waiting 3 months for mandible and 6 months for maxilla is still vivid and alive among us, 50 years after the introduction of the concept.

Let's have a look at one more Chang Hoon Han's case. When would you start loading in this case? Many people might think basically we need to wait for 6 months as it is maxilla but can load 'a little earlier' because the bone density looks pretty good on the radiograph.



Here two 4.0x10.0mm implants were placed with one stage surgical approach as the stability was excellent without any particular bony defect. Since you saw the surgical situation, can you determine the loading time? Many doctors I have met until now answered they would load at month 3. Even that is a great progress as the average 6 months has been reduced to 3 months!



In this case, Dr. Chang Hoon Han delivered the final prosthesis in just 6 weeks in single crowns and not splinted! Many readers may think it is possible, but not many are ready to adopt this protocol in their clinic immediately from tomorrow. Why is that so? I think it is because of lack of solid objective criteria that can guarantee successful results.



▲ AnyRidge implant system and Mega-ISQ should be ready. The patient's lower number 36 is extracted due to cracks and implant treatment is planned.

An implant was placed immediately after extraction, which would be customarily done. 6.0x11.5mm implant was placed and superior stability was obtained despite it was fixed only by the buccal and lingual septal bone. After grafting the mesial and distal socket defect with allograft, and connecting the healing abutment, one-stage surgery was performed. When can you start loading in this case?

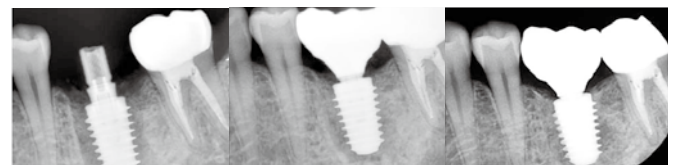


Pre-op

6 Week Post-op

3 Month Post-op

These are pre-op, 6 week and 3 month post-op intraoral radiographs. Are they ready to be load based on these pictures? Certainly bone is regenerated from month 3 picture but how much confidence can these pictures give us for loading?



5 Month Post-op

8.5 Month Post-op

1.5 Year Post-op Month




In the end, the provisional crown was delivered at day 118, over 5 month post-op, and the final prosthesis was connected at 8.5 months. The results were also excellent during the follow-up.


Even though the author realizes better than anybody else the AnyRidge implant compared to other existing implant systems is superior in terms of initial stability, does not lower but maintains the ISQ from the time of placement and facilitates osseointegration faster thanks to its Xpeed surface treatment, he did not attempt to load with confidence because of his attitude to play safe and not to risk any side effects. Any clinician can understand it.

#### Comparison in loading time between EZplus & AnyRidge

## Comparison in loading time between EZplus & AnyRidge



<b>Ez plus (without ISQ)</b>	Case	average loading time(D)
Max. implant	11	125.6
Mand. implant	9	105.8
Total	20	<b>124.5</b>



<b>AnyRidge (without ISQ)</b>	Case	average loading time(D)	<b>AnyRidge (with ISQ)</b>	Case	average loading time(D)
Max. implant	10	129.6	Max. implant	4	84.8
Mand. implant	9	112.8	Mand. implant	9	53.8
Total	19	<b>121.8</b>	Total	13	<b>80.1</b>

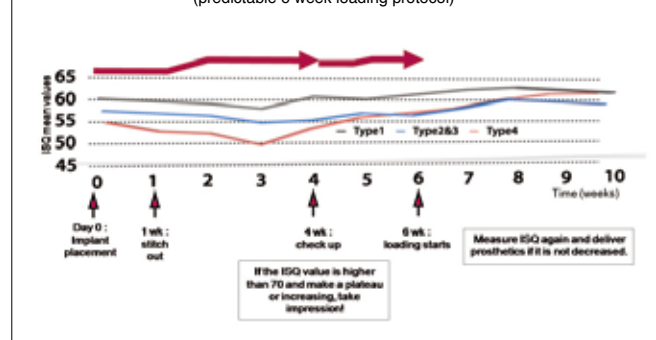
(Table 1)

(Table 1) compares the average loading time of EZ Plus and AnyRidge. The number of days from placement to loading was calculated from twenty randomly selected cases and the results are surprising in that similar loading time is habitually used even in cases where the stability was found to be good during surgery. Compared to this, when ISQ values began to be used as an objective indicator, the loading time was cut almost by one third which is as much as 4 to 5 weeks. This proves again that old habits die hard. Now how about determining the loading time more objectively doing away from the habits? By doing so, I believe we can reduce the number of visits per patient considerably, and save your time accordingly too. This will eventually no doubt show you a new way to step ahead of your competitors. It may just be the author's personal experience, on average 10 to 12 visits are required for the existing treatment pattern from surgery to completion of prosthesis delivery but they were reduced to half of it, 6 to 7 visits.

(Table 2) describes the author's loading protocol used clinically. Although the One-Day Protocol of immediate loading right after implant placement using the R2Gate and Eureka System is already established and the success rate has been around 95% in about 2,000 cases for the last 2 years, I understand not a small number of people feel the preparatory stage rather complicated. Then, what about trying this protocol shown with the graph? It will definitely reduce the patient's number of visits greatly, shorten the treatment time for you and contribute to your business quite a lot.

#### A suggestion on the Loading Time with AnyRidge Implant

(predictable 6 week loading protocol)



(Table 2)

AnyRidge implant system and Mega-ISQ should be ready. The first ISQ values are measured on the day of implant placement right after surgery which requires just 2 to 3 minutes of clinic time. And ISQ is measured again at week 1 visit when the patient comes back to take the stitches out. This also takes less than 5 minutes, a simple step that can be often done by an assistant. The ISQ values are measured again at week 4 when soft tissue is almost healed. Now three ISQ values from a patient are prepared.

Impressions can be taken If these 3 values are almost similar or increasing over time. Today intraoral scanners are available, so precise digital impressions can be taken easily without the need for you to pay much attention to it.

Usually it would take about 1 or 2 weeks to prepare customized abutments and prosthesis. At most, 2 weeks will be enough. When the patient comes back 6 week post-op, ISQ values are measured one more time. If the values are not smaller than those at week 4, prosthesis can be confidently delivered. It is not important whether it is temporary or final. The stability of implant is already confirmed, so we can certainly proceed with the prosthesis. If you repeat this procedure a few times, your confidence in using the One-Day Implant will grow. Today implants are much different from those 2 or 3 decades ago. With a little attention and positive mindset to incorporate new changes, we will be able to make the implant procedures much more interesting and effective and that will contribute more to our business.

※ The clinical cases here are contained in 'How to get a reliable ISQ value' in the clinical cases of [www.R2GATE.com](http://www.R2GATE.com).

**AnyRidge®**



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