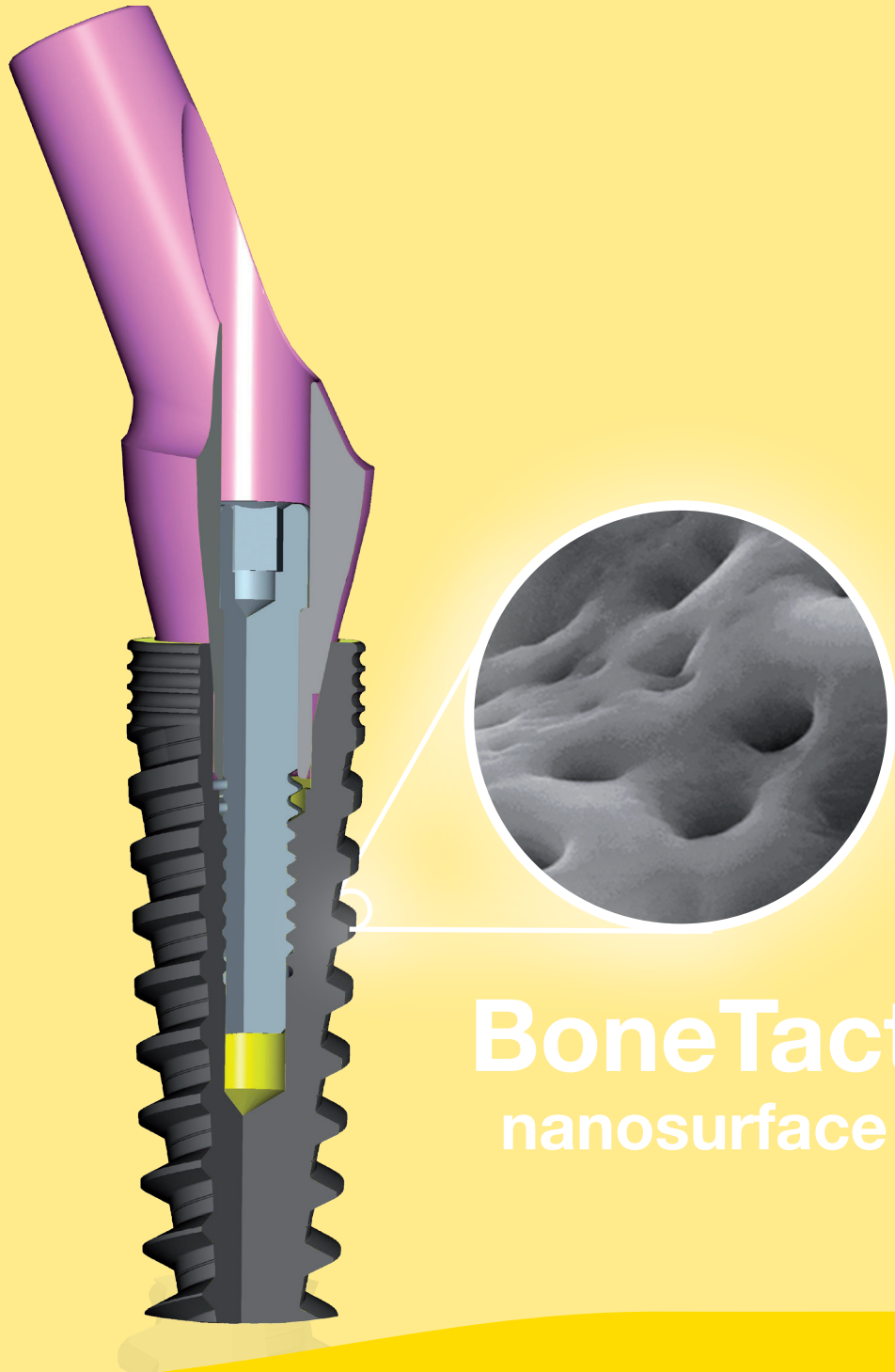


# Sanat Smile

## Dental implant system



**BoneTact**  
nanosurface

# References

The following surgical description contains general outlines for dental implantation and prosthetic activities performed with Sanat Smile system. However, the operating surgeon shall adapt the content to the patient and all other relevant factors that may have influence on the outcome of the surgery.

Therefore, Sanatmetal Ltd. strongly recommends participation on workshops and trainings prior to the initial operation.

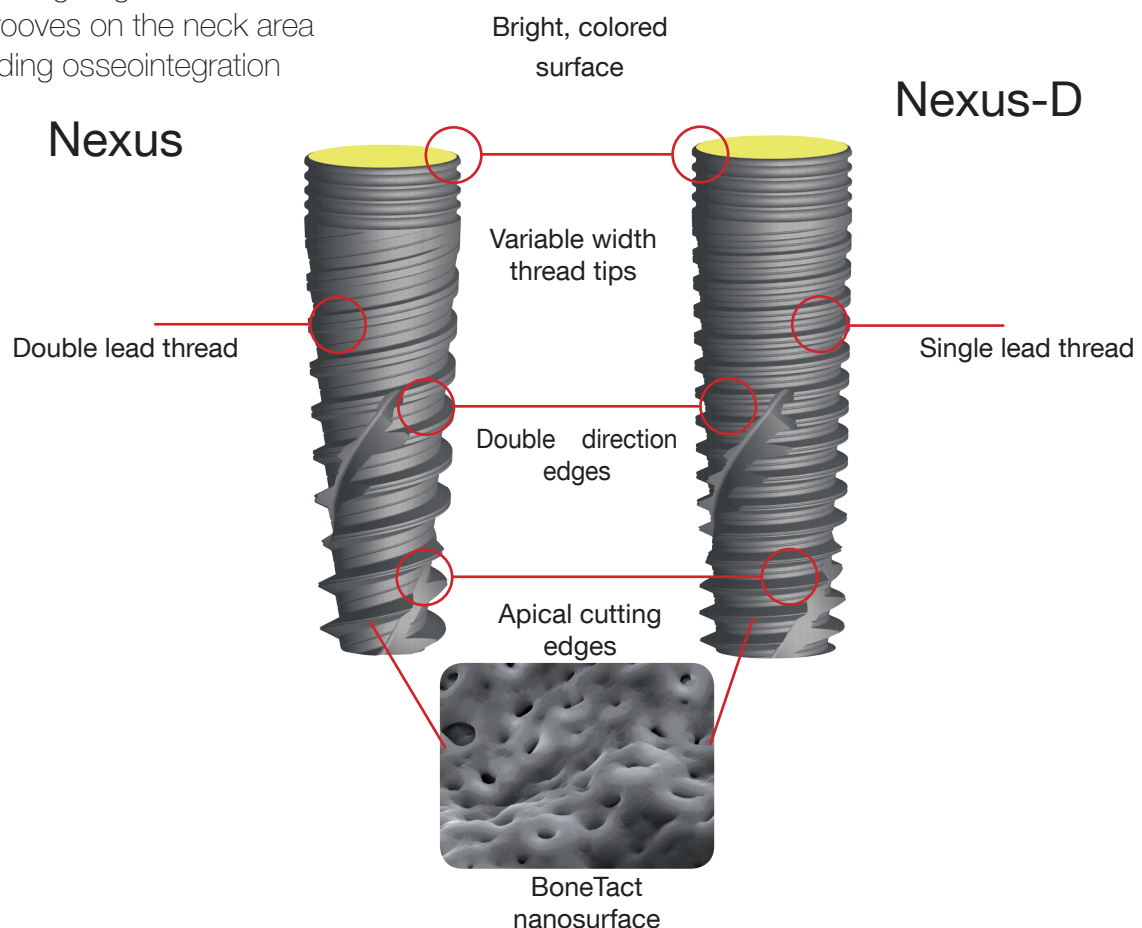
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# 1 | Introduction

Sanat Smile implant and instrument system ensures the satisfaction of dental surgeons and patients by combining the development trends of the most modern dental implantation market with a unique surface. The size and shape selection of the implants and the prosthetics abutments applicable on the whole indication field make the system versatile while the usage of the instrumentation is simple and straightforward.

## 1.1 | Outer structure of the implants

- Compression make
- Double conical shape
- Double micro-groove
- Variable width thread tip
- Spiral holes
- Apical cutting edges
- Micro grooves on the neck area
- Outstanding osseointegration



### Sanat Smile Nexus

- Double lead thread
- Pitch:  $2,1 \div 2,7$  mm
- For soft bone

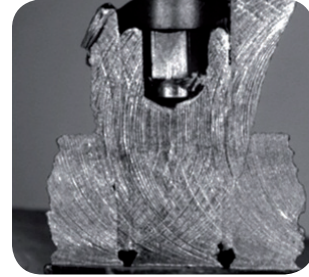
### Sanat Smile Nexus-D

- Single lead thread
- Pitch:  $0,65 \div 0,85$  mm
- For hard bone

## 1.2 | Internal structure

The implant and the abutment are connected by an optimized internal cone. Orientation is ensured by a hexagon under the cone. The connecting screw has a peg ending to block loosening.

Platform switching implants block the microbial and mechanical irritation in the tissues around the implant thus ensuring the maximum tissue stability free from micro-movements and bacteria.



## 1.3 | Surface

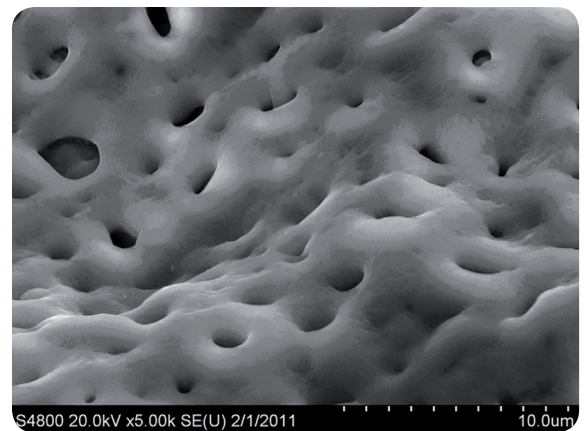
The Bone Tact surface of the implants ensure fast and effective osseointegration.

Surface formation takes place in multiple steps. First the surface is roughened by biocompatible materials. The residual material is removed by a high temperature acidic surface cleaning. Then with an anodization system unique in Hungary a special nanosurface is created by a porous TiO<sub>2</sub> ceramic layer. The surface apart from the high osseointegration properties blocks the movement of Titanium ions which could lead to implant loss.

Sanat Smile implant surface has the best properties for the high degree secondary stability:

- Surface roughness Ra=1,4 micron
- Size of nanopores 3-4 micron
- Extraordinarily clean surface

Surface cleanliness and roughness was investigated by an independent, internationally recognized research institute.



# 1 | Introduction

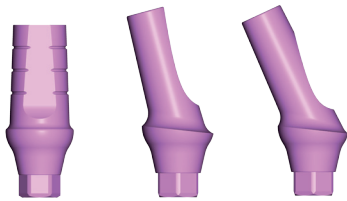
## 1.4 | Abutments

### Free variability

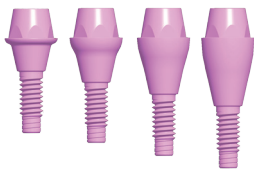
Sanat Smile abutments can be used for any implant size thus the operation is fastened, simplified, moreover the stock can be reduced.

### Anatomic abutments

- Straight, 15° and 25° angle correction
- Anodized to gingiva color. Implant is not visible even if the gingiva recedes.



### Screw retained abutments



Straight screw retained head



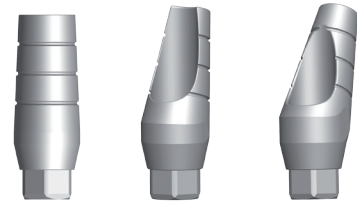
Rotation secure straight head



Multi unit base and head

### Thin wall abutments

- Straight, 15° and 25° angle correction



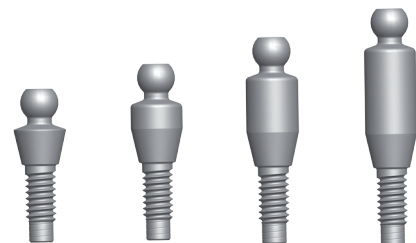
### Universal abutments

- For large angular correction



### Ball head abutments

- For removable dentures



## 1.5 | Static and fatigue testing

- In internationally recognized laboratory
- Fatigue testing: ISO 14801:2007
- Static testing
- Dynamic investigation: maximum load 275N – compares to the competitive companies.
- Supplementary investigation after the dynamic testing: torque loss of the connecting screw is 33% on average, never causing loosening.

## 1.6 | Packaging

- Color coded sterile packaging
- Easy to handle because of the holding unit
- Allows fast implantation
- Contains the color coded closing screw



## 1.7 | Instruments

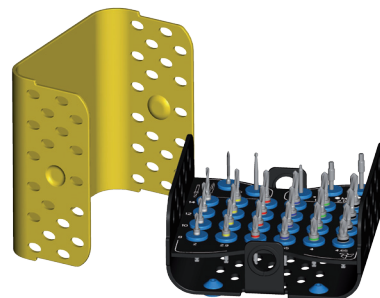
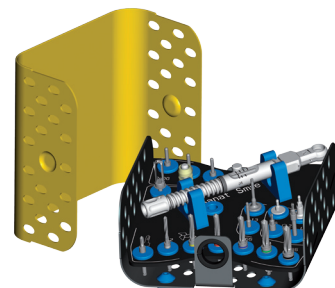
- Instrumentation meets all requirements
- Simple, segmented grouping
- Compact size
- Fixation with silicone inserts for more effective sterilization

### Base instrument set

- All instruments needed for implantation
- Precise-setting torque wrench
- Drillbits according to diameter, lengths marked by milling

### Auxiliary instruments

- Drillbits according to diameter and length
- Motor drives, round drill, direction drill, parallel guide, etc.



## 1.8 | Indications

- Lack of one or more teeth
- Short line space deficiency
- Total toothlessness

### Basic requirements

- Appropriate bone structure
- Good health condition
- Oral hygiene

# 2 | Implant and prosthetic size range

## 2.1 | Implants

### Sanat Smile Nexus



Dia	3,3 mm	3,75 mm	4,2 mm	4,7 mm	5,5 mm
8		X	X	X	X
10	X	X	X	X	X
12	X	X	X	X	X
14	X	X	X	X	X
16	X	X	X	X	

### Sanat Smile Nexus-D



Dia	3,3 mm	3,75 mm	4,2 mm	4,7 mm	5,5 mm
8	X	X	X	X	X
10	X	X	X	X	X
12	X	X	X	X	X
14	X	X	X	X	X
16	X	X	X	X	

### Straight screw retained head



#### Size DxL (mm)

4,5 x 1

4,5 x 2

4,5 x 3

4,5 x 4

### Rotation secure straight head



#### Size DxL (mm)

4,5 x 1

4,5 x 2

4,5 x 3

4,5 x 4

### Multi unit base



#### Size DxLx° (mm)

4,5 x 1,5 x 20°

4,5 x 3 x 20°

4,5 x 1,5 x 30°

4,5 x 3 x 30°

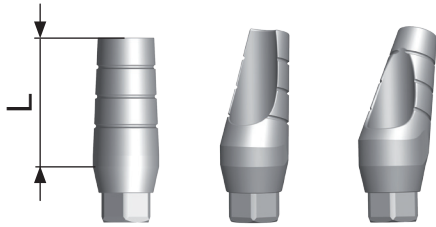
### Multi unit heads





## 2.2 | Abutment selection and sizes

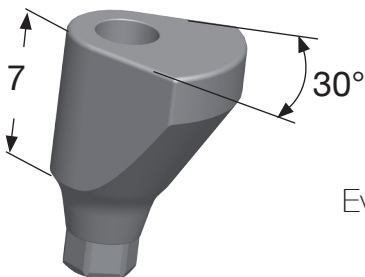
### Thin wall abutments



Non fraisable

Size DxL (mm)	Straight	15°	25°
3,4 x 7	x	x	x
3,4 x 9	x	x	x
3,4 x 11	x	x	x

### Universal abutments



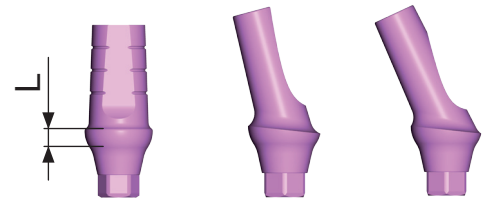
Even for 35° angle correction

## 2.3 | Connecting screw



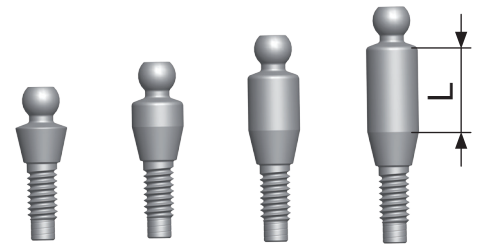
With M2 thread

## Anatomic abutments



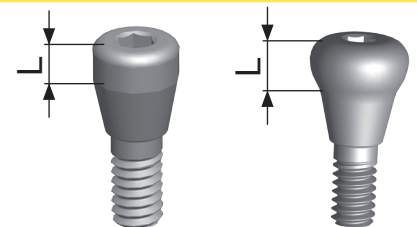
Size DxL (mm)	Straight	15°	25°
4,5 x 1	x		
4,5 x 1,5		x	x
4,5 x 2	x		
4,5 x 3	x	x	x
4,5 x 4	x		

## Ball retention heads



D=3,4 mm	L (mm)			
	0,5	2	4	6

## 2.4 | Healing head



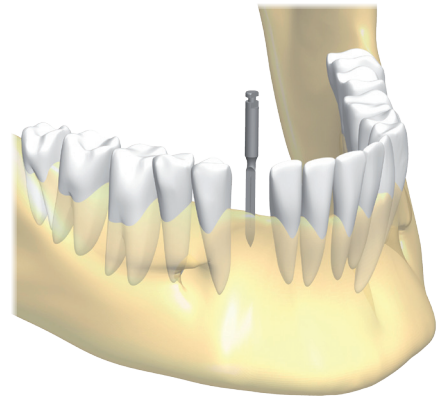
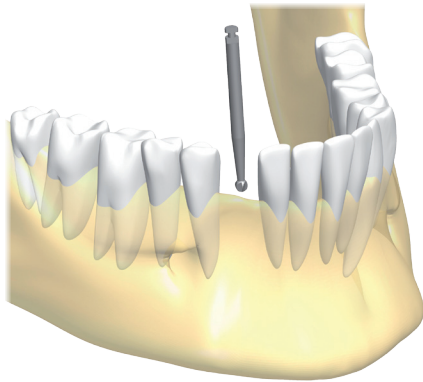
L (mm)	D=3,4 mm	D=4,5 mm
2	x	x
3	x	x
4	x	x
5		x
6		x
7		x

# 3 | Surgical procedure

## 3.1 | Implant insertion

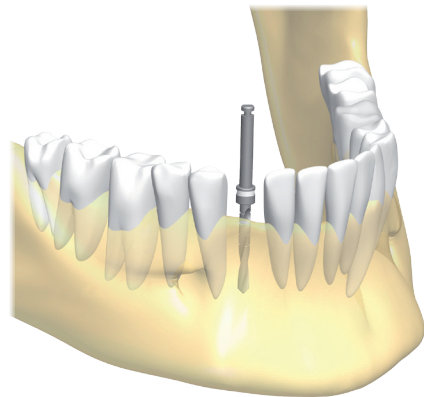
### 3.1.1 | Determining implant position

After the preparations mark the position of the implant with a 2,3 mm round drill or direction drill.



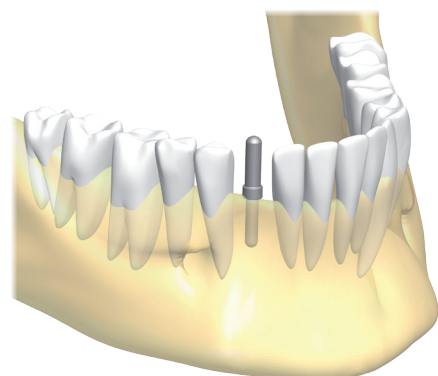
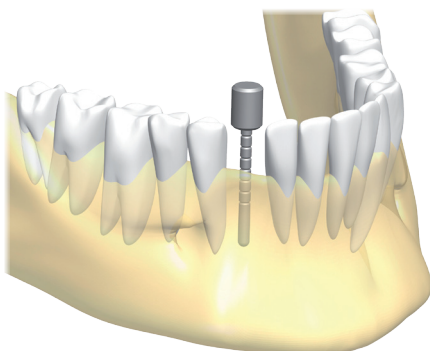
### 3.1.2 | Pre-drilling

Drill with the white 2 mm drillbit in the depth corresponding the length of the implant. The depth is indicated on the drillbit by marks.



### 3.1.3 | Depth and direction control

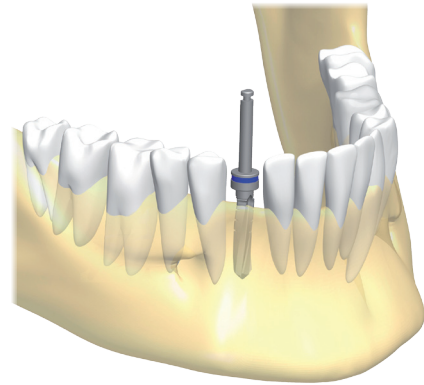
After drilling check the depth and the direction of the hole.



### 3.1.4 | Drilling

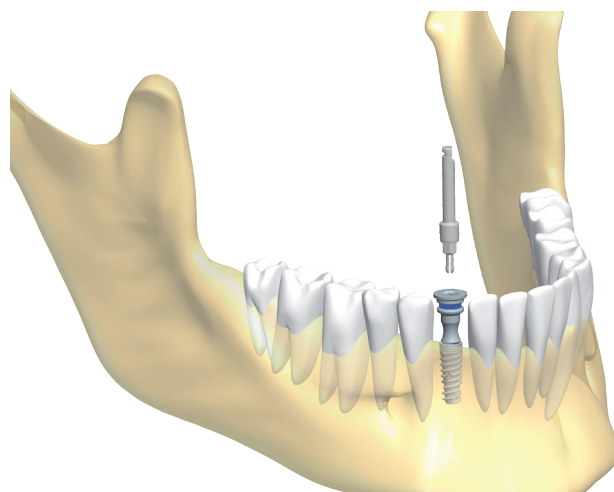
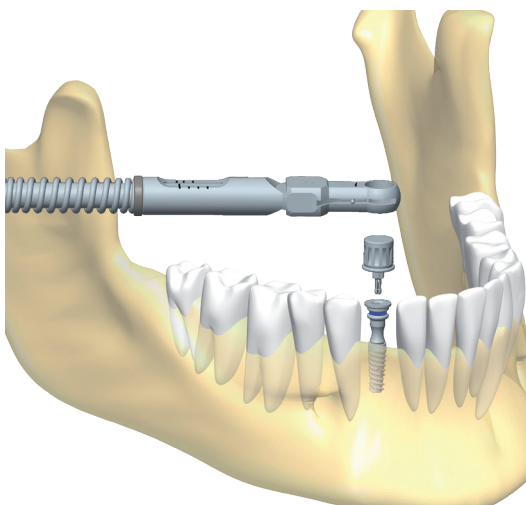
Final drilling is made with the drillbit according to the size of the implant.

The necessary drillbit is selected according to color coding on the internal surface of the implant and the packaging. The final diameter is reached step by step. If the bone structure requires deviation from this is allowed. If the bone is hard the upper third of the hole can be drilled with a drillbit one size larger. Before drilling till the whole depth remove the drillbit so that bone fragments could leave the hole.



### 3.1.5 | Implant positioning

Remove the implant from the glass tube and with the holding unit drive it into the prepared hole. Use ratcheting torque wrench or machine allen key.

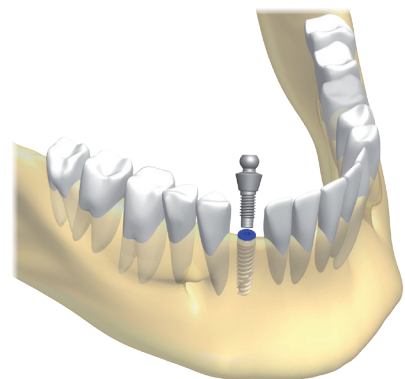
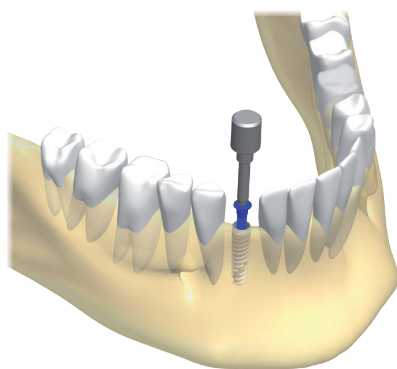
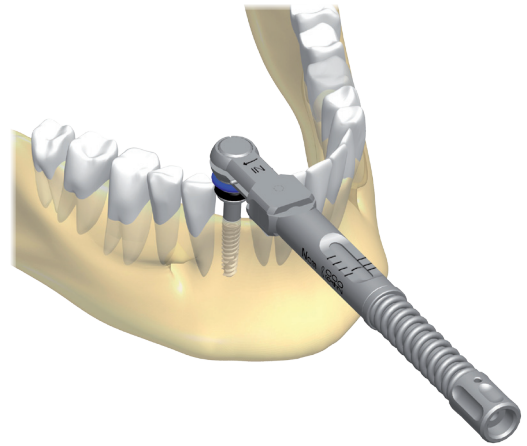


# 3 | Surgical procedure

## 3.1 | Implant insertion

### 3.1.6 | Driving in the implant

Connect the holding unit to the ratcheting wrench. The 2,5 mm hexagon insert can also be used. For single step implantation use the torque limiting wrench. The torque shall be 30 Ncm which is to be set prior to insertion. The instruments contain the inserting tools used with a motor. With single step implantation continue at 3.1.8. After the insertion of the implant drive in the color coded closing screw with the 1,3 mm inserting tool. Hand tighten only.



### 3.1.7 | Gingiva closure

Close the gingiva with any of the known methods.

### 3.1.8 | Gingiva forming

The requested shape can be formed with a forming head. In a single step implantation immediately, in the double step technique after the osseointegration.

### 3.2.1 | Preparation

After sampling the technician prepares the crown for the selected head.

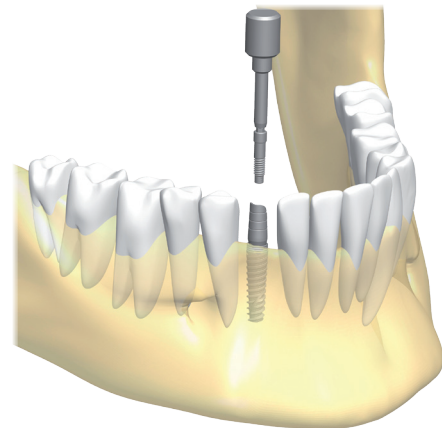
### 3.2.2 | Connecting the abutment

After the preparation of the gingiva the abutment shall be connected to the implant. Orientation is done by the internal hexagon. The conical connection is made by a downward movement.

### 3.2.3 | Securing the abutment

To secure the abutment use the connecting screw which is packed together with the abutment.

For the insertion use the 1,3 mm hexagon tool. Apply 30 Ncm torque for appropriate closing.

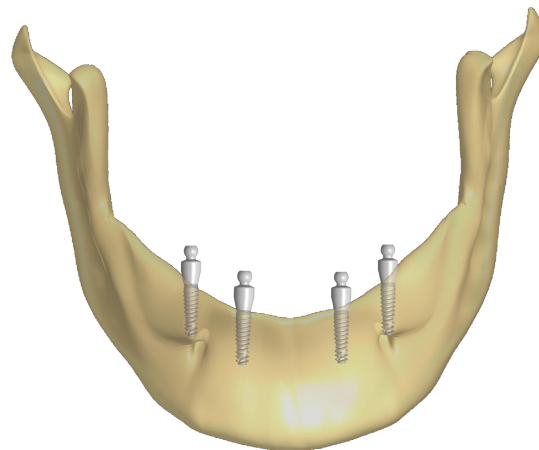


# 3 | Surgical procedure

## 3.3 | Ball retention abutment fixation

### 3.3.1 | Ball retention abutment fixation

After the gingiva formation the ball retention abutment shall be screwed into the implant. Use the 1,3 mm hexagonal insertion tool. Apply 20 Ncm torque for appropriate closing.



### 3.4.1 | Preparation

The tray shall be selected so that the impression head screws shall be reachable and adequate amount of impression material be around the screws. This way the impression heads cannot interfere with the tray.

### 3.4.2 | Insertion and fixation of impression head

Remove the closing screw or the gingiva forming head from the implant. Insert and fix the impression head to the implant with the impression screw. The impression screw shall be tightened with the 1,3 mm hand allen key. Hand tighten only.

### 3.4.3 | Impressing

Check the proper fit of the tray. Fill the tray with impression material and put it into its place. Before insertion cast the impression heads around. Wait until the material sets.

### 3.4.4 | Impression removal

Losen and remove impression screw and also remove the impression. Close the implant.

### 3.4.5 | Modelling

Connect the technical analogue to the head in the impression. Fix this with the impression screw. Hand tighten only. Afterwards cast the impression with modelling material and wait until it sets.

### 3.4.6 | Preparation of prosthetics

After the removal of the impression head the prosthetic works can commence by attaching the selected abutment to the technical analogue.

# 4 | Implant and prosthetics list

## 4.1 | Nexus implant



Titanium/BoneTact

Cat.no	Size
492053310	3,3x10
492053312	3,3x12
492053314	3,3x14
492053316	3,3x16
492053708	3,75x8
492013710	3,75x10
492013712	3,75x12
492013714	3,75x14
492013716	3,75x16
492054208	4,2x8
492014210	4,2x10
492014212	4,2x12
492014214	4,2x14
492014216	4,2x16
492054708	4,7x8
492014710	4,7x10
492014712	4,7x12
492014714	4,7x14
492014716	4,7x16
492055508	5,5x8
492015510	5,5x10
492015512	5,5x12
492015514	5,5x14

## 4.2 | Nexus-D implant



Titanium/BoneTact

Cat.no	Size
492063308	3,3x8
492063310	3,3x10
492063312	3,3x12
492063314	3,3x14
492063316	3,3x16
492023708	3,75x8
492023710	3,75x10
492023712	3,75x12
492023714	3,75x14
492023716	3,75x16
492024208	4,2x8
492024210	4,2x10
492024212	4,2x12
492024214	4,2x14
492024216	4,2x16
492024708	4,7x8
492024710	4,7x10
492024712	4,7x12
492024714	4,7x14
492024716	4,7x16
492025508	5,5x8
492025510	5,5x10
492025512	5,5x12
492025524	5,5x14

## 4.3 | End-cap



Anodized Titanium

Cat.no
492010003



#### 4.4 | Gingiva forming



Titanium

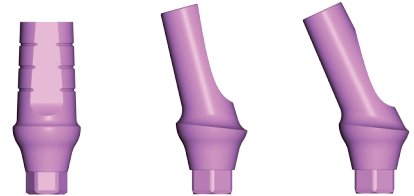
Cat.no	Size
492035402	3,4x2
492035403	3,4x3
492035404	3,4x4



Titanium

Cat.no	Size
492040002	4,5x2
492040003	4,5x3
492040004	4,5x4
492040005	4,5x5
492040006	4,5x6
492040007	4,5x7

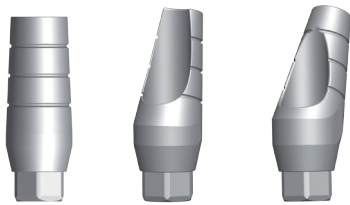
#### 4.5 | Anatomic head



Anodized Titanium

Size	Straight	Angle correction	
		15°	25°
4,5x1	492037401		
4,5x1,5		492038401	492039401
4,5x2	492037402		
4,5x3	492037403	492038403	492039403
4,5x4	492037404		

#### 4.6 | Rotation secure head



Titanium

Size	Straight	Angle correction	
		15°	25°
3,4x7	492031407	492032407	492033407
3,4x9	492031409	492032409	492033409
3,4x11	492031411	492032411	492033411

#### 4.7 | Universal head



Titanium

Cat.no
492034411

#### 4.8 | Ball retention head



Titanium

Cat.no	Size
492036300	3,4x0,5
492036302	3,4x2
492036304	3,4x4
492036306	3,4x6

# 4 | Implant and prosthetics list

## 4.9 | End-cap



Titanium

Cat.no
492010001

## 4.10 | Straight screw retained head



Anodized Titanium

Cat.no	Méret
492070401	4,5x1 mm
492070402	4,5x2 mm
492070403	4,5x3 mm
492070404	4,5x4 mm

## 4.11 | Rotation secure straight head



Anodized Titanium

Cat.no	Méret
492071401	4,5x1 mm
492071402	4,5x2 mm
492071403	4,5x3 mm
492071404	4,5x4 mm

## 4.12 | Multi unit base



Anodized Titanium

Cat.no	Méret
492072401	4,5 x 1,5 x 20°
492072403	4,5 x 3 x 20°
492073401	4,5 x 1,5 x 30°
492073403	4,5 x 3 x 30°

## 4.13 | Multi unit screw head



Anodized Titanium

Cat.no
492072001

## 4.14 | Multi unit ball retention head



Titanium

Cat.no
492072002

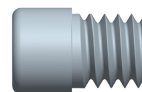
## 4.15 | Screw for screw retained head



Titanium

Cat.no
492070001

## 4.16 | Prosthetics screw



Titanium

Cat.no
492070002

## 4.17 | Healing head

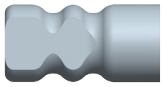


Titanium

Cat.no
492070003

## Instruments for screw retained heads

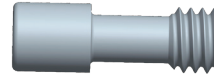
### 4.18 | Impression head



Titanium

**Cat.no**  
492096025

### 4.19 | Impression head for closed tray



Titanium

**Cat.no**  
492096026

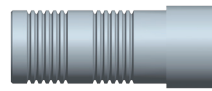
### 4.20 | Impression head for open tray



Titanium

**Cat.no**  
492096027

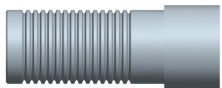
### 4.21 | Castable head conical



Titanium

**Cat.no**  
492096028

### 4.22 | Castable head internal hexagon



Titanium

**Cat.no**  
492096029

### 4.23 | Labor analogue

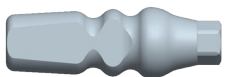


Titanium

**Cat.no**  
492096030

## Instruments for cementable heads

### 4.24 | Impression head



Titanium

**Cat.no**  
492096017

### 4.25 | Impression screw for closed tray



Titanium

**Cat.no**  
492096018

### 4.26 | Impression screw for open tray



Titanium

**Cat.no**  
492096019

### 4.27 | Technical chunk



Titanium

**Cat.no**  
492096013

**Méret**  
3,75 mm

# 5 | Instruments

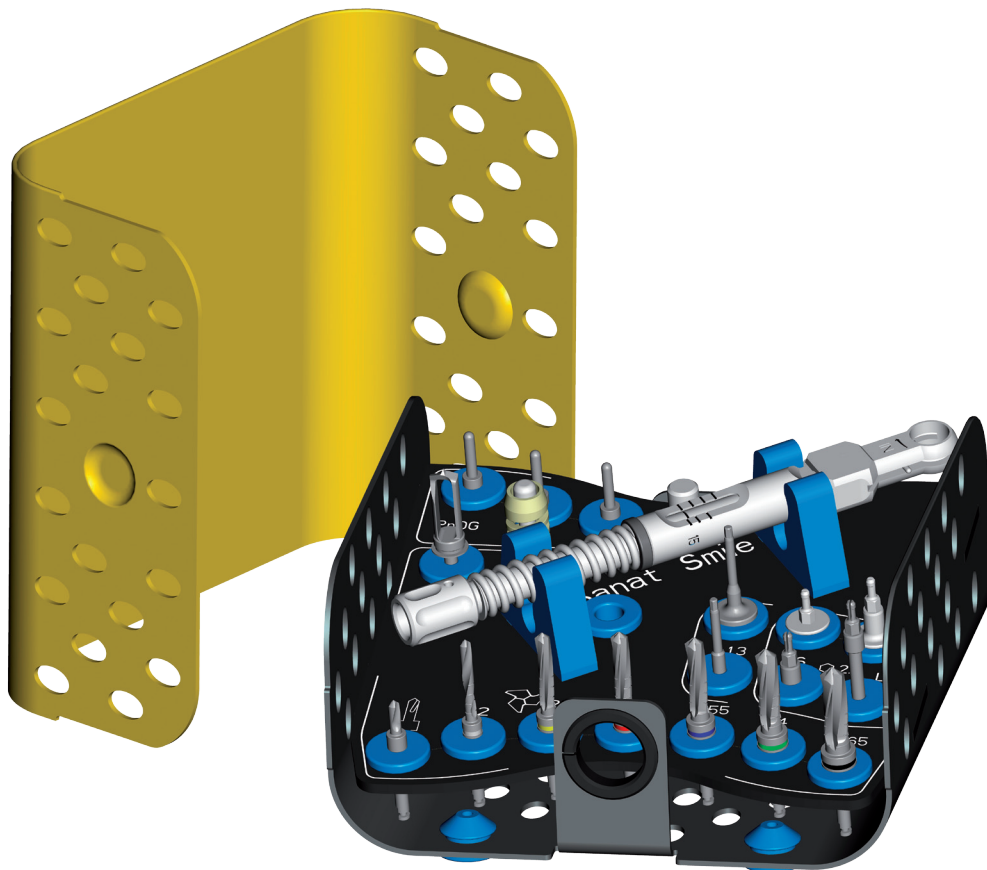
## 5.1 | Filled up tray - Base tray

**Description**

**Cat.no**

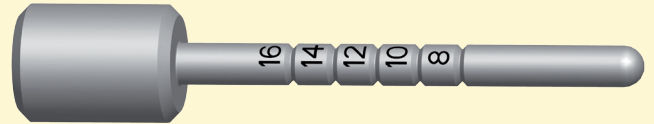
Sanat Smile

492086002



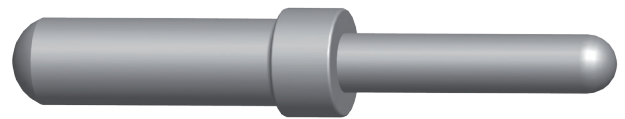
## 5.2 | Instruments - Base tray

Depth gauge



491096810

Parallel guide



491096820

Torque wrench (10-60 Ncm)



492096009

Ratchet Allen key (1,3 mm)



492096008

Initial twist drill (2x7 mm)



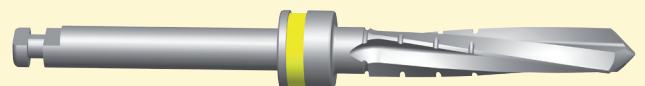
492096720

Initial twist drill (2x16 mm)



492096020

Final drill (2,9x16 mm)

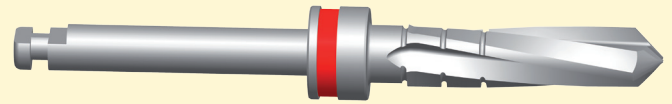


492096229

# 5 | Instruments

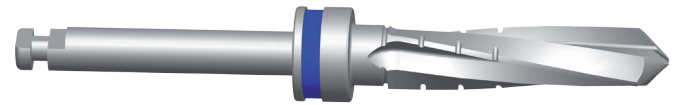
## 5.2 | Instruments - Base tray

Final drill (3,2x16 mm)



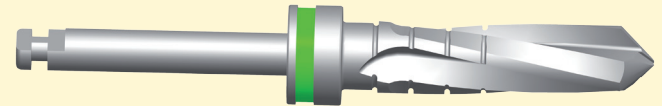
492096232

Final drill (3,55x16 mm)



492096235

Final drill (4x16 mm)



492096240

Final drill (4,65x16 mm)



492096246

Machine Allen key



491096650

Machine Allen key (short 2,5 mm)



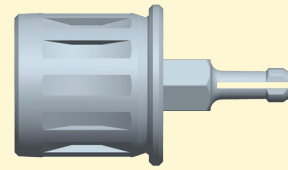
492096033

Machine Allen key (long 2,5 mm)



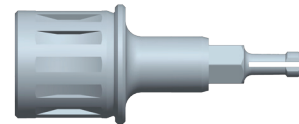
492096034

Ratchet Allen key (short 2,5 mm)



492096035

Ratchet Allen key (long 2,5 mm)



492096036

Optional

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Ratchet stem



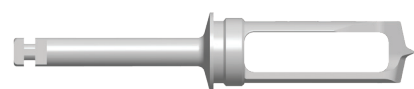
491096005

Torque wrench (20-70 Ncm)



492096043

ABH drill (5 mm)



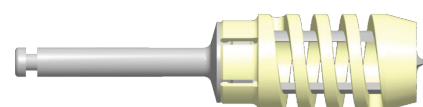
492096037

ABH sleeve (5 mm)



492096038

ABH (5 mm)

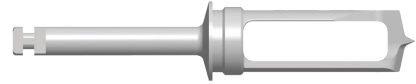


492096039

# 5 | Instruments

## 5.2 | Instruments - Base tray

ABH drill (4 mm)



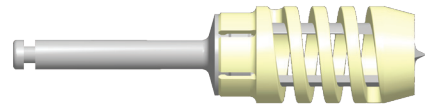
492096040

ABH sleeve (4 mm)



492096041

ABH (4 mm)

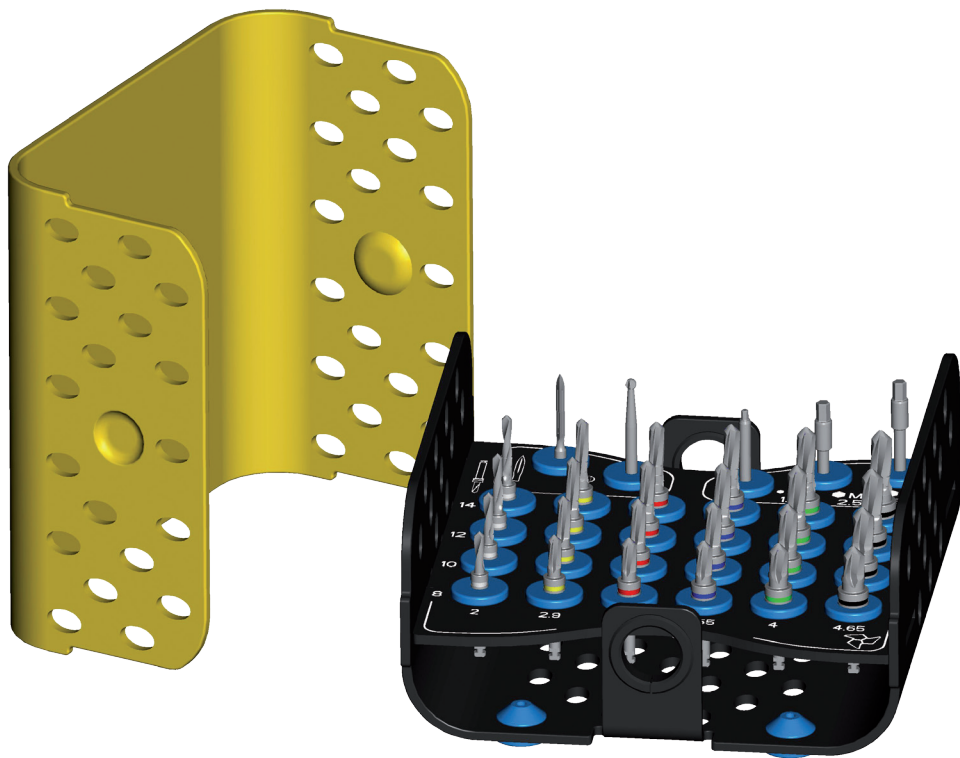


492096042



### 5.3 | Filled up tray - Drill tray

Description	Cat. no
Sanat Smile	492086004



# 5 | Instruments

## 5.4 | Instruments - Drill tray

Round drill



491096001

Direction drill



491096002

Mechanical drive (short 2,5 mm)



491096630

Mechanical drive (long 2,5 mm)



491096631

Machine Allen key (1,3 mm)



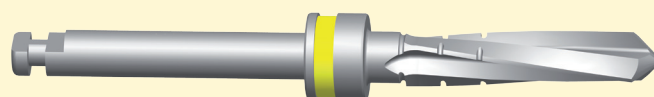
491096650

Initial twist drill



492096320 - 492096620

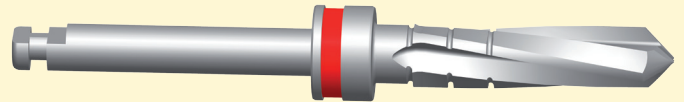
Initial twist drill



492096329 - 492096629

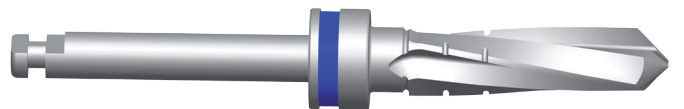
## 5.4 | Műszerek - Fúrótálca

Initial twist drill



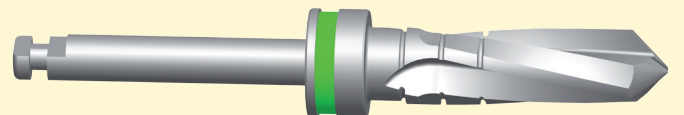
492096332 - 492096632

Initial twist drill



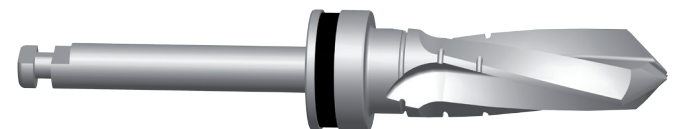
492096335 - 492096635

Initial twist drill



492096340 - 492096640

Initial twist drill



492096346 - 492096646

# 5 | Instruments

## 5.4 | Instruments - Drill tray

Optional

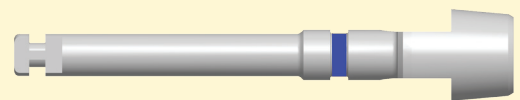
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Round trepan (4 mm)



491096440

Round trepan (5 mm)



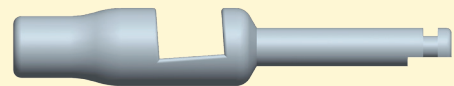
491096450

Screwdriver



492096016

Drill extension



492096023

## Titanium membrane

1 wall



**Size DxL  
(mm)**

4x8x6 mm  
4x8x8 mm  
4x8x10 mm  
4x10x6 mm  
4x10x8 mm  
4x10x10 mm

2 wall



**Size DxL  
(mm)**

7x9x6 mm  
7x9x8 mm  
7x9x10 mm  
10x12x6 mm  
10x12x8 mm  
10x12x10 mm  
12x12x6 mm  
12x12x8 mm  
12x12x10 mm

3 wall



**Size DxL  
(mm)**

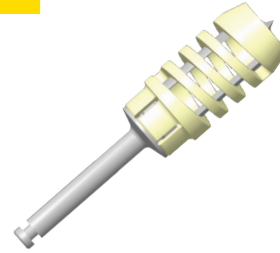
7x9x6 mm  
7x9x8 mm  
7x9x10 mm  
10x12x6 mm  
10x12x8 mm  
10x12x10 mm  
12x12x6 mm  
12x12x8 mm  
12x12x10 mm

4 wall



**Size DxL  
(mm)**

12x15 mm  
12x20 mm  
15x20 mm



### Bone substitution with Titanium membrane

Titanium membrane and ABH drill enables autogenous bone substitution.

## Product family

 DENTAL

 TRAUMATOLOGY

 ORTHOPEDICS

 SPINE

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