

# T3<sup>®</sup> Short Implants

Implants & Instrumentation



# Implant Treatment Options for Vertical Height Deficiencies

The T3 Short Implant's length and features are designed to provide an implant treatment option in some challenging clinical cases where the bone height is insufficient for standard length implants

## The Clinical Challenge:

In areas with minimal bone height, providing implant treatment may require complex surgical procedures, such as:

- A sinus lift procedure in the maxilla
- Vertical ridge augmentation in the mandible due to the proximity to the mandibular nerve

## Clinical Case By: Dr. Stavros Pelekanos,<sup>†</sup> Athens, Greece.

A 32-year-old male patient presented with diminished bone height under the sinus secondary to a fractured root and extraction of the maxillary left first molar eight weeks prior to surgery.



Fig. 1: Minimal bone height under the maxillary sinus.

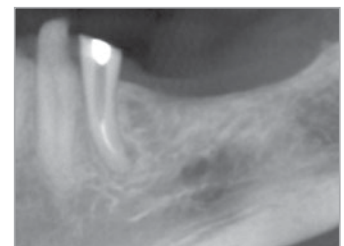


Fig. 2: Reduced vertical bone height above the inferior alveolar nerve canal.

## Clinical Treatment By: Dr. Stefano Sivoilella, Padova, Italy.

A 60-year-old female patient presented with a hopeless first molar due to caries, root resorption and severe alveolar bone loss as a result of generalized periodontitis; the inferior alveolar nerve was in close proximity (approximately 7.0 mm).



Fig. 1: Preoperative periapical radiograph showing missing tooth number 14 [26].



Fig. 2: A 6.0 mmD x 6.0 mmL T3 Short Implant and healing abutment was placed in a single-stage protocol.



Fig. 1: Preoperative periapical radiograph showing hopeless tooth number 30 [46].

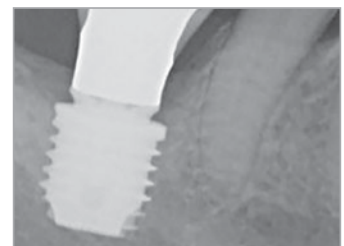


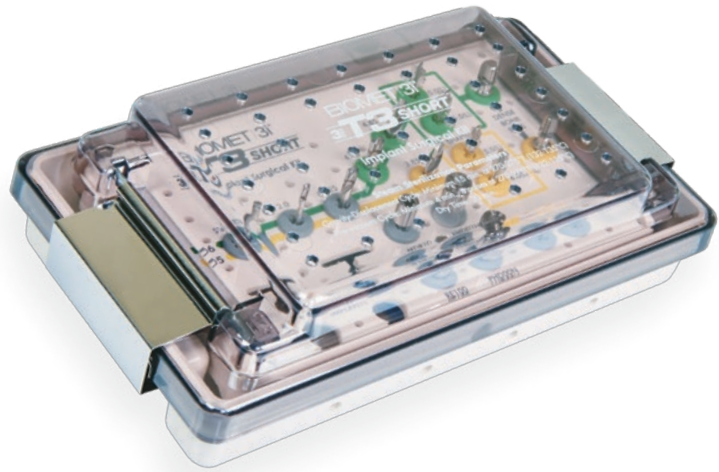
Fig. 2: A 6.0 mmD x 6.0 mmL T3 Short Implant and definitive crown inserted at nine months post-implant placement.



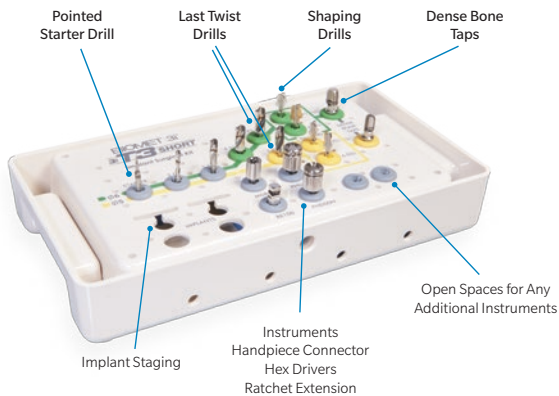
<sup>†</sup>Drs. Pelekanos and Sivoilella have, or in the last 2 years had, financial relationships with Zimmer Biomet Dental resulting from speaking engagements, consulting engagements and other retained services.

## Surgical Kit

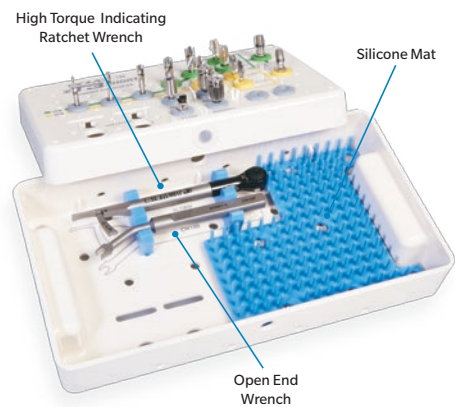
- Everything needed to place a T3 Short Implant in one compact kit
- Instrumentation specific to the T3 Short Implants
- The drilling sequence undersizes the osteotomy in diameter by 1.15 mm
- 5.0 mm diameter implants: **Yellow Path**
- 6.0 mm diameter implants: **Green Path**



## Kit Insert



## Kit Bottom Tray

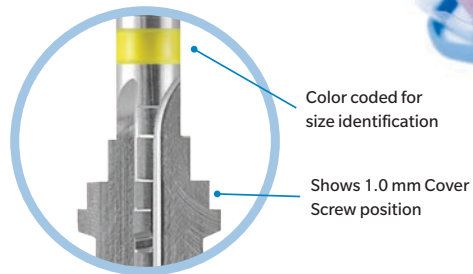
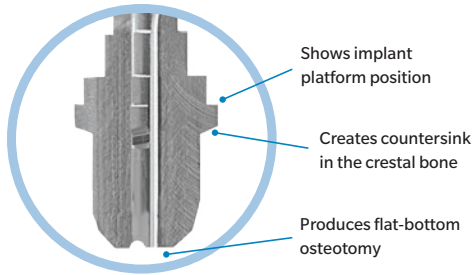


## Surgical Kit: BSISK

Item #	Description	Item #	Description
ACT206S	ACT® Reusable Twist Drill 2.0 mmD x 6.0 mmL	TAP56S	Short Implant Dense Bone Tap, 5.0 mmD x 5-6.0 mmL
ACT326S	ACT Reusable Twist Drill 3.25 mmD x 6.0 mmL	TAP66S	Short Implant Dense Bone Tap, 6.0 mmD x 5-6.0 mmL
ACT386S	ACT Reusable Twist Drill 3.85 mmD x 6.0 mmL	RE100	Short Ratchet Extension
ACT426S	ACT Reusable Twist Drill 4.25 mmD x 6.0 mmL	PHD02N	Narrow Posterior Large Hex Driver
ACT486S	ACT Reusable Twist Drill 4.85 mmD x 6.0 mmL	PHD00N	Narrow Posterior Small Hex Driver
FCS385S	Flat Bottom Countersink Shaping Drill 5.0 mmL	H-TIRW	High Torque Indicating Ratchet Wrench
FCS386S	Flat Bottom Countersink Shaping Drill 6.0 mmL	MDR10	Handpiece Connector
FCS485S	Flat Bottom Countersink Shaping Drill 5.0 mmL	CW100	Open End Wrench
FCS486S	Flat Bottom Countersink Shaping Drill 6.0 mmL	ACTPSD	ACT Pointed Starter Drill

## Flat Bottom Shaping Drills

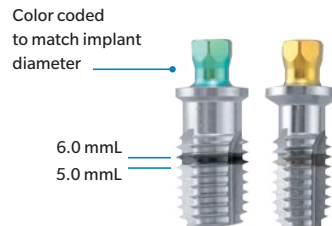
- Similar design to existing Tapered Implant Quad Shaping Drills
- Special cutting features
- Flat-bottom cutting tip to prepare an osteotomy that matches the dimensions of the implant
- Incorporates the countersink so the implant will be properly seated in the osteotomy
- Depth and diameter specific



## Dense Bone Taps

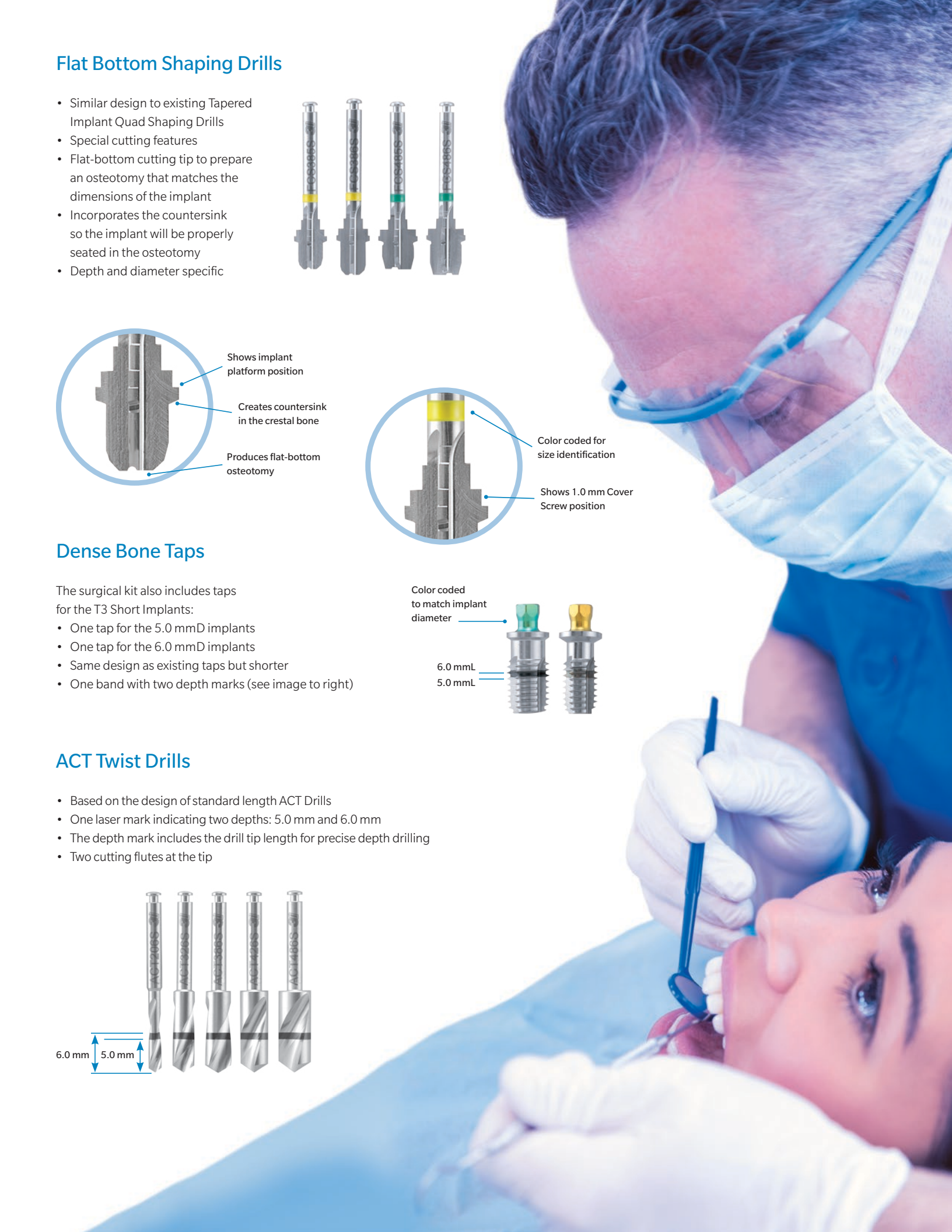
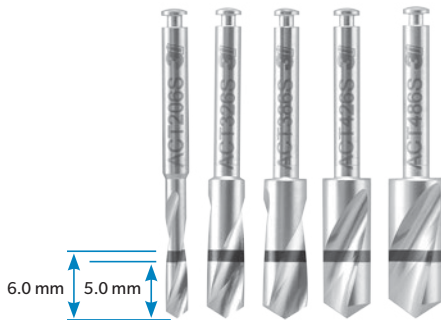
The surgical kit also includes taps for the T3 Short Implants:

- One tap for the 5.0 mmD implants
- One tap for the 6.0 mmD implants
- Same design as existing taps but shorter
- One band with two depth marks (see image to right)



## ACT Twist Drills

- Based on the design of standard length ACT Drills
- One laser mark indicating two depths: 5.0 mm and 6.0 mm
- The depth mark includes the drill tip length for precise depth drilling
- Two cutting flutes at the tip



# Differentiating Technology

## T3 Surface

Blasted and acid-etched implant surface with an average roughness of 1.4  $\mu\text{m}$  along the full length of the implant.<sup>1</sup> In preclinical studies<sup>†</sup>, the T3 with DCD<sup>®</sup> Surface demonstrated increased integration strength throughout the healing phase as compared to less complex surface topographies.<sup>2</sup>

## Initial Bone-to-Implant Contact (IBIC)

The dimensions of the surgical instrumentation and the T3 Short Implant provide a tight implant-to-osteotomy fit, to assist with primary stability.<sup>3</sup>

## Implant/Abutment Clamping Force

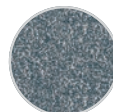
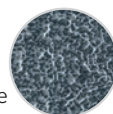
Use of the Gold-Tite<sup>®</sup> Screw increases implant/abutment clamping force by 83% vs. a non-coated screw.<sup>4</sup> Proprietary\* Gold-Tite Surface Lubrication allows the screw to rotate further, increasing clamping force and maximizing abutment stability.<sup>5</sup>

## Platform Switching\*\*

Platform switching medializes the implant/abutment junction (IAJ) redirecting the reformation of the biologic width, thus helping to maintain bone levels.<sup>6</sup>

Coarse and fine micron surface features are designed to create an average mean surface roughness value of 1.4  $\mu\text{m}$  along the full length of the implant.<sup>1</sup>

- **Coarse:** (10+ microns) via resorbable calcium phosphate media blast
- **Fine:** (1 - 3 microns) via Dual Acid-Etching (DAE) on top of the blasted surface



Option for nano-scale features along the full length of the implant via Discrete Crystalline Deposition (DCD) of calcium phosphate



Manual platform switching is recommended

<sup>1</sup> Gubbi P<sup>1</sup>, Towse R<sup>1</sup>. Quantitative and Qualitative Characterization of Various Dental Implant Surfaces. Poster Presentation: European Association for Osseointegration, 20th Annual Meeting; October 2012; Copenhagen, Denmark. To view the poster, please visit [www.biomet3i.com/pdf/Posters/Poster\\_421\\_EAO\\_Final.pdf](http://www.biomet3i.com/pdf/Posters/Poster_421_EAO_Final.pdf)

<sup>2</sup> Mendes V, Davies JE. Early Implant healing at implant surfaces of varying topographical complexity. Poster Presentation: Academy of Osseointegration, 26th Annual Meeting; March 2011; Washington, DC. [http://biomet3i.com/pdf/Posters/Poster\\_Early\\_Perimplant\\_Healing.pdf](http://biomet3i.com/pdf/Posters/Poster_Early_Perimplant_Healing.pdf).

<sup>3</sup> Meltzer AM<sup>†</sup>. Primary stability and initial bone-to-implant contact: The effects on immediate placement and restoration of dental implants. J Implant Reconstr Dent. 2009;1(1):35-41.

<sup>4</sup> Suttin Z<sup>†</sup>, Towse R<sup>†</sup>. Effect of Abutment Screw Design on the Seal Performance of an External Hex Implant System. Presented at the European Association for Osseointegration, 22nd Annual Scientific Meeting; October 2013; Dublin, Ireland. [http://biomet3i.com/resourcecenter/posters/EAO\\_Effect\\_of\\_Abutment\\_Screw\\_Design\\_on\\_the\\_Seal\\_Performance\\_of\\_An\\_External\\_Hex\\_Implant\\_System\\_Poster\\_poster360\\_EN.pdf](http://biomet3i.com/resourcecenter/posters/EAO_Effect_of_Abutment_Screw_Design_on_the_Seal_Performance_of_An_External_Hex_Implant_System_Poster_poster360_EN.pdf).

<sup>5</sup> Byrne D, Jacobs S, O'Connell B, Houston F, Claffey N. Preloads generated with repeated tightening in three types of screws used in dental implant assemblies. J. Prosthodont. 2006 May-Jun;15(3):164-171.

<sup>6</sup> Boitel N, Andreoni C, Grunder U<sup>‡</sup>, Naef R, Meyenberg K<sup>‡</sup>. A Three Year Prospective, Multicenter, Randomized-Controlled Study Evaluating Platform-Switching for the Preservation of Peri-implant Bone Levels. Academy of Osseointegration, 26th Annual Meeting; 2011 March 3-5; Washington DC. To view the poster, please visit [www.biomet3i.com/Resource%20Center/Publications%20of%20Interest/Platform\\_Switching\\_for\\_the\\_Preservation\\_of%20Peri-Implant%20Bone%20Levels.pdf](http://www.biomet3i.com/Resource%20Center/Publications%20of%20Interest/Platform_Switching_for_the_Preservation_of%20Peri-Implant%20Bone%20Levels.pdf). A Biomet 3i sponsored study.

<sup>†</sup> The authors conducted this research while employed at Biomet 3i.

<sup>‡</sup> Drs Grunder, Meltzer and Meyenberg have, or in the last 2 years had, financial relationships with Zimmer Biomet Dental resulting from speaking engagements, consulting engagements and other retained services.

\* Pre-clinical studies are not necessarily indicative of clinical results.

\*\* Placement of a smaller diameter restorative component than the diameter of the implant seating surface.

# Ordering Information

5.0 mmD		External Hex Implants
Item #	Description	
BOES505	5.0 mmD x 5.0 mmL	
BOES506	5.0 mmD x 6.0 mmL	

5.0 mmD		External Hex Implants with DCD Surface
Item #	Description	
BNES505	5.0 mmD x 5.0 mmL	
BNES506	5.0 mmD x 6.0 mmL	

6.0 mmD		External Hex Implants
Item #	Description	
BOES605	6.0 mmD x 5.0 mmL	
BOES606	6.0 mmD x 6.0 mmL	

6.0 mmD		External Hex Implants with DCD Surface
Item #	Description	
BNES605	6.0 mmD x 5.0 mmL	
BNES606	6.0 mmD x 6.0 mmL	

## Recommended Healing Abutments For Platform Switching

4.1 mmD		Seating Surface	
Item #	Emergence Profile	Collar Height	
THA52	5.0 mm	2.0 mm	
THA53	5.0 mm	3.0 mm	
THA54	5.0 mm	4.0 mm	
THA56	5.0 mm	6.0 mm	
THA58	5.0 mm	8.0 mm	
THA63	6.0 mm	3.0 mm	
THA64	6.0 mm	4.0 mm	
THA66	6.0 mm	6.0 mm	
THA68	6.0 mm	8.0 mm	
THA73	7.5 mm	3.0 mm	
THA74	7.5 mm	4.0 mm	
THA76	7.5 mm	6.0 mm	
THA78	7.5 mm	8.0 mm	


## Recommended Healing Abutments For Platform Switching


5.0 mmD		Seating Surface	
Item #	Emergence Profile	Collar Height	
WTH52	5.6 mm	2.0 mm	
WTH53	5.6 mm	3.0 mm	
WTH54	5.6 mm	4.0 mm	
WTH56	5.6 mm	6.0 mm	
WTH58	5.6 mm	8.0 mm	
WTH562	6.0 mm	2.0 mm	
WTH563	6.0 mm	3.0 mm	
WTH564	6.0 mm	4.0 mm	
WTH566	6.0 mm	6.0 mm	
WTH568	6.0 mm	8.0 mm	
WTH572	7.5 mm	2.0 mm	
WTH573	7.5 mm	3.0 mm	
WTH574	7.5 mm	4.0 mm	
WTH576	7.5 mm	6.0 mm	
WTH578	7.5 mm	8.0 mm	

This product is not available in all markets. Please contact your local Zimmer Biomet Sales Representative for availability in your market. Refer to the Surgical Catalog (INSTSUR) for more options.

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