

www.dentisimplant.co.kr



Tel. +82-1899-2804 | Fax. +82-53-583-2806
99, Seongseoseo-Ro, Dalseo-Gu, Daegu, Korea



Tel. +1-323-677-4363 | Fax. +1-323-677-4366
6 Centerpointe Drive, Suite 600 La Palma CA 90623



Tel. +021-5111-3828 | Fax. +021-5111-3828
上海市长宁区中山西路933号2205室

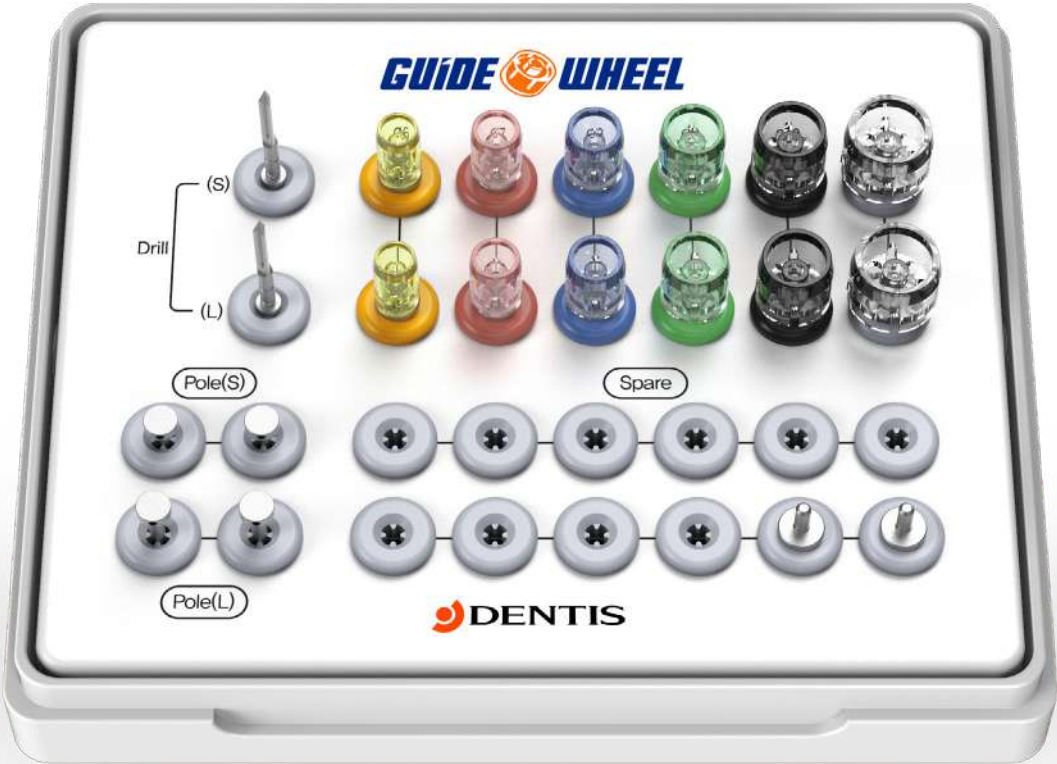
GUIDE WHEEL

User Manual Ver.02



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I. Product Overview

1. Introduction

- This is a disposable surgery equipment that helps determine initial drilling point and path that secures safety margin by imaging superior prosthetic component horizontal size and form.
- Superior component production is more convenient as the prosthetic form can be assumed considering the harmony with adjacent teeth.
- This helps finding fixture covered in gingiva in the second surgery.

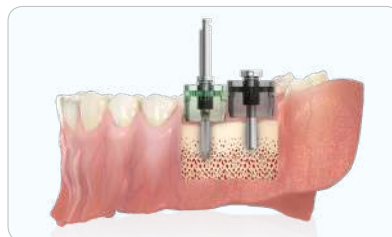


2. Advantages



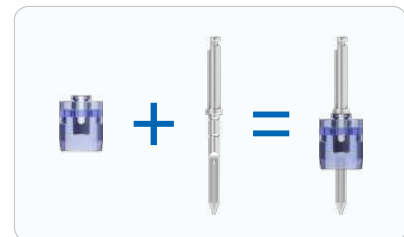
+ Visible operation

-Views of operation is secured through clear materials



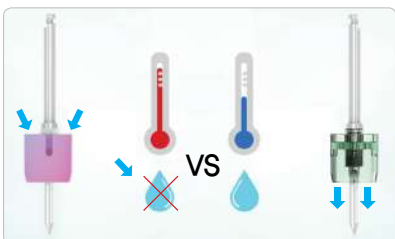
+ High frequency to use

-Not only Single Case, but also Multiple case possible to use



+ Easy to use

-Straight use after connecting to special drill



+ Low bone heating

-Low bone heating is possible due to the inner irrigation



+ High frequencies in practical uses

-Can be both used in single case and multiple cases.
-In comparison with adjacent teeth, surgery time is reduced because of quick and precise determination of placement location



+ Easy and cost-effective solution

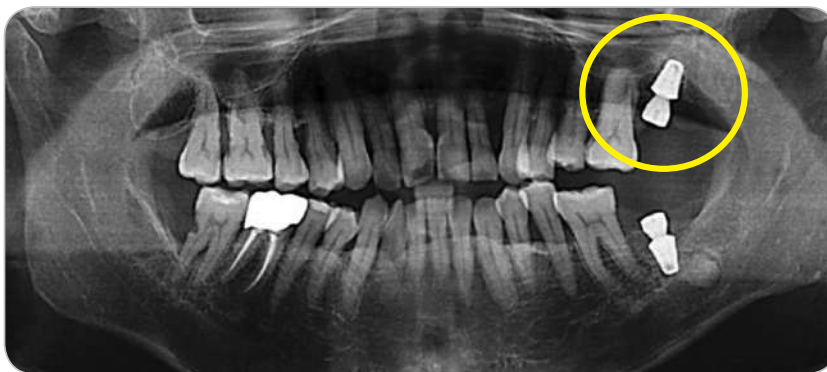
-Simply use without complication guide system or equipment

3. Indications

- Patients whose initial point and path determination is critical for final prosthetic production.
- Patients who want speedy operation by clinical technique improvement.

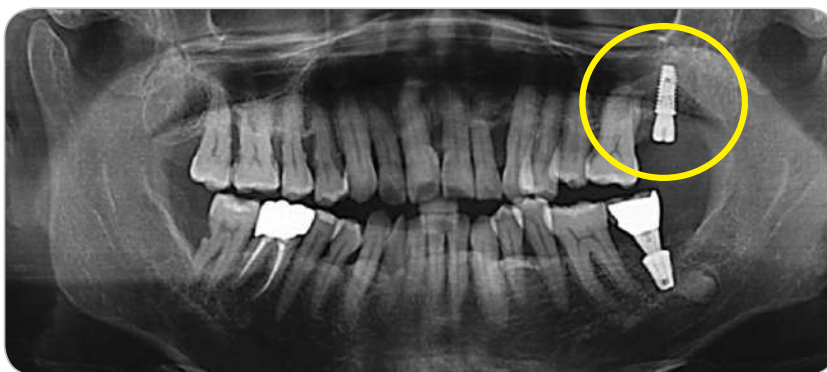
4. Distinction

1) When the Guide Wheel is not being used



- Increasing surgery time due to difficulties in determining drill location and direction
- Limits in implementing treatment plan in a real surgery
- Remove fixture when it is determined that alteration is impossible at prosthetic level

2) When the Guide Wheel is being used



- Reduces surgery time
- Convenient use without complicated pre-surgery stent production
- Find more accurate initial drilling point as it is directly applied at bone levels
- Determine the drilling location and direction in comparison with adjacent teeth
- Comfortable operation can be done and a clear view is secured
- Effective in implementing a planned treatment in a real surgery

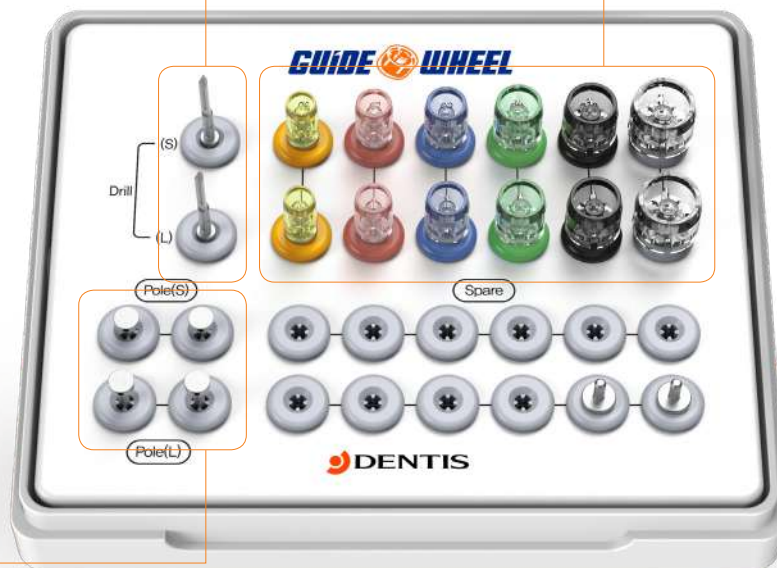
II. Specifications

1. KIT



Guide Wheel Initial Drill

Guide Wheel



KIT Code: DGWK

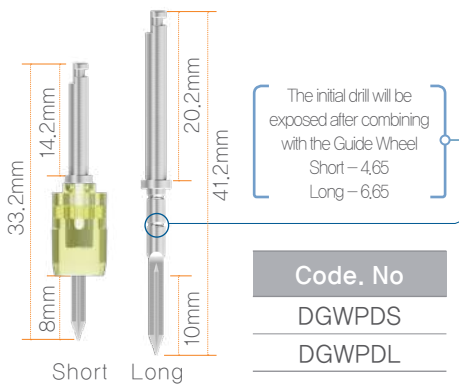
Guide Pole

Guide Pin (separately sold products)



2. Components

Guide Wheel Initial Drill

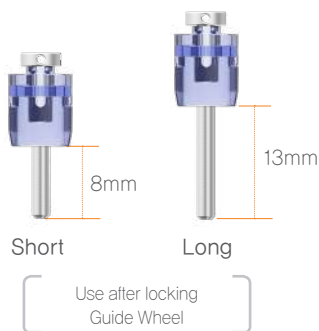


Guide Wheel



Code. No	DGW6	DGW7	DGW8	DGW9	DGW10	DGW12
Color	Yellow	Pink	Blue	Green	Black	Clear
Size	Ø6	Ø7	Ø8	Ø9	Ø10	Ø12

Guide Pole



Code. No
DGWGP
DGWGPL

Guide Pin



► Conveniently used for multiple implant placement.

Code. No	DGWP6	DGWP7	DGWP8	DGWP9	DGWP10	DGWP12
Size	Ø6	Ø7	Ø8	Ø9	Ø10	Ø12

III. How to Use

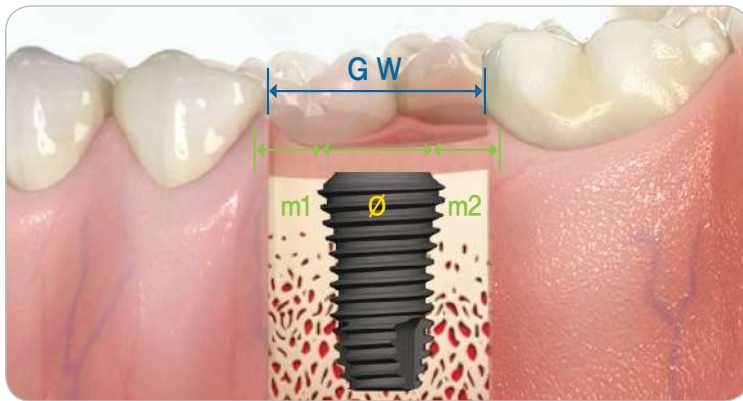
1. Procedure

1) Treatment Planning

- Assess the form and location of surrounding anatomic components using radiographs or CT taken before surgery.
 - General considerations such as distance from underlying nerves and maxillary sinus is important, but it is especially important to check the crown form and root curvature of adjacent teeth
 - If adjacent root is long and severely curved and therefore intrudes the edentulous area, the treatment plan needs to include a counter plan for this
 - Evaluate the occlusional relationship with antagonistic teeth and determine the number of fixtures, diameter and make a plan for edentulous area
 - Generally the fixture is placed in the middle of the adjacent teeth. In clinical situations, the fixture can be placed more mesially or distally depending on patient's economical status, absence of antagonistic teeth, and limitation of maximum mouth opening. Therefore, such factors need to be considered when determining the location.

2) The Size Decision of Guide Wheel

- The mesio-distal distance between adjacent teeth in edentulous area is measured at gingival level using a probe.
 - Based on the measured distance and considering the safety margin of both sides, the fixture diameter is determined.
- The Guide Wheel diameter is easily calculated by subtracting the height of contour thickness of both adjacent teeth from the mesio-distal distance measured above.
- If one wishes to install the fixture in the middle, choose the diameter that contacts both adjacent teeth at the proximal surface. And if one wishes to tilt the fixture intentionally or install at an uncommon angle, a smaller diameter should be chosen.



► Recommended Size According to Fixture Sizes in Guide Wheel

Division	Anterior	Anterior/ Premolar	Premolar	Premolar/ molar	Molar	Molar
Guide Wheel Diameter	 Ø6	 Ø7	 Ø8	 Ø9	 Ø10	 Ø12

- As the fixture diameter increases, a larger Guide Wheel should be used to secure the safety margin.
- If one wishes to install the fixture closer to adjacent fixture or teeth, choose a Guide Wheel with a smaller diameter.
- When sufficient space is needed, choose a Guide Wheel with a larger diameter.

3) The Connection of Guide Wheel

- After connecting the drill and hand piece, operate the engine to check whether it is connected at the exact location.

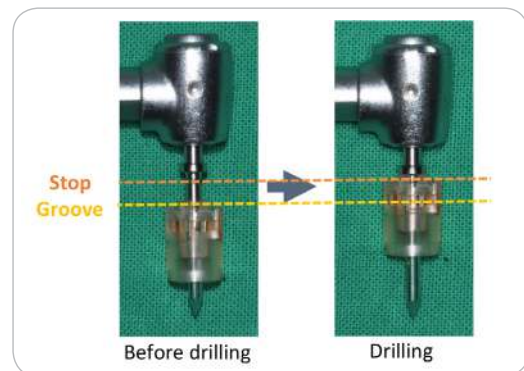
4) The Verification of Guide Wheel's Location

- After opening the flap and locating the drill on the exposed alveolar bone surface, check whether it is parallel to the crown portion of adjacent teeth and to the patient's occlusal plane, using the colored line on the side of the Guide Wheel.



5) Guide Wheel Drilling

- The initial drill does not have to be drilled full length as only the drilling in the compact bone is important at that stage.



6) Surgical KIT Drilling

- Extend the length to full length according to the protocol of the surgical kit that is used, expand the hole using a drill with a larger diameter, and then install the fixture.



7) Path Verification

- In a multiple case, insert the Guide Pole or Guide Pin in the drilled area, and by comparing with this, check the location and path of the next drilling.



2. Tips for Using Guide Wheel in Single Cases



1 According to the treatment plan, choose the Guide Wheel size and combine the Guide Wheel to the drill groove



2 Drilling until Guide Wheel reach to the stop of the initial drill



3 Insert the Guide Pole(or Guide Pin) to the all of drilling hole to path check (if necessary, taking an X-ray)



4 Drilling according to the drilling sequence of the implant system that is used



5 Fixture placement



6 Fixture was placed

3. Tips for Using Guide Wheel in Multiple Cases



1 According to the treatment plan, choose the Guide Wheel size and combine the Guide Wheel to the drill groove



2 Drilling until Guide Wheel reach to the stop of the initial drill



3 Insert the Guide Poles(or Guide Pins) to the hole and keep drilling to the next operation area



4 Insert the Guide Poles(or Guide Pins) to the all of drilling hole to path check (If necessary, taking an X-ray)



5 Drilling according to the drilling sequence of the implant system that is used



6 Fixture placement



7 Fixture placement to the next operation area



8 Fixture were placed

4. Maintenance

1) Cleaning and Disinfection of the KIT

- ❶ Thoroughly pre-rinse blood stain or foreign body on the instruments after using the kit by using a cleaning brush on the surface in distilled water or 30 ~ 40°C running water for 20 seconds.
- ❷ Pre-rinse it by immersing it in disinfectant liquid for 10 minutes.
- ❸ Cleanse additionally by using ultrasonic cleanser.
- ❹ After cleansing it by using detergent and cleaning brush, wash it in running water thoroughly.
- ❺ Either 100% naturally dry the cleansed instruments or use a clean cloth to directly remove wetness.
- ❻ Reposition the dried instruments in accordance with the mark of base plate of the kit.
- ❼ Wrap the kit with sterilization wrap.
- ❽ Mark the sterilization date after attaching sterilization tape on sterilization wrap.
- ❾ Place the wrapped kit into the sterilization device and proceed sterilization.

2) Method for Storage of the KIT

- ❶ Store it in room temperature on uncontaminated area.
- ❷ Check the marked sterilization date, and if it has not been used within 3 ~ 4 days, re-sterilize it before using it for surgery.

5. Guide Wheel Q&A

Q1. Isn't it difficult to use on a tilted surface? Can an ideal path be secured if the Guide Wheel is used?

A1. The Guide Wheel is developed to find the path even on uneven and tilted surfaces. It is easy to find the path without the Guide Wheel on flat surfaces. However, it is difficult to find the path on most tilted surfaces, and therefore the Guide Wheel is developed to find the path easier on such surfaces.

Q2. Is it disposable? Is it sterilized?

A2. Guide Wheel is sterilized and it is a disposable product.

Q3. Isn't it difficult to use in a multiple case?

A3. It can easily be used when used with Guide Pole or Guide Pin.

Q4. The initial drill's diameter is 2.0. Doesn't the path change in the next drill?

A4. After drilling with the Guide Wheel and determining the initial path using Guide Pin or Guide pole, the clinician needs to secure this path until full length drilling. Securing the initial path is not difficult when the density difference of the underlying alveolar bone is minimal. However, if the underlying alveolar bone density is irregular or deeper drilling is interrupted by adjacent teeth or structures, the initial drill path may not be secured. The clinician needs to try to secure the initial path determined by the Guide Wheel as he/she continues drilling. Such situations especially occur often in maxillary and mandibular molar area when teeth are extracted not long ago and drilling is interrupted by interseptal bone. In areas where bone is more dense, Lindemann drill or SAVE kit will be helpful.

Q5. Is it possible to use used Implant Surgical KIT?

A5. After done initial drilling from Guide Wheel KIT, you can keep drilling with your used Implant Surgical KIT.

IV. Clinical Cases

Simple implant placement with Guide Wheel : Single case

Dr. Hwang, Dong-Hwan | Yonsei Well Dental Clinic



Fig.1 Pre-op panorama. 52 years old male patient was showing for implant placement on missing tooth, upper left 2nd molar.



Fig.2 Pre-op clinical view.



a



b

Fig.3a-b Connect the guide with Guide Wheel (a). Drilling (b).



Fig.4 Insert the guide pin to the hole after drilling and take a X-ray for checking the path.



Fig.5 Drilling with surgical KIT was done.



Fig.6 Ø5.2 X 8mm SQ implant was placed.



Fig.7 Suture.



Fig.8 Post-op panorama.

Simple immediate implant placement with Guide Wheel : Single case

Dr. Kim, Yongjin | Ilsan Apsun Dental Clinic



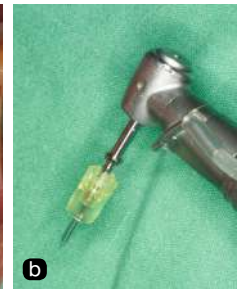
Fig.1 Pre-op panorama. Male patient was showing for implant placement on lower left 2nd premolar.



Fig.2 Pre-op clinical view.



a



b

Fig.3a-b Connect the guide wheels between tooth to select ideal diameter was done (a). Connect the drill with guide wheel for drilling (b).



Fig.4 Insert the guide pin to the hole after drilling to determine the virtual location.



Fig.5 Implant was placed and healing abutment was connected.



Fig.6 Post-op panorama.



Fig.7 Post-op P.A



Fig.8 After 3 months, final prosthesis was delivered P.A.



Fig.9 After 3 months, final prosthesis was delivered clinical view.

#36, 46 simple implant placement with DENTIS SQ fixture and Guide Wheel

Dr. Park, Jeong Cheol | Hyo Dental Clinic

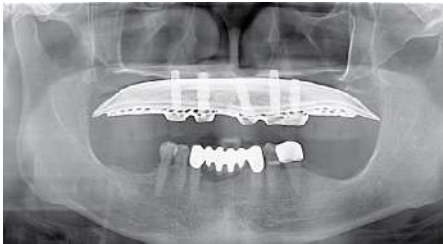


Fig.1 Pre-op panorama. 61 years old male patient. He felt uncomfortable to use lower denture. Treatment plan was #46, #36 implants placement.



Fig.2a-b Pre-op clinical views. #46 (a), #36 (b).



Fig.3a-b Incision and flap elevation were done. #46(a), #36 (b).



Fig.4a-b Connect the drill with the guide wheel and drilling was done. #46 (a), #36 (b).



Fig.5a-b Insert the guide pin to the hole after $\varnothing 2.2$ drilling to determine the virtual location was done. #46(a), #36(b).

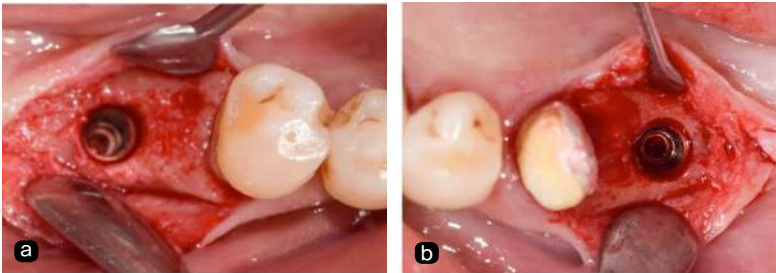


Fig.6a-b Ø5.0 X 8mm SQ implants were placed after following the SQ drilling sequence. #46(a), #36(b).

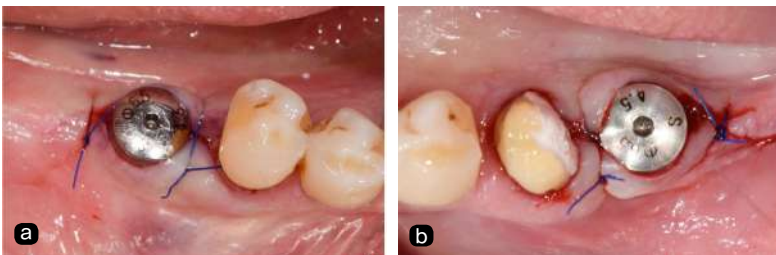


Fig.7a-b Healing abutments were connected and suture was done.

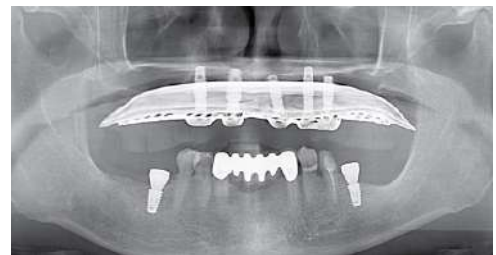


Fig.8 Post-op panorama

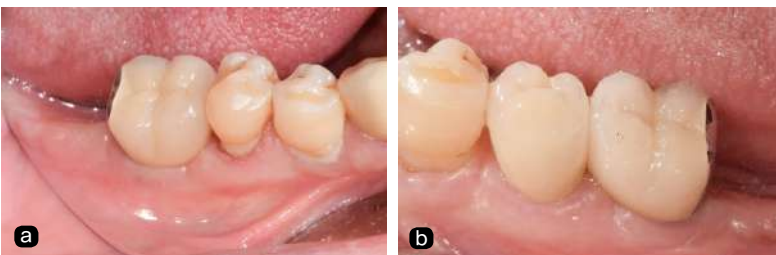


Fig.9a-b Final prosthesis was delivered. #46(a), #36(b).

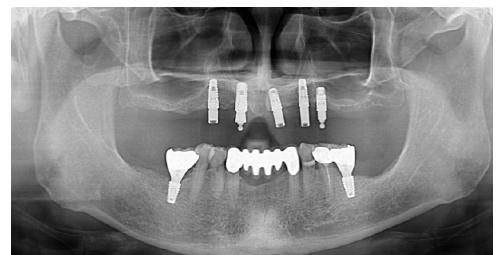


Fig.10 Final prosthesis was delivered panorama

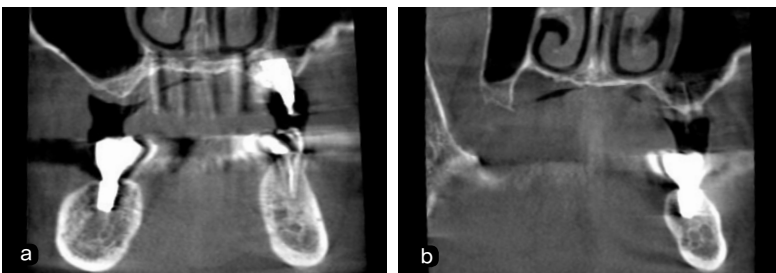


Fig.11a-b Final prosthesis was delivered CT. #46(a), #36(b).

Simple immediate implant placement with Guide Wheel : Multiple case

Dr. Kim, Yongjin | Ilsan Apsun Dental Clinic



Fig.1 Pre-op panorama. 42 years old male patient was showing mobility and pain on right lower 1st molar.



Fig.2 Pre-op clinical view



Fig.3 Extraction was done.



Fig.4 Compare crown size between tooth and guide wheels $\varnothing 10$ (L), $\varnothing 12$ (R). To select ideal diameter of guide wheel comparison was done.



Fig.5 Insert the guide pin to the hole after drilling to determine the virtual location. After drilling, guide pin with same diameter as guide wheel was inserted and evaluation was done.



Fig.6 Same procedure was repeated for 2nd molar implant placement.

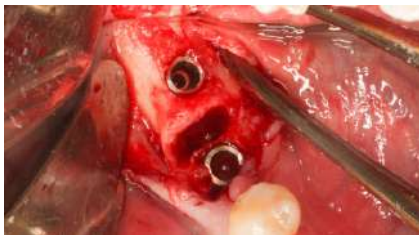


Fig.7 After implants placement.



Fig.8 Healing abutments were connected and Louis Button was placed with the healing abutment of 2nd molar implant.



Fig.9 Post-op panorama



Fig.10 Post-op P.A.



Fig.11 After 2 weeks, suture and Louis Button removal was done.



Fig.12 After 3 months, final prosthesis was delivered.

Mandibular full-arch implant placement with comfortable guide tool, Guide Wheel

Dr. Na Ki Won | Yeosu Seoul Dental Clinic



Fig.1 Pre-op panorama. A 61 years old male patient visits our clinic. He felt uncomfortable with his used denture. Treatment plane was #33, 34, 36,43, 44, 46 implants placement with Guide Wheel and GBR.



Fig.2 Pre-op clinical view.



Fig.3 Incision and flap elevation was done.



Fig.4 #33, 43 drilling with OneQ Surgical KIT and insert the guide pole to the hole to determine the virtual location.



Fig.5 Drilling with Guide wheel and initial drill were done.



Fig.6 After drilling, #33, #34, #43, #44 (Ø 4.2 X 10mm OneQ-SL), #36, #46 (Ø 5.2 X 8mm OneQ-SL) implants were placed.



Fig.8 Ovis ALLO was grafted.



Fig.9 Ovis Xeno were grafted.



Fig.10 Ovis Membrane was covered.



Fig.12 Suture was done.



Fig.15 Post-op 4 months. Final prosthesis was delivered.



Fig.16 Final prosthesis was delivered panorama