

WORLD MARKET LEADER IN CERAMIC DENTAL IMPLANTS



designed by  
*Dr. Ulrich Volz*

\_\_\_\_ **BRIGHT**

2023 Product Catalog  
SDS1.2 and SDS2.2

**SDS** SWISS DENTAL  
SOLUTIONS 

WORLD MARKET LEADER IN CERAMIC DENTAL IMPLANTS

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Not all products shown in this product catalog are manufactured in Switzerland.

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Overview – The 1.2 and 2.2 BRIGHT SDS ceramic implant series

SDS ACT

ACTIVE

SDS ACC

ACCELERATE

SDS ALL

ALL IN ONE

SDSBOX

DIGITAL & BIOLOGICAL WORKFLOW

SDS PRO

PROSTHODONTICS

5



SDS1.2  
“one-piece”



SDS2.2  
“two-piece”



## CLEAN IMPLANT “TRUSTED QUALITY”

For many years, the independent CleanImplant Foundation has been conducting one of the largest, independent quality surveys of dental implants. Following an independent peer review process, SDS SWISS DENTAL SOLUTIONS was awarded a quality seal for the SDS1.2 and SDS2.2 implants. SDS is the first company to receive this seal twice, both for production and manufacturing.

## “NON-TOUCH” PACKAGING

The “non-touch” blister packaging comes with a pre-assembled disposable insertion tool, which is used up to the final insertion depth. Non-touch removal is thus also possible with the handpiece itself.



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*Dr. Ulrich Volz*



# We have learned to think in terms of ceramics

## DYNAMIC THREAD® AND SDS IMPLANT ENGINEERING



For the development and production of ceramic implant series SDS1.2 and SDS2.2, the SDS team has drawn on more than 20 years' experience in the area of ceramic implants. Over the years and with tens of thousands of implants monitored by our development team, we have gained an increasing understanding of the properties, possibilities and limitations of zirconia. The implants are used on a daily basis at the SDS company owner's SWISS BIOHEALTH CLINIC, and have been designed, developed and continuously improved based on practical application.

## CERVICAL PORTION OF THE IMPLANT THREAD

The micro thread of the upper part of the implant—in combination with the shape-congruent countersink drill for this portion of the implant—is ideally suited for cortical bone, which does not tolerate compression. At the same time, the use of the micro thread results in an increased core diameter in the area of highest implant loading, significantly improving implant stability. With tissue-level insertion, the bone level is approximately at the height of the **green arrow**. The **red arrow** shows the implant portion that is exposed to the highest load according to ISO 14801 during simulated bone recession. The wide tulip already forms the lower half of the abutment and supports the soft tissue thanks to the zirconia-epithelial (i.e. desmodontal) connection. The attachment of the gingiva to the tulip of the implant results in a closing of the immunological door.

## APICAL PORTION OF THE IMPLANT THREAD

The lower area of the implant thread features a so-called Dynamic Thread®. This self-tapping thread increases primary stability and has up to 2.5 times the thread depth in the bone-compacting area, and a low thread pitch of 7 degrees compared to other implant systems. This thread design generates a very large surface area for safe osseointegration, even in difficult bone types. SDS implants featuring Dynamic Thread® ensure excellent primary stability at an insertion torque of up to 35 Ncm thanks to the combination of bone-type-dependent drilling protocols and form drills adjusted correspondingly.



Upper portion:  
Micro thread with 0.04  
mm thread depth

Lower portion:  
Dynamic Thread® with up  
to 2.5-fold thread depth

# Zirconia – the implant material of choice

## ZIRCONIA IS NOT DUCTILE

Unlike titanium, zirconia ceramic is less flexible and therefore cannot warp inside the bone as titanium implants do when chewing forces act on them. As a result, thin bone tapering along zirconia implants is possible. We have developed new treatment protocols with A-PRF™ for many cases that can normally only be solved with bone augmentation, and can thus largely dispense with bone replacement materials. Also, a pointed alveolar ridge should never be leveled prior to implant placement, because the gingiva or papilla, respectively, will be lowered by exactly that amount.

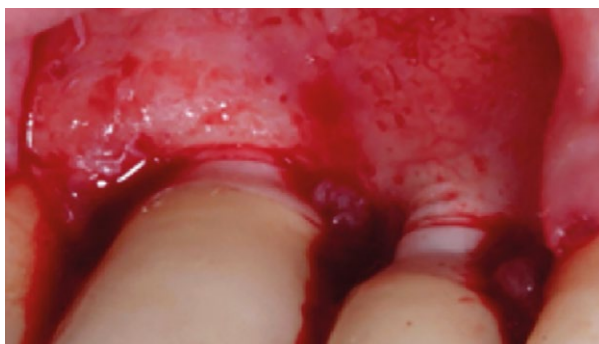
## ZIRCONIA-EPITHELIAL CONNECTION

Soft tissue attaches to zirconia—Dr. Rudelt from Hamburg proved this by means of histological examinations of human material 30 years ago. Current histological examinations by Professor Kniha and the Oliva family further confirm this. Concepts such as “One Abutment – One Time” are also based on this property. For the first time, we have at our disposal an implant material that both grows into/osseointegrates with bone and enables soft tissue to attach. As a result, a

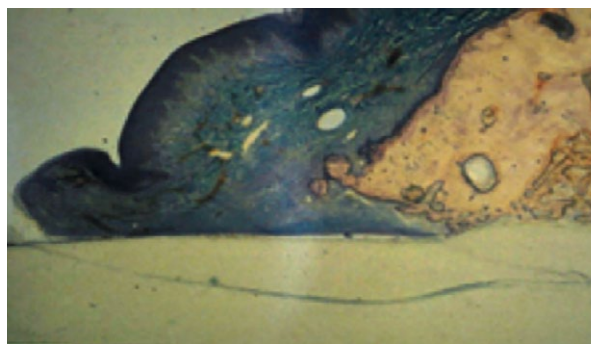
defined implant-abutment transition is no longer necessary. The quadruple micro thread with the same pitch as the coarse thread (7°) is only 0.04 mm deep and can come into contact with bone as well as be exposed, because the gingiva will also attach to this surface.

## CONCLUSIONS

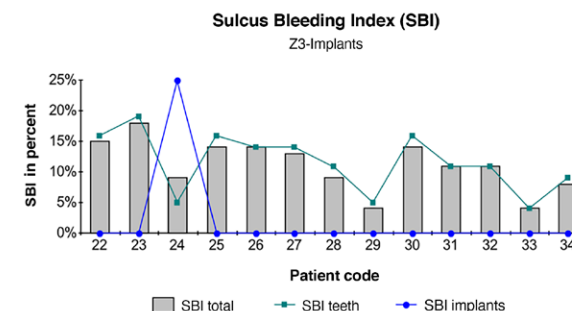
Ceramic implants should not be narrower at the implant-abutment transition, as is the case with titanium implants, but rather wider, which is what we have done at SDS, since the wide tulip stabilizes the gingiva, allowing it to attach. Ceramic implants must/should always be placed at tissue level, as otherwise this valuable bond will be disrupted and destroyed. This way, soft tissue and pink esthetics are preserved to a maximum. In addition, the white color and soft tissue properties of ceramics make deep (bone-level) placement of implants unnecessary. During the prosthetic restoration, it is essential not to destroy the zirconia-epithelial connection with electrosurgical devices or retraction cords.



Re-entry after 3 years: the bone tapers thinly – no circular soft tissue margin



Zirconia-epithelial connection after an implant service life of 20 years: a solid bond



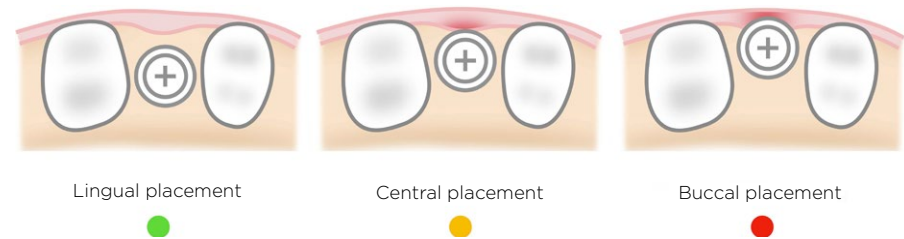
Sidharta JJ: Clinical follow-up of zirconia ceramic implants: Calcium cathode function. Dental dissection, Medical faculty, Ulm university 2006



## OPTIMAL ESTHETICS

With SDS zirconia implants, you will achieve perfect esthetics even in the maxillary anterior region. Because gingiva attaches to zirconia, placing the implant in a slightly oral position will support vertical gingival growth—especially in the esthetic zone. Always make sure that the long-term temporary (LTT) is placed in the “target position.” Especially in the anterior region and even more so if the buccal lamella has been lost, immediate implants should not be placed in the alveolus, but further in the oral direction, at the center of the bone.

The following basic rule applies: The further away you move your implant position from a wall defect, the sooner the implant will be covered by bone, without the need for augmentation.



Optimal implant positioning



Video: Positioning in the UJ front teeth



Video: Positioning in the event of loss of the buccal lamella



Three months post-surgery after immediate implant placement, 12-22



The gingiva has become firmly attached all around the implant tulip



Final prosthetic restoration

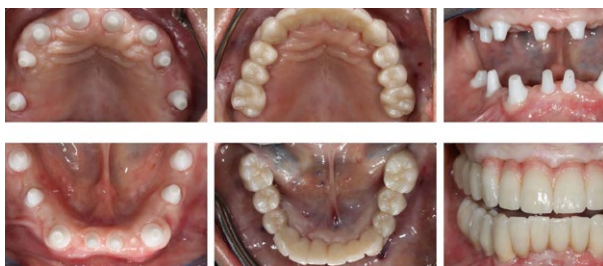
## SDS ceramic implant properties

### CAVE: CERAMIC DOES NOT DISSIPATE IATROGENIC HEAT

The only challenge that zirconia poses as an implant material is its poor ability to dissipate the heat generated at the surface, increasing the risk of overheating and destruction of the bone, particularly in type I bone. For this reason, when it comes to implant shapes and drilling protocols, we do not use cylindrical shapes or thread taps for shape-congruent implant preparation at SDS at all. Rather, we utilize the advantages of stepped implants for all SDS implants, as they will immediately “drop” into type I bone cavities to well over 70 percent of their length, and can be fixed in their final position with just a few turns, with only the thread tips penetrating the bone to a depth of 0.15 mm.



Video: SDS stepped implant vs. cylindrical implant



Stepped implant: After type I bone preparation, the implant will “drop” more than halfway into the cavity.

### CREATING OPTIMALLY VASCULARIZED BONE

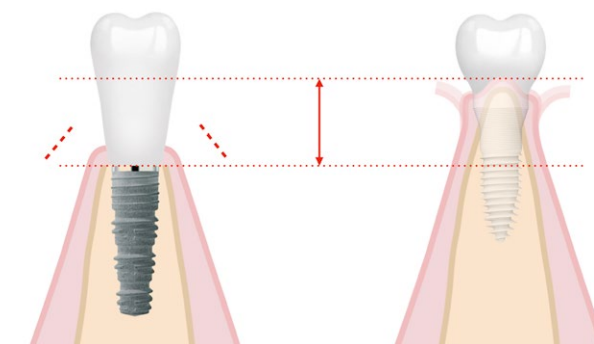
In type III and IV bone, the Dynamic Thread® condenses the bone in the same manner as a bone condenser, thus enabling high primary stability. The Dynamic Thread®—in conjunction with our bone-type-based drilling protocol—enables you to create lacunae for stem cells in hard bone. The overextended preparation in hard bone types, in combination with the extreme thread depths of the SDS Dynamic Thread®, results in the formation a cavity for bone chips, defect blood and stem cells, accelerating callus formation by up to 30 times. The resulting lamellar bone has a far better bloody supply than bone growing apositionally, forming as a result of direct contact between implant and bone. Positive side effect: In this void space, there is no bone-implant contact, and thus no friction with heat generation during insertion.



Video: Healing chambers in type I bone



Lacunae for stem cells: The red areas are void spaces formed as a result of overextended preparation.



Papilla height loss compared: Titanium implant (left) vs. ceramic implant (right).

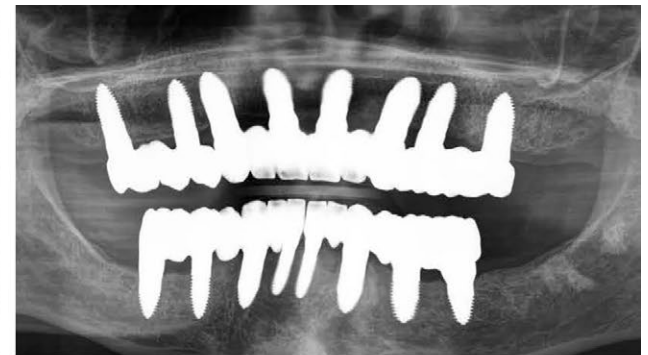
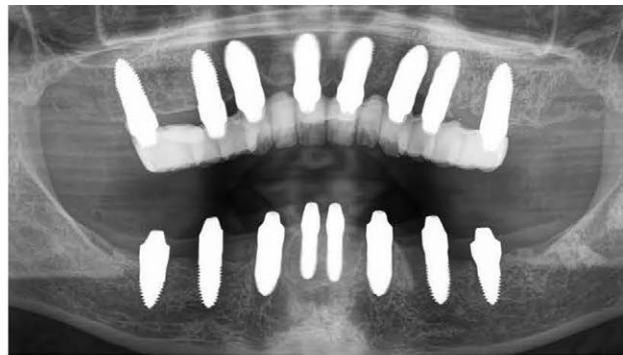
## PRESERVING PAPILLA HEIGHT

In the past, titanium implants placed in narrow alveolar ridges required extensive augmentation or removal of the alveolar ridge (red arrow at bottom right on previous page). This resulted in massive papilla height loss. Since with ceramic implants, the bone is allowed to taper thinly and the transition between implant and abutment is smooth, the entire papilla height can be maintained without the need for augmentation.

## CASE PRESENTATION

Situation at the outset: Eight titanium implants with proven titanium intolerance. Immediate implant placement with immediate restoration.

The pre-prosthetic images show a perfectly healed gingiva—the precondition not only for excellent esthetics, but also for a healthy result from a biological and immunological point of view.





#### SDS1.2 “one-piece”

One-piece implants are used when a risk-free restoration with a long-term temporary (LTT) is possible, limited leverage forces act on the implant, and good primary stability is achieved. Please refer to the list of indications for more details.



## SDS1.2 – The TZP-A hybrid ceramic implant system

### MATERIAL

SDS1.2 implants made of TZP-A (tetragonal zirconia polycrystal)—a material which is being continuously improved—achieve hitherto unknown strength values thanks to optimized and continuously honed production processes. SDS1.2 implants have an optimized surface.

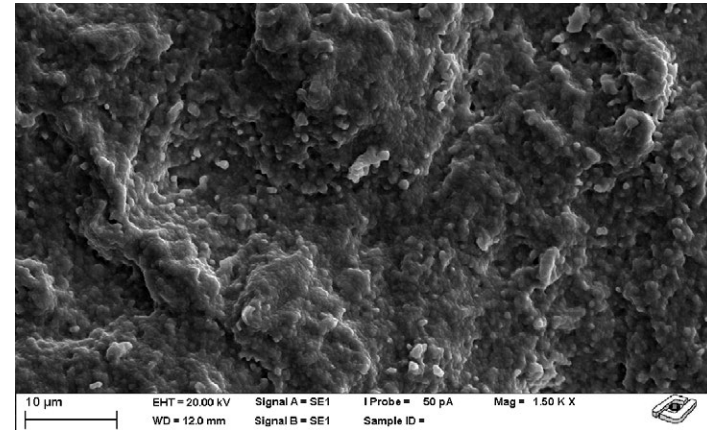
### DESIGN FEATURES

SDS1.2 implants feature the Dynamic Thread®, which is proven for all bone types. The dynamic thread performs convincingly in all situations, even in case of immediate implants placed according to the SDSACC immediate implant concept.

As an option, the abutment can be ground deep into the tulip area with a red ring diamond bur at maximum rotation, water cooling and gentle application of pressure to match it to the line of the gingiva, and can then be used as a standard abutment for cementing crown/bridge restorations without any further steps required immediately after impression-taking\*.

In addition, the SDS1.2 abutment has an internal screw thread allowing you to fix the insertion tool and transferring the abutment into the oral cavity in a safe manner.

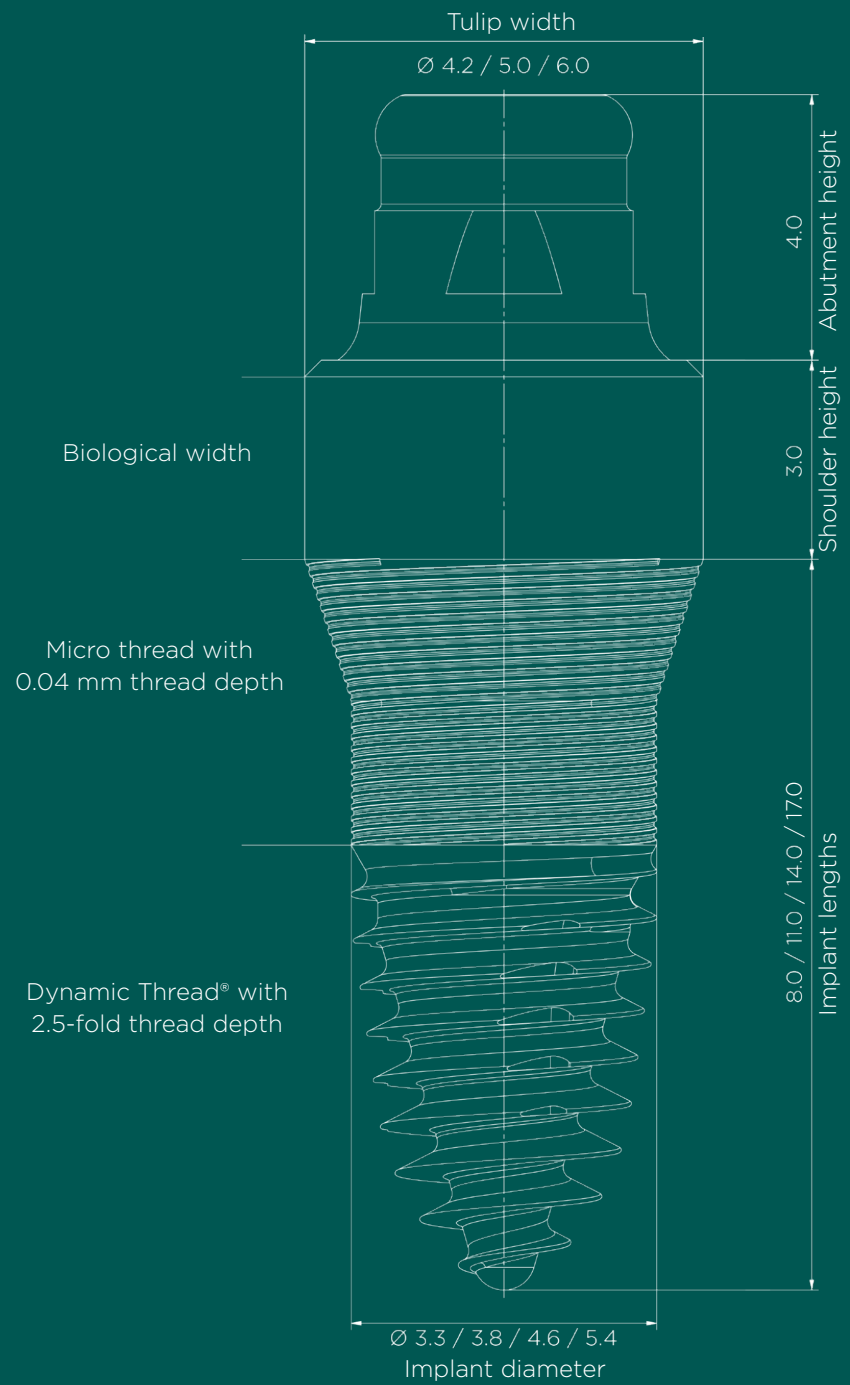
\*Further details can be found in the SDS prosthetics manual, or online in our media library at [www.swissdentalsolutions.com](http://www.swissdentalsolutions.com).



Optimized surface.

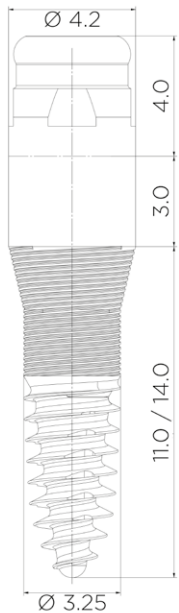


SDS implants are always positioned at tissue level.



# SDS1.2 Product overview, areas of use and indications

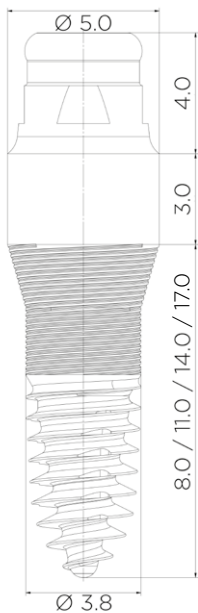
SDS1.2\_3.3



Ø thread 3.3 mm		
SDS1.2_3311	Length in mm	11
SDS1.2_3314	Length in mm	14
Ø tulip 4.2 mm		

Indication  
exclusively for narrow teeth  
12/22, 31/41, 32/42

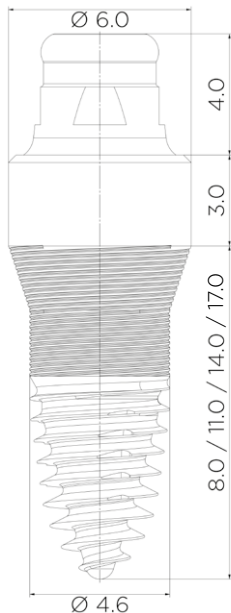
SDS1.2\_3.8



Ø thread 3.8 mm		
SDS1.2_3808	Length in mm	8
SDS1.2_3811	Length in mm	11
SDS1.2_3814	Length in mm	14
SDS1.2_3817	Length in mm	17
Ø tulip 5.0 mm		

Indication  
medium-width teeth

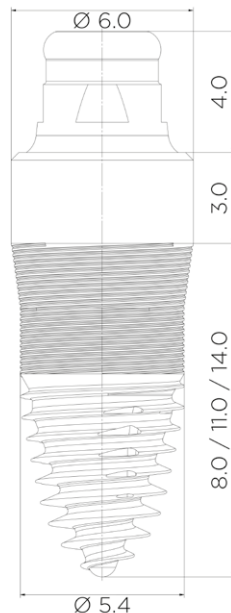
SDS1.2\_4.6



Ø thread 4.6 mm		
SDS1.2_4608	Length in mm	8
SDS1.2_4611	Length in mm	11
SDS1.2_4614	Length in mm	14
SDS1.2_4617	Length in mm	17
Ø tulip 6.0 mm		

Indication  
wide teeth

SDS1.2\_5.4



Ø thread 5.4 mm		
SDS1.2_5411	Length in mm	11
SDS1.2_5414	Length in mm	14
Ø tulip 6.0 mm		

Indication  
wide teeth

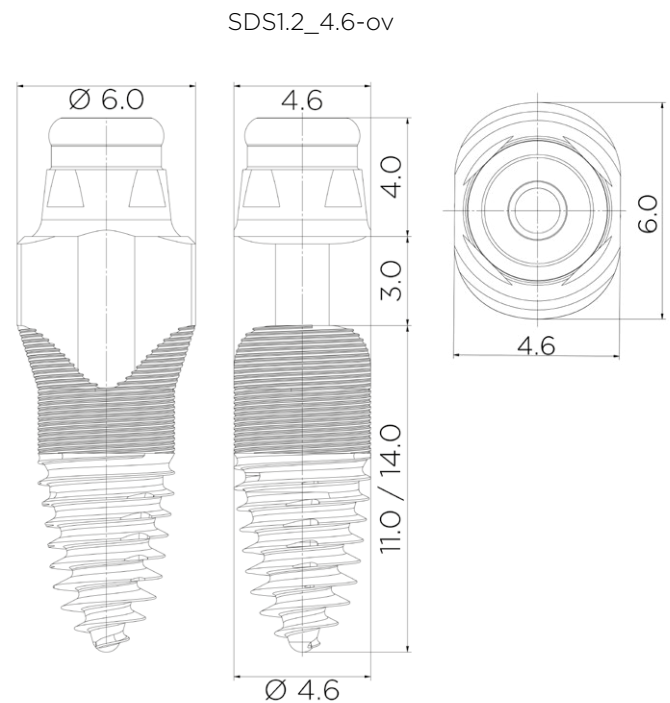


#### SDS1.2-ov “oval”

This implant series enables targeted restoration of upper and lower premolars. Please refer to the list of indications for more details.



SDS1.2-ov Product overview, areas of use and indications



Ø thread 4.6 mm

SDS1.2_4611-ov	Length in mm	11
SDS1.2_4614-ov	Length in mm	14

Ø tulip 4.6 mm x 6.0 mm

Summarized indication UJ/LJ pre-molars  
Detailed indication premolar region, when gap narrow

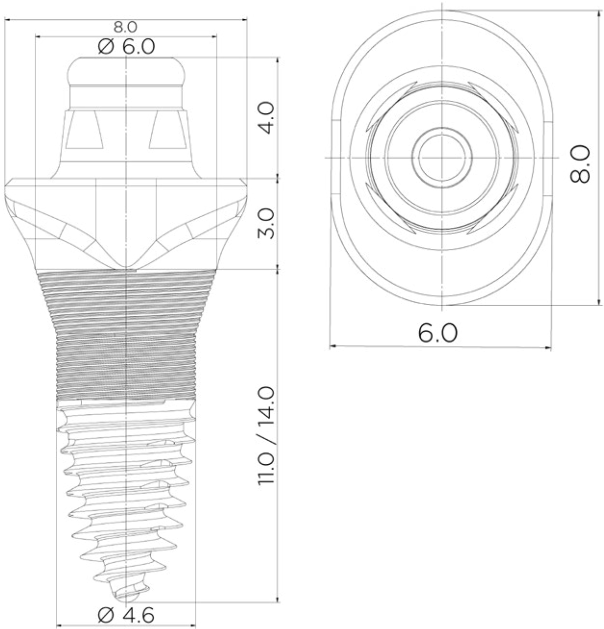


#### SDS1.2-ov “Double balcony”

This implant series enables targeted centralized restoration of UJ/LJ molars. Please refer to the list of indications for more details.

SDS1.2-ov Product overview, areas of use and indications

SDS1.2\_4.6-ov\_6x8



Ø thread 4.6 mm

SDS1.2_4611-ov_6x8	Length in mm	11
SDS1.2_4614-ov_6x8	Length in mm	14

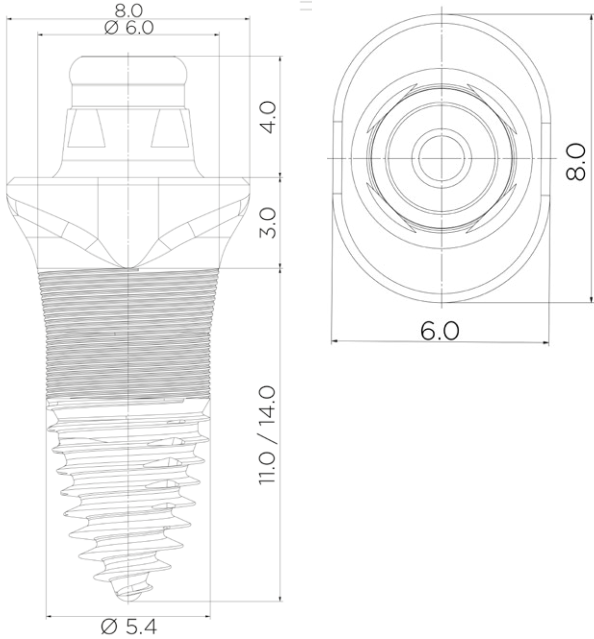
Ø tulip 6.0 mm x 8.0 mm

Summarized indication central UJ/LJ molars

Detailed indication

UJ/LJ molars, central position, mostly late implant placement, but also immediate implant placement with good interradicular septum

SDS1.2\_5.4-ov



Ø thread 5.4 mm

SDS1.2_5411-ov	Length in mm	11
SDS1.2_5414-ov	Length in mm	14

Ø tulip 6.0 mm x 8.0 mm

Summarized indication central UJ/LJ molars

Detailed indication

UJ/LJ molars, central position, mostly late implant placement, but also immediate implant placement with good interradicular septum



#### SDS1.2-ba “balcony”

The “balcony” improves the emergence profile.

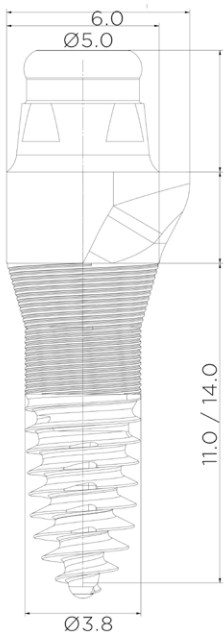
This implant series enables targeted decentralized restoration of UJ/LJ premolars and UJ/LJ molars.

Please refer to the list of indications for more details.



SDS1.2-ba Product overview, areas of use and indication

SDS1.2\_3.8-ba



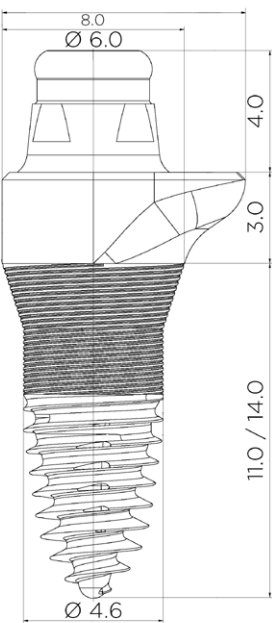
Ø thread 3.8 mm

SDS1.2_3811-ba	Length in mm	11
SDS1.2_3814-ba	Length in mm	14

Ø tulip 5.0 mm x 6.0 mm

Summarized indication premolars, especially the upper premolars  
Detailed indication  
Immediate implant placement in the premolar region, with asymmetric implant position, balcony improves emergence profile

SDS1.2\_4.6-ba



Ø thread 4.6 mm

SDS1.2_4611-ba	Length in mm	11
SDS1.2_4614-ba	Length in mm	14

Ø tulip 6.0 mm x 8.0 mm

Summarized indication UJ/LJ molars  
Detailed indication  
Immediate implant placement in molar region with asymmetric implant position, balcony improves emergence profile



#### SDS2.2 “two-piece”

The two-piece implant series is used when leverage forces must be avoided (low primary stability, little bone contact, terminal position) in both immediate and late implant placements. Please refer to the list of indications for more details.

## SDS2.2 – the two-piece ceramic implant system made of TZP-A

### MATERIAL

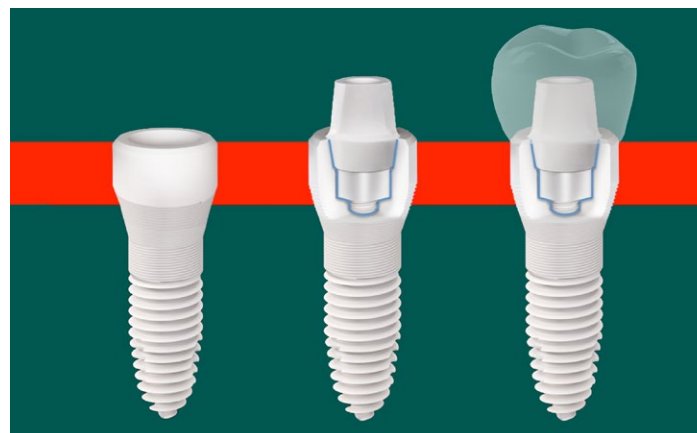
SDS2.2 implants made of TZP-A (tetragonal zirconia polycrystal)—a material which is being continuously improved—achieve hitherto unknown strength values thanks to optimized and continuously honed production processes. SDS2.2 implants have an optimized surface.

### DESIGN FEATURES

SDS2.2 – The two-piece implant system is the result of more than 20 years' experience in the development of ceramic implants. The load-bearing upper part of the implant and the implant-abutment connection have been designed to be very solid. The connection is not inside the implant, but rather in the lower part of the abutment, which is known as the "tulip." Once cemented and screw-retained, the two pieces form a highly stable one-piece implant, with the crown being placed at tissue level. Thus, the implant has no moving parts and only one bacteria-proof connection, guaranteeing perfect results from a periodontal hygienic point of view. The stepped implant design and the proven self-cutting Dynamic Thread® perform convincingly in all bone types and indications. The two-piece design enables submerged healing with high success rates, especially in the posterior region and in free-end situations.

### THREE DIFFERENT ABUTMENTS

Available options: angled at 15°, straight and straight + 1.5 mm. There is a choice of two different screw types (titanium and metal-free PEEK). Identical drilling protocols allow the surgeon to switch intraoperatively between the one-piece SDS1.2 and the two-piece SDS2.2 implants depending on the situation.



SDS2.2 standard abutment cemented (blue line) and screw-retained, crown cemented at tissue level.



The standard abutments are made of zirconia, standard screws are available in titanium and PEEK.



Biological width

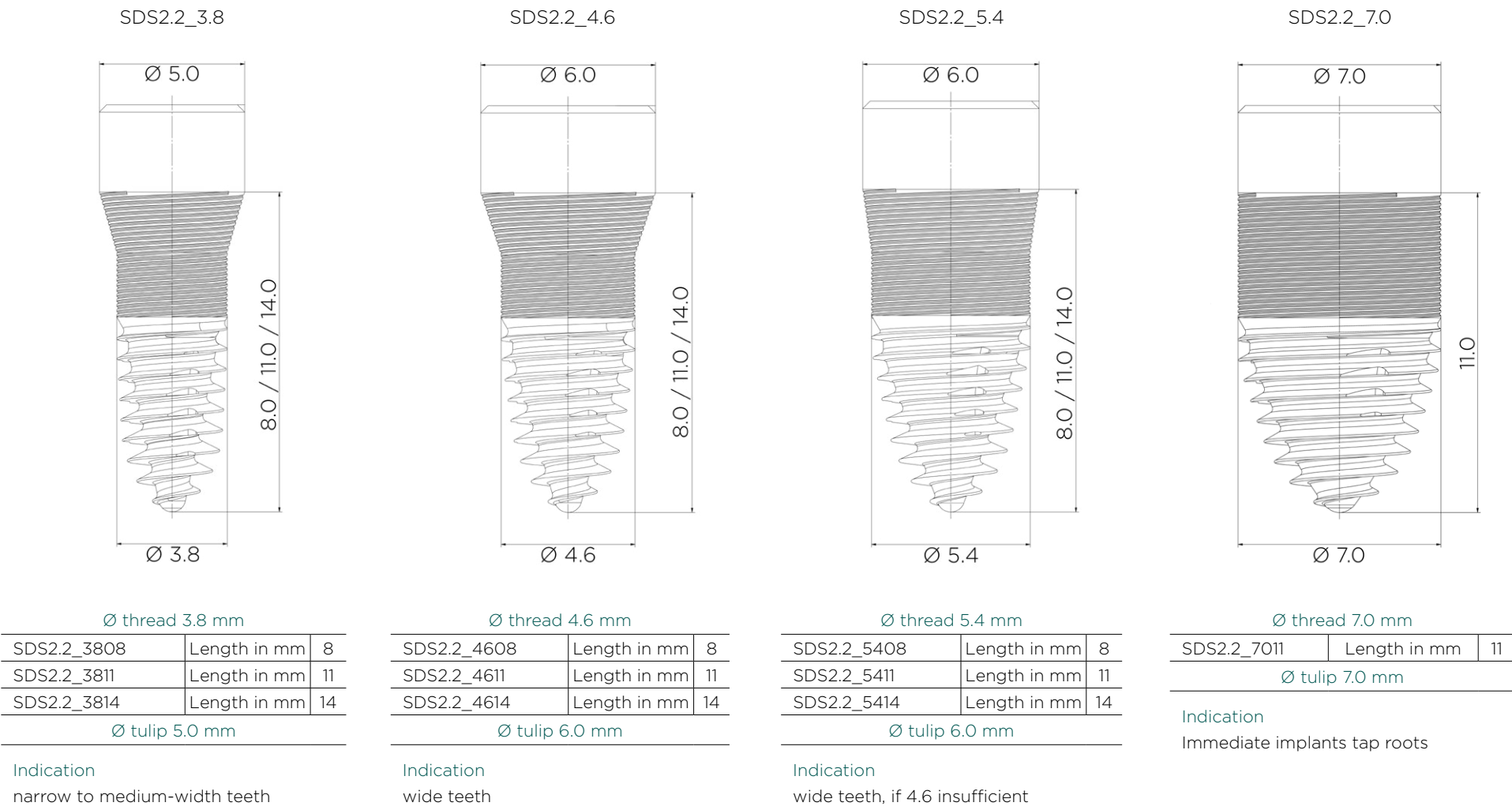
Micro thread with  
0.04 mm thread depth

Dynamic Thread® with  
2.5-fold thread depth





# SDS2.2 Product overview, areas of use and indications

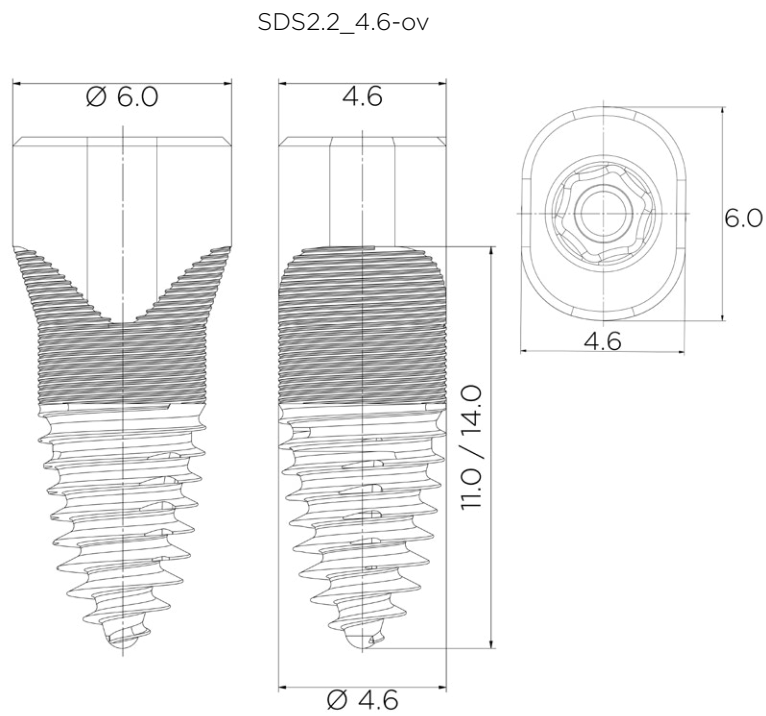




SDS2.2-ov “oval”

This implant series enables targeted restoration of upper and lower premolars. Please refer to the list of indications for more details.

SDS2.2-ov Product overview, areas of use and indications



Ø thread 4.6 mm

SDS2.2_4611-ov	Length in mm	11
SDS2.2_4614-ov	Length in mm	14

Ø tulip 4.6 mm x 6.0 mm

Summarized indication UJ/LJ premolars

Detailed indication

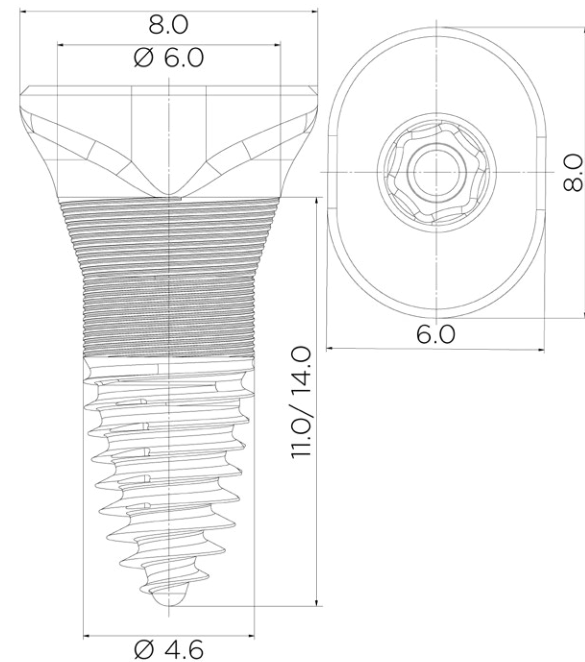
Premolar region and small gaps in canine re-  
gion



#### SDS2.2-ov "Double balcony"

This implant series enables targeted centralized restoration of UJ/LJ molars. Please refer to the list of indications for more details.

SDS2.2-ov Product overview, areas of use and indications



Ø thread 4.6 mm

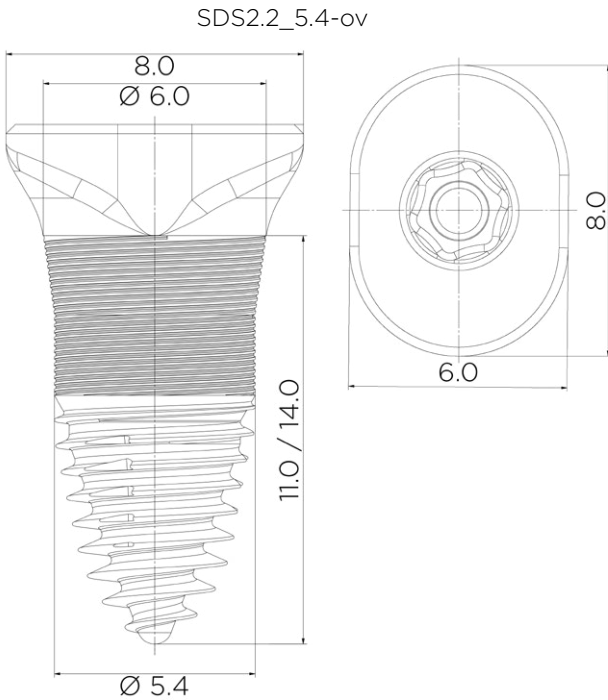
SDS2.2_4611-ov_6x8	Length in mm	11
SDS2.2_4614-ov_6x8	Length in mm	14

Ø tulip 6.0 mm x 8.0 mm

Summarized indication central UJ/LJ molars

Detailed indication

UJ/LJ molars, central position, mostly late implant placement, but also immediate implant placement with good interradicular septum



Ø thread 5.4 mm

SDS2.2_5411-ov	Length in mm	11
SDS2.2_5414-ov	Length in mm	14

Ø tulip 6.0 mm x 8.0 mm

Summarized indication central UJ/LJ molars

Detailed indication

UJ/LJ molars, central position, mostly late implant placement, but also immediate implant placement with good interradicular septum





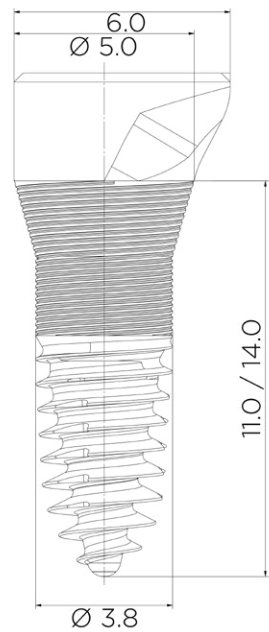
#### SDS2.2-ba “balcony”

This implant series enables targeted decentralized restoration in the event of immediate implant placement in the UJ/LJ premolar or molar region, especially when the implant position is asymmetrical. The “balcony” improves the emergence profile.

Please refer to the list of indications for more details.

SDS2.2-ba Product overview, areas of use and indication

SDS2.2\_3.8-ba



Ø thread 3.8 mm

SDS2.2_3811-ba	Length in mm	11
SDS2.2_3814-ba	Length in mm	14

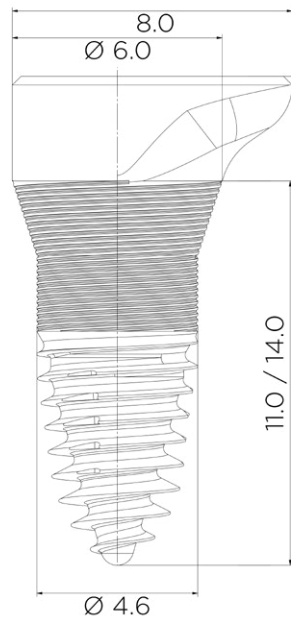
Ø tulip 5.0 mm x 6.0 mm

Summarized indication Premolars, especially UJ

Detailed indication

Immediate implant placement in premolar region, with asymmetric implant position, balcony improves emergence profile

SDS2.2\_4.6-ba



Ø thread 4.6 mm

SDS2.2_4611-ba	Length in mm	11
SDS2.2_4614-ba	Length in mm	14

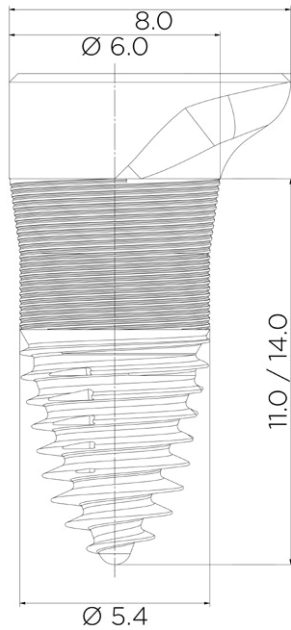
Ø tulip 6.0 mm x 8.0 mm

Summarized indication UJ/LJ molars

Detailed indication

Immediate implant placement in molar region with asymmetric implant position, balcony improves emergence profile

SDS2.2\_5.4-ba



Ø thread 5.4 mm

SDS2.2_5411-ba	Length in mm	11
SDS2.2_5414-ba	Length in mm	14

Ø tulip 6.0 mm x 8.0 mm

Summarized indication UJ/LJ molars

Detailed indication

Immediate implant placement in molar region with asymmetric implant position, balcony improves emergence profile



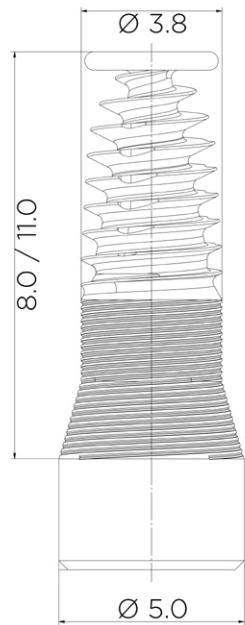
#### SDS2.2-si “Sinus implant”

Biological sinus lift without bone replacement material. The SDS sinus implant is especially designed for external sinus lifts without the use of bone replacement material.

Please refer to the following indications, prerequisites, and the surgical protocol listed below.

# SDS2.2-si Product overview, areas of use and indications

SDS2.2\_3.8-si



Ø thread 3.8 mm

SDS2.2_3808-si	Length in mm	8
SDS2.2_3811-si	Length in mm	11

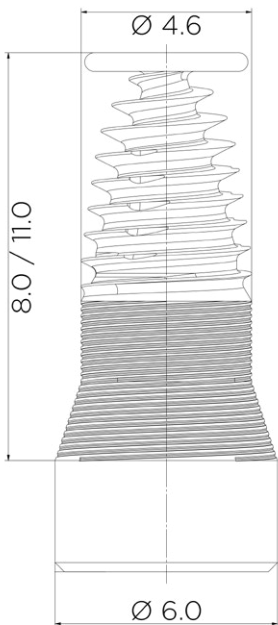
Ø tulip 5.0 mm

Ø disc 3.6 mm

Indication

External sinus **exclusively** in the pre-molar region (without bone replacement material), at least 3 mm up to a maximum of 5 mm residual bone

SDS2.2\_4.6-si



Ø thread 4.6 mm

SDS2.2_4608-si	Length in mm	8
SDS2.2_4611-si	Length in mm	11

Ø tulip 6.0 mm

Ø disc 4.4 mm

Indication

External sinus in the molar region (without bone replacement material), at least 3 mm up to a maximum of 5 mm residual bone



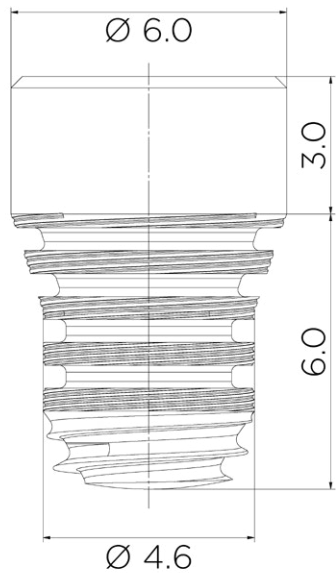
#### SDS2.2-sh “short”

The “short” implant series has been specially designed for central premolar and molar restoration with reduced vertical bone availability in the lower jaw.



# SDS2.2-sh Product overview, areas of use and indications

SDS2.2\_4.6-sh



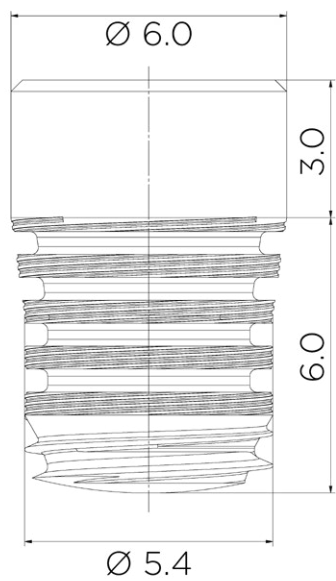
Ø thread 4.6 mm

SDS2.2_4606-sh	Length in mm	6
Ø tulip 4.6 mm		

Indication

At least 6 mm of residual bone  
Observe distance to antagonists/  
crown height, late/immediate implant  
placement in premolar region, no  
immediate restoration

SDS2.2\_5.4-sh

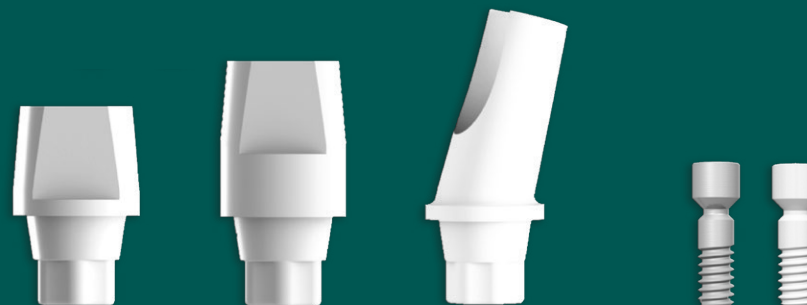


Ø thread 5.4 mm

SDS2.2_5406-sh	Length in mm	6
Ø tulip 5.4 mm		

Indication

At least 6 mm of residual bone  
Observe distance to antagonists/  
crown height, late/immediate implant  
placement in molar region, no im-  
mediate restoration



#### SDS2.2-AP-S “Standard abutment”

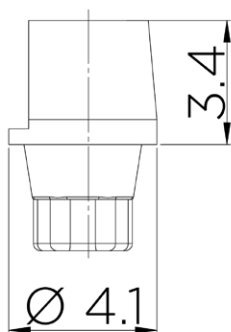
More precisely, the three different abutments (see top left) are only “abutment posts”, since the lower part of the abutment is already integrated into the implant shoulder.

SDS abutments are always cemented with a glass ionomer cement (GIC), e.g. Ketac™ Cem. The standard PEEK or titanium screw is used exclusively for fixation during cementation. For your prosthetic planning, please note that the crown must rest on the shoulder of the implant.

The exact treatment protocol is available in the SDS prosthetic manual and online in our media library at [www.swissdentalsolutions.com](http://www.swissdentalsolutions.com).

## Parts and components SDS2.2

SDS2.2\_AP-S



Post height 3.4 mm

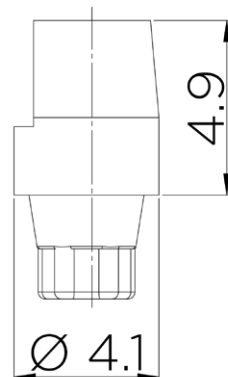
Suited for all SDS2.2 implants

Standard abutment

### Indication

Cemented single crown and bridge restorations in standard situations

SDS2.2\_AP-S+1.5



Post height 4.9 mm

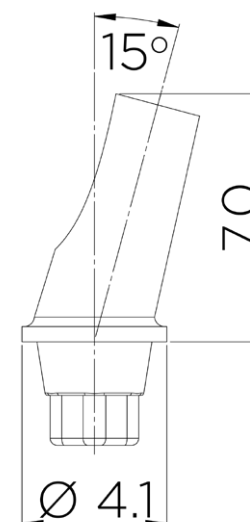
Suited for all SDS2.2 implants

Standard abutment + 1.5 mm

### Indication

Cemented single crown and bridge restorations with a larger distance to the antagonist

SDS2.2\_AP-S15°



Post height 7.0 mm

Suited for all SDS2.2 implants

Standard abutment angled at + 15°

### Indication

Cemented single crown and bridge restorations with implant axis divergences



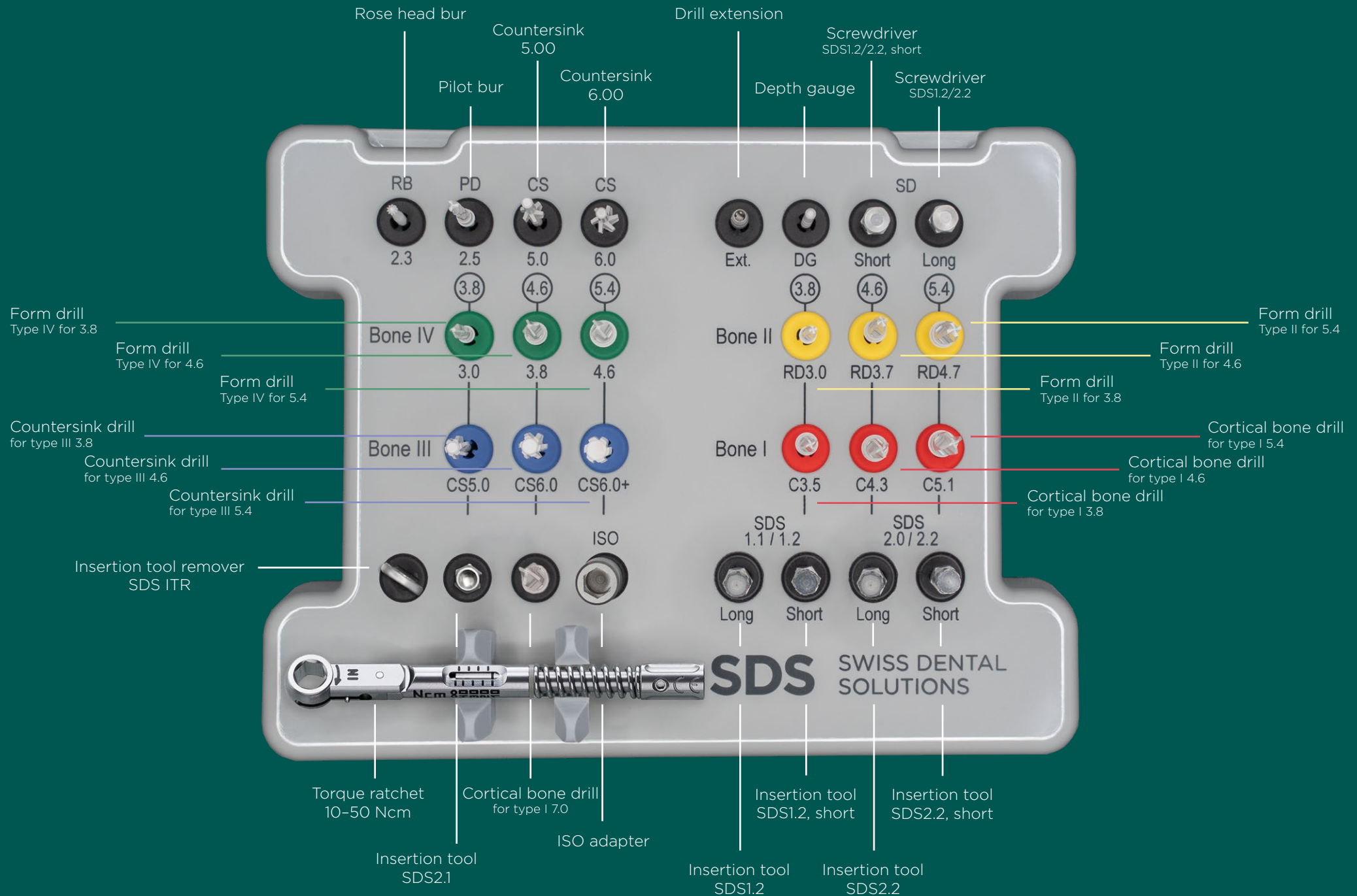
## SDS surgical tray

### CONSISTENTLY METAL-FREE

Metal-free implant placement with all-ceramic drills made of ATZ high-performance ceramics. All instruments that come into contact with the patient are ceramic. The rotating instruments made from ATZ ceramic are characterized by very long service lives with consistently sharp cutting surfaces. The clearly arranged surgical tray is structured according to bone types (IV-III-II-I), making it easier to comply with the different drilling protocols. The drills are laser-marked (type and diameter) and also color-coded, meaning that the drilling sequences are very easy to follow.







## SDS surgical tray

	Product	Article no.	Shaft labeling
1	Rose head bur	SDSrb230	SDS 2.30
2	Pilot bur	SDSpd250	SDS PD 2.5
3	Countersink 5.00	SDScs500	SDS CS 5.00
4	Countersink 6.00	SDScs600	SDS CS 6.00
5	Form drill for DT 3.80	SDSsd300dt	SDS 3.0
6	Form drill for DT 4.60	SDSsd380dt	SDS 3.8
7	Form drill for DT 5.40	SDSsd460dt	SDS 4.6
8	Countersink drill for type III 3.8	SDS2.2_CS-500	SDS CS5.0
9	Countersink drill for type III 4.6	SDS2.2_CS-600	SDS CS6.0
10	Countersink drill for type III 5.4	SDS2.2_CS-600+	SDS CS6.0+
11	Form drill for RD 3.70 and DT 3.80	SDSsd300rd	SDS RD3.0
12	Form drill for RD 4.40 and DT 4.60	SDSsd370rd	SDS RD3.7
13	Form drill for RD 5.40	SDSsd470rd	SDS RD4.7
14	Cortical bone drill for type I 3.8	SDSsd350C	SDS C3.5
15	Cortical bone drill for type I 4.6	SDSsd430C	SDS C4.3
16	Cortical bone drill for type I 5.4	SDSsd510C	SDS C5.1
17	Cortical bone drill for type I 7.0	SDSsd670C	SDS C6.7
18	Depth gauge	SDSdg240	SDS dg 240
19	Drill extension	SDSse001	SDSse001
20	Insertion tool SDS2.2 (screw included)	SDS2.2_ITscrew-ST	
21	Insertion tool SDS1.2 (screw included)	SDS1.2_ITscrew-ST	
22	Insertion tool SDS1.2 short (screw included)	SDS1.2_ITshort-screw-ST	
23	Insertion tool SDS2.2 short (screw included)	SDS2.2_ITshort-screw-ST	
24	Insertion tool SDS2.1	SDS2.1_IT-ST	
25	Insertion tool remover	SDS_ITR	
26	ISO insertion tool adapter	SDS_ITISO-ST	
27	Torque ratchet 10-50 Ncm	SDStw	
28	Screwdriver SDS1.2/2.2	SDS2.2_SD-ST	
29	Screwdriver SDS1.2/2.2, short	SDS-SD_short-ST	
30	Surgical box	SDS00401	
31	O-Ring (20 pcs.) (not pictured)	SDS2.1_IT-ST-O	

# Biological drilling protocol

## TAILORED TO ALL BONE TYPES

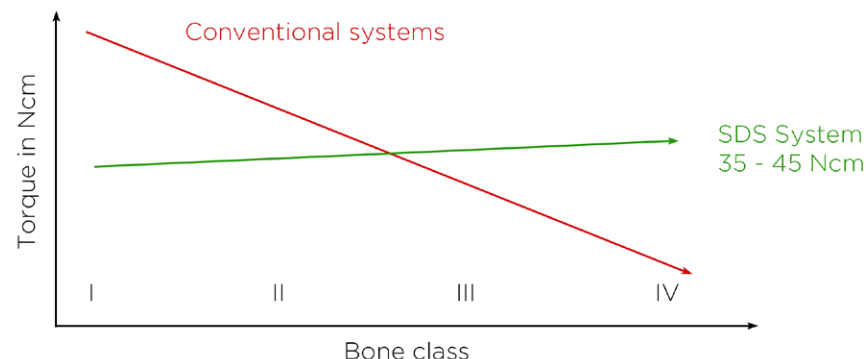
Most conventional implant systems generate higher torques the harder the bone. This is absolutely contraindicated and counterproductive in biological terms as, according to Mammoto's Law, increased pressure on poorly perfused bone leads to resorption. The SDS drilling protocol takes biology and this important biological law into account by generating decreasing insertion torques as the bone gets harder and matching drills and drilling protocols to bone types. This conserves the bone and supports vascularization, which is crucial for the long-term preservation of any tissue.

## DRILLING PROTOCOLS

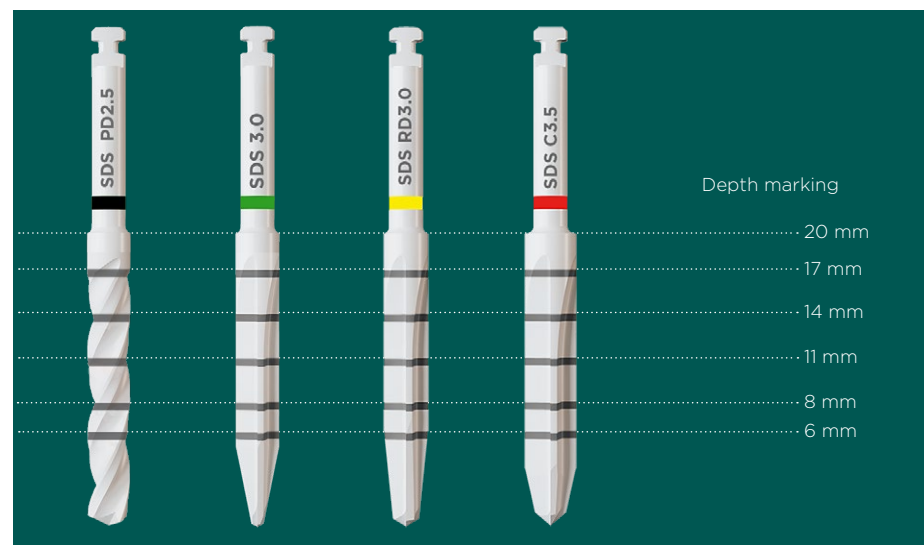
We recommend having these drill sequences on hand during surgery. On the one hand, this will ensure that you follow the protocol perfectly. On the other, depending on bone density, it makes it possible to vary and optimally adapt the implant bed preparation to a potential non-standard situation. The illustrations show the drilling sequences, starting with the rose bur and ending with the form drill projected onto the implant, so that you can see exactly which thread depth remains for stabilization purposes.

## CORRECT USE

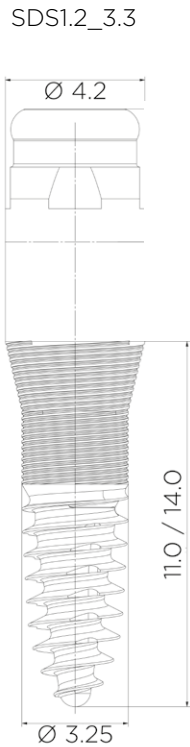
Drilling should be carried out intermittently and with constant external cooling with precooled (5°C/41°F) sterile Ringer's solution. External cooling prevents the bone tissue from overheating and facilitates bone chip removal or drainage. Preparation is performed under low pressure to the desired depth at a speed of 300-600 rpm.



Uniform torque in all four bone types when using the SDS drilling protocol compared to conventional systems.

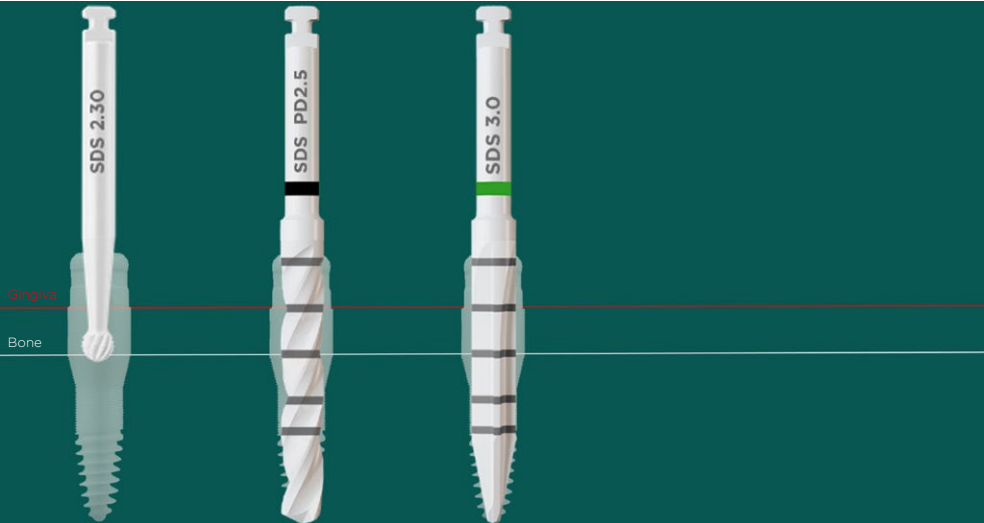


SDS1.2\_3.3 Type III and II bone

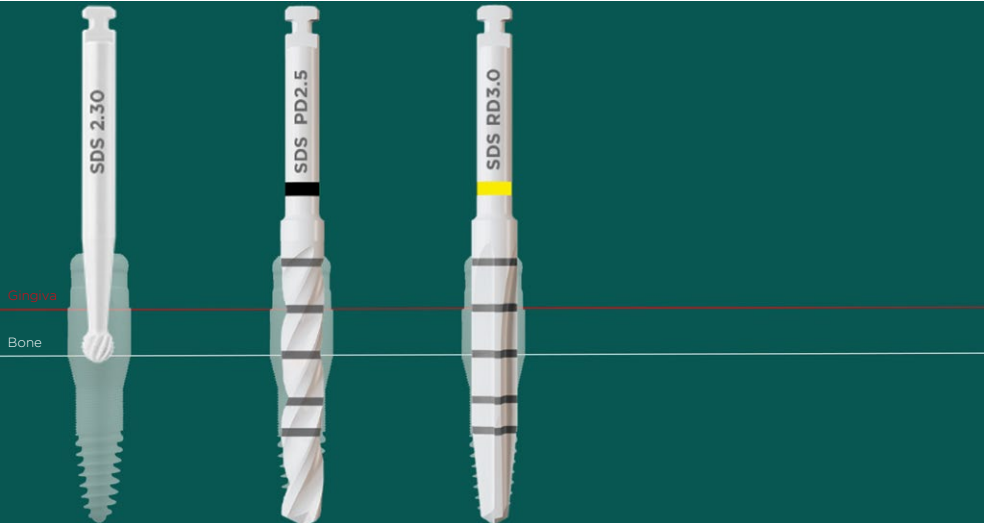


Recommended rpm	
SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS 3.0	300-600/min
SDS RD3.0	300-600/min

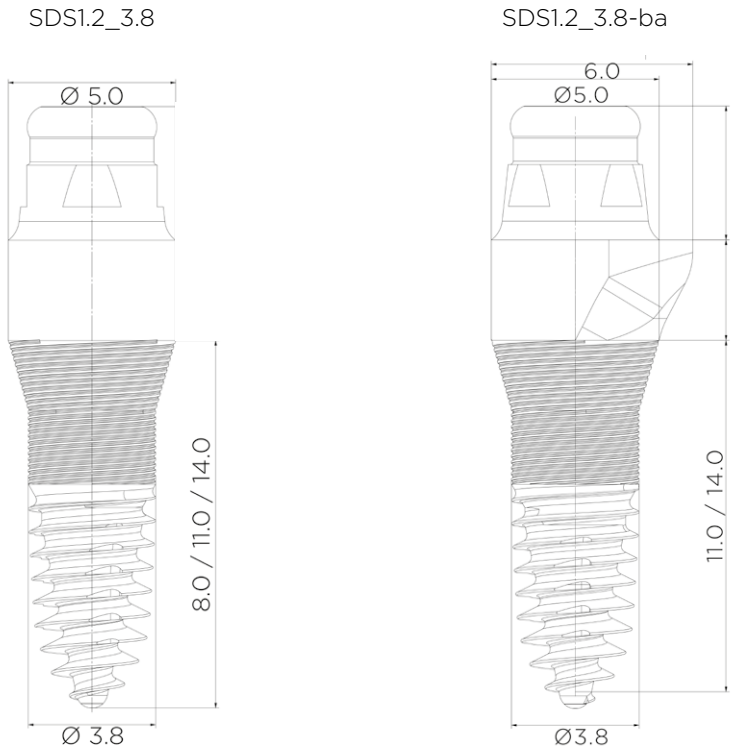
SDS1.2 Ø 3.3 mm – Type III bone



SDS1.2 Ø 3.3 mm – Type II bone



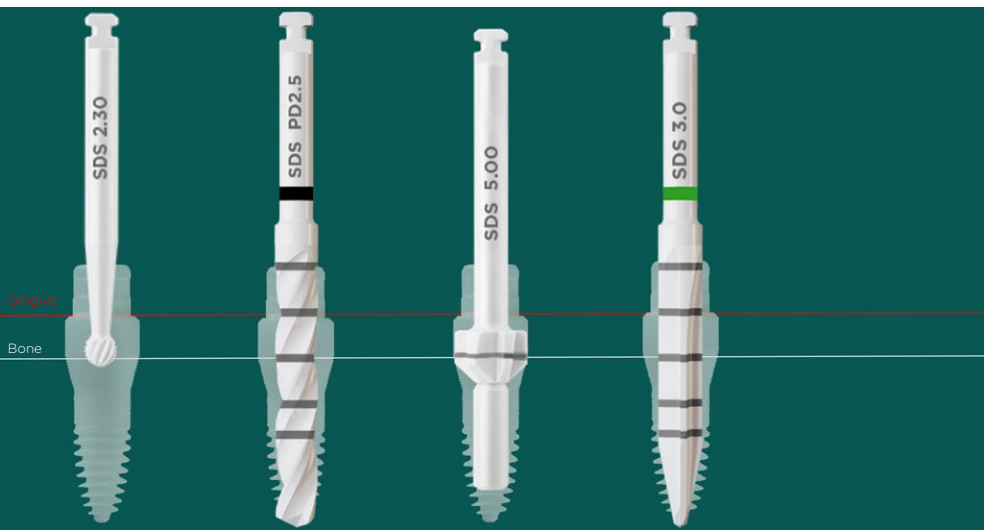
# SDS1.2\_3.8 Type IV and III bone



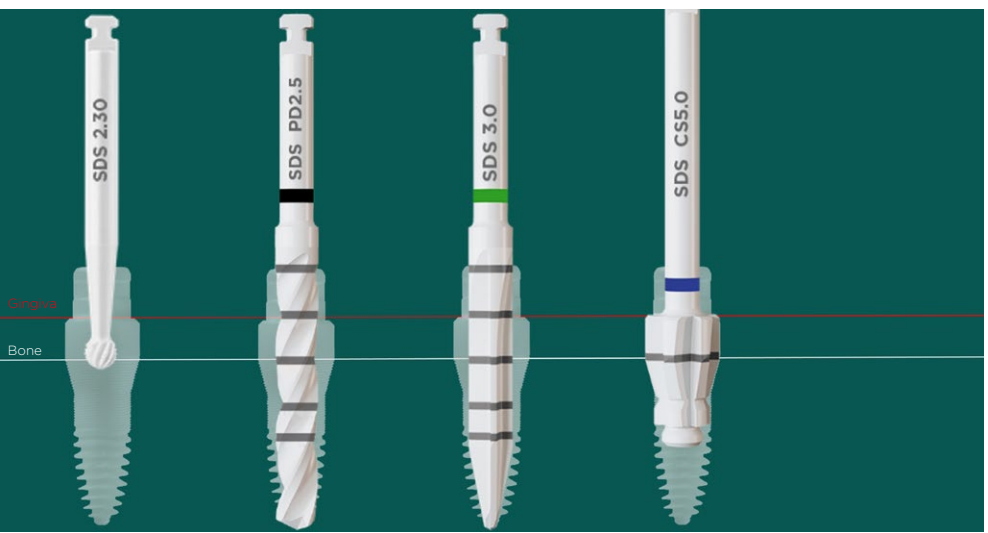
Recommended rpm

SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS 3.0	300-600/min
SDS 5.00	300-600/min
SDS CS5.0	300-600/min

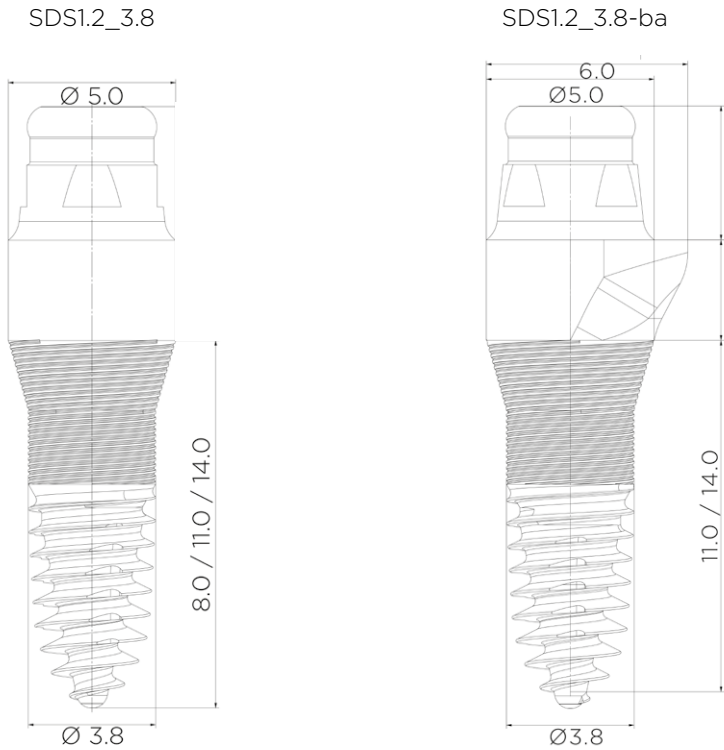
SDS1.2 Ø 3.8 mm – Type IV bone



SDS1.2 Ø 3.8 mm – Type III bone

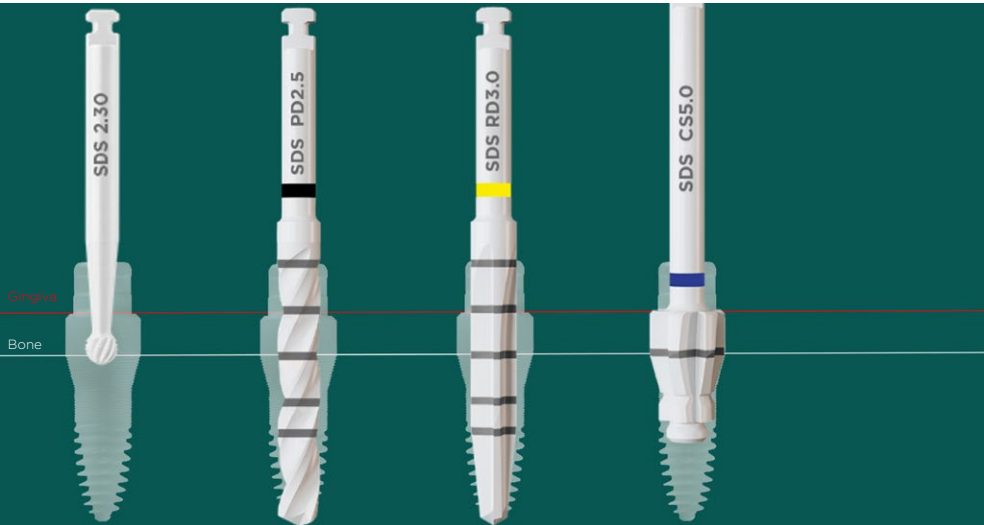


SDS1.2\_3.8 Type II and I bone

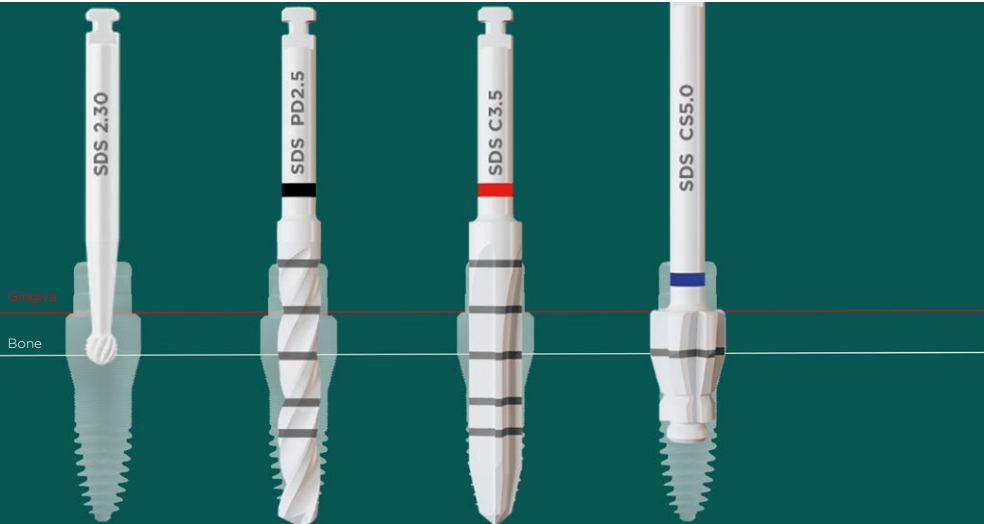


Recommended rpm	
SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS RD3.0	300-600/min
SDS CS5.0	300-600/min
SDS C3.5	300-600/min

SDS1.2 Ø 3.8 mm – Type II bone



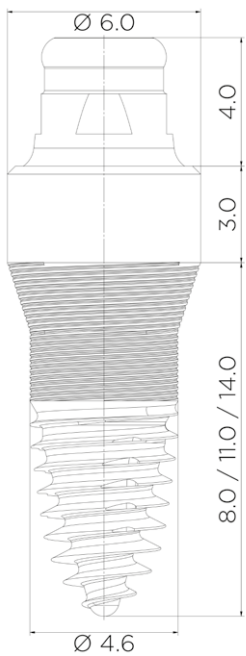
SDS1.2 Ø 3.8 mm – Type I bone



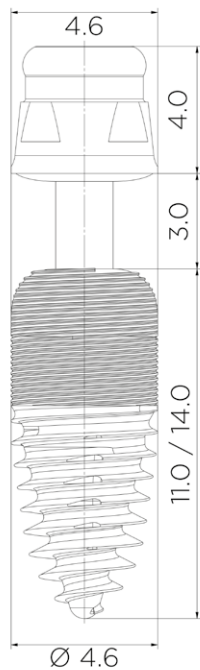


# SDS1.2\_4.6 Type IV and III bone

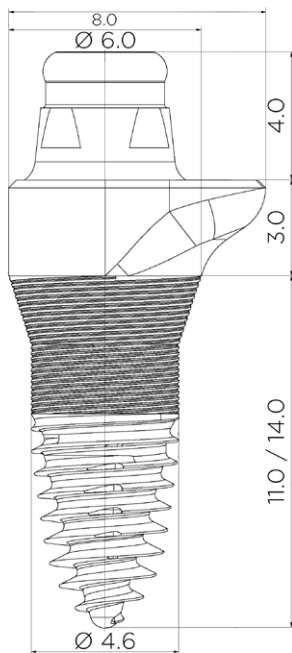
SDS1.2\_4.6



SDS1.2\_4.6-ov



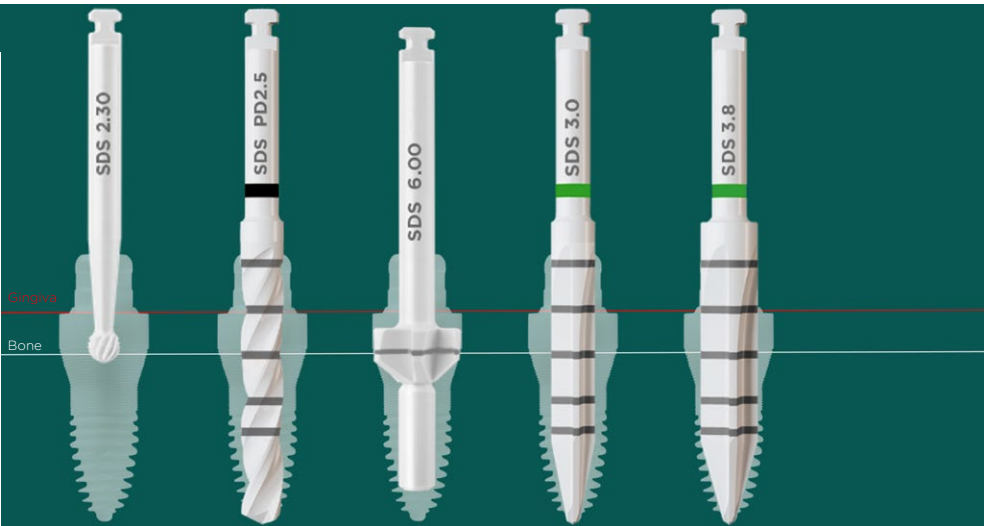
SDS1.2\_4.6-ba



## Recommended rpm

SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS 6.00	300-600/min
SDS 3.0	300-600/min
SDS 3.8	300-600/min
SDS CS6.0	300-600/min

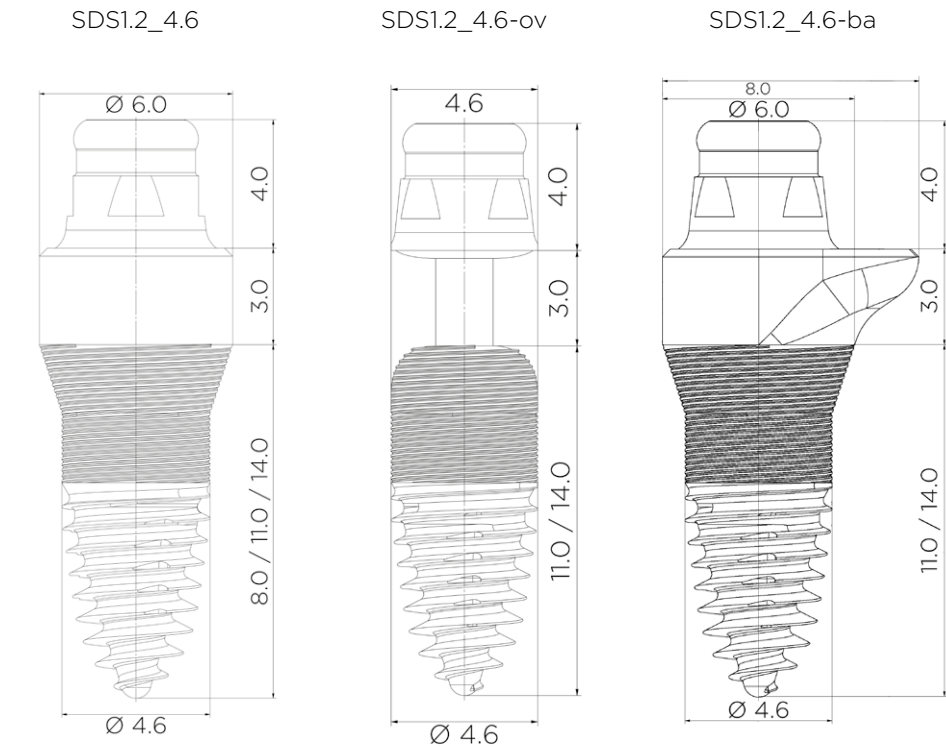
SDS1.2 Ø 4.6 mm - Type IV bone



SDS1.2 Ø 4.6 mm - Type III bone



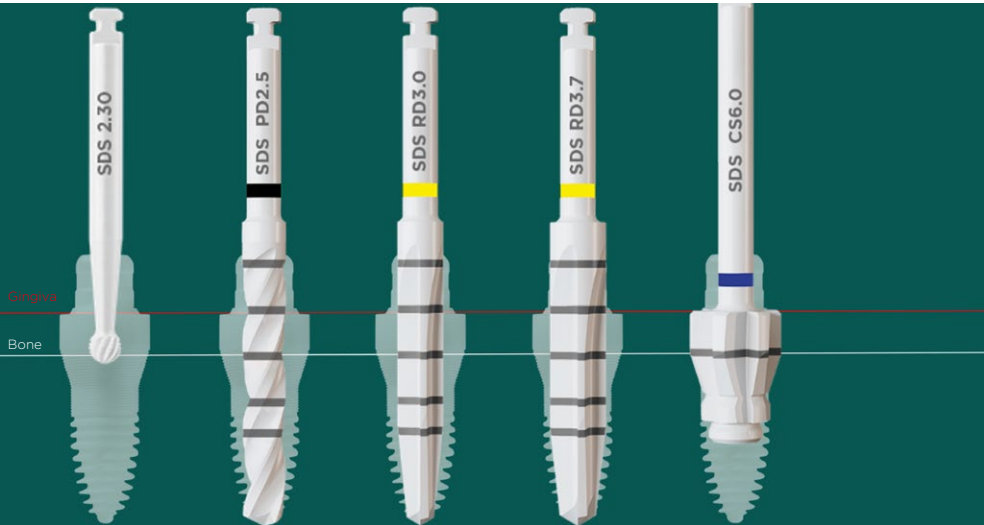
# SDS1.2\_4.6 6 Type II and I bone



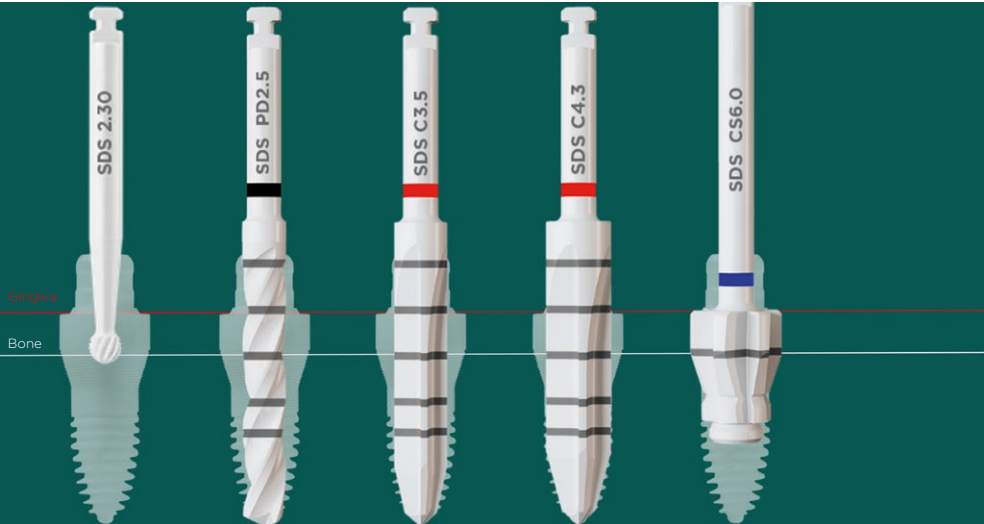
Recommended rpm

SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS RD3.0	300-600/min
SDS RD3.7	300-600/min
SDS CS6.0	300-600/min
SDS C3.5	300-600/min
SDS C4.3	300-600/min

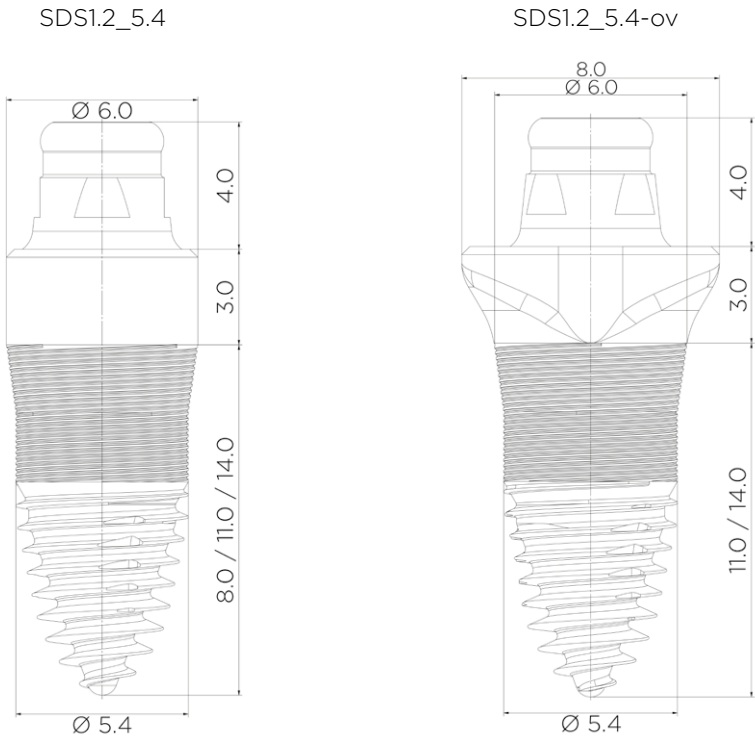
SDS1.2 Ø 4.6 mm – Type II bone



SDS1.2 Ø 4.6 mm – Type I bone



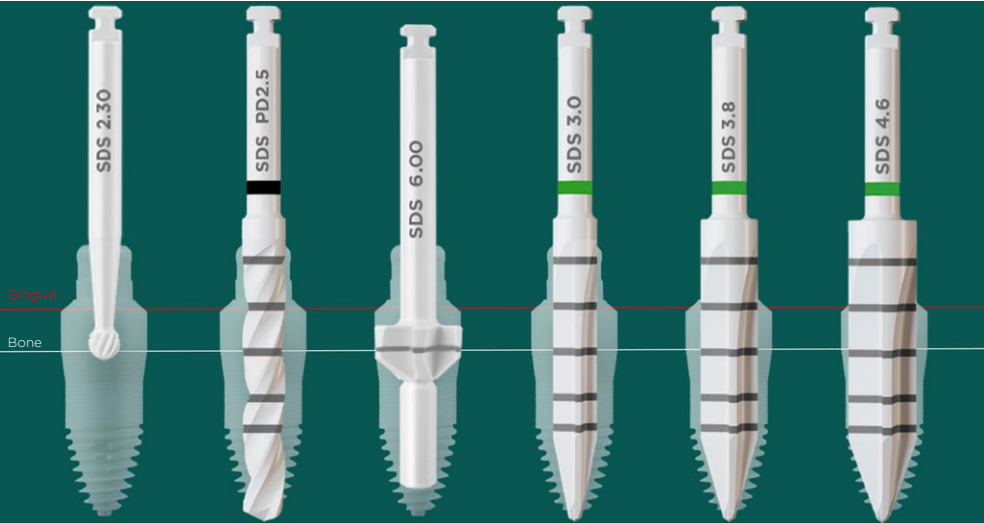
# SDS1.2\_5.4 Type IV and III bone



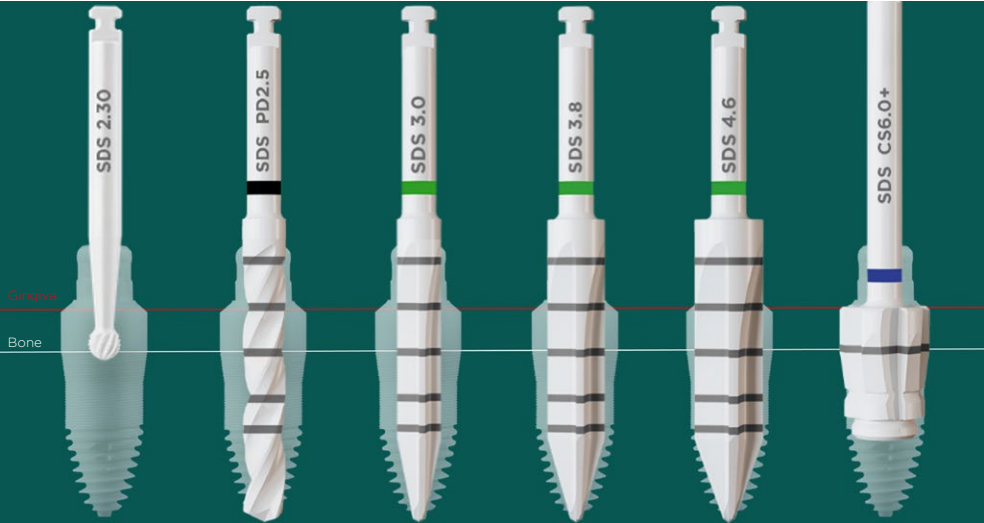
Recommended rpm

SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS 6.00	300-600/min
SDS 3.0	300-600/min
SDS 3.8	300-600/min
SDS 4.6	300-600/min
SDS CS6.0+	300-600/min

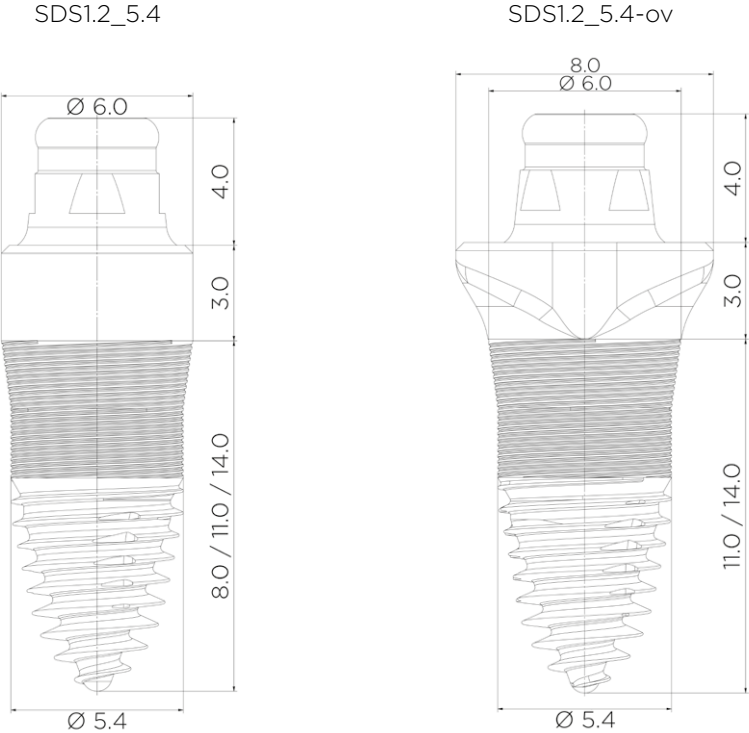
SDS1.2 Ø 5.4 mm – Type IV bone



SDS1.2 Ø 5.4 mm – Type III bone



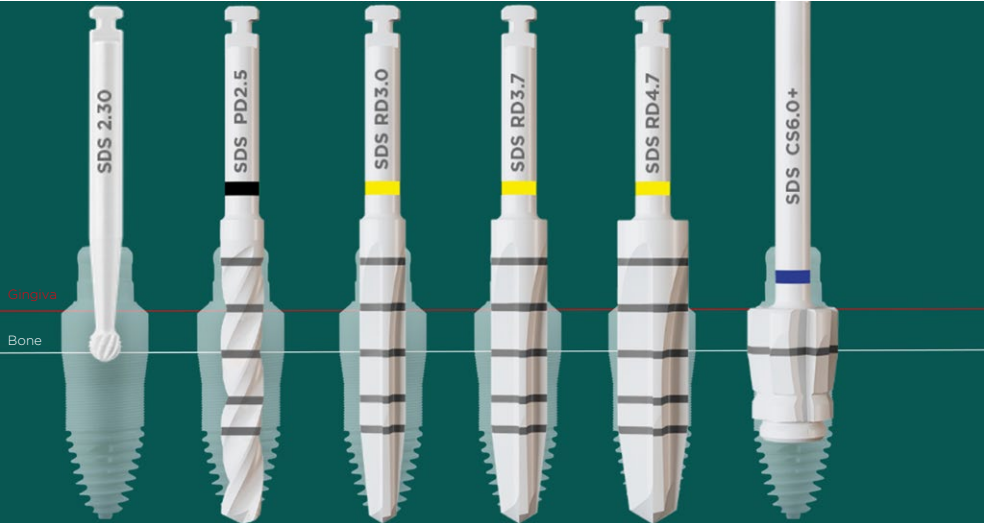
SDS1.2\_5.4 Type II and I bone



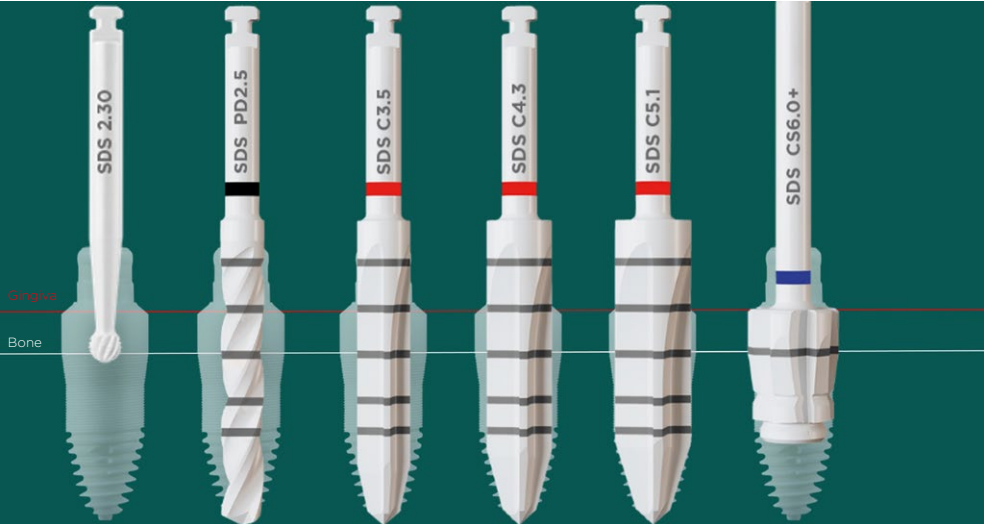
Recommended rpm

SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS RD3.0	300-600/min
SDS RD3.7	300-600/min
SDS RD4.7	300-600/min
SDS CS6.0+	300-600/min
SDS C3.5	300-600/min
SDS C4.3	300-600/min
SDS C5.1	300-600/min

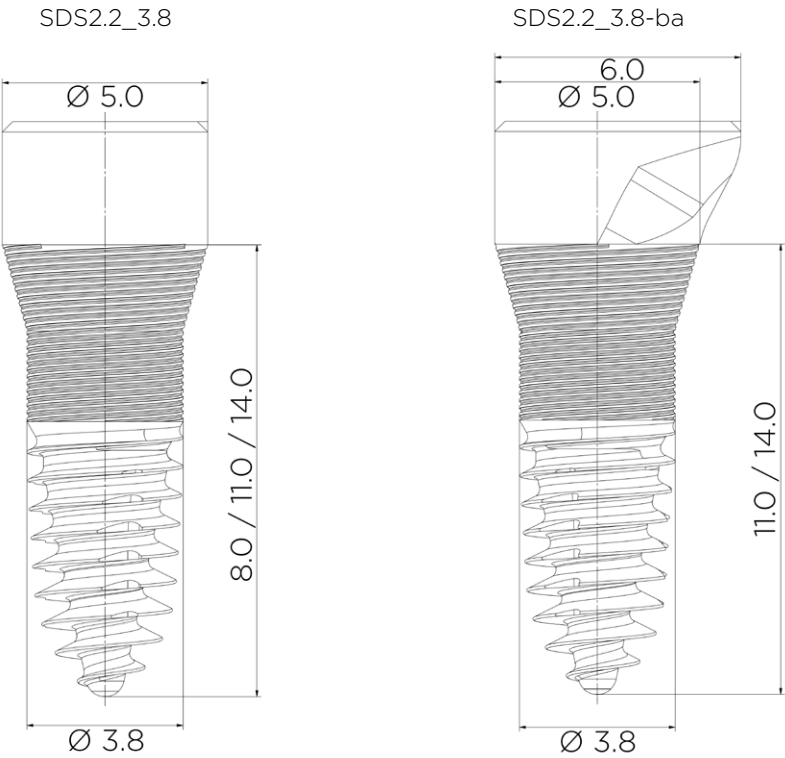
SDS1.2 Ø 5.4 mm – Type II bone



SDS1.2 Ø 5.4 mm – Type I bone



# SDS2.2\_3.8 Type IV and III bone

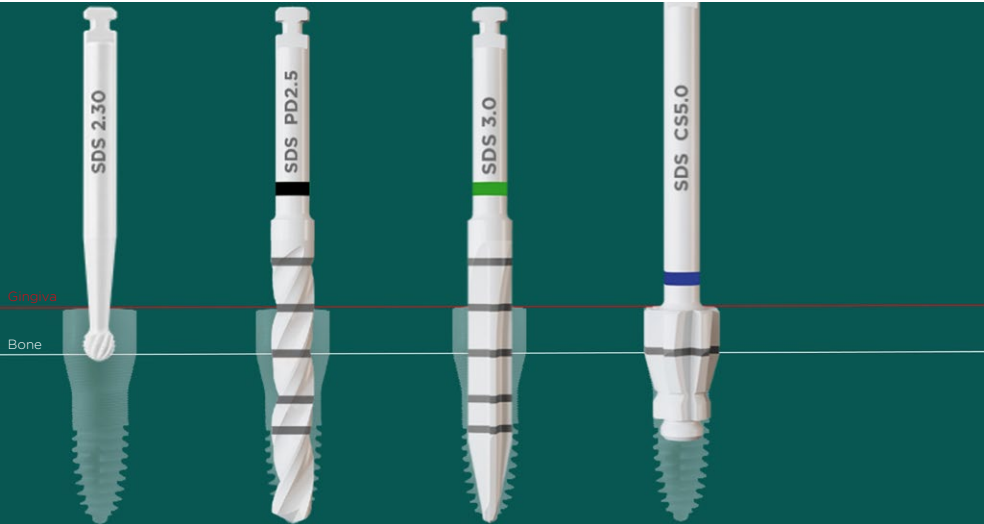


Recommended rpm	
SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS 5.00	300-600/min
SDS 3.0	300-600/min
SDS CS5.0	300-600/min

SDS2.2 Ø 3.8 mm - Type IV bone

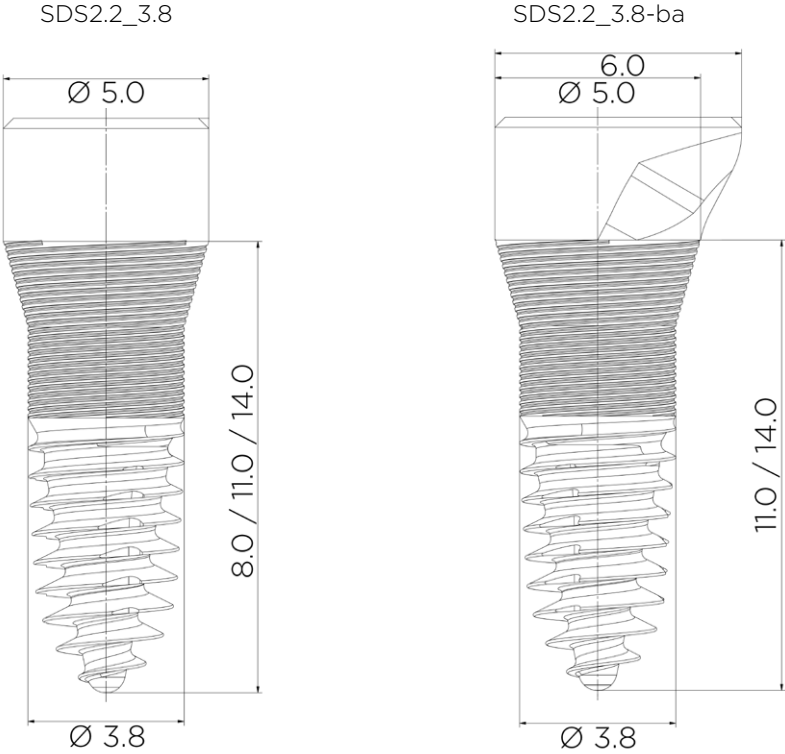


SDS2.2 Ø 3.8 mm - Type III bone



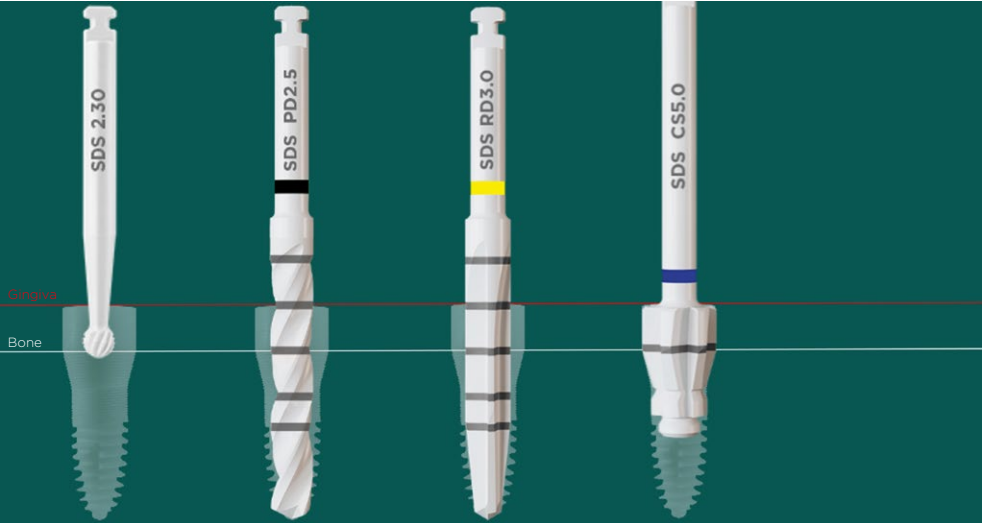


SDS2.2\_3.8 Type II and I bone

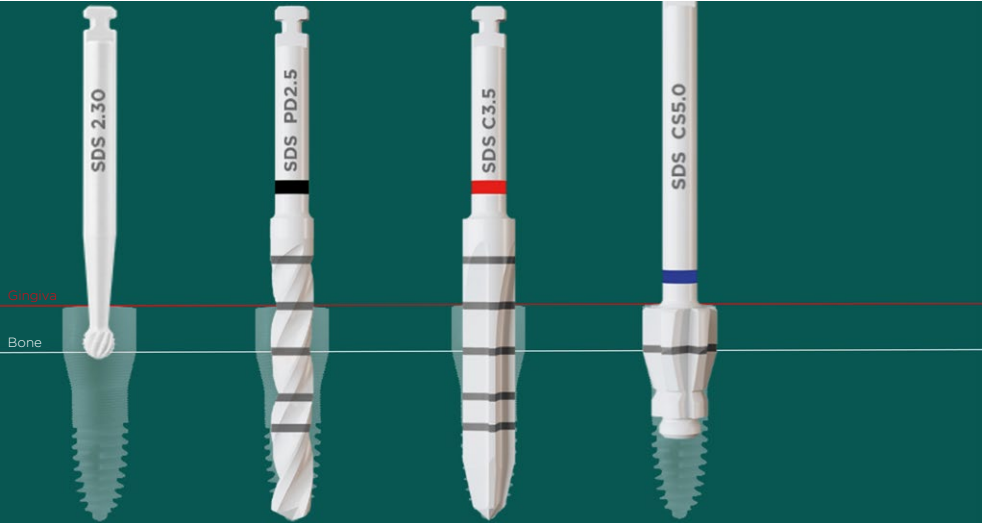


Recommended rpm	
SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS RD3.0	300-600/min
SDS CS5.0	300-600/min
SDS C3.5	300-600/min

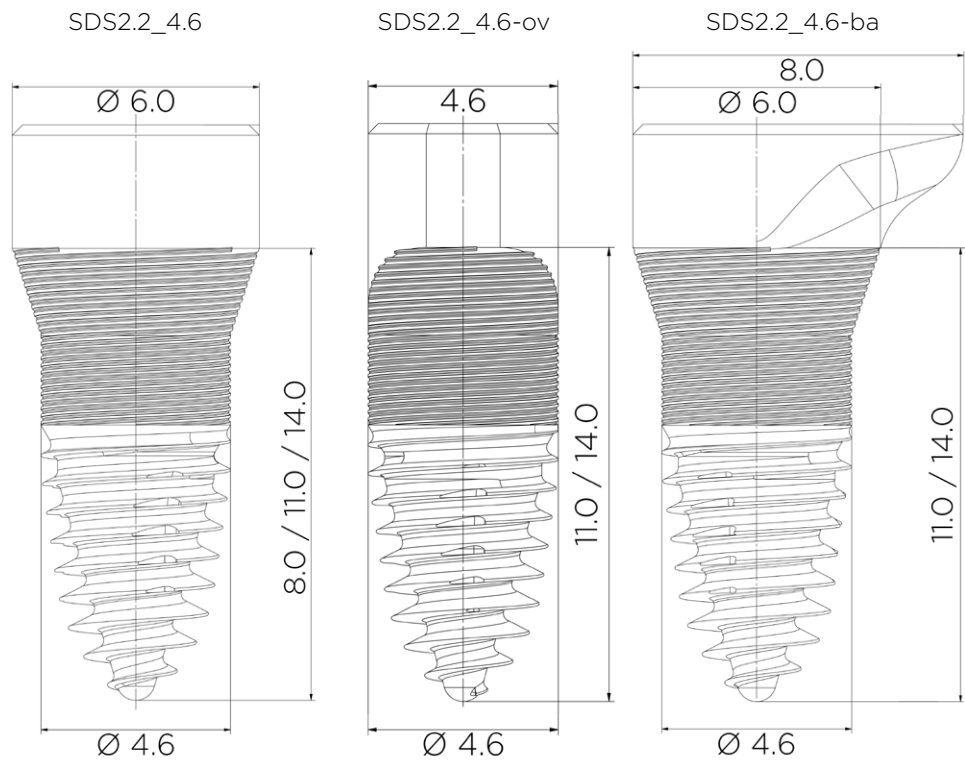
SDS2.2 Ø 3.8 mm - Type II bone



SDS2.2 Ø 3.8 mm - Type I bone

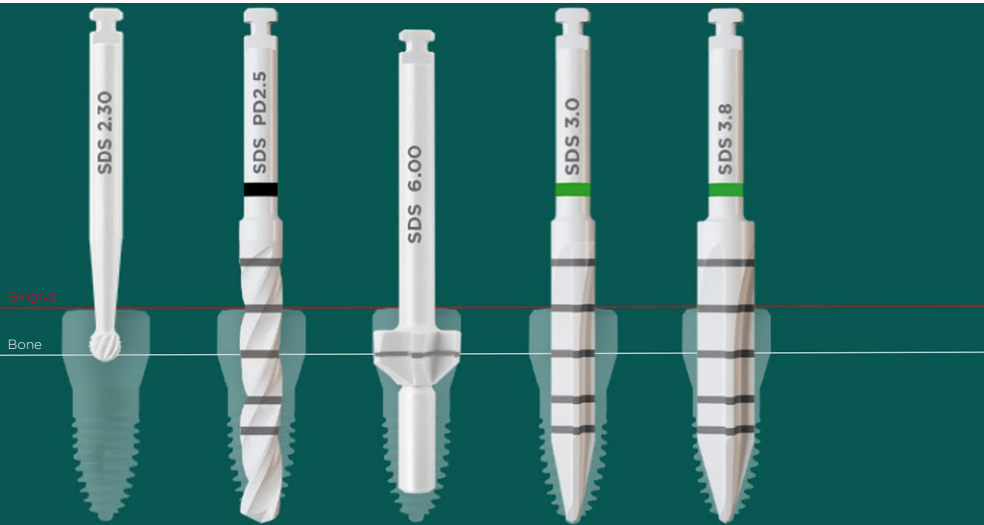


# SDS2.2\_4.6 Type IV and III bone

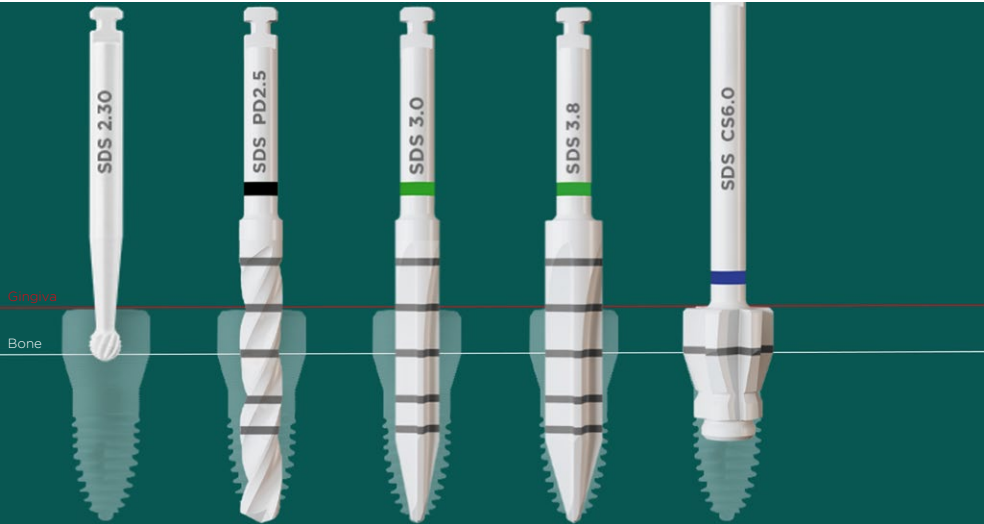


Recommended rpm	
SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS 6.00	300-600/min
SDS 3.0	300-600/min
SDS 3.8	300-600/min
SDS CS6.0	300-600/min

SDS2.2 Ø 4.6 mm - Type IV bone

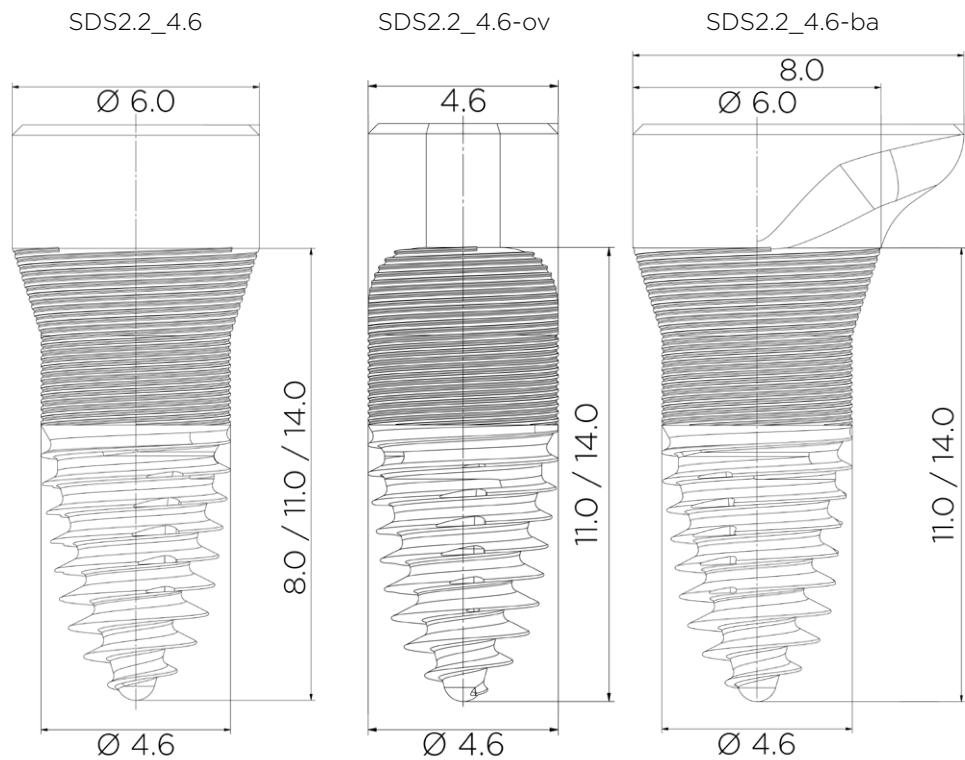


SDS2.2 Ø 4.6 mm - Type III bone





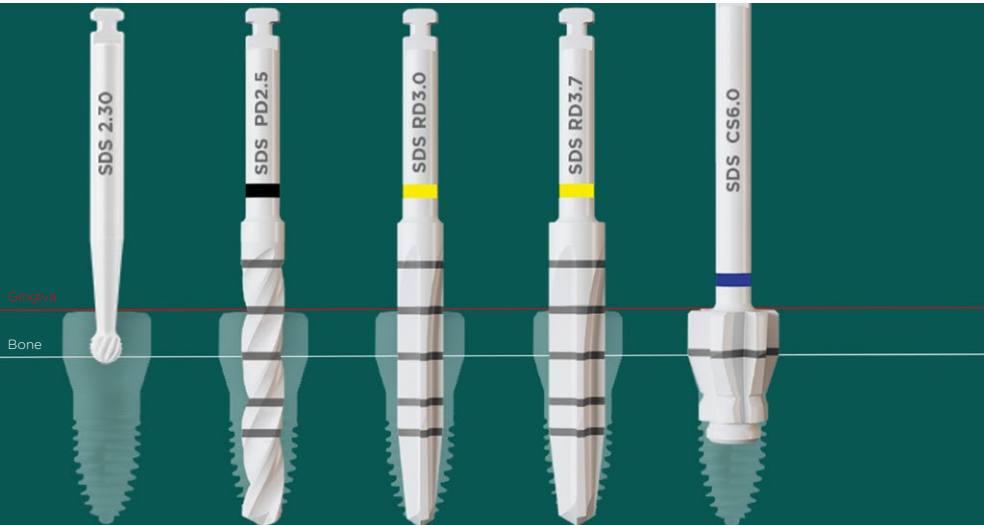
# SDS2.2\_4.6 Type II and I bone



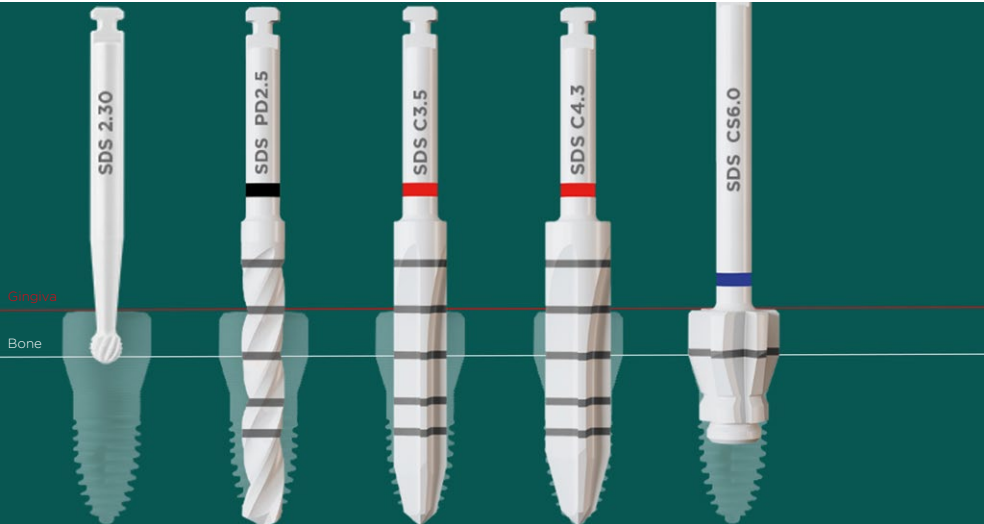
Recommended rpm

SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS RD3.0	300-600/min
SDS RD3.7	300-600/min
SDS CS6.0	300-600/min
SDS C3.5	300-600/min
SDS C4.3	300-600/min

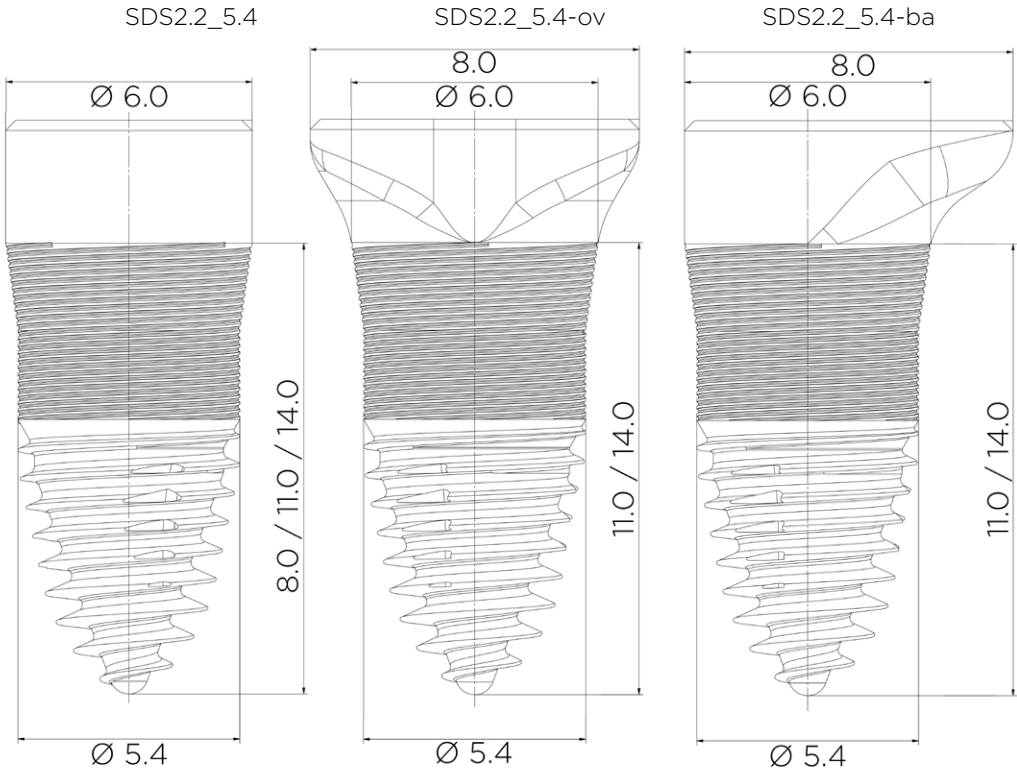
SDS2.2 Ø 4.6 mm - Type II bone



SDS2.2 Ø 4.6 mm - Type I bone



SDS2.2\_5.4 Type IV and III bone



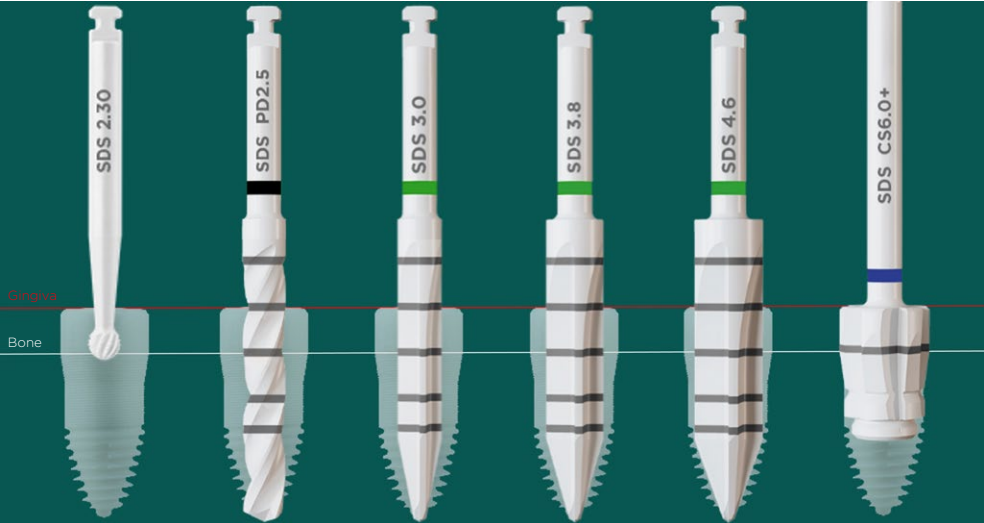
Recommended rpm

SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS 6.00	300-600/min
SDS 3.0	300-600/min
SDS 3.8	300-600/min
SDS 4.6	300-600/min
SDS CS6.0+	300-600/min

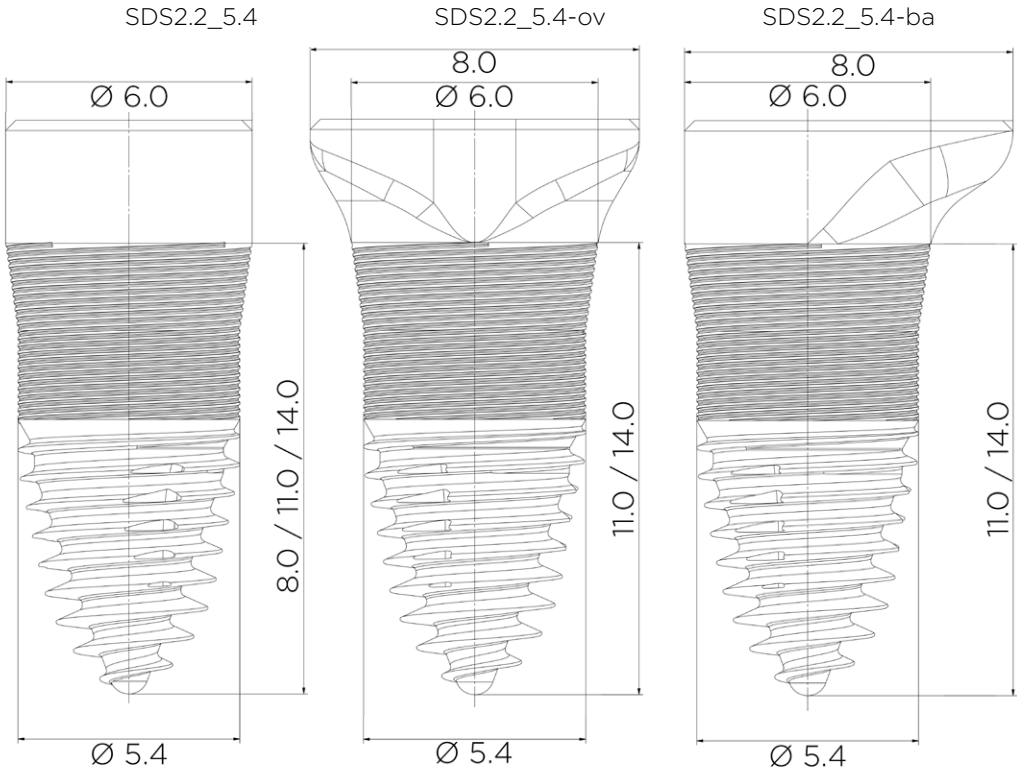
SDS2.2 Ø 5.4 mm - Type IV bone



SDS2.2 Ø 5.4 mm - Type III bone

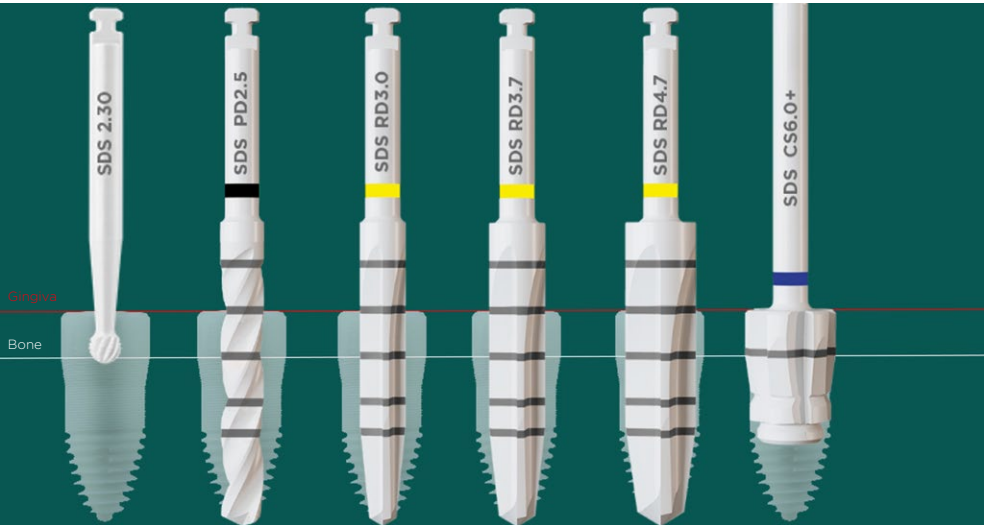


# SDS2.2\_5.4 Type II and I bone

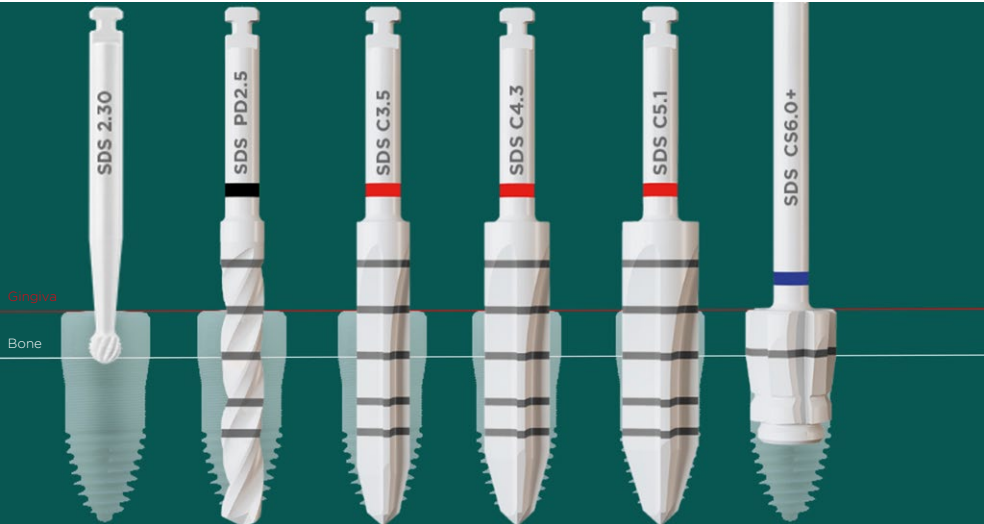


Recommended rpm	
SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS RD3.0	300-600/min
SDS RD3.7	300-600/min
SDS RD4.7	300-600/min
SDS CS6.0+	300-600/min
SDS C3.5	300-600/min
SDS C4.3	300-600/min
SDS C5.1	300-600/min

SDS2.2 Ø 5.4 mm - Type II bone



SDS2.2 Ø 5.4 mm - Type I bone



## SDS2.2-si Surgical protocol for external sinus lift with SDS implants

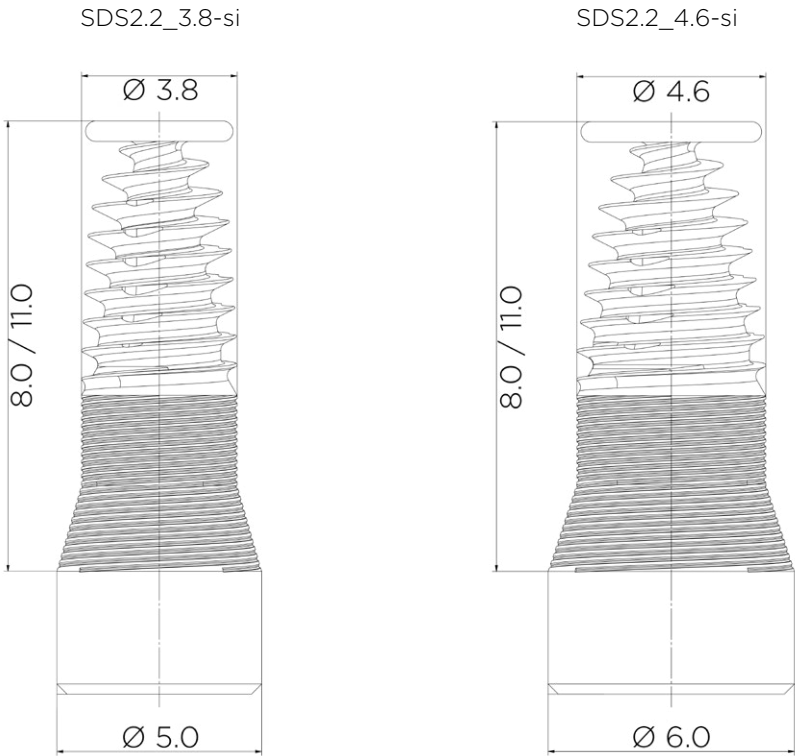
### PREREQUISITES

- Good command of common sinus lift techniques (internal/external sinus lift) and knowledge of possible complications
- Experience with PRF matrices/brushing technique/piezo surgery/apical mattress sutures
- Experience with SDS implants
- Three-dimensional x-ray (DVT/CT)
- Inflammation-free sinus
- Intact Schneiderian membrane
- A minimum of 3 mm of residual bone in the area of the maxillary sinus floor for sufficient primary stability
- A maximum of 5 mm of residual bone in the area of the maxillary sinus floor

### SURGICAL PROTOCOL

- Preparing the immune system
- Adjusting LDL and vitamin D3 levels
- High-dose vitamin C infusions, single shots (800 mg Augmentin® + 8 mg dexamethasone) i.v. over three days (-1, surgery, +1)
- Alveolar ridge incision with gingival margin incision to adjacent teeth to avoid vertical incision
- Application of brushing technique to avoid periosteal slitting
- Thinning of the vestibular bone in the window area with Safescraper® and simultaneous harvesting of cortical chips
- Detachment of the bone window with piezo surgery without perforation of Schneiderian membrane
- Lift Schneiderian membrane (far towards the medial, dorsal and palatal aspect-> generate a void space that is as large as possible)
- No tension on the Schneiderian membrane to avoid expulsive forces on the sinus implant
- Implant osteotomy according to drilling protocol
- Reinforce membrane with one layer of A-PRF, insert sinus implant
- Place bony vestibular window cover over the disc to increase the “shadow effect”
- Fill void space with additional A-PRF™ matrices and the cortical bone chips harvested with the Safescraper®.
- Close window (exclusively with cortical bone chips), add one to two A-PRF™ matrices on top
- Saliva-proof and tension-free wound closure by means of the two-layer suture technique (apical mattress sutures and single button/continuous sutures in the wound area)
- Monophilic, atraumatic and absorbable suture material, preferably PGC25 (Atramat®)

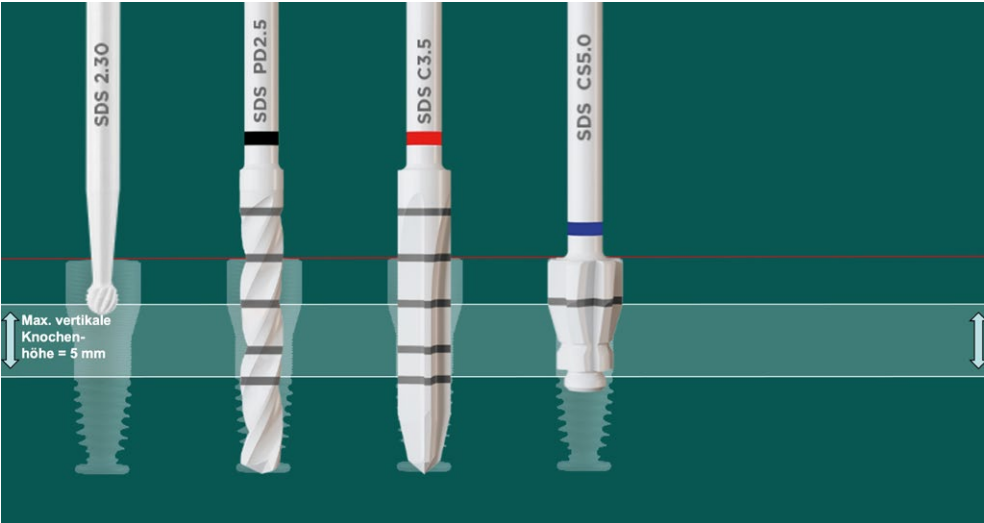
SDS2.2\_si Type IV to I bone



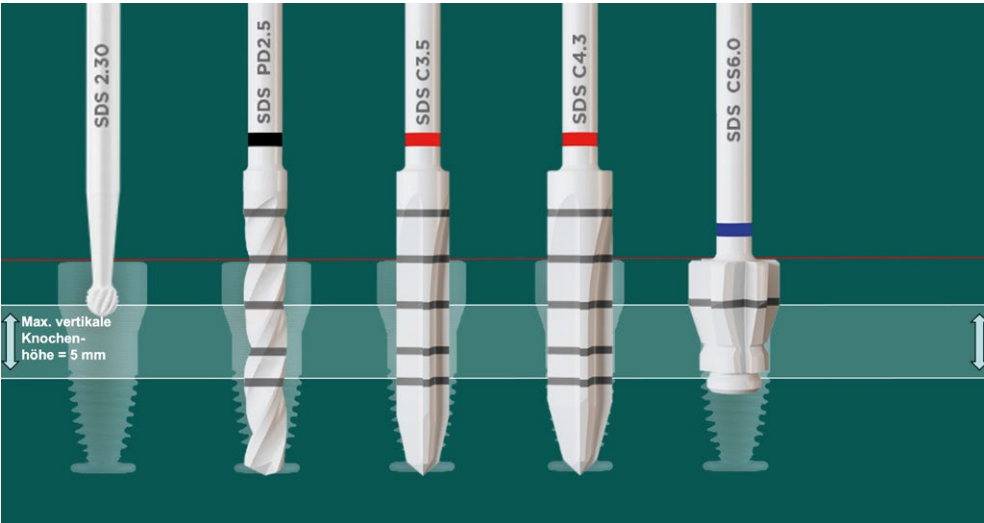
Recommended rpm

SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS CS5.0	300-600/min
SDS C4.3	300-600/min
SDS CS6.0	300-600/min

SDS2.2 3811-si Ø 3.8 mm - all bone types

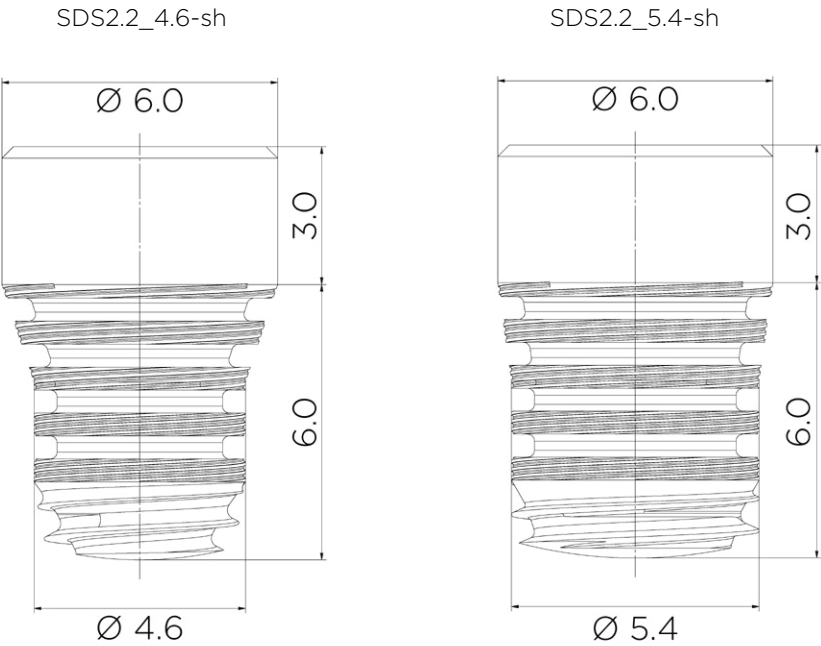


SDS2.2 4611-si Ø 4.6 mm - all bone types



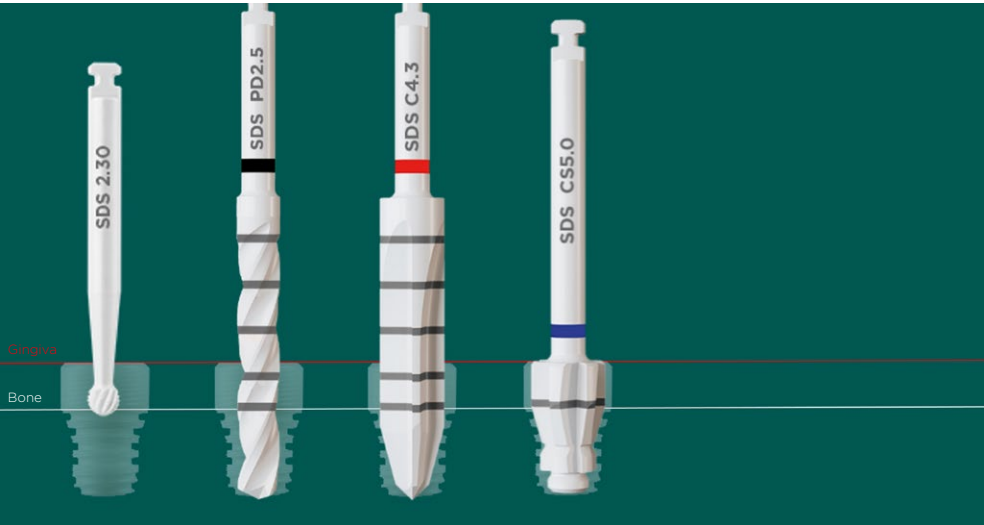


SDS2.2\_sh Type IV to I bone

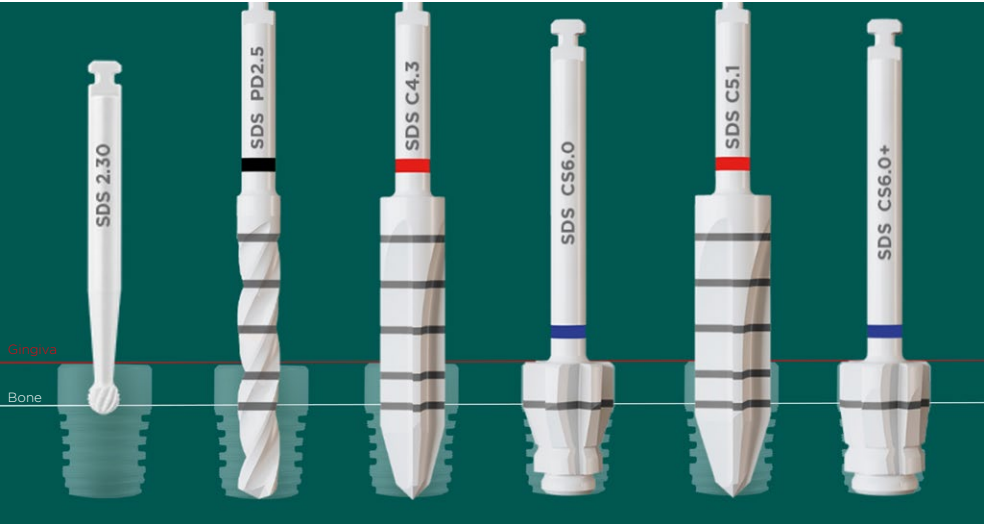


Recommended rpm	
SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS C4.3	300-600/min
SDS C5.1	300-600/min
SDS CS5.0	300-600/min
SDS CS6.0	300-600/min
SDS CS6.0+	300-600/min

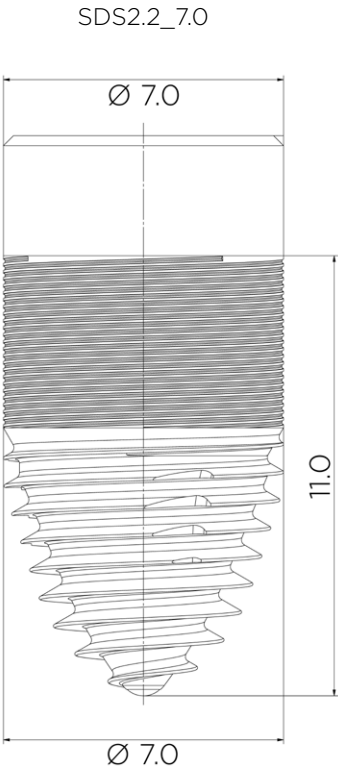
SDS2.2 4606-sh Ø 4.6 mm - all bone types



SDS2.2 5406-sh Ø 5.4 mm - all bone types



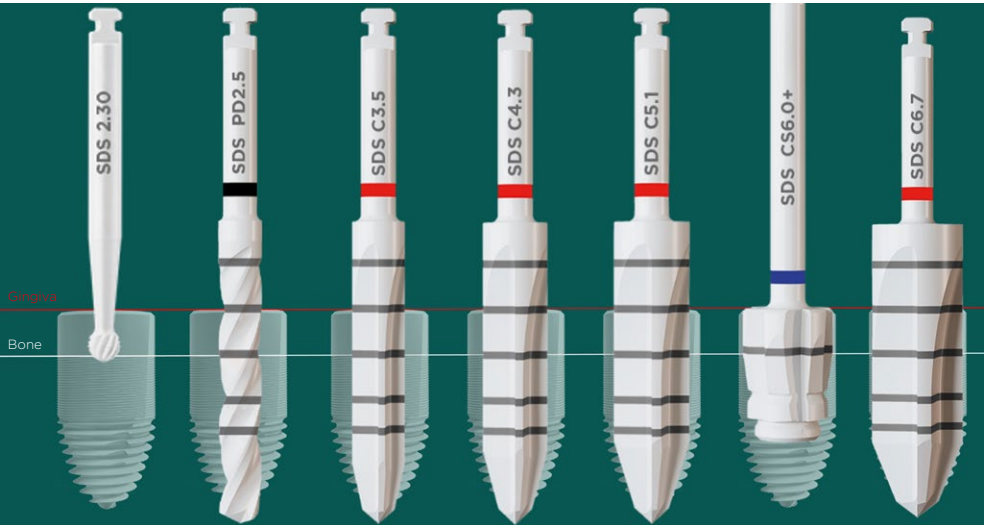
SDS2.2\_7.0 Type II and I bone



Recommended rpm

SDS 2.30	6000/min
SDS PD2.5	1000/min
SDS C3.5	300-600/min
SDS C4.3	300-600/min
SDS C5.1	300-600/min
SDS CS6.0+	300-600/min
SDS C6.7	300-600/min

SDS2.2 Ø 7.0 mm - type II and I bone





## SDS implant indications

### SDS1.2

- Suited for all bone types, immediate and late implant placement
- Indicated for implants connected by bridge or splinting, or for implant-supported partial or full dentures
- SDS1.2\_3.3 mm Ø implants are exclusively approved as single-tooth implants for upper lateral and lower incisors for fixed prosthetic restorations
- SDS1.2\_3.8 mm Ø implants are exclusively approved for single-tooth implants for upper lateral and lower incisors as well as premolars and splinted implants

SDS1.2\_4.6/5.4 mm Ø implants are approved for single-tooth implants for front teeth, canines, premolars and molars and for bridge restorations

- Should be placed at tissue level; the shoulder is always the prosthetic plateau
- At least four implants with Locator™ restoration
- Splint multiple implants

## CONTRAINDICATIONS

### SDS1.2

- SDS1.2 implants are not suited for indications where there is a risk of excessive bending moments (bridges with more than one pontic, crown/bridge with cantilever)
- SDS1.2 implants are not approved for bone-level positioning
- SDS1.2\_3.3 mm Ø implants are not approved for upper central incisors, canines, premolars and molars
- SDS1.2\_3.3 mm Ø and 3.8 mm Ø implants are not approved for bridge restorations
- SDS1.2\_3.8 mm Ø implants are not approved for upper central incisors, canines and molars
- Implant diameter smaller than 4.6 mm Ø for central upper incisors, canines, molars and/or bridge restorations
- Connection of natural tooth with implant not approved
- Less than four implants with Locator™ restoration not approved

### SDS2.2

- Suited for all bone types, immediate and late implant placement
- Indicated for implants connected by bridge or splinting
- SDS2.2\_4.6/5.4 mm Ø implants are approved as single-tooth implants for front teeth, canines, premolars and molars and for bridge restorations
- SDS2.2 implants must be placed at tissue level, the shoulder is always the prosthetic plateau; the abutment must be cemented (glass ionomer cement: Ketac™-Cem) + additionally screw-retained additionally.
- Fixed crown/bridge restoration (glass ionomer cement: Ketac™Cem)
- Splint multiple implants

### SDS2.2

- SDS2.2 implants are not suited for indications where there is a risk of excessive bending moments (bridges with more than one pontic, crown/bridge with cantilever).
- SDS2.2 implants are not approved for bone-level positioning
- SDS2.2\_3.8 mm Ø implants are not approved as single implants in the molar or canine region
- SDS2.2\_3.8 mm Ø implant not approved for bridge restoration
- Implant diameter smaller than 4.6 mm Ø for central upper incisors, canines, molars and/or bridge restorations
- Not approved for implant-supported partial or full dentures
- Connection of natural tooth with implant not approved

SDS2.2	4.6 5.4	4.6 5.4	3.8 (4.6) (5.4)	3.8 (4.6) (5.4)	4.6* 5.4*	3.8* (4.6)* (5.4)*	4.6* (5.4)*	4.6* (5.4)*	3.8* (4.6)* (5.4)*	4.6* 5.4*	3.8 (4.6) (5.4)	3.8 (4.6) (5.4)	4.6 5.4	4.6 5.4	SDS2.2
SDS1.2	4.6 5.4	4.6 5.4	3.8 (4.6) (5.4)	3.8 (4.6) (5.4)	4.6 5.4	3.3 3.8 (4.6) (5.4)	4.6 5.4	4.6 5.4	3.3 3.8 (4.6) (5.4)	4.6 5.4	3.8 (4.6) (5.4)	3.8 (4.6) (5.4)	4.6 5.4	4.6 5.4	SDS1.2
region	17	16	15	14	13	12	11	21	22	23	24	25	26	27	region
region	47	46	45	44	43	42	41	31	32	33	34	35	36	37	region
SDS1.2	4.6 5.4	4.6 5.4	3.8 4.6 (5.4)	3.8 4.6 (5.4)	4.6 5.4	3.3 3.8 (4.6) (5.4)	3.3 3.8	3.3 3.8	3.3 3.8 (4.6) (5.4)	4.6 5.4	3.8 4.6 (5.4)	3.8 4.6 (5.4)	4.6 5.4	4.6 5.4	SDS1.2
SDS2.2	4.6 5.4	4.6 5.4	3.8 4.6 (5.4)	3.8 4.6 (5.4)	4.6* (5.4)*	3.8* (4.6)* (5.4)*	3.8* (4.6)* (5.4)*	3.8* (4.6)* (5.4)*	3.8* (4.6)* (5.4)*	4.6* (5.4)*	3.8 4.6 (5.4)	3.8 4.6 (5.4)	4.6 5.4	4.6 5.4	SDS2.2

\* Not suitable for the esthetic zone, as SDS2.2 implants can only be ground/individualized to a limited extent  
(in brackets) = approved, but mostly second choice or diameter too large | red = recommended diameter

## SDS implant indications – special shapes

### BALCONY

#### SDS1.2 and SDS2.2

- Immediate implant placement in premolar region with asymmetric implant position, balcony improves emergence profile

SDS2.2-ba	4.6 5.4	4.6 5.4	3.8 (4.6)	3.8 (4.6)							3.8 (4.6)	3.8 (4.6)	4.6 5.4	4.6 5.4	SDS2.2-ba
SDS1.2-ba	4.6 5.4	4.6 5.4	3.8 (4.6)	3.8 (4.6)							3.8 (4.6)	3.8 (4.6)	4.6 5.4	4.6 5.4	SDS1.2-ba
region	17	16	15	14	13	12	11	21	22	23	24	25	26	27	region
region	47	46	45	44	43	42	41	31	32	33	34	35	36	37	region
SDS1.2-ba	4.6 5.4	4.6 5.4	3.8 (4.6)	3.8 (4.6)							3.8 (4.6)	3.8 (4.6)	4.6 5.4	4.6 5.4	SDS1.2-ba
SDS2.2-ba	4.6 5.4	4.6 5.4	3.8 (4.6)	3.8 (4.6)							3.8 (4.6)	3.8 (4.6)	4.6 5.4	4.6 5.4	SDS2.2-ba

\* Not suitable for the esthetic zone, as SDS2.2 implants can only be ground/individualized to a limited extent  
(in brackets) = approved, but mostly second choice or diameter too large | red = recommended diameter

### SINUS

#### SDS2.2\_3.8-si

- External sinus exclusively in the premolar region, a minimum of 3 mm to a maximum of 5 mm of residual bone

#### SDS2.2\_4.6-si

- External sinus in the molar region, a minimum of 3 mm to a maximum of 5 mm of residual bone

## OVAL

SDS1.2 and SDS2.2 with a diameter of 4.6

- SDS1.2\_4.6-ov\_6x8: UJ/LJ molars, central position, mostly late implant placement
- SDS1.2\_4.6-ov: Premolar region, mostly immediate implant placement

SDS1.2 and SDS2.2 with a diameter of 5.4

- UJ/LJ molars, central position, mostly late implant placement

SDS2.2-ov	4.6 5.4	4.6 5.4	4.6	4.6							4.6	4.6	4.6 5.4	4.6 5.4	SDS2.2-ov
SDS1.2-ov	4.6 5.4	4.6 5.4	4.6	4.6							4.6	4.6	4.6 5.4	4.6 5.4	SDS1.2-ov
region	17	16	15	14	13	12	11	21	22	23	24	25	26	27	region
region	47	46	45	44	43	42	41	31	32	33	34	35	36	37	region
SDS1.2-ov	4.6 5.4	4.6 5.4	4.6	4.6							4.6	4.6	4.6 5.4	4.6 5.4	SDS1.2-ov
SDS2.2-ov	4.6 5.4	4.6 5.4	4.6	4.6							4.6	4.6	4.6 5.4	4.6 5.4	SDS2.2-ov

\* Not suitable for the esthetic zone, as SDS2.2 implants can only be ground/individualized to a limited extent  
(in brackets) = approved, but mostly second choice or diameter too large | red = recommended diameter

## SHORT

SDS2.2\_4.6-sh

- At least 6 mm of residual bone, pay attention to distance from antagonists/ crown height, late implant placement in the premolar region, no immediate restoration

SDS2.2\_5.4-sh

- At least 6 mm of residual bone, pay attention to distance from antagonists/ crown height, late implant placement in the molar region, no immediate restoration



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