Surgical
Manual

PALTOP
A KeystoneDentalGroup Brand


PALTOP
PREMIUM SURGICAL KIT
PALTOP
PREMIUM SURGICAL KIT
KEYSTONE DENTAL
SHORT DRILLS
PILOT DRILL
LONG DRILLS
FINAL DRILLS
COUNTER SINKS
3.0
3.25
3.75
3.25 / 3.75
4.2
5.0
6.0
5.0 / 6.0
DRIVERS
Short
NP / RCA
1.25
2.0
2.5
Adapter
Adapter
Drill Extender
Driver 1.25
PARALLEL PINS
SPARE
5
8
10
11.5
13
16

Table of Contents

Product specifications are subject to change without notice.
Items illustrated are not to scale.

Surgical
Considerations

Caution

Federal law restricts this device to sale by or on the order of a dentist.

Warning

The guidelines presented herein are not adequate to allow inexperienced clinicians to administer professional implant treatment or prosthetic dentistry and are not intended to substitute for formal clinical or laboratory training. These devices should only be used by individuals with training and experience specific to their clinically accepted application.

- Small diameter implants and angled abutments are not recommended for use in the posterior region of the mouth.
- Do not use if package is damaged.

General Precautions

One hundred percent implant success can never be guaranteed. With respect to pediatric patients, routine treatment is not recommended until the end of the jaw bone growth has been properly documented. Pre-operative hard tissue or soft tissue deficits may yield a compromised esthetic result or unfavorable implant angulation. The device is intended for single use only. Reuse of the device may cause microbial contamination and loss of performance.

Precautions Pre-surgery

A careful clinical and radiological examination of the patient has to be performed prior to surgery to determine the psychological and physical status of the patient. Special attention has to be given to patients who have localized or systemic factors that could interfere with the healing process of either bone or soft tissue or the osseointegration process (e.g., cigarette smoking, uncontrolled diabetes, oro-facial radiotherapy, steroid therapy, infections in the neighboring bone). In general, implant placement and prosthetic design must accommodate individual patient conditions. In case of bruxism or unfavorable jaw relationships reappraisal of the treatment option may be considered.

Precautions at Surgery

Lack of adequate quantity and/or quality of remaining bone, infection and generalized diseases may be potential causes for failure of osseointegration both immediately after surgery, or after osseointegration is initially achieved. Besides the mandatory precautions for any surgery such as of asepsia, during drilling in the jaw bone one must avoid damage to nerves and vessels by referring to anatomical knowledge and preoperative radiographs. Failure to recognize actual lengths of step/twist drills relative to radiographic measurements or drilling beyond the depth intended can result in permanent injury to nerves or other vital structures, potentially resulting in permanent numbness to the lower lip and chin or leading to hemorrhage in the floor of the mouth.

Side-effects and interactions, complications with Paltop implants

Immediately after insertion of dental implants, activities that demand considerable physical exertion should be avoided. Possible complications following insertion of dental implants are:

Temporary symptoms - Pain, swelling, phonetic difficulties.

More persistent symptoms - Chronic pain in connection with the dental implant, permanent paresthesia, dysesthesia, loss of maxillary/mandibular ridge bone, localized or systemic

infection, oroantral or oronasal fistulae, unfavorably affected adjacent teeth, irreversible damage to adjacent teeth, fractures of implant, jaw, bone or prosthesis, esthetic problems, nerve damage, exfoliation, hyperplasia. It is recommended that the dental personnel brief the patients on the precautions to be taken, such as: abstinence from smoking and maintenance of dental hygiene.

Adverse events - Treatment by means of implants may lead to loss of bone, biologic or mechanical failures including fatigue fracture of implants.

Post-Operative Care

After surgery, the healing period depends on each patient's clinical condition (bone quality, bone quantity, initial stability, loading condition, etc.). Therefore, careful attention to the patient and their healing progress is needed. Advise the patient to avoid excessive masticatory pressure to the surgical site during the healing period (osseointegration period) and to maintain proper oral hygiene. Attach the product traceability sticker to the patient's chart to make it possible to trace the product to the patient. Before performing the next stage of surgery, check the implant's progress of osseointegration by x-ray image or other diagnostic such as ISQ.

Indications

The Paltop Dental Implant System is indicated for use in surgical and restorative applications for placement in the bone of the upper or lower jaw to provide support for prosthetic devices, such as artificial teeth, in order to restore the patient's chewing function. The Paltop Dental Implant System is indicated also for immediate loading when good primary stability is achieved and with appropriate occlusal loading.

The Paltop Narrow Implant is indicated for use in surgical and restorative applications for placement in the mandibular central, lateral incisor and maxillary lateral incisor regions of partially edentulous jaws where the horizontal space is limited by the adjacent teeth and roots, to provide support for prosthetic devices, such as artificial teeth, in order to restore the patient's chewing function. The Paltop Narrow Implant is indicated also for immediate loading when good primary stability is achieved and with appropriate occlusal loading.

The Paltop Conical Implant System is indicated for use in surgical and restorative applications for placement in the bone of the upper or lower jaw to provide support for prosthetic devices, such as artificial teeth, in order to restore the patient's chewing function. Narrow diameter implants are intended for placement in the mandibular central, lateral incisor and maxillary

lateral incisor regions of partially edentulous jaws where the horizontal space is limited by the adjacent teeth and roots, The Paltop Conical Implant System is also indicated for immediate loading when good primary stability is achieved and with appropriate occlusal loading.

Implant Description

Paltop dental implants are essentially a substitute for a natural root. Once fitted, these components are intended to provide the foundation for long-term support of crowns, bridges or dentures. The Paltop dental implants are screw-type implants with internal hexagonal connection, which are intended for single use. Each implant is accompanied by a standard cover screw. Paltop Dental Implant System components are not represented to be "pyrogen-free".

Surgical Guide

Available planning software provides both clinicians and technicians the ability to plan implant placement three-dimensionally in conjunction with CT scans. A surgical guide could aid in the site preparation and placement of implants.

Contraindications

Serious internal medical problems, bone metabolism disturbances, uncontrolled bleeding disorders, inadequate wound healing capacity, poor oral hygiene, maxillary and mandibular growth not completed, poor general state of health, uncooperative, unmotivated patient, drug or alcohol abuse, psychoses, prolonged therapy-resistant functional disorders, xerostomia, weakened immune system, illnesses requiring periodic use of steroids, titanium allergy, uncontrollable endocrine disorders.

Patients who are medically unfit for dental implant procedures. For titanium components: cases of hypersensitivity or patients who are allergic to one or more of the metals contained in the alloy.

Relative Contraindications

Previously irradiated bone, diabetes mellitus, anticoagulation drugs / hemorrhagic diatheses, bruxism, parafunctional habits, unfavorable anatomic bone conditions, tobacco abuse, uncontrolled periodontitis, temporomandibular joint disorders, treatable pathologic diseases of the jaw and changes in the oral mucosa, pregnancy, inadequate oral hygiene.

Local Contraindications

Inadequate bone volume and/or quality, local root remnants, in whom adequate sizes, numbers or desirable position of implants are not reachable to achieve safe support of functional or eventually parafunctional loads.

Narrow Platform: Placement of NP implants at angles which exceed 20° from vertical.
Maximum Implant Divergence Angle Table for use with Narrow Platform Multi-Unit Abutments

ABUTMENT A	ABUTMENT B	MAXIMUM IMPLANT DIVERGENCE ANGLE
0°	0°	0°#
17°	17°	40°*

#Straight NP abutments are only to be used with NP implants placed in a straight manner.
*Limited by 20° fatigue test for each NP implant/abutment construct.
Paltop Conical Implant System:
Placement of Conical narrow Ø3.25mm implants at angles which exceed 25° from vertical.
Placement of Conical Ø3.75mm or greater implants at angles which exceed 30° from vertical.

Bone Quality

While one method of classifying bone density is shown in the images below, different combinations of cortical and trabecular bone in varying thicknesses and densities can occur. These typically differ by jaw location. The clinician is responsible for assessing bone density of the surgical site and choosing the appropriate protocol.

D1 Bone

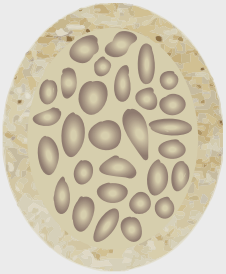
Cortical bone

D2 Bone

Cortical bone/trabecular

D3 Bone

Cortical bone/trabecular



D4 Bone

Cortical bone/trabecular

Implant Selection

Implant selection should be made with the final restorative result as the primary consideration. Selecting implants in this manner aids in maximizing biomechanical stability and proper contouring of the soft tissue. Choosing an implant with a slightly smaller platform than the emergence of the tooth being replaced will provide support of the soft tissue and optimize the esthetic result. Implant placement and healing cap selections should be based on the following:

- Emergence profile of the restoration in relation to the prosthetic platform diameter.
- Height and diameter of the crown as it emerges through the tissue.

Implant Packaging

Paltop dental implants are delivered sterile. The intact sterile packaging protects the gamma-sterilized implant from outside influences and, if stored correctly, ensures sterility up to the expiration date. When removing the implant from the sterile packaging, the rules of asepsis must be observed. The sterile packaging must not be opened until immediately prior to insertion of the implant. Implants with damaged sterile packaging must not be used due to risk of contamination. It is recommended to have a replacement implant on hand.

Implant Pick Up

Connect the Hex Key implant driver to the insertion instrument. Then pick up the implant from the inner sleeve by applying light pressure on the implant driver and carefully turn counter-clockwise until Hex Key implant driver is fully seated.

Implant Placement

The final implant position is at the discretion of the surgeon. Each case should be evaluated on the basis of placement, protocol and type of implant prior to osteotomy preparation. It is recommended to place a Paltop dental implant at bone level.

Cover Screw Pick Up

To remove the screw from the vial the Clinician holds the plastic cap and uses an appropriate sterile Paltop Hex Driver/Hex Key Ø1.25mm, and removes the cover screw by turning it counter-clockwise with the screwdriver.

Cleaning
and Sterilization

Instrument Care

Instruments must be cleaned and sterilized prior to first and after each use based on established procedures. Proper instrument care is an important part of successful implant dentistry.

General Cleaning Information

- Observe universal precautions for the handling of contaminated or biohazardous materials.
- Clean promptly after each use, to prevent biological fluids and tissues from drying on the instruments.
- When applicable, disassemble parts and instruments prior to cleaning.
- Do not rely solely on automatic cleaning. Thorough manual cleaning is required prior to automatic equipment and sterilization.

Pre-cleaning

- Used instruments should be soaked immediately in instrument cleaning solution to avoid the drying of blood, saliva and tissue residue.
- Used surgical trays including grommets must be cleaned with suitable disinfectants.
- Multiple-part instruments must be disassembled prior to cleaning and sterilization.
- Internal debris/residue of instruments must be removed with a soft brush.
- Instruments should be inspected, cleaned separately and discarded if damaged.

Principle Cleaning

- Best results are achieved if surgical instruments are cleaned by material type.
- Cleaning and rinsing must take place immediately after each use for best effect.
- Failure to clean promptly may result in adherent particles or dried secretions that may resist cleaning and complicate or resist future sterilization.
- Instruments must be completely cleaned and rinsed of all foreign matter. Use warm water and a commercially available instrument presoak or cleaning agent. Enzymatic cleaners should be used to remove protein deposits.

- Do not use corrosive cleaning agents (i.e., bleach). Cleaning solutions and rinses at or near a neutral pH (7.0) are best.
- Do not use abrasive cleaners.
- Only a soft bristle brush should be used.
- Rinse and maintain all parts and inaccessible areas like inside channels etc.
- Ultrasonic cleaners can be used. Check and retighten any fittings that may have vibrated loose.
- Can be disinfected in the washing machine up to 203°F (95°C).
- Rinse thoroughly with distilled water.
- Prepare for storage and / or sterilization.
- After cleaning and rinsing, dry instruments completely and carefully with compressed air (Highly inaccessible areas like inside channels etc. must be blown out).
- Instruments and trays can be cleaned and disinfected in a dedicated dishwasher or alternatively by hand, followed by an ultrasonic bath with a detergent appropriate for surgical instruments.
- Instruments and trays must be rinsed and dried thoroughly.

NOTE: After cleaning and before sterilization, treat all instruments with an oil which is considered as being physiologically safe (paraffin oil according to DAB 8 of Ph. Eur. USP XX), especially their blades, ends, stops, snaps and all movable parts.

Surgical Motor and Handpiece

Cleaning and maintenance instructions for W&H handpieces and motors can be found on www.wh.com.

Standard Sterilization Methods

The device may be delivered sterile or non-sterile. Please see indication on label. The device must be sterile before use. Tools may be steam-sterilized using Standard Sterilization Method: Steam sterilization (Gravity Displacement) for 10 minutes at 275°F (135°C).

Storage and Re-use

Instruments should be stored in a clean, dry moisture free area. The instruments should be stored individually in their shipping carton or in a protective tray with partitions. Protect tips with cloth, gauze or tubing if stored in drawers. Steam autoclave sterilization is recommended. Thoroughly clean instruments of all debris, tissue and foreign matter prior to sterilization. Follow the sterilizer manufacturer's instructions for operation and loading of steam autoclaves. There must be direct steam exposure to all surfaces of the instruments being sterilized including the internal surface and tubes channels. Allow instrument to air cool to room temperature before use.

Handling

All surgical/dental instruments should be handled with the greatest care when being transported, cleaned, treated, sterilized and stored. This is especially true for blades, fine points and other sensitive areas. Surgical/dental instruments corrode and their functions are impaired if they come into contact with aggressive materials. The instruments should not be exposed to acids or other aggressive cleaning agents.

Premium
Surgical Kit

Surgical Kit

The Paltop surgical kit must be cleaned and sterilized prior to use. For further information, please consult Paltop Instruction for Use.

- All surgical instruments provided in kits are non-sterile.
- All drills must be inspected for signs of wear, damage, or discoloration.

The drill markings and color-coding facilitate proper instrument selection. It is recommended to inspect the latch-lock shank after each use. Surgical instruments are susceptible to damage and wear and should be inspected before use. The number of uses per drill will vary and depends on a variety of factors including bone density, proper handling, and cleaning. It is recommended to replace drills after 20 osteotomies, as repeated sterilizations and use may affect cutting efficiency and color appearance.


PALTOP
PREMIUM SURGICAL KIT
KEYSTONE DENTAL
SHORT DRILLS
PILOT DRILL
LONG DRILLS
FINAL DRILLS
COUNTER SINKS
3.0
3.25
3.75
3.25 / 3.75
4.2
5.0
6.0
5.0 / 6.0
Short
Long
1.25
2.0
2.5
Adapter
Adapter
Drill Extender
Driver 1.25
PARALLEL PINS
SPARE
6
8
10
11.5
13
16

Premium Surgical Kit

Pilot Drill		**60-70020** Spade					
Step Drills Short		**60-70047** Ø1.5/Ø2.0 Short	**60-70049** Ø2.0/Ø2.4 Short	**60-70051** Ø2.4/Ø3.2 Short	**60-70053** Ø3.2/Ø3.8 Short	**60-70120** Ø3.8/Ø4.3 Short	
Step Drills Long		**60-70048** Ø1.5/Ø2.0 Long	**60-70050** Ø2.0/Ø2.4 Long	**60-70052** Ø2.4/Ø3.2 Long	**60-70054** Ø3.2/Ø3.8 Long	**60-70121** Ø3.8/Ø4.3 Long	
Final Drills		**60-70147** Ø3mm Long	**60-70035** Ø3.25mm Long	**60-70037** Ø3.75mm Long	**60-70039** Ø4.2mm Long	**60-70041** Ø5mm Long	**60-70098** Ø6mm Long
Countersinks		**60-70145** Ø3.25mm Ø3.75mm	**60-70144** Ø4.2mm	**60-70143** Ø5mm Ø6mm			
Key Ratchet Adapter		**60-70100** 2 Per Kit					
Drill Extender		**60-70019**					

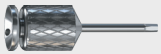
Hex Keys

60-70101	60-70105	60-70103	60-70102	60-70106	60-70104
Ø1.25mm Long	Ø2mm Long	Ø2.5mm Long	Ø1.25mm Short	Ø2mm Short	Ø2.5mm Short

Parallel Pins

60-70015
Ø1.5/2mm
4 Pack

Manual Hex Driver



60-70006

Torque Ratchet

60-70079
Bending Beam

Drill Depth Probe

60-70073

Hand Piece

60-70014

Drill Stop Kit

60-70230

Paltop Surgical Instruments are reusable and should be replaced after being used up to 20 times, or prior to that if cutting efficiency declines.

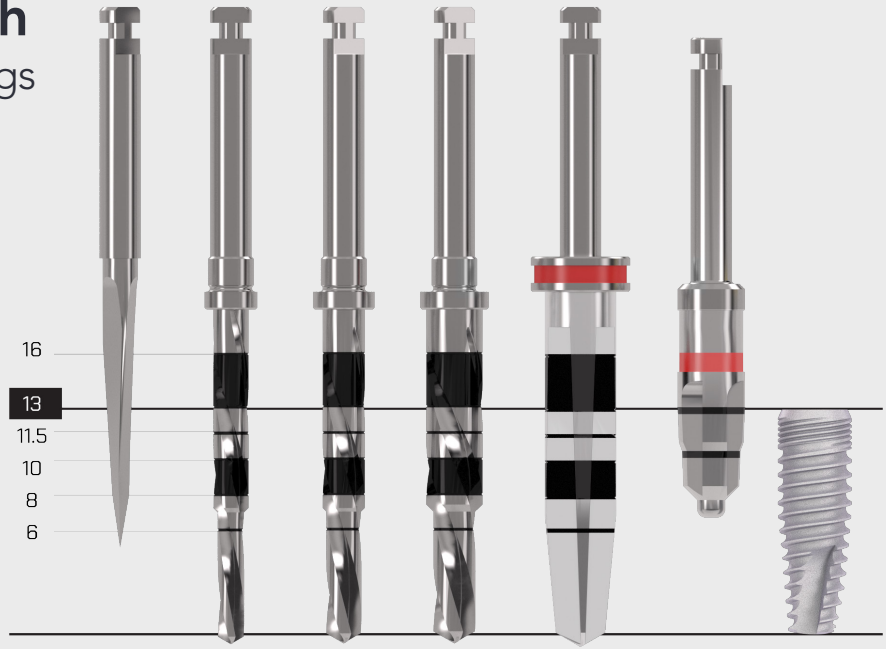
Surgical
Sequence

Drilling and Countersink Procedures

The Final Drills are designed to collect bone. During surgery, it is recommended to remove the collected bone from the drill before proceeding to the final depth marking. This will reduce the downward force applied to the handpiece.

- In certain instances, countersinking is recommended.
- It is recommended to avoid lateral pressure during drilling and countersinking as the resulting osteotomy may be oversized and/or redirected.
- When using the Final Drills, it is not recommended to use an in-and-out technique as this may inadvertently enlarge the site.

Depth
Markings



Surgical
Sequence

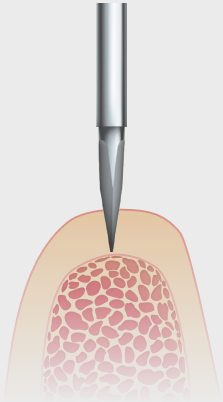
Dynamic Ø4.2mm x 11.5mm

D1-D2 Bone

(For demonstration purposes)

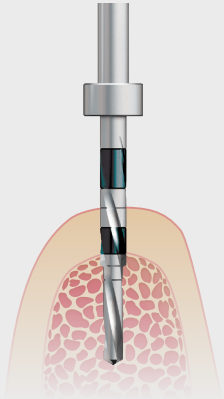
Step 1

When using a flap procedure, an incision of the appropriate design is made and the flap is elevated. Pilot Drill Spade is used to create a crestal starting point and should be used before initial Step Drill and should be inserted to desired length at 1,200 – 1,500 rpm.



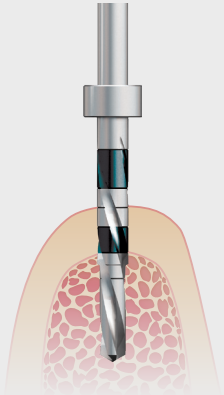
Step 2 (Optional)

Optional 1.5/2.0 mm Step Drill is used to enlarge the initial osteotomy site to Ø 2.0 mm at 900 - 1,100 rpm. This preparation guides the next Step Drill Ø 2.0 mm/2.4 mm to ensure proper osteotomy width.



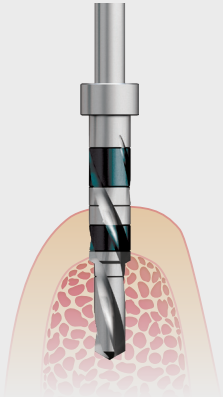
Step 3

Ø 2.0 mm/2.4 mm Step Drill is used to enlarge the osteotomy site to Ø 2.4 mm at 700 – 900 rpm. This preparation guides the next Step Drill Ø 2.4/3.2 mm to enlarge osteotomy site to Ø 3.2 mm.



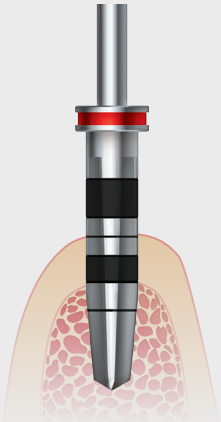
Step 4

The osteotomy is further widened with the Ø 2.4/3.2 mm Step Drill to the required depth at 500 - 700 rpm.



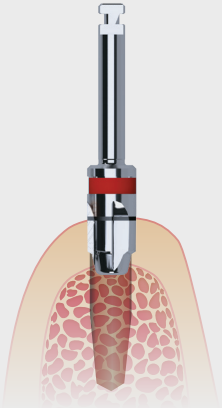
Step 5

Use a Ø 5.0 mm Final Drill to 6mm depth OR a Ø 4.2 mm Countersink can be used at 400 – 850 rpm.



Step 6

Countersink Drill is available in very dense bone and should be inserted to the laser mark at 400 – 850 rpm to prepare the coronal area. Over-preparation of the osteotomy with the Countersink Drill must be avoided. It is not recommended to countersink in soft bone.



Step 7

Non-sterile dental assistant removes the plastic shrink packaging from the vial. Non-sterile dental assistant grasps the outer vial and opens the sealed cap by twisting in the counter-clockwise direction and lifting the cap away. The assistant removes the outer vial cap, without touching the inner sleeve and cap.

Step 8

Assistant tips the outer vial so that the inner sleeve and cap fall onto the sterile surgical field (tray); the implant is protected by the sleeve. Clinician (sterile) grips the inner sleeve and does not come into contact with the outer vial. Clinician removes the inner plastic cap and places it on the surgical field with the plastic side down and the cover screw side up.

Step 9

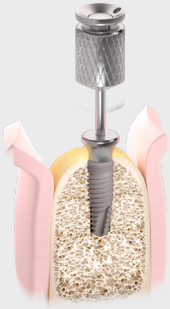
Implant Insertion

Hold the inner sleeve, and use Hex Key Implant driver to pick up sterile implant from the sleeve and place by either a handpiece or ratchet. Finalize the insertion of the implant by engaging the Implant Driver into the Ratchet.

Step 10

Single-Stage Surgery

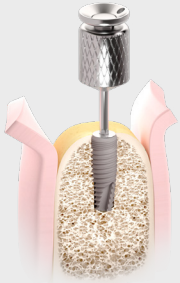
In a single-stage surgery the Healing Cap is placed with a 1.25mm (.050) Hex Key to help contour the soft tissue during the healing phase. The flap margins are positioned around the Healing Cap and sutured in a tension-free manner.



Step 11

Two-Stage Surgery

In a two-stage surgery the Cover Screw is placed with a 1.25mm (.050) Hex Key and the flap margins are repositioned and sutured in a tension-free manner.



Torque Value Reference Table Available on Page 63

ADVANCED CLASSIC ADVANCED+ SLIGHTLY ACTIVE APEX PCA

Drilling Sequence

Drill Speed Chart

Type/Size (mm) of Drill	Spade Drill	Step Drills				Final Drills			
		Ø2.0 /Ø1.5	Ø2.4 / Ø2.0	Ø3.2 / Ø2.4	Ø3.8 / Ø3.2	Ø3.25	Ø3.75	Ø4.2	Ø5.0
Speed RPM	1200 - 1500	900 - 1100	700 - 900	500 - 700	400 - 600	400 - 850			

Recommended implant insertion torque is 30 - 50 Ncm.

If the insertion torque exceeds 50 Ncm consider reducing the pressure caused by high insertion torque by:

1. Reversing the implant 2-3 rotations, and then reinserting to the appropriate height
2. Remove the implant and countersink or tap the osteotomy and then reinsert the implant. (If the implant is removed, reinsert it into its titanium vial during the countersinking/tapping procedure)

*You may need to countersink if there is dense cortical bone.

**Optional

NOTE: Due to the individuality of the patient's condition, the doctor must use his clinical judgment and expertise in choosing the right protocol.

ADVANCED CLASSIC | ADVANCED+ SLIGHTLY ACTIVE APEX | PCA

D1 Type Bone

3.0 mm	**Pilot Drill**	**Step Drill** Ø2.0 /Ø1.5	**Final Drill** Ø 3.0	**Implant**						
3.25 mm	**Pilot Drill**	**Step Drill** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.25	**Final Drill** Ø3.75 *(Drill to 6mm)*	OR **Countersink** Ø3.25 mm & 3.75 mm	**Implant**			
3.75 mm	**Pilot Drill**	**Step Drill** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Final Drill** Ø3.75	**Final Drill** Ø4.2 *(Drill to 6mm)*	OR **Countersink** Ø3.25 mm & 3.75 mm	**Implant**		
4.2 mm	**Pilot Drill**	**Step Drill** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Step Drill** Ø3.8 / Ø3.2	**Final Drill** Ø4.2	**Final Drill** Ø 5.0 *(Drill to 6mm)*	OR **Countersink** Ø 4.2 mm	**Implant**	
5.0 mm	**Pilot Drill**	**Step Drill** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Step Drill** Ø3.8 / Ø3.2	**Step Drill** Ø4.3 /Ø3.8	**Final Drill** Ø5.0	**Countersink** Ø5.0	**Implant**	
6.0 mm	**Pilot Drill**	**Step Drill** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Step Drill** Ø3.8 / Ø3.2	**Step Drill** Ø4.3 / Ø3.8	**Step Drill** Ø 5.3 / Ø4.3	**Final Drill** Ø6.0	**Countersink** Ø6.0	**Implant**

Countersink
3.25 mm - Drill to First Line
3.75 mm - Drill to Second Line
4.2 mm - Drill to First Line
5.0 mm - Drill to First Line
6.0 mm - Drill to Second Line

ADVANCED CLASSIC | ADVANCED+ SLIGHTLY ACTIVE APEX | PCA

D1-D2 Type Bone

3.0 mm	**Pilot Drill**	**Step Drill** Ø2.0 /Ø1.5	**Final Drill** Ø3.0	**Implant**					
3.25 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Final Drill** Ø3.25	**Final Drill** Ø3.75 *(Drill to 6mm)*	OR **Countersink** Ø3.25 mm & Ø3.75 mm	**Implant**			
3.75 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.75	**Final Drill** Ø4.2 *(Drill to 6mm)*	OR **Countersink** Ø3.25 mm & Ø3.75 mm	**Implant**		
4.2 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Final Drill** Ø4.2	OR **Final Drill** Ø 5.0 *(Drill to 6mm)*	**Countersink** Ø 4.2 mm	**Implant**	
5.0 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Step Drill** Ø3.8 / Ø3.2	**Final Drill** Ø 5.0	**Countersink** Ø 5.0 mm	**Implant**	
6.0 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Step Drill** Ø3.8 / Ø3.2	**Step Drill** Ø4.3 / Ø3.8	**Final Drill** Ø 6.0	**Countersink** Ø 6.0 mm	**Implant**

Countersink
3.25 mm - Drill to First Line
3.75 mm - Drill to Second Line
4.2 mm - Drill to First Line
5.0 mm - Drill to First Line
6.0 mm - Drill to Second Line

ADVANCED CLASSIC | ADVANCED+ SLIGHTLY ACTIVE APEX | PCA

D3-D4 Type Bone

3.0 mm	**Pilot Drill**	**Step Drill** Ø2.0 /Ø1.5	**Final Drill** Ø3.0 *(D4 Optional)*	**Implant**					
3.25 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Final Drill** Ø3.25 *(D4 Optional)*	**Final Drill** Ø3.75 *(Drill to 6mm)* OR	**Countersink*** Ø3.25 mm & 3.75 mm	**Implant**			
3.75 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.75 *(D4 Optional)*	**Final Drill**** Ø4.2 *(Drill to 6mm)* OR	**Countersink*** Ø3.25 mm & 3.75 mm	**Implant**		
4.2 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Final Drill** Ø4.2 *(D4 Optional)*	**Final Drill**** Ø 5.0 *(Drill to 6mm)* OR	**Countersink*** Ø 4.2 mm	**Implant**	
5.0 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Step Drill** Ø3.8 / Ø3.2	**Final Drill** Ø 5.0 *(D4 Optional)*	**Countersink**** Ø 5.0 mm	**Implant**	
6.0 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Step Drill** Ø3.8 / Ø3.2	**Step Drill** Ø4.3 / Ø3.8	**Final Drill** Ø 6.0 *(D4 Optional)*	**Countersink*,**** Ø 6.0 mm	**Implant**

Countersink
- **3.25 mm** - Drill to First Line
- **3.75 mm** - Drill to Second Line
- **4.2 mm** - Drill to First Line
- **5.0 mm** - Drill to First Line
- **6.0 mm** - Drill to Second Line

Drilling Sequence

Drill Speed Chart

Type/Size (mm) of Drill	Spade Drill	Step Drills				Final Drills			
		Ø2.0 /Ø1.5	Ø2.4 / Ø2.0	Ø3.2 / Ø2.4	Ø3.8 / Ø3.2	Ø3.25	Ø3.75	Ø4.2	Ø5.0
Speed RPM	1200 - 1500	900 - 1100	700 - 900	500 - 700	400 - 600	400 - 850			

Recommended implant insertion torque is 30 - 50 Ncm.

If the insertion torque exceeds 50 Ncm consider reducing the pressure caused by high insertion torque by:

1. Reversing the implant 2-3 rotations, and then reinserting to the appropriate height
2. Remove the implant and countersink or tap the osteotomy and then reinsert the implant. (If the implant is removed, reinsert it into its titanium vial during the countersinking/tapping procedure)

***You may need to countersink if there is dense cortical bone.

****Optional

NOTE: Due to the individuality of the patient's condition, the doctor must use his clinical judgment and expertise in choosing the right protocol.

ENHANCED STABILITY Dynamic Dynamic CONICAL

D1 Type Bone

3.0 mm	**Pilot Drill**	**Step Drill** Ø2.0 /Ø1.5	**Final Drill** Ø 3.0	**Implant**						
3.25 mm	**Pilot Drill**	**Step Drill** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.25	**Final Drill** Ø3.75	OR	**Countersink** Ø3.25 mm & 3.75 mm	**Implant**		
3.75 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Final Drill** Ø3.75	**Final Drill** Ø4.2	OR	**Countersink** Ø3.25 mm & 3.75 mm	**Implant**	
4.2 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Step Drill** Ø3.8 / Ø3.2	**Final Drill** Ø4.2	**Final Drill** Ø 5.0	OR	**Countersink** Ø 4.2 mm	**Implant**
5.0 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Step Drill** Ø3.8 / Ø3.2	**Step Drill** Ø4.3 /Ø3.8	**Final Drill** Ø5.0	**Countersink** Ø5.0	**Implant**	
6.0 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Step Drill** Ø3.8 / Ø3.2	**Step Drill** Ø4.3 / Ø3.8	**Step Drill** Ø 5.3 / Ø4.3	**Final Drill** Ø6.0	**Countersink** Ø6.0	**Implant**

Countersink
3.25 mm - Drill to First Line
3.75 mm - Drill to Second Line
4.2 mm - Drill to First Line
5.0 mm - Drill to First Line
6.0 mm - Drill to Second Line

ENHANCED STABILITY Dynamic Dynamic CONICAL

D1-D2 Type Bone

3.0 mm	**Pilot Drill**	**Step Drill** Ø2.0 /Ø1.5	**Implant**					
3.25 mm	**Pilot Drill**	**Step Drill** Ø2.0 /Ø1.5	**Final Drill** Ø3.75 OR	**Countersink** Ø3.25 mm & 3.75 mm	**Implant**			
3.75 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø4.2 OR	**Countersink** Ø3.25 mm & 3.75 mm	**Implant**		
4.2 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Final Drill** Ø 5.0 OR	**Countersink** Ø 4.2 mm	**Implant**	
5.0 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Step Drill** Ø3.8 / Ø3.2	**Countersink** Ø5.0	**Implant**	
6.0 mm	**Pilot Drill**	**Step Drill**** Ø2.0 /Ø1.5	**Step Drill** Ø2.4 / Ø2.0	**Step Drill** Ø3.2 / Ø2.4	**Step Drill** Ø3.8 / Ø3.2	**Step Drill** Ø4.3 / Ø3.8	**Countersink** Ø6.0	**Implant**

Countersink

3.25 mm - Drill to First Line

3.75 mm - Drill to Second Line

4.2 mm - Drill to First Line

5.0 mm - Drill to First Line

6.0 mm - Drill to Second Line

ENHANCED STABILITY Dynamic Dynamic CONICAL

D3-D4 Type Bone

3.0 mm	Pilot Drill	Step Drill Ø2.0 /Ø1.5	Implant				
3.25 mm	Pilot Drill	Step Drill Ø2.0 /Ø1.5	Implant				
3.75 mm	Pilot Drill	Step Drill* Ø2.0 /Ø1.5	Step Drill Ø2.4 / Ø2.0	Implant			
4.2 mm	Pilot Drill	Step Drill* Ø2.0 /Ø1.5	Step Drill Ø2.4 / Ø2.0	Step Drill Ø3.2 / Ø2.4	Implant		
5.0 mm	Pilot Drill	Step Drill* Ø2.0 /Ø1.5	Step Drill Ø2.4 / Ø2.0	Step Drill Ø3.2 / Ø2.4	Step Drill Ø3.8 / Ø3.2	Implant	
6.0 mm	Pilot Drill	Step Drill* Ø2.0 /Ø1.5	Step Drill Ø2.4 / Ø2.0	Step Drill Ø3.2 / Ø2.4	Step Drill Ø3.8 / Ø3.2	Step Drill Ø4.3 / Ø3.8	Implant

Countersink

3.25 mm - Drill to First Line
3.75 mm - Drill to Second Line
4.2 mm - Drill to First Line
5.0 mm - Drill to First Line
6.0 mm - Drill to Second Line

Drilling Sequence

Drill Speed Chart

Type/Size (mm) of Drill	Spade Drill	Step Drills				Final Drills			
		Ø2.0 /Ø1.5	Ø2.4 / Ø2.0	Ø3.2 / Ø2.4	Ø3.8 / Ø3.2	Ø3.25	Ø3.75	Ø4.2	Ø5.0
Speed RPM	1200 - 1500	900 - 1100	700 - 900	500 - 700	400 - 600	400 - 850			

Recommended implant insertion torque is 30 - 50 Ncm.

If the insertion torque exceeds 50 Ncm consider reducing the pressure caused by high insertion torque by:

1. Reversing the implant 2-3 rotations, and then reinserting to the appropriate height
2. Remove the implant and countersink or tap the osteotomy and then reinsert the implant. (If the implant is removed, reinsert it into its titanium vial during the countersinking/tapping procedure)

*You may need to countersink if there is dense cortical bone.

**Optional

NOTE: Due to the individuality of the patient's condition, the doctor must use his clinical judgment and expertise in choosing the right protocol.

PALTOP ACTIVE IMPLANT

PALTOP ACTIVE IMPLANT TC

D1-D2 Type Bone

3.25 mm	**Pilot Drill**	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.25	**Implant**				
3.75 mm	**Pilot Drill**	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.25	**Final Drill** Ø3.75	**Implant**			
4.2 mm	**Pilot Drill**	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.25	**Final Drill** Ø3.75	**Final Drill** Ø4.2	**Implant**		
5.0 mm	**Pilot Drill**	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.25	**Final Drill** Ø3.75	**Final Drill** Ø4.2	**Final Drill** Ø5.0	**Implant**	
6.0 mm	**Pilot Drill**	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.25	**Final Drill** Ø3.75	**Final Drill** Ø4.2	**Final Drill** Ø5.0	**Final Drill** Ø6.0	**Implant**

Countersink

3.25 mm - Drill to First Line

3.75 mm - Drill to Second Line

4.2 mm - Drill to First Line

5.0 mm - Drill to First Line

6.0 mm - Drill to Second Line

PALTOP ACTIVE IMPLANT

PALTOP ACTIVE IMPLANT TC

D3-D4 Type Bone

3.25 mm	**Pilot Drill**	**Step Drill** Ø2.4 / Ø2.0	**Implant**				
3.75 mm	**Pilot Drill**	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.25	**Implant**			
4.2 mm	**Pilot Drill**	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.25	**Final Drill** Ø3.75	**Implant**		
5.0 mm	**Pilot Drill**	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.25	**Final Drill** Ø3.75	**Final Drill** Ø4.2	**Implant**	
6.0 mm	**Pilot Drill**	**Step Drill** Ø2.4 / Ø2.0	**Final Drill** Ø3.25	**Final Drill** Ø3.75	**Final Drill** Ø4.2	**Final Drill** Ø5.0	**Implant**

Countersink

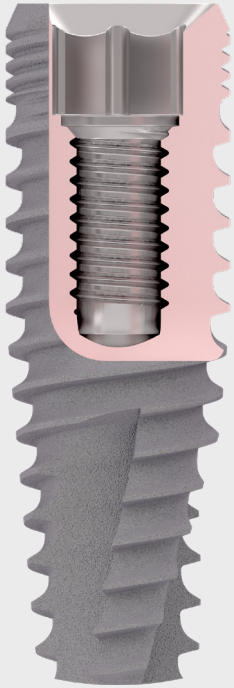
3.25 mm - Drill to First Line
3.75 mm - Drill to Second Line
4.2 mm - Drill to First Line
5.0 mm - Drill to First Line
6.0 mm - Drill to Second Line

Connection
Characteristics

Internal Hex

Advanced, Advanced+, Dynamic, PAI, PAI TC
Implant diameters and lengths vary depending on implant body type

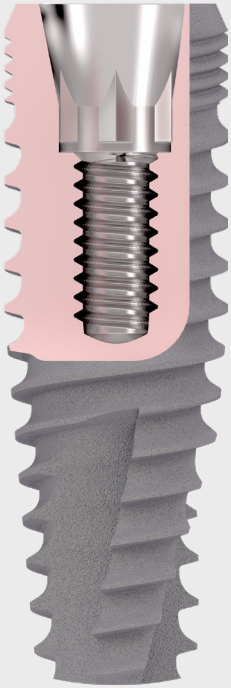
Ø 3.0 mm (only in Advanced, Advanced+ and Dynamic) can be restored with Narrow Platform prosthetic components.
Ø 3.25 mm Paltop implants can be restored with Narrow Platform prosthetic components.
Ø 3.75 mm, Ø 4.2 mm and Ø 5.0 mm Paltop implants can be restored with Standard Diameter prosthetic components.
Ø 6.0 mm Paltop implants can be restored with Wide Diameter prosthetic components.



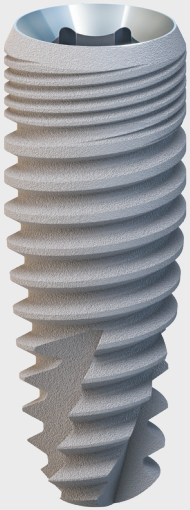
Conical

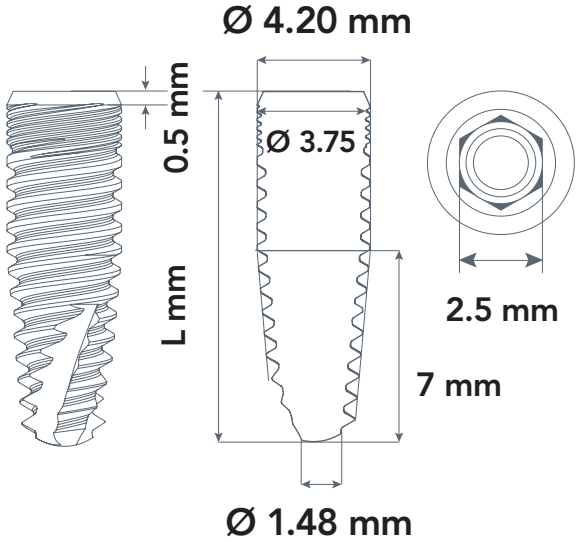
Dynamic Conical, PCA
Implant diameters and lengths vary depending on implant body type

One platform for all diameters. The same prosthetic components and screws can be used for all Conical Connection implant diameters
(Ø 3.25mm, Ø 3.75mm, Ø 4.2mm and Ø 5.0mm)



ADVANCED
CLASSIC

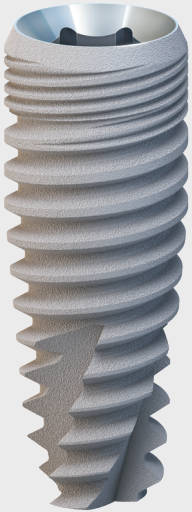


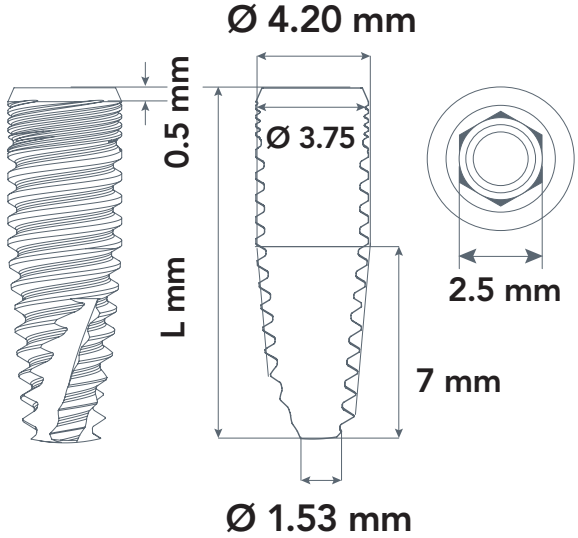


IH	NP	SP		
	⌀ 3.25 mm	⌀ 3.75 mm	⌀ 4.2 mm	⌀ 5.0 mm
6.0 mm	—	—	20-70005	20-70011
8.0 mm	—	20-70017	20-70006	20-70012
10.0 mm	20-70018	20-70001	20-70007	20-70013
11.5 mm	20-70019	20-70002	20-70008	20-70014
13.0 mm	20-70020	20-70003	20-70009	20-70015
16.0 mm	20-70021	20-70004	20-70010	20-70016

Paltop dental implants are made of biocompatible TI 6AL 4V ELI and have a large grit sandblasted, acid-etched surface.

ADVANCED+
SLIGHTLY ACTIVE APEX



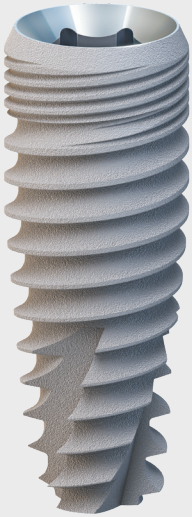


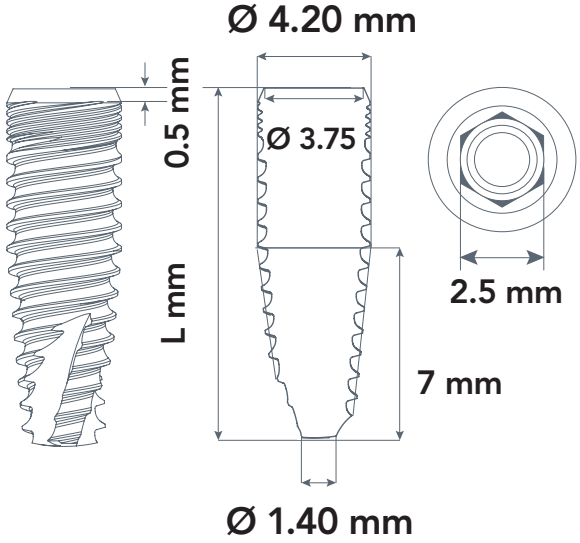
IH	NP		SP			WP
	⌀ 3.0 mm	⌀ 3.25 mm	⌀ 3.75 mm	⌀ 4.2 mm	⌀ 5.0 mm	⌀ 6.0 mm
6.0 mm	—	—	—	20-70005P*	20-70011P*	20-70022P*
8.0 mm	—	—	20-70017P	20-70006P	20-70012P	20-70023P
10.0 mm	20-70034P	20-70018P	20-70001P	20-70007P	20-70013P	20-70024P
11.5 mm	20-70035P	20-70019P	20-70002P	20-70008P	20-70014P	20-70025P
13.0 mm	20-70036P	20-70020P	20-70003P	20-70009P	20-70015P	20-70026P
16.0 mm	20-70037P	20-70021P	20-70004P	20-70010P	20-70016P	20-70027P

Paltop dental implants are made of biocompatible TI 6AL 4V ELI and have a large grit sandblasted, acid-etched surface.

***Disclaimer: Some products are not available for sale in all markets including the USA.**

ENHANCED STABILITY
Dynamic





IH	NP		SP			WP
	∅ 3.0 mm	∅ 3.25 mm	∅ 3.75 mm	∅ 4.2 mm	∅ 5.0 mm	∅ 6.0 mm
6.0 mm	—	—	—	21-70005*	21-70011*	21-70022*
8.0 mm	—	—	21-70017	21-70006	21-70012	21-70023
10.0 mm	21-70034	21-70018	21-70001	21-70007	21-70013	21-70024
11.5 mm	21-70035	21-70019	21-70002	21-70008	21-70014	21-70025
13.0 mm	21-70036	21-70020	21-70003	21-70009	21-70015	21-70026
16.0 mm	21-70037	21-70021	21-70004	21-70010	21-70016	21-70027

Paltop dental implants are made of biocompatible TI 6AL 4V ELI and have a large grit sandblasted, acid-etched surface.

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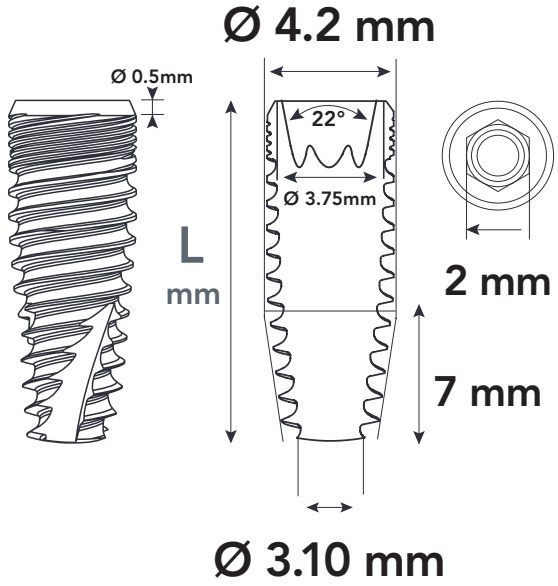
Dynamic CONICAL

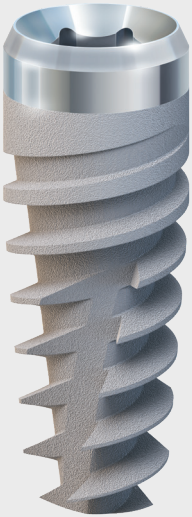


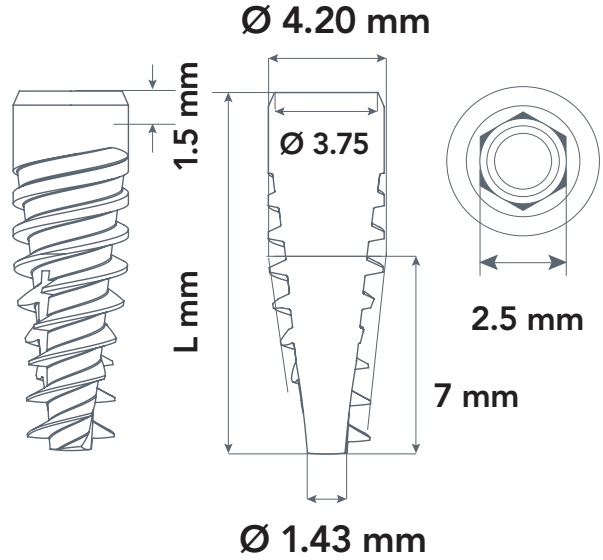
CC	CP			
	⌀ 3.25 mm	⌀ 3.75 mm	⌀ 4.2 mm	⌀ 5.0 mm
6.0 mm	—	—	24-70005*	24-70011*
8.0 mm	—	24-70017	24-70006	24-70012
10.0 mm	24-70018	24-70001	24-70007	24-70013
11.5 mm	24-70019	24-70002	24-70008	24-70014
13.0 mm	24-70020	24-70003	24-70009	24-70015
16.0 mm	24-70021	24-70004	24-70010	24-70016

Paltop dental implants are made of biocompatible TI 6AL 4V ELI and have a large grit sandblasted, acid-etched surface. Dynamic Conical with .8mm machined collar available soon.

***Disclaimer: Some products are not available for sale in all markets including the USA.**

PALTOP ACTIVE IMPLANT

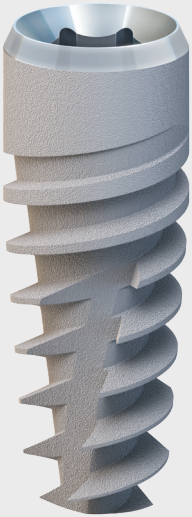


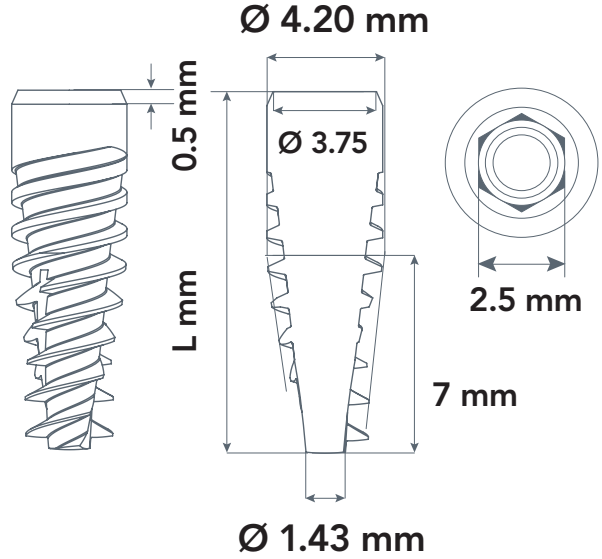


IH	NP	SP			WP
	⌀ 3.25 mm	⌀ 3.75 mm	⌀ 4.2 mm	⌀ 5.0 mm	⌀ 6.0 mm
6.0 mm	—	—	29-70005	29-70011	29-70022
8.0 mm	—	29-70017	29-70006	29-70012	29-70023
10.0 mm	29-70018	29-70001	29-70007	29-70013	29-70024
11.5 mm	29-70019	29-70002	29-70008	29-70014	29-70025
13.0 mm	29-70020	29-70003	29-70009	29-70015	29-70026
16.0 mm	29-70021	29-70004	29-70010	29-70016	29-70027

Paltop dental implants are made of biocompatible TI 6AL 4V ELI and have a large grit sandblasted, acid-etched surface.

PALTOP ACTIVE IMPLANT

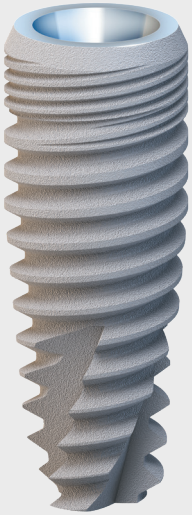


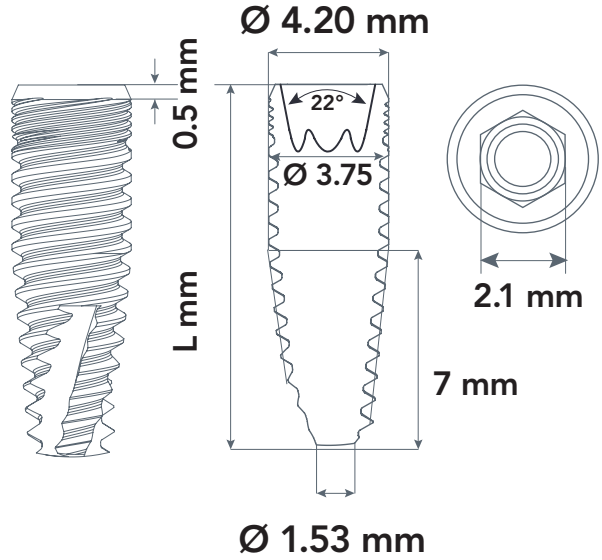


IH	NP	SP			WP
	⌀ 3.25 mm	⌀ 3.75 mm	⌀ 4.2 mm	⌀ 5.0 mm	⌀ 6.0 mm
6.0 mm	—	—	29-70005TC	29-70011TC	29-70022TC
8.0 mm	—	29-70017TC	29-70006TC	29-70012TC	29-70023TC
10.0 mm	29-70018TC	29-70001TC	29-70007TC	29-70013TC	29-70024TC
11.5 mm	29-70019TC	29-70002TC	29-70008TC	29-70014TC	29-70025TC
13.0 mm	29-70020TC	29-70003TC	29-70009TC	29-70015TC	29-70026TC
16.0 mm	29-70021TC	29-70004TC	29-70010TC	29-70016TC	29-70027TC

Paltop dental implants are made of biocompatible TI 6AL 4V ELI and have a large grit sandblasted, acid-etched surface.

PCA





CC	CP			
	⌀ 3.25 mm	⌀ 3.75 mm	⌀ 4.2 mm	⌀ 5.0 mm
8.0 mm	—	22-70017	22-70006	22-70012
10.0 mm	22-70018	22-70001	22-70007	22-70013
11.5 mm	22-70019	22-70002	22-70008	22-70014
13.0 mm	22-70020	22-70003	22-70009	22-70015
16.0 mm	22-70021	22-70004	22-70010	22-70016

Paltop dental implants are made of biocompatible TI 6AL 4V ELI and have a large grit sandblasted, acid-etched surface.

MRI SAFETY INFORMATION - MR CONDITIONAL

Warning: The RF safety of the device has not been tested. The patient may only be imaged by landmarking at least 30 cm from the implant, or ensuring the implant is located outside of the RF coil. A patient with a Paltop Dental Implant System device can be scanned safely in an MR system under the following conditions:

For MR patient safety card please visit:
KeystoneDental.com/pages/mr

DEVICE NAME	PALTOP DENTAL IMPLANT SYSTEM
Static Magnetic Field Strength (B0)	≤ 3.0T
Maximum Spatial Field Gradient	17 T/m (1700 gauss/cm)
RF Excitation	Circularly Polarized (CP)
RF Transmit Coil Type	For body transmit coil, landmarking at least 30 cm from the implant, or ensuring the implant is located outside of the coil. Extremity T/R coils permitted. Includes Head T/R coil.
Operating Mode	Normal Operating Mode in the allowed imaging zone
Maximum Whole-Body SAR	2 W/kg (Normal Operating Mode)
Maximum Head SAR	Not evaluated for head landmark
Scan Duration	No specific constraints due to implant heating

PROSTHETIC	TORQUE
Healing Cap, MUA/SUA Healing Cap PEEK Temporary Abutment, NP/SP Temporary Abutment, Immediate (Gelb) Cover Screw Impression Coping Screw	15
Multi-Unit Prosthetic Screw*	20
Titanium Temporary Abutments NP*	25
Titanium Temporary Abutments SP/WP/Conical* Straight Multi-Unit Abutments Single-Unit Abutments Paltop Equator Abutments Ball Abutments Abutment Screw, NP/SP/WP/Conical (for Titanium/Cobalt Chrome/Gold/SAS Abutment) Multi-Unit Abutment Screw for Angulated	30

*Any temporary abutment/cylinder placed at time of implant placement, the clinician should use best clinical judgement on lowering indicated torque value.

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Caution, consult accompanying documents.

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