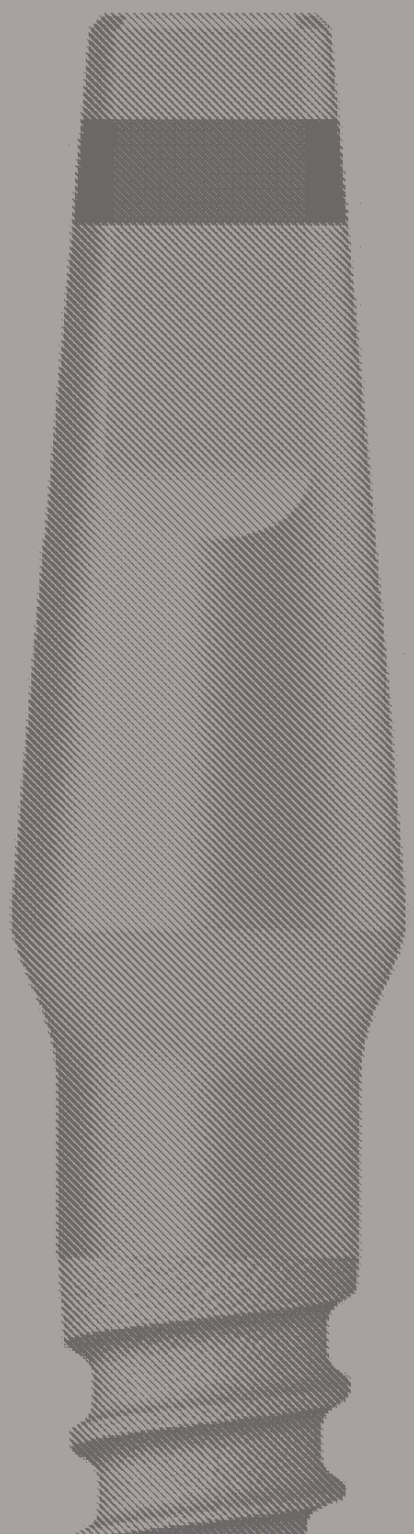
Restoration Procedure

HIOSSEN IMPLANT

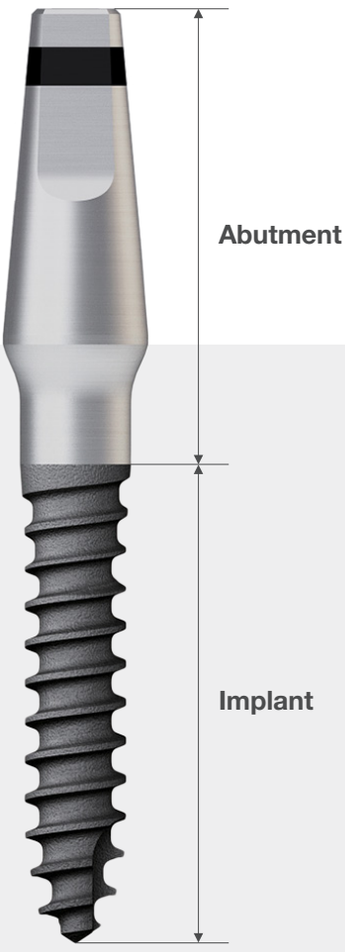
RESTORATION INTRODUCTION



Contents.

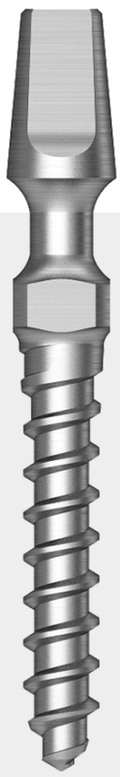
EM SYSTEM

- Specially designed implant for edentulous patients with narrow ridges
- Maintains strength to withstand masticatory forces despite its small diameter and one-piece body
- Abutment shape and size are optimized for prosthesis fabrication without prepping
- Non-submerged, one-piece implant suitable for narrow bone width, allowing for one-stage surgery
- Applicable in mandibular anterior, narrow ridge, and narrow interdental areas
- Three available types: EM Narrow Ridge, EM Denture, and EM Provisional, catering to different clincial needs



EM Narrow Ridge

EM Denture



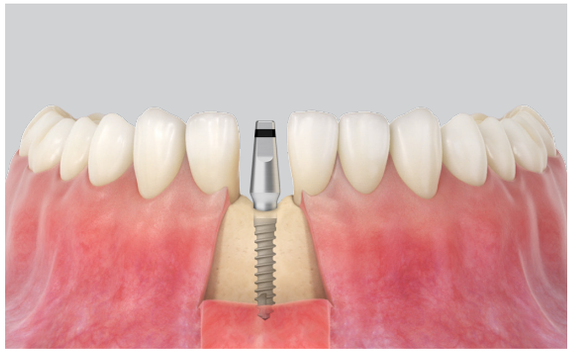
EM Provisional

Types of EM Implants

EM Narrow Ridge

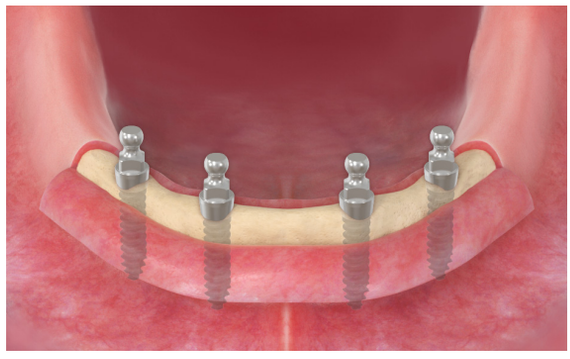
- Utilized in cases where the alveolar ridge's width is extremely narrow in either the buccolingual or mesiodistal aspect

▸ Mandibular anterior,
maxillary lateral incisor



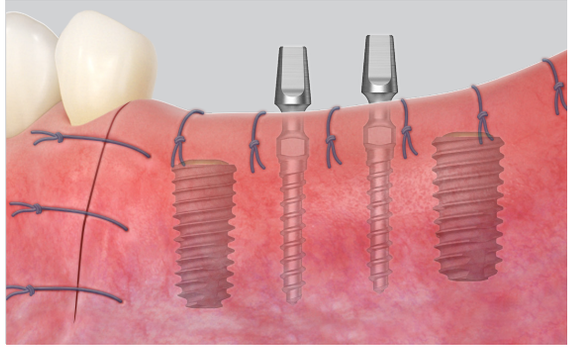
EM Denture

- Used to support overdenture



EM Provisional

- Employed for providing support to temporary prostheses following implant placement



EM Prosthesis Restoration

EM Narrow Ridge

Indications

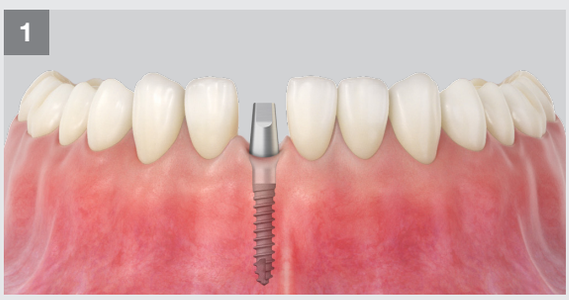
- Applied in cases involving narrow interdental spaces and ridges in the mandibular anterior region, where the mean mesiodistal crown dimension ranges from 5.0 to 5.5mm and the mean alveolar mesiodistal width falls within the 3.5 to 4.0mm range

- Utilized in situations with limited interdental space, particularly in the maxillary lateral incisor area

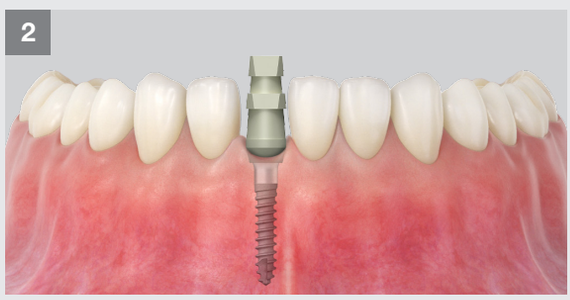
Features

- Once an EM Narrow Ridge implant is in place, a temporary prosthesis is crafted using the Temporary Cap
- The Temporary Cap offers exceptional self-retention, eliminating the need for additional adhesives during temporary prosthesis installation
- The abutment's size and shape are perfectly suited for the prosthesis without requiring any additional preparation
- Care should be taken to adjust the prosthesis's height to prevent occlusal issues
- For impression purposes, the abutment can be prepared above the black laser marking to allow the Lab Analog to take an accurate impression

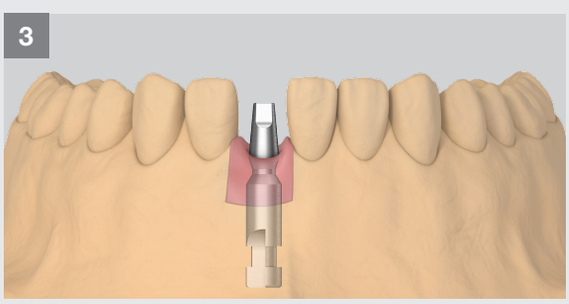
Prosthetic Procedure



Placement of EM Narrow Ridge



Impression taking using Impression Coping



Model fabrication using Lab Analog

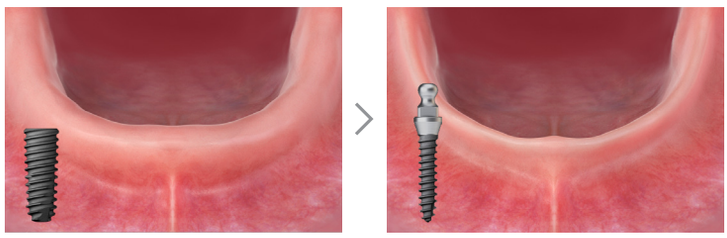
Prosthesis fabrication with a Burn-out Cylinder

EM Implant Denture

Indications

- Used in cases involving complete or partially edentulous patients with narrow ridges where standard implant placement is not feasible.

- Used for edentulous patients with narrow ridges resulting from chronic bone resorption, in situations where standard implant placement is not a viable option



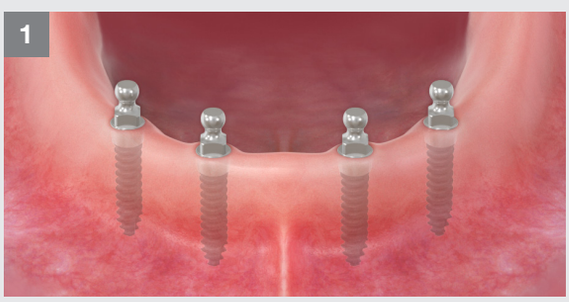
Before bone resorption

After development of bone resorption

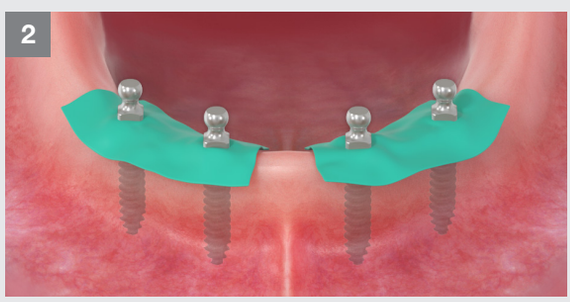
Features

- Tailored for edentulous patients facing challenges with standard implant use due to narrow ridges
- Simplifies denture fabrication through the use of Retainers and Lab Analog
- Ball-type abutment design allows for secure 0-ring attachment
- Convenient solution for the fabrication of immediate prostheses by evenly distributing mastication pressure

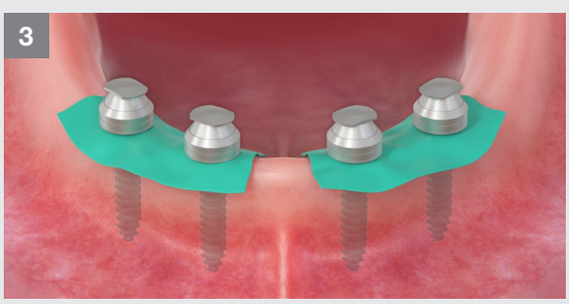
Prosthetic Procedure



Placement of EM Denture



Connection of Retainer Cap with O-ring inserted



Block out to ensure no undercut at the bottom of the Retainer Cap

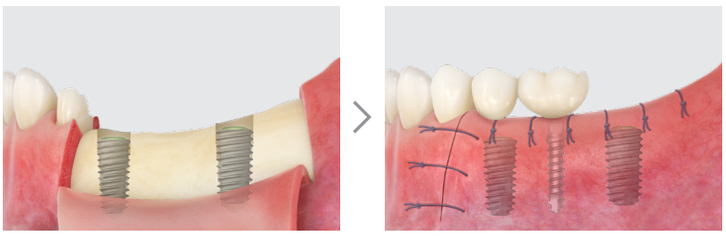
Check the denture retention and occlusion

EM Prosthetic Restoration

EM Provisional

Indications

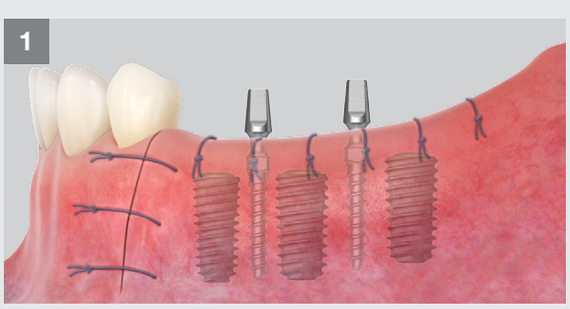
- Applied in cases involving completely or partialy edentulous patients, especially when loading a temporary prosthesis
- Positioned between two implants to provide support for a bridge



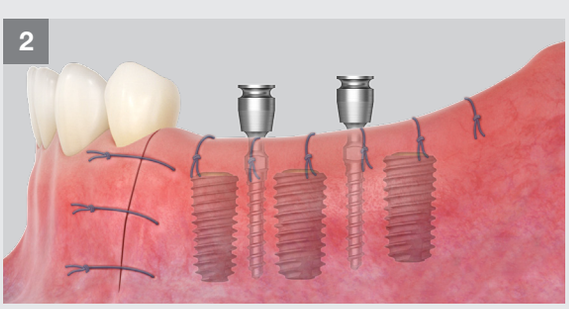
Features

- Used for the immediate loading of a temporary prosthesis in cases involving completely or partially edentulous patients
- Implant's neck allows for path compensation, and a one-time neck bending within 30° is possible using a Depth Gauge from the EM KIT
- Fabrication of a temporary prosthesis is simplified through the use of the Provisional Cap and Lab Analog
- Quadrilateral structure below the implant neck is designed to connect with the driver, ensuring stability
- Implant neck cannot be reversed once it has been bent

Prosthetic Procedure

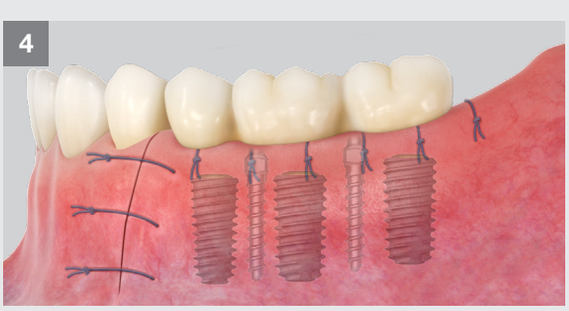


Place EM Provisional



Connect the Provisional Cap

Connect the provisional prosthesis and Provisional Cap



Load provisional prosthesis

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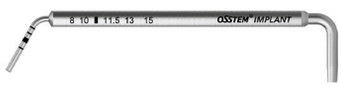
Surgical Instrument

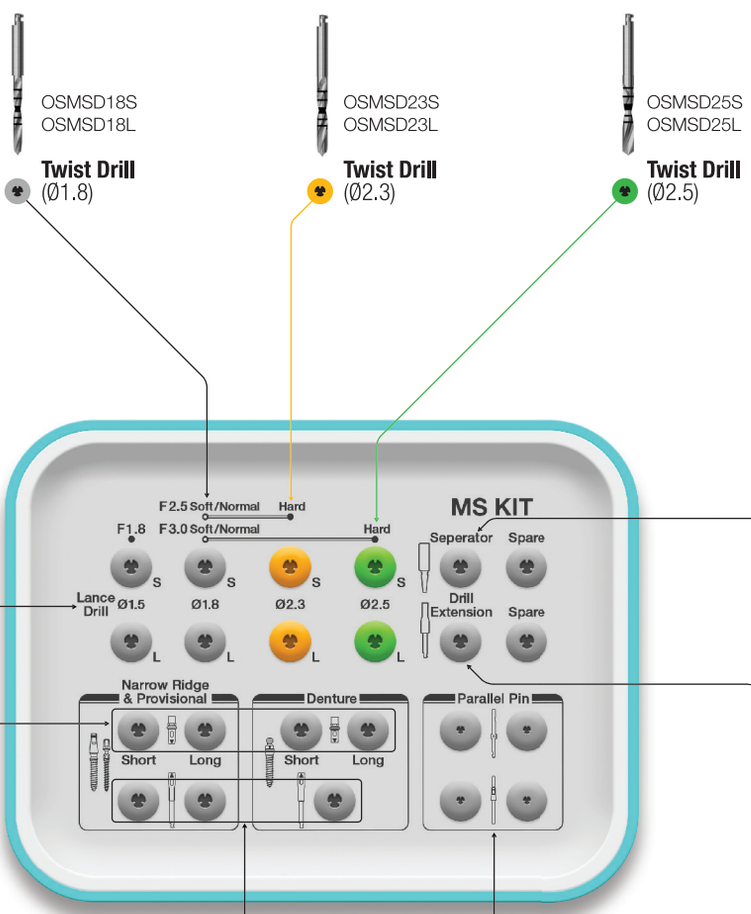
EM KIT

Bottom case components

Depth Gauge
MSDG



Ratchet Wrench
CITQW-1185A



OSMSD18S
OSMSD18L
Twist Drill
(Ø1.8)

OSMSD23S
OSMSD23L
Twist Drill
(Ø2.3)

OSMSD25S
OSMSD25L
Twist Drill
(Ø2.5)

Lance Drill
OSLD15
OMSLD15L

Torque driver
MSPTL
MSDTS

Driver Separator
MSDS

Drill Extension
ODE

Machine Driver
MSPML
MSDMS

Parallel Pin
MSPP
MSPPN

Drill

- Each laser marking on the implant corresponds to a specific length (8/10/11.5/13/15)
- With cortical bone, it is advisable to use a lance drill, which can be drilled up to the respective laser markings, depending on the specific case
- The long-type drill with a length of 13mm is equipped with a built-in stopper, providing added precision during the drilling process

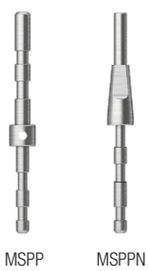
Lance drill

Twist drill

Gauge

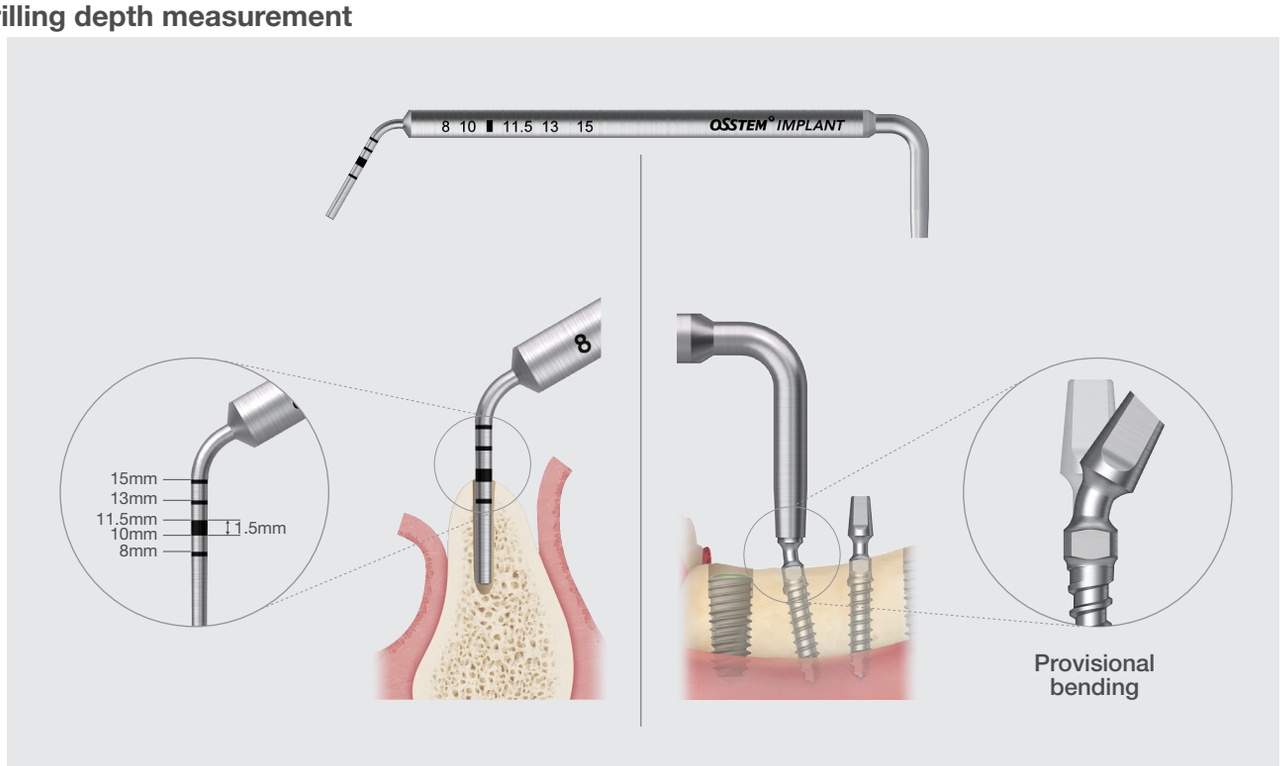
- Depth Gauge
  1) Used to check depth after drilling
  2) Used to bend EM Provisional implant neck
     * EM Narrow Ridge is not applicable for bending
       - Path adjustment is only applicable for EM Provisional
       - Depth Gauge is used in this case
     * Excessive bending may lead to implant neck fracture
- Parallel pin is used to check the drilling path
  - MSPP : lower diameter Ø1.5 / upper diameter Ø1.8
  - MSPPN : lower diameter Ø1.5 / The upper structure copies the shape of EM Narrow Ridge abutment
    * Convenient to plan for the final prosthesis

Depth gauge



Parallel pin

Drilling depth measurement

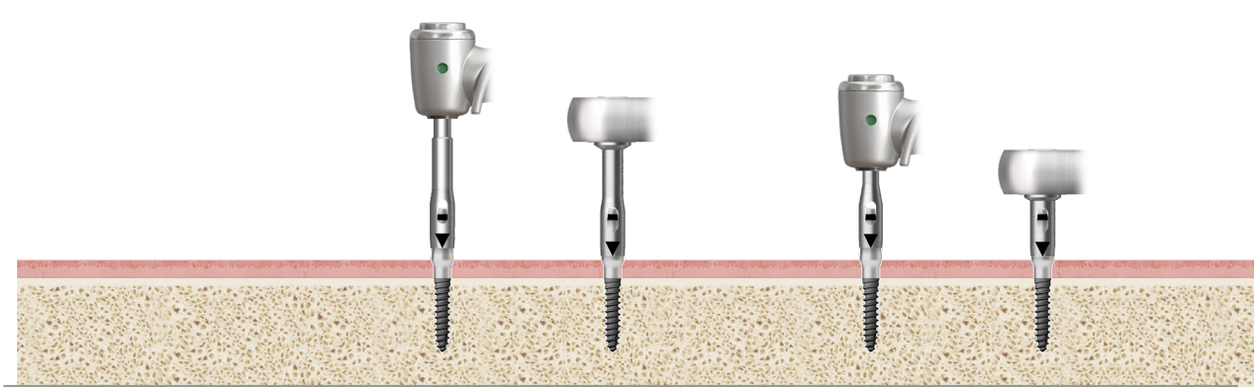


Surgical Instrument

Driver

Hand Driver		Machine Driver		Driver Separator	Torque Driver Handle
Narrow Ridge Provisional Driver	Denture Driver	Narrow Ridge Provisional Driver	Denture Driver		
 Short Long	 Short Long	 Short Long			
Engage it to the Torque Wrench and tighten the implant - Narrow Ridge Driver: No hole on the head - Denture Driver: A hole in the head (*The Denture Driver has a groove on the side)		Connect to the engine handpiece to place EM implant The triangle laser marking for EM Implant needs to be aligned with the implant's internal surface		In case of the driver becoming stuck during the implant placement process, you can use the Driver Separator by inserting it into the driver groove to facilitate the removal of the stuck driver	Engage it to the Torque Driver and manually rotate it to place the implant in the initial stage

Narrow Ridge / Provisional Driver Selection Guide

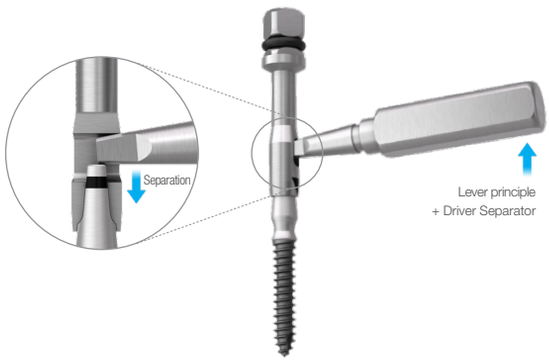


Location	How to use	*Recommendation
Long crown (anterior teeth)	Engine	Driver - Long type
	Hand	Driver - Long type
Narrow occlusal space (posterior teeth)	Engine	Driver - Long type
	Hand	Driver - Long type

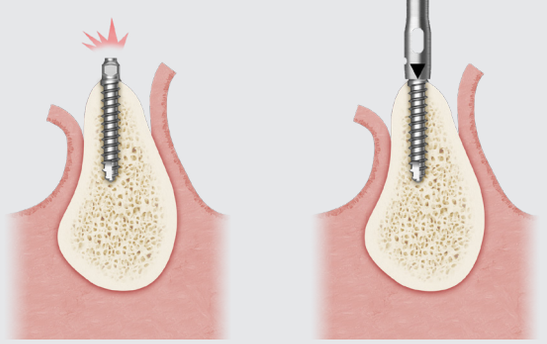
*Recommendation : 25rpm, 30Ncm (Provisional Ø1.8 : 25Ncm)

Engage Engine Hand Piece to the EM implant

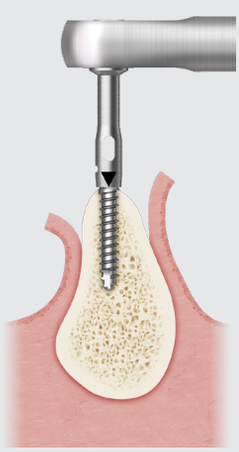
Remove the stuck driver during the implant placement with a Driver Separator



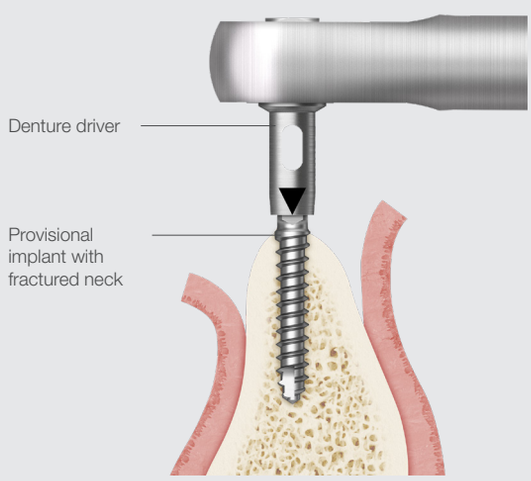
How to remove a fractured EM implant



Fracture in the neck



Connect Denture Driver to the EM Provisional implant

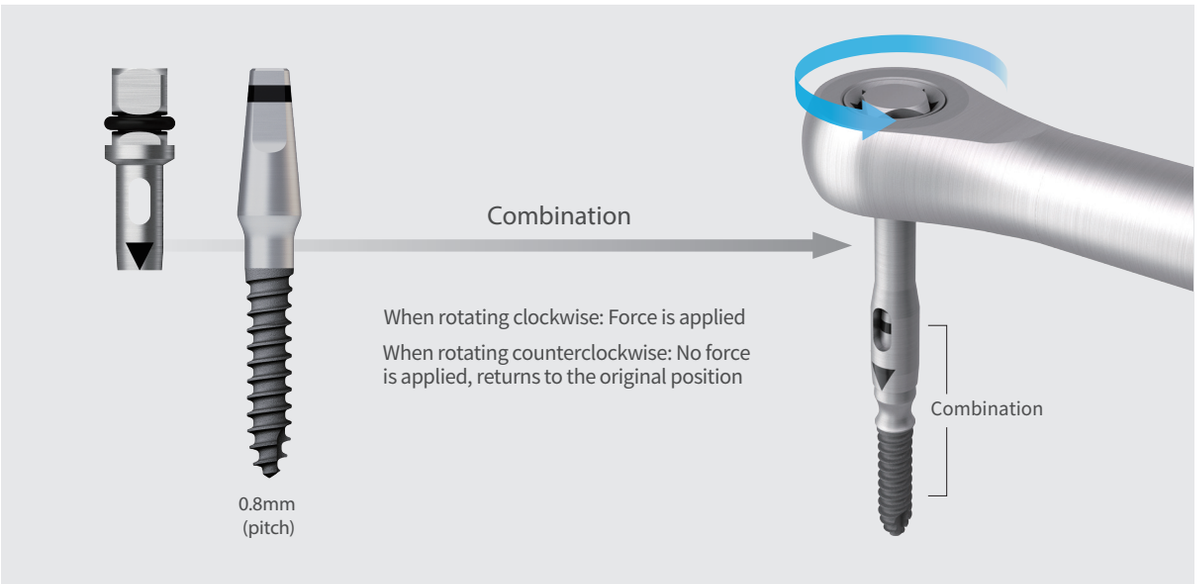


Rotate the driver counterclockwise to remove the implant

Surgical Instrument

Ratchet Wrench

- The wrench engine is a versatile tool that enables the unlimited application of torque. It is primarily utilized for making final depth adjustments after placing an EM impant.



· Pitch : 0.8 (1 turn = 0.8mm advancement) · 90°(¼ turn) = 0.2mm advancement · Lead 1 + ¼ turn = 1mm installation

EM Removal Tool

- Designed for the simple extraction of fractured EM Implants, particularly the Narrow Ridge type
- Connect the Universal Handle and rotate counterclockwise
- Specifications are available and vary depending on the diameter of the fractured implant (For Ø 2.0 implant, Orthodontic Screw Removal Tool is recommended)

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IMPLANT

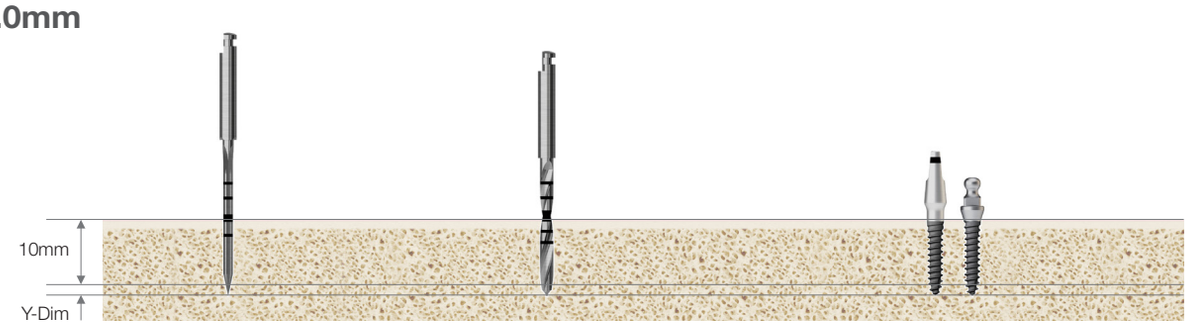
Recommended Surgical guide

Drilling Sequence

Ø1.8mm

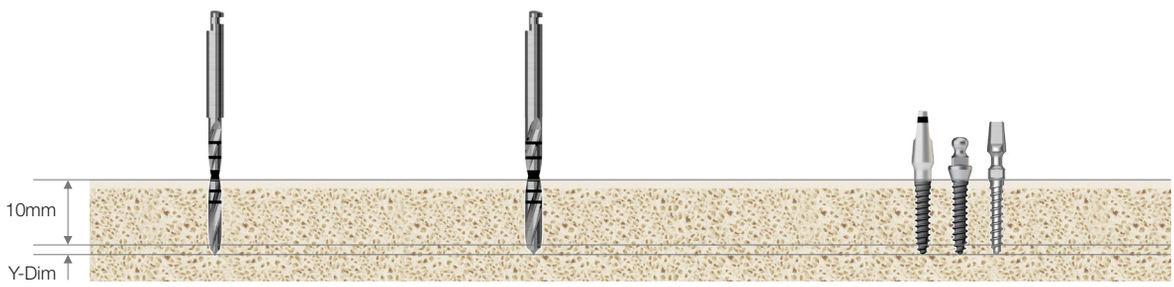
Bone Quality	Lance Drill	Ø1.8 Implant
Soft	►	Implant Placement
Normal	►	
Hard	►	

Ø2.0mm



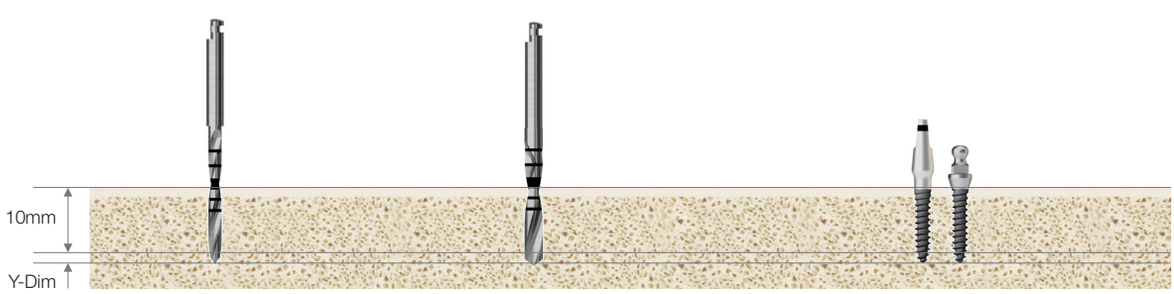
Bone Quality	Lance Drill	Drill (Ø1.8)	Ø2.0 Implant
Soft	►		Implant Placement
Normal	►		
Hard	►	►	

Ø2.5mm



Bone Quality	Drill (Ø1.8)	Drill (Ø2.3)	Ø2.5 Implant
Soft	►		Implant Placement
Normal	►		
Hard		►	

Ø3.0mm



Bone Quality	Drill (Ø1.8)	Drill (Ø2.5)	Ø3.0 Implant
Soft	►		Implant Placement
Normal	►		
Hard		►	

Recommended Surgical Procedure

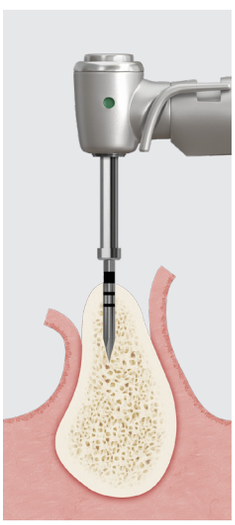
EM Implant (Ø2.5/Ø3.0)

Recommended Insertion Torque : 30Ncm

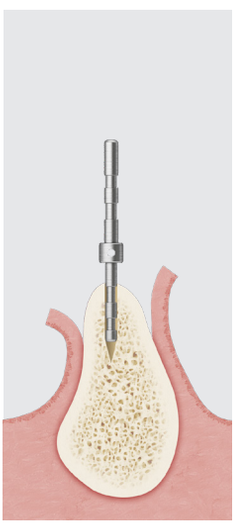
EM
Narrow Ridge

EM
Denture

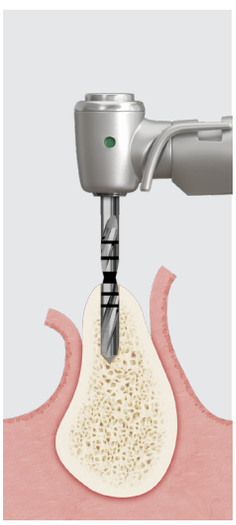
EM
Provisional



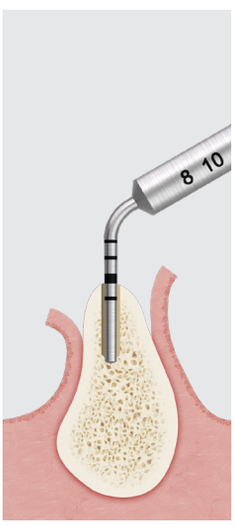
Lance Drill 800rpm



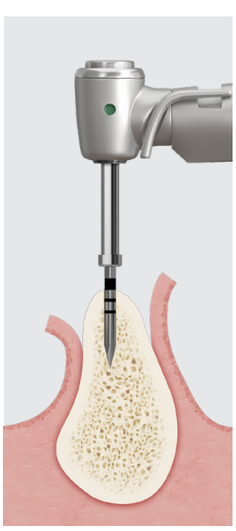
Check Path



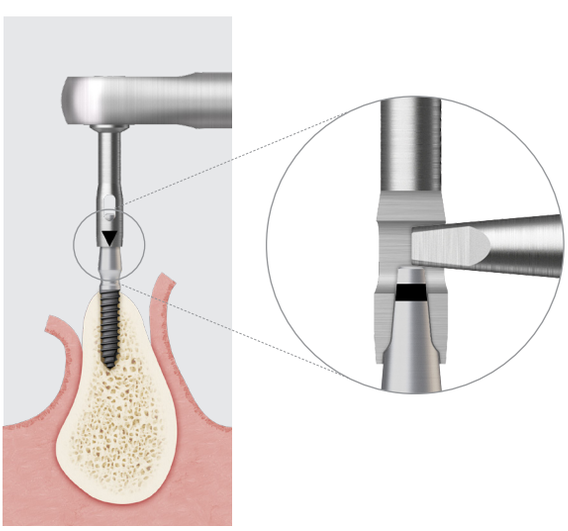
1.8 Drilling / 2.3 Drilling
1200rpm



Check Depth



Engine Mode : 30Ncm
Manual Mode : ≤70Ncm
(Provisional type : ≤40Ncm)

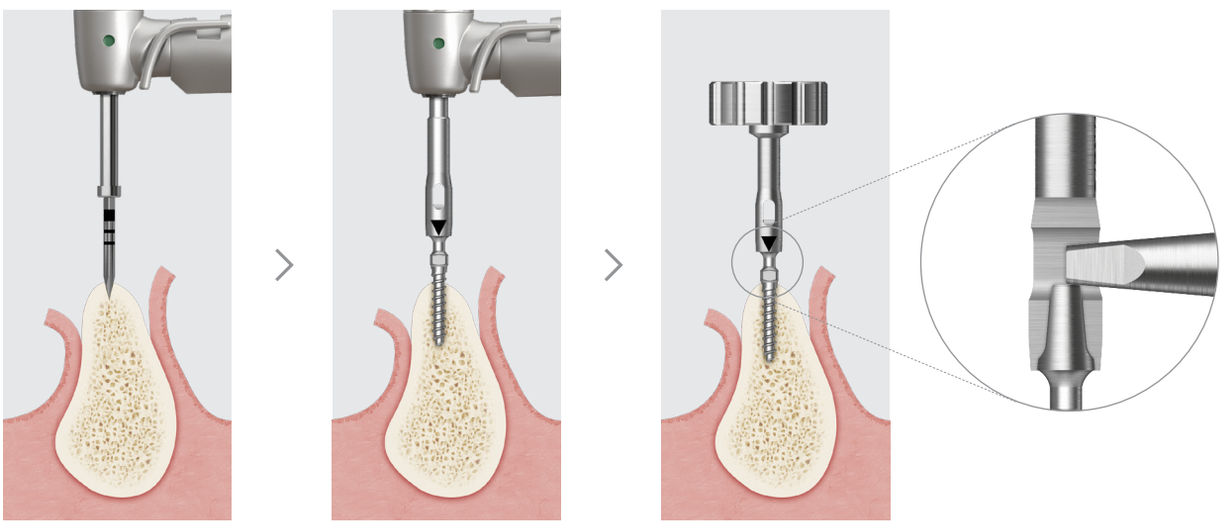


Separate Driver

EM Implant (Ø1.8)

Recommended Insertion Torque : 25Ncm

EM
Provisional



Lance Drill 800rpm
Only cortical bone
with irrigation

Engine Mode : 25Ncm
Manual Mode : ≤40Ncm

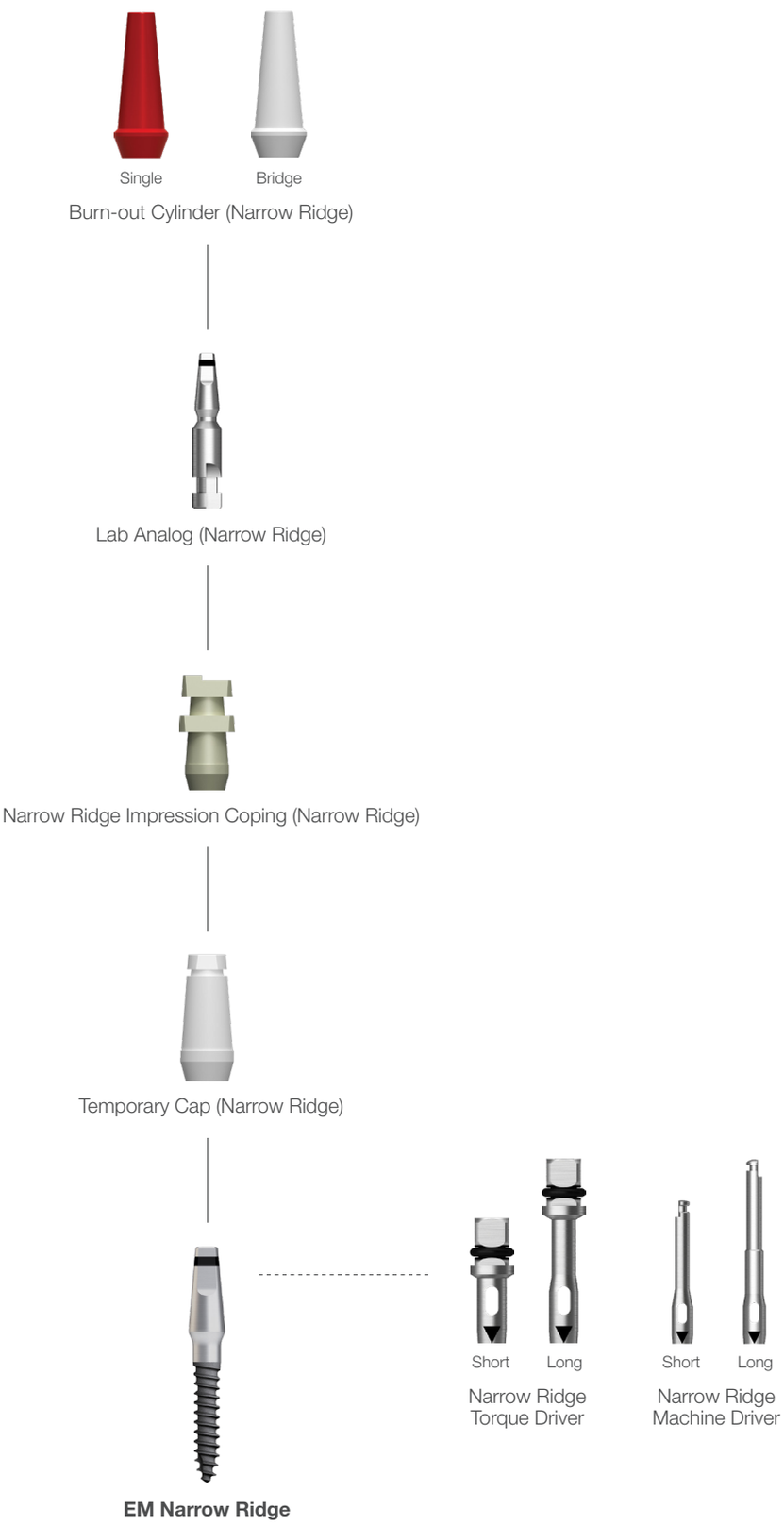
Separate Driver

Caution : When placing an EM Implant using the Torque Handle (MSTH), it's essential to exercise caution. If the applied torque exceeds 40Ncm, there's a risk of neck fracture

Prosthodontics Flow Diagram

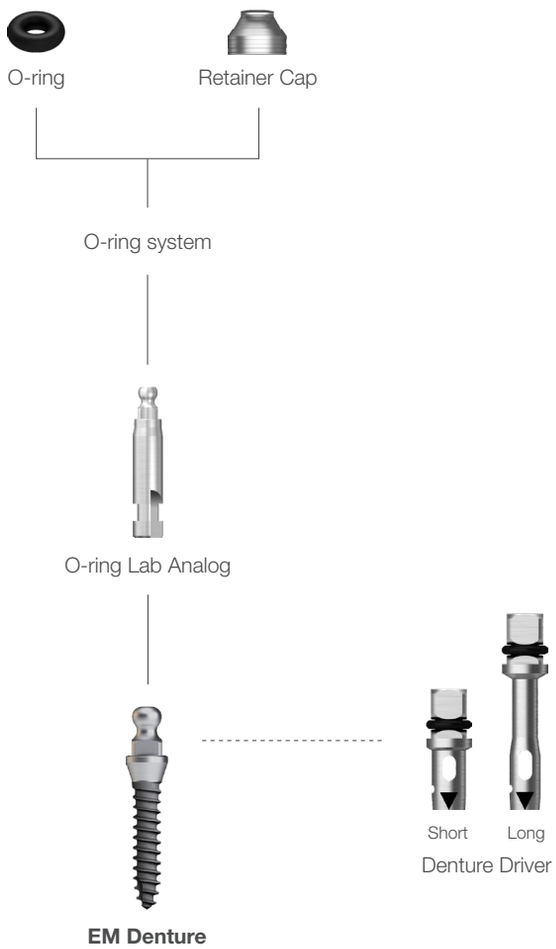
EM Implant Narrow Ridge

Abutment Level Impression



EM Implant Denture

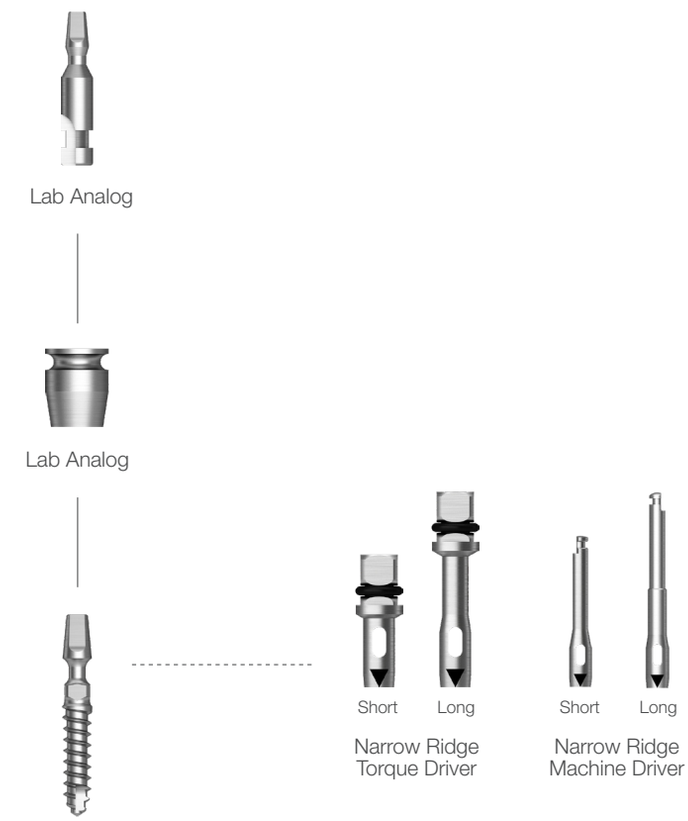
Abutment Level Impression



Prosthodontics Flow Diagram

EM Implant Provisional

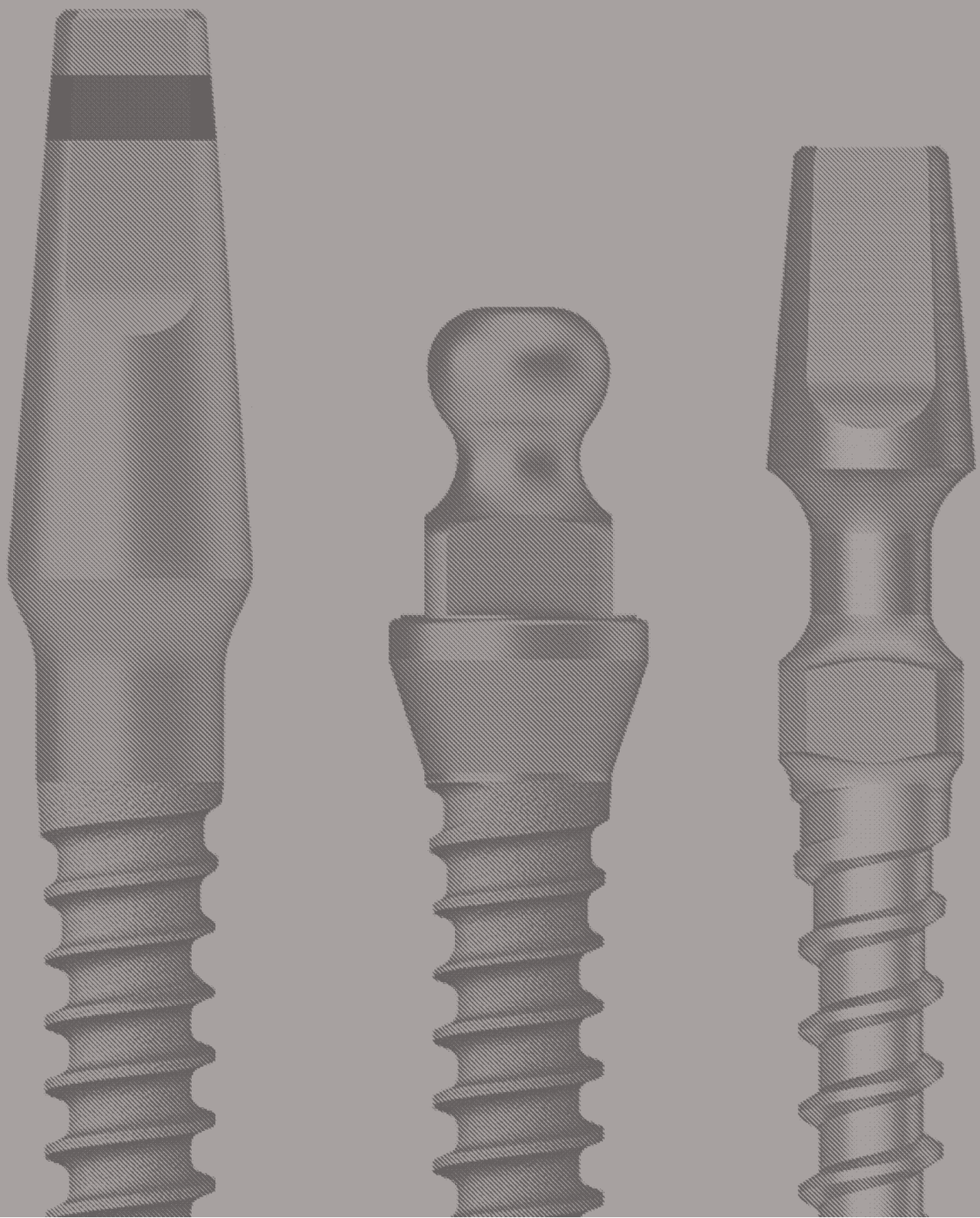
Abutment Level Impression



EM Provisional

HIOSSEN
IMPLANT

RESTORATION PROCEDURE



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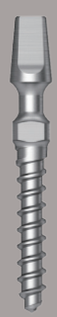
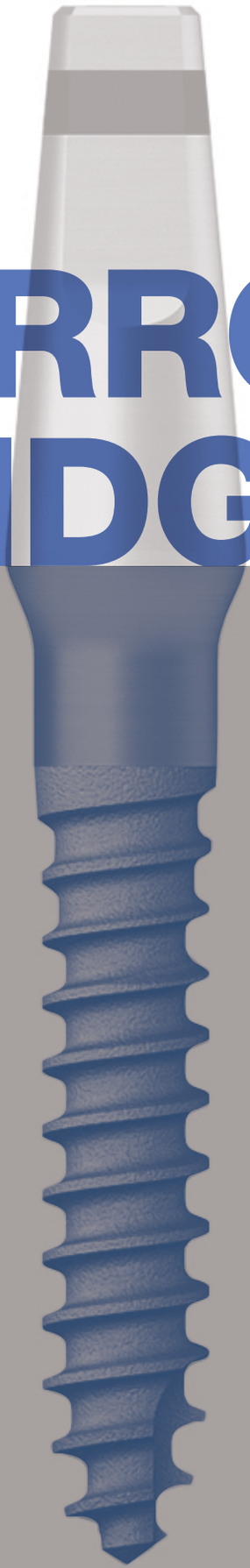


NARROW RIDGE

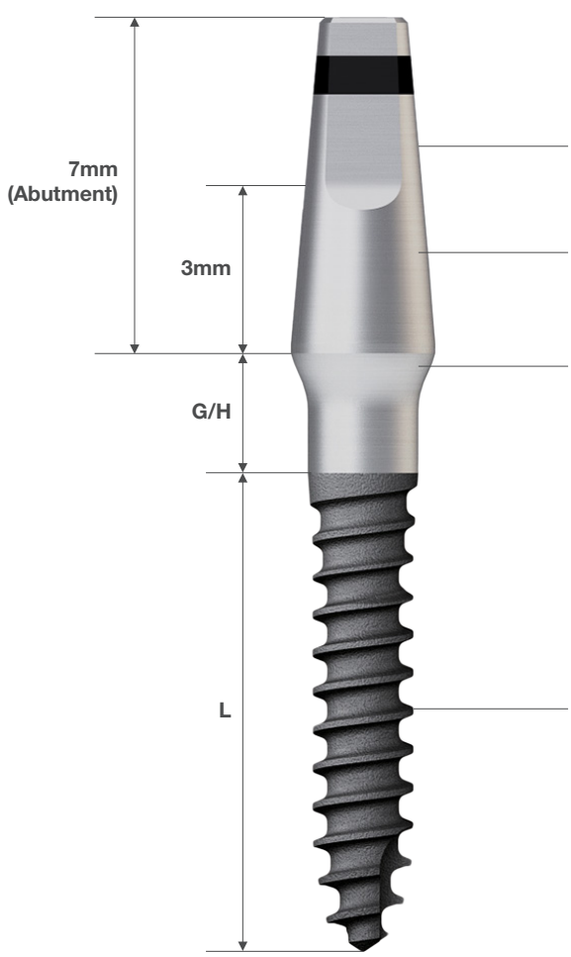


IMPLANT. 01

30 For fabrication of
Narrow Ridge prosthesis

EM Implant Narrow Ridge

- **Indications for use:**
  - Designed for narrow ridge situations, especially in cases with limited restoration space, like the mandibular anterior region
  -One-stage surgery and tissue level placement
- **Implant and abutment in one integrated body**
- Ø3.0 variant is primarily used in immediate placement cases, such as fresh extraction sockets
- Ø2.5 version is typically employed when dealing with narrow alveolar ridges in older extraction sockets
- It permits a maximum placement of up to 10° , which can be adjusted compared to the tooth's long axis
- Use EM KIT for placement
- RBM surface type is also available
- The material used is Ti-6Al-4V, known for its biocompatibility
- For implant diameters Ø2.0, Ø2.5, and Ø3.0, the Narrow Ridge Driver is used for connection and placement (code : MSPTS / MSPTL)
- Recommended tightening torque of ≤30Ncm



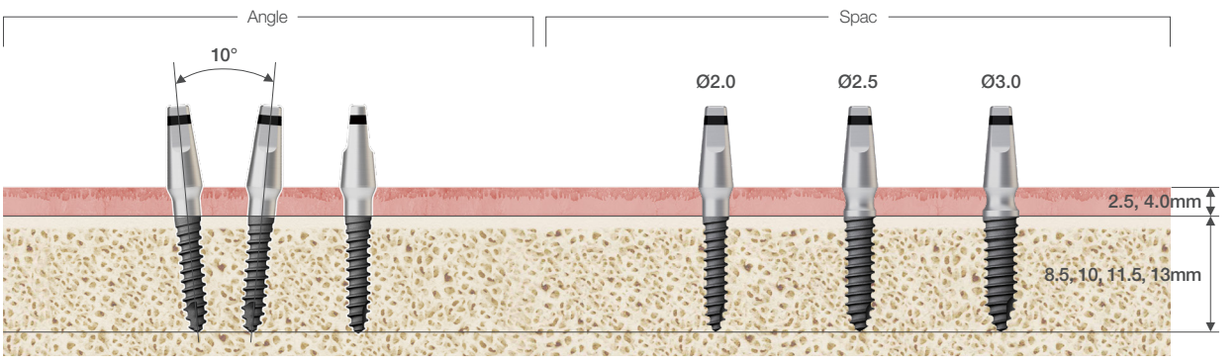
Does not require additional reshaping as the abutment shape and size are optimal

Crown Margin area 3mm

Concave Neck Design
- Increase in the soft tissue volume
- Enhanced gingival stability

Body Thread
[Corkscrew Thread]
- Enhanced self-tapping thread
- Improved primary stability

Specification



Impression Coping (Narrow Ridge)

- Distinct edges allow for precise impression taking

Temporary Cap

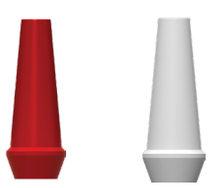
- Used until the final prosthesis is fabricated

Lab Analog

- Replica of the EM Implant Narrow Ridge Abutment in a working model

Burn-out Cylinder

- Used as a prosthetic framework by assembling with EM narrow ridge implant
- After prosthetic casting, a reamer is used to adjust the margin
- Single (red) / Bridge (white)



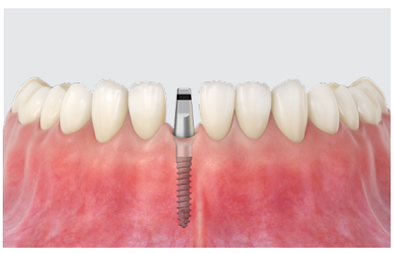
EM Implant Prosthetic Procedure for Narrow Ridge

Narrow Ridge crown fabrication

01

Separation of the Healing Abutment

- Check the vertical height and path
- If necessary, the upper part of the EM Implant should be adjusted



Torque Driver

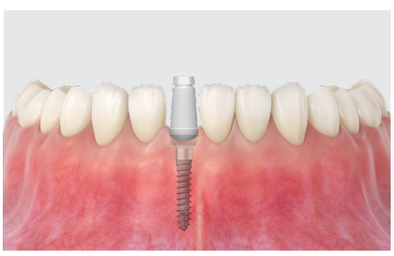
Parallel Pin

Torque Wrench

02

Fabrication of temporary prosthesis by using Temporary Cap and crown

- With the Temporary Cap's excelent self-retention, there is no need for adhesive when loading a temporary prosthesis
- Adjust the height of the prosthesis to avoid occlusion issues
- Individual margin shaping is feasible within the 3mm margin area of the EM Implant



Temporary Cap

Lab Analog

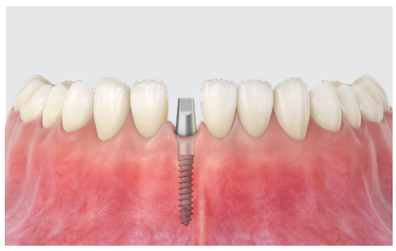
03

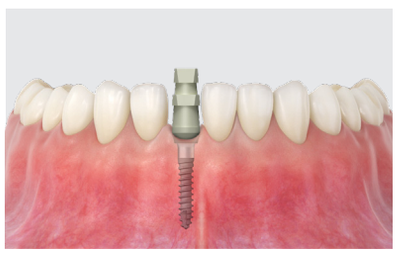
When abutment preparation is required

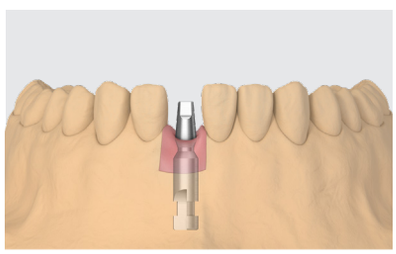
1. Abutment preparation for the EM Implant
2. Direct impression-taking
3. Model fabrication to create an accurate replica of the oral environment. It's important to note that if irregular abutment preparation is done, prosthesis fabrication using Lab Analog becomes impractical.

If abutment preparation is unnecessary and the vertical height aligns perfectly with the laser marking on the implant, prosthetic fabrication can proceed without the need for additional adjustments.

1. Load the impression coping on to the implant
2. Utilize the impression coping to capture an impression, which is crucial for creating the prosthesis
3. Construct a model using the impression and Lab Analog. It's important to make adjustments while considering the length of the upper marking line to ensure the precise fabrication of the prosthesis using Lab Analog
4. With the Burn-out Cylinder, create the prosthesis using a single type







Impression Coping

Temporary Cap

Lab Analog

Single

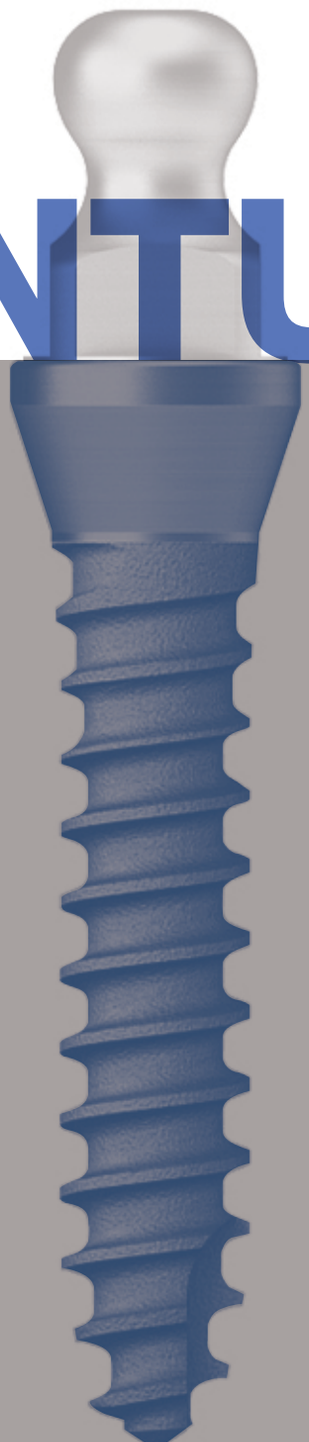
Bridge

Burn-out Cylinder

04

Place prosthesis and check occlusion

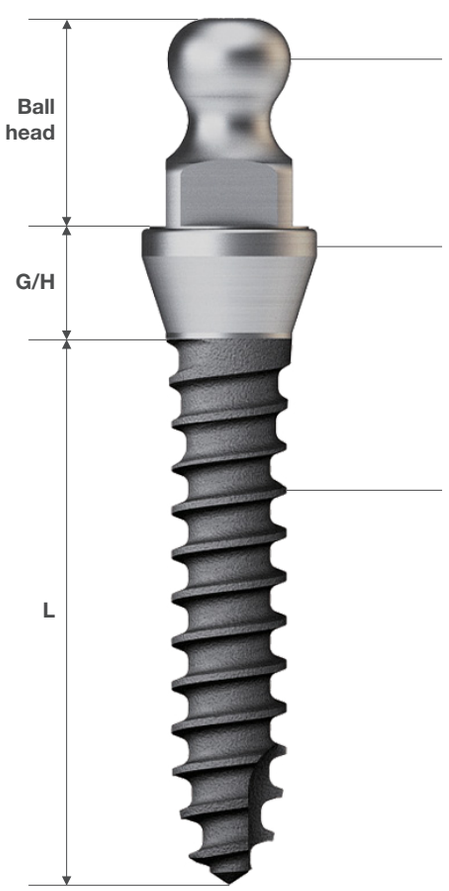
DENTURE



IMPLANT. 02

EM Implant Denture

- **Designed for both complete and partial edentulous patients dealing with narrow ridges**
- **One-stage surgery and tissue level placement**
- **Implant features a ball-type structure for the connection of 0-ring attachments**
- Denture fabrication is made easier with the use of Retainers and Lab Analog
- Ø3.0 variant is primarily used for immediate placement cases, such as fresh extraction sockets
- Ø2.5 version is typically employed when dealing with narrowed alveolar ridges in older extraction sockets
- Use EM KIT for placement
- RBM surface type is also available
- The material used is Ti-6Al-4V, known for its biocompatibility
- For implants with deameters of Ø2.0 , Ø2.5, Ø3.0 are connected using the Denture Driver (code : MSDTS / MSDTL)
- Recommended tightening torque of ≤30Ncm

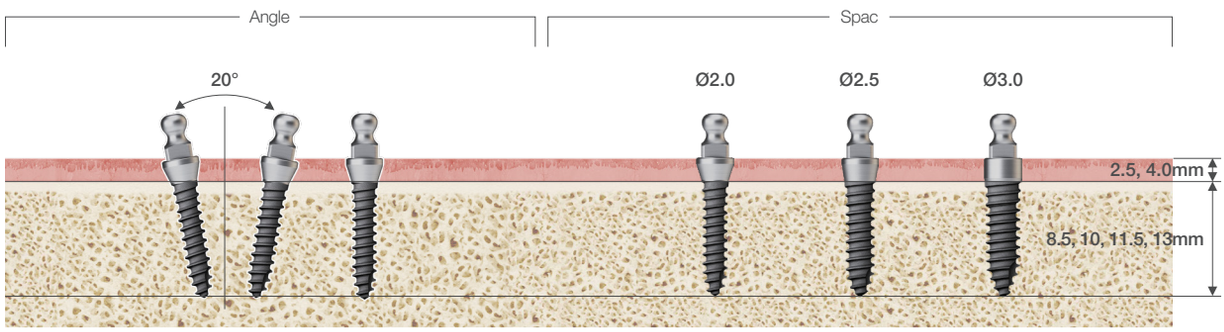


Ball shape
- O-ring System compatibility:
  Ball type structure suitable for O-ring attachment

Gingival height : 2mm / 4mm

Threaded body design
[Corkscrew Thread (Single)]
- Enhanced self-tapping
- Improved primary stability
- Gentle comfort in placement

Specification



O-ring Retainer Cap Set

- For use in the fabrication of stud type overdenture prosthesis
- Compensation of retention through O-ring replacement
- Packing unit : Retainer cap + O-ring

O-ring Lab Analog (Denture)

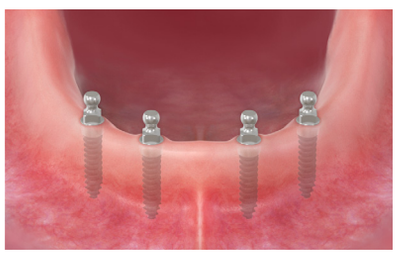
- Replication of the oral O-ring abutment in a working model

EM Implant Prosthodontics Procedure for Denture

For fabricating new dentures

01

EM Denture is placed



Torque Driver

Parallel Pin

Torque Wrench

02

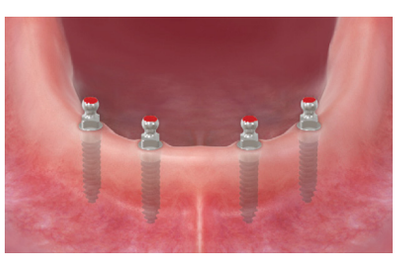
After carefully injecting the Rubber impression material onto the exposed Ball Head in the patient's oral cavity, fill the impression material into a personalized tray and position it in the mouth for impression taking

- After impression taking, insert 4 lab analogs into the impression material, then pour stone to create the working model
- Position the occlusal rim in the oral cavity to capture interocclusal records, then proceed with wax denture fabrication on the laboratory side

Lab Analog

03

Apply die spacer to the ball portion, seat the denture in the oral cavity, and mark the location of the Ball Head on the denture-bearing mucosal surface



04

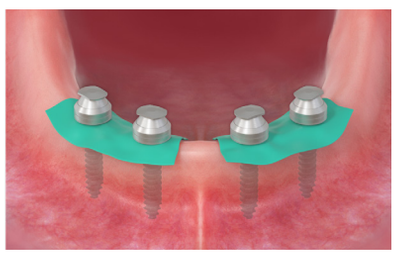
Considering the size of the Retainer cap, seat the denture in the marked area and adjust it as necessary

- To prevent excess resin from pushing into the mucosal surface, create a small vent hole with a diameter of 1mm in the denture's fitting surface

05

After blocking out the undercut area beneath the Ball Head of the EM Denture, secure the Retainer cap with an inserted 0-ring

- If concerned about the possibility of resin entering the low-pressure relief space, use a rubber dam for block out



Retainer Cap

O-ring

06

Apply vaseline to the mucosal surface of the denture

- To prevent excessive resin from adhering to the denture during the direct setting method, apply vaseline in advance to facilitate removal if necessary

07

Place an appropriate amount of self-curing resin at the site where the Retainer cap will be positioned, and secure it within the oral cavity

- After establishing an accurate occlusal relationship, induce centric occlusion while maintaining the occlusal relationship
- Remove excess resin and proceed with the final polishing and finishing

08

After checking the retention and occlusal contact, proceed with the setting

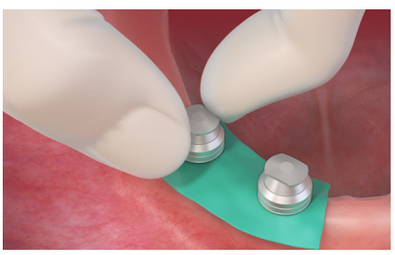
Replace with a new O-ring and seat it within the oral cavity. Since the O-ring set contains 5 pieces, it can be replaced after use as needed

EM Implant Prosthodontics Procedure for Denture

For fabrication using existing denture

01

A rubber dam is initially inserted into the ball head of the positioned EM Implant. Subsequently, intraoral block-out procedures are performed, and the Retainer Cap is then hand-tightened



Torque Driver

Parallel Pin

Torque Wrench

02

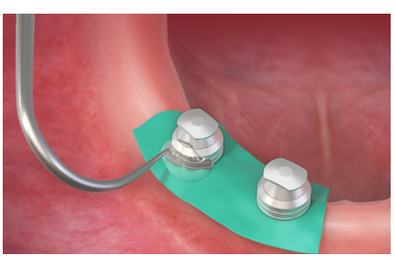
The inner space of the denture is hollowed out using a handpiece and bur, creating the necessary space for the autopolymerizing resin

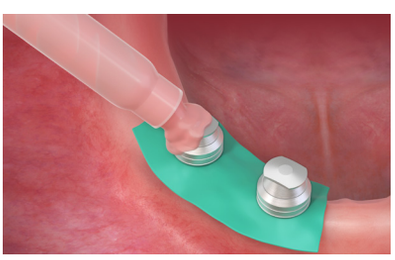
- On the lingual side, a small vent hole with a 1mm diameter is carefully created to allow for the release of any residual denture model resin at a later stage

03

Following the application of monomer (liquid) to both the denture and Retainer Cap, the resin is injected, and it's important to verify if the resin is effectively released through the vent hole

- The liquid is applied to enhance the bonding strength between the denture, retainer, and autopolymerizing resin





Retainer Cap

O-ring

04

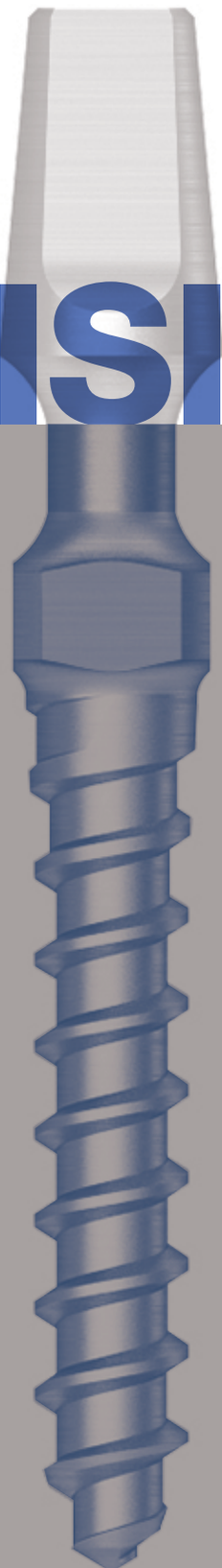
Place the denture and let the patient bite the cotton roll in the posterior region of both sides. Remove the cotton roll after 5 minutes.

05

Check the status of retention and occlusion

- Check for any point with increased height and adjust accordingly
- Polish the denture after checking occlusion

PROVISIONAL

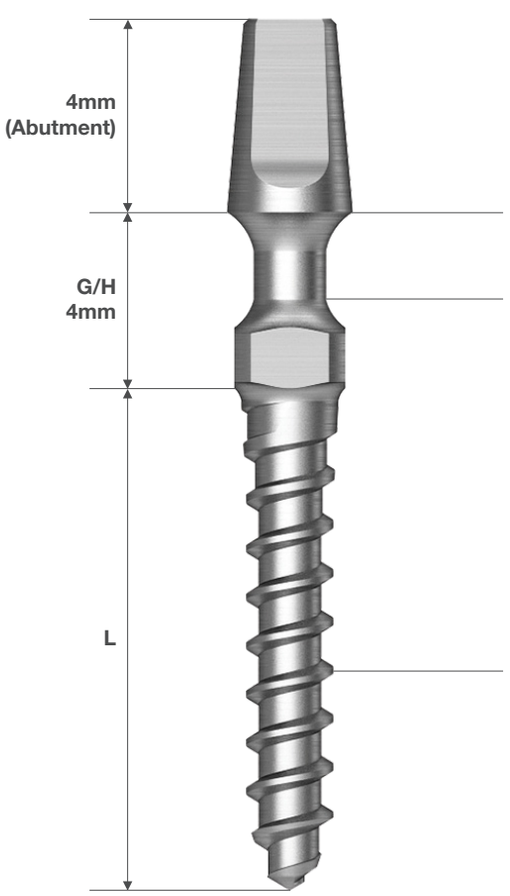


IMPLANT. 03

44 For fabrication of temporary prosthesis for EM Provisional

EM Implant Provisional

- **Denture implant for completely or partially edentulous patients with narrow ridges**
- **One-stage surgery and tissue-level placement**
- **Features a ball-type structure for O-ring attachment**
- **Facilitates denture fabrication using Retainer and Lab Analog**
- Ø3.0 primarily used for immediate placement in fresh extraction sockets
- Ø2.5 is ideal for narrowed alveolar ridges in older extraction sockets
- Use EM KIT for placement
- RBM surface type option available
- Constructed from biocompatible Ti-6Al-4V material
- Accomodates implant diameters of Ø2.0, Ø2.5, and Ø3.0 using the Denture Driver (code : MSDTS / MSDTL)
- Recommended tightening torque : ≤30Ncm

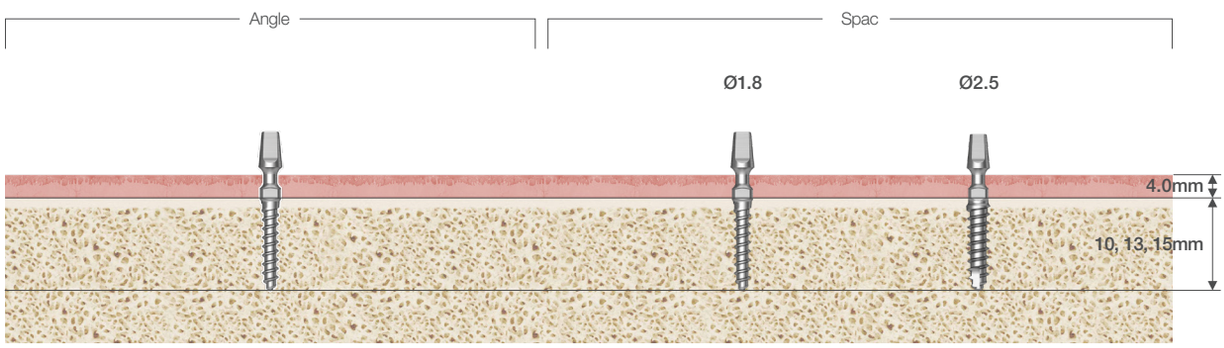


Concave Neck design
- Neck bending is possible for path adjustment

Employs tetrahedral structure for easy removal in neck fracture, using Denture Driver

Pitch 1.0 Depth 0.25 Thread (Single)
- Protection of soft bone
- Thread design suitable for easy removal

Specification



Provisional Cap

- Designed for use in temporary prosthesis (Material : Titanium)

Lab Analog

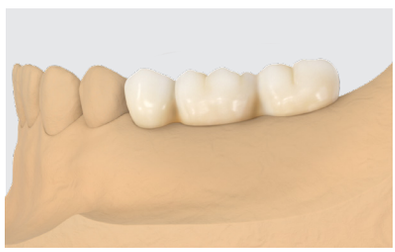
- Replication of the oral EM Implant Provisional Abutment in a working model

EM Implant Prosthodontics Procedure for Provisional

For fabrication of temporary prosthesis for EM Provisional

01

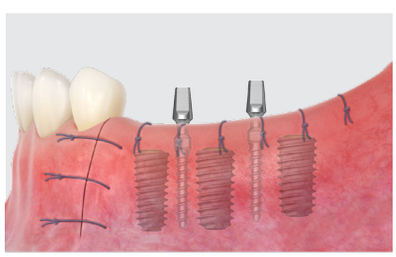
Temporary prosthesis is fabricated

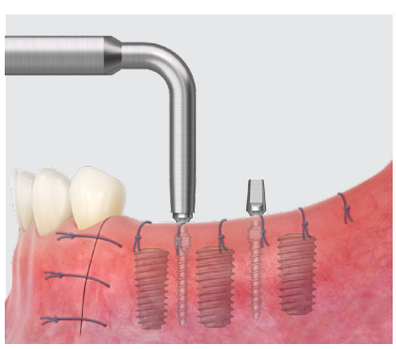


02

Insert Provisional Implant between the implants

- Check the path of EM Provisional and adjust the path using Depth Gauge





Torque Driver

Parallel Pin

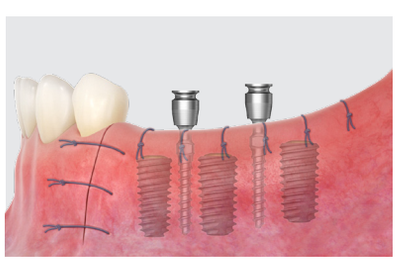
Torque Wrench

Depth Gauge

03

Connect Provisional Cap in the mouth

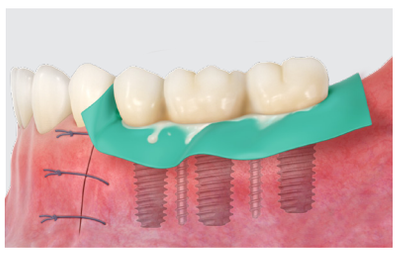
- Secure space for in the temporary prosthesis insertion of Provisional Cap



Retainer Cap

04

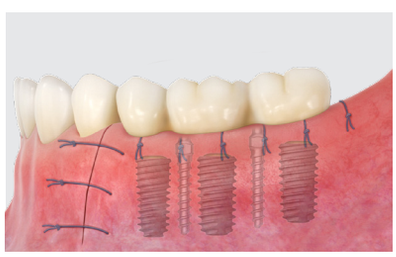
Following the completion of block-out procedures to eliminate any undercuts, the pre-made shell of the temporary prosthesis, crafted from resin, is then positioned onto the Provisional Cap



05

Carefully remove any residual resin, and then a resin curing process is initiated

- Subsequently, the occlusion status is assessed and verified



HIOSSEN IMPLANT

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