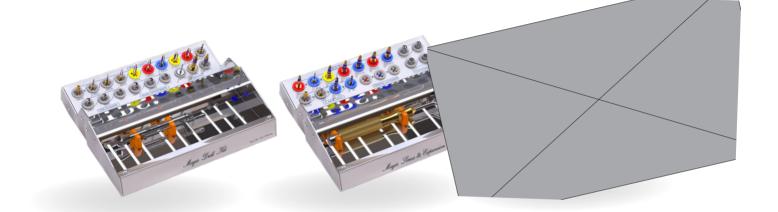
MAGIC SURGICAL SYSTEM

SURGICAL MANUAL





Different But, Better



- 8 Magic Drill Kit
- 14 Magic Sinus & Expansion Kit
- 25 Magic Guide Kit

Bone Quality Classification and Bone Quality Checking for Implant Treatment (by Dr. Wang)

Bone Quality Classification for Implant Treatment

- . Purpose of bone classification
- : a. To determine the implant surgery that ensures a high success rate. b. To plan a treatment for bone remolding that ensures a high success rate.
- Effects of bone classification
- : c. To determine the placement hole formation method.
- d. To be able to decide on which surgical technique is used (1-stage/2-stage surgery)
- e. To determine the loading time.

Bone quality classification (Dr. Wang's method)

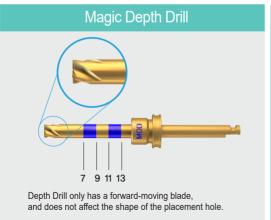
Primary diagnostic method



Both lateral blades of the 'Magic Split' should be aligned mesiodistally and entering direction of 'Magic Split' should be aligned with longitudinal axis of alveolar bone where implant is planned to be placed.

- Very soft bone : Bone condition with almost no cortical bone where 'Magic Split' enters by hand
- Soft bone : Condition of cortical bone that can be bent and expanded. Instrument enters by gentle tapping with mallet.
- Hard bone : Condition of cortical bone that cannot be bent. Does not enter more than 2mm by gentle tapping with mallet.

Secondary diagnostic method



Use Magic Depth Drill and perform drilling as if picking on and off at the bottom of the placement hole. If the bone permits the drill to do good grinding, it is cancellous bone; otherwise cortical bone. After this procedure, scratch the wall of the hole using the spoon excavator. If bone can be felt, it indicates the presence of cancellous bone. If the drill does not scratch but enters the wall, it is due to bone marrow spaces. Classify into Q1, Q2, Q2-E, Q3, Q3-E, Q4 according to the condition of floor and wall of the placement hole.

- Cortical bone up to bottom floor : Q1
- Cortical bone with normal cancellous bone : Q2
- Cortical bone with bone marrow space : Q2-E
- Thin cortical bone with normal cancellous bone : Q3
- Thin cortical bone with bone marrow space : Q3-E
- Almost zero cortical bone and little cancellous bone : Q4

Bone Quality Classification (Dr. Wang's method)

Bone Type		Primary bone classification			Secondary bone classification				
		Response of cortical bone	Cortical bone thickness and characteristic	Drill size	Condition of cancellous bone	Before implantation	Loading time	Surgical Method	
		Magic Split enters no more than 1mm into bone.	Thick and dense cortical bone (2~3mm or more)		No presence of cancellous bone	Drill 0.5~1mm deeper	Immediate loading possible	1 or 2 stage surgery	
	Q1				Q1				
Hard Bone				Regular Size Drill	Regular cancellous bone	Not required	Early loading possible (2~3 months)	1 or 2 stage surgery	
	Q2	Magic Split	Thick and porous cortical			C	2		
		enters no more than 2~3mm into bone.	bone (2~3mm or more)		Bone marrow space	Bone marrow replacement if needed	Hard Bone is <u>less</u> than 4mm Hard Bone is <u>more</u> than 4mm User Loading possible without	1 or 2 stage surgery	
	0, , , , , , , , , , , , , , , , , , ,						grafting		
	Q2-E				Q2-E				
		Cortical bone can be bent and	Thin and porous cortical bone (less than 2mm)	Drill 1 size Smaller	Regular cancellous bone	Place 0.5mm deeper	Delayed loading (4~5months)	2-stage surgery recommended	
Soft	Q3	expanded			Q3				
Bone		easily. Magic Split enters smoothly by gentle tapping			Presence of bone marrow space or sinus case	Bone marrow replacement or GBR in sinus	More than 8 months	2-stage surgery required.	
	Q3-E				Q3-E				
Very Soft Bone		·Cortical bone cannot resist external force. ·Magic Split enters easily by band	Almost no cortical bone	Tapping System	Thin and a small number of trabeculae	Bone marrow replacement with 3.8 Magic Expander (place 1mm deeper)	More than 8 months	2-stage surgery required.	
	Q4	by hand			Q4				

- In all bone qualities, the quality at the floor of the hole must be checked using the Depth Drill. If the floor is found to have hard and dense bone, 0.5 ~ 1mm of extra drill depth is needed to prevent the implant apex from hitting the floor and causing micro-fractures between the threads.
- •When malleting is used to form the hole, allow for 4~5 months of healing before loading.

THREE SURGICAL TECHNIQUES (by Dr. Wang)

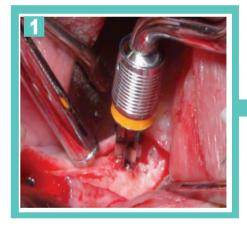
P.B.R Technique

- ·Check the floor and walls of the placement hole
- ·Perfectly round placement hole
- ·No drill shifting
- ·Minimal bone loss
- ·Harvestation of bone core



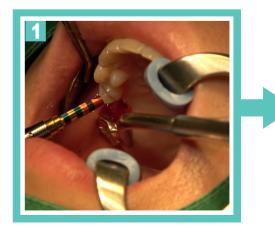
B.E.B Technique

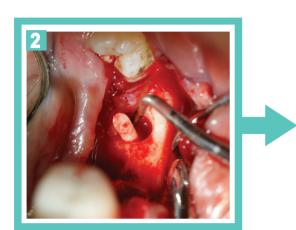
- Bone expansion by bending of cortical bone
- •Prevent bone fracture by reducing condensation force and load imposed onto bone
- ·Less chance of GBR procedure
- ·Prevents damage to anatomical structures



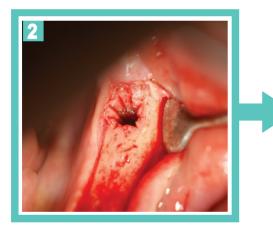
C.M.C Technique

- Minimally invasive crestal approach with ability to directly hold and control the membrane. Results in precise membrane lift exactly in the desired height, and area.
- \cdot Can be used regardless of the height of residual bone
- · Minimal use of bone grafting material













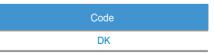






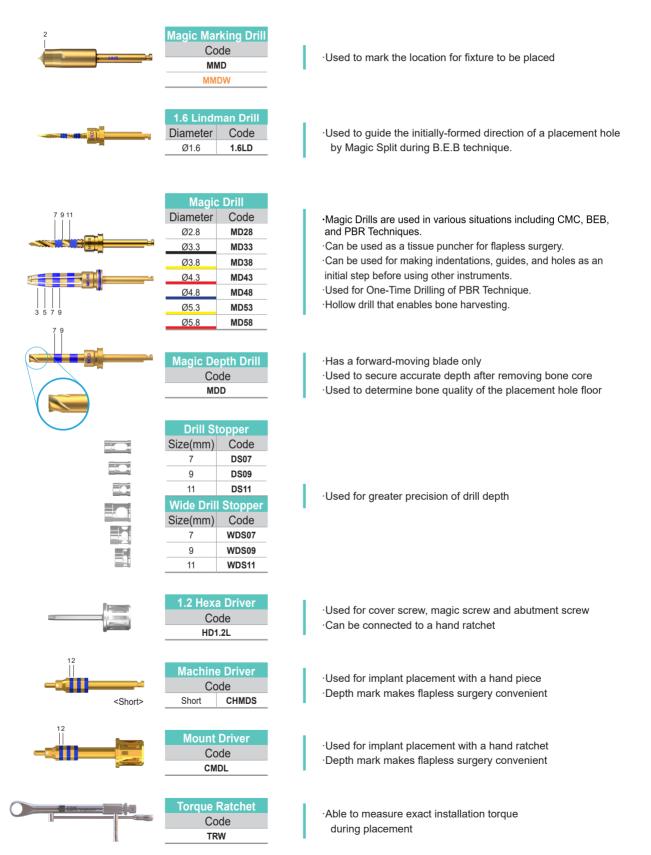
Magic Surgical System

Magic Drill Kit



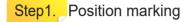
Components of Magic Drill Kit

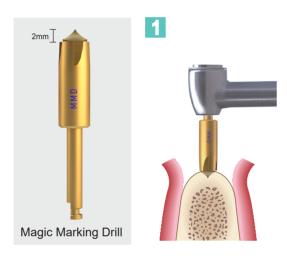
Custom Order



P.B.R TECHNIQUE (Peripheral Bone Removal Technique)

Indication : To form a placement hole in soft bone To form a placement hole in hard bone





- Make initial indentation and mark the placement position. (2mm depth)

When esthetic concern is required	Esthetic concern is not required
Min. 3mm between 2 fixtures	Min. 2mm between 2 fixtures
Min. 1.5mm between fixture and natural tooth or fixture. Buccal bone thickness of min. 2mm	Min. 1mm between fixture and natural tooth or fixture. Buccal bone thickness of min. 1mm
Fixture palatal bone thickness of min. 1mm	Fixture palatal bone thickness of min.1mm

Drill selection according to primary bone classification

MagiCore

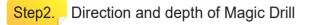
· Below Table Refers to MagiCore Placement w/out Tapping

MagiCore Bone Type	Ø 4.0mm	Ø 4.5mm	Ø 5.0mm	Ø 5.5mm	Ø 6.0mm	Ø 6.5mm
Soft Bone (Q3)	MD33		MD38		MD48	
Hard Bone (Q2)		555				

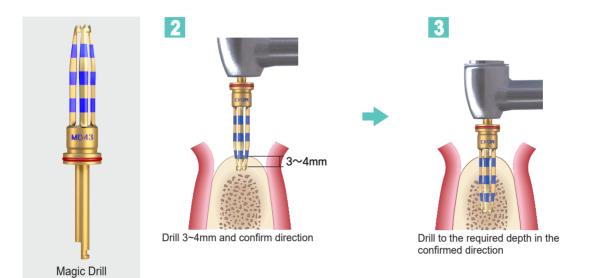
Magic Surgical System

Magic FC

Magic FC Ø 4.0mm Bone Type	Ø 4.5mm	Ø 5.0mm	Ø 5.5mm	Ø 6.0mm	Ø 6.5mm
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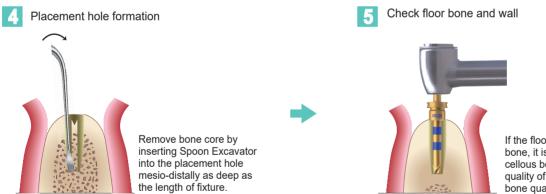


- Use of Drill Stopper possible for Magic Drill
- Intermittently apply vertical do not apply up & down technique pressure during drilling (bone dancing).



Step3. Placement hole formation and secondary bone classification

- Remove bone core using spoon excavator and check bone quality of placement hole wall
- If bone was classified as hard bone in the Primary Classification stage, use Magic Depth Drill to check floor bone.



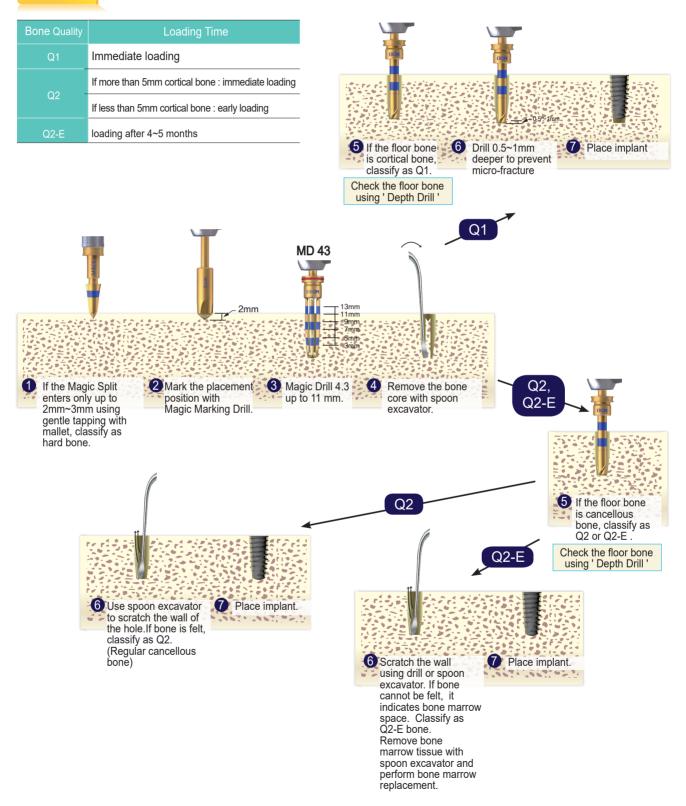
If the floor bone is cortical bone, it is Q1. If it is cancellous bone, check bone quality of wall for further bone quality classification.

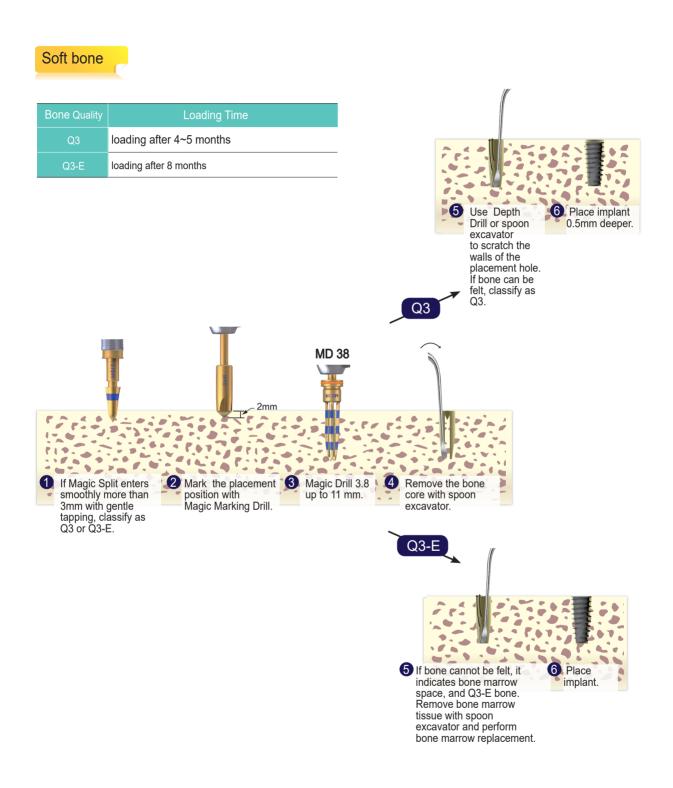
Step4. Secondary bone quality checking and precaution for drilling and fixture placement

- Enables doctors to classify bone according to the conditions of the cortical/cancellous bone around the placement hole.
- Place fixture at bone level for Q1, Q2, Q2-E, and Q3-E. For Q-3 bone, place fixture 0.5mm subcrestally.
- 2-stage surgery is required.
- Speed at 20rpm or less torque 30N/cm or less.
- For Q1 bone, drill 1mm deeper than the length of the implant in order to prevent micro-fracture of the bone in case of over-rotation of the fixture during placement.

In case of placing Magic FC4511 (Ø4.5, 11mm)

Hard bone





MAGIC SINUS & EXPANSION KIT

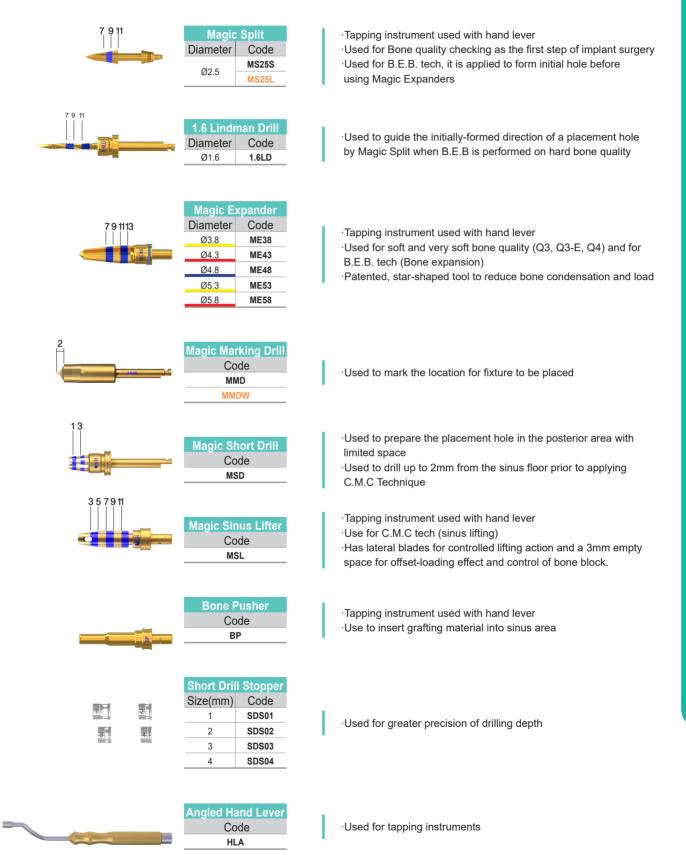


Magic Sinus & Expansion Kit



Components of Magic Sinus & Expansion Kit

Custom Order



B.E.B TECHNIQUE (Bone Expansion with Bending of cortical bone)

Indication

Case1. Placement hole formation in Q4 bone Case2. Bone Expansion

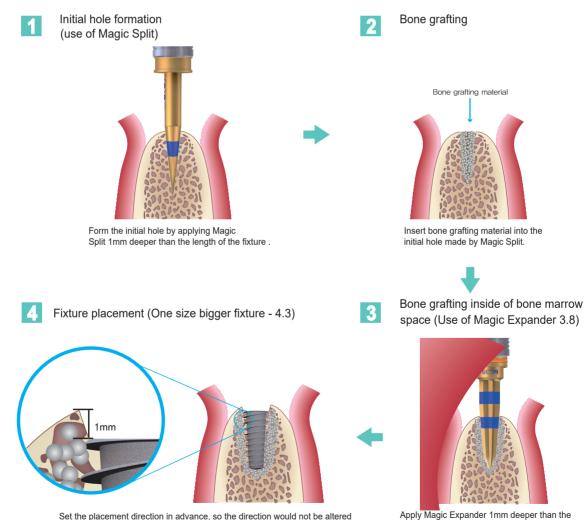
Case3. Protection of anatomical structure

Features

- 1. Developed with structural considerations and mechanical analysis of alveolar bone
- 2. May effectively minimize the need for GBR
- 3. Avoids damage to anatomical structures

Indication1. Fixture placement in Q4 bone

- Methods to secure initial stability should be considered. Formation of bone tissue is necessary and should be considered for fixture to endure occlusal force.
- If the Magic Expander is not driven to the ideal depth with manual force during bone grafting, use tapping instrument with very gentle tapping

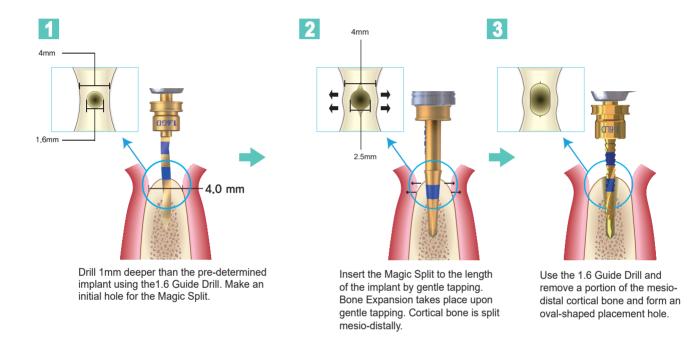


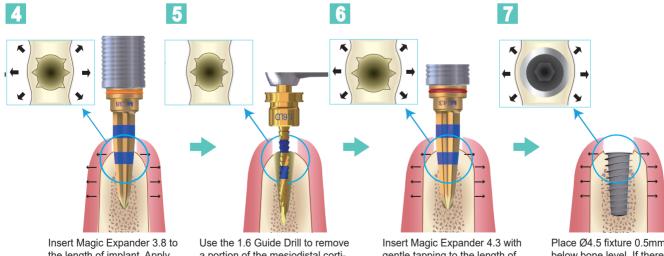
Set the placement direction in advance, so the direction would not be altered during placement and initial stability would not be weakened. Also, place the implant 0.5-1mm deeper than bone level to prevent failure by external force after placement (2-stage surgery should be performed).

Apply Magic Expander 1mm deeper than the length of fixture. When this procedure is **repeated 2-3 times**, bone grafting material would be sufficiently grafted inside of bone marrow space.

Indication2. Bone expansion

- If the tapping instrument does not advance, mesial and distal portions of cortical bone must be removed in order to allow the cortical bone to be bent when Expander is applied. After removal of the mesiodistal bone, resume gentle tapping with the Expander. If the Expander still does not advance further into desired depth, use the 1.6 Guide Drill to slightly remove small portions of the buccalingual cortical bone in order to make it thinner for bending. Once the buccalingual bone is made thinner, apply very gentle tapping to bend and expand the bone.





the length of implant. Apply gentle tapping only.

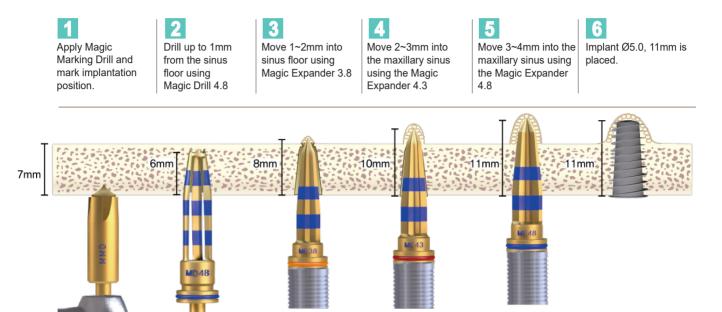
Use the 1.6 Guide Drill to remove a portion of the mesiodistal cortical bone.

Insert Magic Expander 4.3 with gentle tapping to the length of implant.

Place Ø4.5 fixture 0.5mm below bone level. If there is a fracture line, perform bone grafting and suture.

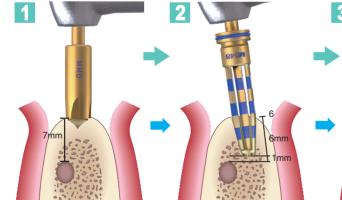
Indication3. Protection of anatomical structure

- Instrument does not directly come in contact with anatomical structures. Mechanical and biological logic ensures protection of structures from damage.
- a. Sinus augmentation up to 4mm



b. Prevention of Damage to Inferior Alveolar Nerve

- Minimize infiltration anesthesia on soft tissue.
- Let the patient raise left hand when they feel pain during surgery, then the doctor should remove the instrument, change its direction and resume treatment.
- CT scan is recommended in order to precisely locate the inferior alveolar nerve before procedure.



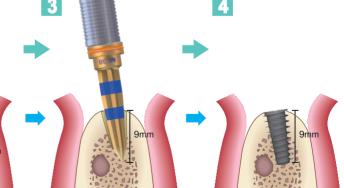
Mark placement position with the Magic Marking Drill.

Use the Magic Drill keeping a minimum 1mm distance from the inferior alveolar nerve at all times.

Insert Magic Expander with gentle tapping. Must be gentle tapping and if more force is required, stop tapping and remove a portion of the mesio -distal and buccal bone. Resume tapping. If the patient feels pain, stop tapping and change the direction towards the buccal direction. Resume tapping as necessary.

Give a bit of pressure lingually when placing the implant. The inferior alveolar nerve may be compressed but will not contact the fixture directly and it will not

suffer damage.



Precautions for BEB tech

- 1. 2-stage surgery must be performed.
 - Initial stability decreases due to bone resorption from the inside of placement hole.
- 2. Give at least 5 months for bone healing. Early loading is not recommended.
 - Give sufficient amount of bone healing time as bone resorption area of inside of placement hole is large.
- 3. Check for any fractures and use bone grafting material in the case of fracture.
 - Give some space for cortical bone healing.
- 4. Only use wrist action when using hand mallet. (soft tapping).Strong strikes will lead to excessive loading that may cause bone fracture.

C.M.C TECHNIQUE (Crestal approach with Membrane Control)

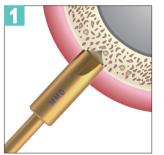
Indication: GBR is needed in sinus area and Sinus Lift of more than 4mm is required

Features

1. Technique was developed using sound biological and mechanical as well as physical logic which ensures safe, precise, and consistent sinus lifting. 2. Application of GBR with closed defect concept.

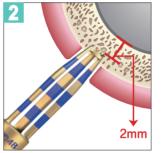
- Advantages 1. Able to hold and detach the membrane to a desired height 2. No membrane perforation since the instrument does not come into direct contact with the sinus
 - membrane
 - 3. Minimally invasive surgery and easy protocol for all dentists
 - 4. Short chair time and cost-effective
 - 5. The instrument can be used regardless of the height of residual bone.
- Precautions 1. Tapping force must be gentle
 - 2. If instrument does not advance, drill must be used to remove a portion of bone
 - 3. When the instrument advances into the maxillary sinus, proceed slowly while further advancing (very slowly) until the membrane is elevated to the desired height.

Step1. CMC Tech Preparation Stage



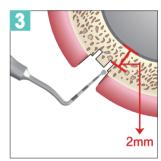
Magic Marking Drill

In case of residual bone height less than 2mm, skip this step and apply Magic Sinus Lifter without using Marking Drill.



Use of Magic Drill 4.8 or 4.3

Use of Magic Drill 4.8 or 4.3 up to 2mm below the sinus floor.

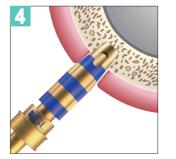


Use of Spoon Excavator

Use the Excavator to remove the bone core (where Magic Drill was used) and measure the depth of the hole



Sinus lifting with C.M.C Tech



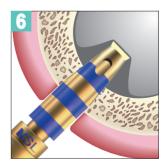
C.M.C Tech begins with Magic Sinus Lifter

Apply gentle tapping only. Strong strikes will make an irregular sinus floor bone-block which may lead to sinus perforation.



Fractured bone block bigger than diameter of Sinus Lifter

The outer bevel shape of the Sinus Lifter creates a bone block that is circumferentially larger than the apex of the instrument, ensuring that the instrument does not come into contact with the membrane.



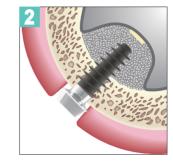
Sinus membrane detached

Care should be taken to advance the instrument very slowly into the maxillary sinus in order to adjust elevating force. The 3mm empty space of the apex of the lifter enables direct control of the bone-block and consequently the membrane, which is connected to the bone-block.

Step3. Bone Grafting and Placement Stage



Remove the Sinus Lifter, slightly moving it mesiodistally. Place bone grafting material of 0.04 ~ 0.05cc per mm of membrane lift.



Fixture placement: If residual bone height is less than 3mm, implantation should be made without applying any pressure on the fixture.

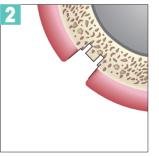
In the event that instrument does not advance into the bone

* Reason: Presence of hard cortical bone on the sinus floor

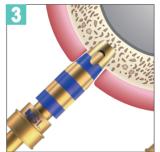


n Make 0.5~1mm additional indentation.

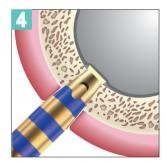




Place a stopper onto the drill and make an indentation of 0.5mm to 1mm more.



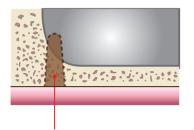
Insert the Sinus Lifter into the If this method newly prepared space and perform repeatstep 1. gentle tapping.

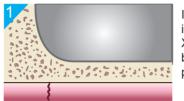


If this method is not successful, repeatstep 1.

Application of C.M.C Tech at area of inclined bone

The direction of sinus lifting should be in line with the direction which GBR is to be performed. Conversely, the implant placement direction could be different than the sinus lifting direction according to the diagnosis and surgical plan determined by the surgeon.



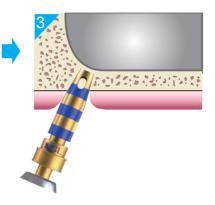


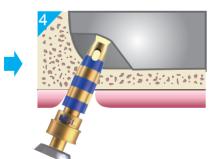
Insert a cut 'Endo file' (about 4mm) into the placement area and take X-ray to check for relationship between the inclination and the placement location (IMPORTANT)

When the area for implantation is inclined

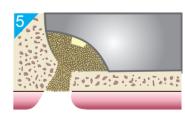
5.0162:5 . 6:4:10:2

Perform drilling from the placement location towards the direction of less inclination up to 2mm below the sinus floor

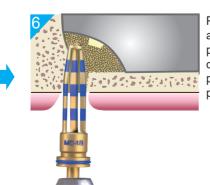




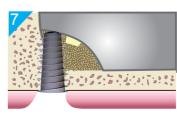
Insert Sinus lifter up to the length of the implant to be placed



Remove the 'Sinus Lifter' and do GBR

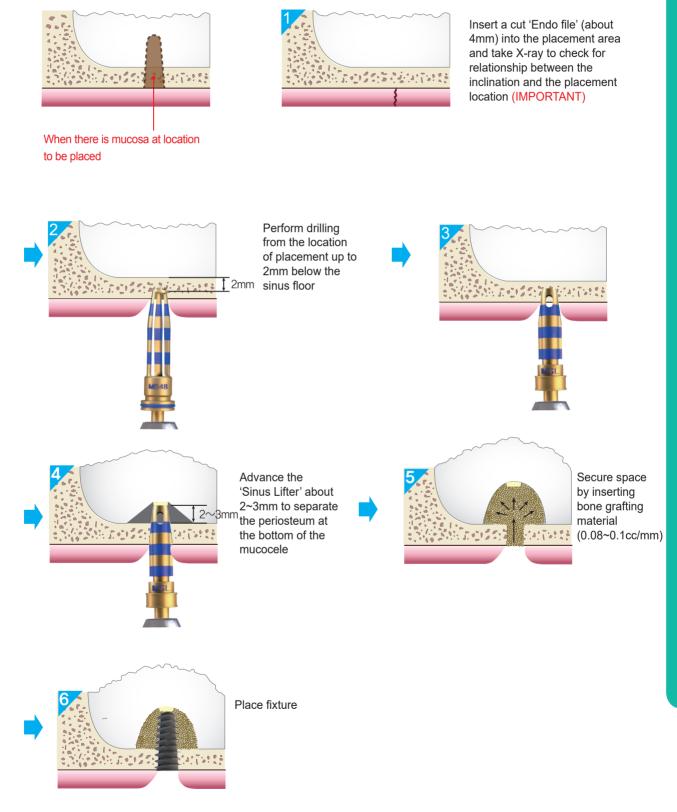


Perform drilling after GBR procedure in the direction of the planned fixture placement



Place fixture

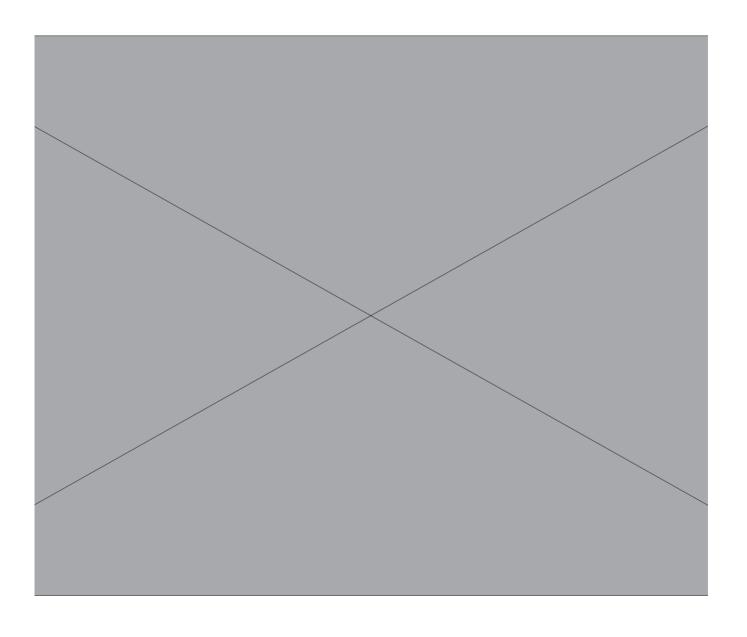
Application of C.M.C Tech at area with thick mucosa



Surgical components not included in the Kits (available seperately)

	IBS Mallet Code HM15	 Tapping instrument for Bone Quality Checking, B.E.B tech, C.M.C tech Gentle force during tapping is required
	IBS Spoon Excavator Code EXC	 Specially designed to remove bone core Marked for measuring depth of placement hole An important instrument to distinguish bone quality
	Drill Extension Code DE	·Used to extend the application range of the drill in length
	Drill Stopper size(mm) Code 1 DS01 2 DS02 3 DS03 4 DS04 7 DS07 9 DS09 11 DS11	·Used for greater precision of drill depth
<pre>123 123 </pre>	Machine Hex Driver Code Long CHMDL	·Used for the placement of implant with a hand piece ·Depth markings make flapless surgery convenient
	1.2 Hex DriverCodeShortHD1.2SLongHD1.2L	·Used for cover screw, magic screw and abutment screw ·Can be connected to hand ratchet
	Ultra Short 1.2 Hex Driver Code	·Used for removing coping pin during impression taking
	Bone Remover Code BR	·Used to remove bone core from the center of Magic Drill. Sharp tip and curved structure allows for easy and safe removal of bone core. Fits all sizes.
Ø 2.0 8 6 4 2 2 4 6 7 mm	Parallel Pin Code PP16	 Parallel pins are provided in the surgical kit to aid the surgeon in the alignment of implants during placement. The pins are double sided with different diameters on each side.
	1.6 Lindemann DrillDiameterCodeØ1.61.6LD	·Used to guide the initially-formed direction of a placement hole by Magic Split when B.E.B is performed on hard bone quality

MAGIC GUIDE KIT

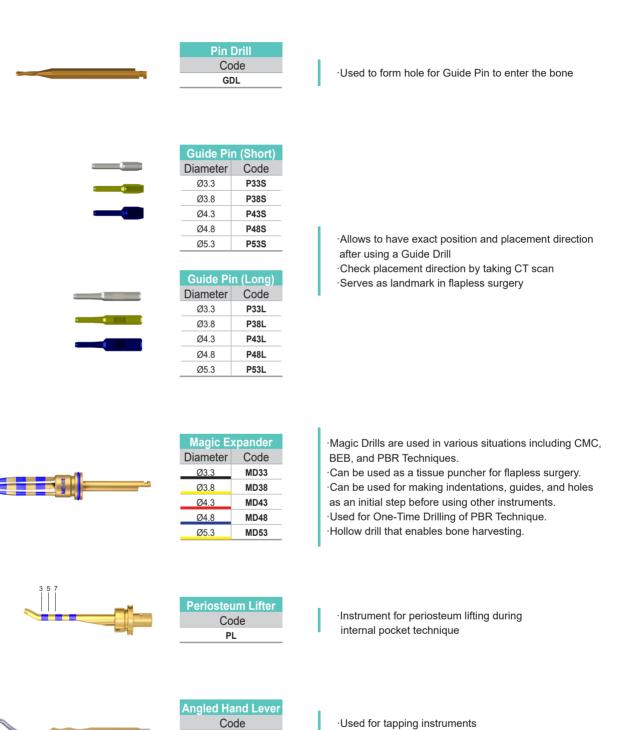


Magic Guide Kit



Components of Magic Guide Kit

Custom Order



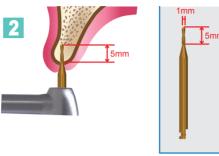
HLA

C.P.C TECHNIQUE (Crestal approach with Periosteum Control) - Internal Pocket Tech



Make a mark on the soft

tissue for of placement site.

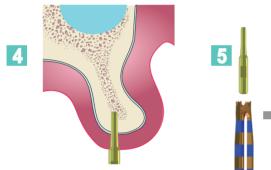


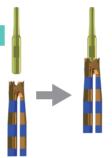
Perform drilling up to a depth of 5mm in the direction of planned fixture placement.

3

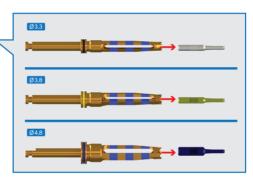


A 5mm hole is formed by the Pin Drill.

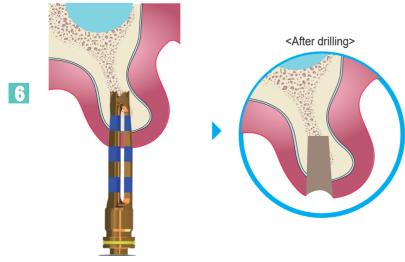




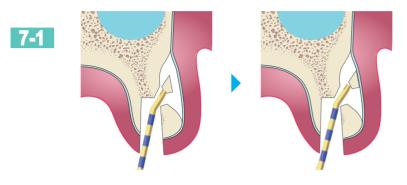
Select guide pin that matches the magic drill suitable for the diameter of the fixture to be placed. Place the guide pin in the hole formed by the Pin Drill and take CT scans.



Use Magic Drill that matches the Guide Pin that was placed.

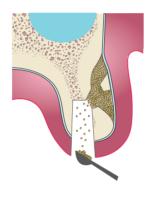


Perform drilling until cortical bone is reached



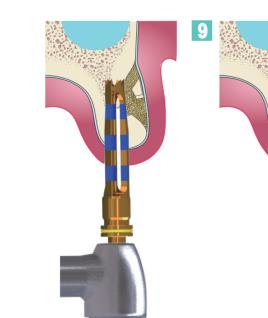
Fracture the surrounding bone of the hole using the Periosteum Lifter and detach the periosteum from the alveolar ridge.





Perform GBR procedure





Perform drilling & place MAGICORE fixture.

IBS Packaging and Fixture Capsule Manual



Magicore fixture packaging is shown above. The fixture diameter and length as well as other dimensions are marked on the side of the box.



Press down on the top edge of the box, marked "OPEN" with thumb to break the seal and open the box.



The fixture capsule is enclosed inside a sterile casing as shown above.



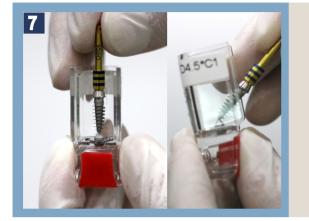
Open the sterile casing by removing the seal.



Squeeze the part of the capsule with thumb pressure to open the capsule



Press down on the bottom part of the capsule with thumb to open the capsule.



Connect Machine Driver to fixture. Make sure the Machine Driver is securely engaged, tilt towards the front window to snap off, and disengage the fixture from the mount



Take out the fixture from the capsule.



Remove silicon portion from the capsule. A closing screw is included within the silicon.



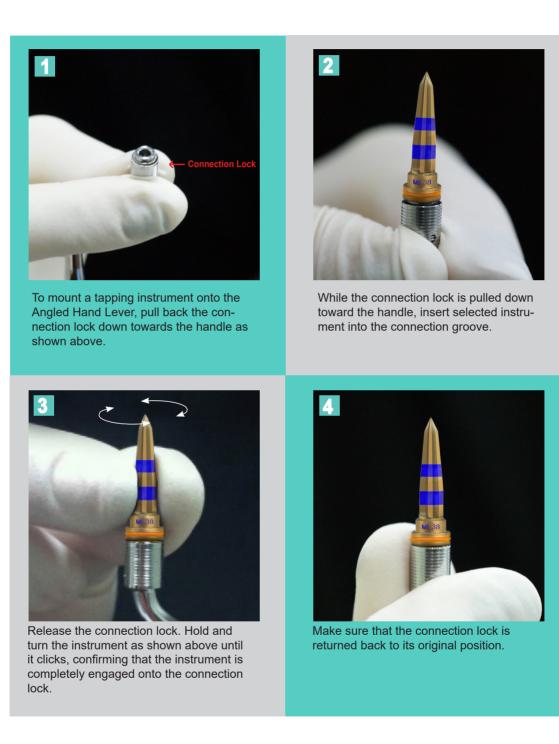
After placement, engage the 1.2 hexa driver with the closing screw.



Remove closing Screw from the silicon and connect it onto the fixture.

Angled Hand Lever and Tapping Instrument Manual

(Magic Expander, Magic Split, Magic Sinus Lifter, Bone Pusher)



- To dismount instrument from hand lever, pull back the connection lock and pull out the instrument from the connection groove.

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