# 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 50 countries.

R2 GATE
2013 ~ 2019

**96,667** cases
Delivered to world wide

**293,704** Implants

**110,650** Prosthesis

# R2GATE GUIDE

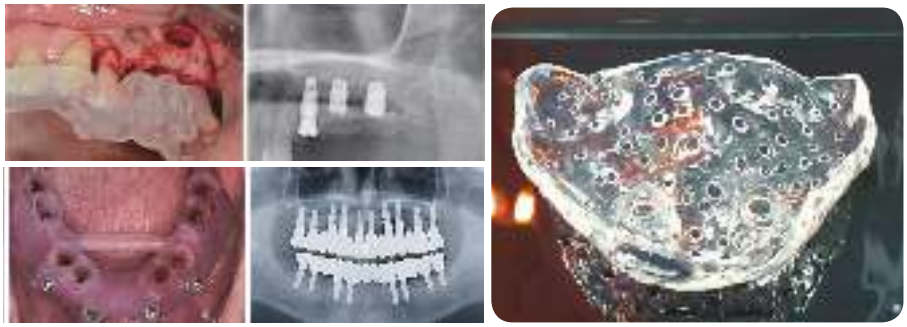


## I. Advantage of R2GATE GUIDE

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 control)are printed as one-body for improved precision and convenience.

# I. Advantage of R2GATE GUIDE

## R2GATE integrated with Major implant systems.


## R2GATE Surgical Kits are available!

Full Kit and Universal Kit are available.
The full kit consists of a complete set of drills and system-specific implant carriers.
The Universal kit consists of drills from initial to 2.8 drills for any implant systems.
The implant carrier and disposable drills may be added as your option.

R2GATE Full Surgical KIT

R2GATE Universal KIT

# ▸▸ Simple and Practical R2GATE UNIVERSAL KIT

Flexible kit for all implant systems

## Simple and practical **Universal Kit**

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.

## Must have Accessory 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? Narrow Guide Kit with ø3.5mm 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 Anchor kit For the fixation of fully edentulous guid**

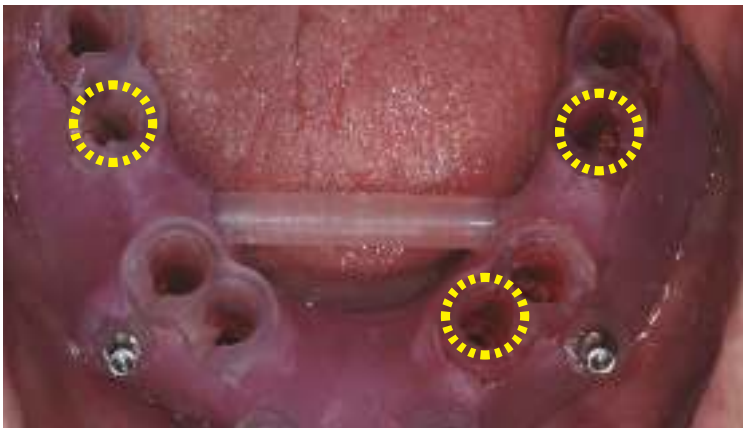
R2GATE Anchor Kit is used to fix fully edentulous R2GATE Guide in the mouth.

**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.

# II. R2GATE Guided Surgery

## 1. Preparations for R2GATE Guide™ Surgery

### ❶ Package check

Check what are contained in the delivery package received from R2GATE Design Center.


**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™

**Patient's name**

### ❷ 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.


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 diaeter fixture (over the 5.0mm), drill hole(core) should be made for wide diameter drilling and fixture insertion.

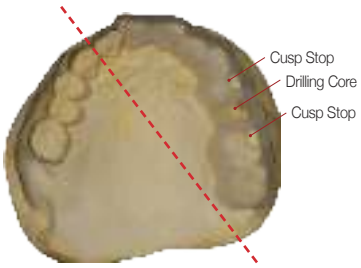
**Drilling sequence:**
Up to 4.3mm diameter of drilling, use the regular hole R2GATE Guide™ (marked "R"). Then that change to wide hole R2GATE Guide™ and continue to drill with bigger diameter drills.

### ❸ Sterilization for R2GATE Guide™ and prostheses

Put the R2GATE Guide™ and all prosthetics into a bowl (jar) with an antiseptics (ex. Chlorhexidine Gluconate) for 30 minutes before surgery.

# ▸▸ Types and retention of R2GATE Guide™

## 1. Tooth - supported type

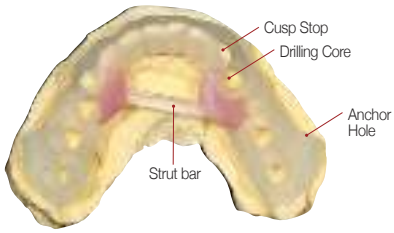



[Minimum size of model] Even it's tooth support type R2GATE Guide™, 3/4 arch model is required for design and accurate retention.

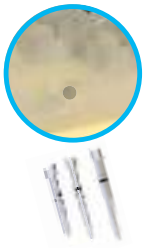
**1~4 implants** The residual teeth are still remained around the implantation site. The Main retention of R2GATE Guide™ comes from the remaining teeth. So, with the larger number of remaining teeth, retention will be higher and more stable. The damage and porosity of the remaining teeth on the model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

∗ Cusp Stop : To check the accuracy of R2GATE Guide™, Designer makes a few number of "Cusp stopper" on the cusp of the mesio-distal neighbor teeth. When R2GATE Guide™ is seated, check its fitness of contact between cusp and hole. There should not be a gap.

## 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.



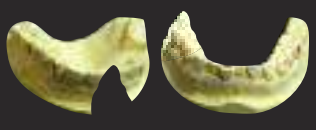
∗ Anchor Hole : The anchor hole can be designed for additional retention. The location will be decided during diagnosis and confirmed by user. Ø2.0 drilling might be required to insert anchor pin into the hard bone. (Maxillary anterior, Mandibulary regions).

## 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, vestibulare) 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 than put it in the patient mouth together. Let the patient bite it strong 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.

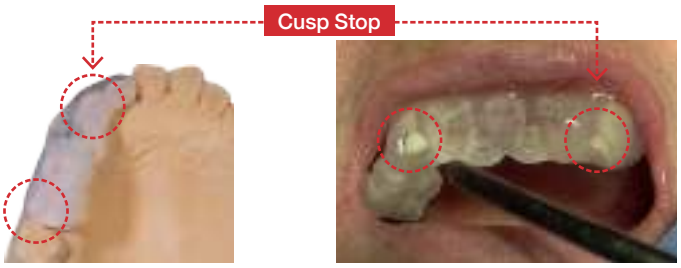


# 2. Adaptation of R2GATE Guide™ before surgery

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

## ❶ 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.





## ❷ 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 specially 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. 2.0mm drilling will be required in advance if the drilling point have a thick cortical bone.

# 3. Necessary items to produce R2 Guide

## ❶ R2 Tray used for taking CBCT

### R2 Tray SE

| Ref.C |
|---|
| R2TRAYSE |

## ❷ Hole trimmer set for R2 Guide trimming

### Stopper trimmer

- Tools for trimming the stopper in R2 Guide

| Thread | Guide Diameter | Ref.C |
|---|---|---|
| Narrow | Ø3.5 | AGHTN2 |
| Regular | Ø5.0 | AGHTR2 |
| Wide | Ø6.5 | AGHTW2 |

### Hole trimmer

- Tool for trimming guide holes in R2 Guide

| Thread | Guide Diameter | Ref.C |
|---|---|---|
| Narrow | Ø3.5 | AGHTN3 |
| Regular | Ø5.0 | AGHTR3 |
| Wide | Ø6.5 | AGHTW3 |

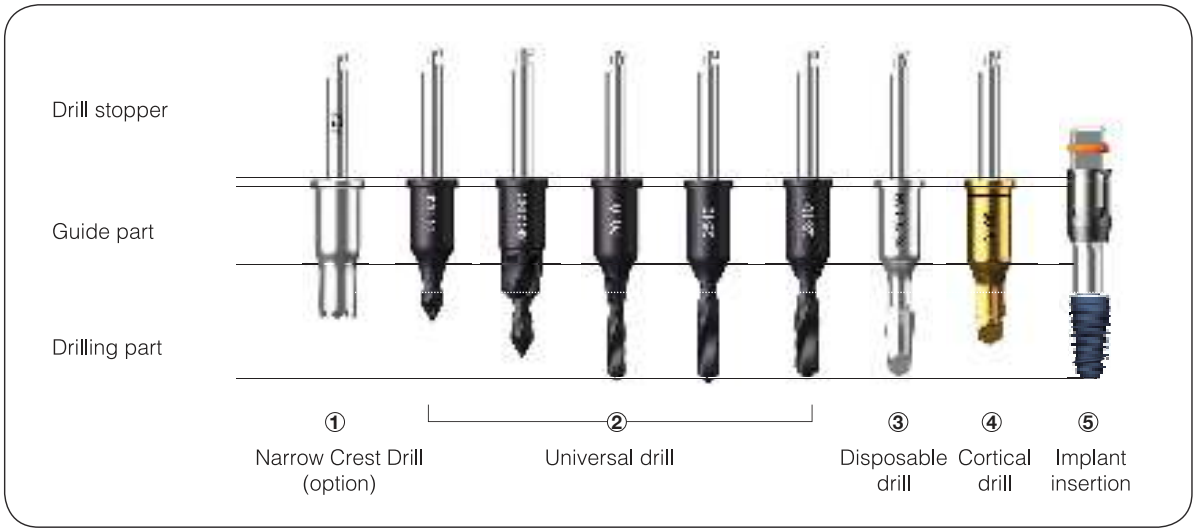
### Reamer Handle

| Ref.C |
|---|
| TCMRH |

# 4. 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 shorter the surgery time.

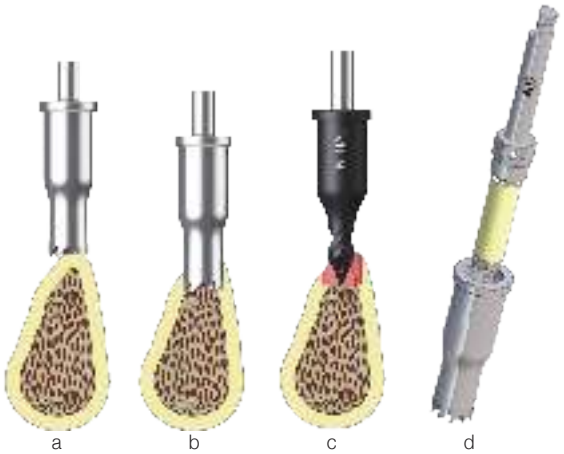



## Narrow Crest Drill
## for narrow or steep alveolar ridge.

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.

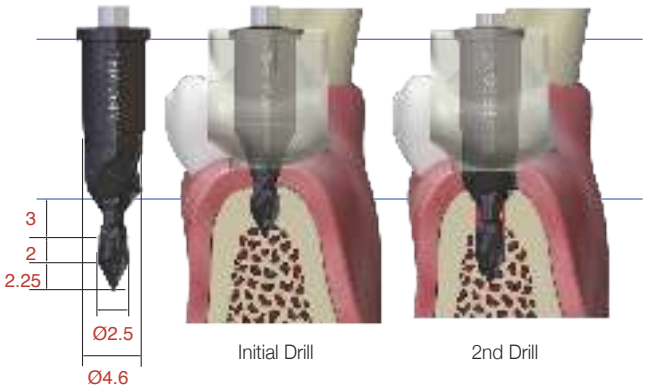
**How to use the Narrow Crest Drill.**

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



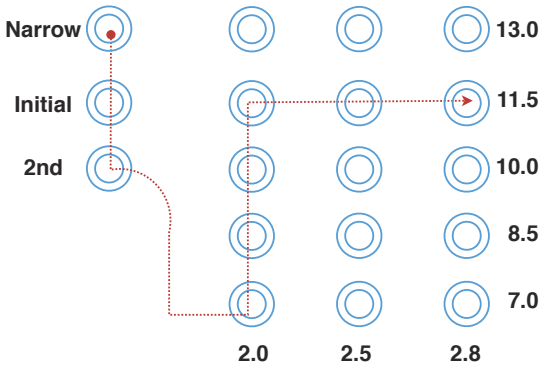
## 1st & 2nd Drilling

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

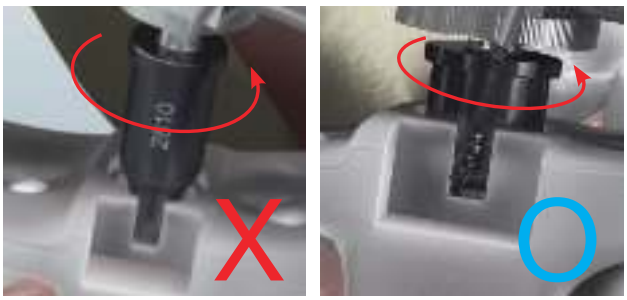
Narrow Ø2.0 diameter drilling is very important to complete the coronal path of the drill. Especially when the guide core is short due to thick gingiva, gradual drilling to secure the depth of a fixture is essential for successful surgery.




Eg) When placing a 11.5mm length fixture
Narrow 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 dirll to be inserted into the drill core of guide compeletely. when drill is in right postion, start drilling with recommended RPM [300 ~ 500 RPM]




## Slow UP & DOWN Motion

Drilling 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.

## Deliver Fixture as planned

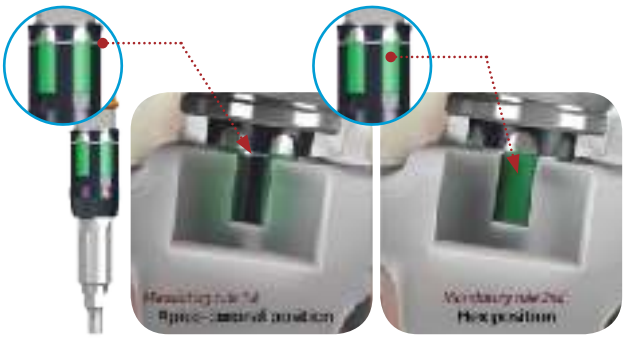
Make sure to connect Handpiece Carrier onto a fixture and deliver it through the R2GATE Guide as planned.

**a. Fixture depth control**

Align the upper line of the Handpiece Carrier with the Guide Window as [Image 1]

**b. Hex position control**

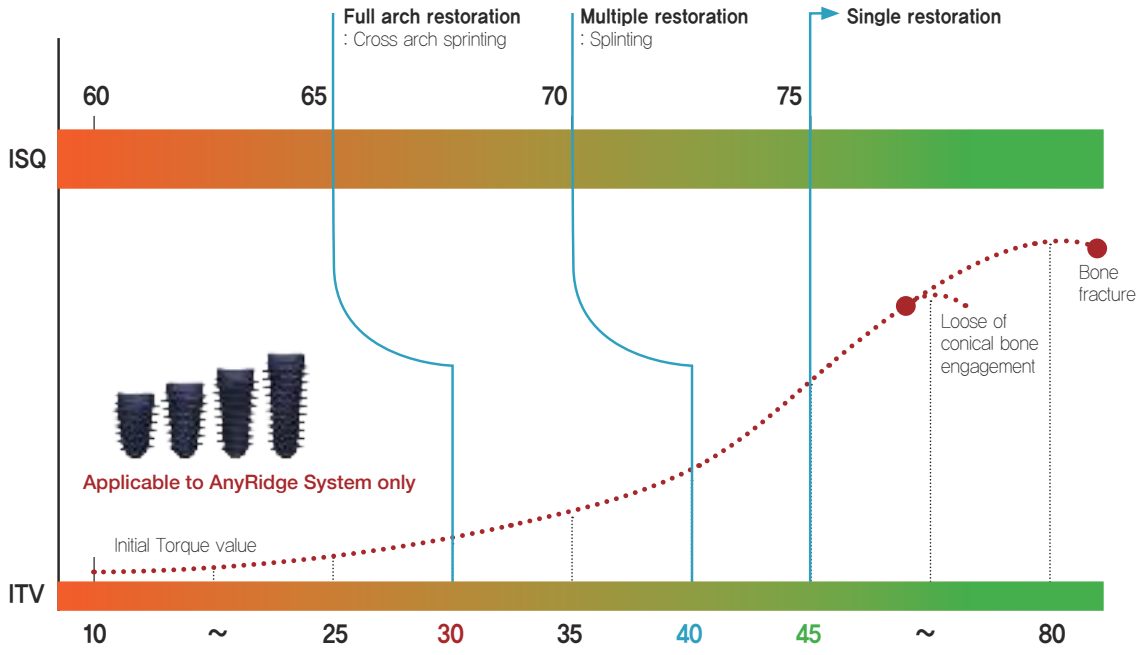
Align the green part of Handpiece Carrier as [Image 2] to make hex position in buccal direction.



[Image 1] [Image 2]

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

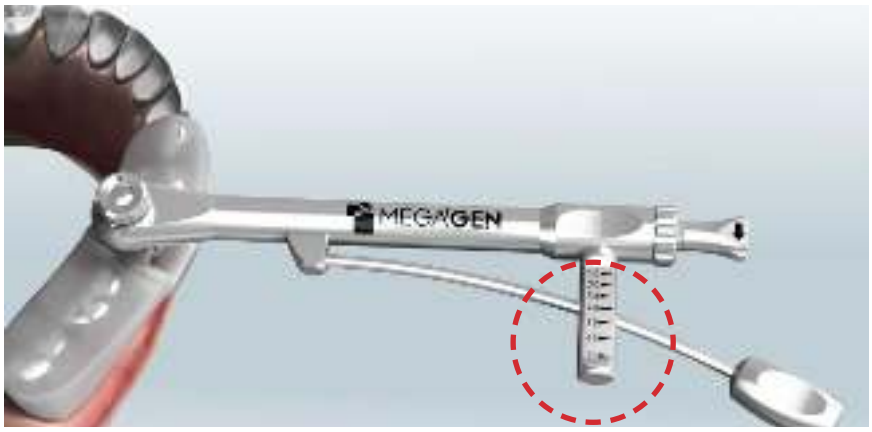
If you use AnyRidge System, the recommended ITV (Initial Torque Value) and ISQ (Implant Stability Quotient) for immediate loading are ITV = 45Ncm/ISQ=75 or above. These values are only for the AnyRidge system and cannot be applied to other systems.



# 5. Recommended condition for ONE-DAY IMPLANT & immediate loading

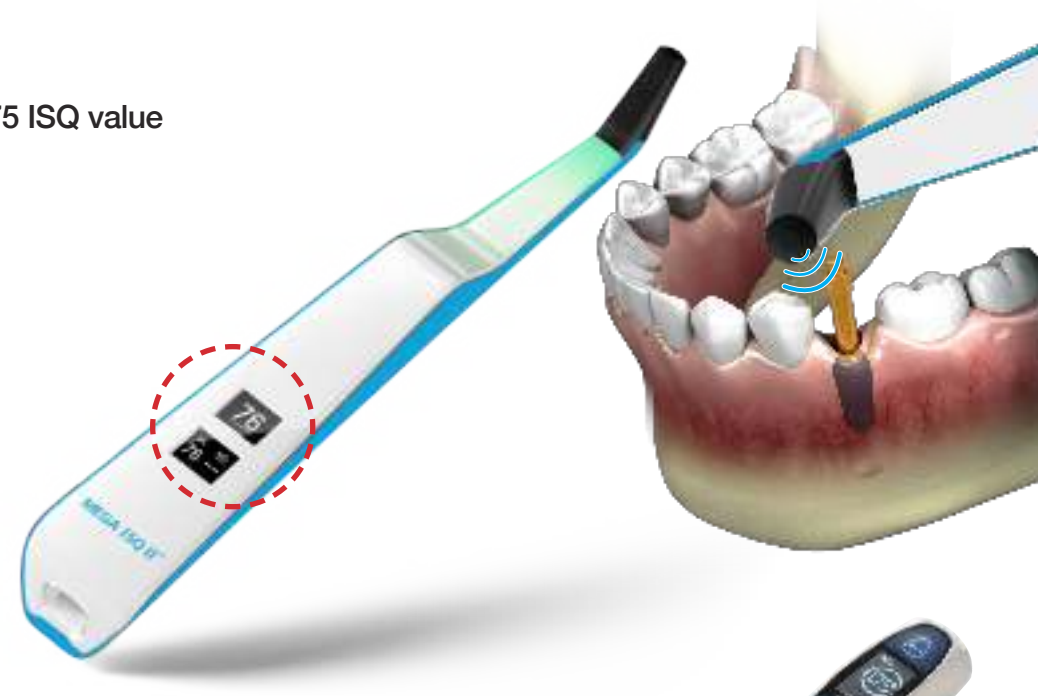
According to our own clinical experiences & data, we strongly recommend to check two values : Insertion Torque & ISQ value.

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




Available on our R2GATE Universal Kit.

**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.