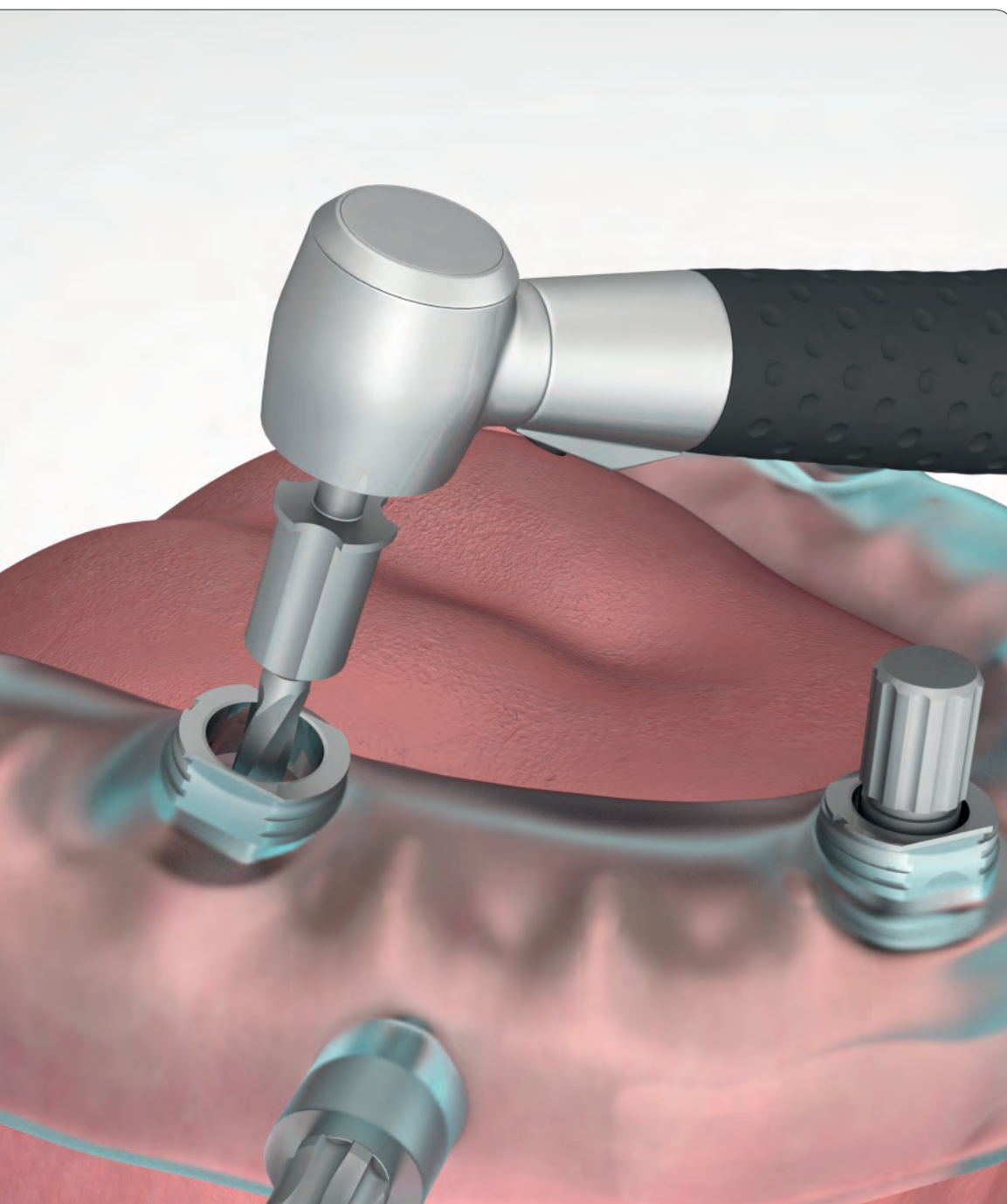


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N-Guide
Surgical Manual
User Manual



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N-Guide Surgical Manual



This user manual includes instructions for use that are recommended for surgical applications of NucleOSS Dental Implant system. Treatment and surgical planning should be performed on the basis of clinical data and evaluations of physician in relation to the case.

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Dear Clinician

Şanlılar A.Ş. , the manufacturer of the NucleOSS brand, was established in Izmir in 2001 and produced Turkey's first dental implant. In the light of meticulous R&D studies and knowledge, we continue to produce more innovative and user-friendly products for you with the excitement of the first day, by adopting world-class sensitive production protocols. In order to increase the quality of the operation and to enable more comfortable treatment processes, we design and develop quality and innovative products, and offer them to you.

We established the TFI (Together for Implantology) academy in order to create a platform where dentists can share their ideas, studies and information about implants within an ethical framework and thus contribute to the development of the field of implantology. As NucleOSS, we adopt reliable, quality and customer-oriented production with transparent, ethical and principled management.

We work more and more every day within the framework of our open to change and innovative approach, which is the first condition of progress and growth. We design new products, constantly change and develop with our understanding of management and production that values people.

We are growing thanks to your support... We are enchanting...



Salih ŞANLI

PRESIDENT

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Pre-operational Examination

General evaluation of patient must be done with clinical and oral radiographic tests and mucous membrane, jaw morphology, dental history, prosthetic history and oral dysfunctional signs must be carefully examined before the operation. Radiographical analyzes should be used in the examination of bone topography.

Preliminary radiographic evaluations constitute a basis to determine whether the patient is suitable for the implant treatment or not, in addition to the clinical examination.

If the patient is considered to be suitable for treatment, more detailed clinical examination should be done for the treatment area and the receiving area. Any pathological situation detected in relation to the jaw must be treated before implant operation.

N-Guide Surgical Planning

Treatment Plan

Diagnoses that are made by the physician and the patient-specific requests affect the treatment plan. The final prosthesis, patient's request for a temporary prosthesis, number of implants that will be applied, and the imaging procedure must be considered with regards to the patient's treatment plan for the surgical guide.

NOTE : In order for the guided surgery method to be applied, the patient's mouth opening capacity must be suitable for the surgical instruments that will be used. Or else, implant application with traditional methods is recommended.

Scanning Prosthesis Production

A scanning prosthesis is a radiopaque copy of the current condition or temporary tooth model. It provides additional information for implant planning for the clinician. When the patient is scanned with the scanning prosthesis, the desired tooth setting can be seen on the CT images.

Scanning prosthesis is also used in planning software to visualize soft tissue status.

Manufacturing procedure of the scanning prosthesis depends on the software being applied and the template fixation being chosen (bone, tooth or mucosa supported). For more information, the detailed documentation of the software vendors should be referred to.

CT / CBCT Scanning

Regardless of the imaging technology being used, scanning with the correct parameters constitutes the basis for correct planning in software and correct implant placement.

In order to obtain optimum scan data, the radiologist and patient should be properly instructed and scan instructions/parameters must be followed as per the software supplier's instructions.

Software Based Planning and Production of Surgical Guide (Open Systems)

Software-based planning enables the implants to be planned virtually with software. When the planning phase is completed, the data is sent to the surgical guide manufacturer. The software company can manufacture the surgical guide or the dental laboratory can produce the surgical guide as depending on the software concept used.

NOTE : At this stage, the surgical guide manufacturer ensures compatibility with N-Guide instruments and surgical rings for guided surgery being positioned according to NucleOSS parameters.

The surgical guide is a specialized medical instrument which guides the implants and drills in the bone region most suitable for the implant, in accordance with the patient's anatomical structure.

1 – Tooth-supported Guides

If the patient has teeth, the guide is created to remain stable on these teeth. If sufficient stability can not be achieved, fixation abutments can be used following the placement of first implant.

2 – Mucosa Supported Guides

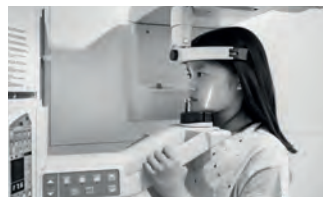
In the case of complete edentulism, the guide will only have mucosal support. In this situation, it will be necessary to use fixing pins. The fixation pins should be inserted through the Ø2.5 mm rings that are positioned in the vestibular space. In order for the pins to be placed, the bone must be drilled to the appropriate size with the Ø2.0 Pin drill. At this stage, the guide must be held in place by biting off an intercalated silicone.

NOTE : Infiltration can give rise to minor changes in mucosal topography. This may cause the mucosa-supported guide to become less stable.

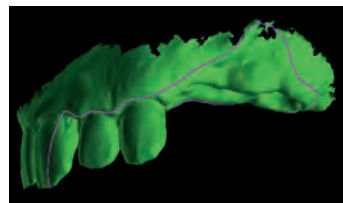
3 – Bone Supported Guide

Bone-supported guides are positioned directly on the bone after the soft tissues have been removed and they are used when the bone appears to be irregular in shape and therefore requires an osteoplasty. This type of guides must be fixed with fixing pins after drilling the bone with the Ø2.0 Pin drill.

N-Guide Workflow



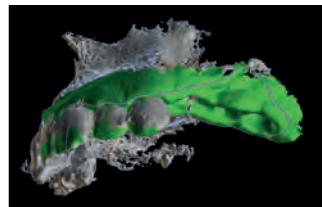
CT/CBCT imaging



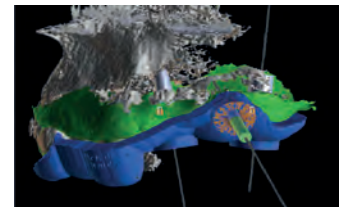
Intraoral optical scan data is obtained in .stl format.



Data is uploaded to the program in .dicom format.



DICOM and .stl data are combined.

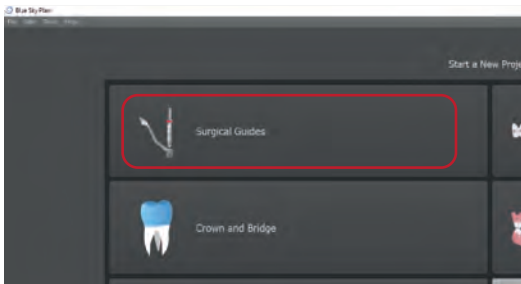


Virtual implant planning is done

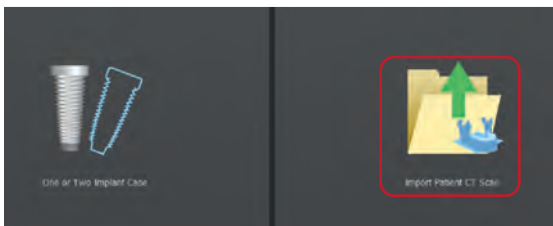


Surgical guide data is created by 3D printer

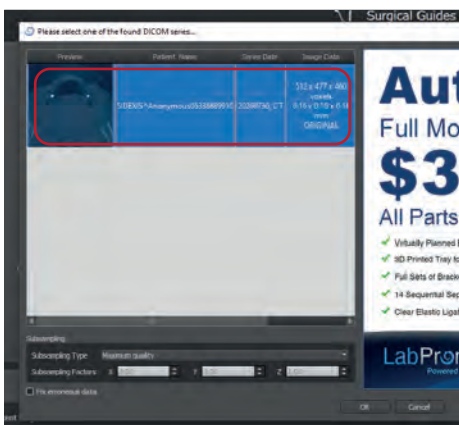
N-Guide Design is created with BlueSkyBio Software



▽ From the screen that appears in the BlueSkyBio program, the "Surgical Guide" section is selected.

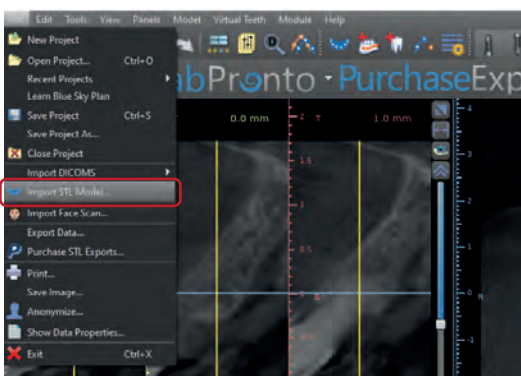


▽ From the screen that opens, the "Import Patient CT Scan" tab is selected.

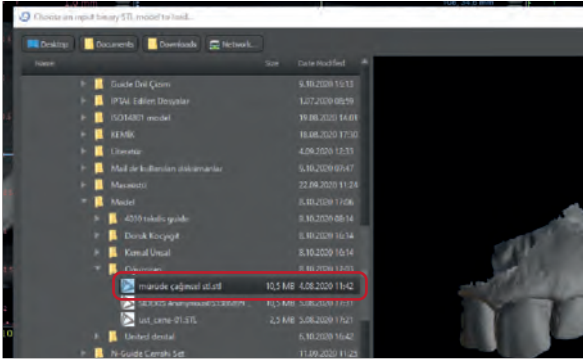


▽ The .zip file containing the CT data is opened and one of the DICOM series in this file is selected.

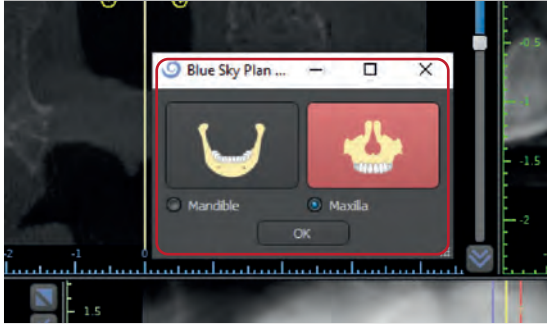
If it is desired, data quality can be reduced or increased in the "Subsampling Type" section. This option ensures that the image is fluent during the design phase.



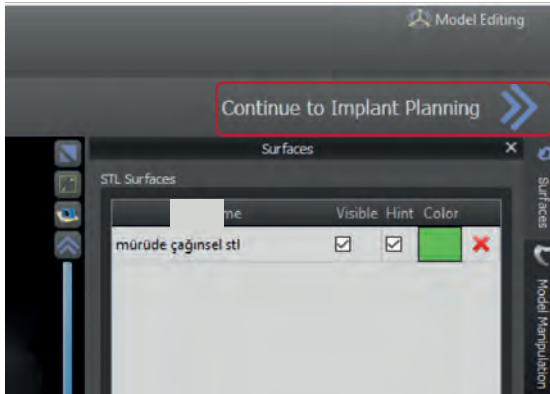
▽ In the file that is opened, there are tomography and x-ray images of the patient. At this stage, CT data and the optical scan data are required to be matched. For this purpose, the "File - Import STL Model" tab is selected.



- ▽ STL file of the optical scanning model of the region where the implant will be applied is selected from the screen.



- ▽ Jawbone where the implant will be applied is selected from the opened segment.

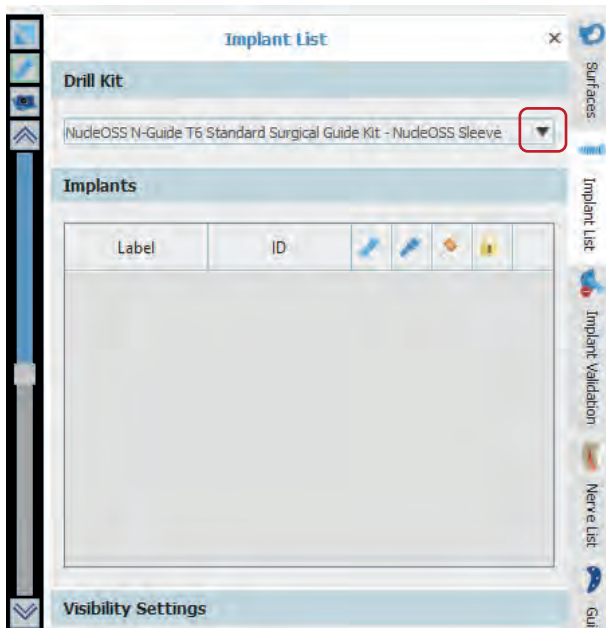


- ▽ The optical scan pattern will automatically match with the CT data (Model shown in green).

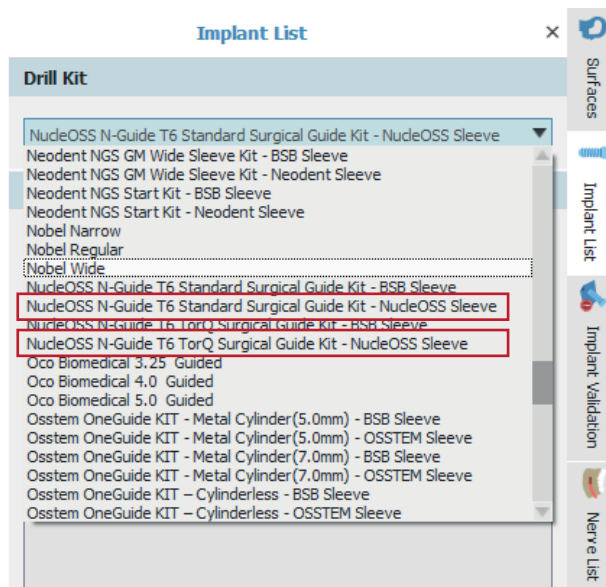
Automatic matching may not be sufficient in situations where the CT data is not of sufficient resolution. In this case, the match can be set manually from the "Model Manipulation" panel.

After the matching is achieved, click on "Continue to Implant Planning" to proceed to the implant planning stage.

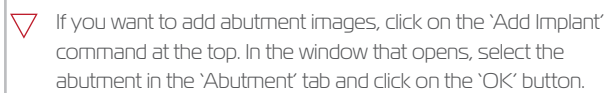
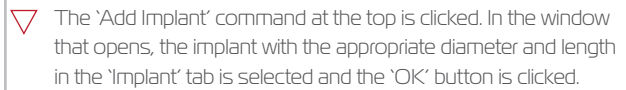
N-Guide Design is created with BlueSkyBio Software



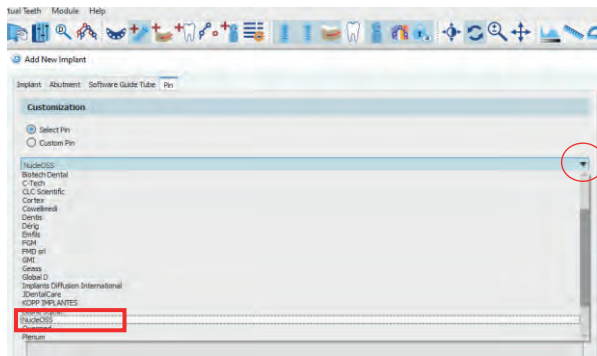
▽ The 'Implant List' page opens from the 'Panels' section. Here, the arrow sign in the 'Drill Kit' tab is clicked.



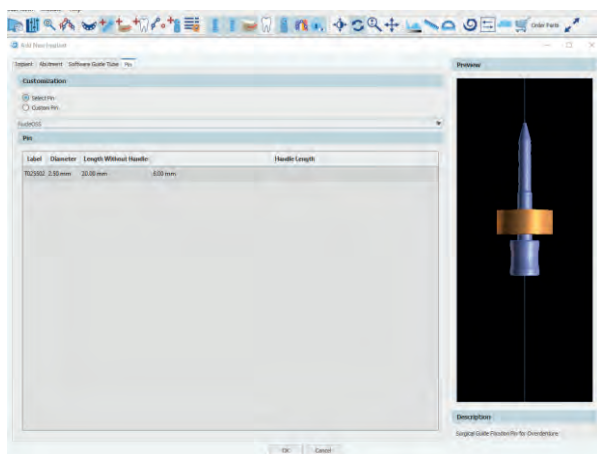
▽ Select 'NucleOSS N-Guide T6 Standard Surgical Guide Kit -NucleOSS Sleeve' or 'NucleOSS N-Guide T6 TorQ Surgical Guide Kit -NucleOSS Sleeve' from the list that opens.



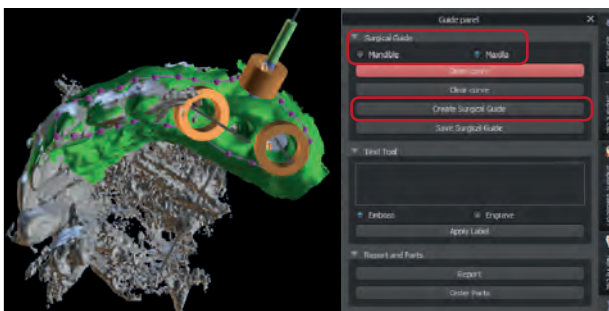
N-Guide Design is created with BlueSkyBio Software



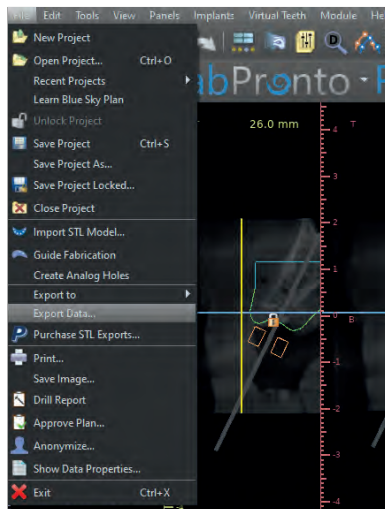
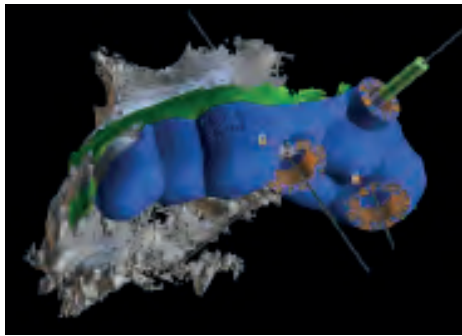
▽ If a fixation pin is to be used in the surgical guide to be created, the 'Add Implant' command at the top is pressed. In the window that opens, 'NucleOSS' is selected from the list that opens with the arrow sign in the 'Pin' tab.



▽ After the selection is made, the 'OK' button is pressed. After the implant and pin placement is made, the guide drawing is started.

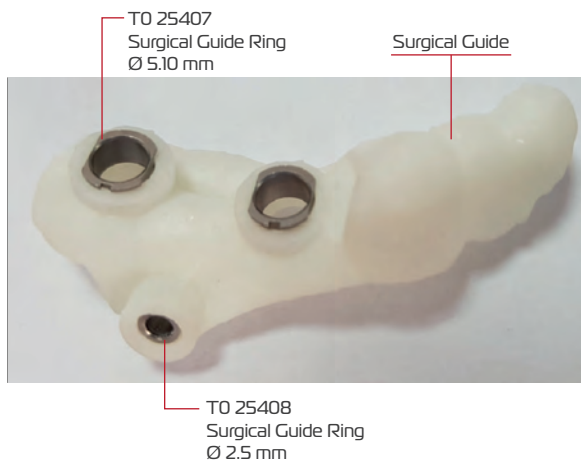


▽ In the "Guide Panel" area, "Draw curve" is selected. With "Shift + Left click" the teeth that the guide will receive support from and its outlines are drawn.



▽ After the line drawing, the guide is created automatically with the "Create Surgical Guide" command.

▽ The data of the prepared guide is imported with the command "File - Export Data...". The guide is printed with a 3D printer using surgical guide resin. T0 25407 Surgical guide ring Ø5.10 mm and T0 25408 Surgical guide ring Ø2.5 mm, if any, are placed on the printed guide.



⚠ **Attention** : It is recommended that the canal on the surgical ring faces the vestibule direction. This channel is used for the Hex orientation determination of the implant. (See page 26).

N-Guide Design is created with BlueSkyBio Software

Program options and Custom design information for NucleOSS Surgical Guide design

Alternative programs used for NucleOSS Surgical Guide design:

- Exoplan
- Real Guide
- Planmeca
- ProDigiDent
- GuideMia

If the guide design will be created with the value entered as custom, the values should be entered according to the following information.

1- Implants ;

implant	Occlusal Diameter (Ø mm)	Apical Diameter (Ø mm)	Lenght (mm)
T6 3508	3,5	2,45	8
T6 3510	3,5	2,45	10
T6 3512	3,5	2,45	12
T6 3514	3,5	2,45	14
T6 41065	4,1	3,9	6,5
T6 4108	4,1	3,05	8
T6 4110	4,1	3,05	10
T6 4112	4,1	3,05	12
T6 4114	4,1	3,05	14
T6 48065	4,8	4,5	6,5
T6 4808	4,8	3,65	8
T6 4810	4,8	3,65	10
T6 4812	4,8	3,65	12
T6 4814	4,8	3,65	14

▽ T6 3510 Implant :

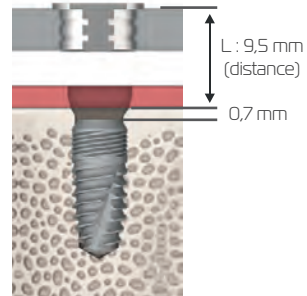
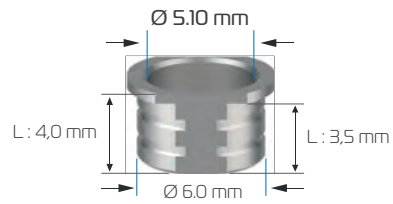


implant	Occlusal Diameter (Ø mm)	Apical Diameter (Ø mm)	Lenght (mm)
TRQ 3508	3,5	2,80	8
TRQ 3510	3,5	2,80	10
TRQ 3512	3,5	2,80	12
TRQ 3514	3,5	2,80	14
TRQ 40065	4,0	3,20	6,5
TRQ 4008	4,0	3,20	8
TRQ 4010	4,0	3,20	10
TRQ 4012	4,0	3,20	12
TRQ 4014	4,0	3,20	14
TRQ 45065	4,8	3,50	6,5
TRQ 4508	4,8	3,50	8
TRQ 4510	4,8	3,50	10
TRQ 4512	4,8	3,50	12
TRQ 4514	4,8	3,50	14
TRQ 50065	5,0	3,50	6,5
TRQ 5008	5,0	3,50	8
TRQ 5010	5,0	3,50	10
TRQ 5012	5,0	3,50	12
TRQ 5014	5,0	3,50	14

▽ TRQ 3510 Implant :



2- T0 25407 Surgical Guide Ring Ø 5.10 mm

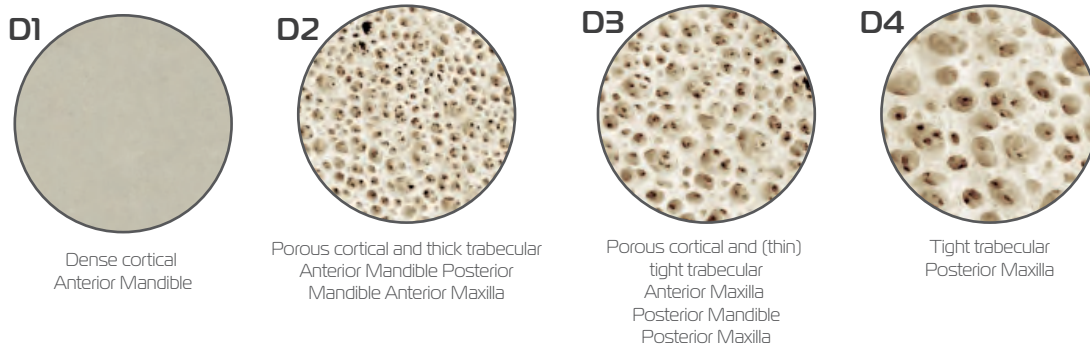


3- T0 25408 Surgical Guide Ring Ø 2.5 mm



Bone Classification

As the density and thickness differs from patient to patient, the placement and surgery of the implant will vary from case to case. Due to this reason, NucleOSS surgical kit and protocol is developed considering these specific functional requirements.



Recommendations for Clinical Application

The design of NucleOSS Dental Implant System is developed considering the natural tooth anathomy and targeted final tooth restoration. The positions of the implants are also recommended according to crown and implant compatibility. Besides implant size and design, soft-tissue healing, required support for the final restoration, bone volume and relation to adjacent tooth should also be considered while deciding the implant placement.

Depending upon mechanical strength considerations, widest implant placement is always recommended. This should be considered especially for posterior regions as the loading forces are higher. While planning the implant surgery and determining the number of implants, loading conditions and targeted restoration should be taken in consideration.

- N-Guide Surgical Guide set is a guided surgery system that assists the correct and desired placement of T6 standard and TorQ implants in the lower or upper jawbone.
- Regarding the patients who have had intraoral scanning and 3D tomography, guides are designed in computer environment according to the treatment method to be applied by authorized persons. The designed guides are printed with the help of three-dimensional printers.
- After these guides are placed in the patient's mouth, the socket is opened with surgical set pieces with special guides in accordance with the size and characteristics of the implant to be placed, and the implant placement is completed.
- All drills in the N-Guide set are made of 1.4057 Stainless Steel.
- Guide rings were designed for the placement of T6 standard implants and T6 TorQ implants in the planned area and all N-Guide drills were produced in accordance with these ring diameters.
- In cases of complete edentulism, the fixing pin and the ring compatible with this pin are designed so that the guide can stay in the patient's mouth without moving.
- If more than one implant is used in surgical guide planning, a fixation base is designed to attach the placed implant on it.
- Implant carrying - tightening parts compatible with guide rings are added to the set for placing T6 standard and T6 TorQ implants over the guide.
- A punch drill is designed to remove soft tissue before proceeding with the drill.
- In order to place the implant in the planned area, a center drill compatible with guide rings was produced to mark the center and flatten the bone surface.
- Hard bone drills compatible with guide rings are added to the set for use in hard bones.
- The N-Guide set has the same drill sequence as the T6 standard and T6 TorQ surgical sets.
- Separate stopper drills are used for all diameter and length implants.

N-Guide Surgical Guide & Prosthetic Kit

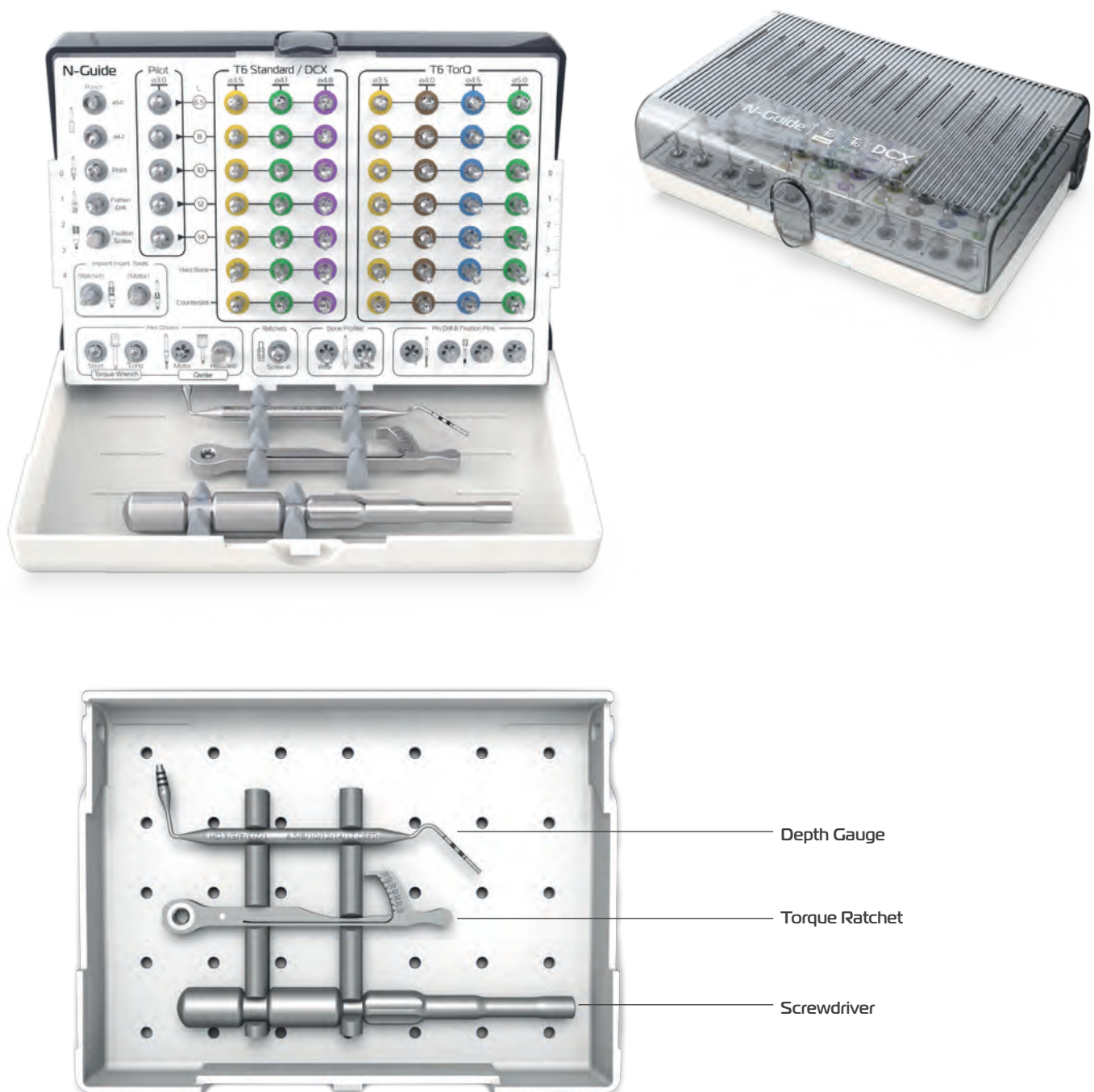
Surgical Set Parts and Hand Tools

The surgical set consists of three parts as a transparent cover, a movable middle shelf with surgical drills and tightening parts, and a lower section with a torque ratchet and other hand tools.

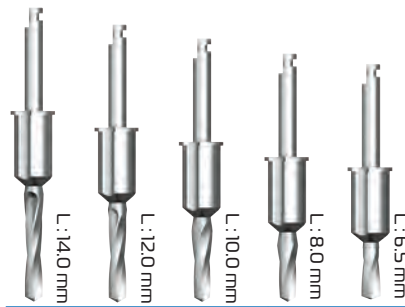
With its compact and useful design, it can be easily sterilized in one piece without taking it out of the set box in autoclave devices used in clinics. The surgical drill is manufactured from high quality stainless steel.

Surgical sets consist of drills, fixation pins, fixation abutments, countersinks, hex drivers and hand tools.

All parts and their intended use are on the following pages:



Pilot Drills Ø 3.0



Implant Carrying Tightening (Ratchet)



Implant Carrying Tightening (Micromotor)



Hex Driver - Short (Ratchet)



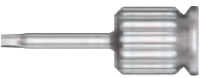
Hex Driver - Long (Ratchet)



Hex Driver (for Micromotor)



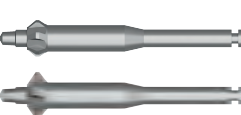
Hex Driver (manual)
Cover and Gingiva former
Carrying/ Tightening



Screw Retained Abutment
Tightening Part



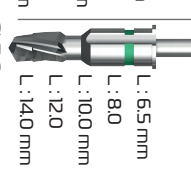
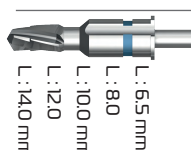
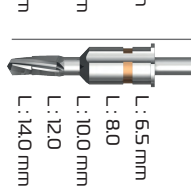
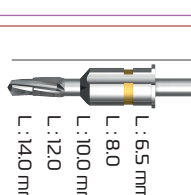
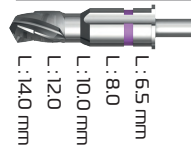
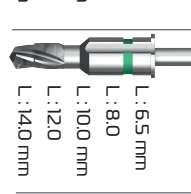
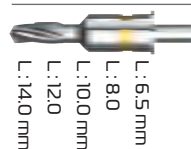
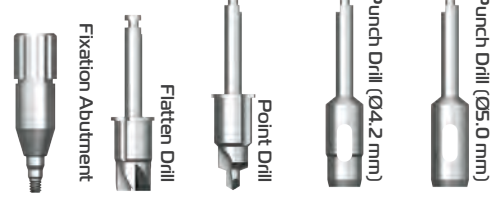
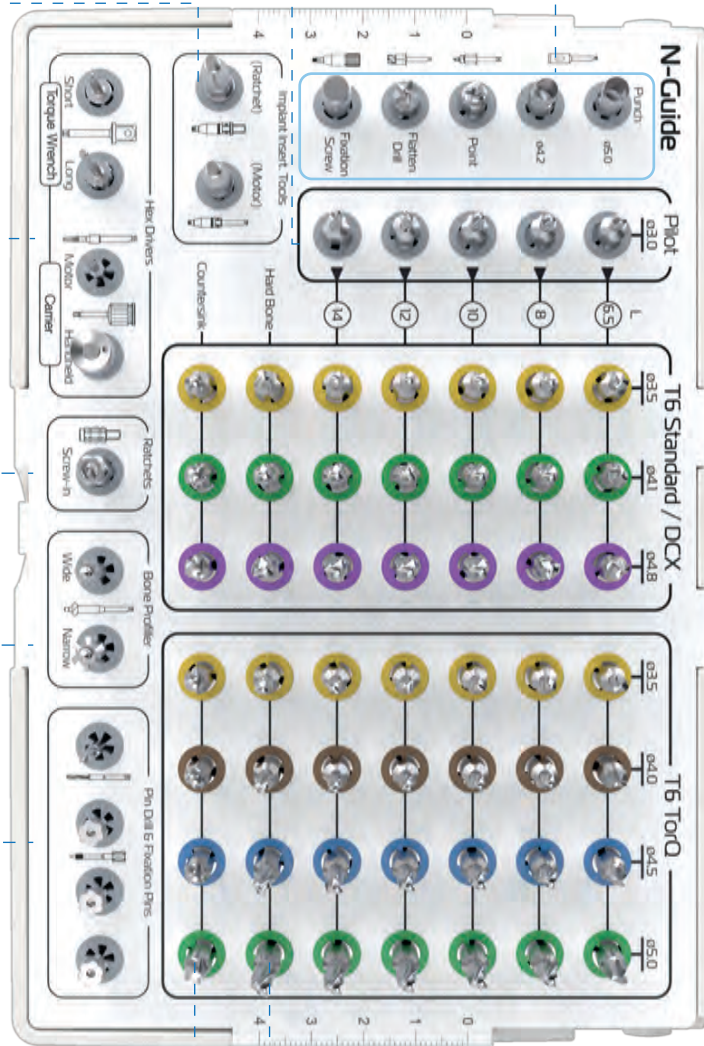
Bone Profiler Drills



Pin Drill



Guide Fixation Pin



Ø2/Ø3/Ø4 Bone drills separate for diameter and depth

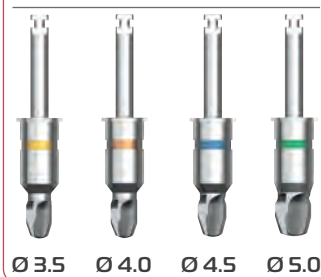
Ø2/Ø3/Ø4 Bone drills separate for diameter and depth

Countersink Drills

for T6 Standard



for T6 TorQ

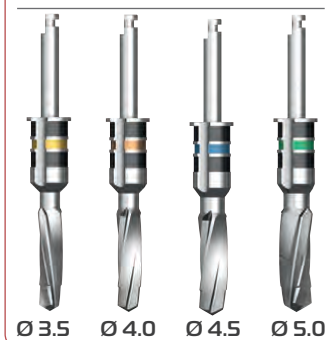


D1 Hard Bone Drills (Final)

for T6 Standard



for T6 TorQ



Preparation of the Implant Socket

The bone socket opening protocol with the N-Guide set is shown below.

Short Implant L 6.5 mm Drill Protocol

Step 1 : After the T6 Standard and T6 TorQ 6.5mm size implant or implants are planned, tissue punch is used to remove the soft tissue.

Step 2 : After the tissue punch drill, punching is performed with a point drill for marking and determination of the drill slot axis. In addition, the point drill straightens the bone surface with a diameter of 4.0 mm.

⚠ Attention : In all protocols, if an uneven bone topology is present, the leveling drill is used following the tissue punch drill.

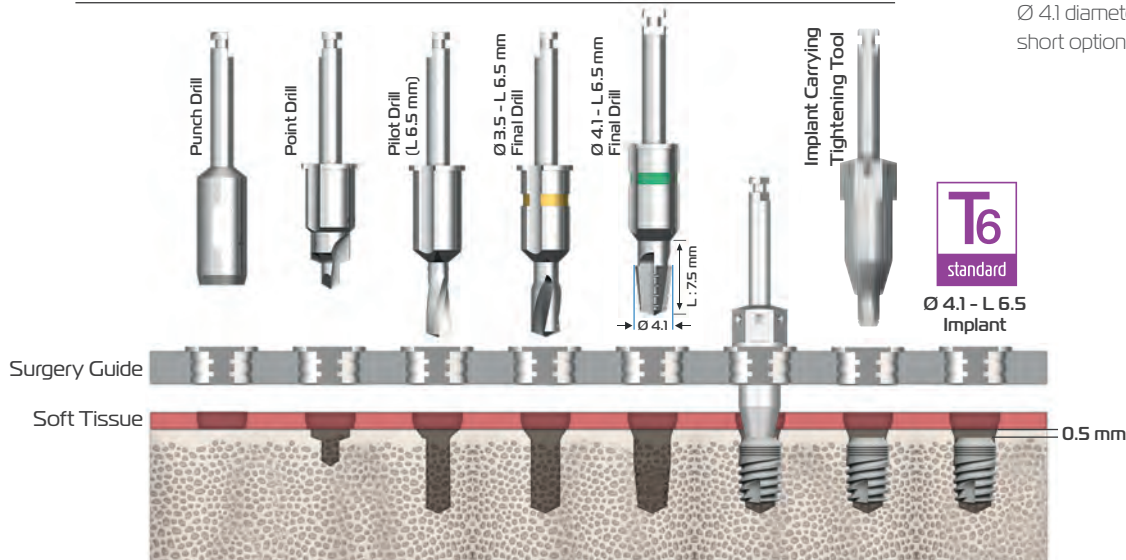
Step 3 : The final drills for T6 Standard and T6 TorQ 6.5 mm size implants are the 6.5 mm implant drills included in the N-Guide surgical guide set. The drills are with stoppers and there are separate drills for each implant diameter.

The slot is gradually enlarged by using other diameter drills until the final diameter of the selected implant is reached, and the preparation is completed.

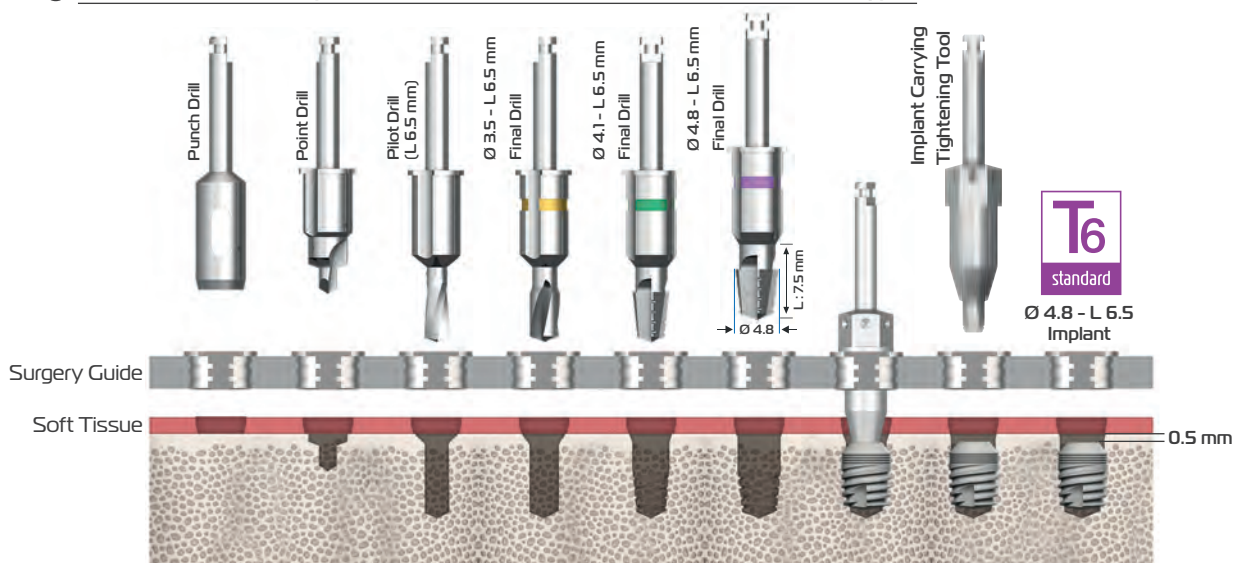
Drill should be operated with cooling liquid at a maximum of 800 rpm.

● T6 Standard Short Implant (Ø 4.1 mm/L 6.5 mm) D1-D2-D3-D4 bone type

⚠ Attention : L 6.5 mm short implants start from Ø 4.1 diameter. Ø 3.5 implants do not have a short option with a length of 6.5 mm.

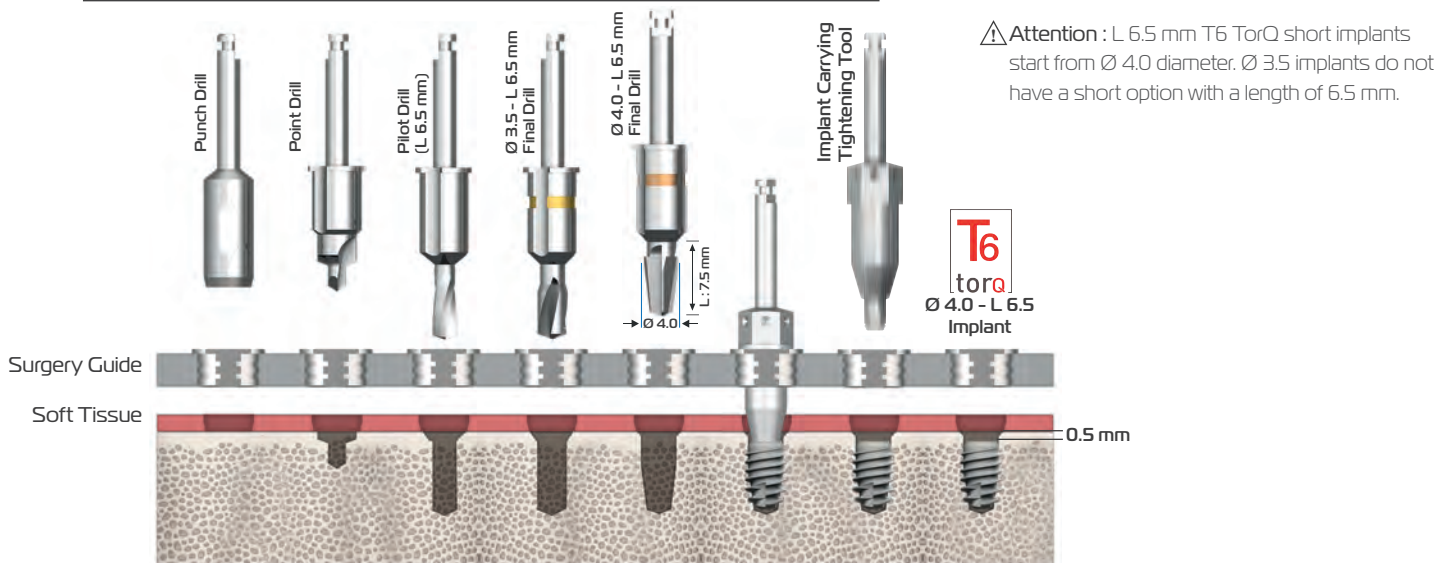


● T6 Standard Short Implant (Ø 4.8 mm/L 6.5 mm) D1-D2-D3-D4 bone type

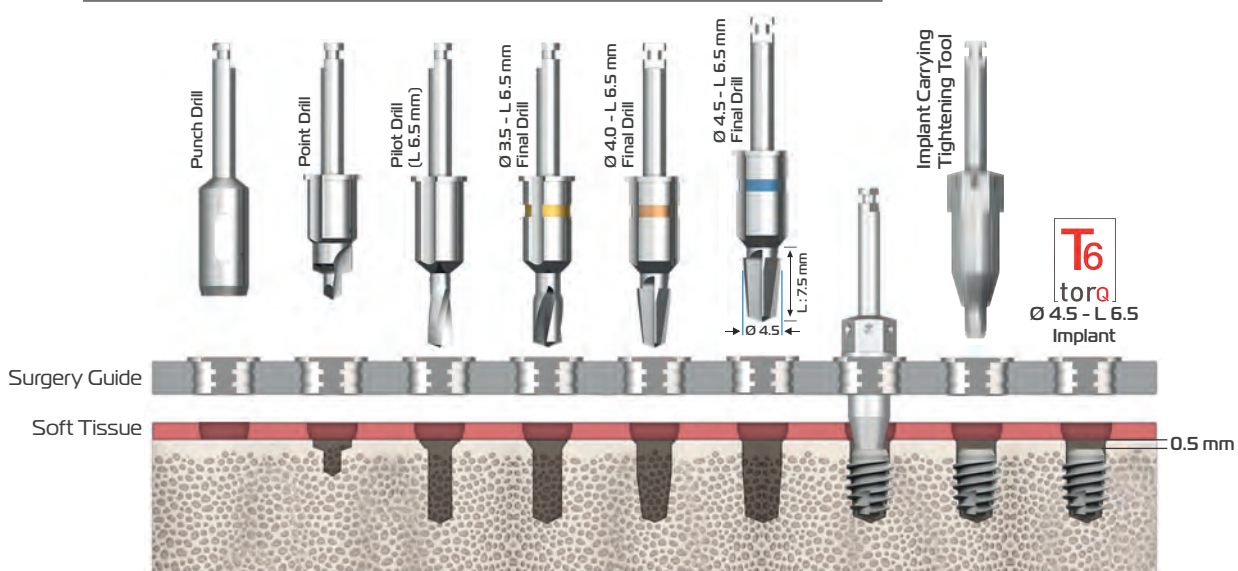


Preparation of the Implant Socket

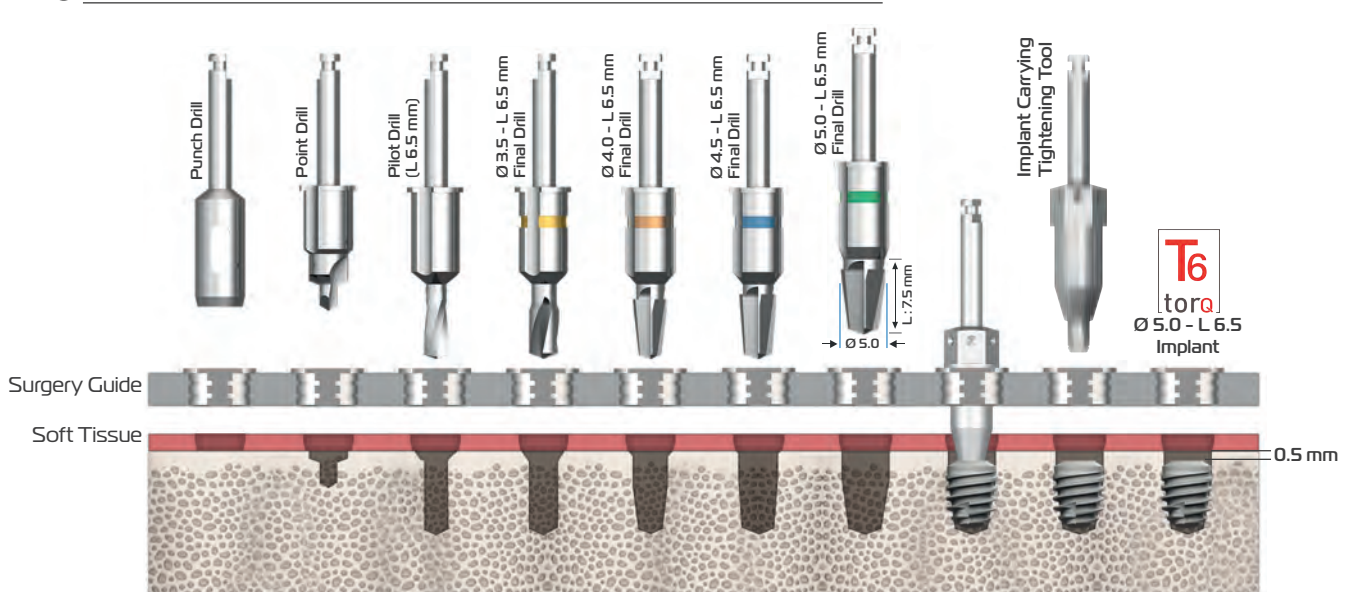
● T6 TorQ Short Implant (Ø 4.0 mm/L 6.5 mm) D1-D2-D3-D4 bone type



● T6 TorQ Short Implant (Ø 4.5 mm/L 6.5 mm) D1-D2-D3-D4 bone type



● T6 TorQ Short Implant (Ø 5.0 mm/L 6.5 mm) D1-D2-D3-D4 bone type



Preparation of the Implant Socket

Step 1 : After planning the T6 Standard or T6 TorQ implants to be used in the patient's mouth, tissue punch is used to remove the soft tissue.

Step 2 : After the tissue punch drill, punching is performed with a point drill for marking and determination of the drill slot axis. In addition, the point drill straightens the bone surface with a diameter of 4 mm.

⚠ Attention : In all drill protocols, if there is a wavy bone structure, Flatten drill is used after the punch drill.

Step 3 : After the marking hole is drilled, the first enlargement is made with the pilot drill. Pilot drills are designed with stoppers for each implant size. The use of pilot drills as per the implant size in the drill protocol provides a controlled surgery by preventing the other drills from going deeper.

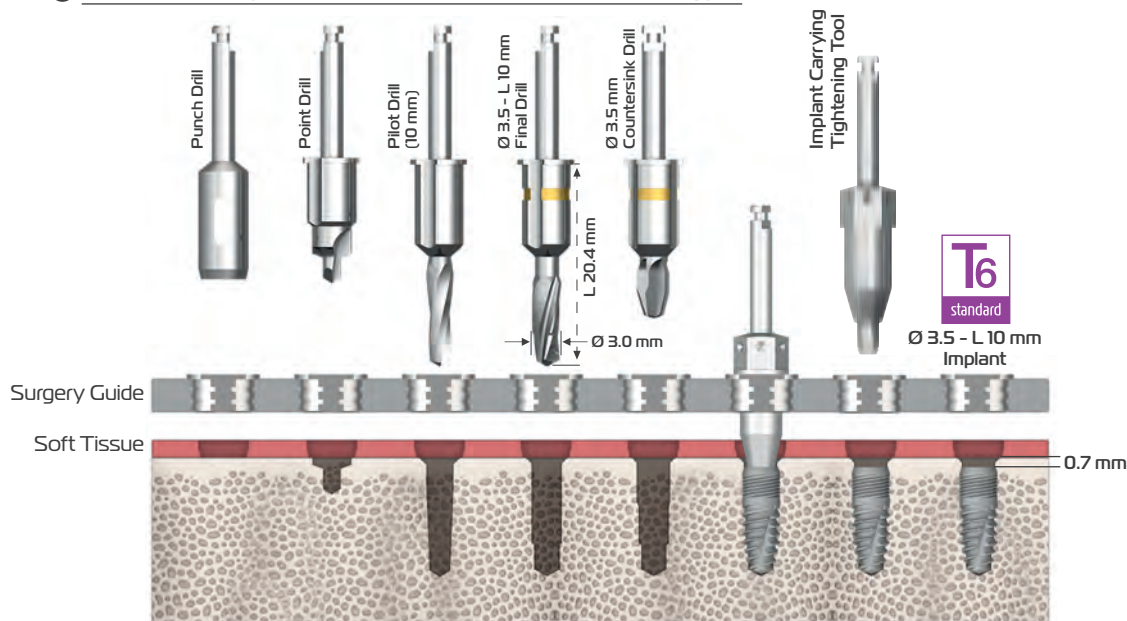
Step 4 : The position and axis are checked and the drill protocol is continued to be applied according to the suitable socket implant diameter. Drills designed separately for each diameter and length of implant should be used.

Slot is opened up to the depth line suitable for the size of the implant to be slotted. The slot is gradually enlarged using the previous diameter drill until the final diameter of the selected implant is reached. According to the bone density (in D1 type bones), the slot is enlarged with a hard bone drill.

⚠ Attention : The hard bone drill is used to expand the slot after the standard final drill, using it as a final just after the previous diameter drill may damage the bone and the drill.

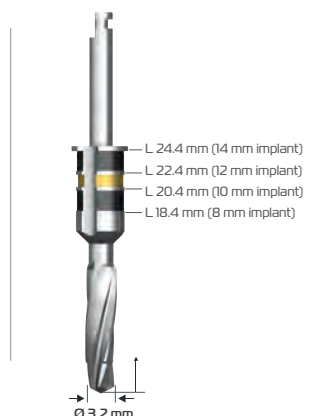
Finally, the slot preparation is completed by using a countersink to prevent jamming in the neck area. Drills should be operated with cooling liquid at a maximum of 800 rpm.

● T6 Standard Implant (Ø 3.5 - L 10.0 mm) D3-D4 bone type



⚠ Attention : In D1 bone, a hard bone drill should be used after the final drill.

Hard Bone Drill - Ø 3.5 mm



Countersink Drill - Ø 3.5 mm

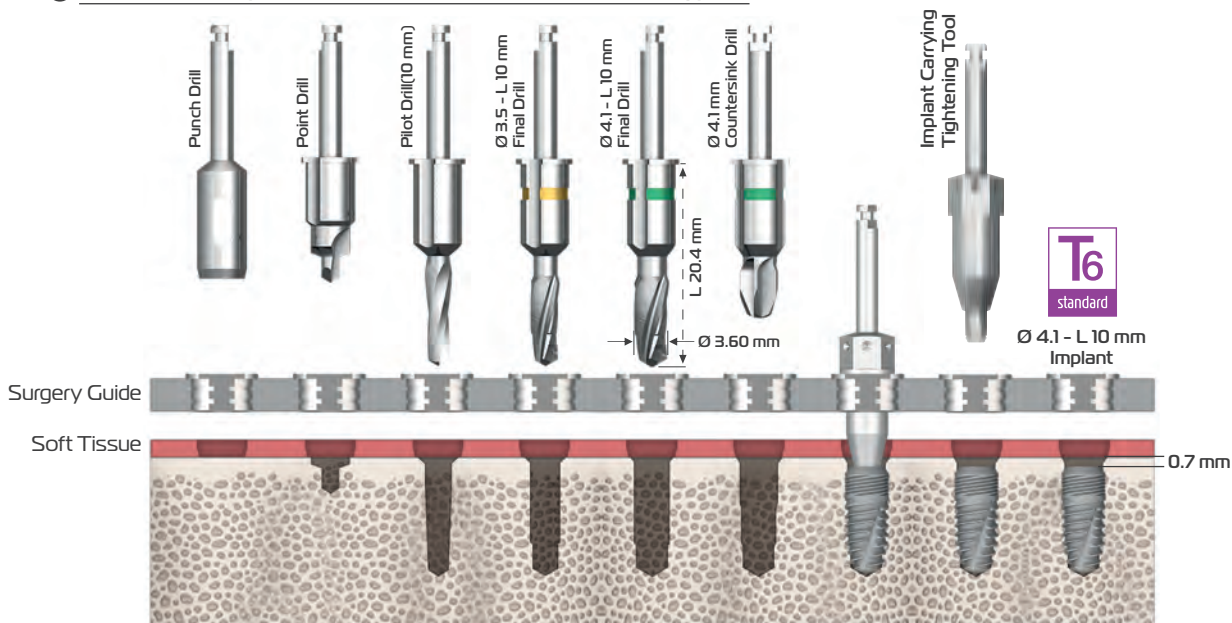


⚠ Attention : The socket made by the surgical drill in the bone is 0.7 mm longer than the implant length to increase healthy bone formation in the neck area.

Please take this into consideration in surgical planning and implementation.

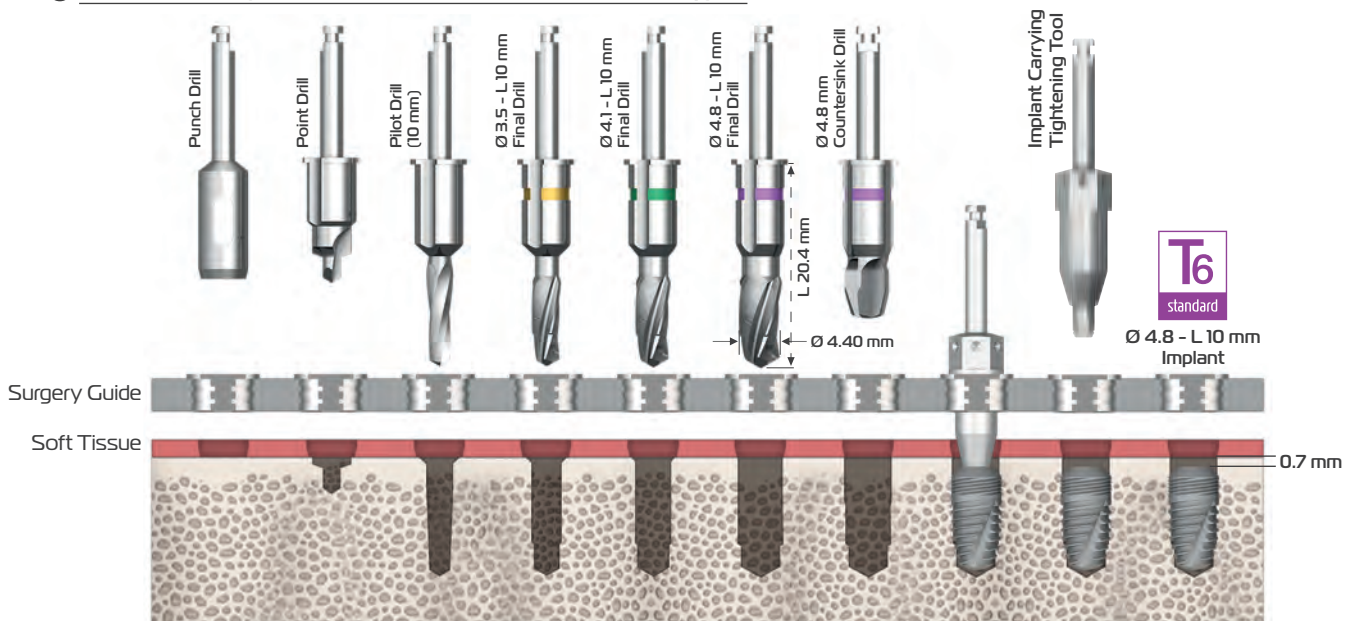
Preparation of the Implant Socket

● T6 Standard Implant (Ø 4.1 - L 10.0 mm) D3-D4 bone type



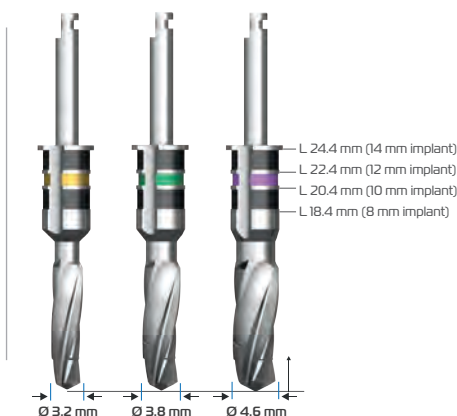
⚠ Attention : In D1 bone, a hard bone drill should be used after the final drill.

● T6 Standard Implant (Ø 4.8 - L 10.0 mm) D3-D4 bone type

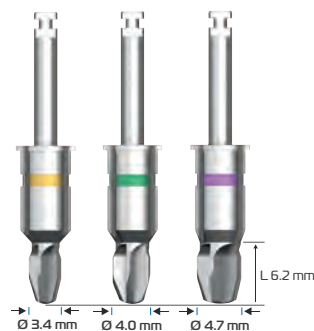


⚠ Attention : In D1 bone, a hard bone drill should be used after the final drill.

T6 Standard Hard Bone Drills



T6 Standard Countersink Drills

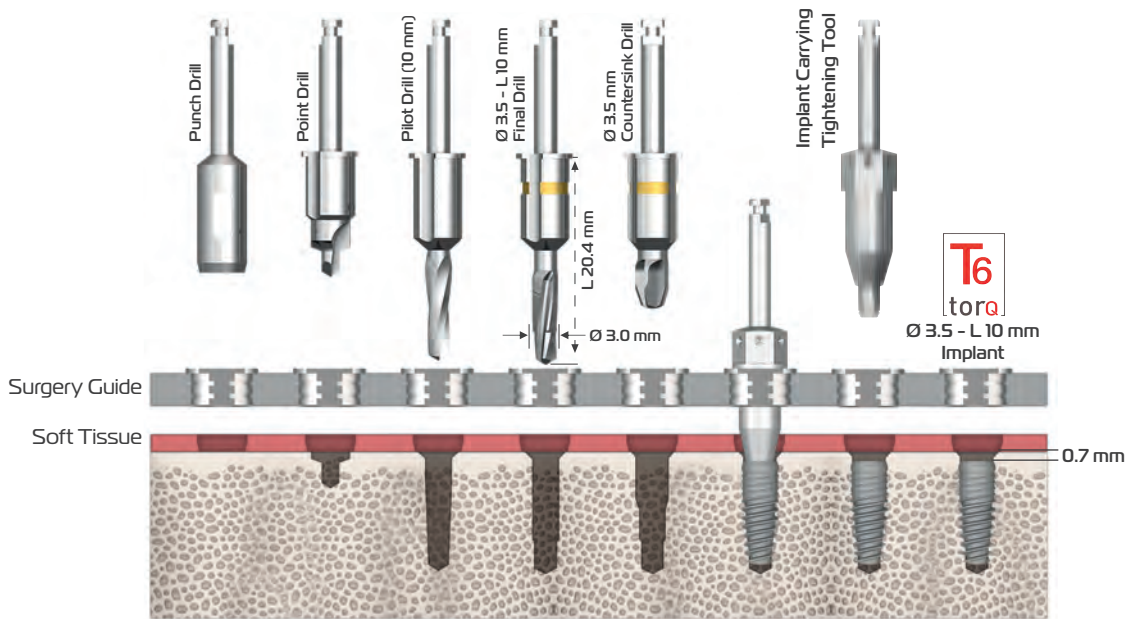


⚠ Attention : The socket made by the surgical drill in the bone is 0.7 mm longer than the implant length to increase healthy bone formation in the neck area.

Please take this into consideration in surgical planning and implementation.

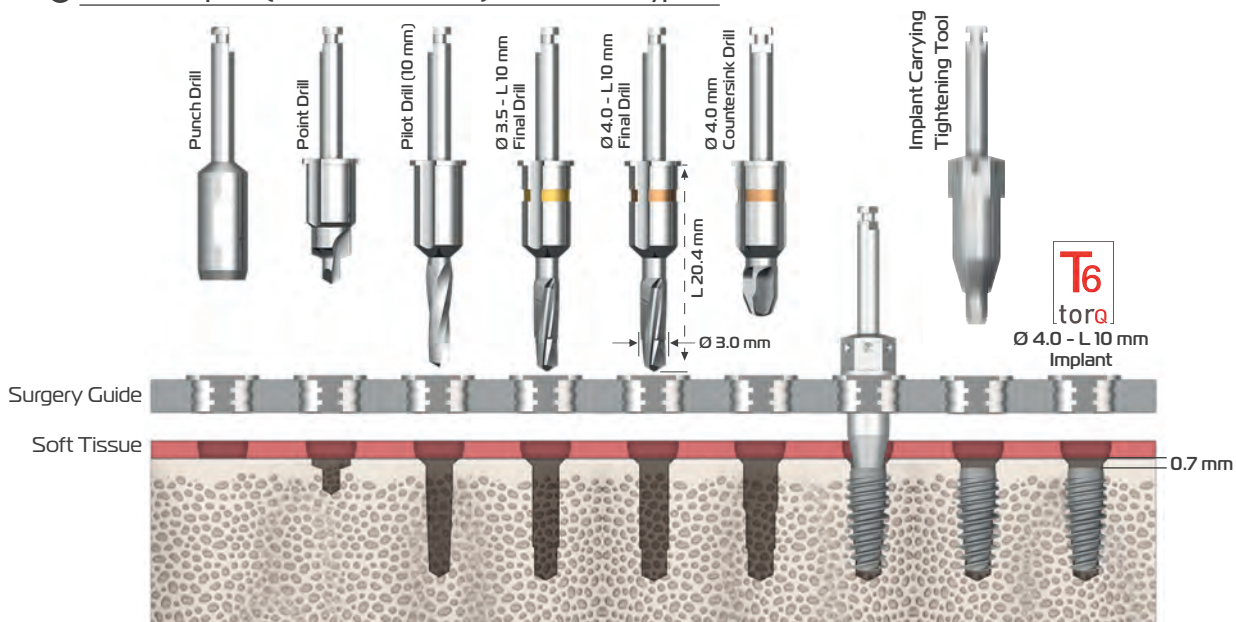
Preparation of the Implant Socket

● T6 TorQ Implant (Ø 3.5 - L 10.0 mm) D3-D4 bone type



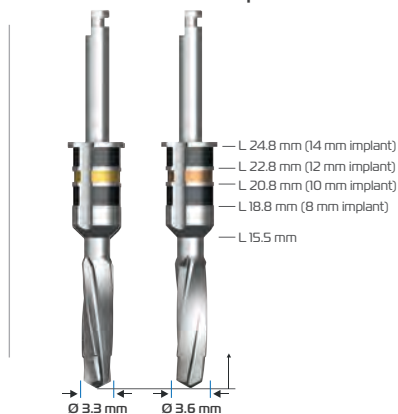
⚠ Attention : In D1 bone, a hard bone drill should be used after the final drill.

● T6 TorQ Implant (Ø 4.0 - L 10.0 mm) D3-D4 bone type



⚠ Attention : In D1 bone, a hard bone drill should be used after the final drill.

Hard Bone Drills for T6 TorQ Ø 3.5 and 4.0 implants



Countersink Drills for T6 TorQ Ø 3.5 and 4.0 implants

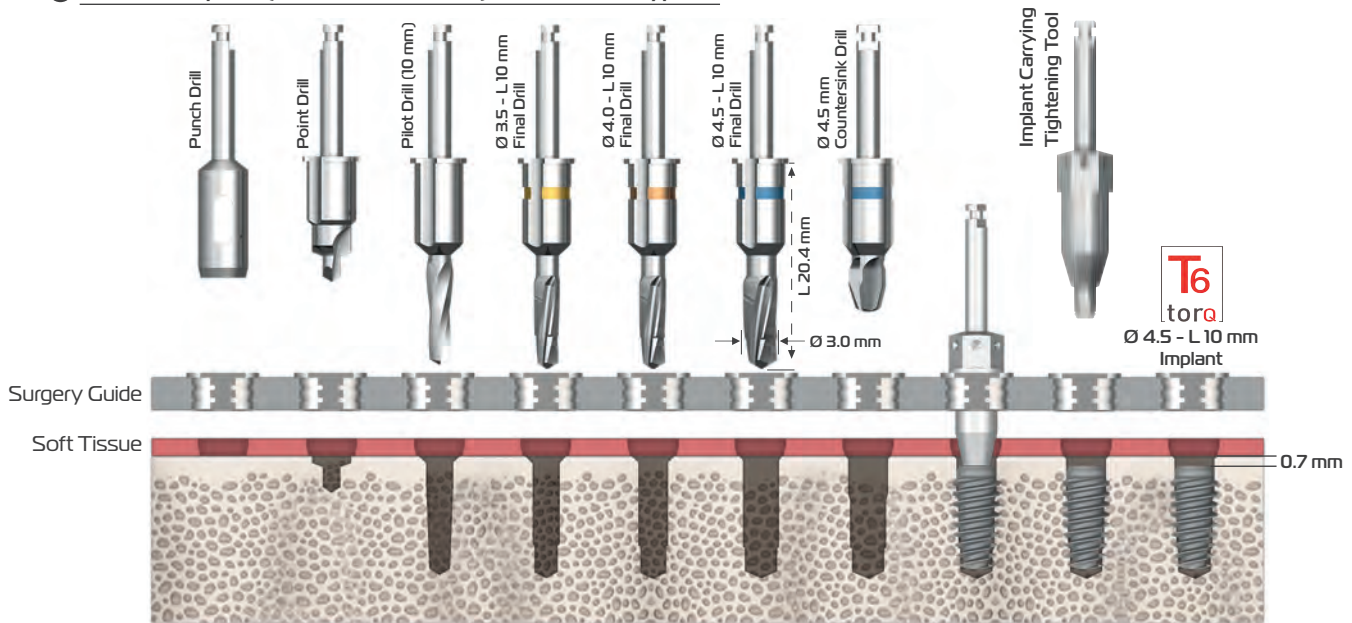


⚠ Attention : The socket made by the surgical drill in the bone is 0.7 mm longer than the implant length to increase healthy bone formation in the neck area.

Please take this into consideration in surgical planning and implementation.

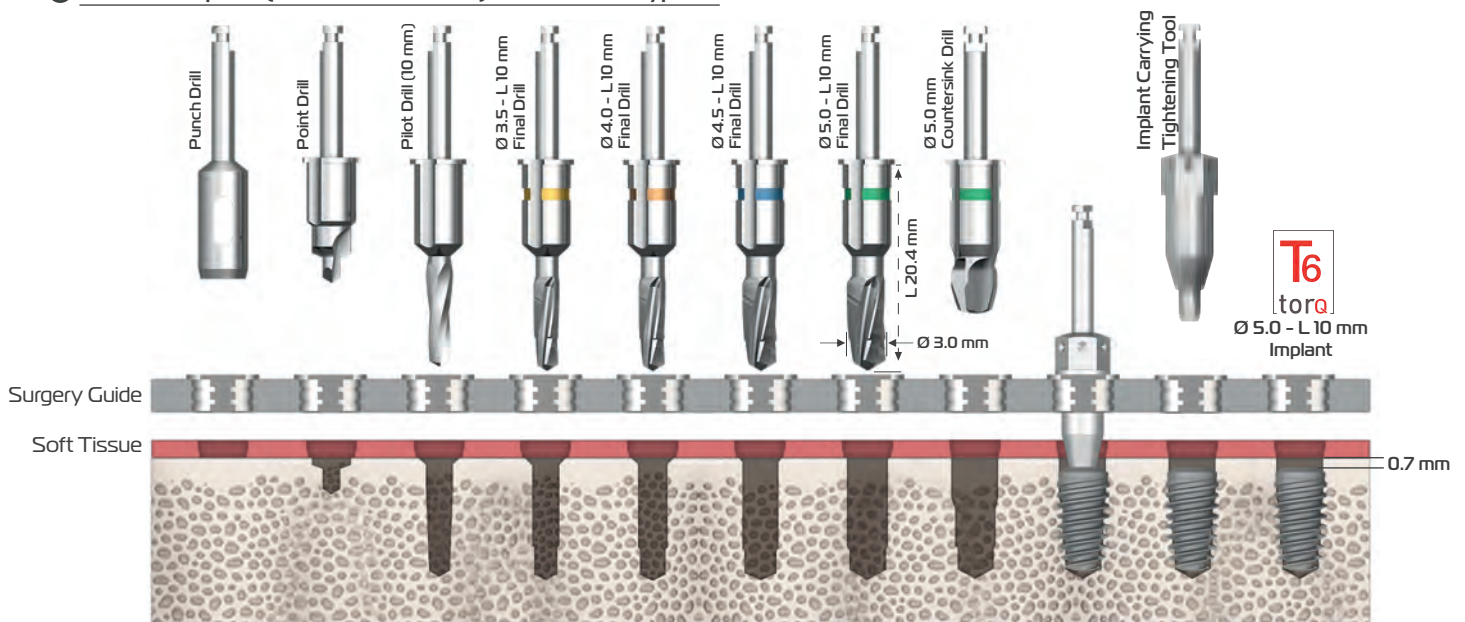
Preparation of the Implant Socket

● T6 TorQ Implant (Ø 4.5 - L 10.0 mm) D3-D4 bone type



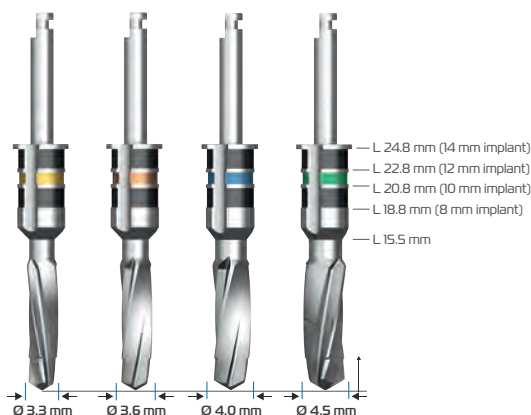
⚠ Attention : In D1 bone, a hard bone drill should be used after the final drill.

● T6 TorQ Implant (Ø 5.0 - L 10.0 mm) D3-D4 bone type

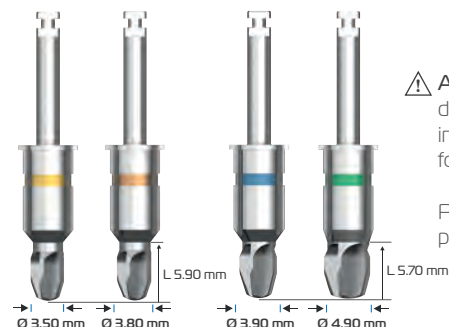


⚠ Attention : In D1 bone, a hard bone drill should be used after the final drill.

Hard Bone Drills for T6 TorQ Implant



Countersink Drills for T6 TorQ Implant

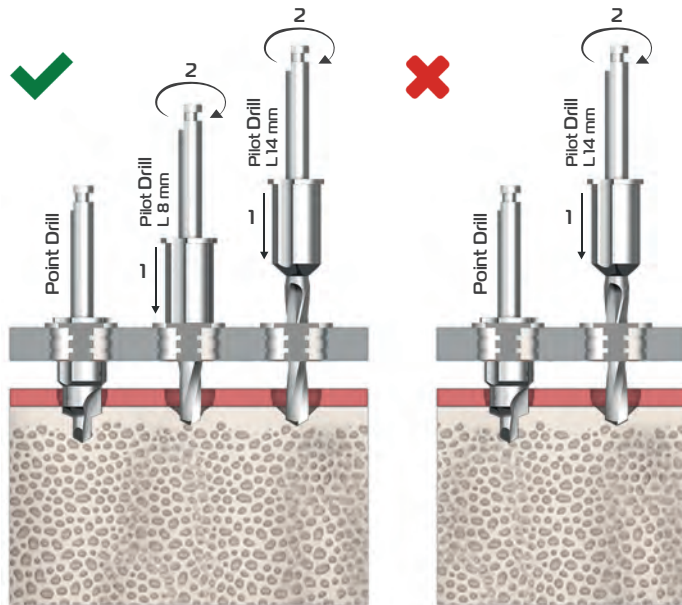


⚠ Attention : The socket made by the surgical drill in the bone is 0.7 mm longer than the implant length to increase healthy bone formation in the neck area.

Please take this into consideration in surgical planning and implementation.

Rules to be observed

For L 12 and L 14 mm implants, L 8 or L 10 mm pilot drills should be used before the pilot drills. Otherwise, L 12 and L 14 mm pilot drills will not pass into the Ø 5.10 mm surgical guide ring and will cause incorrect centering.



Features of Surgical Drills

Surgical drills are used to open a suitable slot in the bone for implant placement.

The 6.5 mm drills in the N-Guide surgical set are stoppered and in a single size. There are 6.5/08/10/12/14 mm pilot drills with self-stoppers for each size. For D3/D4 type bones, T6 Standard and T6 Torq implant drills are self-stoppers in all diameters and sizes. There are hard bone drills with length lines for D1 type bones.

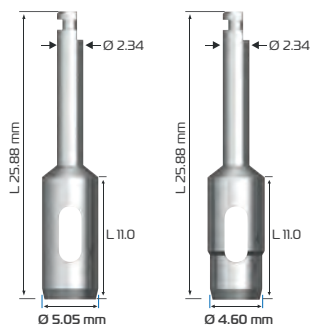
All drills are designed to be used with micromotors.

Each of the drills should be replaced after 15 uses.

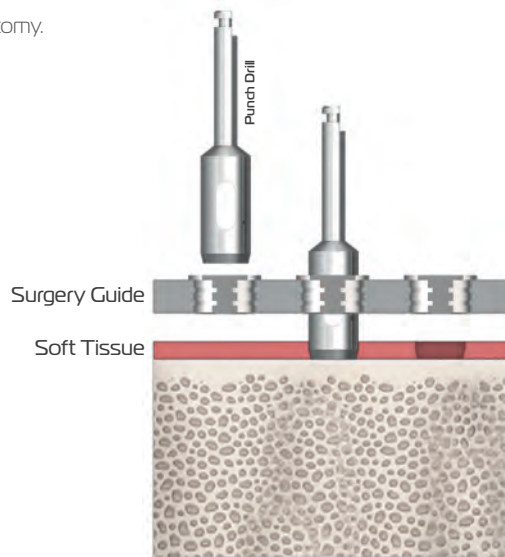
Initial Drills - Punch Drills, Point Drill and Flatten Drill

Initial drills are used to open the socket during osteotomy.

Punch Drills

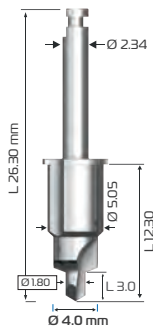


Punch Drills :
Used for cutting and removing
soft tissue.

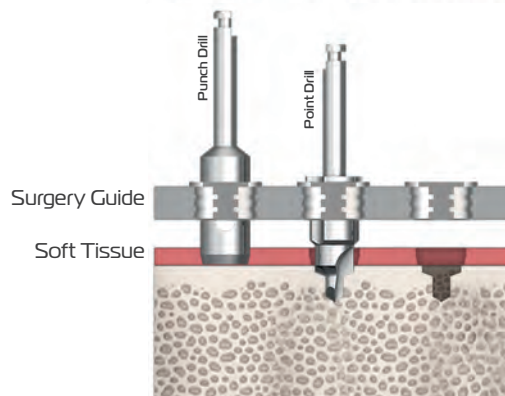


Punch drill is used to excise soft tissue before starting the drilling process.

Point Frez



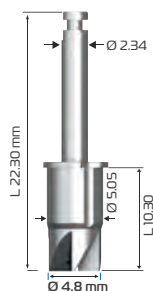
Point Drill : It is used to determine the place where the implant will be placed and to smooth the bone surface.



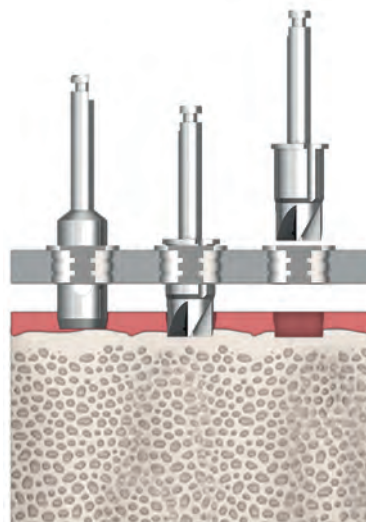
Point drill is used to smooth and mark the bone surface after tissue punch drill .

Pilot drill is used after point drill.

Flatten Drill



Flatten Drill : It is used to smooth the surface by rasping the irregular bone density.

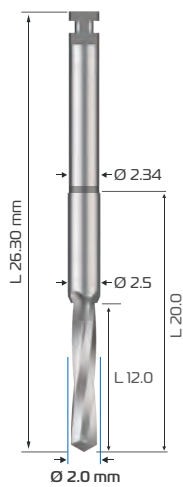


By using a flatten drill, a correct centering surface is provided for the drills to be used.

Pin Drill Ø 2.0 mm and Ring Ø 2.5 mm

It is used to open a suitable slot for the fixing pins to prevent the guide to be used in total or partial edentulism from moving in the patient's mouth. A Ø2.5 mm ring is used for centering the drill.

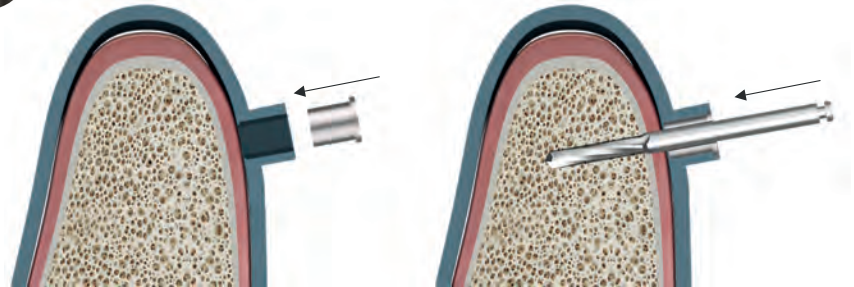
Pin Drill Ø 2.0 mm



Ring Ø 2.5 mm

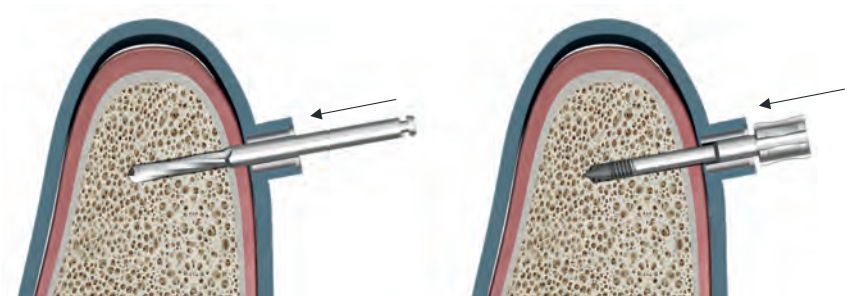
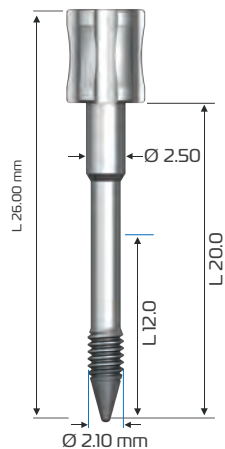


⚠ Attention : The Ø 2.5 mm Ring is not included in the N Guide Surgical Set. It must also be requested.

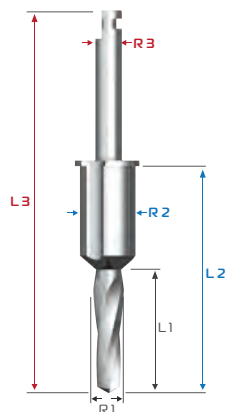


Guide Fixing Pin

It is used to fix the guide before the surgical procedure in total or partial edentulism. During surgery, it prevents micro-movements of the guide and increases the stability of the guide.



Pilot Drills Ø 3.0 mm

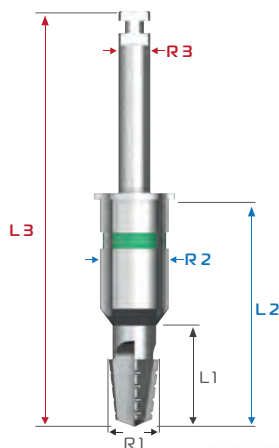


Pilot Frezler

L 6.5
L 8.0
L 10.0
L 12.0
L 14.0

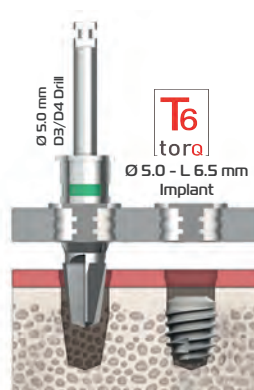
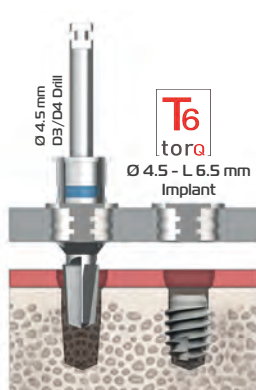
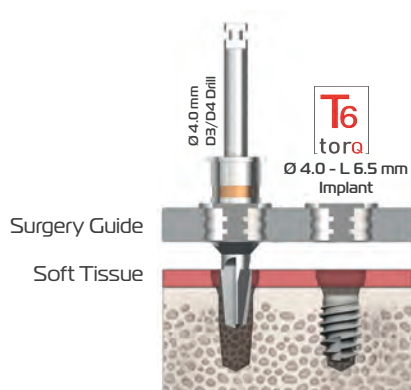
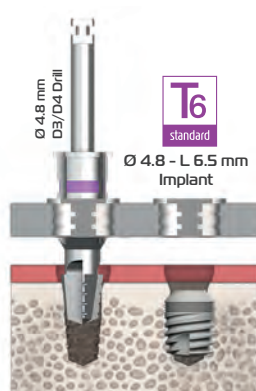
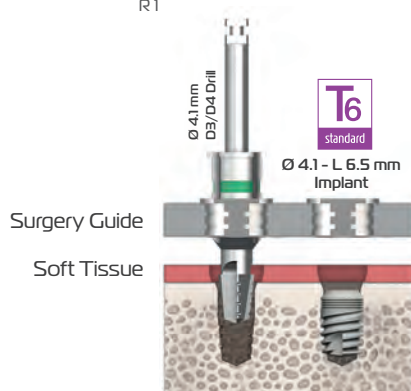
	R1	R2	R3	L1	L2	L3
L 6.5	2.45	5.05	2.34	8.00	16.80	30.80
L 8.0	2.95	5.05	2.34	9.60	18.40	32.40
L 10.0	2.95	5.05	2.34	11.60	20.40	34.40
L 12.0	3.00	5.05	2.34	13.60	22.40	36.40
L 14.0	3.00	5.05	2.34	15.60	24.40	38.40

Short Implant Drills L 6.5 mm



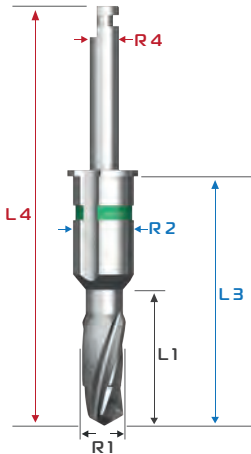
Drill Dm. Ø	T6 Standard			T6 Torq			
	3.5	4.1	4.8	3.5	4.0	4.5	5.0
R1	3.0	4.15	4.85	3.0	3.70	4.10	4.90
R2	5.05	5.05	5.05	5.05	5.05	5.05	5.05
R3	2.34	2.34	2.34	2.34	2.34	2.34	2.34
L1	7.50	7.50	7.50	7.50	7.50	7.50	7.50
L2	16.80	16.80	16.80	16.80	16.80	16.80	16.80
L3	30.80	30.80	30.80	30.80	30.80	30.80	30.80

⚠ Attention: Only for T6 Standard or T6 TorQ 6.5 mm size implants.



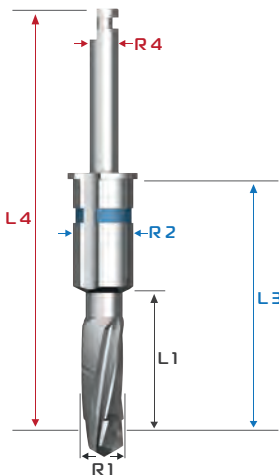
Soft & Hard Bone Drills - D2/D3/D4

for T6 Standard Implants,



Drill Dm. Ø	Drill Height L	R1	R2	R4	L1	L3	L4
Ø 3.5	L 6.5	3.00	5.05	2.34	7.50	16.80	30.80
	L 8.0	3.00	5.05	2.34	9.10	18.40	32.40
	L 10.0	3.00	5.05	2.34	11.10	20.40	34.40
	L 12.0	3.00	5.05	2.34	13.10	22.40	36.40
	L 14.0	3.00	5.05	2.34	15.10	24.40	38.40
Ø 4.1	L 6.5	4.15	5.05	2.34	7.50	16.80	30.80
	L 8.0	3.60	5.05	2.34	9.20	18.50	32.50
	L 10.0	3.60	5.05	2.34	11.20	20.50	34.50
	L 12.0	3.60	5.05	2.34	13.20	22.50	36.50
	L 14.0	3.60	5.05	2.34	15.20	24.50	38.50
Ø 4.8	L 6.5	4.85	5.05	2.34	7.50	16.80	30.80
	L 8.0	4.40	5.05	2.34	9.30	18.60	32.60
	L 10.0	4.40	5.05	2.34	11.30	20.60	34.60
	L 12.0	4.40	5.05	2.34	13.30	22.60	36.60
	L 14.0	4.40	5.05	2.34	15.30	24.60	38.60

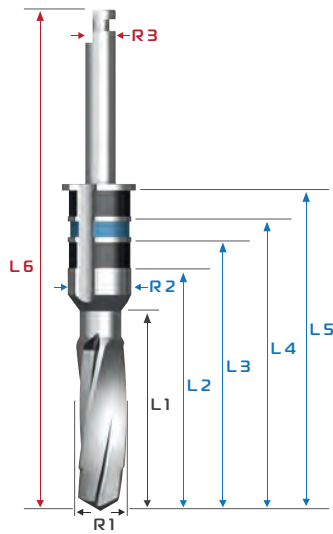
for T6 TorQ Implants,



Drill Dm. Ø	Drill Height L	R1	R2	R4	L1	L3	L4
Ø 3.5	L 6.5	3.00	5.05	2.34	7.50	16.80	30.80
	L 8.0	2.70	5.05	2.34	9.50	18.80	32.80
	L 10.0	2.70	5.05	2.34	11.50	20.80	34.80
	L 12.0	2.70	5.05	2.34	13.50	22.80	36.80
	L 14.0	2.70	5.05	2.34	15.50	24.80	38.80
Ø 4.0	L 6.5	3.70	5.05	2.34	7.50	16.80	30.80
	L 8.0	3.00	5.05	2.34	9.50	18.80	32.80
	L 10.0	3.00	5.05	2.34	11.50	20.80	34.80
	L 12.0	3.00	5.05	2.34	13.50	22.80	36.80
	L 14.0	3.00	5.05	2.34	15.50	24.80	38.80
Ø 4.5	L 6.5	4.10	5.05	2.34	7.50	16.80	30.80
	L 8.0	3.70	5.05	2.34	9.50	18.80	32.80
	L 10.0	3.70	5.05	2.34	11.50	20.80	34.80
	L 12.0	3.70	5.05	2.34	13.50	22.80	36.80
	L 14.0	3.70	5.05	2.34	15.50	24.80	38.80
Ø 5.0	L 6.5	4.90	5.05	2.34	7.60	16.90	30.90
	L 8.0	4.20	5.05	2.34	9.50	18.80	32.80
	L 10.0	4.20	5.05	2.34	11.50	20.80	34.80
	L 12.0	4.20	5.05	2.34	13.50	22.80	36.80
	L 14.0	4.20	5.05	2.34	15.50	24.80	38.80

Final Drills (Hard Bone Drills - D1 Type)

Hard bone drills are used after final drills in D1 bone. Hard bone drills enlarge the opened socket more, allowing the implant to advance more easily in the socket and reducing the resulting stress.



Drill Dm. Ø	T6 Standard			T6 TorQ			
	3.5	4.1	4.8	3.5	4.0	4.5	5.0
R 1	3.20	3.80	4.60	3.30	3.60	4.00	4.50
R 2	5.05	5.05	5.05	5.05	5.05	5.05	5.05
R 3	2.34	2.34	2.34	2.34	2.34	2.34	2.34
L 1	15.10	15.20	15.30	15.50	15.50	15.50	15.50
L 2	18.40	18.50	18.60	18.80	18.80	18.80	18.80
L 3	20.40	20.50	20.60	20.80	20.80	20.80	20.80
L 4	22.40	22.50	22.60	22.80	22.80	22.80	22.80
L 5	24.40	24.50	24.60	24.80	24.80	24.80	24.80
L 6	38.40	38.50	38.60	38.80	38.80	38.80	38.80

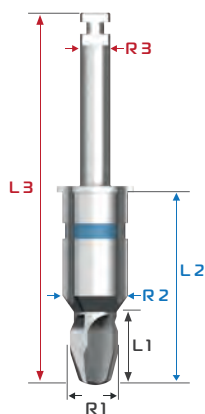
Countersink

Countersinks are designed to provide passive seating of the implant neck into the surgical field.

It should definitely be used to prevent/reduce bone resorption in the neck region caused by stress in D1/D2/D3 type bones.

It is recommended to use in D4 type bone according to dentist preference.

All drills are designed for use with a micro motor.



Drill Dm. Ø	T6 Standard			T6 TorQ			
	3.5	4.1	4.8	3.5	4.0	4.5	5.0
R 1	3.40	4.0	4.70	3.50	3.80	3.90	4.90
R 2	5.05	5.05	5.05	5.05	5.05	5.05	5.05
R 3	2.34	2.34	2.34	2.34	2.34	2.34	2.34
L 1	6.20	6.20	6.20	5.90	5.90	5.70	5.70
L 2	15.60	15.60	15.60	15.20	15.20	15.00	15.00
L 3	29.60	29.60	29.60	29.20	29.20	29.00	29.00

Transfer and Tightening Parts

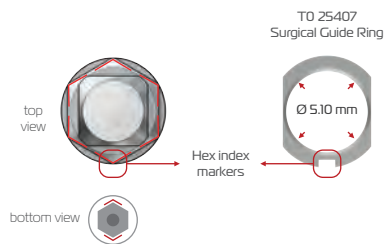
The tightening parts are designed to handling the implant into the prepared slot. The precise connection between the implant and the handling piece ensures safe handling of the implant from the tube to the surgical site.

Single and double points on the handling parts help in determining the implant hex direction in the mouth. It is recommended to terminate the thread placement with the points facing the buccal.

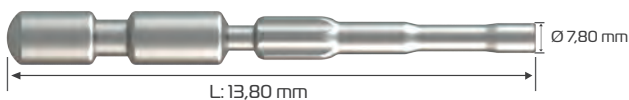
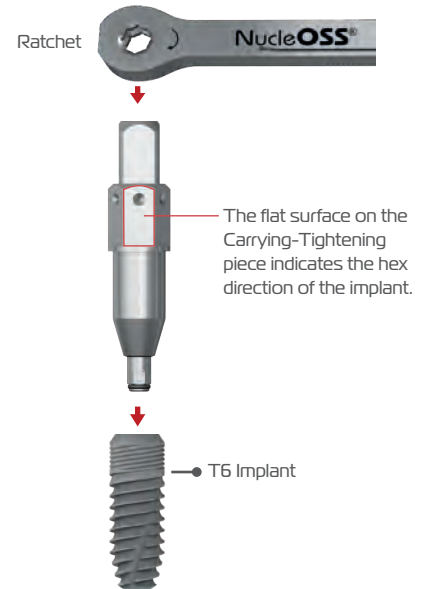
Implant Carrying-Tightening (Ratchet/Screwdriver)



It is used to handling the implant from the tube to the surgical area and tighten it with a ratchet.



Attention : Hex direction of the implant is determined by aligning the channel in the carrying and clamping piece with the channel in the surgical ring.



Transfer and tightening can be done with a screwdriver.

Implant Carrying-Tightening (Motor)



It is used to handling the implant from the tube to the surgical site and tighten with a motor.

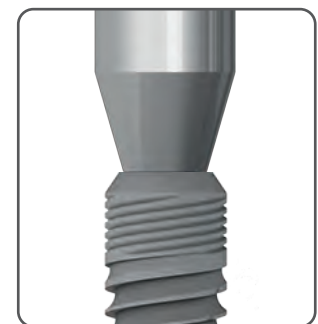


Micromotor



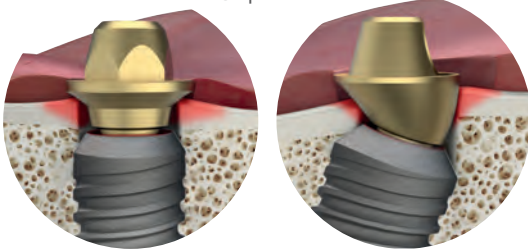
The flat surface on the Carrying-Tightening piece indicates the hex direction of the implant.

T6 Implant



Make sure that the carrier fits into the implant for correct and safe handling.

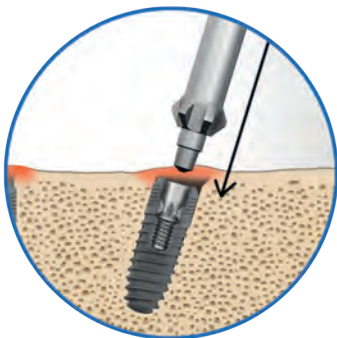
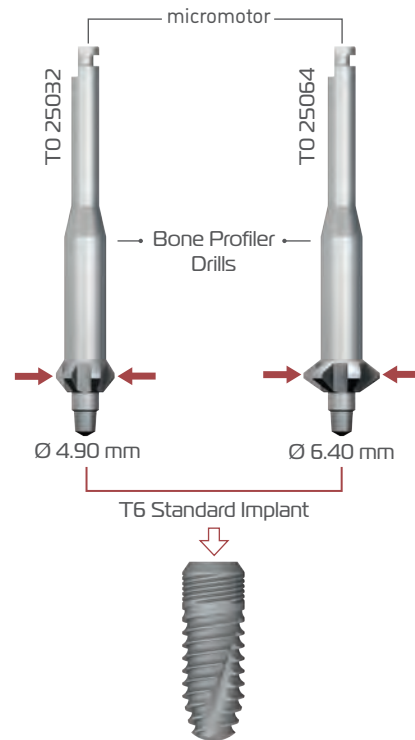
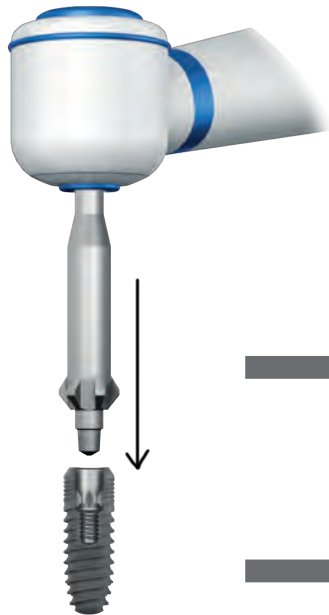
There should be no spaces!



After T6 implants are placed in the implant socket(cavity) in the patient's jawbone, the uneven bone density in the neck area of the implant prevents the abutment from seating on the implant properly.

This may cause the abutment or the connecting screw to break in the short or long term.

To solve this problem, the bone profiler bur in surgical sets is used before the abutment is placed.

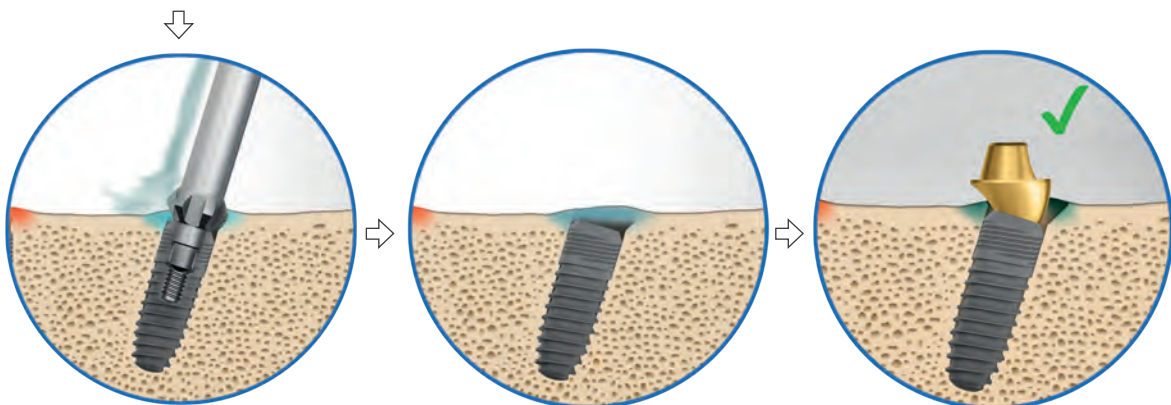


Using the Bone Profiler Drill

Before the abutment is placed, the guide pin is inserted into the implant with the help of a manual hex driver.

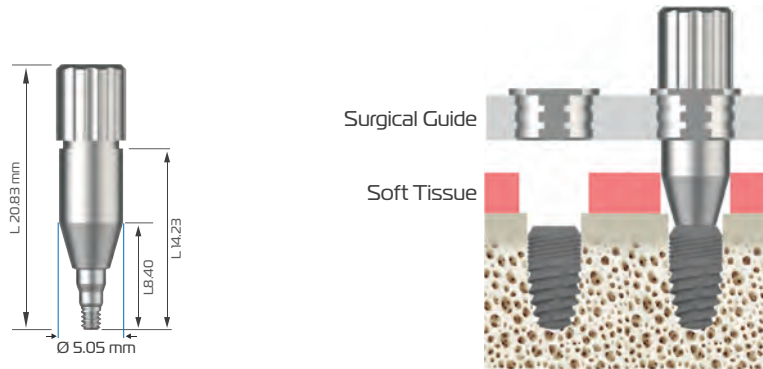
Note: At this stage, while the drill is working, the bone surface should be cooled with water.

After the uneven bone is cleaned, the abutment to be used is checked by placing it on the implant.

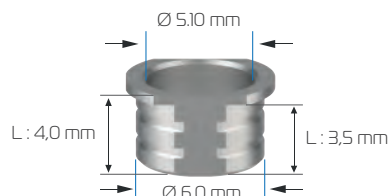


Fixation Abutment

In situations where multiple implants will be applied, it is used to prevent micro-movements of the guide and to ensure its stability after the first implant is inserted. It is not mandatory to apply in tooth supported guides.



Surgical Guide Ring Ø 5.0 mm - T0 25407

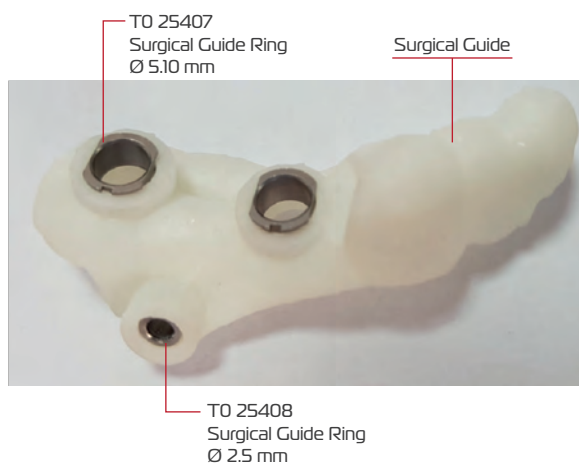
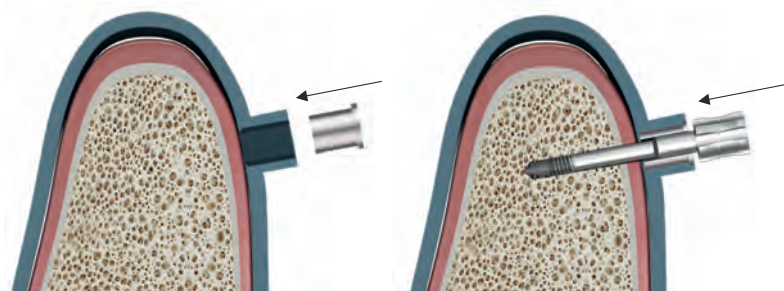


⚠ Attention : The upper channel is used for indexing the hex aspect of the T6 implant.



⚠ Attention : The Ø 5.0 mm Surgical Guide Ring is not included in the N-Guide Surgical Set. It must also be requested.

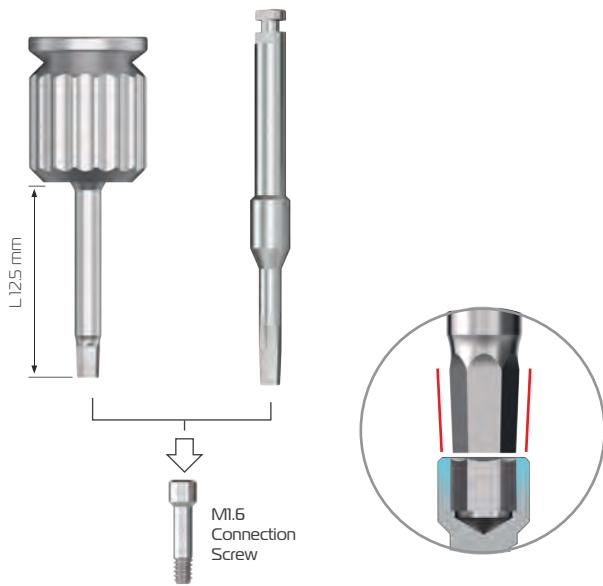
Surgical Guide Ring Ø 2.50 mm - T0 25408



⚠ Attention : It is recommended that the canal on the surgical ring faces the vestibule direction. This channel is used for the Hex orientation determination of the implant.

Hex Drivers - Transfer

TO 25251 (manuel usage) TO 2009 (micromotor)



Hex wrench is used for fixing healing components, prosthetic and impression parts.

It is made of stainless-steel material.

It can be procured in a surgical set and in one piece.

The tip of the hex drivers used manually and with micromotor is in hex structure and conical shape.

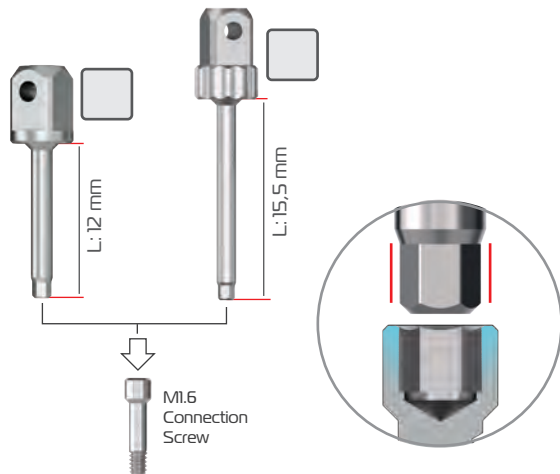
It can be used for carrying connection screws and healing caps and for light tightening.

Torque up to a maximum of 10 Ncm can be made with these hex driver.

Note: Final torque must never be done. Because the hex slot of the screw or the tip of the hex wrench may be damaged.

Hex Drivers - Torque

TO 2024 (short hex driver) TO 2025 (long hex driver)



The screw is held with a hex wrench and placed on the part it will be fixed to. The hex driver is gently turn clockwise to tighten the screw.

Tightening drivers are used for fixing healing components, prosthesis and impression parts.

It is used with a ratchet

It is made of stainless-steel material.

The tip of the hex drivers used for final torque is straight. It is only used for torque with NucleOSS ratchet.

It has no retention, it is not used for carrying.

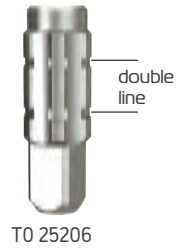
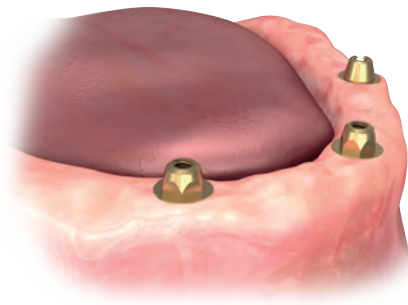


The ratchet is carefully seated on the hex driver.



The screw is tightened by turning the ratchet clockwise. By following the torque values specified at the end point, the desired torque value is set and the tightening process is completed.

Multi Unit Abutment Tightening Parts



Threaded abutment tightening part is used to place multi-unit straight abutments on T6 implants.

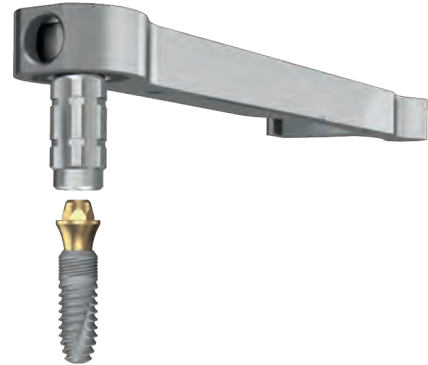
It is made of stainless steel.

It can be used with a ratchet or screwdriver.

Multi-unit straight abutment has a threaded connection structure. When placing the abutment on the implant, attention should be paid to the tightening and torque values.

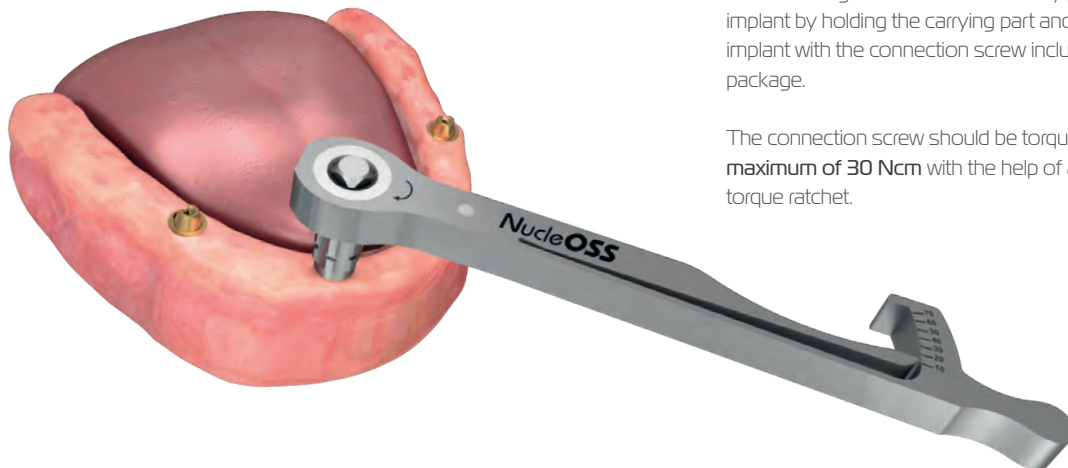
⚠ Attention : Multi-unit straight abutment should be torqued to a maximum of 30 Ncm when being placed on the abutment!

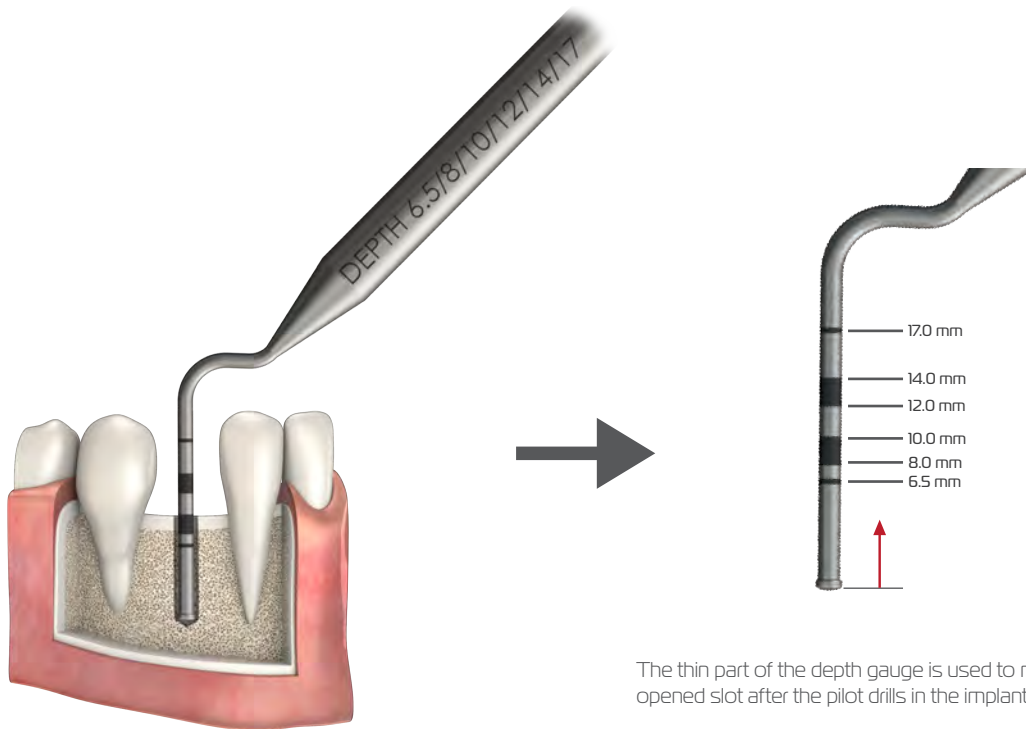
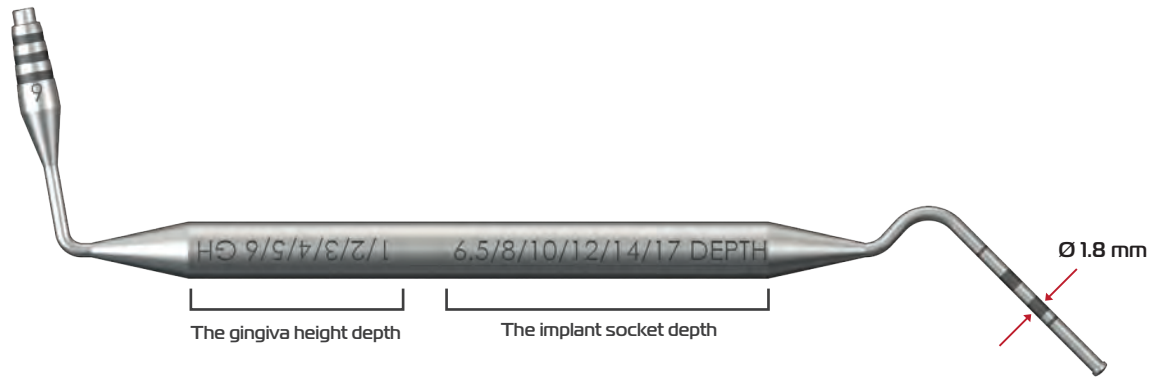
If the torque value is less or more than the specified value, loosening or breakage of the abutment may occur.



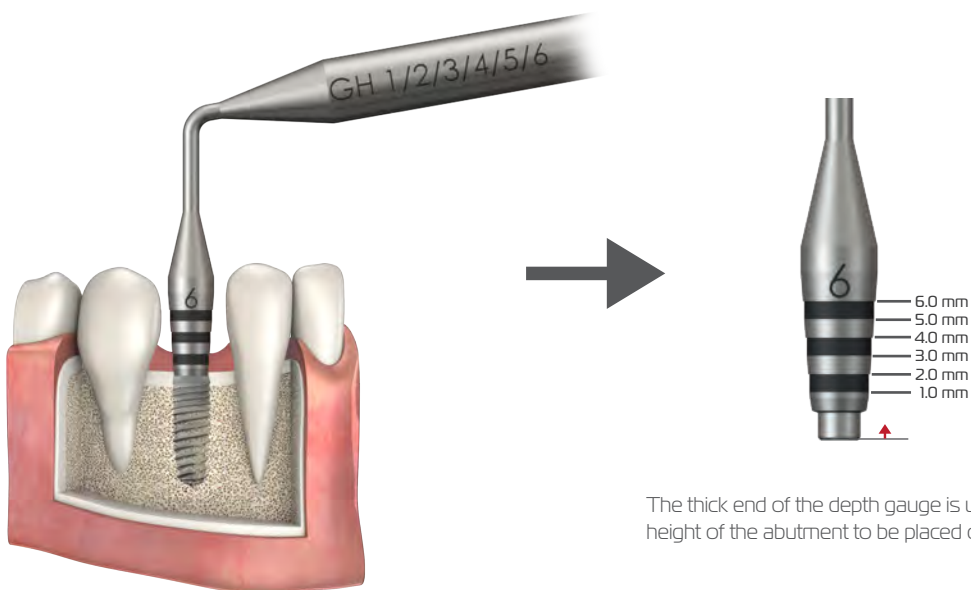
Multi-unit angled abutment is carefully placed on the implant by holding the carrying part and fixed to the implant with the connection screw included in the package.

The connection screw should be torqued to a **maximum of 30 Ncm** with the help of a NucleOSS torque ratchet.



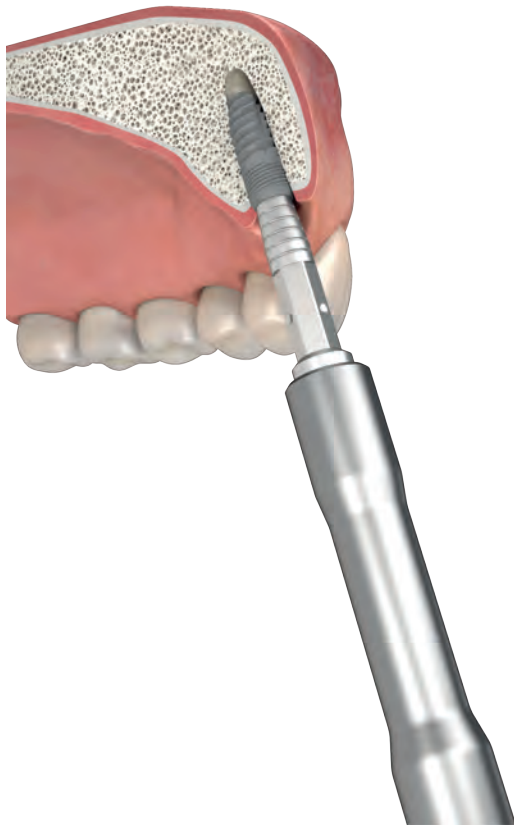
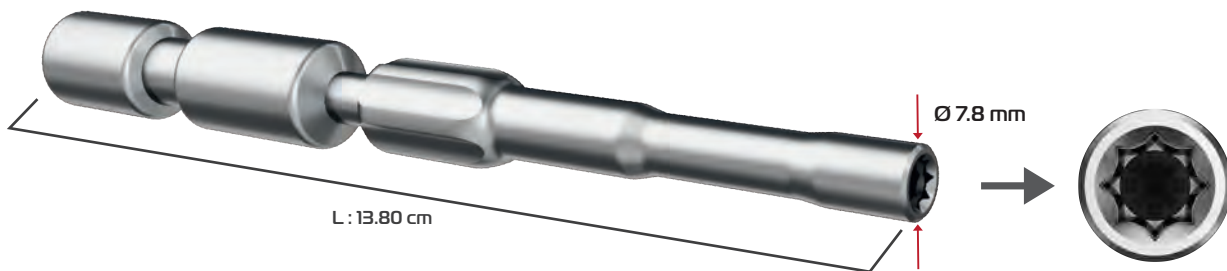


The thin part of the depth gauge is used to measure the depth of the opened slot after the pilot drills in the implant site opening process.

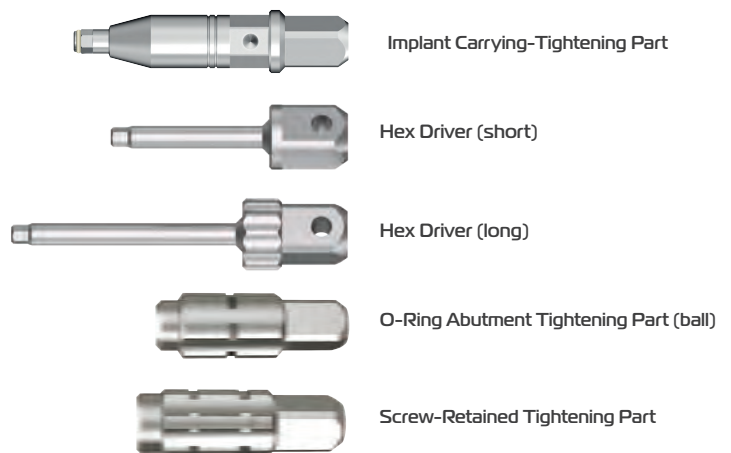


The thick end of the depth gauge is used to determine the gingival height of the abutment to be placed on the implant.

Screwdriver



In the use of screwdrivers, implant carrying-tightening parts, hex keys, screw-retained and ball abutment clamping parts, NucleOSS is offered as an alternative to the ratchet.

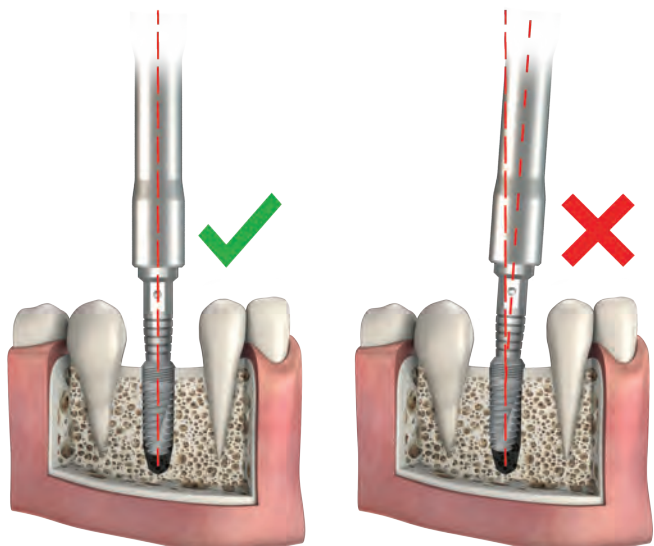


The screwdriver provides convenience in placing the implant or tightening the screws in the maxilla-anterior region.

The transfer and tightening process can be done with a screwdriver.

Make sure the screwdriver is aligned with the axis of the socket.

Otherwise, the implant may be damaged or the transfer piece may break.





The torque value of the NucleOSS ratchet is from 0 Ncm to 70 Ncm.

When the needle is at the top, it shows about 80 Ncm.

The ratchet is used by NucleOSS to tighten all the abutments and screws at the torque values specified in the product catalogs.

It is made of stainless-steel material.

It can be procured in a surgical set and in one piece.



Using as Torqueless Ratchet;

Hold the torque arm and torque needle together. Press down on the wheel with your finger to hold the ratchet in place.

Caution! Direction arrow should point to the top during tightening and to the bottom during untightening.

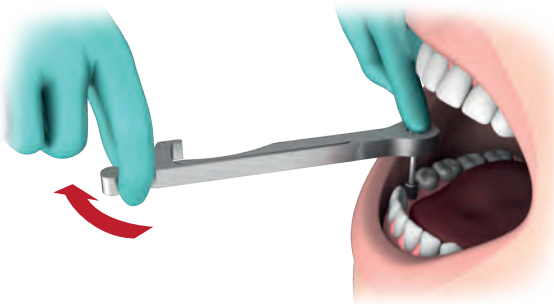
Using as Torque Ratchet:

Press down on the wheel with your finger to hold the ratchet in place. Then pull the torque arm lightly in the direction of the arrow until you reach the desired torque value.

Caution! The torque arm should not be turned more than the torque values specified on the ratchet. Otherwise, the torque will be incorrect. Direction arrow should point to the top during tightening and to the bottom during untightening.

Using Ratchet for Removal:

Use the ratchet with the direction arrow facing down.



Tightening - Torque Values

 TO 25900		
Products	Tightening Parts	Torque Value
Implant Cover Screw And Sinus Caps 	 TO 2024 Short (ratchet) TO 2025 Long (ratchet)  TO 2525I Manual Hex Driver	MANUAL/ Ratchet (If a ratchet is used, 10 Ncm)
Gingiva Former 		
Connection Screws of Peek Parts 		
All Cemented Abutment Screws 	 TO 2024 Short (ratchet) TO 2025 Long (ratchet)  TO 2525I Manual Hex Driver	Max. 30 Ncm
Cast Abutment Screws 		
Cad/Cam Ti-Base Abutment Screws 		

Tightening - Torque Values

 TO 25900		
Product	Tightening Parts	Torque Value
Ball Abutment 	 TO 25205 Ball Abutment Tightening Part	Max. 30 Ncm
Equator Abutment 	 774CHE Equator Abutment Tightening Part	Max. 30 Ncm
Multi Unit Straight Abutments 	 TO 25206 Multi Unit Abutment Tightening Part	Max. 30 Ncm
Multi Unit Angled (17° / 30°) Abutment Screws 	 TO 2024 Short (ratchet) TO 2025 Long (ratchet)	Max. 30 Ncm
Parts Installed on the Multi Unit 		Max. 10 Ncm
Occlusal Screws Attached to Prosthesis 		Max. 20 Ncm
Occlusal Screws Attached to Prosthesis 	 TO 25251 Manual Hex Driver	Max. 20 Ncm

Maintenance and Cleaning of Surgical Hand Tools

- Careful use of all tools is extremely important.
- Even the slightest damage to the ends of the drill adversely affects cutting performance and therefore the clinical outcome.
- Even if it is used correctly and clean, it should be taken into account that the cutting performance of the drill is reduced after a certain number of uses. (Maximum milling for NucleOSS drills is 15 times)
- Avoid contact with the ends of the drills on a hard surface other than the bone.
- Each surgical set piece should be used according to its purpose and method of use. Other uses may damage the part.
- Never allow surgical residues (blood, bone, etc.tissue residues) to dry on an tool, clean immediately after surgery.
- Clean thoroughly with only soft brushes so as not to cause wear and scratches on the tools. If necessary, remove the removable parts of the tools and clean the gaps.
- Never disinfect, clean (also ultrasound) or sterilize instruments made of different materials together.
- Use only cleaning agents and disinfectants for the material and follow the manufacturer's instructions for use.
- Rinse disinfectants and cleaning agents thoroughly with water.
- Never leave or store tools moist or wet.
- For more detailed information, please refer to the D006 NucleOSS Surgical Instruments User Manual for Cleaning and Disinfection of Surgical Instruments.

Sterilization

Şanlılar Medical Devices Med. Kim. San Tic. A. Ş. accepts no responsibility for devices initially delivered non-sterile, regardless of who performs the sterilization or by what method. Due to variations in conditions and environments, the ultimate responsibility for implementing and verifying procedures to achieve sterility rests with the user. Non-sterile surgical instruments should not be used under any circumstances.

Place properly cleaned and dried instruments into the designated slots inside the surgical set box. The surgical set is made of highly impact-resistant plastic materials suitable for autoclave sterilization. In clinical autoclaves, parts can be sterilized as a single piece without having to be removed from the box. Place the surgical set container in the autoclave bag.

Note: Do not stack boxes while performing the sterilization process, as this may affect sterilization effectiveness.

Sterilisation cycle recommended by Şanlılar Medical Devices :

Method	Moist heat sterilization according to ISO 17665:2024.
Cycle	Prevacuum
Temperature	134°C / 273.2°F
Exposure Time	3 Minutes
Basınç	2.2 bar
Pre-Vacum	3 times < 60 mbar
Minimum Drying Time	60 minutes in the enclosed chamber.

- Remove the surgical sets from the sterilizer after the cycle is complete, and place the tray on a padded surface to prevent condensation during cooling.

Note: Sterilization processes are validated in accordance with the current international standard, ISO 17665:2024.

Note: Manufacturer instructions for use for all detergents/cleaning solutions and/or equipment and accessories used in the cleaning and disinfection of the devices must be strictly followed.

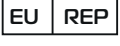
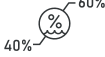
Storage Conditions and Symbol Explanations

Storage Instructions

After sterilization, store the devices in a dry, dark place, such as a closed cupboard or drawer.

Symbol Explanations

The symbols found on all Nucleoss products are as follows:

 Product catalog number	 Authorized representative	 Product lot number	 Unique device identifier
 Medical device	 Manufacturer country	 Manufacturer	 Read the user manual.
 Gamma sterilization	 Do not re-sterilize	 Don't reuse	 Not sterile
 Double sterile barrier system	 Humidity range	 Temperature range	 MR Conditional
 Distributor	 Dispersive	 Do not use if the packaging is damaged.	 Warnings
 Conformity European	 Model number	 For prescription use only.	 Contains hazardous materials
- The CE mark is the manufacturer's declaration that the product meets the requirements of the applicable Medical Device Regulation (MDR) (EU) 2017/745. - Where applicable: The identification number of the Notified Body shall follow this symbol.			

NucleOSS™



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