



Crestal Approach - Sinus KIT

CAS-KIT



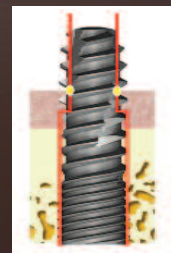
Crestal Approach - Sinus KIT

CAS-KIT

(Crestal Approach - Sinus KIT)

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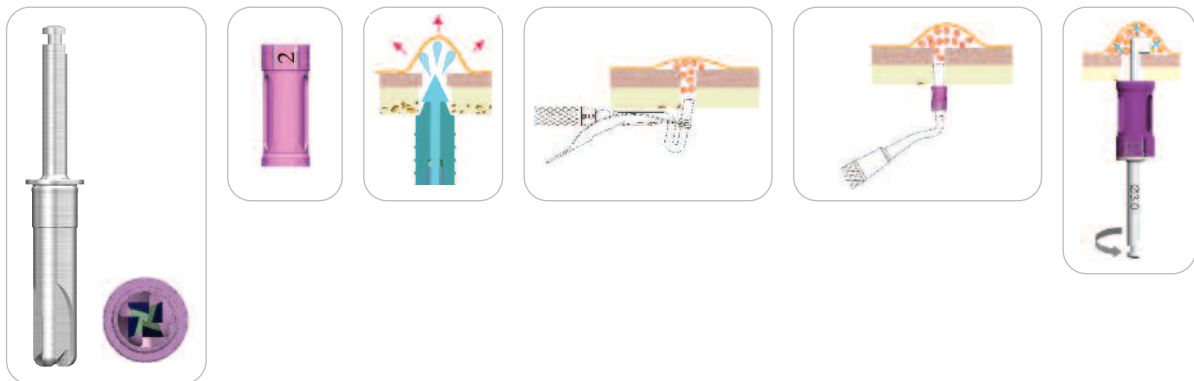
● Introduction ↙

- Hiossen's Crestal Approach Sinus KIT (CAS-KIT) is specifically designed to easily and safely lift the membrane in the maxillary sinus by method of crestal approach.

Unique design of the CAS Drill is the key feature of the CAS Kit. With its unique drill shape, it has enhanced the convenience and the safety of crestal approach sinus surgery by creating conical shaped bone chip to safely lift membrane. CAS Drill also provides precision drilling, smooth and stable insertion, easy path correction, and septum surgery.

● FEATURES of CAS-KIT ↙

- Safely lifts the sinus membrane while drilling
- Unique Stopper system that prevents over drilling into the sinus cavity
- Hydraulic Lift System that easily & safely lifts the membrane
- Bone Carrier System for transferring and filling bone material
- Bone Spreading System for spreading & compacting bone material
- Simple and intuitive surgical system
- The ability to combine Osteotome in surgery

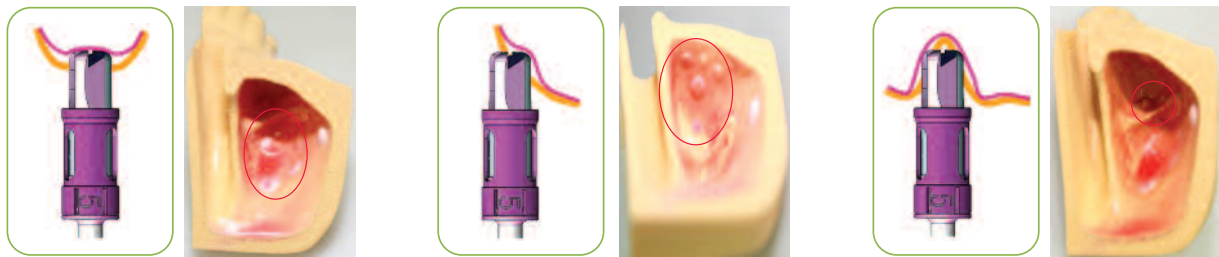


● CAS-Drill SPECIFICATIONS & PERFORMANCE ↙

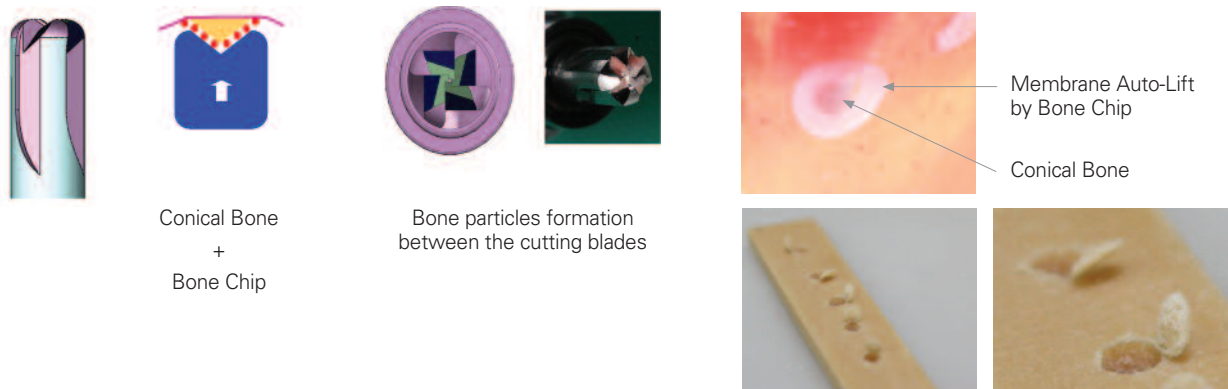
- The CAS-Drill is designed to safely and rapidly lift the maxillary sinus membrane from a crestal approach. The CAS-Drill can be used for either straight or tapered fixtures. It is optimized for insertion torque, initial fixation strength, and tactile feedback when using Hiossen's HG III & OSSTEM's GS / TS III Fixtures.

The CAS-Drill:

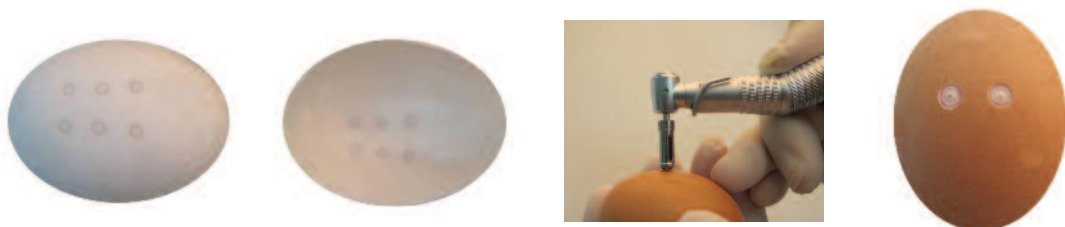
- The atraumatic design of the drill tip allows the user to perform sinus surgery even if the sinus floor is flat, incline, or septum.



- It's design forms conical bone and bone chips.
- The CAS-Drill tip has an inverse conical shape. This shape will form a conical bone chip when drilling, which safely lifts the membrane. In addition, bone particles generated during drilling, discharges upward, producing a Membrane Auto-Lift function.

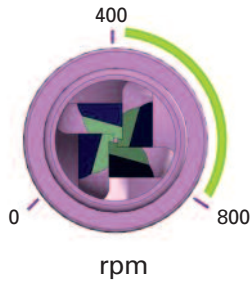


- Membrane can safely be lifted.



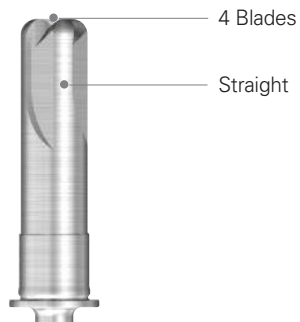
The CAS-Drill can:

- Drilling can be done at various speeds, from low to high speed (800 rpm), allowing flexibility during surgery.

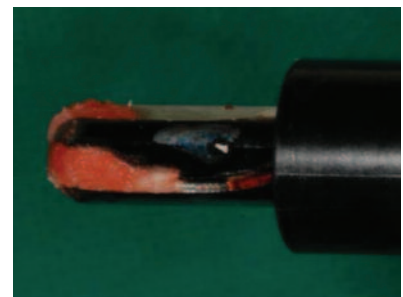


Guide : 400 ~ 800 rpm
400 to 600 rpm is recommended for novice users.

- The drill is designed with four blades to reduce the deflection of the bone, and the straight edges of the drill are designed to dampen the vibration.



- Ability to harvest bone particles at low speed at around 50 rpm.



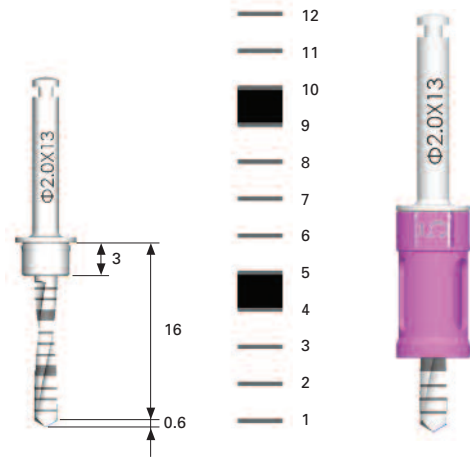
• Typically, the CAS-Drill can be used up to 50 times. *

* Number of uses may depend on the type of bone.

● Components ↙

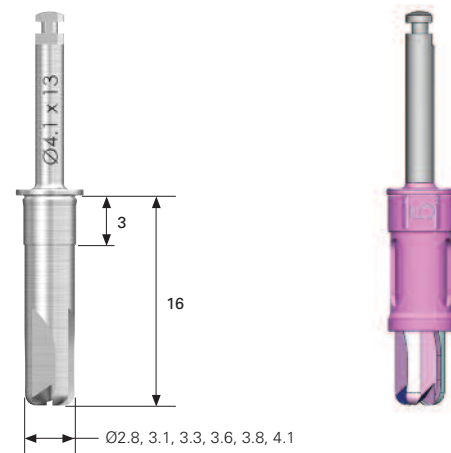
1) Ø2.0 Twist Drill

- The drill tip is 0.6 mm and is 13 mm long.
- Recommended drill speed: 1000~1500 rpm
(Water Infusion + Pumping)
- 1 mm spaced markers with wide bands at 4~5, 9~10
- Unique Stopper system
- It is recommended to stop drilling when there is about 2 mm of bone left; please calculate this beforehand when using CT images as a guide.



2) CAS-Drill

- Comes in six (6) diameters: Ø2.8 / Ø3.1 / Ø3.3 / Ø3.6 / Ø3.8 / Ø4.1
- Allows 13 mm Fixture to be implanted
- Drilling is dependent upon the fixture diameter and the how far the fixture protrudes into the maxillary cavity.
- Drilling speed ranges from low to high speed (800 rpm)
Experienced: 800 rpm; Beginner: 400 to 600 rpm is recommended
(Water Infusion + Pumping)
- Unique Stopper system



■ An example of a CAS-Drill depends on the Hiossen's HG III & OSSTEM's GS / TS III Fixture diameter and protrusion height - Fixture protrusion height (mm)

Fixture	HG III, GS / TS III F Ø4.0		HG III, GS / TS III F Ø4.5		HG III, GS / TS III F Ø5.0	
	0~3	3~6	0~3	3~6	0~3	3~6
Fixture Protrusion Height (mm)	0~3	3~6	0~3	3~6	0~3	3~6
	Ø2.8	Ø3.1	Ø3.3	Ø3.6	Ø3.8	Ø4.1
CAS-Drill						
Code	SNDR2813T	SNDR3113T	SNDR3313T	SNDR3613T	SNDR3813T	SNDR4113T

● Components ↙

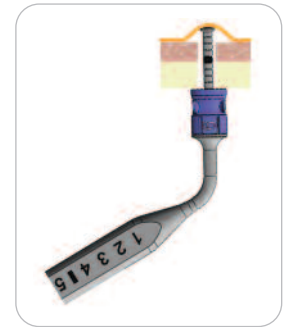
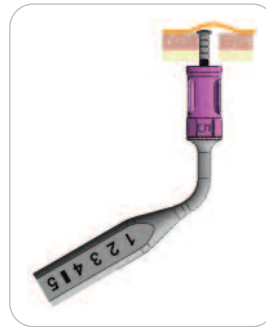
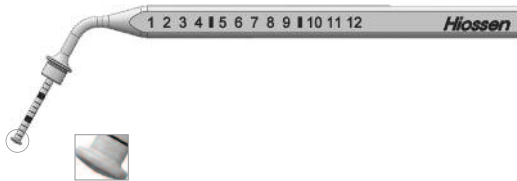
3) Stopper System

- A total of eleven (11) stoppers; labeled 2 to 12 mm
- Labels indicate the remaining length of the drill (from drill tip to stopper top)
- Each stopper is anodized and color coded. Labels are laser etched.



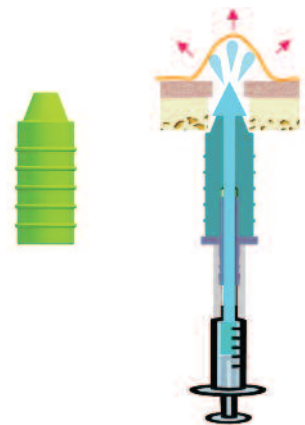
4) Depth Gauge

- Measures the thickness of the remaining bone
- The atraumatic tip can be used to confirm membrane lifting
- Can be used with the Stopper system
- **Caution: Do not use the Depth Gauge to lift membrane beyond 1 mm.**



5) Hydraulic Lifter

- The Hydraulic Lifter uses normal saline to raise the membrane
- **Infuse with a 1 cc syringe.**
- Required volume of saline
To expand 3 mm of the membrane, generally 0.2 to 0.3 cc of saline is injected. Inject saline very SLOWLY.
- **Contraindication**
 - Not recommended for patients with inflammation of the maxillary Sinus (Sinusitis)
 - Not recommended for patients with complex morphology of the sinus floor (including the septum)

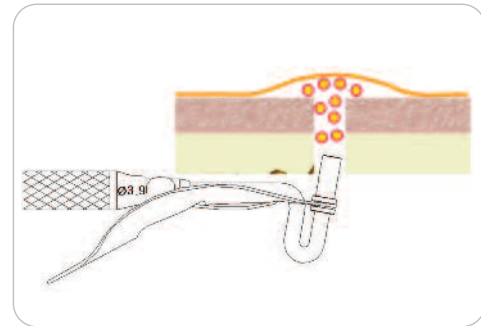


6) Bone Carrier

- Transporting bone material to the grafting site
- Has dual diameters: Ø3.5 and Ø3.9

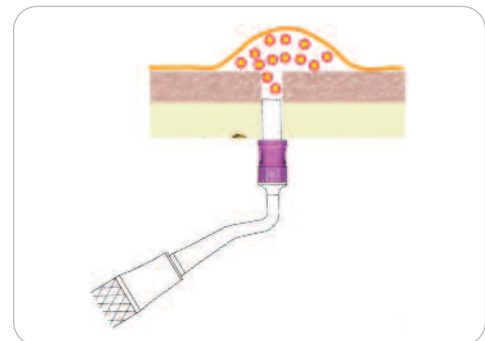
- Bone graft material and filler (for reference)

Herry Y and Lee DY, 2005	
Lift heigh	Volume of bone matrix
3 mm	0.36 cc
4 mm	0.5 cc
5 mm	0.7 cc
6 mm	0.9 cc



7) Bone Condenser

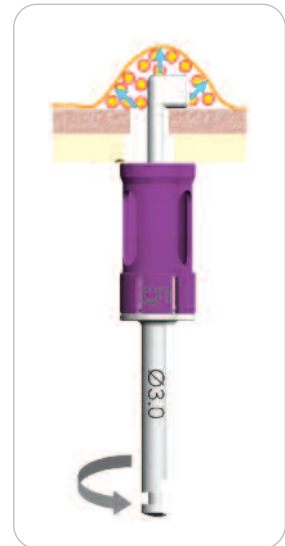
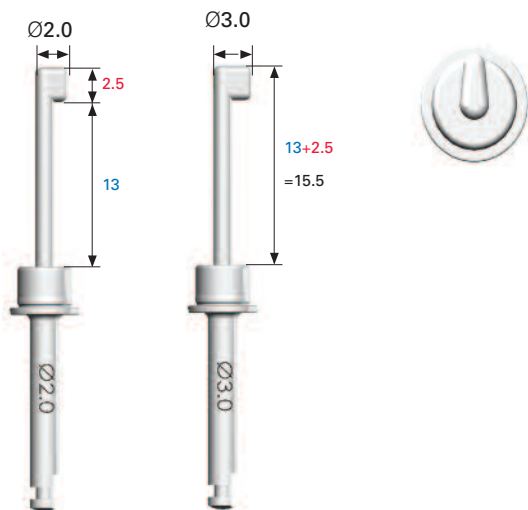
- Assists compacting bone grafting material
- Has dual diameters: Ø2.3 and Ø3.3
- Can be used with the Stopper system
- Wide banded markers at 4-5 and 9-10 mm
- Can also be used to confirm membrane lifting after using the CAS-Drill



● Components

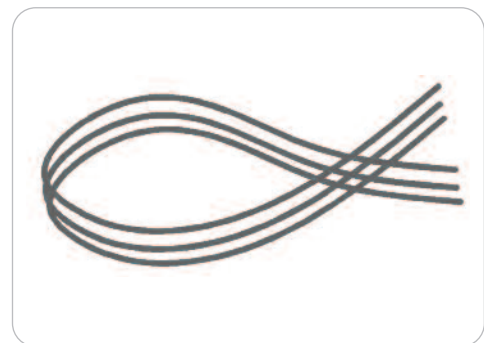
8) Bone Spreader

- Evenly spreads bone material after transplanting bone material to the site.
- After injecting 0.2 to 0.3 cc use the spreader and add additional material
- Use at lower speeds: ~ 30 rpm is recommended
- Comes in two diameters: Ø2.0 / Ø3.0
- Can be used with the Stopper feature
- The total length (head tip to stopper hilt) is 2.5 mm longer than other CAS-KIT tools
Caution: When equipping this tool remember that the length is 2.5 mm longer.



9) Hydraulic Lifter Tube

- Used with a syringe
- Reusable, sterilize in an autoclave.



● Clinical Indications & Case Study

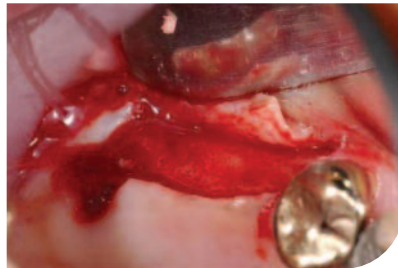
1) #26, #27 Septum Case (F/36)

*Data source from: Professor Kim Gyeong-won from Chungbuk National Univ. Hospital

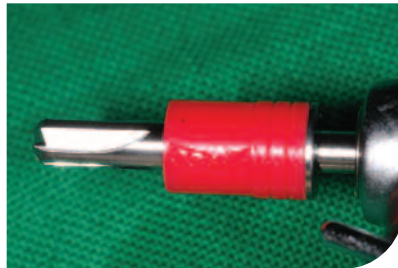
- #26 Septum Case
- The membrane is lifted 4~5 mm and the remaining bone is about 5 mm
#26 GSII Ø4.0 x 10 mm
#27 GSII Ø4.5 x 10 mm were implanted



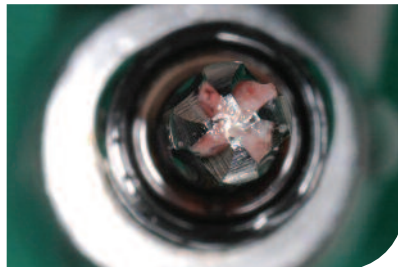
- Ø2.0 Twist Drill
Using a 3.0 mm Stopper with the 2.0 Twist Drill, we are able to drill 3 mm into the bone, confidently leaving 2mm of bone.



- Ø2.8 → Ø3.1 CAS-Drill (800 rpm)
A 5 mm Stopper is used for the final drilling and lifting of the membrane.



- Membrane safely lifted
A conical bone chip is formed and pushes up the membrane, with the assistance of bone particles formed during drilling.



Clinical Indications & Case Study

1) #26, #27 Septum Case

- Depth Gauge

Confirm membrane lifting and measuring the bone thickness



- Membrane Lift

The membrane is lifted by slowly injecting 0.30 cc of saline solution using a 1 cc syringe



- Bone Carrier

Osteoss Bone Powder 0.25 cc is transplanted
A mix of Cortical 50%: Cancellous 50%



- Bone Condenser

Vertical compacting of the bone grafting material



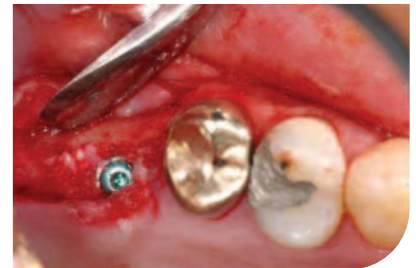
- Bone Spreader

Evenly spread the bone grafting material at 10 rpm of rotational speed

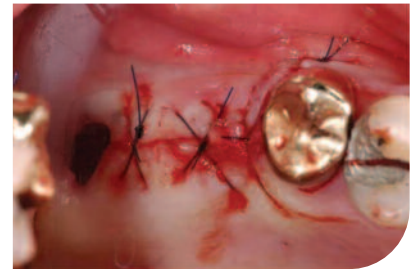


1) #26, #27 Septum Case

- Fixture implantation
#26 GSII Ø4.0 x 10 mm implanted
using 20 to 30 Ncm

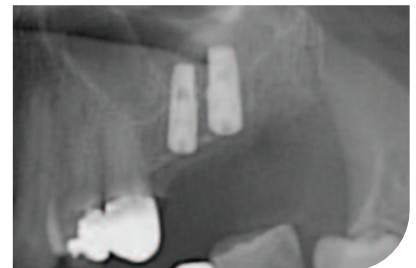


- Fixture implantation
#27 GSII Ø4.5 x 10 mm implanted
using 20 to 30 Ncm



- Results
#26, #27 Missing, a case with 6 mm
of bone remaining

Even though there was a Septum at #26, fixture implantation was successfully completed using the CAS-KIT to safely lift the membrane and establishing a secure implant site.



● Clinical Indications & Case Study

2) #26 Missing Case

*Data source from: Dr. So, Gwang-seup; Mirae Dental Clinic

- USII Ø4.0 x 11.5 mm implant planning
 - Initiated using a Ø2.0 Twist Drill
 - CAS-Drill at 800 rpm
 - Membrane lifted with 0.25 cc of saline solution
 - Bone Condenser 4~5 mm lifting
 - Bone Spreader at 10 rpm
 - Initial fixation force 36 Ncm



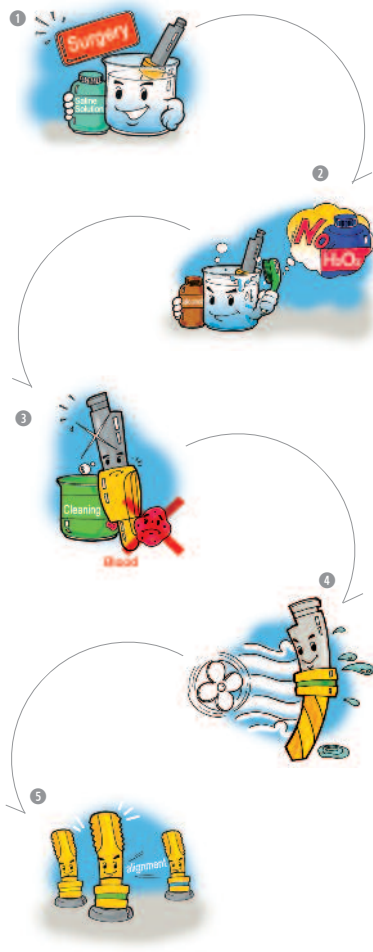
3) #25 Hydraulic Lift Case

*Data source from: Dr. Jung, Gi-don; Bright Smile Dental Clinic

- TSIII Ø4.5 x 10 mm implant planning
 - Initiated using a Ø2.0 Twist Drill
 - CAS-Drill at 800 rpm
 - Membrane lifted with 0.30 cc of saline solution
 - Bone Condenser: 4 mm lifting
 - Bone Spreader at 30 rpm



CAS-KIT Care & Maintenance



① Prepare tools for surgery by soaking them in a "saline solution" or in "distilled water."

② After surgery: All tools should be soaked in an "alcohol solution".

- Caution**
- Avoid using Hydrogen Peroxide.
 - Hydrogen Peroxide will discolor laser markings and anodized surfaces.

③ Tools should be cleaned thoroughly with distilled or tap water to wash away any remaining blood and foreign material.

④ Completely dry all tools using a dry cloth or warm air.

⑤ Dried tools should be stored in the KIT case.
(Please refer to the color coding when placing the tools back in the case)

⑥ After placing all the tools back into the kit, dry the entire kit in an Autoclave (132° c for 15 minutes) and then store the kit at room temperature.

NOTES:

It is recommended to re-sterilize the surgical KIT right before surgery. (132° c; for 15 minutes)

Immediately after surgery, all the tools should be cleaned and stored.

The CAS-KIT has a one year warranty on all parts & case.

The recommended usage of the drills is 50 times.

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