Digital Implant No.1 DIO

DIO navi.

Digital Navigation Implant

DIO IMPLANT

Contents

DIOnavi. Surgical Instrument

DIOnavi. surgical instruments guarantee superior cutting force and durability.
It is fully optimized for flapless surgery.

DIOnavi. Master Kit

Order Code_ **UF(M) 05**

UF(II) Fixture Ø3.0 / Ø3.3 / Ø3.8 /
Ø4.0 / Ø4.5 / Ø5.0
Exclusive kit for a flapless surgery

DIOnavi. Narrow Kit

Order Code_ **UF 14**

UF(II) Fixture Ø3.0 / Ø3.3

DIOnavi. Surgical Guide Fix / Anchor Kit

Order Code_ **SGF 02**

Connect **Guide Fix** on fixture after placing implant
and insert **Fix Pin** after initial drilling
or use **Anchor Screw** to fix
surgical guide in edentulous cases or free-end case

DIOnavi. Flapless Crestal Sinus Kit

Order Code_ **SMK 02**

This kit supports flapless sinus surgery
(Crestal approach only)

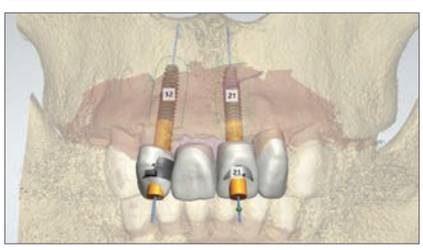
What is **DIOnavi.**?

DIOnavi. Digital Navigation Implant

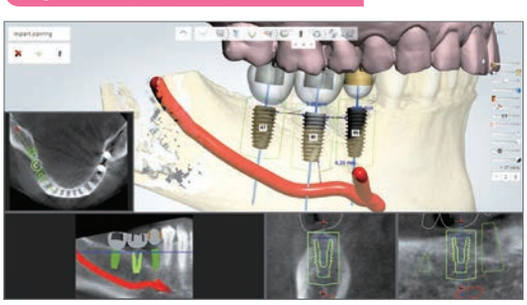
With the highest accuracy and the stability

DIOnavi. Digital Implant System increases the accuracy of the implant placement through implant planning that considers both occlusion and stress diversion and it can also be useful in patient consultation with 3D simulation.



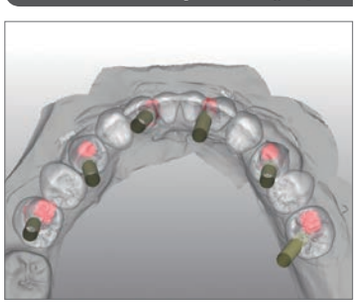
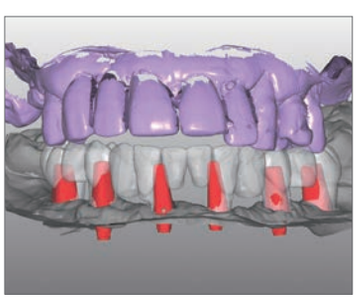



Implant surgery using DIOnavi.



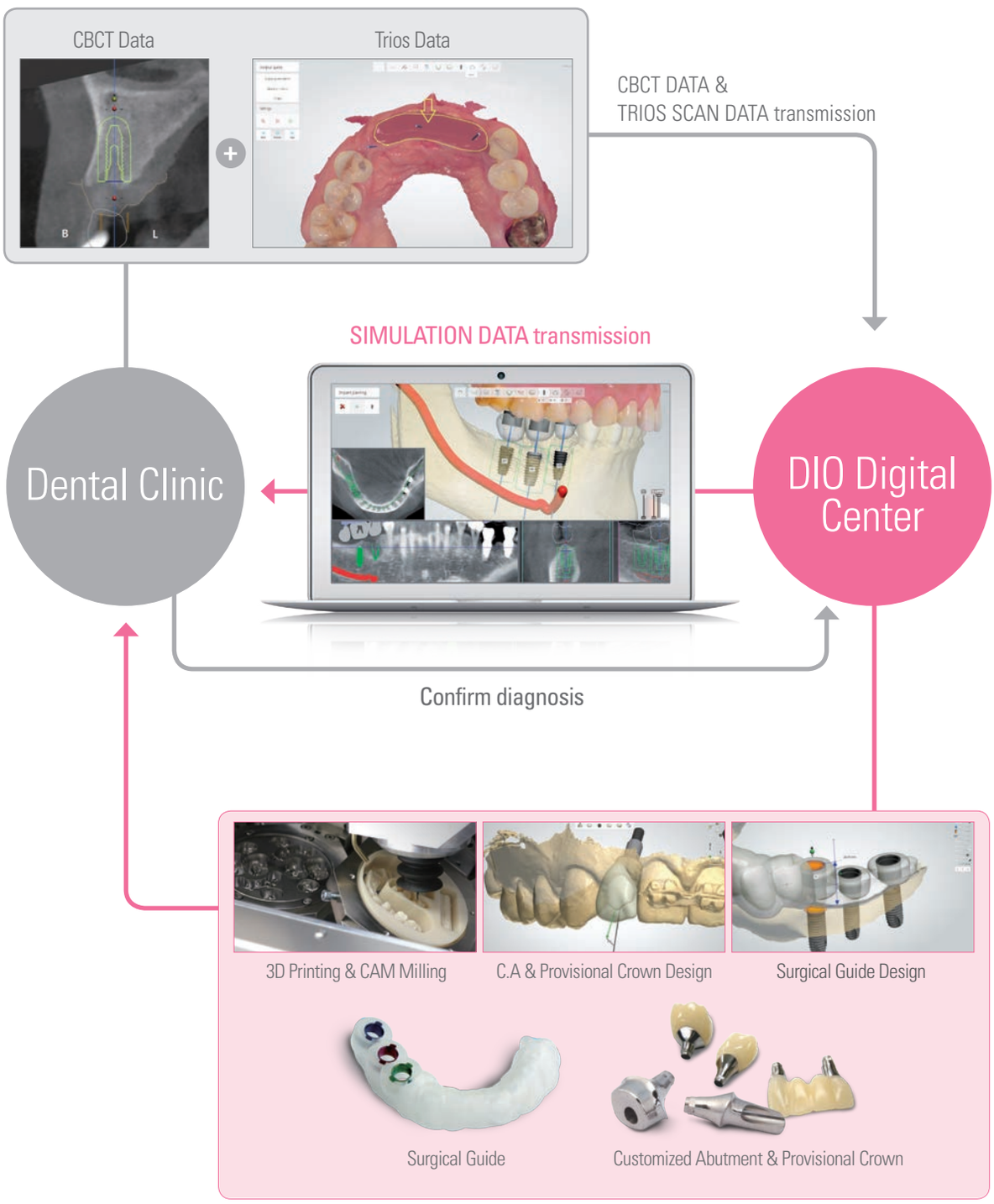
Crown is designed first on the exact location, and then fixture is placed below, therefore the implant can withstand the high load, and it is advantageous for abutment selection and maintenance.

Conventional implant surgery

It may be difficult to disperse loading which may lead to fractured prosthetics or implant failure since it is difficult to line up the center of the implant and the crown.

DIOnavi. One-Step Protocol

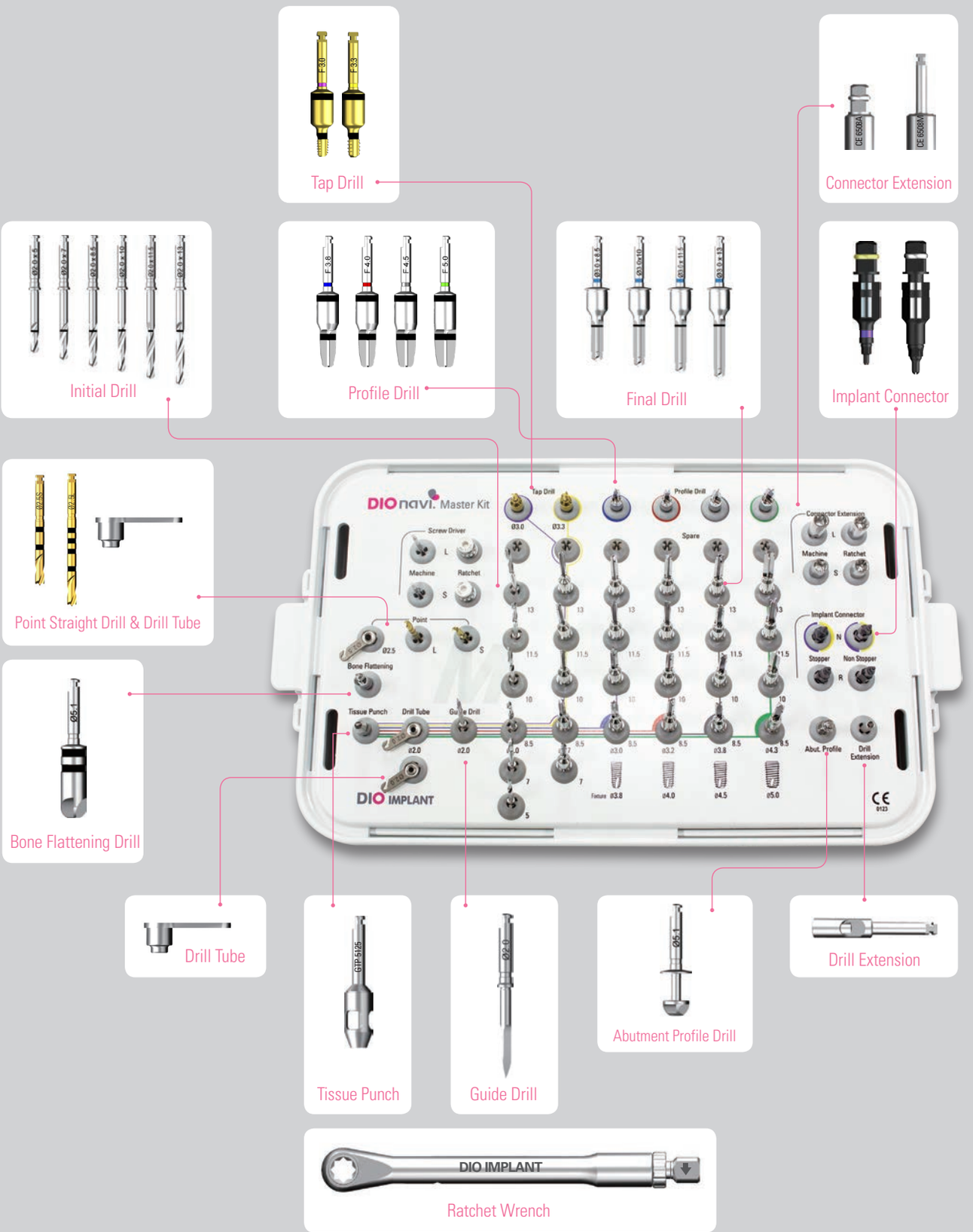


- 5 working days after confirmation -

DIOnavi. Master Kit

Order Code_ **UF(M) 05**

Outstanding cutting forces and durability.
Available for UF(II) System



1 Tissue Punch

Stable gingiva removal is possible with a fixed blade inside the tissue punch (Flapless Surgery)

■ Product Code

Diameter	Ø3.0
Code	GTP 5125

Unit: mm

2 Bone Flattening Drill

Flattens uneven alveolar bone surface and removes gingiva residue

■ Product Code

Code	UBFD 5127M

Unit: mm

3 Guide Drill

Forms a hole on the bone to facilitate initial drilling

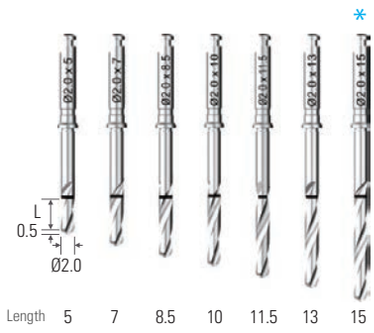
■ Product Code

Diameter	Ø2.0
Code	UGD 2030M

Unit: mm

4 Initial Drill

Forms a hole (osteotomy site) on the cortical bone



■ Product Code

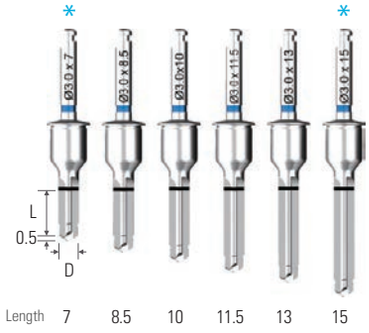
Length \ Diameter	Ø2.0
5	ISD 2005M
7	ISD 2007M
8.5	ISD 2008M
10	ISD 2010M
11.5	ISD 2011M
13	ISD 2013M
15	ISD 2015M*

* Optional items

Unit: mm

5 Final Drill

Expands the drill hole untill final drilling



■ Product Code

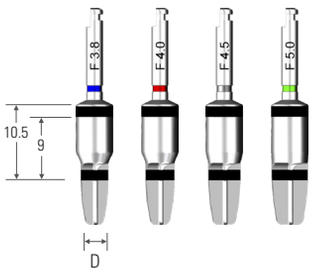
Length \ Diameter	Ø2.7	Ø3.0	Ø3.2	Ø3.8	Ø4.3
7	USD 2707M	USD 3007M*	USD 3207M*	USD 3807M*	USD 4307M*
8.5	USD 2708M	USD 3008M	USD 3208M	USD 3808M	USD 4308M
10	USD 2710M	USD 3010M	USD 3210M	USD 3810M	USD 4310M
11.5	USD 2711M	USD 3011M	USD 3211M	USD 3811M	USD 4311M
13	USD 2713M	USD 3013M	USD 3213M	USD 3813M	USD 4313M
15	USD 2715M*	USD 3015M*	USD 3215M*	USD 3815M*	USD 4315M*

* Optional items

Unit: mm

6 Profile Drill

Prevents excessive torque by expanding the cortical bone on the D1 and D2 bone



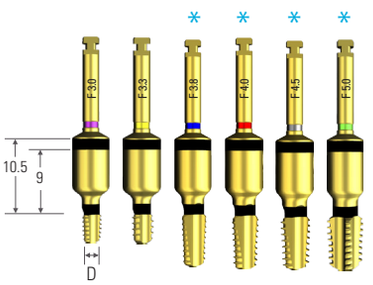
■ Product Code

Diameter	Ø3.8	Ø4.0	Ø4.5	Ø5.0
Code	GPD 3805M	GPD 4005M	GPD 4505M	GPD 5005M

Unit: mm

7 Tap Drill

Prevents excessive torque on the D1 and D2 bone



■ Product Code

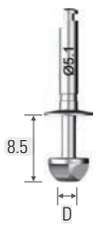
Diameter		Code
UFII Narrow	Ø3.0	GNTD 3015
	Ø3.3	GNTD 3315
UFII Regular	Ø3.8	GTD 3815*
	Ø4.0	GTD 4015*
	Ø4.5	GTD 4515*
	Ø5.0	GTD 5015*

* Optional items

Unit: mm

8 Abutment Profile Drill

Forms an emergency profile after removing the cortical bone when placing the abutment



■ Product Code

Diameter	Ø3.0
Code	UAPD 5122M

Unit: mm

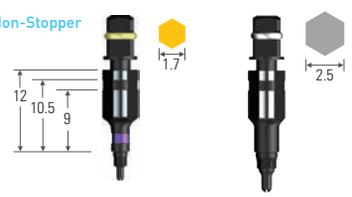
9 Implant Connector

Place an implant in accordance with the pre-planned fixture depth and inner hex direction

UF(II) Narrow Recommended number of uses is 20 times.

Caution Do not make a torque value over 50Ncm

Non-Stopper

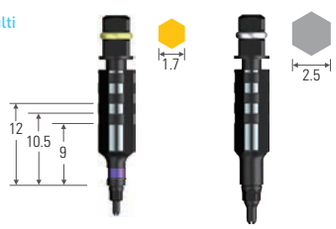


■ Product Code

Size	UFII Narrow	UFII Regular
Code	GNIC 5309	GIC 5309

Unit: mm

Multi



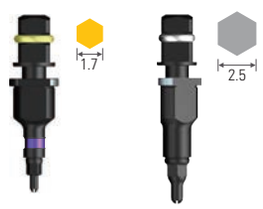
■ Product Code

Size	UFII Narrow	UFII Regular
Code	GNIC 5317*	GIC 5317*

* Optional items

Unit: mm

Stopper



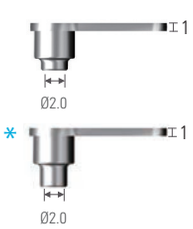
■ Product Code

Size	UFII Narrow	UFII Regular
Code	GNIC 5309ST	GIC 5309ST

Unit: mm

Drill Tube

To fix the guide drill and the initial drill with stability



■ Product Code

Code	UDT 20
	UDTE 20*

* Optional items

Ratchet Wrench

To place the fixture with an implant connector

■ Product Code

Code	DRW 070

Drill Extension

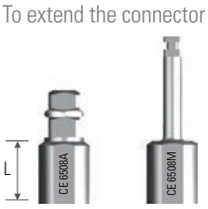
To extend a neck of drill.

■ Product Code

Code	DE 3507M

Connector Extension

To extend the connector length during implant placement



Ratchet Machine

■ Product Code

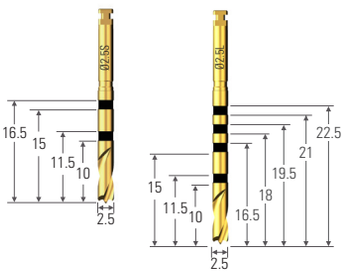
Length \ Type	Ratchet	Machine
8	CE 6508A	CE 6508M
12	CE 6512A	CE 6512M

Unit: mm

Point Straight Drill & Drill Tube

This drill keeps the right drilling path when you use an initial drill on **immediate extraction socket area.**

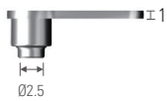
※Recommended drilling RPM is 1200 and must irrigate while drilling.



■ Product Code

Code	PSD 2518
	PSD 2525

Unit: mm

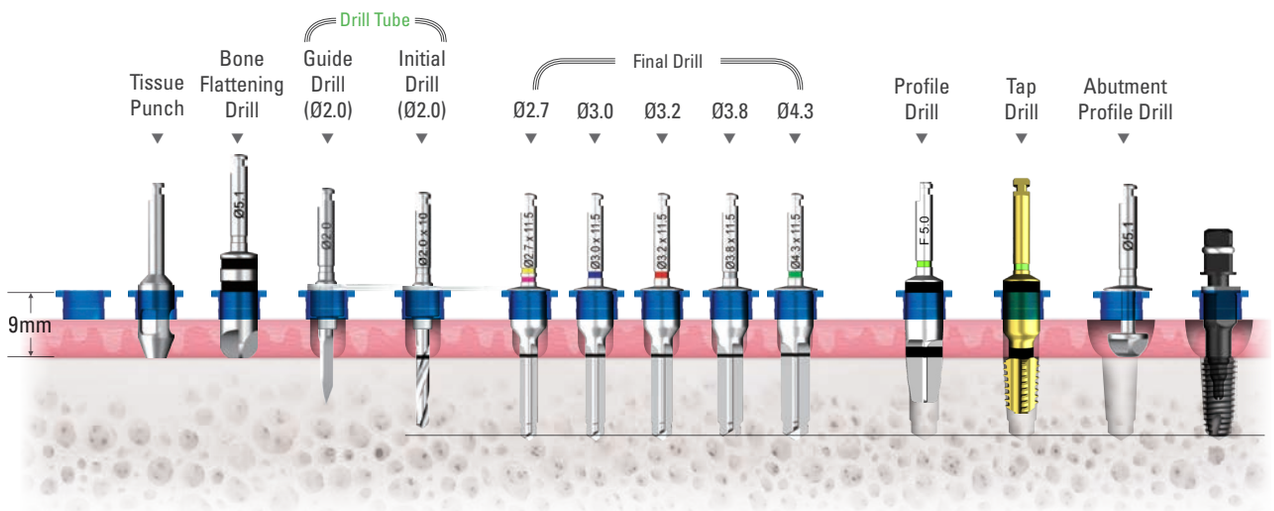


■ Product Code

Code	UDT 25

Unit: mm

Surgical Protocol

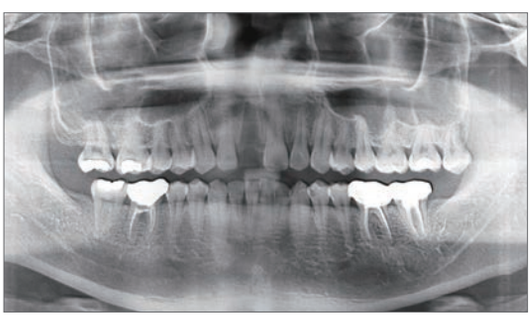


		Tissue Punch	Bone Flattening Drill	Guide Drill (Ø2.0)	Initial Drill (Ø2.0)	Final Drill Ø2.7	Ø3.0	Ø3.2	Ø3.8	Ø4.3	Profile Drill	* Optional Tap Drill	Abutment Profile Drill
Ø3.0	Soft	▶	▶	▶	▶	▷							▷
	Medium	▶	▶	▶	▶	▶							▷
	Hard	▶	▶	▶	▶	▶						▶	▷
Ø3.3	Soft	▶	▶	▶	▶	▷							▷
	Medium	▶	▶	▶	▶	▶							▷
	Hard	▶	▶	▶	▶	▶						▶	▷
Ø3.8	Soft	▶	▶	▶	▶	▶	▷						▷
	Medium	▶	▶	▶	▶	▶	▶				▶		▷
	Hard	▶	▶	▶	▶	▶	▶				▶	▶	▷
Ø4.0	Soft	▶	▶	▶	▶	▶	▷	▷					▷
	Medium	▶	▶	▶	▶	▶	▷	▶			▶		▷
	Hard	▶	▶	▶	▶	▶	▷	▶			▶	▶	▷
Ø4.5	Soft	▶	▶	▶	▶	▶	▷	▶	▷				▷
	Medium	▶	▶	▶	▶	▶	▷	▶	▶		▶		▷
	Hard	▶	▶	▶	▶	▶	▷	▶	▶		▶	▶	▷
Ø5.0	Soft	▶	▶	▶	▶	▶	▷	▶	▶	▷			▷
	Medium	▶	▶	▶	▶	▶	▷	▶	▶	▶	▶		▷
	Hard	▶	▶	▶	▶	▶	▷	▶	▶	▶	▶	▶	▷

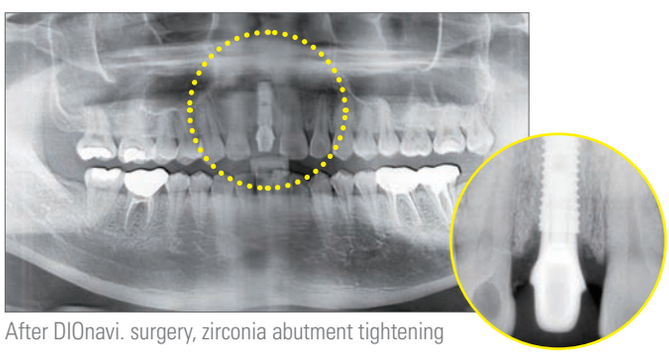
Overcome the limitation of maxillary anterior placement through the plan.

Dr. Dong, Do-eun

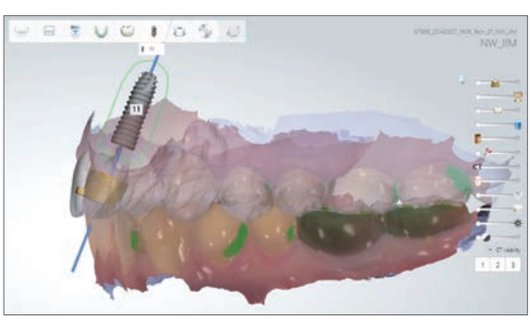
After UF(II) HSA implant placement, with GBR grafting Bio-Oss and transplanting connective tissue at the same time it retains soft-tissue and hard-tissue of labio. SCRP type final prosthesis using full zirconia crown



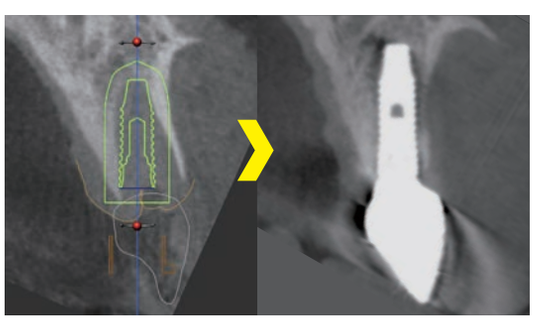
#11 Pre-operational panorama



After DIOnavi. surgery, zirconia abutment tightening



Implant Planning



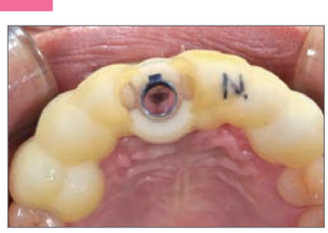
Implant Planning CT after 3months

◆ **Perio Test_** If Applicable

Date	OP-d	3W	5W	7W	12W	14W
#11	78~81	61	70	75	82	86

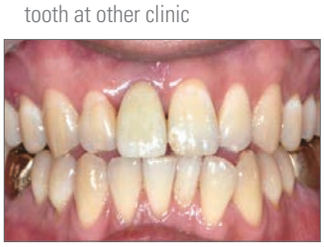
DIOnavi. surgery procedure

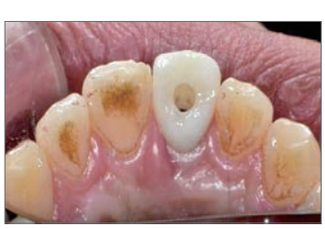
1) Patient visits after extraction of tooth at other clinic



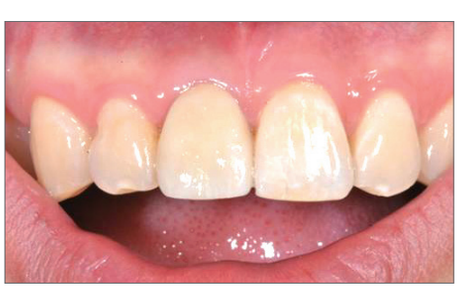
2) Surgical guide placement

3) Zirconia Abutment tightening





4) Provisional restoration placement



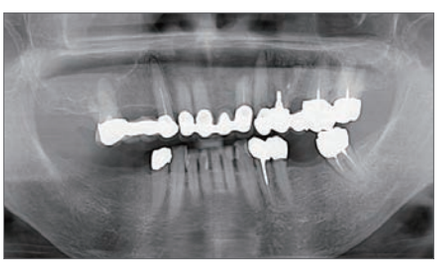
Final prosthesis placement (after 3 months)

Immediate implant placement after extraction with minimal insicion and bone grafting

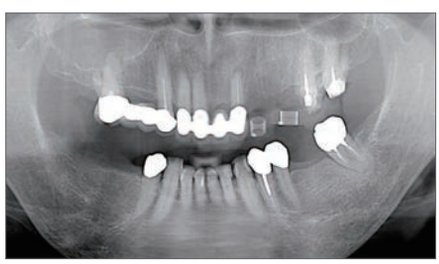
Dr. Lee, Hyang-ryeon

[75 years old, Female]

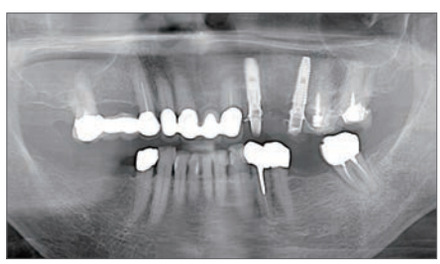
Maxilla #23, 24, 26 and 27 with 5 unit bridge. Patient was aware that #23, 24 should be extracted but mainly concerned about removal of the bridge and missing #23,24 for the duration of healing process



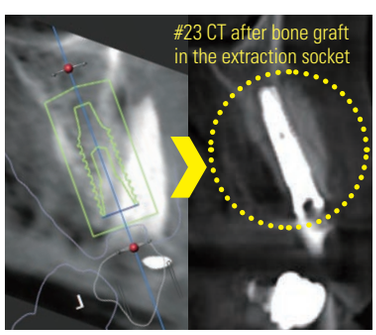
Pre-operational panorama



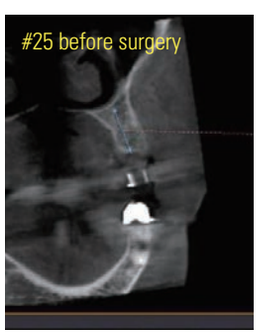
#Panorama after #23,24 extraction

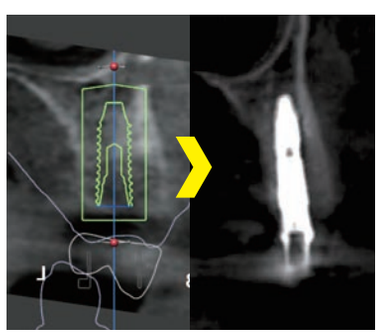


Panorama after DIOnavi. surgery



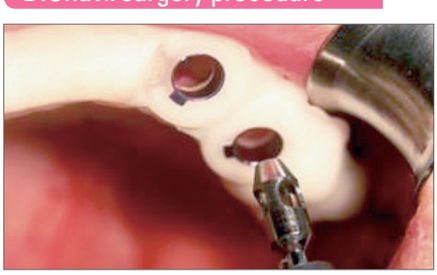
#23 UF(II) HSA Implant Ø4.0x13mm





#25 UF(II) HSA Implant Ø4.0x13mm

DIOnavi. surgery procedure



1) Sitting of surgical guide and removal of soft tissue with tissue punch

2) Connect the healing abutment and proceed with bone grafting in the extraction socket.

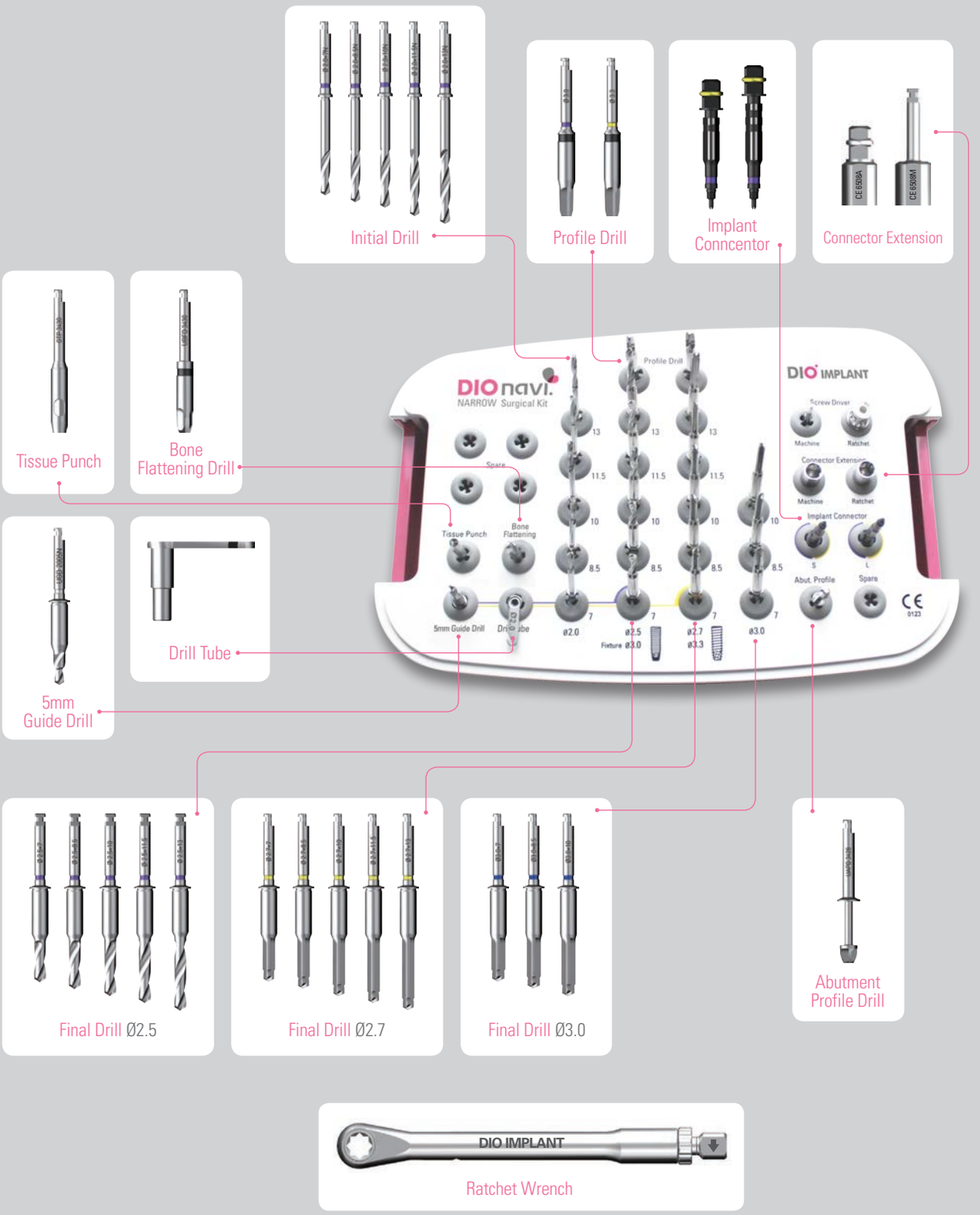
3) Customized Abutment & provisional crown setting

4) Provisional crown setting

5) Provisional crown after 1 week of surgery

DIOnavi. Narrow Surgical Kit Order Code_ UF 14

Outstanding cutting forces and durability.
Available for UF(II) Narrow system



1 Tissue Punch

Stable gingiva removal is possible with a fixed blade inside the tissue punch (Flapless Surgery)

■ Product Code

Diameter	Ø3.0
Code	GTP 3430

Unit: mm

2 Bone Flattening Drill

Flattens uneven alveolar bone surface and removes gingiva residue

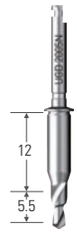
■ Product Code

Code	UBFD 3430

Unit: mm

3 Guide Drill

Forms a hole on the bone to facilitate initial drilling



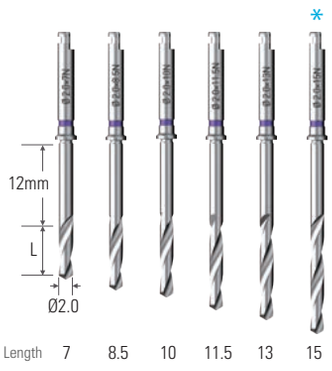
■ Product Code

Diameter	Ø2.0
Code	UGD 2005N

Unit: mm

4 Initial Drill

Forms a hole (osteotomy site) on the cortical bone



■ Product Code

Length \ Diameter	Ø2.0
7	ISD 2007N
8.5	ISD 2008N
10	ISD 2010N
11.5	ISD 2011N
13	ISD 2013N
15	ISD 2015N*

* Optional items Unit: mm

5 Tap Drill

Prevents excessive torque on the D1 and D2 bone

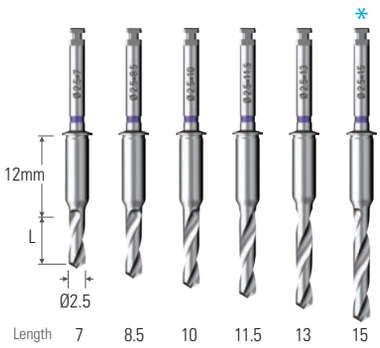
■ Product Code

Diameter	Code
Ø3.0	GNTD 3018DN*
Ø3.3	GNTD 3318DN*

* Optional items Unit: mm

6 Final Drill

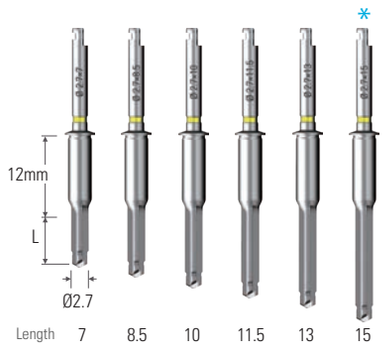
Expands the drill hole untill final drilling



■ Product Code

Length \ Diameter	Ø2.5
7	USD 2507DN
8.5	USD 2508DN
10	USD 2510DN
11.5	USD 2511DN
13	USD 2513DN
15	USD 2515DN*

* Optional items Unit: mm



■ Product Code

Length \ Diameter	Ø2.7
7	USD 2707DN
8.5	USD 2708DN
10	USD 2710DN
11.5	USD 2711DN
13	USD 2713DN
15	USD 2715DN*

* Optional items Unit: mm

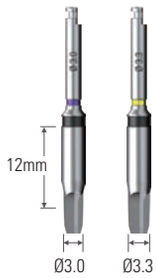
■ Product Code

Length \ Diameter	Ø3.0
7	USD 3007DN
8.5	USD 3008DN
10	USD 3010DN
11.5	USD 3011DN*

* Optional items Unit: mm

8 Profile Drill

Prevents excessive torque by expanding the cortical bone on the D1 and D2 bone



▪ Product Code

Diameter	Code
Ø3.0	GNPD 3005DN
Ø3.3	GNPD 3305DN

Unit: mm

9 Abutment Profile Drill

Forms an emergency profile after removing the cortical bone when placing the abutment

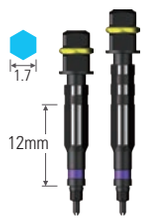
▪ Product Code

Code	UAPD 3428

Unit: mm

10 Implant Connector

To places an implant in accordance with the pre-planned fixture depth and inner hex direction



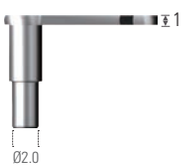
▪ Product Code

Length	Code
15	GNIC 3615
18	GNIC 3618

Unit: mm

Drill Tube

To fix the initial drill without shaking motion



▪ Product Code

Code	UDTE 10

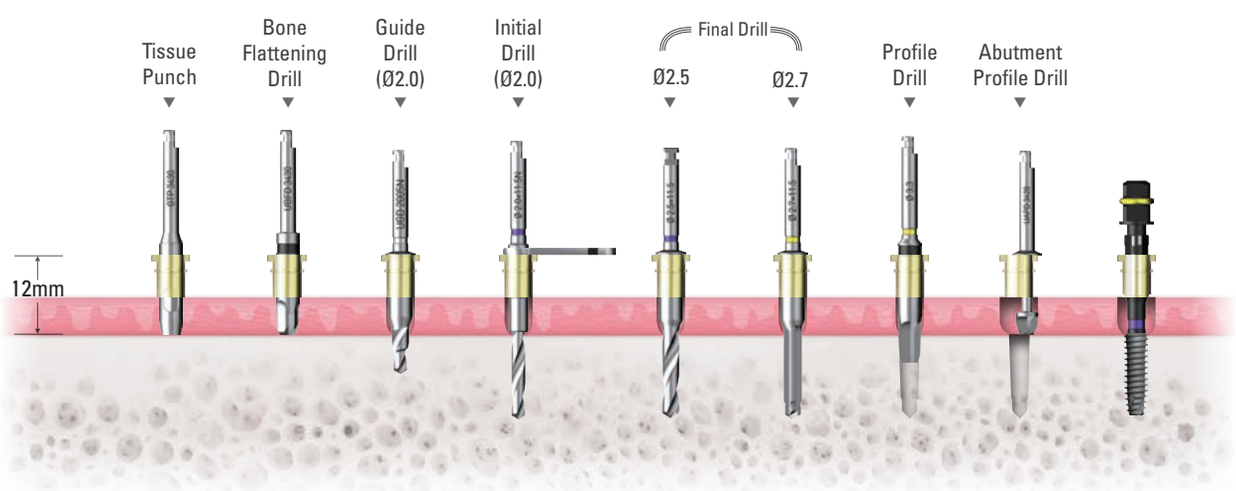
Ratchet Wrench

To place the fixture with the use of an implant connector

▪ Product Code

Code	DRW 070

Surgical Protocol



	Bone Density	Tissue Punch	Bone Flattening Drill	Guide Drill	Initial Drill (Ø2.0)	Final Drill Ø2.5	Final Drill Ø2.7	Final Drill Ø3.0	Profile Drill	Abutment Profile Drill
Ø3.0	Soft	▶	▶	▶	▶	▷				▷
	Medium	▶	▶	▶	▶	▶				▷
	Hard	▶	▶	▶	▶	▶			▶	▷
Ø3.3	Soft	▶	▶	▶	▶		▷			▷
	Medium	▶	▶	▶	▶		▶			▷
	Hard	▶	▶	▶	▶		▶		▶	▷

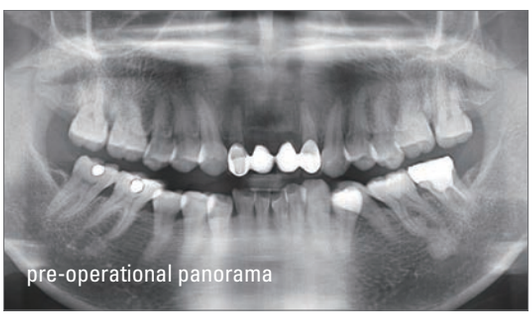
Minimally invasive implant placement with DIOnavi.

Dr. Kang, Jaeseok

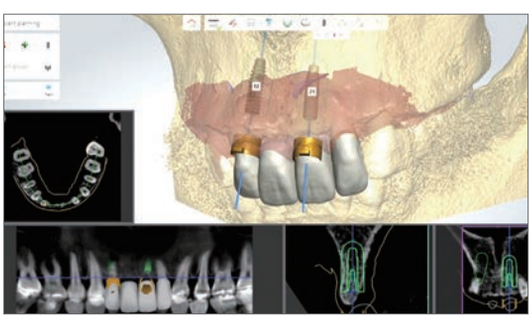
[Female, 49 years old] Maxillary anterior bridge / Insufficient remaining bone / Scared at Implant surgery

After DIOnavi. surgery, planning temporary prosthetic considering aesthetic factor on the day of surgery.

#12 Extraction and Implant placement, fitting temporary prosthetics / Bone width 4.5mm → UF(II) Narrow Ø3.3 Fixture
#21 Implant placement and fitting temporary prosthetic / Bone width 4.5mm → UF(II) Narrow Ø3.3 Fixture


pre-operational panorama


Panorama after DIOnavi. Surgery


Implant planning
Merging CT Scan Data & Trios Scan Data


#21, Bone width 4.5mm
UF(II) HSA Implant Ø3.3×13mm

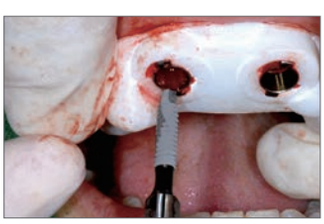

#12, Bone width 4.5mm
UF(II) HSA Implant Ø3.3×13mm

DIOnavi. Surgery procedure


1) Removal of bridge and extraction #12 tooth


2,3) Surgical guide, customized abutment and provisional crown are designed based on CT scan data & Trios scan data


4) Use bone flattening drill after fitting surgical guide for the narrow alveolar bone


5) UF(II) 3313S fixture (insertion)


6) Customized abutment (tightening)


Completed prosthetics on the day of surgery

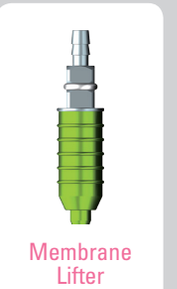
Flapless Crestal Sinus Kit

Order Code_ **SMK 02**

This kit enables flapless maxillary sinus surgery by crestal approach.

Ø2.0 Initial Drill

Ø2.7 Straight Drill

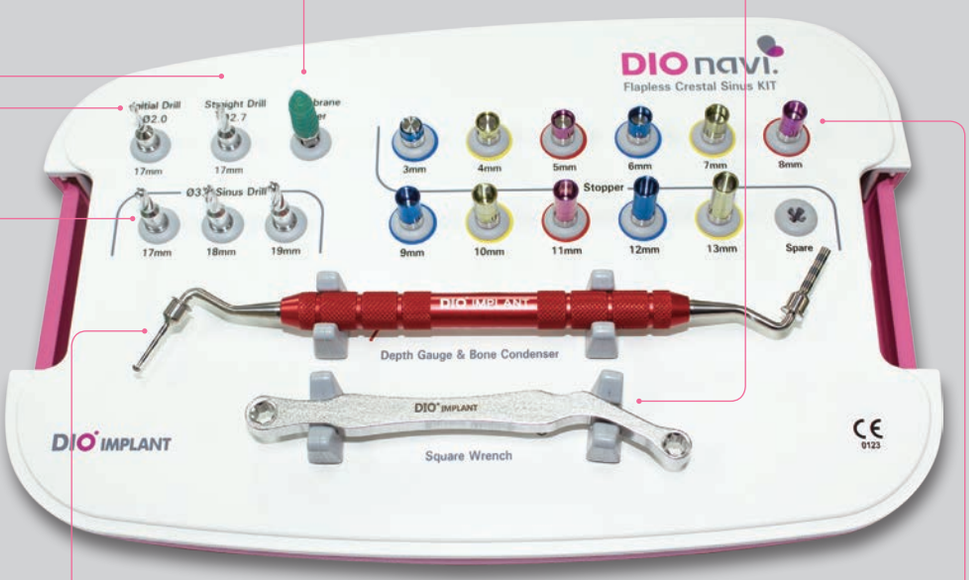


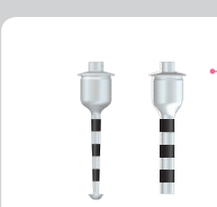
Membrane Lifter

One time use only

Square Wrench

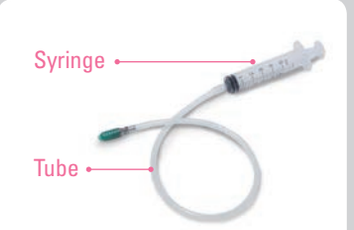
Ø3.2 Sinus Drill





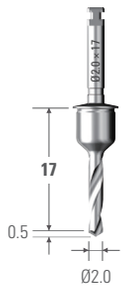
Depth Gauge & Bone Condenser

Stopper



1 Ø2.0 Initial Drill

Forms a guide hole for an initial drill penetration.
Always use with stopper



▪ Product Code

Diameter	Code
Ø2.0	GSID 2017

Unit: mm

2 Ø2.7 Straight Drill

Expands a drill hole before using a round drill.
Always use with stopper

▪ Product Code

Diameter	Code
Ø2.7	GSD 2717

Unit: mm

3 Membrane Lifter

Water pressure method with a saline solution

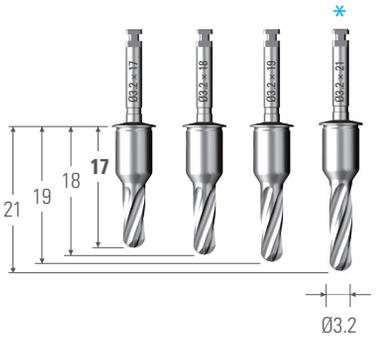
▪ One time use only

▪ Product Code

Code	WML 6627

4 Ø3.2 Sinus Drill

The end of the drill is designed in a round shape not to damage the maxillary sinus membrane.
Always use with stopper, and low speed (50rpm)



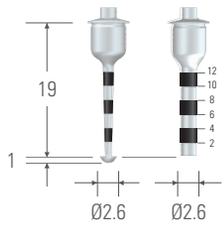
▪ Product Code

Length	Ø3.2
17	GSRD 3217
18	GSRD 3218
19	GSRD 3219
21	GSRD 3221*

* Optional items Unit: mm

5 Depth Gauge & Bone Condenser

- Checks if sinus membrane has been opened
- To insert bone grafting materials to the sinus through the drill hole.
  Always use with stopper.



▪ Product Code

Code	GSDB 2619

6 Stopper

Must use stopper to adjust drill depth.
Stopper depth is laser marked and color coded with anodizing color per length.

Syringe

Capacity: 5ml/cc,
Gradation in size: 0.2ml/cc

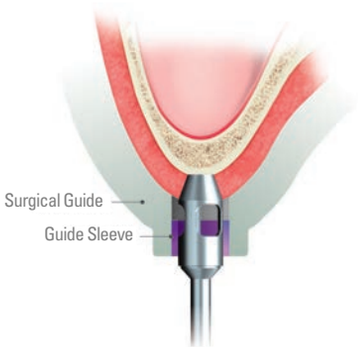
▪ One time use only

Tube

Translucence silicone.
Outside(Φ4.0), Inside(Φ2.0), Length(300mm)

▪ One time use only

▶ Buy syringe and tube considering surgery case



▪ Cleaning and anesthesia

Spit out the 0.12% chlorhexidine solution after holding it in the mouth for about a minute.
Rub the surgery area and the surrounding area with gauze dipped in
0.12% chlorhexidine solution and rinse off.

Important It must be cleansed because the implant surface touches the tissue during placement.

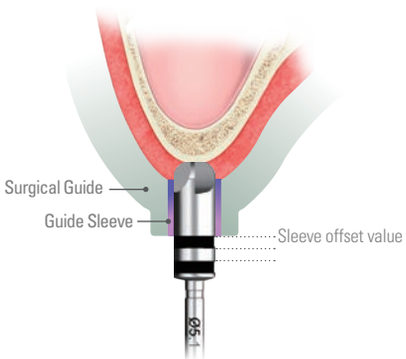
Caution Do not sterilize the surgical guide in an autoclave because it can be mutated by heat but by leaving it in the solution of 70% alcohol and 0.12% chlorhexidine mixed in a 9:1 ratio for 20 minutes. It may mutate the resin if it is left in the solution for too long.

▪ Surgical guide sitting

Correctly sit the surgical guide/ guide sleeve in mouth

▪ Gingiva removal Tissue Punch

Remove the gingiva using the tissue punch until it reaches the bone level



▪ Bone Flattening

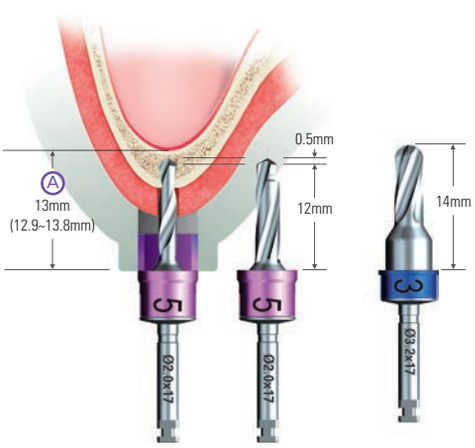
Use bone flattening Drill on uneven alveolar bone to ease next drilling process.

Important Drilling in accordance with sleeve offset value.

▪ Drilling Initial Drill / Straight Drill

After early drilling with initial drill. Expand the drill hole with straight drill.
The depth of the drill is based on the bone thickness below the maxillary sinus.
Drill just before puncturing the maxillary sinus.

Caution Always use stopper with low speed drillling (50rpm)



Choose the right stopper

Ⓐ Section Length (mm)		11	12	13
Stopper Marking	Initial Drill Ø2.0 / Ø2.7	7	6	5
	Sinus Drill Ø3.2	5	4	3

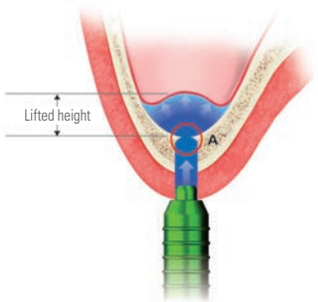
* please refer to page 20 for a detailed protocol

▪ Maxillary sinus puncture Sinus Drill

Drill 2mm deeper

Important Always use a stopper when adjusting the depth. Low speed drilling (50rpm)

Note For a sinus drill, you can adjust the depth by both the stopper and the drill length.



▪ Sinus membrane lift Membrane Lifter

Remove the surgical guide and inject the saline solution into the drill hole using the membrane lifter.

Caution Inject 0.4cc after you feel the pressure.
(excluding the initial amount of 0.2~0.5cc)

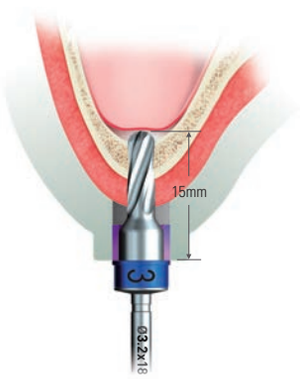
Note ※**Case where sinus bone(A) is opened well**

You can feel the pressure when injecting the saline solution and after the membrane is lifted, the pressure drops and saline is injected in the space.

※**Case where sinus bone(A) s not opened well**

After you feel the pressure, the nozzle is pushed out and no more pressure can be forced.
→Make a second attempt after drilling 1mm deeper with a sinus drill & Stopper.

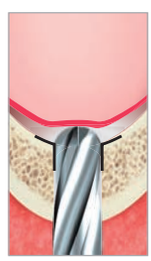
Perform saline aspiration with a nozzle still in the hole.
If negative pressure can be felt after the injected saline and blood mix together to form an aspiration, the membrane is safely lifted.



▪ Sinus bone expansion Sinus Drill (2nd)

After lifting the sinus membrane, drill 1mm deeper with a sinus drill to expand the entrance to the sinus.

Caution Always use a stopper to adjust the depth



▪ Inject bone graft material Bone condenser

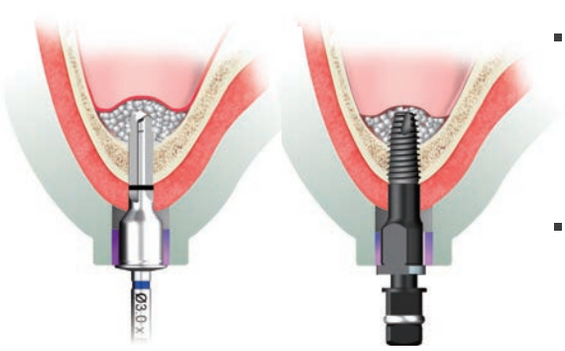
By using only a bone condenser without the use of a surgical guide, inject the bone graft materials into the drill hole up into the sinus.

Caution Always use a stopper to adjust the depth

Note Spongy type bone graft material recommended for DIOnavi.
In the case of immediate placement after bone graft, implant helps to keep the space inside the sinus with the spongy type bone graft material and promotes bone formation.

Decide on the volume of bone graft material

Sinus membrane lifted height		1	2	3	4	5	6	7	8	9	10
Bone graft GBR (CC)	For immediate implant placement	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
	For delayed implant placement	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3.0



▪ Final Drilling Final Drill

After lifting the sinus membrane, drill 2mm deeper with a sinus drill and expand the entrance of the sinus bone.

Note During this process, bone materials are diffused.

▪ Implant placement

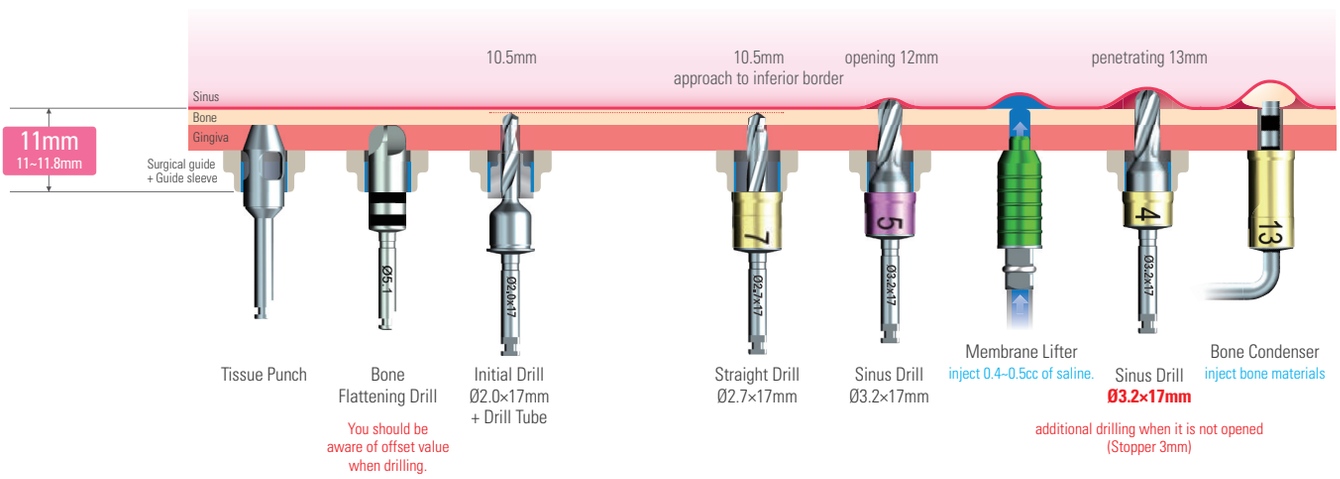
Place the implant using a surgical guide
The implant that entered the sinus, disperses the bone graft materials.
If the amount of remaining bone is more than 4mm, initial fixation can be achieved, and temporary prosthetic can be placed after immediate placement

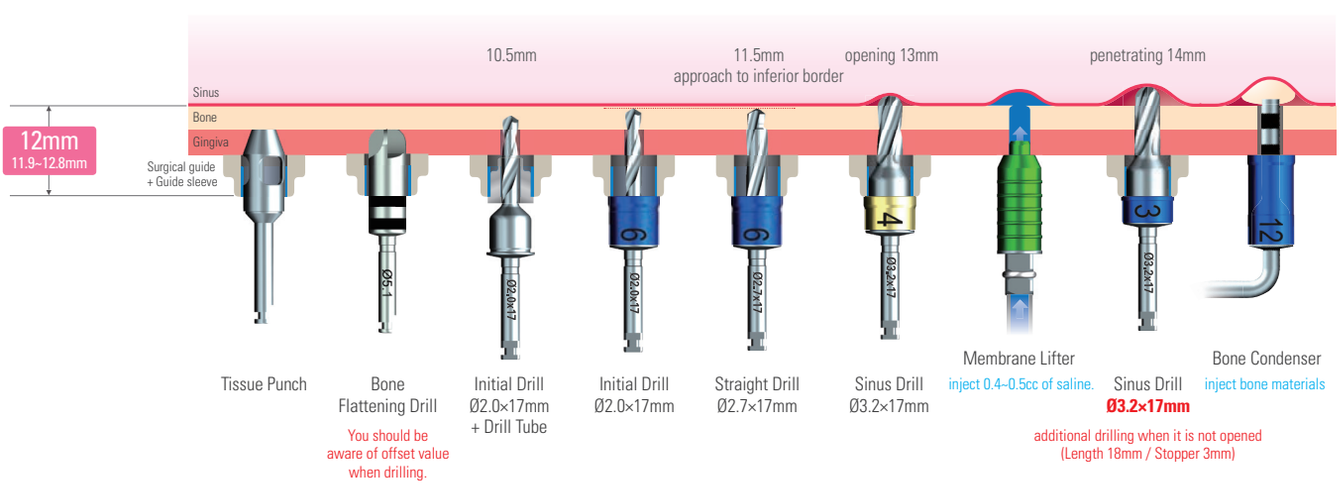
Caution If the remaining bone is very thin – less than 3mm – and initial fixation cannot be achieved, only perform sinus bone graft and do not proceed immediate implant placement.

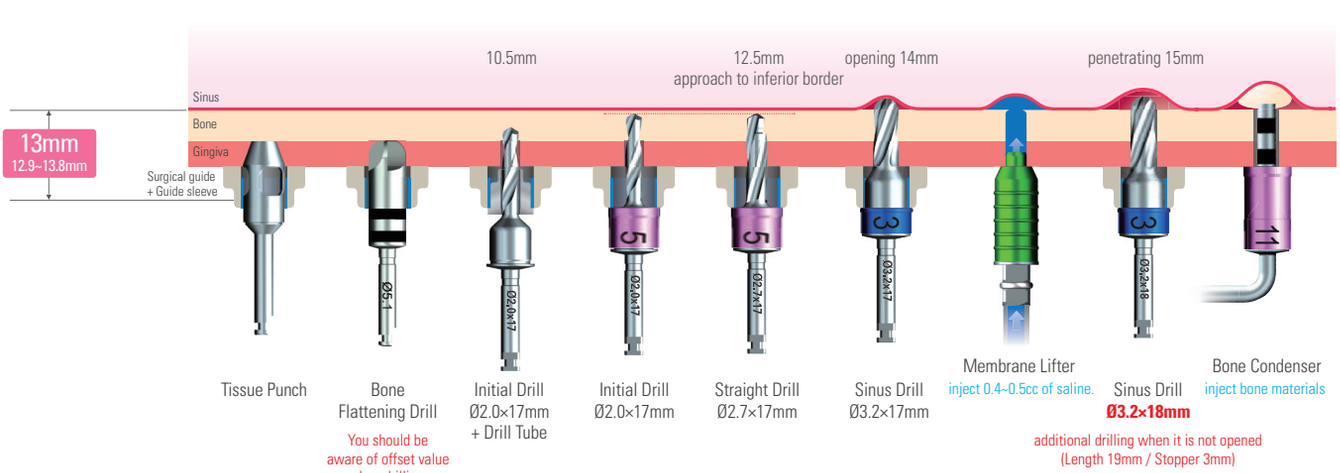
Flapless Crestal Sinus Kit Protocol

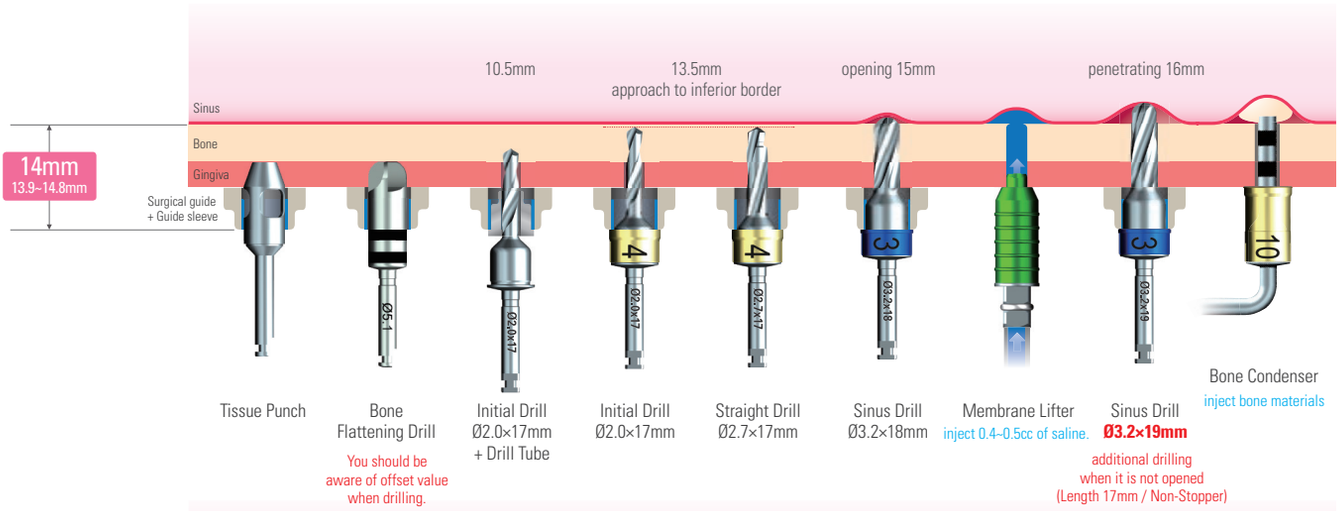
Surgical protocol up to sinus bone expansion based on the length from the top of the sleeve to the sinus

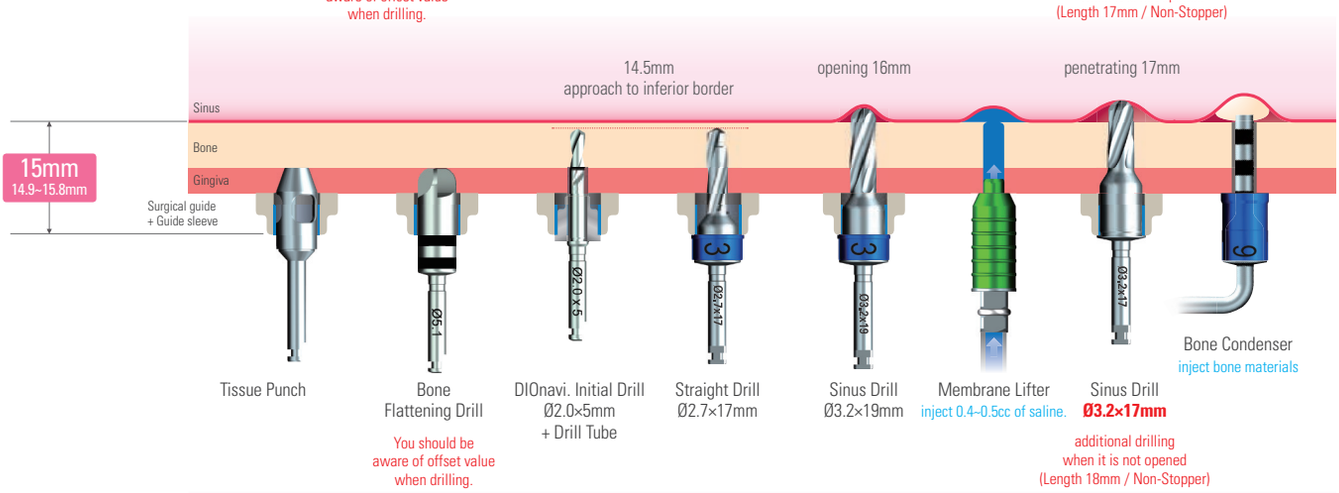
Caution Please check the planning file closely before surgery and follow the protocol guide during surgery.

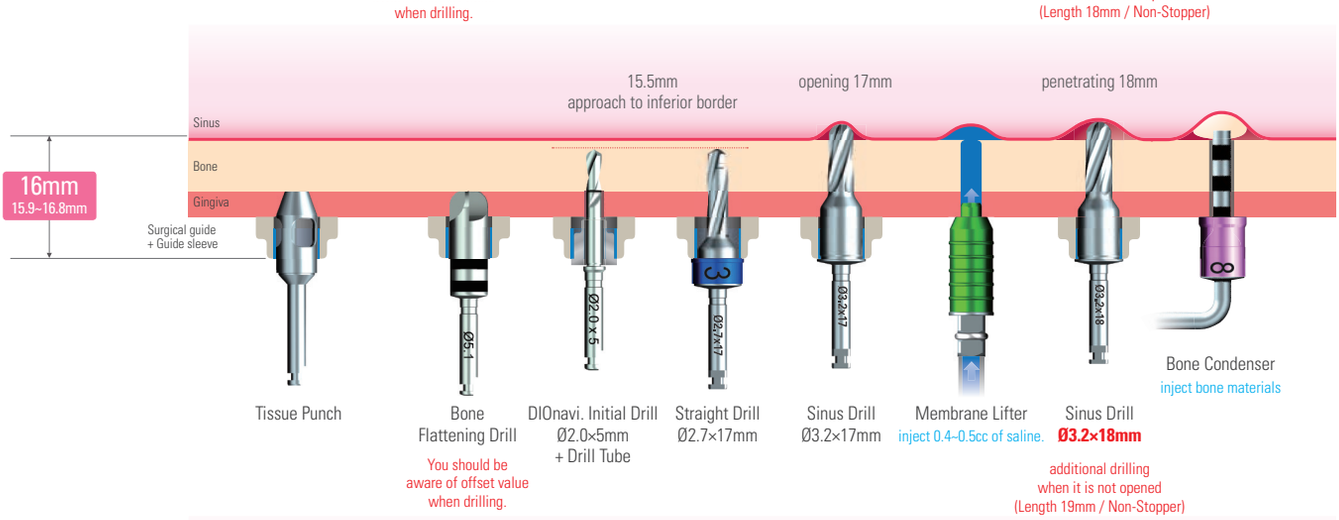


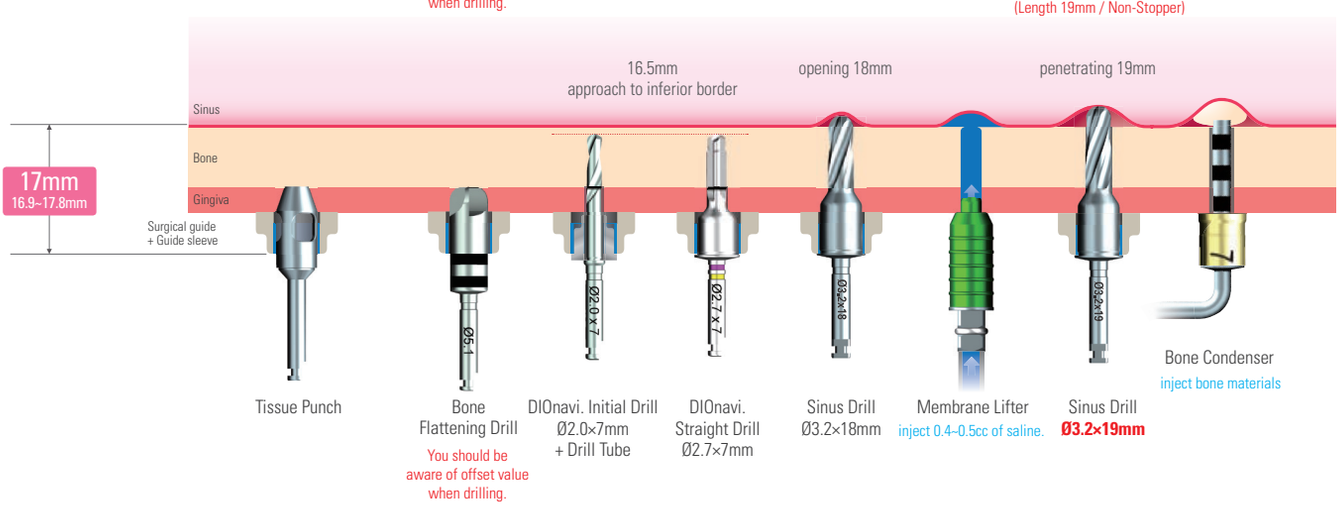





14mm
13.9~14.8mm
Surgical guide
+ Guide sleeve
Sinus
Bone
Gingiva
10.5mm
13.5mm
approach to inferior border
opening 15mm
penetrating 16mm
Ø5.1
Ø2.0×17
4
Ø2.0×17
4
Ø2.7×17
3
Ø3.2×18
3
Ø3.2×19
10
Tissue Punch
Bone
Flattening Drill
You should be
aware of offset value
when drilling.
Initial Drill
Ø2.0×17mm
+ Drill Tube
Initial Drill
Ø2.0×17mm
Straight Drill
Ø2.7×17mm
Sinus Drill
Ø3.2×18mm
Membrane Lifter
inject 0.4~0.5cc of saline.
Sinus Drill
Ø3.2×19mm
additional drilling
when it is not opened
(Length 17mm / Non-Stopper)
Bone Condenser
inject bone materials


15mm
14.9~15.8mm
Surgical guide
+ Guide sleeve
Sinus
Bone
Gingiva
14.5mm
approach to inferior border
opening 16mm
penetrating 17mm
Ø5.1
Ø2.0×5
3
Ø2.7×17
3
Ø3.2×19
Ø3.2×17
9
Tissue Punch
Bone
Flattening Drill
You should be
aware of offset value
when drilling.
DIOnavi. Initial Drill
Ø2.0×5mm
+ Drill Tube
Straight Drill
Ø2.7×17mm
Sinus Drill
Ø3.2×19mm
Membrane Lifter
inject 0.4~0.5cc of saline.
Sinus Drill
Ø3.2×17mm
additional drilling
when it is not opened
(Length 18mm / Non-Stopper)
Bone Condenser
inject bone materials


16mm
15.9~16.8mm
Surgical guide
+ Guide sleeve
Sinus
Bone
Gingiva
15.5mm
approach to inferior border
opening 17mm
penetrating 18mm
Ø5.1
Ø2.0×5
3
Ø2.7×17
Ø3.2×17
Ø3.2×18
8
Tissue Punch
Bone
Flattening Drill
You should be
aware of offset value
when drilling.
DIOnavi. Initial Drill
Ø2.0×5mm
+ Drill Tube
Straight Drill
Ø2.7×17mm
Sinus Drill
Ø3.2×17mm
Membrane Lifter
inject 0.4~0.5cc of saline.
Sinus Drill
Ø3.2×18mm
additional drilling
when it is not opened
(Length 19mm / Non-Stopper)
Bone Condenser
inject bone materials


17mm
16.9~17.8mm
Surgical guide
+ Guide sleeve
Sinus
Bone
Gingiva
16.5mm
approach to inferior border
opening 18mm
penetrating 19mm
Ø5.1
Ø2.0×7
Ø2.7×7
Ø3.2×18
Ø3.2×19
7
Tissue Punch
Bone
Flattening Drill
You should be
aware of offset value
when drilling.
DIOnavi. Initial Drill
Ø2.0×7mm
+ Drill Tube
DIOnavi.
Straight Drill
Ø2.7×7mm
Sinus Drill
Ø3.2×18mm
Membrane Lifter
inject 0.4~0.5cc of saline.
Sinus Drill
Ø3.2×19mm
Bone Condenser
inject bone materials

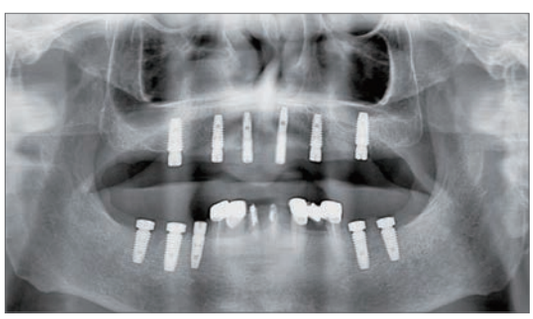
Edentulous implant surgery with maxillary sinus lift

Dr. Hyunrak Son

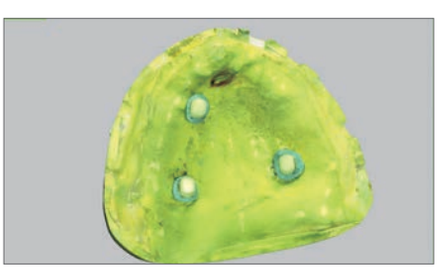
[Male, 66years old] Complete denture on maxilla, and it has been in use for more than 10 years.
Placed 6 implants and planned the over-denture which doesn't cover the plate. Reason being, there can be an esthetic issue with soft tissue due to absorption of anterior bone cause by the fixed prosthesis.

#16, 26 UF(II) ø5.0 X 10.0 mm Fixture Insertion, #26 is done with maxillary sinus lift
#14, 24 UF(II) ø4.5 X 10.0 mm Fixture | #12, 22 UF(II) ø3.8 X 11.5 mm Fixture

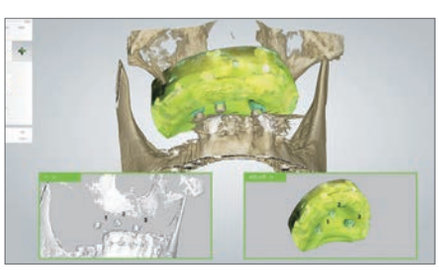
Pre-operational panorama



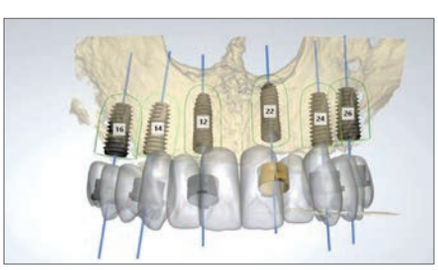
Panorama after DIOnavi. Surgery



Scanning the model and template.
There are attached markers.

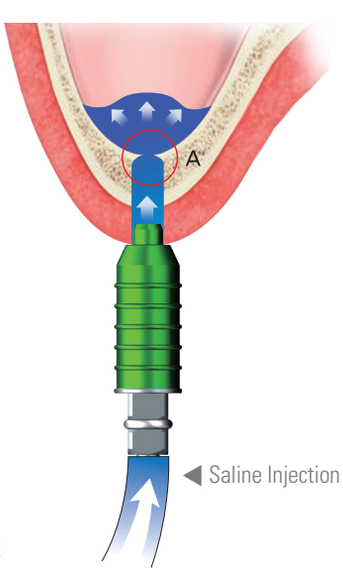


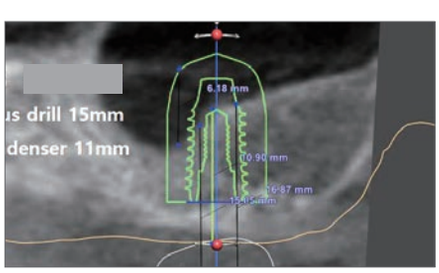
CT data & Trios data merging

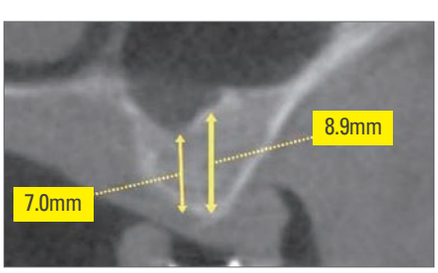


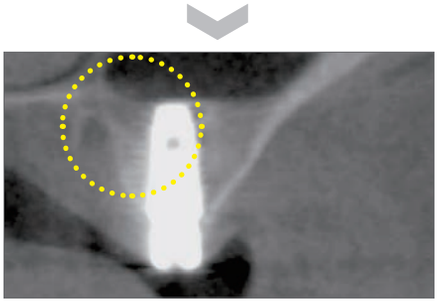
Guide surgery planning

DIOnavi. Surgery procedure



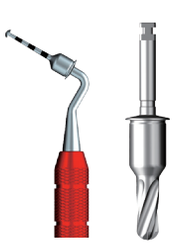




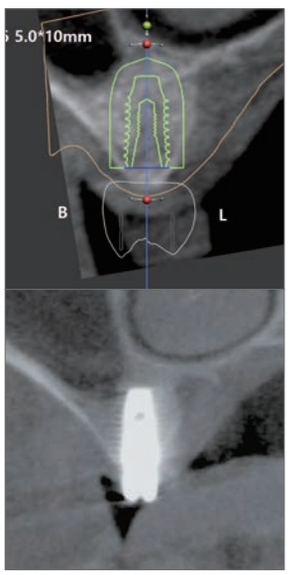


#26 Flapless maxillary sinus lift surgery

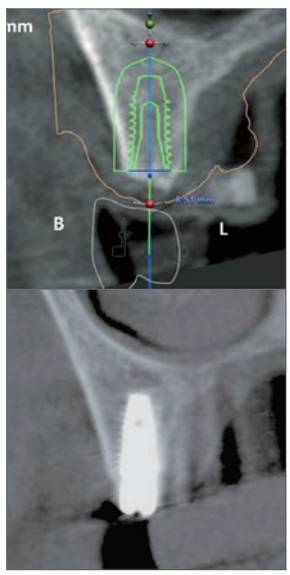
- Sinus Drill 15mm
- Bone Condenser 11mm



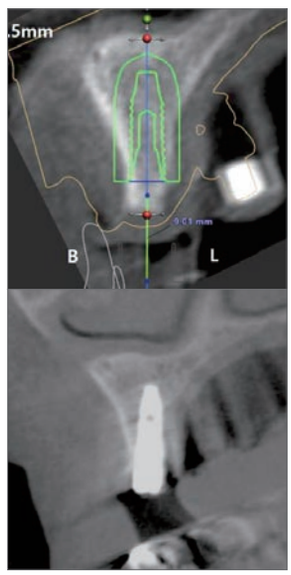
※ **CT data : Surgery Plan vs After Surgery**



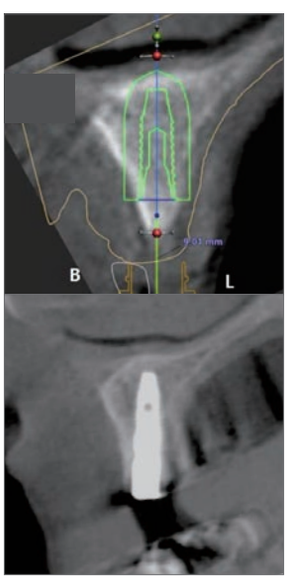
#16
UF(II) HSA ø5.0 X 10.0 mm



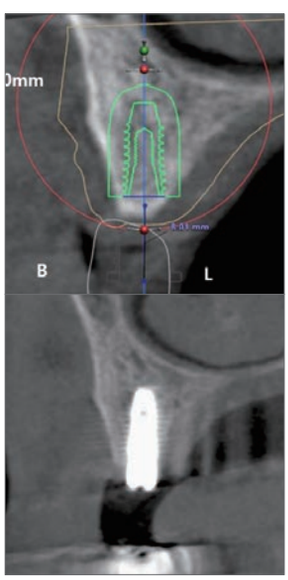
#14
UF(II) HSA ø4.5 X 10.0 mm



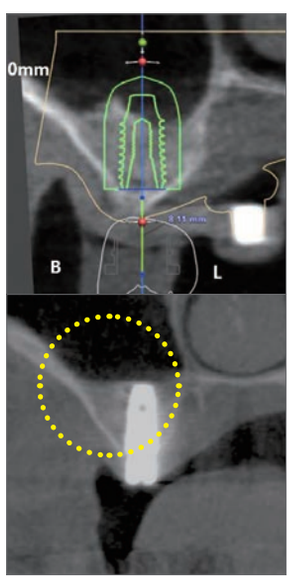
#12
UF(II) HSA ø3.8 X 11.5 mm



#22
UF(II) HSA ø3.8 X 11.5 mm



#24
UF(II) HSA ø4.5 X 10.0 mm



#26
UF(II) HSA ø5.0 X 10.0 mm

※ **Right after surgery**

DIOnavi. Surgical Guide Fix / Anchor Kit Order Code_ **SGF 02**

Connect **Guide Fix** or fixture after placing implant and insert **Fix Pin** after initial drilling or use **Anchor Screw** to fix surgical guide in edentulous cases or free-end case

1 Surgical Guide Fix Pin

Use Guide Fix Pin after drilling ø2.0 to fix the surgical guide.

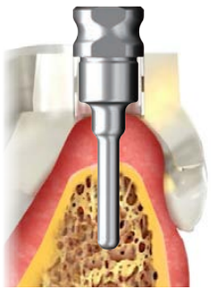
▪ Product Code

Code	SGFP 2008

Subject of advice

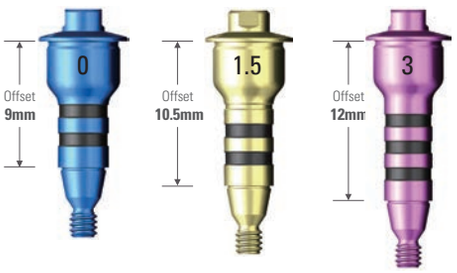
※ Using Bone Flattening Drill can reduce interference between bone and gingiva.

※ Regardless of offset, it is used after ø2.0x8.5mm drilling.



2 Surgical Guide Fix

This is connected with implant fixture to fix the surgical guide.
Color coded with offset value.



▪ Product Code

Offset	Ø6.3
9	SGF 6309
10.5	SGF 6310
12	SGF 6312

Unit: mm

3 Drill Tube

Drill tube minimizes deviation
during the guide/initial drilling process.

▪ Product Code

Code	UDT 20

4 Anchor Drill

Make a hole for an anchor

▪ Product Code

Code	AD 2015

5 Anchor Screw Driver

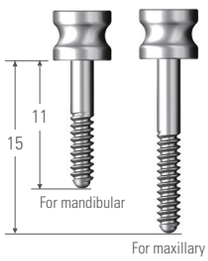
Use only for anchor screw

▪ Product Code

Code	ASD 2513

6 Anchor Screw

Anchor screw directly fix the surgical guide to gingiva



▪ Product Code

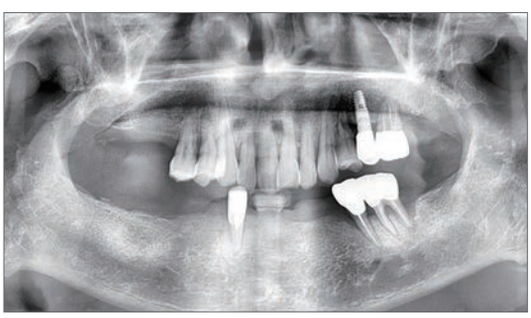
Lenth	Ø1.5
11	ASC 1511
13	ASC 1515

Unit: mm

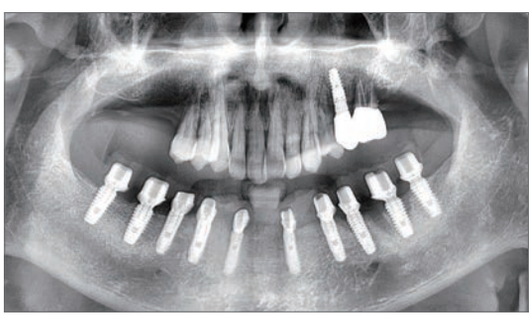
Edentulous & immediate loading case considering final prosthesis overbite

Dr. Chung, Dong-keun

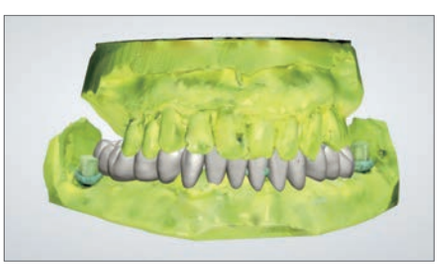
He has been wearing dentures for quite a long time. #34, #35 was affected by bone resorption and periodontitis.
After extraction of #42, 34, 35, total of 8 implant fixtures were placed on the positions. Provisional crowns were delivered.



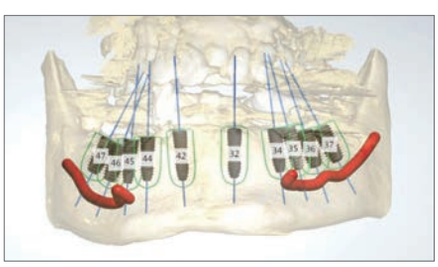
Pre-operational panorama



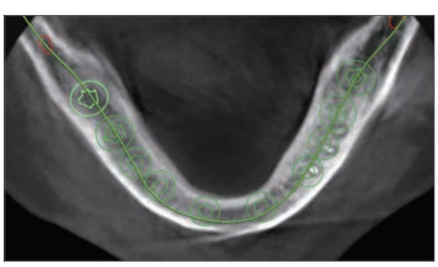
Customized abutment tightening



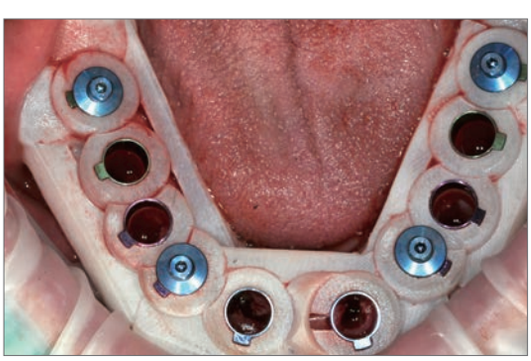
Implant Planning- 1



Implant Planning- 2



Implant Planning- 3



Customized abutment tightening

Provisional crown is placed on the day of surgery

◀ To fix surgical guide on edentulous, Guide Fix is placed after fixture insertion.

Use of Fix Guides in edentulous cases and check the accurate initial drilling.

By using Fix Pins, make sure the surgical guides are "FIXED" well and also check the accuracy of initial drilling.
When the upper part of Fix Pin does not contact with lower part of the guide, it means that the path of initial drilling is inaccurate. By modifying the initial drilling, it will increase not only the accuracy of the surgery but also will increase the predictability.
In this case, place the Fix Pin (tripodism) after initially drilling on the anterior (#31,#41) and on the molar (#36,$46) and proceed with fixture placements on premolars (#34,#44), and molars (#36,#46) and connect the Guide Fix on the fixture for more accurate procedure.

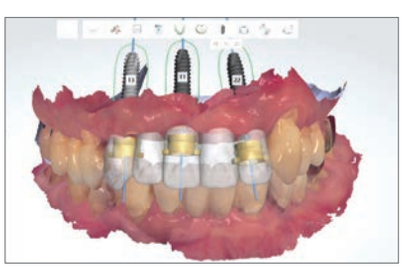
Immediate implant placement with consideration of final prosthesis.

Dr. Lee Dong-ho

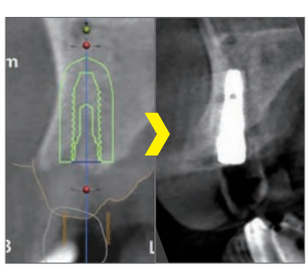
He was suffering from periodontitis on maxillary anterior site. There's extraction of #12~#22,
and placed 3 implants on #13, #11, #22. Provisional crowns are connected on the day of surgery.

Pre-operational panorama

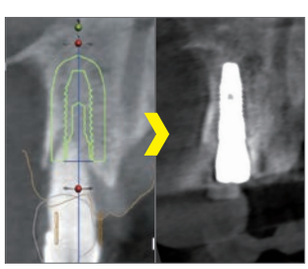
Extraction of #12, 11, 21, 22 and implant placement on #12, 11, 22.



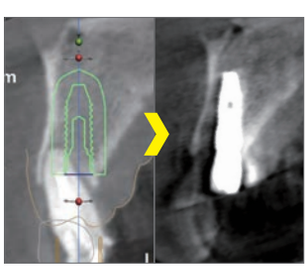
Implant Planning



#13 UF(II)HSA Implant 3.8×11.5mm



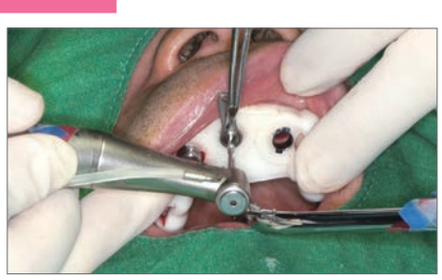
#11 UF(II)HSA Implant 3.8×11.5mm



#22 UF(II)HSA Implant 3.8×11.5mm

Produre using Surgical Guide Fix / Anchor

1) With mobility of adjacent teeth,
do initial drilling on #13 which has healed ridge
and fix the surgical guide with Fix Pin.



2) Place a fixture on #11

3) Connect the Guide Fix with implant fixture on #22

4) Removed Fix Pin on #13 and place the implant

5) Provisional crowns are connected

General Principles of surgical tool management

01 Because all surgical tools are provided in a non-sterile condition, they must be cleansed and sterilized before using.

Caution

Wrong cleansing and sterilizing process causes corrosion and damage to the tools and if used directly, it may be the cause of 2nd infection.

02 The recommended number of use of a drill is 20~30 times based on the bone status, and it must be replaced if the blade has been damaged or transformed.

Caution If damaged drill is used, Heat Necrosis may occur

03 When managing the surgical tool, one must wear a mask and a glove to prevent infection.

Before sterilization

01 To prevent contaminants such as blood, tissue cell or bone residue from attaching to the surface of the instruments, the instruments must be immersed in an antiseptic solution right after use.

02 When using antiseptic solution, to prevent corrosion or bronzing, one must follow directions given by the manufacturer of the concentration of the antiseptic and the duration of the instrument immersion in the antiseptic.

Check

Concentration: completely liquefy the concentrate before placing the instruments in the antiseptic solution.
Immersion Duration: The instruments must not be immersed more than a day

03 The instruments must be fully immersed in the antiseptic solution.

04 For a decrease in sterilizing power and to prevent corrosion, the antiseptic solution must be replaced every day.

Before rinse

To prevent protein from clotting in 45 degrees temperature Celsius, the instruments must be rinsed in running cold water.

Caution

Cleanse the instruments right after preliminary rinse

1 Sterilization

01 Must only use antiseptic solution that is FDA and CE approved, and you must follow the manufacturer's directions

02 When cleansing metal instruments, corrosion free antiseptic solution and cleansing product use is recommended.

03 For safety, one must always wear personal protection gear such as gloves, glasses, and masks.

04 The user has an obligation to be responsible for the sterilization and management of the instrument.

05 Restriction and limitation of the instrument reuse:

- With repetition of cleansing, the life expectancy of all instruments will decrease. If the instruments show corrosion, transformation or discoloring of the marking area, it means that they have exceeded the safety criteria that is required for use.
- Product with a disposable mark cannot be reused.
- Tungsten carbide burs, plastic composition and NiTi instruments can be damaged with hydrogen peroxide, and aluminum material instruments can be damaged by caustic soda solution.
- Acid solution (pH < 6) and alkaline solution (pH > 8) must not be used.

Caution After use, if the contaminants such as residual bone or blood stain are not completely removed, it may lead to corrosion; therefore all separable instruments must all be disassembled before the cleansing process.

2 Cleanse / Dry

01 Contaminants must be completely removed using a soft brush. Do not use a wire brush or stainless material brush, and do not put too much pressure.

02 Immerse the products in the antiseptic solution of their characteristics and clean with an ultrasonic cleaner. However, do not cleanse the different materials together. Also, when immersing the instruments in the ultrasonic cleaner, make sure that the instruments do not touch each other.

03 Make sure that debris is not seen with the naked eye.

- Products that are fractured or transformed must be discarded.
- One should follow the recommendations for the level of concentration or the length of time provided by the manufacturer.
- The antiseptic solution must not include aldehyde, di- or tri-ethanolamines component to control the corrosion.

01 Contaminants must be completely removed using a soft brush. Do not use a wire brush or stainless material brush, and do not put too much pressure.

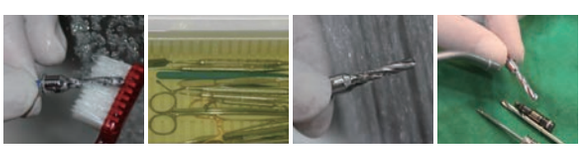
02 Immerse the products in the antiseptic solution of their characteristics and clean with an ultrasonic cleaner. However, do not cleanse the different materials together. Also, when immersing the instruments in the ultrasonic cleaner, make sure that the instruments do not touch each other.

03 Make sure that debris is not seen with the naked eye.
- Products that are fractured or transformed must be discarded.
- One should follow the recommendations for the level of concentration or the length of time provided by the manufacturer.
- The antiseptic solution must not include aldehyde, di- or tri-ethanolamines component to control the corrosion.

04 After cleaning, the products must be rinsed with distilled water or deionized water for at least a minute. If the antiseptic solution contains corrosion inhibitor, rinsing before placing in the sterilizer is recommended.

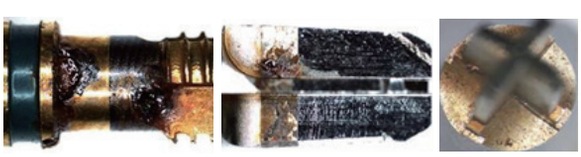
05 To prevent corrosion or water stain on the instruments, completely dry with a dryer or filtered compressed air

06 To prevent corrosion, decrease in sterilizing power, and contamination, antiseptic must be supplemented every day.



Caution

If the instruments are not properly rinsed, residue is left behind, or is not properly dried, the sterilization process might discolor or corrode the instruments, and therefore the whole process must be gone through again.



Caution

Corrosion may start if debris such as blood stain or bone residue is not completely removed. They must be cleansed right after use and the debris must be completely removed when cleaning.

Check

Check on the instruments for faults (fracture, transformation, or corrosion). If necessary, assemble the instruments.
Contaminated instruments must be cleansed or disinfected. Transformations that may affect the safety, performance or tolerance of the instruments; in other words; bent, damaged (fractured, corroded), or faulty products (discoloration of marking area, Loss) must be destroyed.

3 Packaging

01 Check on the dry status of the instruments and pack in the sterilized wrapping paper.

02 On the sterilized wrapping paper, attach a direction tape to check the date of sterilization. Check on the expiration date on the sterilized wrapping paper. Wrapping paper must be able to withstand up to 141 degrees that coincides with the EN ISO 11607.

4 Pasteurization

01 Pasteurization process must follow the sterilizer equipment manufacturer. ⦿ 4~ 18 minutes in 134˚C for autoclave sterilization

02 Instruments and plastic components must be sterilized based on their packaging label.
- Sterilizer must coincide with the requirements of EN 13060 and EN285.
- Sterilization process must regard the ISO 11607.
- One must follow the sterilization process and maintenance process of the sterilizer provided by the manufacturer.
- Efficiency management (Proper packaging, no humidity, change in color of the sterilization dashboard)

DIO navi.

Digital Navigation Implant

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