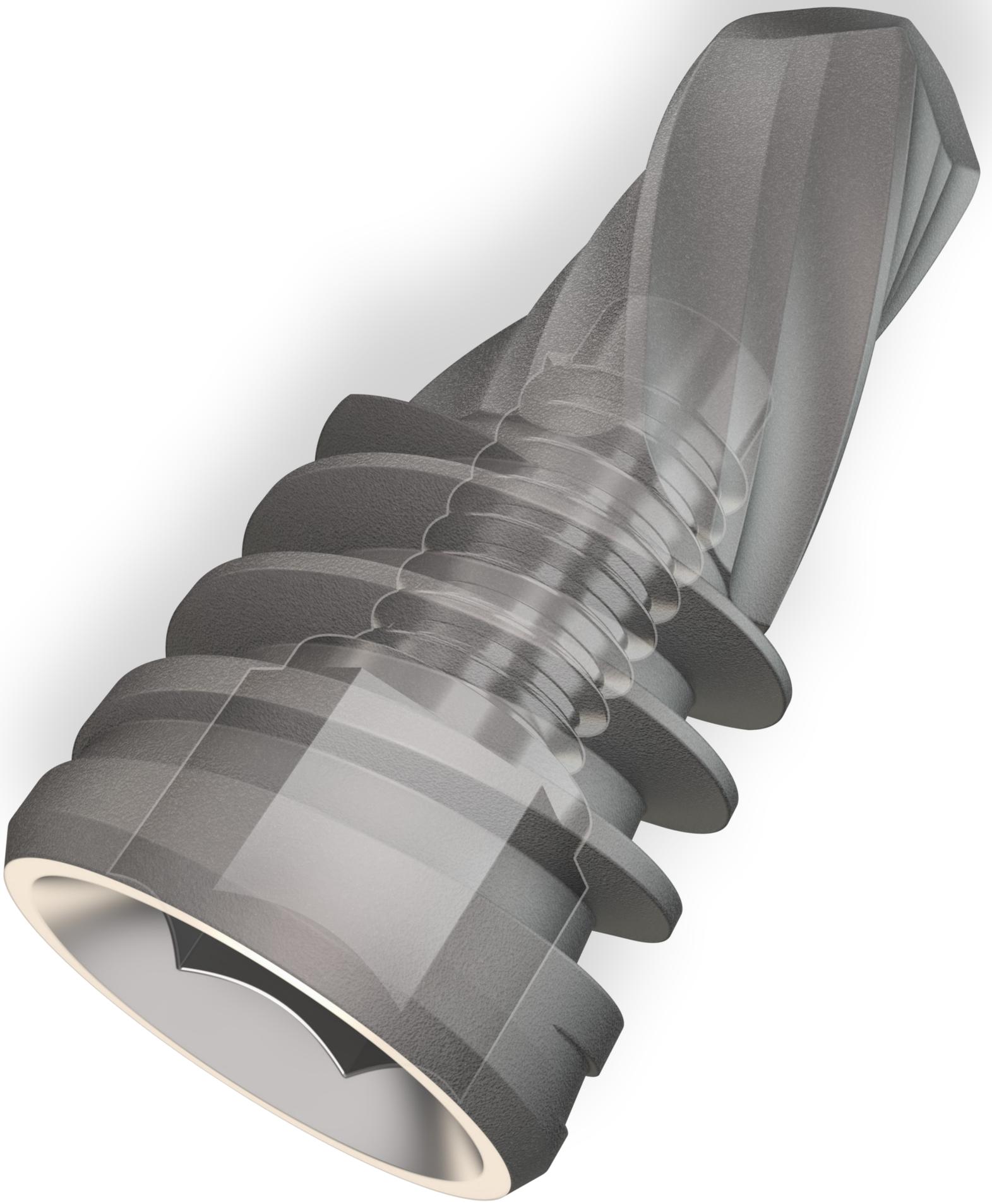
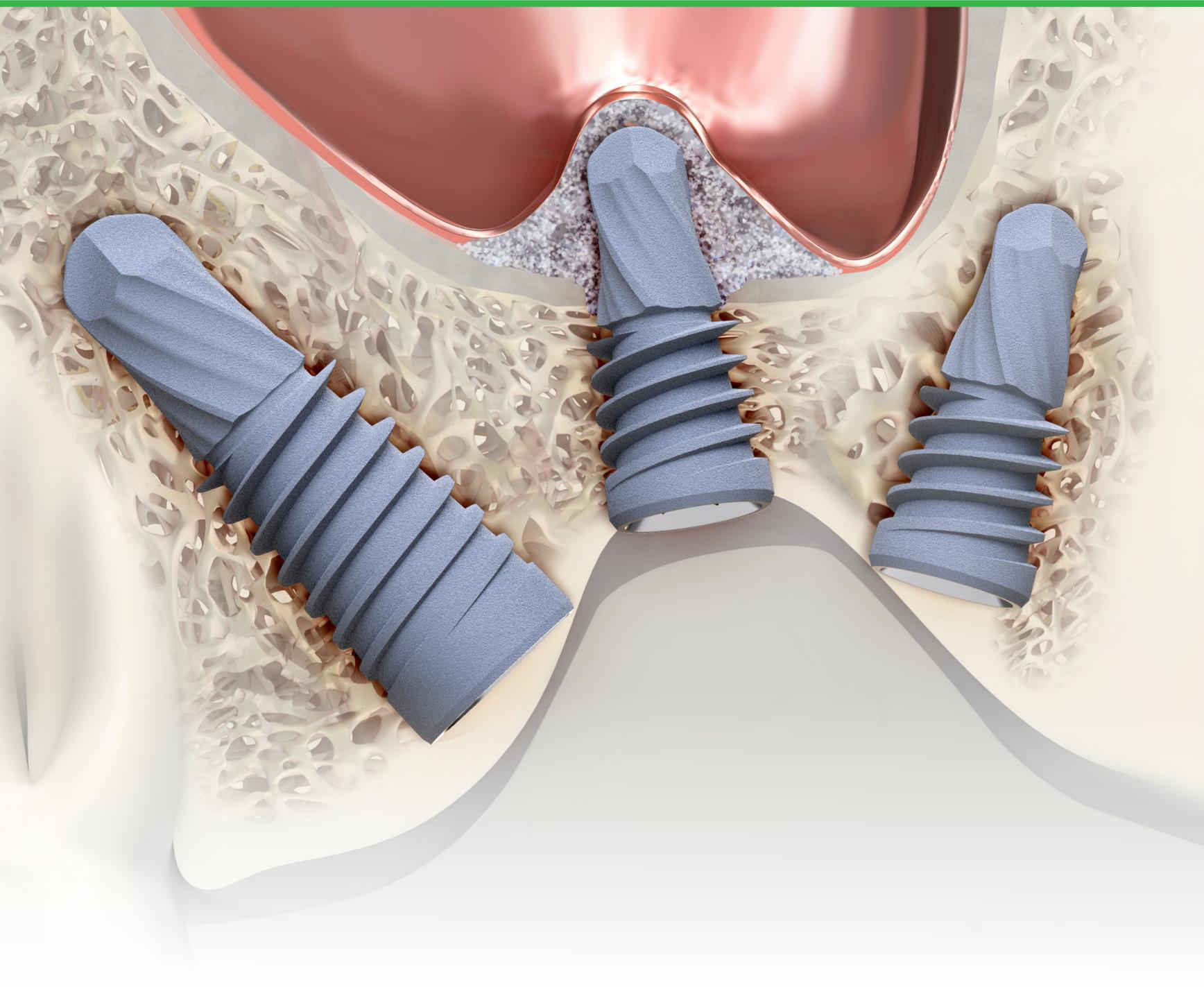


# SMART

Osseodisplacement Implant™



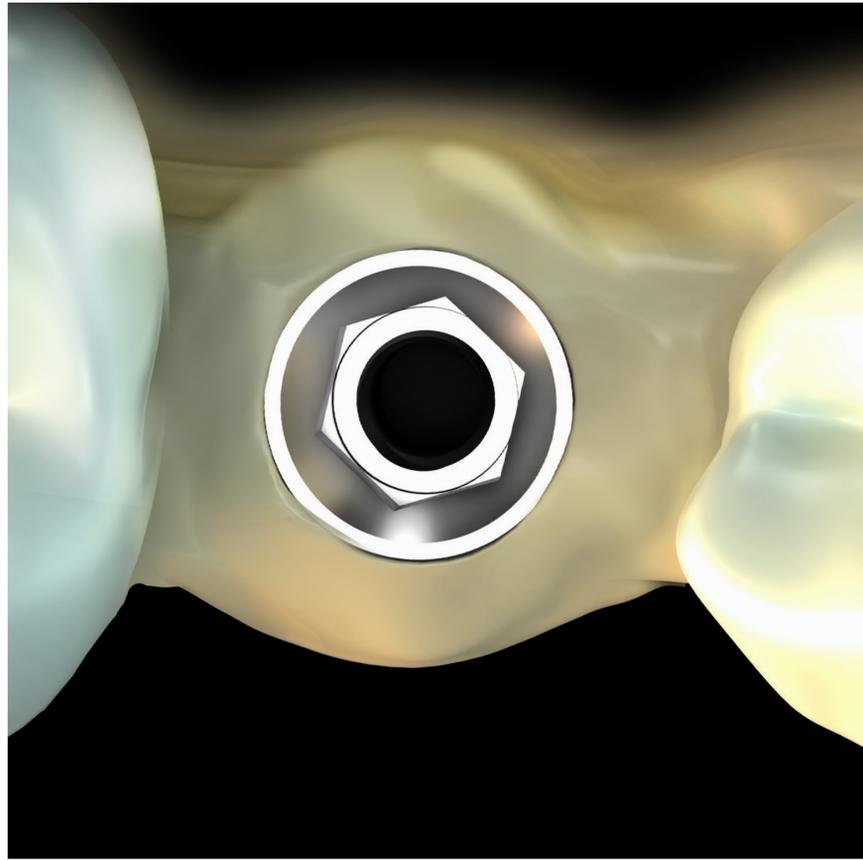
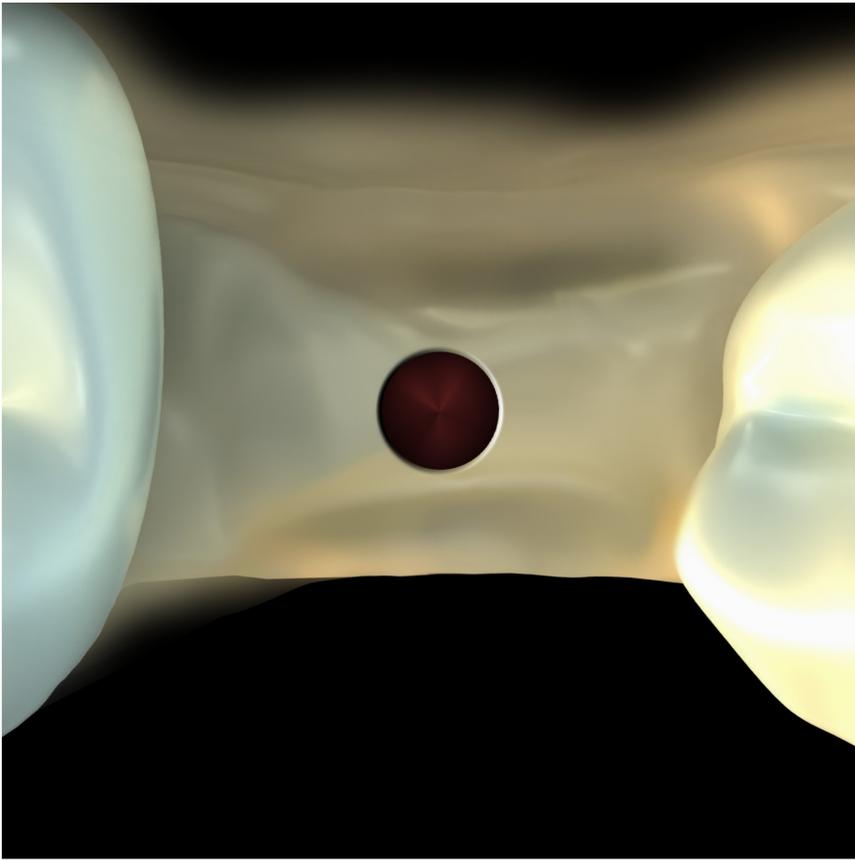
# SURGICAL TECHNIQUE MANUAL



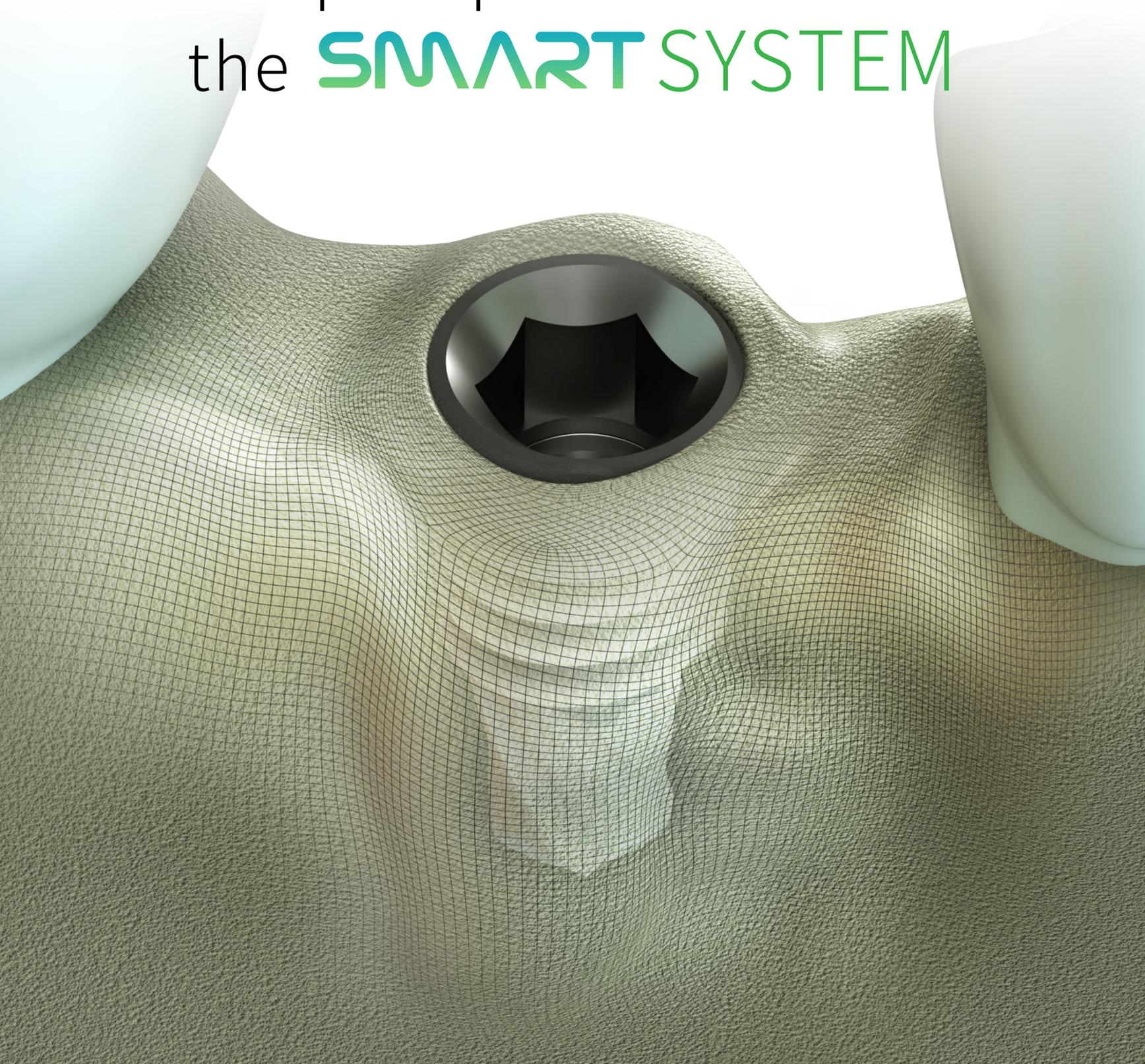
The **SMART SYSTEM** transforms a typical closed sinus lift procedure, which entails site preparation, channeling of autogenous bone graft and then implant insertion, **into a single step technique**

# WHY SMART<sup>™</sup> SYSTEM?

## Narrow ridge



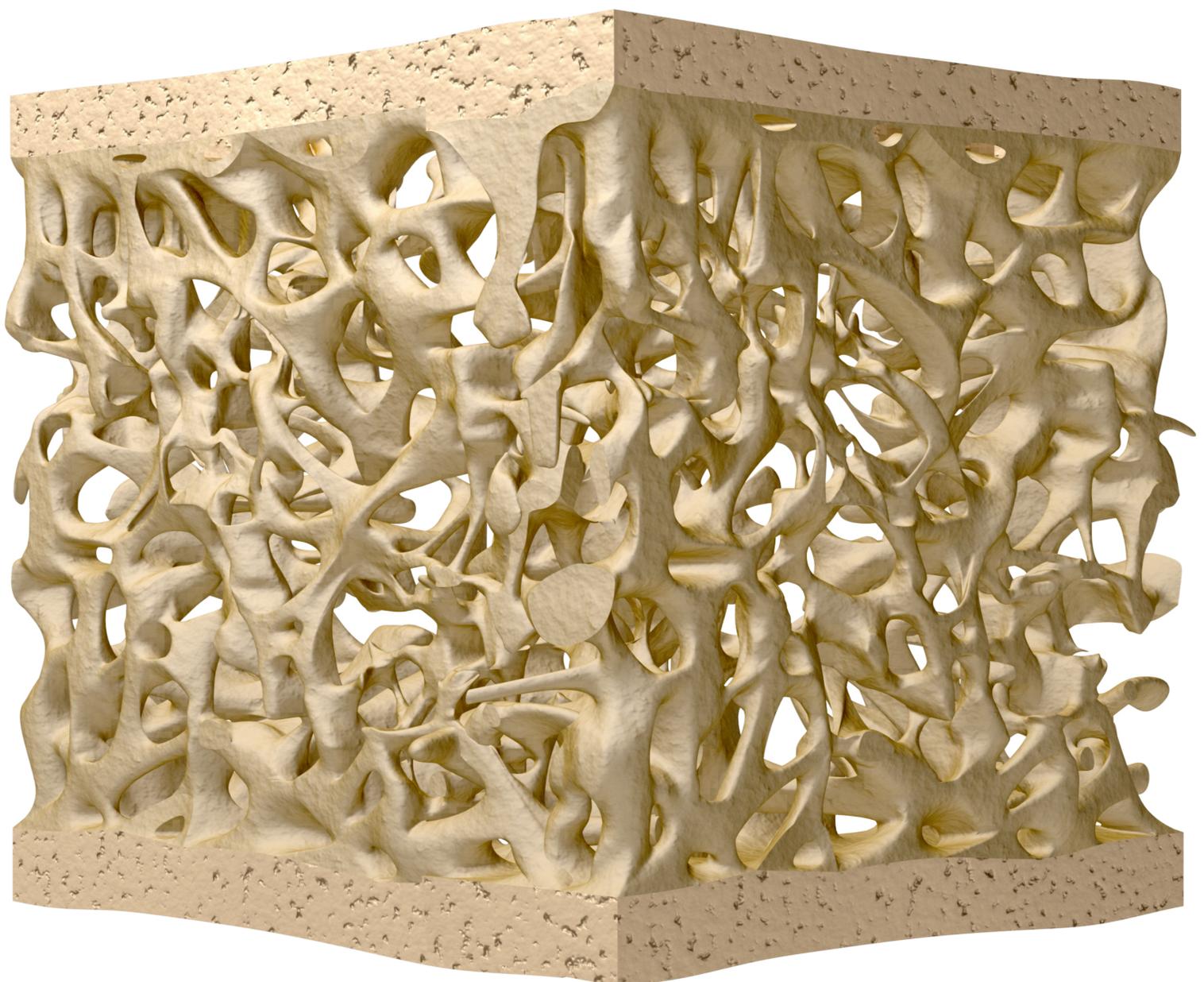
For treating atrophic ridge by widening it with the unique apical feature of the **SMART SYSTEM**



# WHY SMART? SYSTEM™

Soft bone

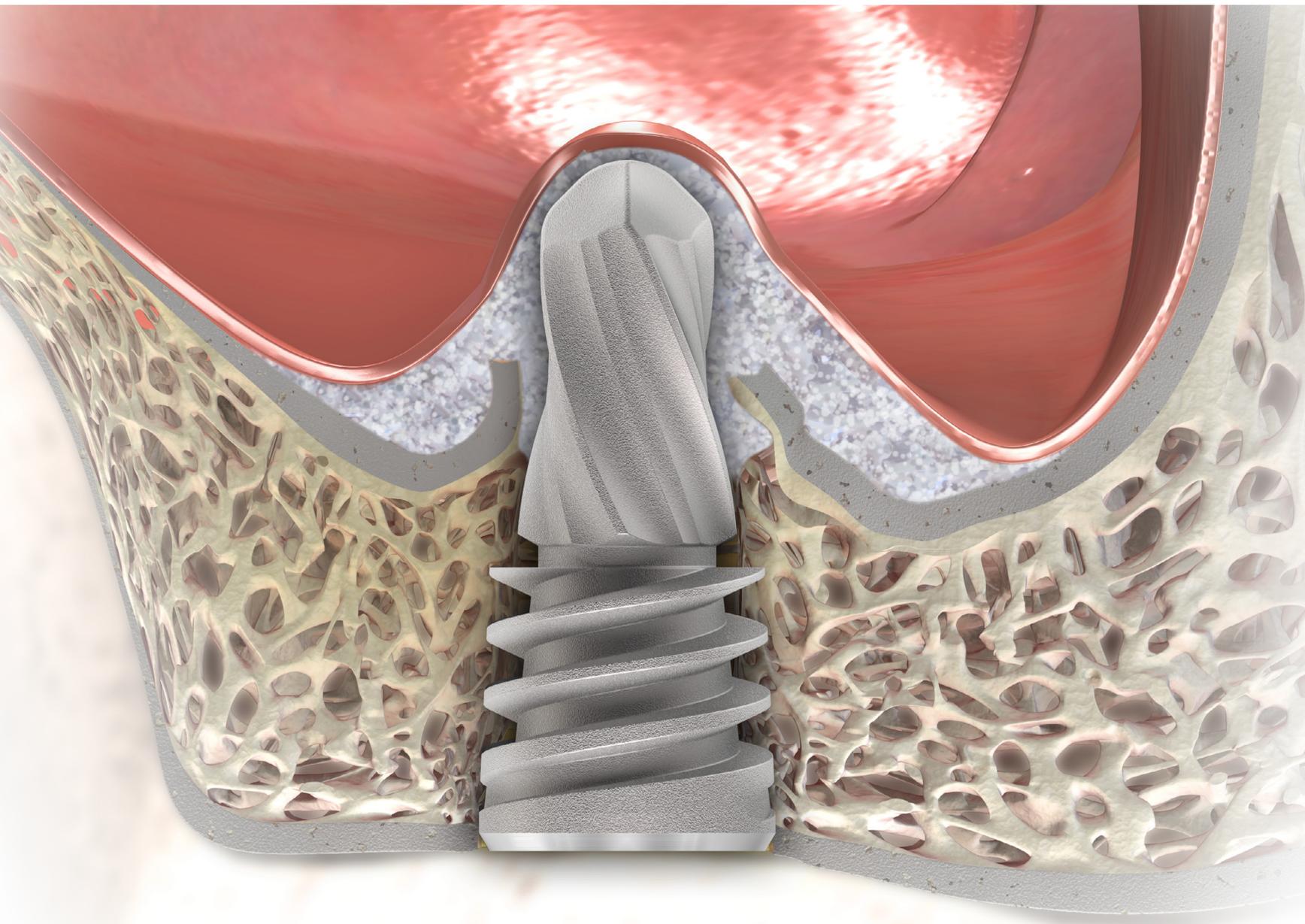
For treating soft bone tissue.



Type 4.

# WHY SMART? SYSTEM?

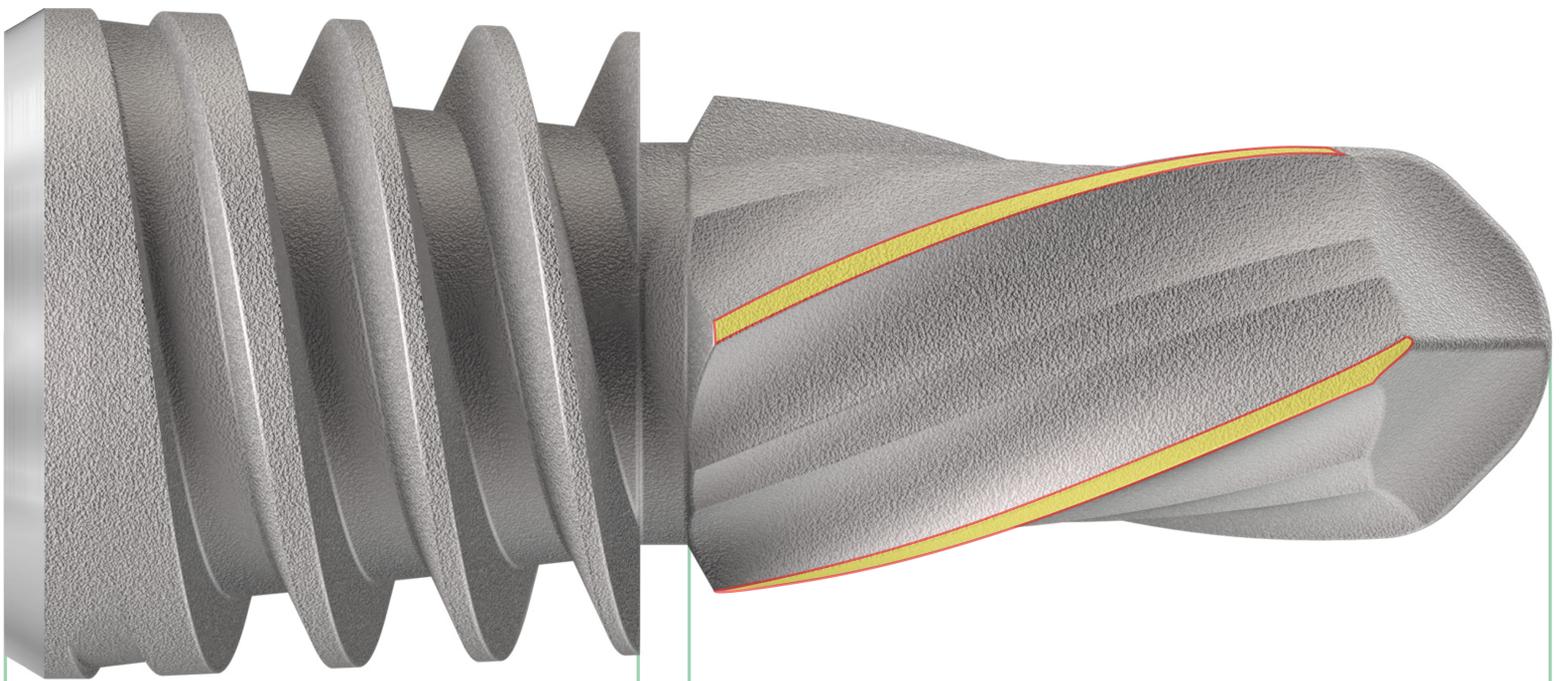
## Close sinus lift Procedure



For treating up to 3mm residual bone height by safe and **SMART** close sinus lift procedure:

- Autografting the sinus cavity.
- Detachment and lifting of the Schneiderian membrane with-no direct contact of the implant.
- Avoiding the risk of Infection, rejection and grafting material migration, associates with bone substitute.

# Implant Geometry



**Fixation Portion**

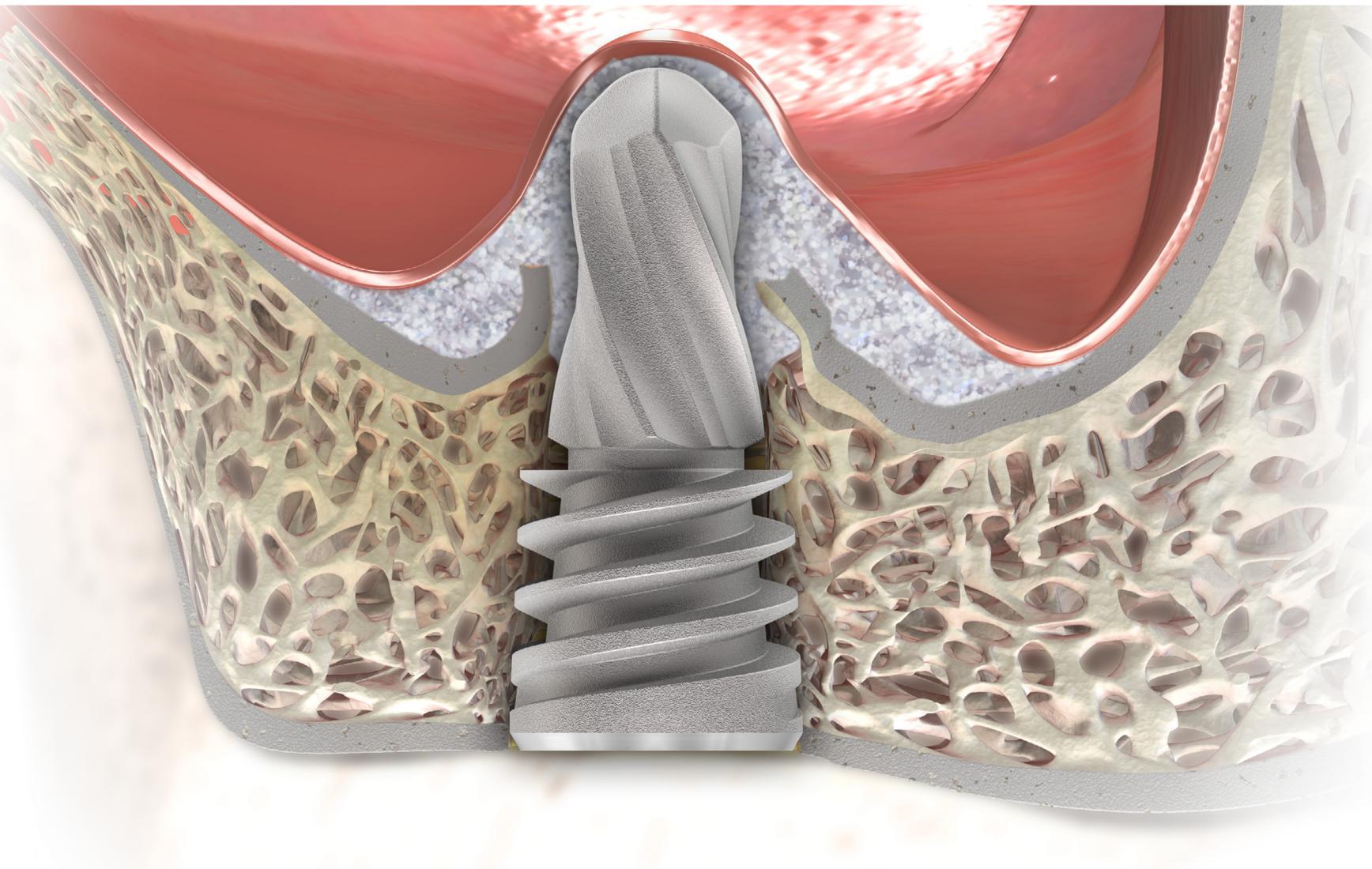
**Osteotome Portion**

The **SMART implant** was designed to allow easy and **SMART insertion** procedure, in line with conventional implant placement procedures.

The **SMART implant** is made of two regions, an apical section that functions as an Osteotome, and a coronal section that resemble of a standard implant, functioning as for Fixation.

This unique design allows the implant to make its own osteotomy fixate itself to the desired position as it is inserted into the bone.

# The **SMART** System for close sinus lift procedure



The **SMART System** transforms a typical closed sinus lift procedure, which entails site preparation, placing graft material and then implant insertion, into a single step technique.

The **SMART implant** consists of two regions, an apical section that functions as an Osteotome and a coronal section, resembling that of a classic implant, enabling Primary Fixation.

The apical region is characterized by spiral flutes, winding in an opposite direction to the thread direction. This unique geometry enables collection of bone whilst driving it apically. Thus during Implant insertion the apical region simultaneously combines site preparation while channeling residual bone into the sinus cavity.

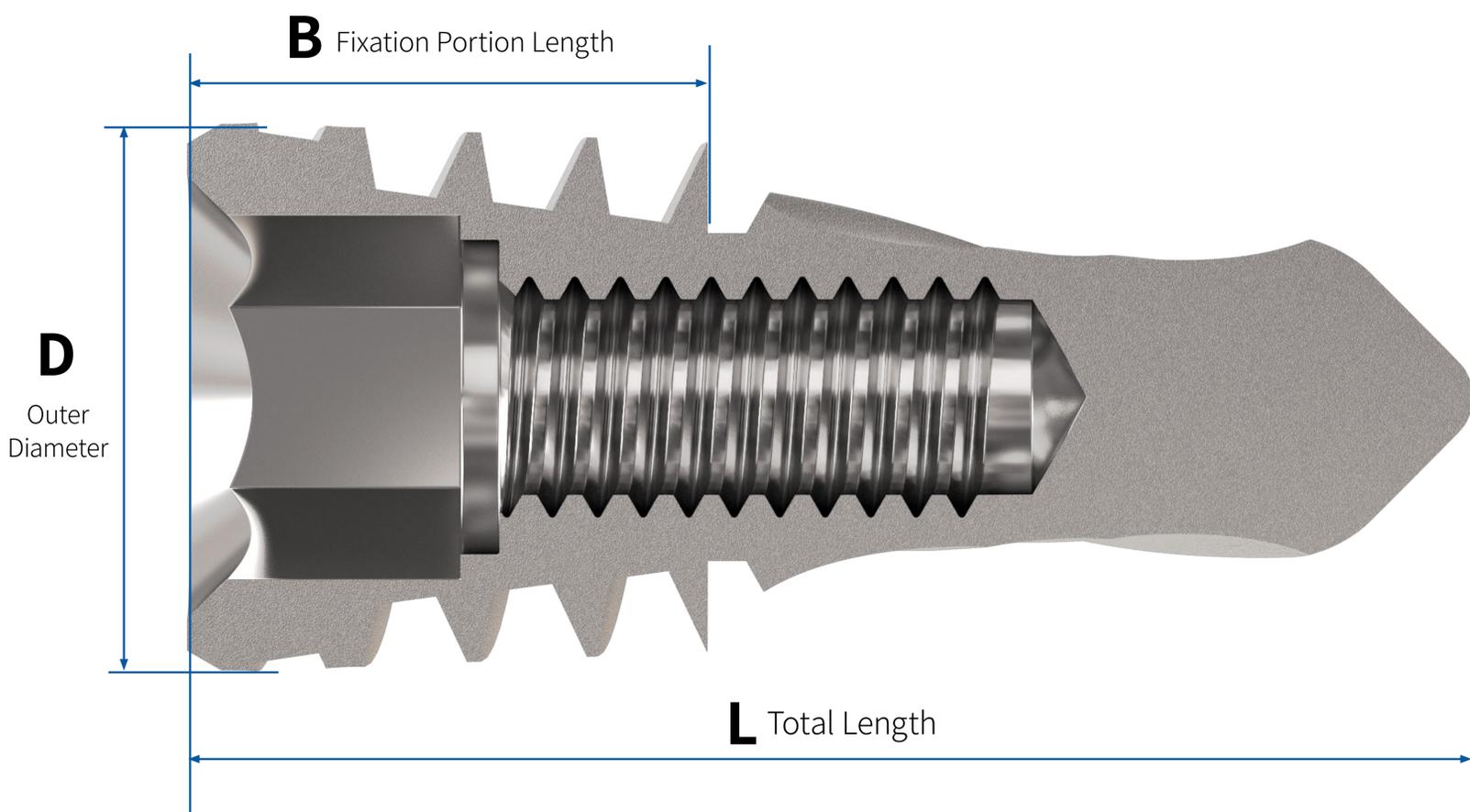
The apex of the implant has blunt edgeless with bone collected indent feature geometry ensuring that during the elevation procedure there is no direct contact with the Schneiderian membrane. The sinus floor is raised while protecting the membrane. Once the floor of the sinus cavity has been penetrated, the bone which has been collected by the flow by the flutes at the implant's apex will follow the floor (which acts as a barrier, so protecting the membrane), thus achieving the needed height for adequate implant length.

Simultaneously the coronal portion of the implant fixates the implant and no further surgical steps are needed

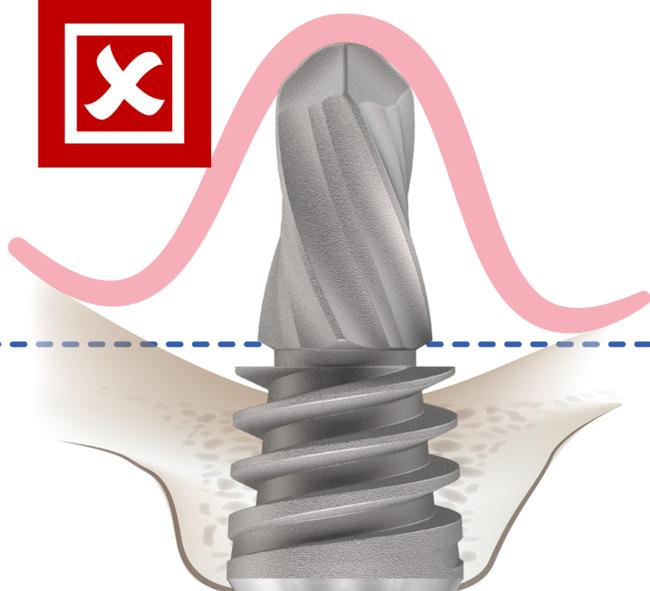
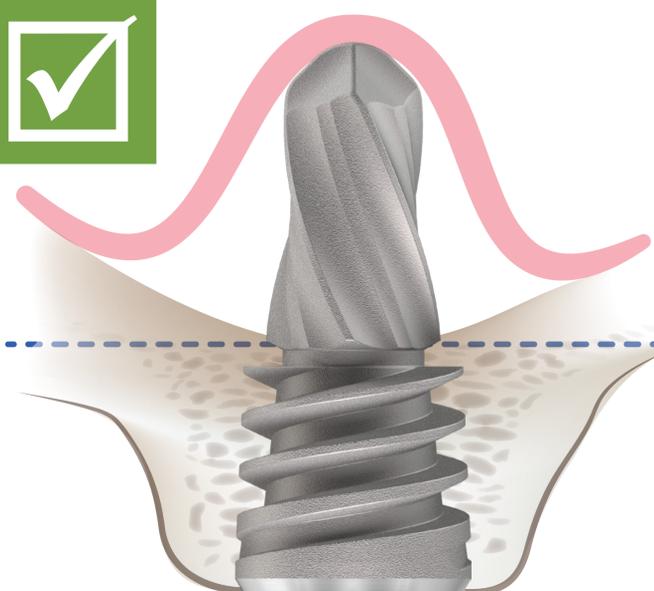
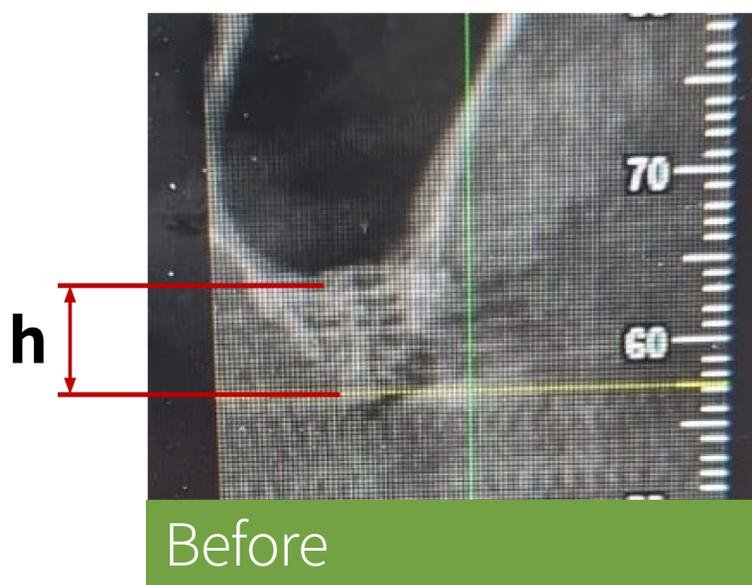
# Implant Selection

The **SMART System** is defined by its :

- L - Total length,**
- D - Outer diameter and**
- B - Fixation portion length.**



In Sinus lift procedure, the fixation portion **length B** should be in accordance and not greater to the residual bone **height, h**.



# The SMART System Principle for Close Sinus Lift

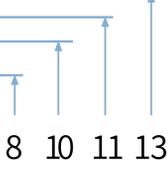
1. The SMART System starts as an Osteotome and ends as an implant.
2. Using small drill diameter only is to remove as less autogenous bone as possible.
3. During travelling of the SMART through the residual bone, autogenous bone been collected by the flutes are moving forward to the indentation region at the apical end till reaching the sinus floor.
4. The sinus floor is playing a role during the elevation. If opening in the sinus floor is occurred during drilling, it must be smaller than the SMART's apical size.
5. Mild vertical force now is needed to first bump the sinus floor up. While rotating the implant concurrently attention must be made that it moving upward and not dig in place.
6. The Schneiderian membrane will follow the fractured bony fragment once the sinus floor is been penetrated by the bony particles covered apex.
7. Now the implant is ready to reach the desire position in a densifying vicinity for an optimal fixation. The space left beneath the Schneiderian membrane is filled with blood clot in order to produce bone formation.

## Padding the Apex before coming into contact with the membrane

During travelling through the residual bone, the autogenous bone been collected by the flutes are moving forward to the indentation region at the apical end. Part of it is using as a barrier, ahead of the apex, for lifting the Schneiderian membrane and the rest deploys all around.



# SURGICAL PROTOCOL

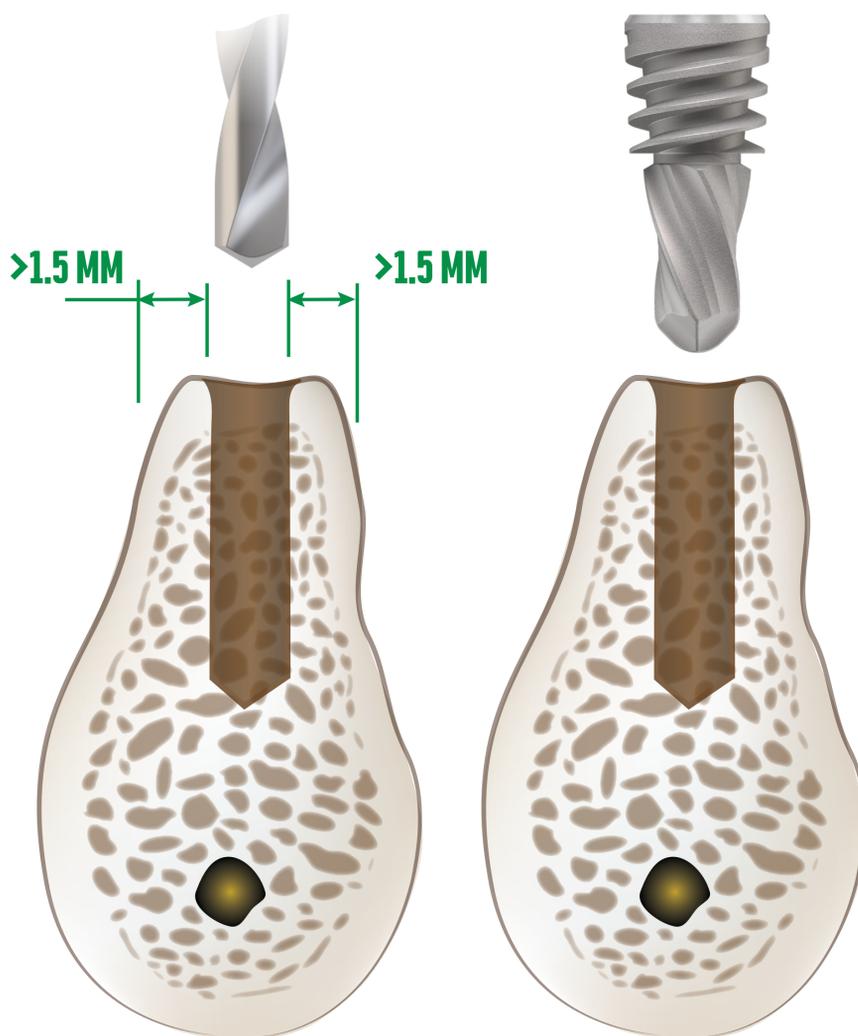
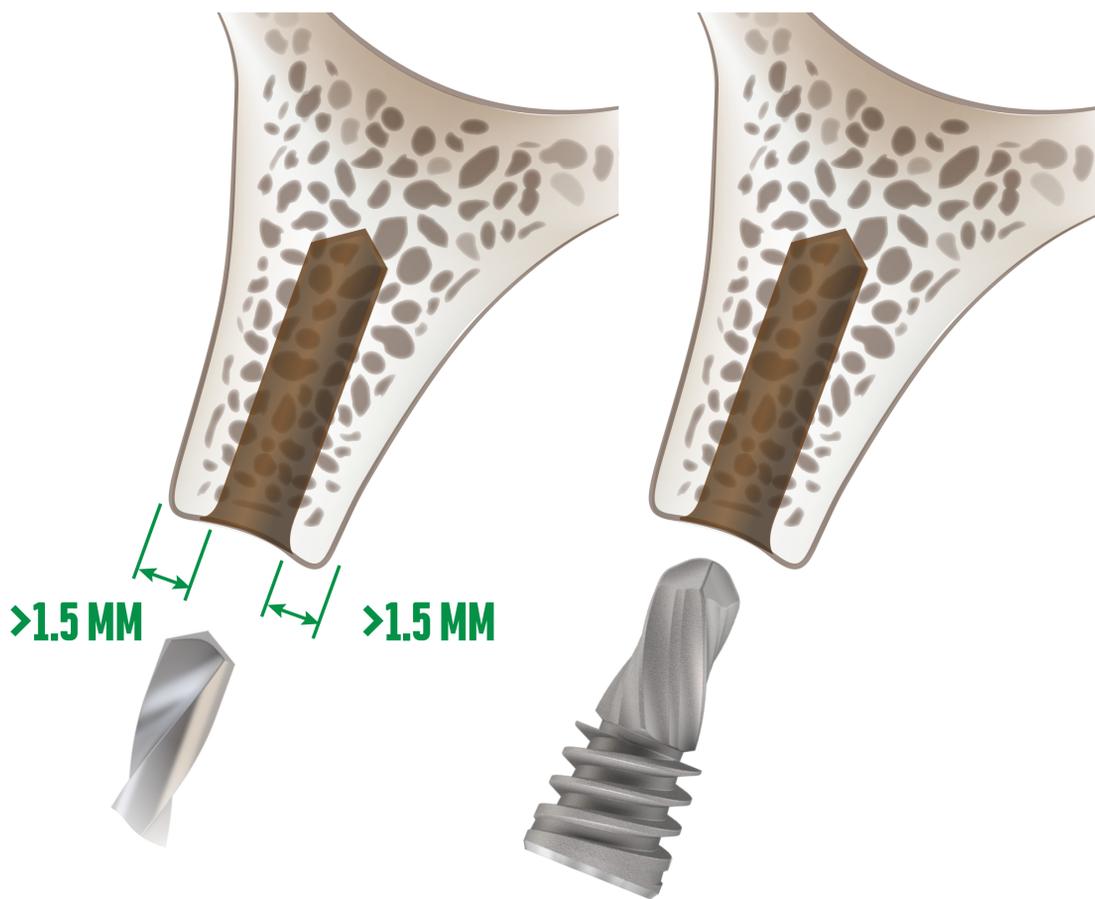
Spade	2 mm	2.8 mm	3.2 mm	3.65 mm	4 mm	
	TSD-200	TSD-280	TSD-320	TSD-365	TSD-400	
						
						
✓	✓	✓	✓	<b>D1</b>		Ø Implant
✓	✓	✓	✓	✓	<b>D1</b>	Ø 3.75
✓	✓	✓	✓	✓	<b>D1</b>	Ø 4.2
						Ø 4.5
1200-1500	900-1200	500-700	400-600	300-500	300-500	Drilling Speed (RPM)

1. With copious irrigation, perforate the alveolar crest.
2. With copious irrigation, drill a pilot hole in a speed of **800–1200 RPM**, to the appropriate depth marking on the drill.
3. Depending on implant diameter and the density of bone at the osteotomy site, it may be necessary to utilize one or more of the Surgical Drills to widen the osteotomy.
4. Apply firm pressure and begin slowly rotating the implant in a C.W direction with a max. speed of **15 RPM**.



- Recommended insertion torque: 35-60 Ncm.
- Procedure recommended by SMART cannot replace the judgment and professional experience of the surgeon.
- Drilling with the marking drill should stop upon penetration of the cortical bone.

# Narrow ridge PROTOCOL



1. A buccal and lingual wall thickness of  $>1.5$  mm is recommended at the time of implant placement.
2. Once the implant site has been determined, mark it with the marking drill at 1200 – 1500 RPM for penetrating the cortical bone. Use copious irrigation with sterile water or saline solution to prevent overheating of the bone.
3. Proceed with 2 mm drill diameter at the same conditions.
4. Insert the implant in a low speed and moderate longitudinal force concurrently for splitting the ridge during implant insertion.

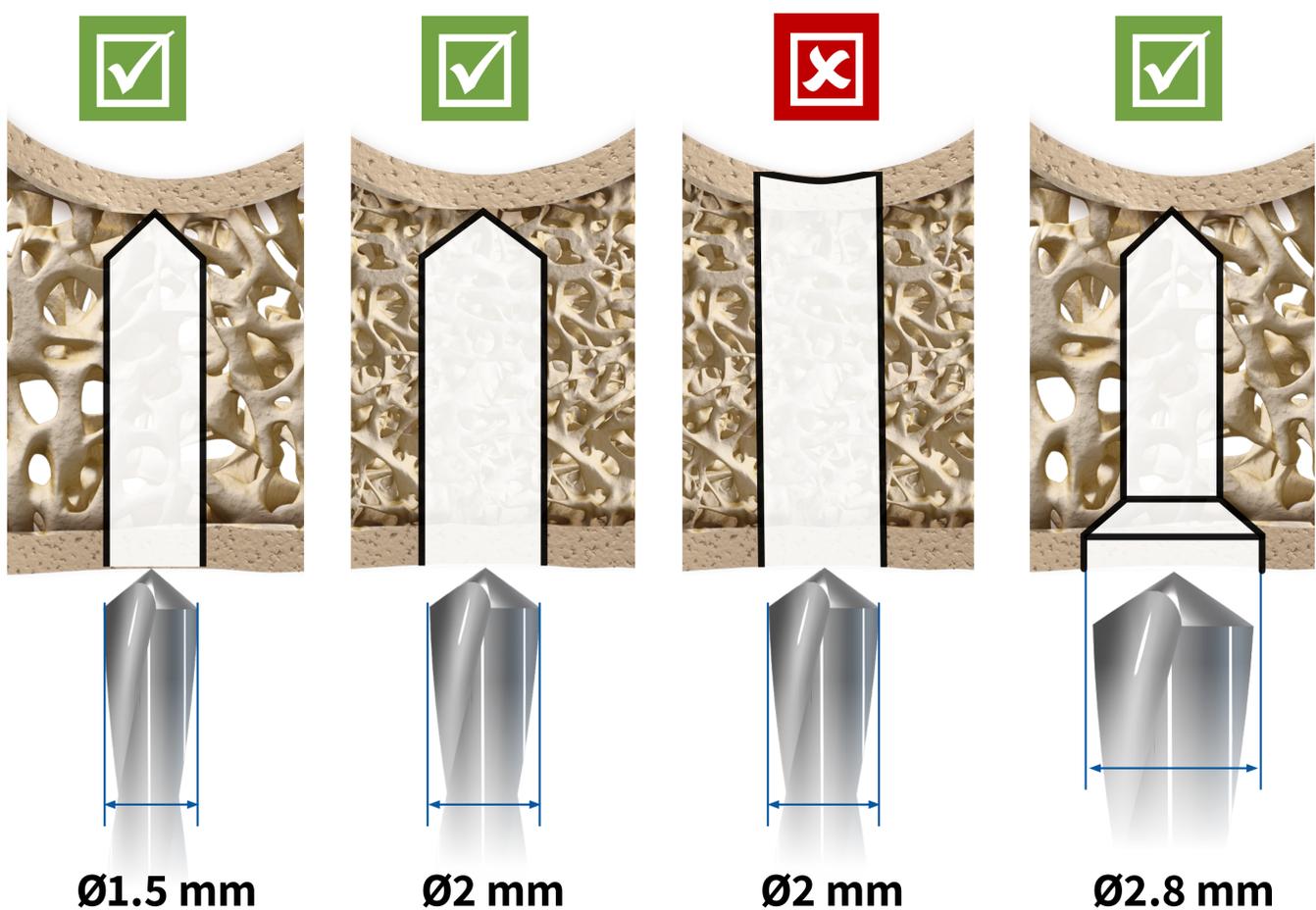
## Notes:

1. During implant insertion It is recommended to stop every 2mm for letting the peri – implant to adapt.
2. Bone type D1 is counterindication for such application.



- Recommended insertion torque: 35-60 Ncm.
- Procedure recommended by SMART cannot replace the judgment and professional experience of the surgeon.
- Drilling with the marking drill should stop upon penetration of the cortical bone.

# Closed Sinus Lift PROTOCOL



1. Assessment of the thickness of the sinus floor by x-ray imaging.
2. Use of a 1.5 drill in 800 RPM with irrigation till reaching the sinus floor.
3. Use a moderate vertical force with the same 1.5 drill in non-rotational mode to assess sinus floor hardness. If according to the x-ray and the feedback from the drill is of thin flexible wall, insert the **SMART** by a rotational and vertical force simultaneously, if the feedback is of a hard sinus floor, keep going deeper with the same drill for having thinnest floor to facilitate SMART insertion.
4. Insert the implant gently in a C.W direction till reaches the sinus floor.

**Note:**

make as much turns and move slow before reaching the floor to collect and move as much bone to the apex of the implant.

5. Apply rotational and mild vertical force concurrently for bumping up the sinus floor.

**Note:**

make sure that the sinus floor yield to the vertical force.

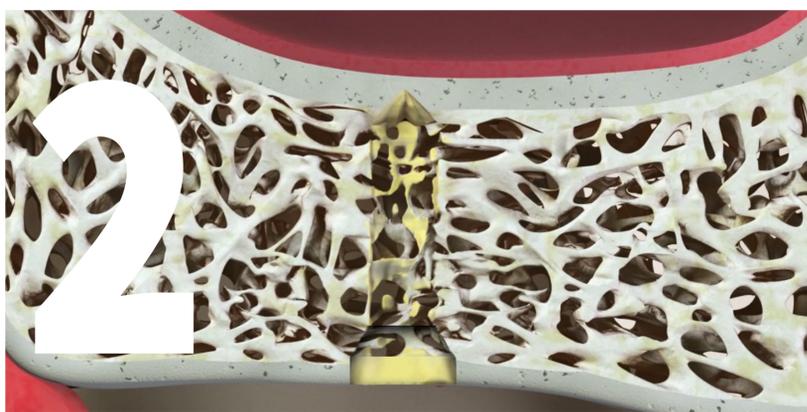
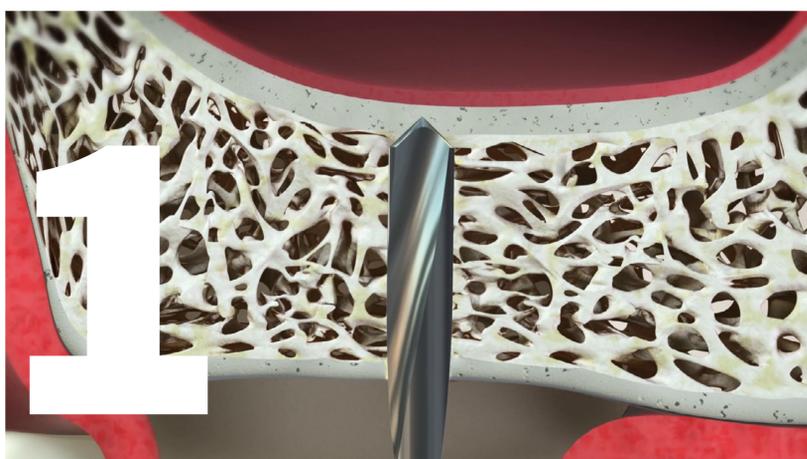
6. Keep moving the implant to the desire position till reaching a maximum torque level.

**Note:**

The sinus floor is playing a crucial role during floor elevation. As long as it not too thick and not too hard, it must be intact or with smallest hole diameter than the 2.4 mm apex diameter to assure optimal results.

# Closed Sinus Lift

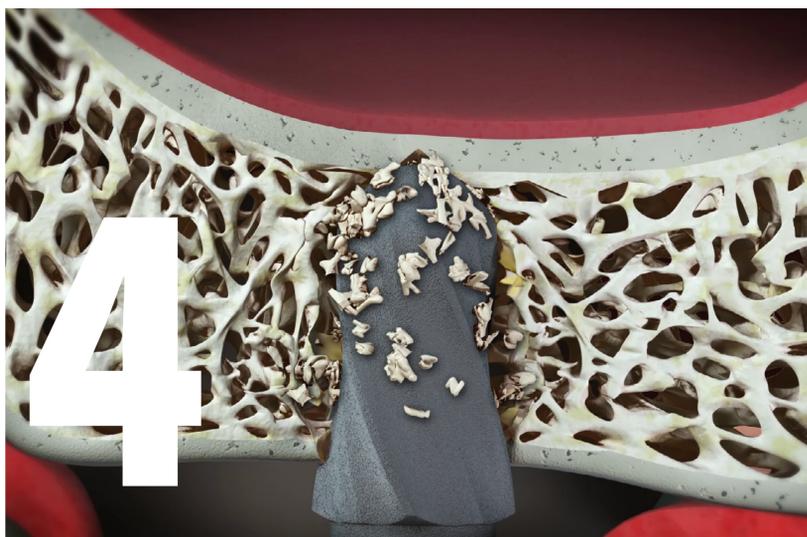
## PROTOCOL Illustrative



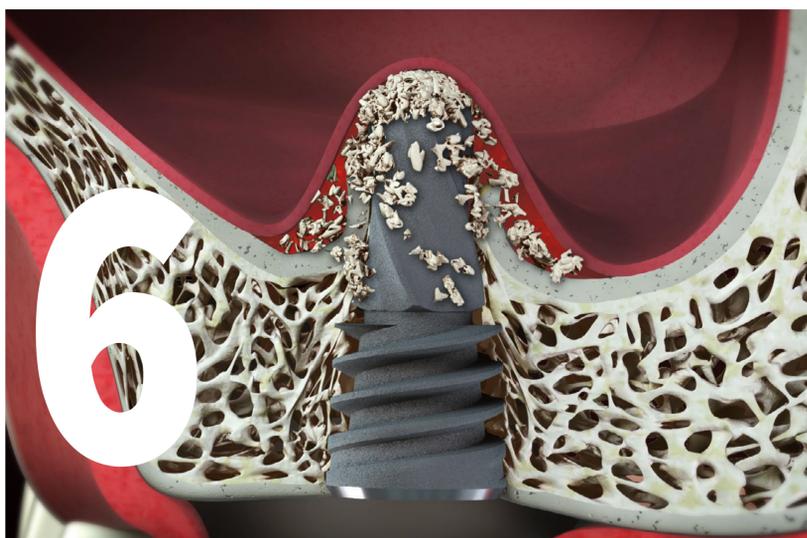
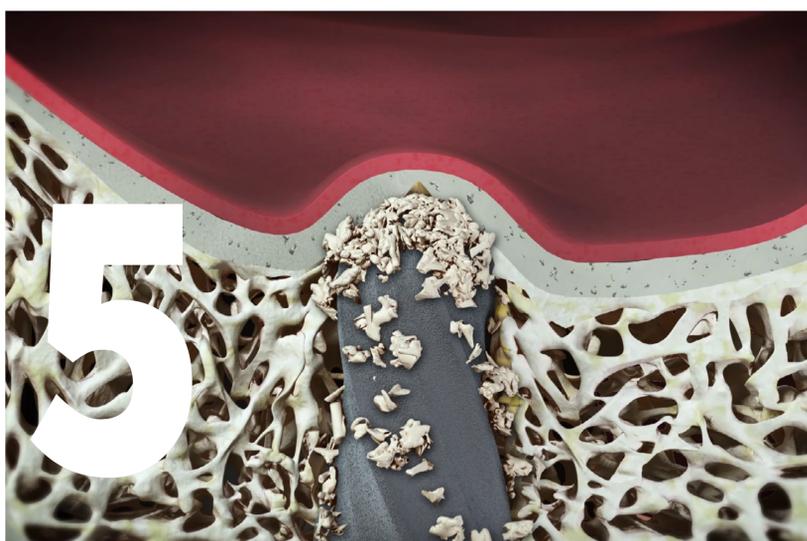
Countersink drill is optional.

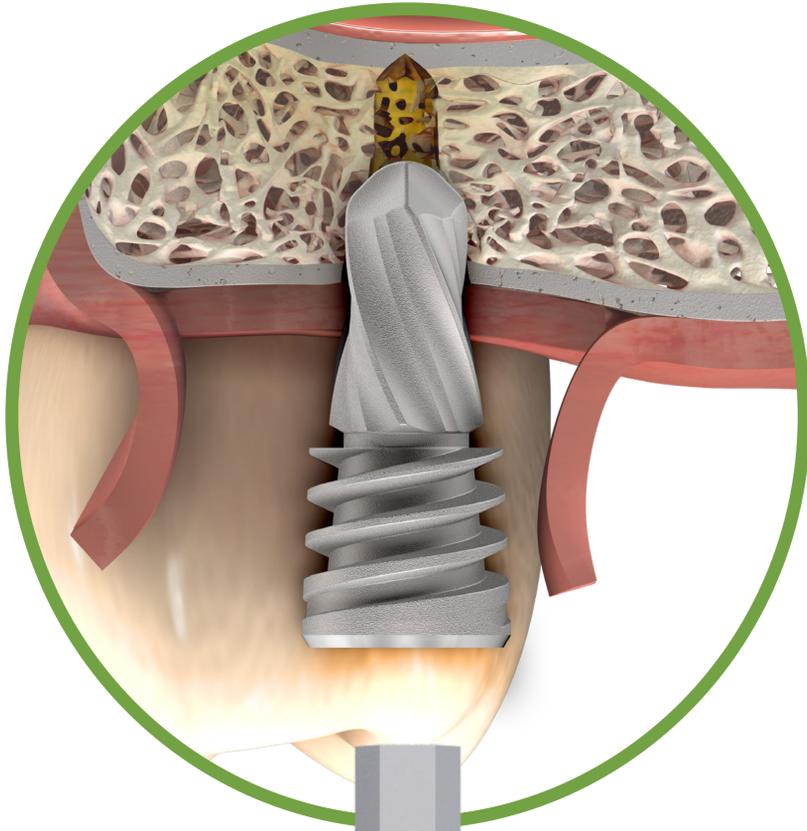


Make as much turns and move slow before reaching the floor to collect and move as much bone to the apex of the implant.



Apply rotational and mild vertical force concurrently for bumping up the sinus floor.

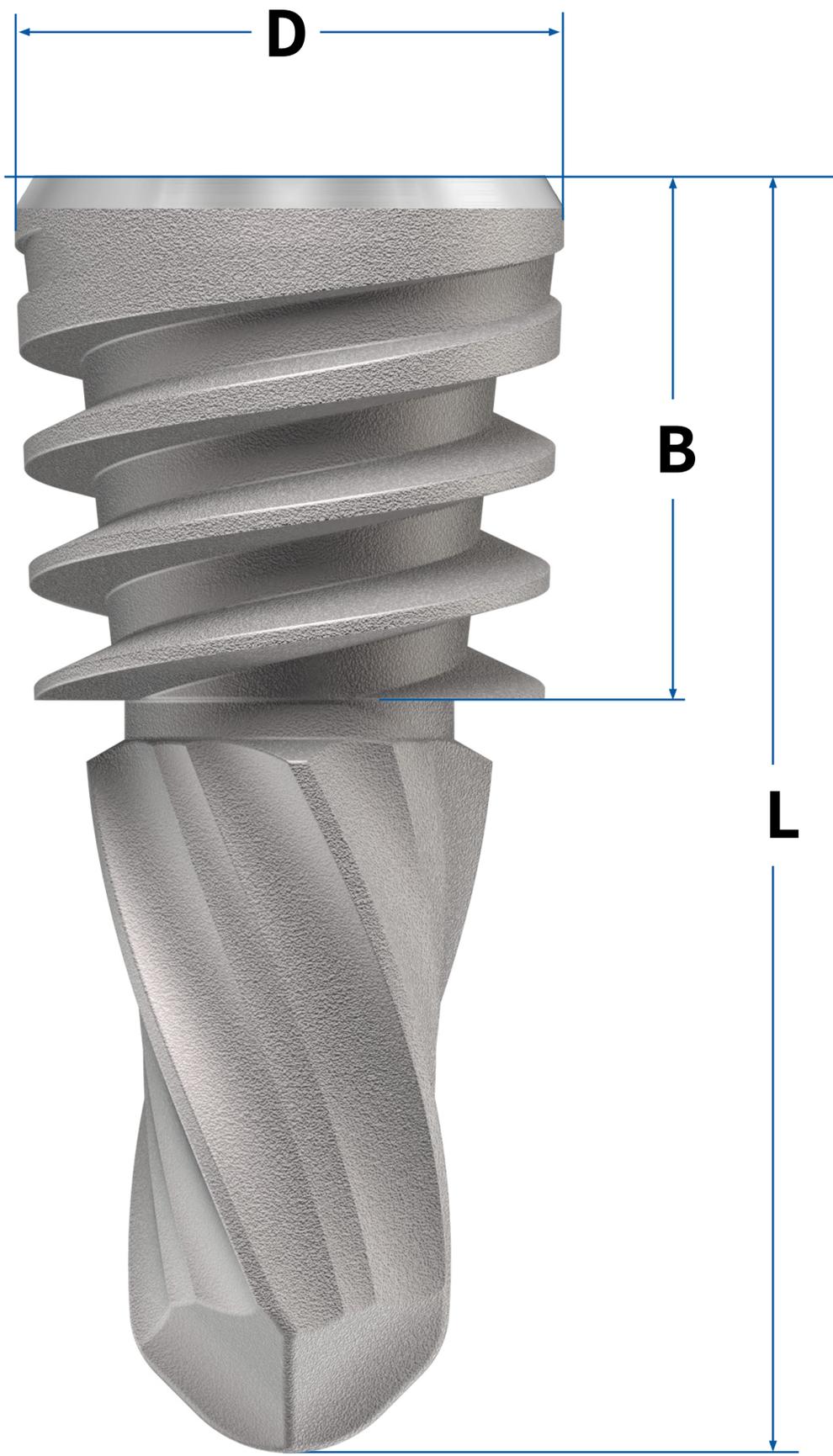




Continuous moderate longitudinal pressure during implant insertion

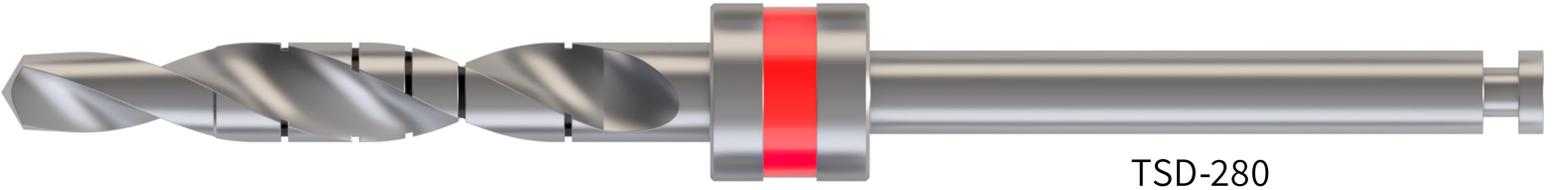


# IMPLANTS

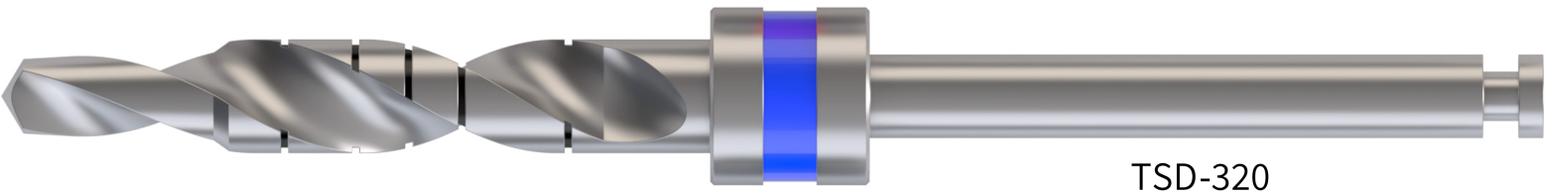


No	D	L	B	Cat No
1	3.75	10	5	SOI-381005
2	3.75	11.5	7	SOI-381107
3	4.2	10	5	SOI-421005
4	4.2	11.5	7	SOI-421107
5	4.5	8	3	SOI-450803

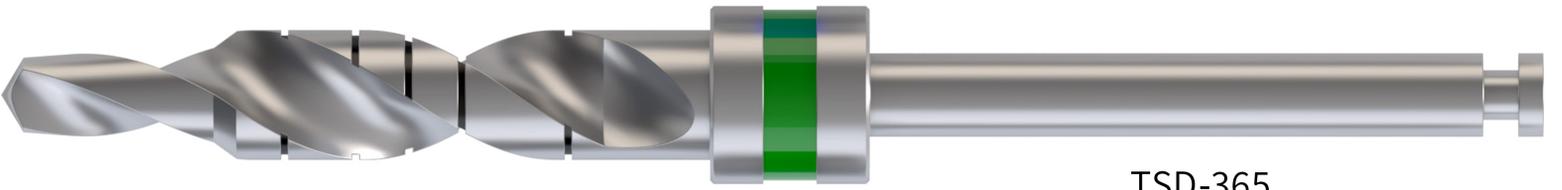
# DRILLS



TSD-280



TSD-320



TSD-365

# Wide Cover Screw

SC-100

