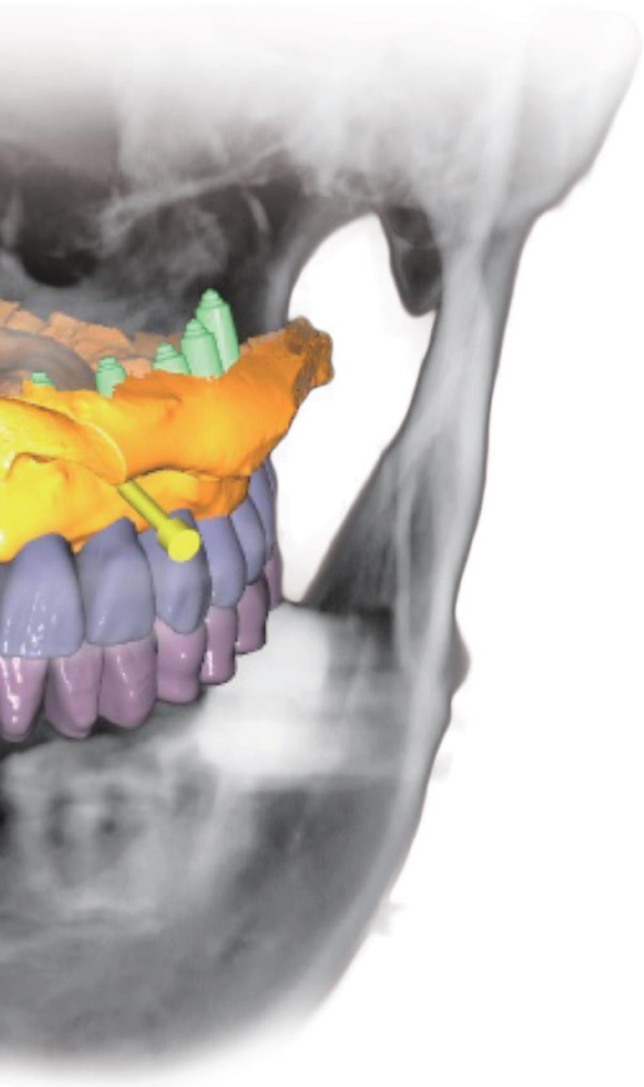
R2GATE™

turning imagination into reality

since 2012



R2GATE™ guided surgery

R2 Guide™

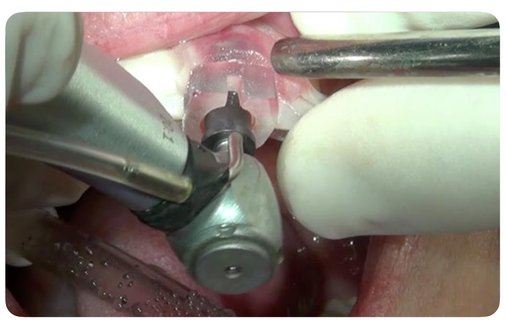
Virtual planning to reality!

- 3D printed based on approved treatment plan
- One body combining drill guide hole(s), drill stopper(s), & hex control

R2 guided surgery

Highly accurate & convenient

- All drills include drill, drill guide & drill stopper as one-body
- No need for metal sleeves or spoons!
- Shorter surgery time!



1 Sterilization of R2 Guide & prosthesis

Sterilize R2 Guide & prosthesis in ANTISEPTIC (e.g. chlorhexidine or gluconate) for 30 minutes before surgery

! Do NOT use autoclave

- Autoclave causes distortion of R2 Guide
- Sterilize R2 Guide using antiseptic

2 Wide implant (over Ø5.0mm - real size)

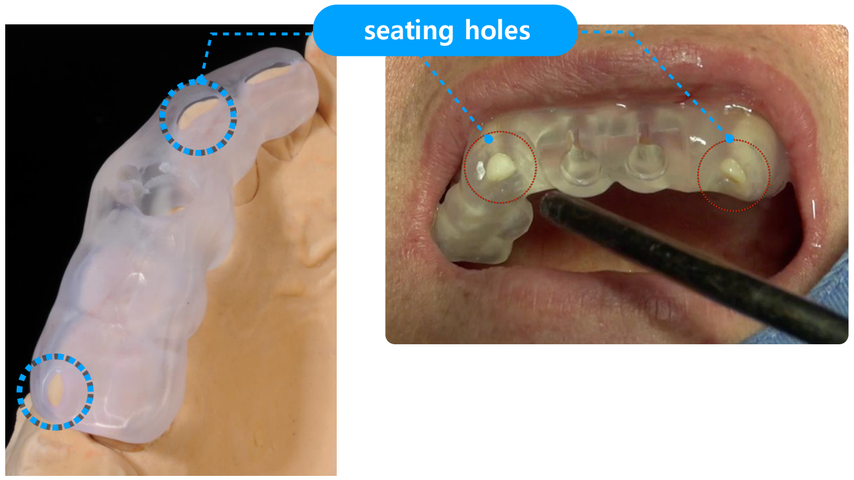
In this case, R2 Centre provides two R2 Guides:
- regular drill guide hole (Ø5.0)
- wide drill guide hole (Ø5.0-6.5)

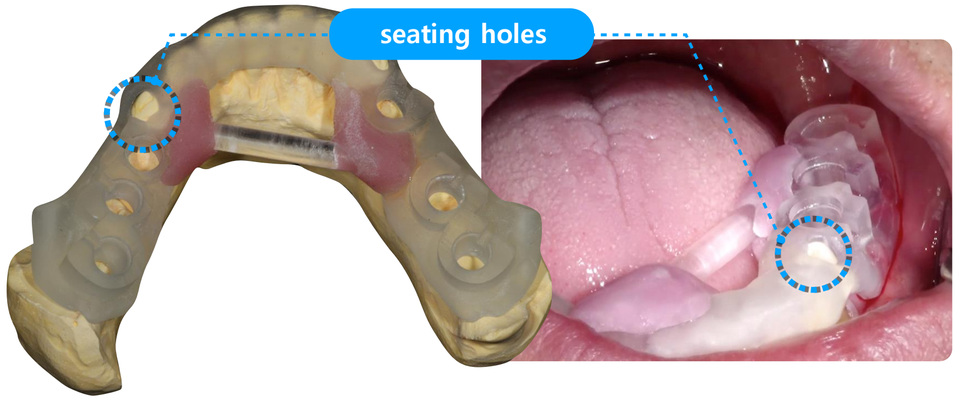
Drill to 4.8mm drill using regular drill guide hole, then use wide drill guide hole to finish drilling & place wide implant

1 Tooth & tissue support

For improved accuracy, R2 Guide is seated using several seating holes for neighboring teeth

Once R2 Guide is seated, check fit of seating holes & cusp tip of neighboring teeth





2 Tissue-only support (edentulous case)

In this case, R2Guide is seated using putty bite & specially designed anchor pins

! If opposing jaw is dentures, R2 Guide should be anchored with dentures in

a Combined R2 Guide & putty bite

b R2 Guide impression side

c Teeth impression side

Anchor Kit:

R2 Guide is fixed using anchor pins inserted via pinholes in R2 Guide

Triangular format of anchor pins is recommended for better fixation.

Place R2 Guide & putty bite in mouth together

Bite with maximum occlusal force

Screw anchor pins into pin holes using hand driver

Advance drilling (2.0 x 13mm) can be used in case of hard bone (mandible)

R2GATE™

Compatible with all major implant systems

R2 Surgical Kits

Various kits available!

1 R2 Full Kit

Complete set of drills + system-specific implant carriers for MegaGen implant systems [AnyRidge, AnyONE]

2 R2 Universal Kit

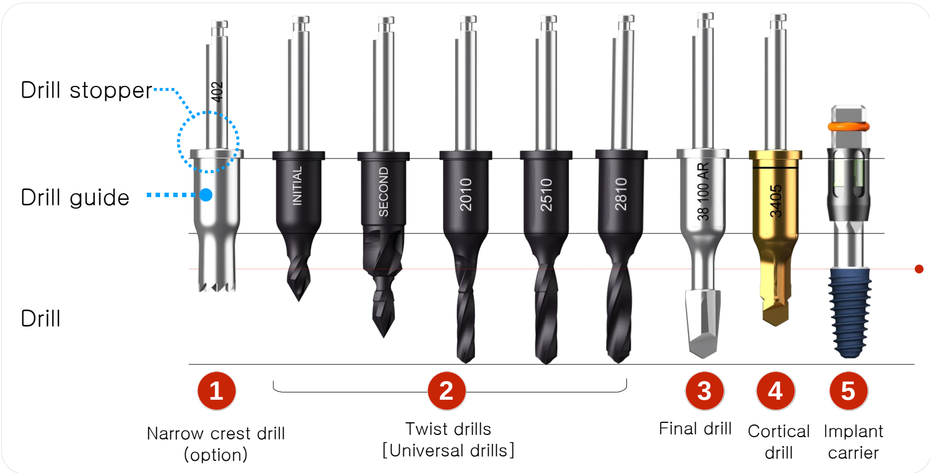
Essential drills (initial - Ø2.8 drills) for all major implant systems
Implant carriers & final drills can be added for preferred implant system

3 R2 Narrow Kit

For MINI implant system:
Ø3.5mm drill guide is designed for narrow surgical sites, such as anterior mandible or close adjacent teeth

R2 Guide drilling protocol

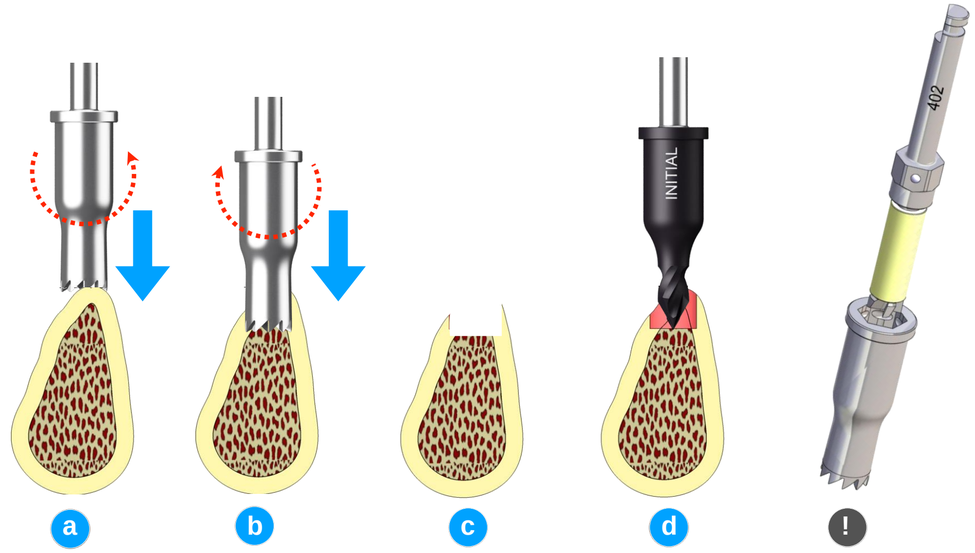
- All drills combine drill, drill guide, and drill stopper in one-body
- No need for metal sleeves or spoons!
- Shorter surgery time!
- Disposable final drill provided for each surgery to optimize initial stability



R2 Universal Kit

1 Narrow crest drill for narrow or steep alveolar ridge

To prevent slipping in cases of narrow or steep alveolar ridge, use narrow crest drill first to flatten drilling area

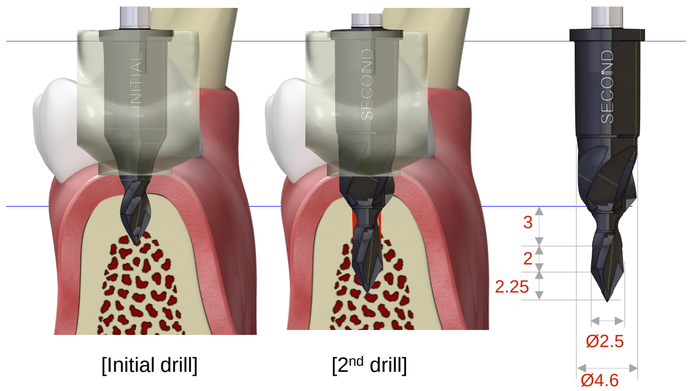


- a Engage bone when drilling counter-clockwise at less than 100 RPM
- b Drill clockwise at 400~600 RPM until drill is stopped by drill stopper
- c Withdraw drill
- d Mark drilling start point on bone using initial twist drill
- ! Autogenous bone can be harvested from shank of narrow crest drill

R2 Guide drilling protocol

2 Initial & 2nd drilling

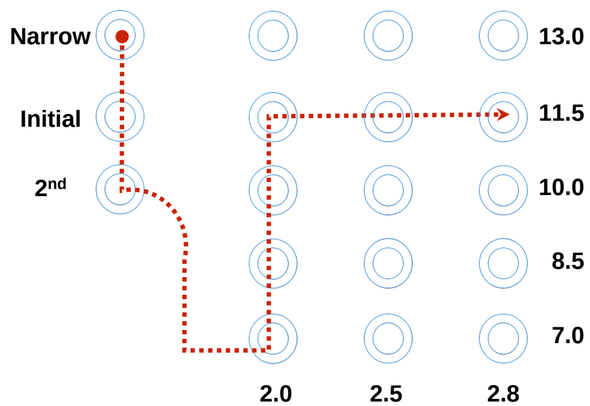
- Use initial drill to mark drilling start point on bone
- 2nd drill also removes excess bone above fixture platform for better connection with prosthesis
- In case of dense bone, use 2nd drill right before fixture placement



[Initial drill] [2nd drill]

3 Graduated Drilling: critical to success!

- Use graduated drilling sequence to increase osteotomy depth & diameter
- E.g. when placing 11.5mm 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

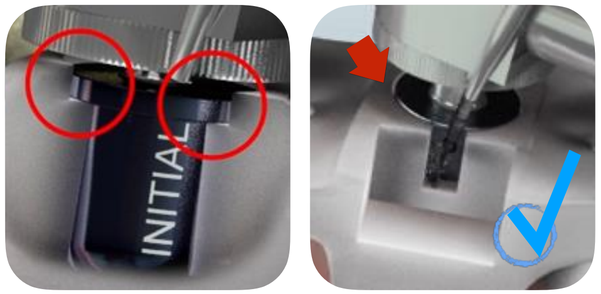


4 Drill guide: for maximum accuracy

- Do NOT start drilling until drill guide is completely inserted into guide hole
- Always start drilling at low RPM[300~500 RPM]

5 Slow UP & DOWN drill motion

Increase osteotomy depth in 1mm increments using slow up & down motions until drill stopper reaches stopper position in drill guide



R2 Guide drilling protocol

6 Drilling strategy according to bone density

Color-coded analysis of bone morphology identifies invisible bony structure for predicting optimal drilling sequence to achieve strong initial stability

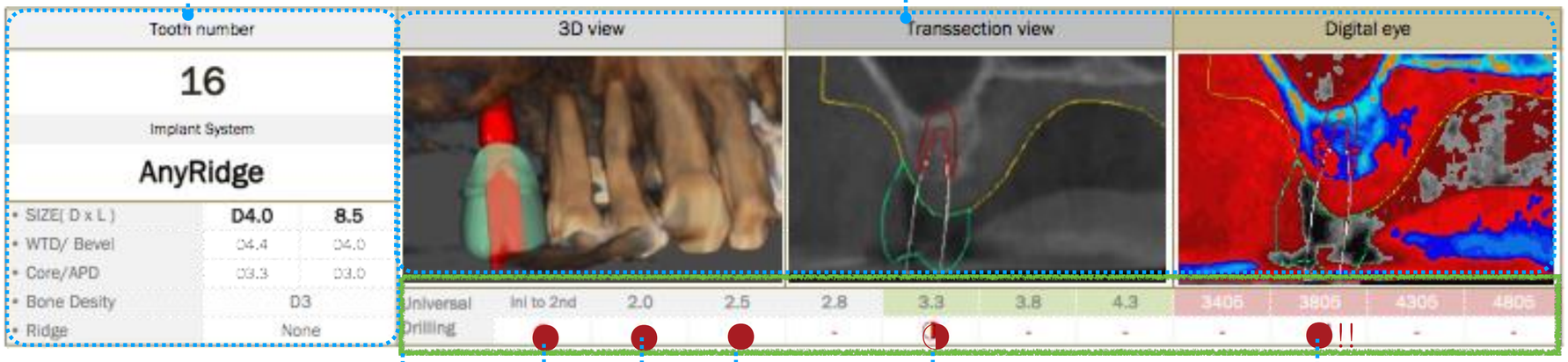
Recommended drilling speed **500 - 800 RPM**

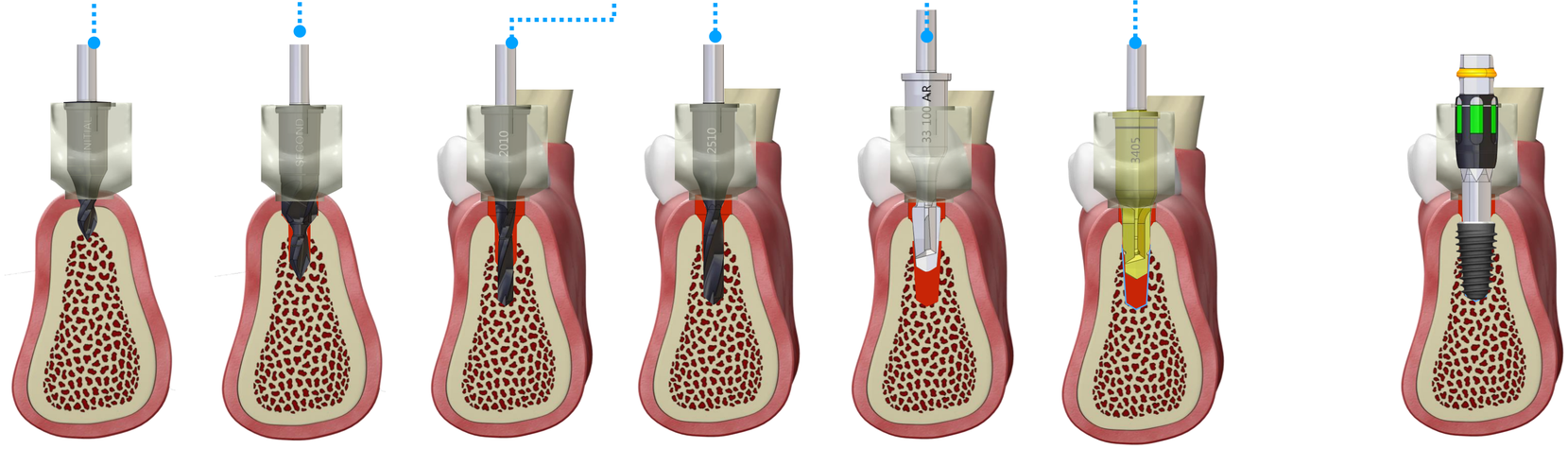
Symbols used in drilling protocol report

- ● Full-depth drilling
- ◑ Half-depth drilling
- !! Optional drilling depending on decision of clinician

Fixture information & bone density

CBCT view & Digital EYE



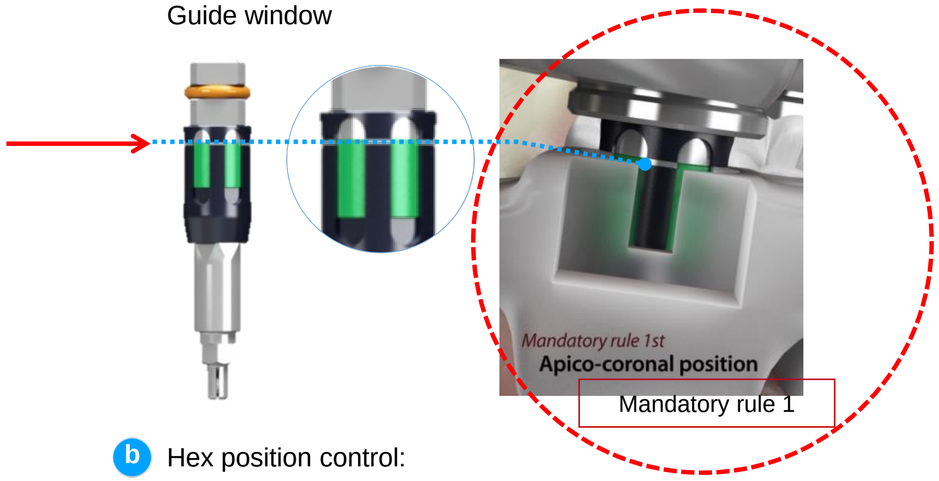


Initial drilling | 2nd drilling | 2.0 drilling | 2.5 drilling | 3.4 drilling | Cortical bone drilling | Fixture placement

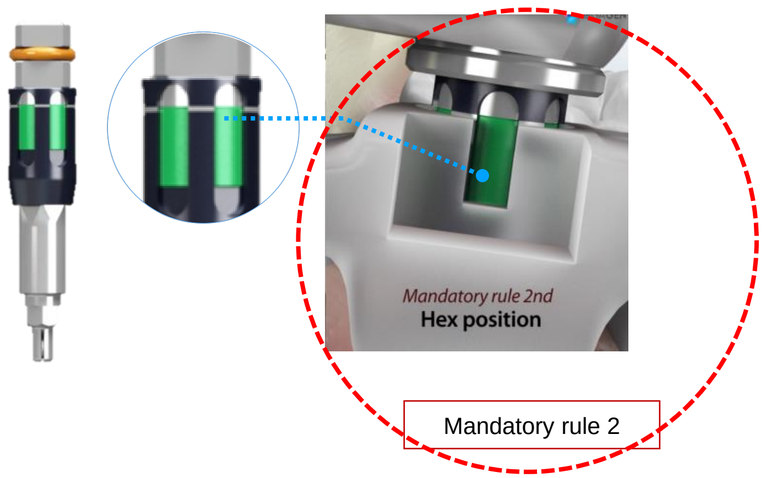
7 Fixture delivery using implant carrier

Fixture is delivered via R2 Guide using implant carrier

a Fixture depth control:
Align upper line of implant carrier with R2 Guide window



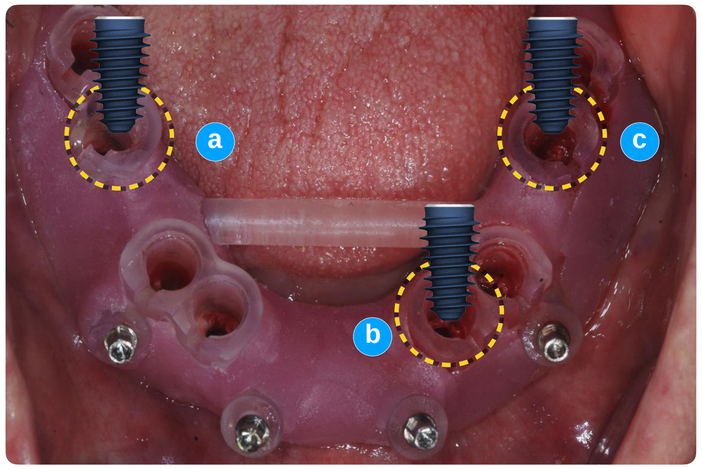
b Hex position control:
Align green part of implant carrier with R2 Guide window turning in buccal direction



Implant placement in fully edentulous case

Anchor screws

In addition to anchor pins, use of anchor screws in triangular formation is highly recommended in fully endentulous case to increase stability of R2 Guide



Regular & wide fixtures

- When placing regular & wide fixtures, R2 Centre will provide 2 R2 Guides
- Place regular fixtures first & use same anchor screw positions for placing wide fixtures

Anchor screws

ONE-DAY IMPLANT™

An effective reality!

R2GATE treatment planning enables pre-fabrication of customized drilling guide & prosthetics before surgery, which reduces chair-time, minimizes surgical procedures & allows for immediate loading

Customized prosthetics

Customized abutment & crown

- ZrGEN (Ti-Base)
- customized abutment
- zirconia/titanium provisional crown

Screw-retained crown (All-in-One)

- ZrGEN (Ti-Base)
- PMMA CAD/CAM provisional crown

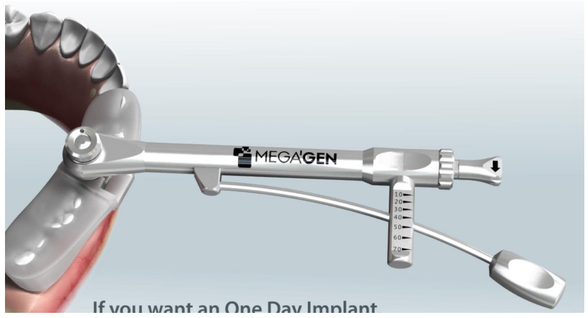
All-on-Four(Six) type

- customized abutment
- multi-unit abutment
- 3D printed or milled dentures

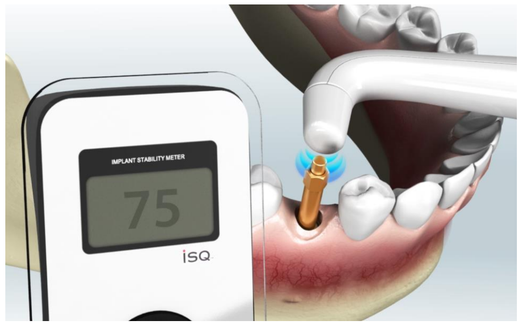
Recommended conditions for immediate loading (ONE-DAY IMPLANT)

Based on extensive clinical trials, two key values need to be checked [limited to AnyRidge system]:

a Insertion Torque Value (ITV): >45Ncm



b Implant Stability Quotient (ISQ): > 70



! If either value is insufficient, loading should be delayed

ISQ & ITV conditions for various restorations