What is R2GATE™
I. Digital EYE
II. One-DAY Implant

R2GATE GUIDE™
I. Advantage of R2GATE GUIDE
II. R2GATE Guided Surgery

R2 Digital Center
I. Various R2GATE Services
II. R2GATE Order Process
III. R2 Digital Center Network

R2GATE Lite™

R2GATE Surgical KIT
What is R2GATE™

R2GATE™ is an innovative implant diagnostic software that analyses the oral condition and it shows the best option for implant treatment.

**CBCT (Dicom)**
CBCT is the most efficient method for implant diagnosis. Through CBCT, you can easily identify the shape of the bone and other skeletal structures. But it has an original distortion and not accurate enough for complete treatment planning by itself.

**Digital EYE (Bone)**
After intuitively checking the shape and density of bone via Digital Eye, you can obtain strong initial stability by customizing the drilling sequence. The software also provides a guideline for whether immediate loading is possible or not.

**STL (Soft tissue & teeth)**
R2GATE merges the STL (3D scanning of model or impression) with the CBCT file to overcome the CBCT's limitations such as Metal Scattering and distortion. STL intuitively shows the gingiva and neighboring teeth.

**Top-Down Treatment planning**
The purpose of implant treatment is to recover lost and functionless teeth. With R2GATE, you can select the ideal position of an implant by checking the crown design, and occlusion with neighboring and antagonist teeth.

The most innovative and intuitive diagnosis software for Dental implant planning in the world.

---

I. Digital EYE™

Does your CBCT show you right information?

**Black and White? It’s only 5%**
Regular black and white CBCT analyzes the data in 256-level of shades. We can only detect 16 levels with naked eyes. R2GATE’s Digital EYE regenerates 256 shades into color to deliver much more detailed, intuitive bone condition. It standardizes the brightness level that various CT equipment has and provides objective HOUNSFIELD UNIT.
It significantly differs from the color that other CT data provides. Based on this information, you can decide implant position and size and its drilling sequence for the initial stability of the implant.

---

Re-arrange of DICOM files for standardization.

Windowing function standardizes the brightness level that different CT equipment has and provides objective HOUNSFIELD UNIT. It significantly differs from the color that other CT data provides. Based on this information, you can decide implant position and size and the drilling sequence for the initial stability of the implant.
II. ONE-DAY IMPLANT™

Get your implant and prosthetics in one day!

Digital EYE™

Provides the predictable indications for Immediate loading. According to the bone density and R2GATE treatment planning, patients can have customized abutments before the surgery, and it can be placed right after the implant surgery.

Place a Fixture as it is planned

Completely connect the Handpiece carrier into a fixture, and drill it down as it is planned using your R2GATE Guide.

a. Depth of a fixture align the upper line of Handpiece Carrier with Guide Window as [Image 1]

b. Matching internal hex of a fixture fill the window with the green part of a carrier body as [Image 2]

Prosthetics can be manufactured as single, bridge, or screw-retained type according to your preferences.

- Cementation Type
  - Customized Abutment
  - PMMA Temporary

- Screw retained type
  - Ti-Base
  - PMMA CAD/CAM
  - Provisional restoration

- Over-Denture type
  - Stock abutment
  - Customized abutment
  - 3D Printed Denture

R2GATE™ is already tried and trusted world wide.

Japan, China, Taiwan, Thailand, USA, UAE, Romania, Italy, Netherland, Australia, Germany, UK, Russia, Ukraina, Turkey...
Doctors are using R2GATE through out 30 countries.

What is R2GATE » II. ONE-DAY IMPLANT

2013 ~ 2018
33,802 cases
Delivered to world wide

293,704 Implants
69,488 Prosthesis
Meet the most innovative diagnostic software for dental implant

R2GATE Diagnostic and Planning Service allows you the Perfect planning for optimal implant positioning. The R2GATE software allows us to design a top-down prosthetic driven treatment plan. The software features a unique module of combining CBCT and STL les (digitalized study model) for precise and accurate planning. R2GATE surgical guides are manufactured by state-of-the-art 3D printing technology and according to the agreed treatment plan. The procedure requires just the CBCT les and the study models. By delivering the implants and prosthetics on the same day, you can restore function and aesthetics simultaneously at the surgical phase of treatment.

Unlike the existing implant that requires at least 3-6 months only to perform the basic procedure, the new R2GATE Navigation-guided procedure can be completed in one day with the teeth and abutment are pre-fabricated in advance and customized for each patient. As a result, the patient may go back to normal life immediately after.

R2GATE™ GUIDE
1. Advantage of R2GATE GUIDE

Experience the most innovative implant guide surgery! Virtual planning becomes a reality.

R2GATE GUIDE doesn’t need a metal sleeve or spoons. It has the internal structure for drill stopper and hex controller. R2GATE Guide surgery is more convenient and precise.

Precise R2GATE Guide using 3D Printer.

R2GATE guides are designed directly based on your diagnosis and are printed by 3D Printer. The unique structures of R2 Guide for drill stopper, implant position, and hex controller printed as one-body for improved precision and convenience.

R2GATE Lite™
www.r2gate.com.au
I. Advantage of R2GATE GUIDE

R2GATE™ integrated with Major implant systems.

Flexible kit for all implant systems

R2GATE Universal Kit includes essential guide drills and tools that can be used for various implant systems. Final drills and other necessary tools can be added for your preferred implant system.

Add optional Tools for your preferred implant system

You can add optional tools like implant carrier, tap drill, cortical bone drill and more for your preference. Refer to MegaGen Implant Catalogue for more information.

We provide a new Disposable final drill for each surgery.

Along with R2GATE Guide, we provide a disposable final drill for ideal initial stability based on the patient’s bone density. Now, safer surgery can be done with our disposable final drill.

* permanent drill are available under your order.
**II. R2GATE Guided Surgery**

### 1. Preparations for R2GATE Guide™ Surgery

1. **Package check**
   - Check what is contained in the delivery package received from R2GATE Design Center.

2. **Received two R2GATE Guide™?**
   - Do you plan to place a wide diameter fixture? One is for regular diameter of drills and another is for wide diameter of drills & fixture insertion.

3. **Sterilization for R2GATE Guide™ and prostheses**
   - Put the R2GATE Guide™ and all prosthetics into a bowl (jar) with an antiseptic (e.g., Chlorhexidine Gluconate) for 30 minutes before surgery.

---

**R2GATE Anchor kit**

**R2GATE Anchor kit for Mini System**

Are you planning to use for a Mini implant? Are you worried about the surgery because of narrow surgical space? R2GATE Anchor Kit with ø0.5mm drill core is designed to overcome narrow surgical spaces such as anterior mandibular, narrow distance between adjacent teeth or adjacent implants.

**R2GATE Anchor kit**

**R2GATE Narrow Guide kit for Mini System**

Are you planning to use for a Mini implant? Are you worried about the surgery because of narrow surgical space? R2GATE Narrow Guide Kit with ø0.5mm drill core is designed to overcome narrow surgical spaces such as anterior mandibular, narrow distance between adjacent teeth or adjacent implants.

**Anchor Pin:**
- Put R2GATE Guide and Putty Bite together and put it into patient’s mouth. Let the patient bite firmly. Then, insert an anchor pin into the pin holes on the guide and fix them using a driver. If bone density is dense, slightly drilling to penetrate cortical bone area with 2.0 x 13.0mm drill will be helpful for better fixation.

**Anchor Screw:**
- For fully edentulous guide, placing fixtures and connecting anchor screw in a triangular form is highly recommended for better fixation as the image below.

When regular fixture and wide fixture are needed to place in edentulous case, there will be 2 set of R2GATE guides for regular fixture and wide fixture placement. Anchor screw will provide same position of fixation for both of R2GATE Guides.

**Drilling sequence:**
- Up to 4.3mm diameter of drilling, use the regular hole R2GATE Guide™ (marked “R”). Then that change to wide hole R2GATE Guide™ and continue to drill with bigger diameter drills.

---

**R2GATE™ Guide™ Ⅰ. Advantage of R2GATE GUIDE**

1. **Preparations for R2GATE Guide™ Surgery**

   - **Prosthetics type**
     - ZA: Zirconia customized abutment
     - PR: Provisional restorations

   - **Patient’s name**

   - **R2GATE Guide™ type**
     - R: Regular core R2GATE Guide™
     - W: Wide core R2GATE Guide™

   - **All diameter of general drill hole(core) and guide part of drills are 5.0mm. So from 3.5 to 4.5 diameter fixture can be placed through general drill hole. But in order to insert wide diameter fixture (over the 5.0mm), drill hole(core) should be made for wide diameter drilling and fixture insertion.**

---

---

---

---

---
Types and retention of R2GATE Guide™

1. Tooth - supported type

- 1~4 implants: The residual teeth are still remained around the implantation site. The main retention of R2GATE Guide™ comes from the remaining teeth. So, with the larger number of remaining teeth, retention will be higher and more stable. The damage and porosity of the remaining teeth on the model are not acceptable for the design of R2GATE Guide™ and its adaptation.

- Cusp Stop: Design a few number of Cusp stoppers on the cusp of the neighboring teeth. When R2GATE Guide™ is seated, check its fitness between cusp and hole. There should not be any gaps.

2. Dual - supported type

- Free-end case: Most of the free-end case, R2GATE Guide™ gets the retention from a remaining tooth and residual ridge. All anatomical forms of teeth, alveolar ridge, vestibule should be represented clearly on the model.

- Anchor Hole: The anchor hole can be designed for additional retention. The location will be decided during diagnosis and confirmed by user. Ø2.0 drilling might be required to insert anchor pin into the hard bone. (Maxillary anterior, Mandibular border regions).

3. Fully tissue - supported type

- Fully edentulous case: In the fully edentulous case, R2GATE Guide™ gets the support from the residual ridge and gets the retention from anchor pins. All anatomical structure (palatal, vestibular) should be represented clearly on the model.

- Putty bite: Right initial positioning of R2GATE Guide™, putty bite will be provided. Combine putty bite and R2GATE Guide™ first then put it in the patient mouth together. Let the patient bite it strongly and insert the anchor pin into each hole.

The distortion of the model is an important factor of the error on diagnosis and R2GATE Guide™. Please understand checking point of R2GATE Guide™ fabrication, and try to make accurate impression and model.

2. Adaptation of R2GATE Guide™ before surgery

This procedure is essential to check the accuracy of R2GATE Guide™.

1. Tooth & tissue supported type

- Check the “Cusp stop” of R2GATE Guide™: To check the accuracy of R2GATE Guide™, our designer makes a few number of “Cusp stoppers” on the cups of the neighboring teeth. When R2GATE Guide™ is seated, check its fitness between cusp and R2GATE Guide™ hole. There should not be any gaps.

2. Fully tissue supported type

- Putty bite and Anchor pin: For an edentulous case, R2GATE Guide™ is seated using the putty bite and fixed with anchor pins especially designed for R2GATE Guide™ positioning.

- 1. The connected R2GATE Guide™ and the seating jig are delivered into the mouth together and seated.
- 2. Patient should bite with maximum occlusal force on the R2GATE Guide™ and seating jig.
- 3. Tighten the anchor pin using a hand driver.
- 4. Ø2.0mm drilling will be required in advance if the drilling point have a thick cortical bone.
3. Basic principles of drilling with R2GATE Guide™

No spoons, No sleeves
Our guided drill design does not need spoons or sleeves

All of our drilling components from initial drill to implant carrier are designed as guide and drilling part. You do not need any additional sleeves or spoons, to shorten the surgery time.

![Drill stopper](image)

Drill stopper
Guide part
Drilling part

Narrow Ø2.0 diameter drilling is very important to complete the coronal path of the drill. Especially when the guide core is short due to thick gingiva, gradual drilling to secure the depth of a fixture is essential for successful surgery.

E.g. When placing a 11.5mm length fixture
Initial drill ➔ Initial drill ➔ 2nd drill ➔ 2.0x7 ➔ 2.0x8.5 ➔ 2.0x10 ➔ 2.0x11.5 ➔ 2.5x11.5 ➔ 2.8x11.5 ➔ Final drill ➔ Cortical bone drill

Slow drilling in a Drill Core
Before drilling, you have to check the guide part of drill to be inserted into the drill core of guide completely, when drill is in right position, start drilling with recommended RPM [300 ~ 500 RPM]

Slow UP & DOWN Motion
Diving must be done in the order of increasing the depth of osteotomy and then widening the diameter according to the suggested drilling protocol. Keep repeating up and down motion slowly until the drill stopper touches the stopper position on the guide.

1" & 2" Drilling
The 2nd drill also works as a profiler drill which removes excess bones above the fixture platform for a better has connection of prosthetics. If bone density is dense or high resistance during drilling, stop 2nd drilling protocol and repeat 2nd drilling protocol right before fixture placement.

Crucial Step: Basic drilling
Narrow Ø2.0 diameter drilling is very important to complete the coronal path of the drill. Especially when the guide core is short due to thick gingiva, gradual drilling to secure the depth of a fixture is essential for successful surgery.

E.g. When placing a 11.5mm length fixture
Initial drill ➔ Initial drill ➔ 2nd drill ➔ 2.0x7 ➔ 2.0x8.5 ➔ 2.0x10 ➔ 2.0x11.5 ➔ 2.5x11.5 ➔ 2.8x11.5 ➔ Final drill ➔ Cortical bone drill

How to use the Narrow Crest Drill.
- a. Counter-clockwise: Engage the blade onto the ridge by rotating a drill with less than 100 RPM
- b. Clockwise: Drill with 400~600 RPM
- c. Start a drilling sequence with initial drill
- d. You can collect bone by separating the drill body after drilling

Narrow Crest Drill
for narrow or steep alveolar ridge.

If a regular drill is used on narrow or steep alveolar ridge cases, a drill may slip and the drilling path will be made in the wrong direction. In this case, use a narrow crest drill first and flatten the drilling area to prevent slipping.
**Deliver Fixture as planned**

Make sure to connect Handpiece Carrier onto a fixture and deliver it through the R2GATE Guide as planned.

- **a. Fixture depth control**
  Align the upper line of the Handpiece Carrier with the Guide Window as [Image 1].

- **b. Hex position control**
  Align the green part of Handpiece Carrier as [Image 2] to make hex position in buccal direction.

---

**We provide a general standard for immediate loading [ISQ & ITV]**

If you use AnyRidge System, the recommended ITV (Initial Torque Value) and ISQ (Implant Stability Quotient) for immediate loading are ITV = 45Ncm/ISQ=75 or above. These values are only for the AnyRidge system and cannot be applied to other systems.

<table>
<thead>
<tr>
<th>ISQ</th>
<th>Full arch restoration (Cross arch sprinting)</th>
<th>Multiple restoration (Splinting)</th>
<th>Single restoration</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>65</td>
<td>70</td>
<td>75</td>
</tr>
</tbody>
</table>

Applicable to AnyRidge System only

---

**4. Recommended condition for ONE-DAY IMPLANT & immediate loading**

According to our own clinical experiences & data, we strongly recommend to check two values: Insertion Torque & ISQ value.

1. **Insertion Torque value**
   more than 45Ncm

2. **ISQ value**
   more than 75 ISQ value

---

**R2GATE Digital Center**

To have stable ISQ value, we recommend to use MEG-TORQ to fasten a smartpeg with 5 Ncm torque force consistently.
Digital EYE™; Color-coded analysis of bone morphology & density

Although CBCT uses 256 shades of B&W, the human eye can only detect 16(6%). Therefore, Digital EYE converts the CBCT shades into full color with a standardized brightness, allowing intuitive analysis of the bone condition to position & size the implant, determine the drill sequence, and predict the initial stability for immediate loading (ONE-DAY IMPLANT™).

Creating the reality of ONE-DAY Teeth & Digital All-on-4(6)

- accurate diagnosis
- reduced chair-time
- minimally invasive surgery
- immediate loading using digital prosthesis
- excellent clinical results

Convenient drilling system

- All drills combine drill, guide, & drill stopper into one-body
- No need for metal sleeves or spoons!
- Shorter surgery time!
- Disposable final drill provided for each surgery to optimize initial stability

Compatible with all major implant systems

Significant cost savings!

R2 Digital Center
I. Various R2GATE Services
We provide various R2GATE Services. Enjoy them conveniently.

R2GATE™ Planning Service
Optimal Implant positioning basis on the TOP-Down concept.
R2GATE allows you to do Prosthetic driven Treatment Planning for optimal positioning of the implant. It provides an edetic view of all elements that you need for implant practice as CBCT, STL, and Prosthetic design before surgery.

R2GATE Guided™ Service
Realize the Tx.planning perfectly.
The surgical guide will be made using state of the art 3D printing technology with the result of Tx.planning. R2 Guide completes your daily implant practice without uncertainty.

R2GATE™ ONE-DAY IMPLANT™ service.
Under certain conditions, various prostheses may be delivered on the same day as surgery. Recover function & aesthetics immediately!
II. R2GATE™ Order process

Simple order process: R2GATE Service is very simple, fast and cost effective.

We have world-wide R2 Digital Center network. Please contact to nearest Digital Center or MegaGen distributors at applicable countries.

Order

1. CBCT Taking
   - Model fabrication
   - Send it to R2 Center

2. Implant Planning
   - Model Scan
   - Digital wax-up
   - Implant planning
   - Send planning file back to Clinic

User Confirmation

3. Download project file to R2GATE Lite
   - Open project file
   - Modification or confirmation
   - R2 Guide Design
   - 3D Printing & trimming
   - CAD/CAM

Manufacturing

4. Packaging
   - Delivery

Delivery

Caution!

Ask R2 Tray to local R2 Digital Center before placing an order

If a patient is partially edentulous or if there are multiple teeth with metal fillings or restorations, R2 Tray must be used. R2 tray must be sent to R2 Digital Center along with study models and bite registration.

Your confirmation is the most important to shorten the delivery time.

Diagnostic information sent to R2GATE lite can be confirmed. Corrected and approved data are saved as project files and transferred to the R2 Digital Center.

R2GATE Lite is the essential option for you.
Meet the most innovative implant diagnostic software program in the most innovative way!

Whenever, Where-ever!

Diagnostic information sent to R2GATE Lite can be confirmed by the dentist immediately. Corrected and approved data are saved as project files and transferred to the R2 Digital center in real time.

Communication with R2GATE Lite

Throughout consultation about implant treatment with a patient, ensuring the patient clearly understands their oral condition and the future possible outcome of the treatment is a major factor in assuring patient satisfaction. Using R2GATE Lite on IPAD, the doctor can easily show the visual information on treatment planning from diagnosis through to the optimal treatment.

Communication and Design efficiency

With R2GATE Lite, everywhere it becomes your clinic for you & your patients. You can check, edit, confirm, or send a file to R2GATE Design Center at anytime, and anywhere.
3 essential key factors for implant diagnosis:

**Bone, soft tissue, teeth**

For an ideal implant treatment, cortical bone, soft tissue, and prosthetics must work together. R2GATE intuitively analyzes and shows the condition of cortical bone and soft tissue, and optimizes the prosthetic outcome for ideal treatment planning. For multiple implant cases especially, the distance between implants/platform level and the implant axis angle can be easily understood beforehand for simpler treatment and prosthetic procedure.

**Digital EYE™**

Standard black and white CT analyses the data in 256 shade levels, but human eyes only detect 16 levels with the naked eye. R2GATE Digital EYE regenerates 256 shades into color to deliver a much more detailed and intuitively understandable guideline of the bone condition. Also, it standardizes the brightness level that each CT equipment has and provides an objective Houns Field Unit. This significantly differs from the color that other CT data provides.

**Easily shift, zoom in, zoom out, rotate with your finger**

- Implant rotation: Lightly touch the screen and drag to rotate the implant.
- Implant shift: Lightly touch the sign from the lower part of the screen, and drag to move the implant position.
- Zoom in & out: You can easily zoom in & out by using two fingers. Please use the “Moving Key” on the right corner of the screen if accurate adjustment is needed.

**Fast and easy diagnosis check**

You can confirm the diagnosis immediately by using the “User Confirm” function, or you can send the changes to the center. If you need to revise the model or the implant placement site, you can use the “Diagnosis Reconfirm” function to conveniently receive the diagnosis again.
Meet the most innovative diagnostic software system for dental implant

<table>
<thead>
<tr>
<th>R2GATE.com.au</th>
</tr>
</thead>
</table>

**R2GATE Surgical KIT**

- **R2GATE FULL Surgical KIT**
  - I. AnyRidge System
  - II. AnyOne System

- **R2GATE Standard KIT**
  - I. TSⅢ System (Osstem co.)
  - II. SuperLine System (Dentium co.)
  - III. UFⅡ System (DIO co.)
  - IV. ISⅡ System (Neo Biotech co.)

- **R2GATE Universal KIT**
  - 1. AnyRidge Octa 1
  - 2. Straumann
  - 3. Nobel Biocare
  - 4. Astra
  - 5. Biomet 3i
  - 6. TSⅢ
  - 7. SuperLine
  - 8. ISⅡ
  - 9. UFⅡ
  - 10. Final Drill Option

- **R2GATE Narrow KIT**

- **R2GATE Anchor KIT**
R2GATE™ Full Surgical KIT

I. R2GATE Full Surgical Kit for AnyRidge System

- If you only use a specific system, corresponding system’s full kit can be provided.
- R2GATE full surgical kit is composed with all of drills and components that are needed for the Digital Guided Surgery which uses R2GATE Guide™ after R2GATE™ diagnosis. It helps to actualize minimally invasive surgery and makes exact clinical result as the diagnosis.

**Ref.C**
KAGIN3000

**Bone Profiler**

- This is used to minimize the interference of the crestal bone when connecting ZrGEN Abutment. [Used before placing the fixture / Recommended RPM: 600 ~ 1000]

**AnyRidge Surgical Kit**

#### Initial Drill
- Initial Drill
- Second Drill
- Drilling to make the initial drill path

#### Guide Stop Drill
- Drill diameter: Ø2.0 ~ Ø5.9
- Drill Length: 7.0 ~ 13.0mm
- Guide length: 13.5mm
- Drilling length: 7.0 ~ 13.0mm

#### Drill Extension
- Ø2.0
- Ø2.8
- Ø3.4
- Ø3.8
- Ø4.3
- Ø4.8
- Ø5.3
- Ø5.8
- Ø6.3

#### Cortical Bone Drill
- Ø2.5
- Ø3.3
- Ø3.8
- Ø4.3
- Ø4.8
- Ø4.0
- Ø5.0
- Ø6.0
- Ø5.4
- Ø5.9

#### Bone Profiler
- Ø2.0
- Ø2.8
- Ø3.4
- Ø3.8
- Ø4.3
- Ø4.8
- Ø5.3
- Ø5.8
- Ø6.3

**Implant Carrier**

- : Handpiece type
- : Ratchet type
- ▶ R = AnyRidge Regular (Ø3.5 ~ Ø4.5)
- ▶ W = AnyRidge Wide (Ø5.0 ~ Ø6.0)

**Hand Driver**
- 1.2 hex driver (Short)
- 1.2 hex driver (Long)

**Carrier-Handpiece Adapter**

**Carrier Extension**
II. R2GATE Full Surgical Kit for AnyOne System

- If you only use a specific system, corresponding system’s full kit can be provided.
- R2GATE full surgical kit is composed with all of drills and components that are needed for the Digital Guided Surgery which uses R2GATE Guide™ after R2GATE™ diagnosis. It helps to actualize minimally invasive surgery and makes exact clinical result as the diagnosis.

Ref. C
KAGIN3001

RATCHET WRENCH
BONE PROFILER
DRILL
EXTENSION
Ø2.0
INITIAL
DRILL
SECOND
DRILL
OPTION
HAND DRIVER
SL
HANDPIECE
ADAPTER
RATCHET
EXTENSION
Ø3.5
CORTICAL
DRILL
Ø4.0
Ø4.5 Ø5.0 Ø6.0
Ø2.5 Ø2.8 Ø3.3 Ø3.6 Ø4.2 Ø4.8
Ø4.0 Ø5.0 Ø6.0
Ø5.8
13mm
10mm
8.5mm
7mm
11.5mm
AnyOne
IMPLANT
CARRIER
Ø3.5

Guide length : 13.5mm
Drilling length : 7.0 – 13.0mm

Drilling to make the initial drill path

Drill diameter : Ø2.0 ~ Ø5.9
Drill Length : 7.0 ~ 13.0mm

Drill Extension

Hand Driver : 1.2 hex driver (Short/Long)

AnyOne

In type I or II bone, crestal bone is partly reduced to lower the pressure against the fixture during placement.

Handpiece type
Ratchet type

▶ R – AnyOne Regular
(Ø3.5 ~ Ø4.5)

▶ W – AnyOne Wide
(Ø5.0 ~ Ø6.0)

This is used to minimize the interference of the crestal bone when connecting ZrGEN Abutment.
[Used before placing the fixture / Recommended RPM 600 ~ 1000]
Components for R2GATE Full Surgical Kit (Continued)

Initial Drill
- Use the initial drill in order to mark the drilling position on the bone. Start drilling slowly, when drill guide part is fully contacted with drilling core of R2GATE Guide™.
- Recommended drilling speed range is 300 ~ 800 RPM with copious irrigation.

Second Drill
- This unique step-drill(from Ø2.0 to Ø4.6) is used to flare out the upper cortical bone of the ostectomy.
- It helps not only the rest drilling procedure but abutment connection. In case of hard bone, if the 2nd drilling will be disturbed by thick cortical bone. Stop the drilling and try it after final drilling procedure.

Stopper Drill
- Universal drills consist of Ø2.0, Ø2.5, Ø2.8 diameter to enlarge the osteotomy gradually.
- The length of drill are designed as 7.0, 8.5, 10, 11.5,12mm for most common length of implant system.
- Recommended drilling speed range is 500 ~ 800 RPM with copious irrigation.

Bone Profiler
- Recommended drilling speed is 300 ~ 800 RPM.

Stopper Drill[AR]
- Recommended drilling speed is 300 ~ 800 RPM.

Stopper Drill[AO]
- Recommended drilling speed is 300 ~ 800 RPM.
Components for R2GATE Full Surgical Kit (Continued)

Cortical Bone Drill [AR]
- Recommended drilling speed: 300 ~ 800 RPM

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Guide Diameter</th>
<th>Length (mm)</th>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø2.3</td>
<td>Ø5.0</td>
<td>5.0</td>
<td>R2CD3405</td>
</tr>
<tr>
<td>Ø3.3</td>
<td>Ø5.0</td>
<td>5.0</td>
<td>R2CD3405</td>
</tr>
<tr>
<td>Ø4.5</td>
<td>Ø5.0</td>
<td>5.0</td>
<td>R2CD4505</td>
</tr>
<tr>
<td>Ø5.3</td>
<td>Ø6.5</td>
<td>5.0</td>
<td>R2CD5305</td>
</tr>
<tr>
<td>Ø6.3</td>
<td>Ø6.5</td>
<td>5.0</td>
<td>R2CD6305</td>
</tr>
</tbody>
</table>

Cortical Bone Drill [AO]
- Recommended drilling speed: 300 ~ 800 RPM

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Guide Diameter</th>
<th>Length (mm)</th>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø3.3</td>
<td>Ø5.0</td>
<td>6.0</td>
<td>AODD39</td>
</tr>
<tr>
<td>Ø4.3</td>
<td>Ø5.0</td>
<td>6.0</td>
<td>AODD43</td>
</tr>
<tr>
<td>Ø5.3</td>
<td>Ø6.5</td>
<td>6.0</td>
<td>AODD53</td>
</tr>
</tbody>
</table>

Implant Carrier [AR]
- Recommended insertion torque and speed is 45 ~ 50Ncm, under 40 RPM.

<table>
<thead>
<tr>
<th>Connection</th>
<th>Guide Diameter</th>
<th>Type</th>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3 Hex</td>
<td>Ø3.9</td>
<td>Ratchet</td>
<td>ICPF518</td>
</tr>
<tr>
<td>2.3 Hex</td>
<td>Ø5.0</td>
<td>Handpiece</td>
<td>ICPF520H</td>
</tr>
</tbody>
</table>

Implant Carrier [AO]
- Recommended insertion torque is 45 ~ 50Ncm.
- Two different implant carriers for regular stent since Ø3.5 fixture has different abutment connection
- To pick up the fixture from the ampule and insert it to the osteotomy. Then turn it to clockwise direction 2 ~ 3 times manually.
- When it gets fixation from the osteotomy, connect the handpiece adaptor and use implant motor.

Carrier-Handpiece Adapter
- Useful to use the handpiece for the implant placement following initial delivery of a fixture with a fixture carrier.

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>AGHA</td>
</tr>
</tbody>
</table>

Carrier Extension
- To extend the length of implant carrier.

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>MHE4000</td>
</tr>
</tbody>
</table>
**R2GATE Surgical Kit**

**Drill Extension**
- No more than 35Ncm torque: May distorted when excessive force is applied.
- Extends drills & other handpiece instruments.

<table>
<thead>
<tr>
<th>Length(mm)</th>
<th>Type</th>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>Ultra-short</td>
<td>TCMHDEU1200</td>
</tr>
<tr>
<td>10</td>
<td>Short</td>
<td>TCMHDSE1200</td>
</tr>
<tr>
<td>15</td>
<td>Long</td>
<td>TCMHDLE1200</td>
</tr>
<tr>
<td>20</td>
<td>Extra-long</td>
<td>TCMHDE1200</td>
</tr>
</tbody>
</table>

(*) Separate sales item.

**Hand Driver (1.2 Hex)**
- Used for all Cover Screws, Abutment Screws, and Healing Abutments.
- Available in 4 lengths for added convenience.
- Hand Driver can be directly inserted into the Torque Wrench without using an adaptor.
- Hex tip can withstand 35-45Ncm of torque without distorting.

<table>
<thead>
<tr>
<th>Length(mm)</th>
<th>Type</th>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>Ultra-short</td>
<td>TCMHDEU1200</td>
</tr>
<tr>
<td>10</td>
<td>Short</td>
<td>TCMHDSE1200</td>
</tr>
<tr>
<td>15</td>
<td>Long</td>
<td>TCMHDLE1200</td>
</tr>
<tr>
<td>20</td>
<td>Extra-long</td>
<td>TCMHDE1200</td>
</tr>
</tbody>
</table>

(*) Separate sales item.

**Ratchet Wrench**
- Used to exert more force than the Handpiece.
- No bearing system: No breakage and no corrosion problems.
- Arrow laser marking indicates direction of force.

**Cortical Bone Drill**
- Recommended drilling speed: 300~800 rpm

**Tap Drill**
- Recommended insertion torque and speed is 45~50Ncm, under 40 RPM.

**Implant Carrier**
- To pick up the fixture from the ampule and insert it to the osteotomy. Then turn it to clockwise direction 2~3 times manually.
- When it gets fixation from the osteotomy, connect the handpiece adaptor and use implant motor.
- Recommended insertion torque is 45~50Ncm.

**System Options for the AnyOne External**
When you want to do R2GATE surgery with R2GATE Guide™, please inform us your favorite implant system.

Make your own R2GATE Surgical Kit with your favorite implant system. R2GATE Universal kit consists of basic drilling set which can be used for any implant system. You can add system options as “Implant Carrier”, “Cortical Bone Drill”, “Tap Drill” to your favorite implant system. The specification of final drills will be decided with treatment planning and delivered to you with R2GATE Guide™ will be from the R2GATE Design Center.

Universal Kit
Consisted of basic drilling set which can be used for any implant system

Customized instrument
for various implant system
AnyRidge / AnyRidge Octa 1 / AnyOne Mini / ST Bone Level/Straumann / Nobel Active/Nobel Blocans / SuperLine(Dentium) / TSIII(Sistem)
(Available system can be varied by country due to registration process)

Intermediate & final drill
will be delivered with R2GATE Guide™

R2GATE Universal Kit
Maximize the cost-effectiveness & efficiency.

Product coordinator: Jung Ho Nam, rnd_implant1@imegagen.com
Drills & Components for R2GATE Universal Kit

Basic drilling set for any implant system. It consists of initial drill, 2nd drill, universal drills and essential tools.

Initial Drill
- Use the initial drill in order to mark the drilling position on the bone. Start drilling slowly, when drill guide part is fully contacted with drilling core of R2GATE Guide™.
- Recommended drilling speed range is 300 ~ 800 RPM with copious irrigation.

Second Drill
- This unique step-drill(from Ø2.0 to Ø4.6) is used to flare out the upper cortical bone of the osseotomy.
- It helps not only the rest drilling procedure but abutment connection. In case of hard bone, if the 2nd drilling will be disturbed by thick cortical bone. Stop the drilling and try it after final drilling procedure.

Stopper Drill
- Universal drills consist of Ø2.0, Ø2.5, Ø2.8 diameter to enlarge the osteotomy gradually.
- The length of drill are designed as 7.0, 8.5, 10, 11.5, 13mm for most common length of implant system.
- Recommended drilling speed range is 500 ~ 800 RPM with copious irrigation.

Carrier-Handpiece Adapter
- Useful to use the handpiece for the implant placement following initial delivery of a fixture with a fixture carrier ratchet type.

Carrier Extension
- To extend the length of implant carrier.

Optional Instrument

Torque Wrench & Adapter
- Torque Wrench has torque options from 15Ncm to 45Ncm and is used for the placement of an implant and final tightening of the Abutment Screw.

Cortical Bone Drill[AR]
- Recommended drilling speed : 300 ~ 800 RPM

Narrow Crest Drill
- It is used when fixture will be slantly implanted or to flat the slipped bone surface of narrow ridge to prevent any slips during drilling.
- Design as 2-piece: drill body and housing
- Can be disassembled. Easy to clean and remove bone chips
- Can harvest autogenous bone if it is used after soft tissue

Set the site by drilling counter-clockwisely with low speed (≤ 100rpm)
Start drilling clockewisely (400~600rpm)
Bone is now flat. Perform drilling with proper drilling sequence.
Disassemble body and housing after drilling is remove bone chip. Clean and sterilize after every usage.
**R2GATE Narrow Kit**

- **Components of R2GATE Narrow Kit**
  - **Initial Drill**
    - Use the initial drill in order to mark the drilling position on the bone. Start drilling slowly, when drill guide part is fully contacted with drilling core of R2GATE Guide™.
    - Recommended drilling speed range is 330 ~ 900 RPM with copious irrigation.
  - **Second Drill**
    - This unique step-drill (from Ø2.0 to Ø4.6) is used to flare out the upper cortical bone of the osteotomy.
      - It helps not only the rest drilling procedure but also abutment connection. In case of hard bone, if the 2nd drilling will be disturbed by thick cortical bone, stop the drilling and try it after final drilling procedure.
  - **Stopper Drill**
    - Universal drills consist of Ø2.0, Ø2.5, Ø2.8 diameter to enlarge the osteotomy gradually.
      - The length of drill are designed as 7.0, 8.5, 10, 11.5, 13mm for most common length of implant system.
      - Recommended drilling speed range is 500 ~ 900 RPM with copious irrigation.
  - **Tap Drill**
    - The purpose of tap drills in the universal kit system is insertion test.
      - Recommended insertion torque and speed is 45 ~ 50Ncm, under 40 RPM.
  - **Implant Carrier**
    - To pick up the fixture from the ampule and insert it to the osteotomy. Then turn it to clock-wise direction 2~3 times manually.
      - When it gets position from the osteotomy, connect the handpiece adaptor and use implant motor.
      - Recommended insertion torque is 45 ~ 50Ncm.

---

**When do we use R2GATE Narrow Kit?**

- **Mandible single case**
  - When Ø5.0 stent cannot be fabricated due to narrow distance between the teeth.
  - Regular VS Narrow Stent Guide Core

- **Mandible multiple case**
  - When fixture cannot be place near adjacent teeth due to large stent core on regular stent.

---

**Initial Drill**

- Ø1.9 Ø3.5 1.0 R01901N

**Second Drill**

- Ø1.8 Ø3.5 5.0 R02180N

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Guide Diameter</th>
<th>Length(mm)</th>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø1.8</td>
<td>Ø3.5</td>
<td>5.0</td>
<td>R02180N</td>
</tr>
<tr>
<td>Ø2.5</td>
<td>Ø3.0</td>
<td>8.0</td>
<td>R02250N</td>
</tr>
<tr>
<td>Ø2.5</td>
<td>Ø3.0</td>
<td>9.5</td>
<td>R02251N</td>
</tr>
<tr>
<td>Ø2.5</td>
<td>Ø3.0</td>
<td>11.0</td>
<td>R02250N</td>
</tr>
<tr>
<td>Ø2.5</td>
<td>Ø3.0</td>
<td>12.5</td>
<td>R02251N</td>
</tr>
</tbody>
</table>

---

**Stopper Drill**

- Ø1.9 Ø3.5 1.0 R01901N

**Tap Drill**

- Ø3.0 Ø3.5 8.0 R0T030N

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Guide Diameter</th>
<th>Length(mm)</th>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø3.0</td>
<td>Ø3.5</td>
<td>8.0</td>
<td>R0T030N</td>
</tr>
<tr>
<td>Ø3.4</td>
<td>Ø3.5</td>
<td>9.5</td>
<td>R0T034N</td>
</tr>
</tbody>
</table>

---

**Implant Carrier**

- 1.7 Hex Ø3.5 Ratchet ICNH1722
- Handpiece ICNH1722N
Anchor Kit

For an edentulous case or free end case, R2GATE Guide™ is fixed with Anchor Pins specially designed for stability of the R2GATE Guide™.

Components for Anchor Kit

Anchor Pin
- Distinguish the length size by the numbers of Line marking
- Connect through Torx Tip

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Length(mm)</th>
<th>Marking</th>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø2.0</td>
<td>5.5</td>
<td>1</td>
<td>TCMACP2015</td>
</tr>
<tr>
<td>Ø8.0</td>
<td>2</td>
<td>TCMACP2015</td>
<td></td>
</tr>
<tr>
<td>Ø10.5</td>
<td>3</td>
<td>TCMACP2020</td>
<td></td>
</tr>
</tbody>
</table>

Stent Anchor
- Connect through Hand & Hand Driver

<table>
<thead>
<tr>
<th>Thread</th>
<th>Diameter</th>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1.8</td>
<td>Ø5.0</td>
<td>AGSAR18</td>
</tr>
<tr>
<td>(AnyRidge)</td>
<td>Ø6.5</td>
<td>AGSAW18</td>
</tr>
<tr>
<td>M2.0</td>
<td>Ø5.0</td>
<td>AGSAR20</td>
</tr>
<tr>
<td>(AnyOne)</td>
<td>Ø6.5</td>
<td>AGSAW20</td>
</tr>
</tbody>
</table>

Torx Tip

<table>
<thead>
<tr>
<th>Length(mm)</th>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>AGTT80</td>
</tr>
</tbody>
</table>

Tip Driver

<table>
<thead>
<tr>
<th>Ref.C</th>
</tr>
</thead>
<tbody>
<tr>
<td>TD</td>
</tr>
</tbody>
</table>
How to use Anchor Kit?

Case 1.
When it is possible to get stability from neighboring teeth. (No need to use the Anchor kit)

Place the R2GATE Guide™ by placing it onto the neighboring teeth.

Case 2.
When it is hard to get stability from fully edentulous case or neighboring teeth.

1. Fix the R2GATE Guide™ temporarily by asking patient to bite the R2GATE Guide™ using a resin or other tools.
2. Please use the Pin that R2GATE™ program selected, and place that Pin on the Driver Tip.
3. Insert the Pin into the R2GATE Guide™ that the patient is biting, and turn it into clockwise to fix the R2GATE Guide™ to bone.

*Make a hole on the Guide using Ø2.0 Drill if a density of the bone is high. Then, insert the Anchor Pin into the hole.

Case 3.
- When it is necessary to re-implant a fixture after separating the R2GATE Guide™.
- When the stability of the R2GATE Guide™ is weak even though all planned Anchor Pins are used (This is only for the cases with edentulous jaws and implantations of three or more fixtures).

* Cases for re-implant a fixture after failure
1. Check the condition of an implanted fixture after a separation of a R2GATE Guide™. Evulse the fixture when the implantation is considered as a failure for lack of stability or a path is inaccurate.
2. Replace the R2GATE Guide™. Insert the R2GATE Guide™ Anchor to the R2GATE Guide™ Hole of the neighboring fixture, and place the R2GATE Guide™ by turning it into clockwise.

* When it is hard to get stability of the R2GATE Guide™ by an Anchor Pin only
1. When the stability of a fixture by an Anchor Pin only is low, start an implantation from molar areas. Then, connect the R2GATE Guide™ Anchor with an installed fixture to increase stability.