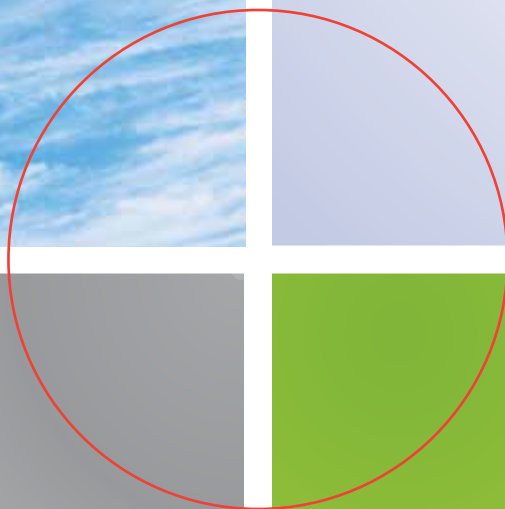




(((DENTACK
IMPLANTS

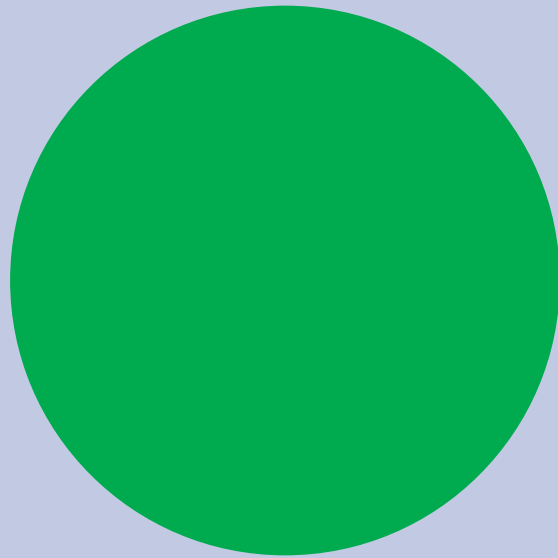


QUAD

Dental Implants



(((DENTACK
IMPLANTS



QUAD Dental Implants

DenTack creates and markets innovative high-stability, short expandable implants that carry the same load as longer implants, offering clinicians a viable and cost-effective alternative to bone augmentation for dental implant candidates.

The DenTack QUAD Implant

Unlike existing short implants, DenTack's expandable QUAD implants have an integral compensation mechanism that enhances initial and long-term stability and load-carrying ability.

Enabling effective, timely implant placement in patients with low bone height, QUAD implants eliminate the need for bone augmentation and sinus lift procedures- significantly lowering treatment cost and duration. Moreover, the load-carrying performance of QUAD implants allows for immediate loading - shortening the overall time to restoration.

Without preliminary surgical intervention, DenTack implants are placed in the jaw as per current common procedure, and behave like standard long implants. During expansion, the implant's apical portion and folded foils spread out into the surrounding bone, maximizing bone contact area. As it reaches maximum expansion, the apical portion inclines slightly inward to reduce total pressure on the bone.

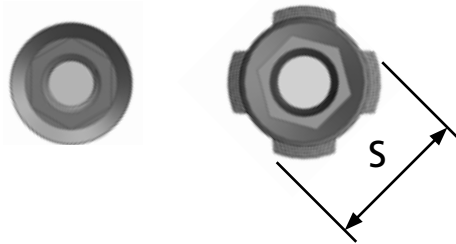
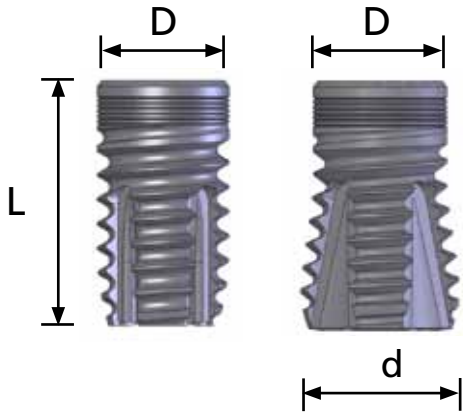
With an uncompromising commitment to maintaining highest standards of quality in manufacturing, all DenTack implants are CE Mark certified, and are registered under the ISO 13485:2003 international quality standards.

Implant Geometry

Internal Hex.

Before Expansion

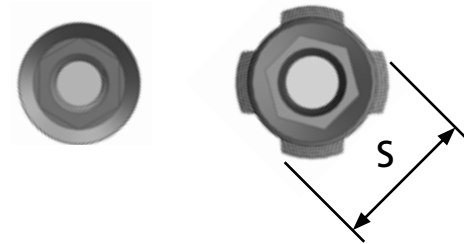
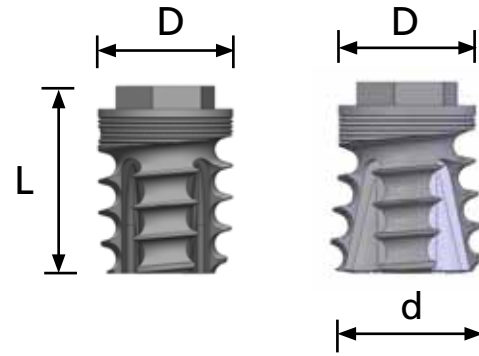
After Expansion



External Hex.

Before Expansion

After Expansion



D (mm)

L (mm)

d (mm)

S (mm)

Platform

EDI4105

4.1

5

4.5

4.2

External Hex

EDI4106

4.1

6

4.7

4.4

External Hex

EDI4107

4.1

7

4.7

4.4

Internal Hex

EDI3757

3.75

7

4.2

3.9

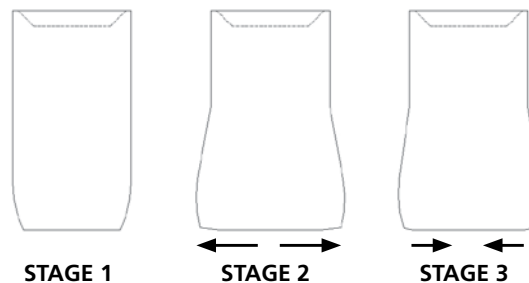
Internal Hex

Unique Mechanism for Optimal Stability

Unlike other implants, DenTack implants achieve optimal stability with a unique, error-free expansion mechanism.

By limiting the final range of expansion, and with a self “snap back” mechanism, the DenTack system allows for bone condensation without creating excessive pressure on the surrounding bone - resulting in a square-shaped apex that prevents rotation and markedly improves stability.

After only a short training session, dental surgeons can effectively and safely use DenTack expandable implants, without fear of over-expansion.

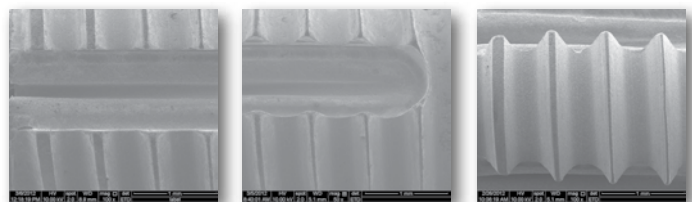


Expansion Stages

- **STAGE 1 – IMPLANT PLACEMENT** Slightly conical DenTack implants are placed in bone like any other implant.
- **STAGE 2 – EXPANSION** Using the DenTack expansion tool, the apical portion of the implant is gradually expanded - enhancing surrounding bone density and closing micro-gaps.
- **STAGE 3 – COMPLETELY EXPANDED** With a unique expansion profile, the apical portion of the DenTack implant inclines slightly inward as it reaches maximum expansion, reducing total pressure on the bone tissue.

Enlarged Surface Area

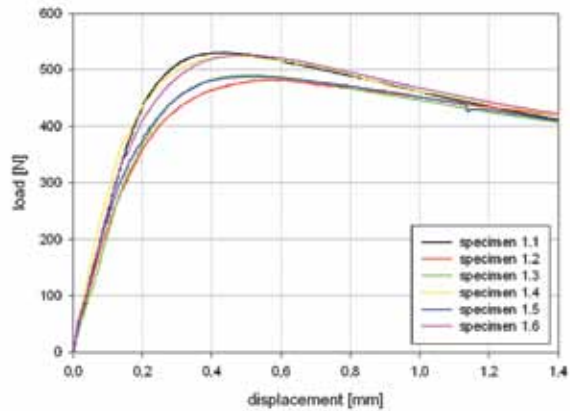
Surface topography: combination of etching and blasting treatment produces a surface texture and porosity ideal for osseointegration



Static Compression Test - QUAD 7mm

Results

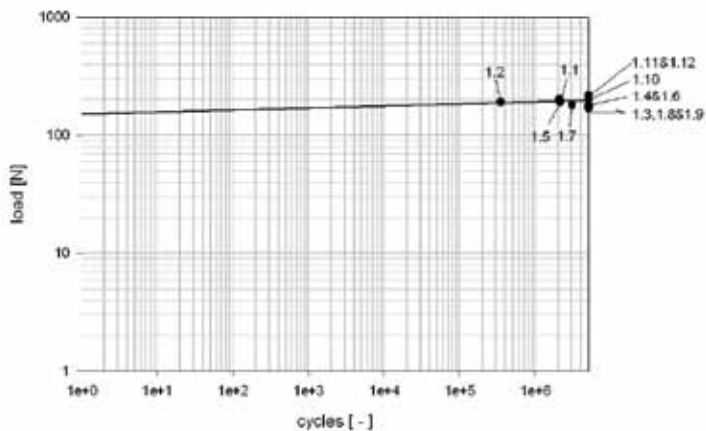
Specimen	Ultimate Load [N]	Ultimate Displacement [mm]	Stiffness [N/mm]
2.1	530	0.4	2397.7
2.2	482	0.6	1819.3
2.3	490	0.5	2065.0
2.4	524	0.4	2574.4
2.5	487	0.5	2011.5
2.6	528	0.5	2392.1
Mean	507	0.5	2213.3
StdDev.	22	0.1	285.9



Load vs displacement curves for the static compression test

Conclusion: Six specimens have been tested in a static compression mode. A mean ultimate load 507N has been determined.

Dynamic Test - QUAD 7mm



AFN curve of the dynamic axial compression test



Set-up used fatigue and static testing

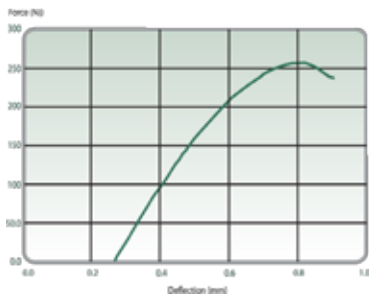
Conclusion: The run-out load established herein according to ISO 14801:2007 is 170N. Three specimens reached 5 million load cycles at this level without failure.

In-Vitro Initial Stability Evaluation

Unlike standard implants, which show a direct relationship between implant length and initial stability, DenTack expandable implants derive stability from their unique design, achieving even greater stability than longer screw-type implants.

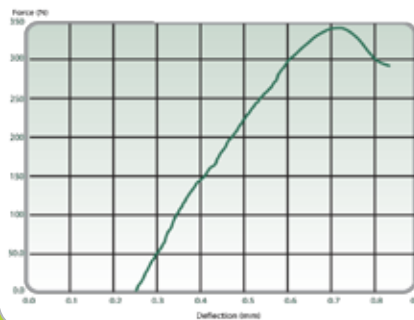
The results below present the behavior of each implant under a compression test where both vertical and lateral forces were applied. DenTack's unique design enables a 7mm implant to provide stability comparable to 10 mm standard implant.

8mm cylindrical shape



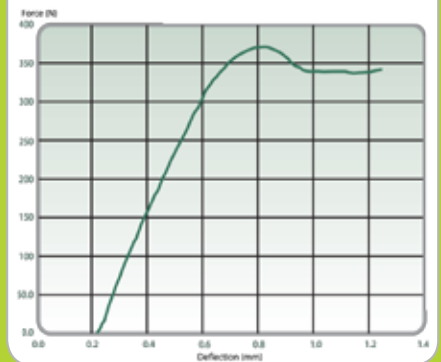
8mm screw - type implant
- yield at 278N

10mm cylindrical shape



10mm screw - type implant
- yield at 344N

QUAD7mm



7mm Expandable DenTack Implant
- yield at 372N



In-Vivo Primary Stability Test – Osstell ISQ

Comparison between the QUAD in contracted configuration and expanded configuration, noting the contribution of the expanded apical portion to primary stability.

Tooth No.	Osstell Probe Direction	Before Expansion	After Expansion
45	Buccal-lingual mesial-Distal	28 ISQ	78 ISQ
		25 ISQ	78 ISQ
46	Buccal-lingual mesial-Distal	22 ISQ	64 ISQ
		22 ISQ	60 ISQ



QUAD7mm implants after expansion

Surgical Protocol

Packaging:

DenTack's implant is packed in a double vial package, which contains also a cover screw.

A blue mount, allowing for simple differentiation between mount and implant, is attached to the implant.



Implant Placement:

A torque ratchet is used for the placement of the implant. Torque should not exceed 35Ncm while placing the implant. If higher torque is required, the implant should be removed gently, and the next drill size used to enlarge the osteotomy. Then, the implant may be re-inserted.

NOTE: See implant position.



After implant placement, the blue mount is removed, and the expansion tool attached to the implant, noting correct fit to the internal implant hex.



Surgical Protocol

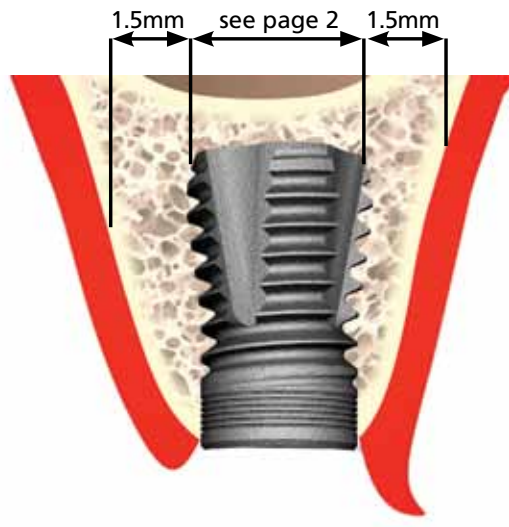
While holding the handle to prevent any implant movement, the torque ratchet is attached to the expansion tool and rotated slowly clockwise. The torque should not exceed 35 Ncm. The expansion tool's two yellow bands will come into close contact when expansion is completed. Rotating the inner screw counterclockwise while holding the handle detaches the torque ratchet from the implant.



Optimal Implant Position

During implant placement, clinicians are required to maintain a minimum spacing of 1.5mm from adjacent tooth and buccal and lingual plates. When two implants are necessary, a spacing of 3 mm is required.

The apical portion of the implant becomes wider after expansion, and must be considered for appropriate spacing.



Surgical Drilling Sequences

Maximilla

Ø 3.75 Implant Dia.



Ø 2.0

Ø 2.8

Ø 3.2

Ø 3.5

Ø 3.65

Ø 3.8



For Hard Bone

Maximilla

Ø 4.1 Implant Dia.



For Hard Bone

Mandible

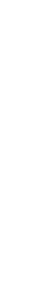
Ø 3.75 Implant Dia.



For Hard Bone

Mandible

Ø 4.1 Implant Dia.



For Hard Bone

Ø 2.0

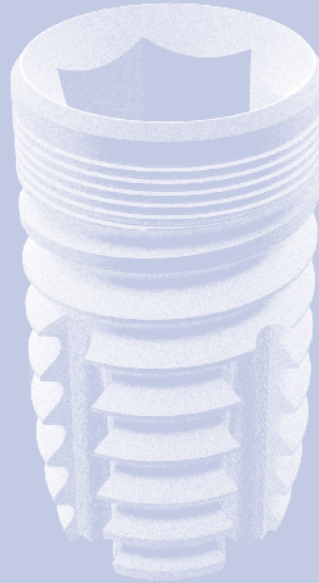
Ø 2.8

Ø 3.2

Ø 3.5

Ø 3.65

Ø 3.8



Prosthetic Components - IFU



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www.medneteuropa.com

P00011/1
Rev. 01/2013

Although DenTack implants feature a standard hex connection, DenTack's prosthetic components are uniquely manufactured and designed to fit and complement DenTack's implants. Abutments are made of a biocompatible titanium alloy Ti6Al4V ELI. Abutments, impression and laboratory components of the DenTack System are designed for single use only. Healing screws, abutments and all other prosthetic components are delivered decontaminated but non-sterile.

Warning:

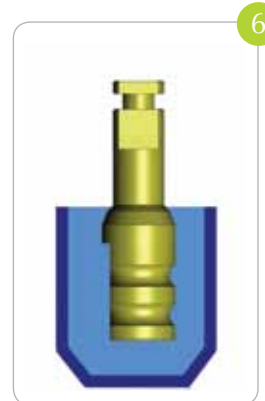
Users of the DenTack system must be trained dentists. All users must have a background which includes specific training in implant dentistry and implant prosthodontics. Prosthetic components are small objects, and therefore may present inhalation hazards to the patients. Special care should be used when handling these components.

Impression Taking

1. In order to take an impression, remove the healing screw by rotating it counterclockwise.
2. Clean the internal compartment of the implant.
3. Place an impression coping by adjusting the hex connection to the compartment of the implant and by securing the screw clockwise.

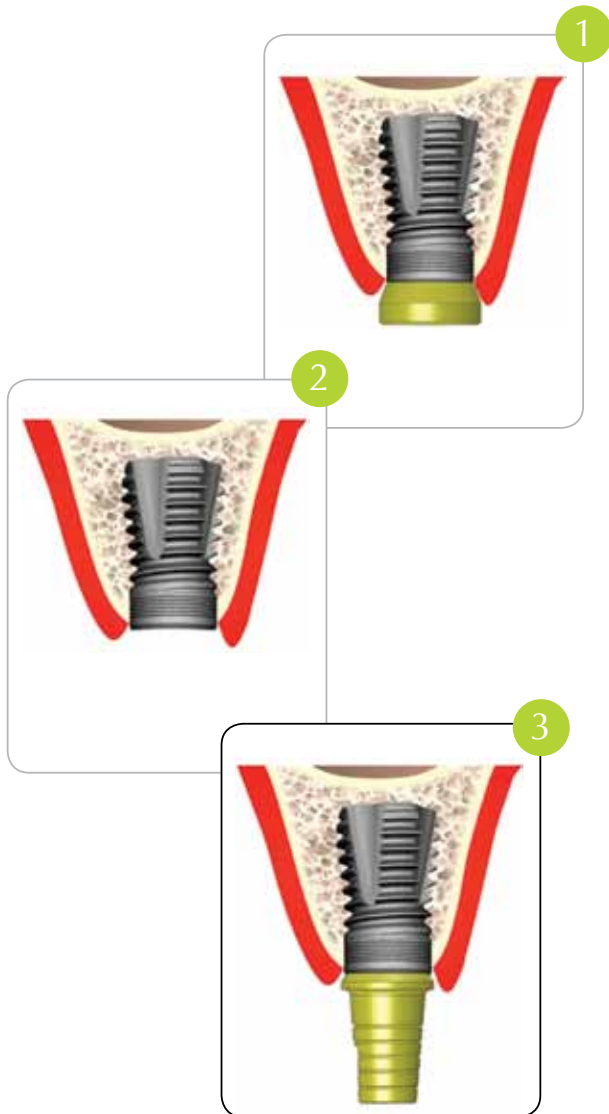


4. Take a standard impression, making sure that wash type impression material covers the impression coping completely.
5. After setting, take the impression out of the mouth.
6. Attach an implant analog to the impression coping, and place it back on the impression, making sure that the coping fits its original position.



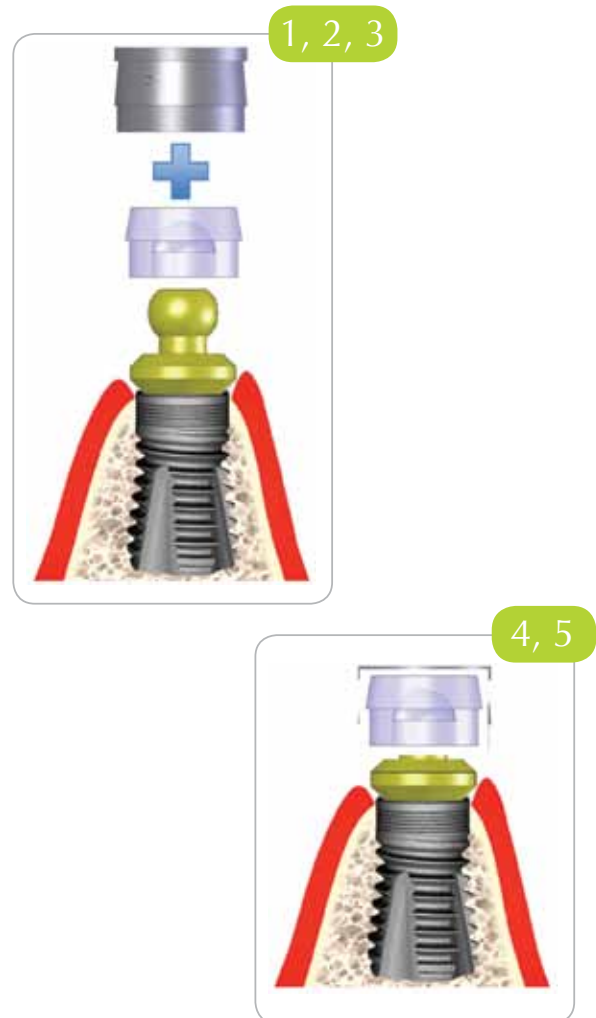
Abutment Connection

1. In order to place an abutment, remove the healing screw by rotating it counterclockwise.
2. Clean the compartment of the implant.
3. Place the abutment by adjusting the hex connection to the internal compartment of the implant and by securing the screw clockwise. Using a torque wrench, apply torque of 20 Ncm.



Ball Attachment

1. In order to place a ball attachment, remove the healing screw by rotating it counterclockwise.
2. Clean the compartment of the implant.
3. Place the ball attachment by adjusting internal compartment of the implant and by securing the screw clockwise. Using a torque wrench apply torque of 20 Ncm.
4. Insert a nylon ball attachment cap into its housing.
5. Adhere the housing to the denture following standard procedures.





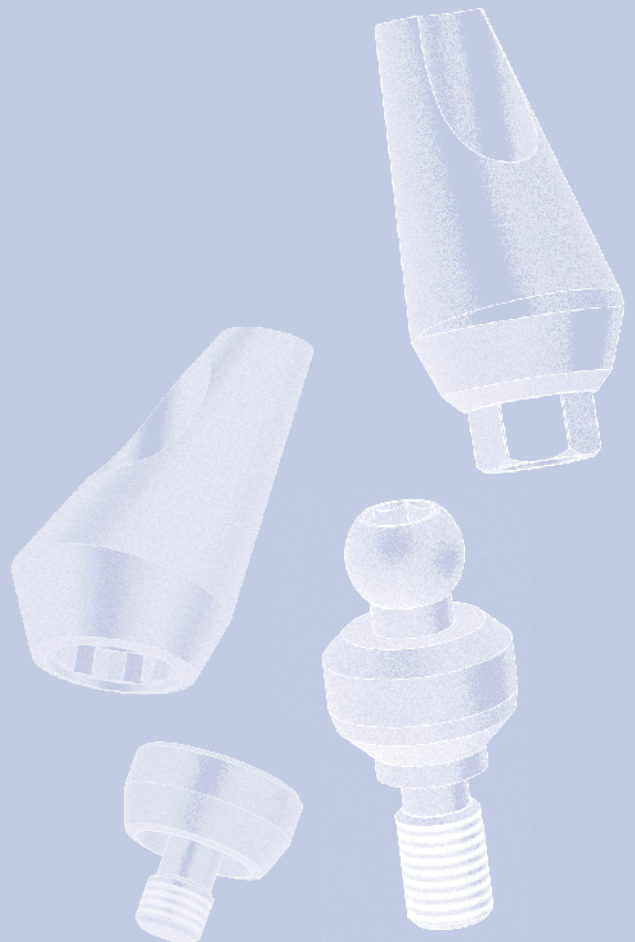
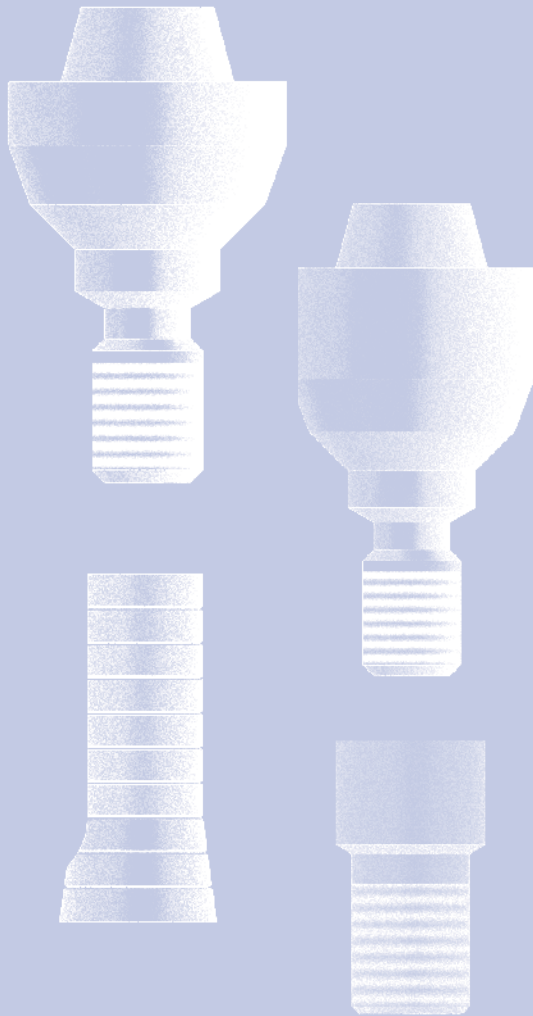
Products

Implants




Prosthetic – Internal Hex. Platform

Prosthetic – External Hex. Platform

Surgical Instruments



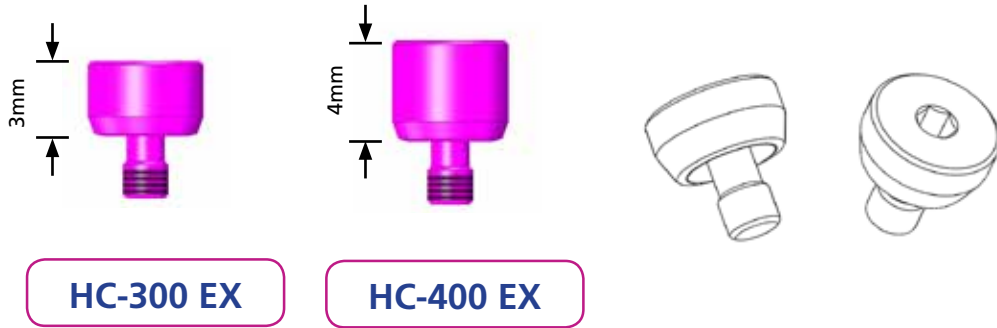
Implants

	Cat. No.	Dia.	Length	Platform
	EDI4105	4.1mm	5mm	External Hex.
	EDI4106	4.1mm	6mm	External Hex.
	EDI4107	4.1mm	7mm	Internal Hex.
	EDI3757	3.75mm	7mm	Internal Hex.

Healing Screws for External Hex.

Healing Screws

Healing Screw is suitable for 4.1 implant diameter with External Hex.



Prosthetic - Impression for External Hex.

Implant Impression Transfer.

Implant impression open tray transfer is suitable for 4.1 implant diameter with External Hex.



Implant Analog.

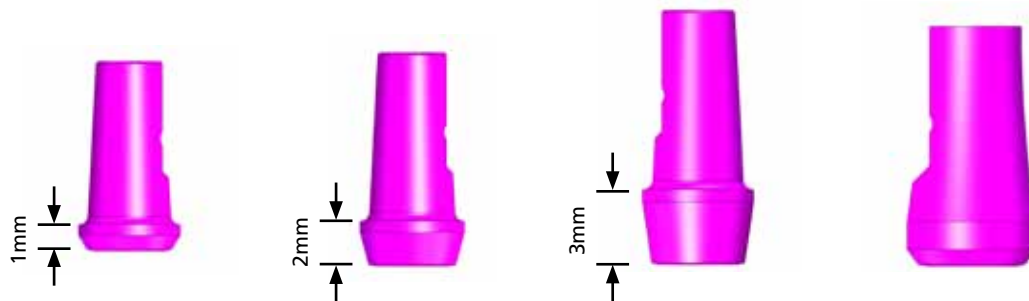
Implant Analog is suitable for 4.1 implant diameter with External Hex.



Titanium Abutment for External Hex.

Straight Titanium Abutment

Straight Abutment is suitable for 4.1 implant diameter with External Hex.



SA-100 EX

SA-200 EX

SA-300 EX

SA-500 EX

Prosthetic - Impression for External Hex.

Angled Titanium Abutment.

Angled Abutment is suitable for 4.1 implant diameter with External Hex.

15 degree angle
abutment



AA-15L EX

15 degree angle
abutment



AA-150 EX

25 degree angle
abutment



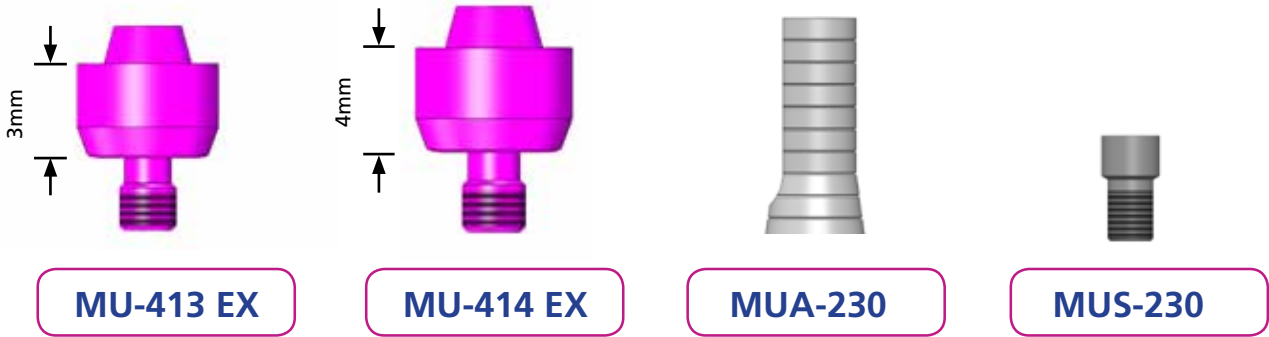
AA-250 EX



Multi Unit Abutment System for External Hex.

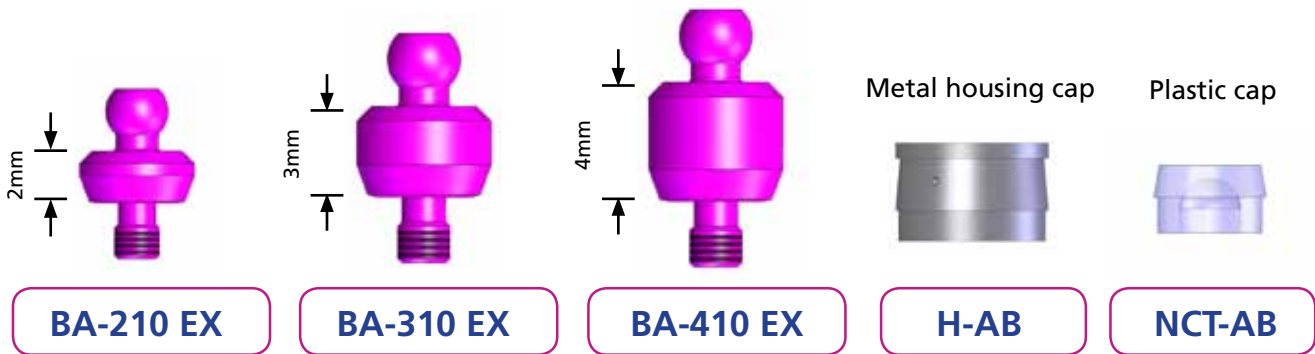
Straight Multi-unit abutment

Straight Multi-unit abutments may be used for multiple-unit screw-retained restorations at the abutment level and is suitable for 4.1 implant diameter with External Hex.



Ball Attachment for External Hex.

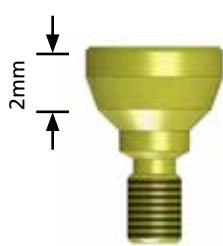
The ball attachment are used for implant-support overdentures and is suitable for 4.1 implant diameter with External Hex.



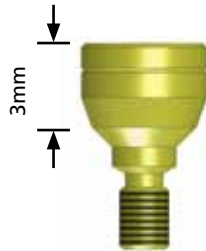
Healing Screws for Internal Hex.

Healing Screws

Healing Screw is suitable for 3.75 and 4.1 implant diameter with Internal Hex.



HC-200



HC-300



HC-400

Prosthetic - Impression for Internal Hex.

Implant Impression Transfer.

Implant impression open tray transfer is suitable for 3.75 and 4.1 implant diameter with Internal Hex.



+



+



IC-750

Implant Analog.

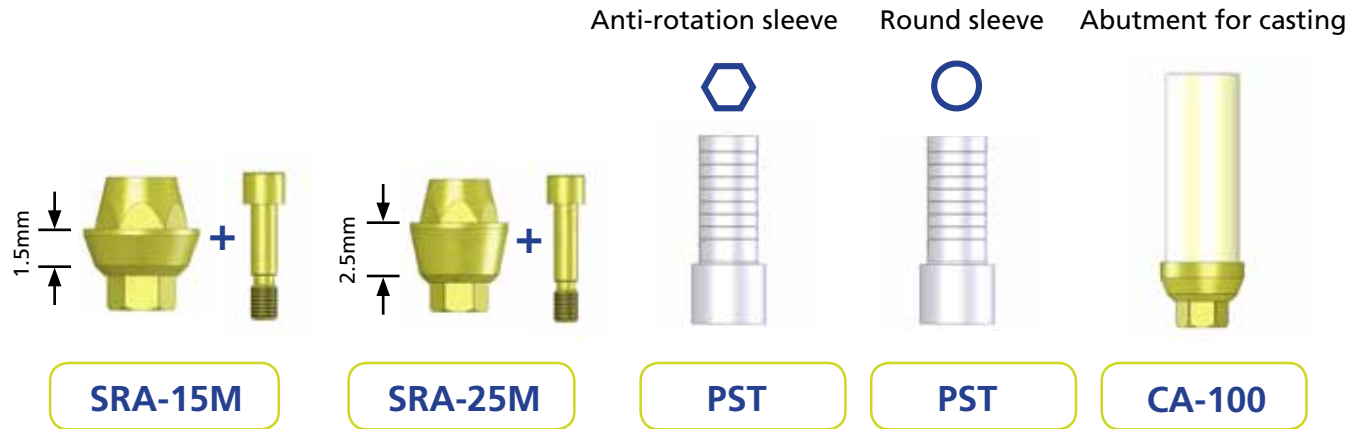
Implant Analog is suitable for 3.75 and 4.1 implant diameter with Internal Hex.



IA-375

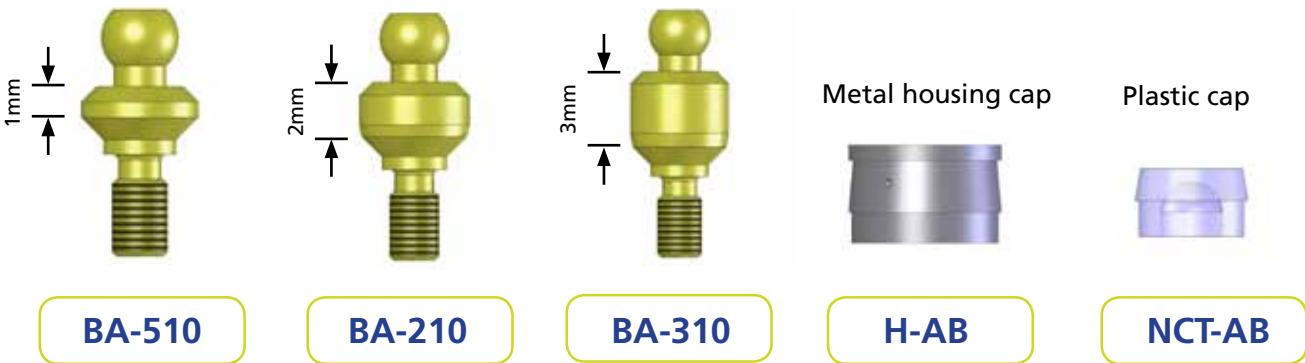
Screws Retained Restorations for Internal Hex.

Raising the height for performing various procedures like overdentures, bridges and bars in a 3.75 and 4.1 implant diameter with Internal Hex.



Ball Attachments for Internal Hex.

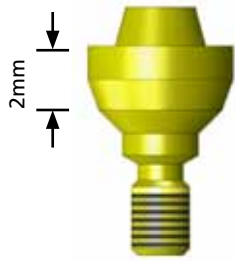
The ball attachments are used for implant-supported overdentures and is suitable for 3.75 and 4.1 implant diameter with Internal Hex.



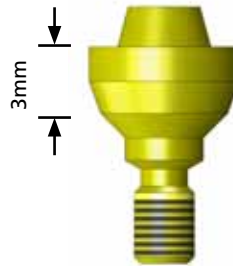
Multi Unit Abutment System for Internal Hex.

Straight Multi-unit abutment

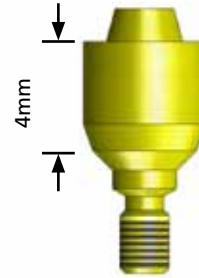
Straight Multi-unit abutments may be used for multiple-unit screw-retained restorations at the abutment level and is suitable for 3.75 and 4.1 implants diameter with Internal Hex.



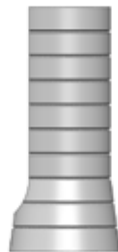
MU-412



MU-413



MU-414



MUA-230

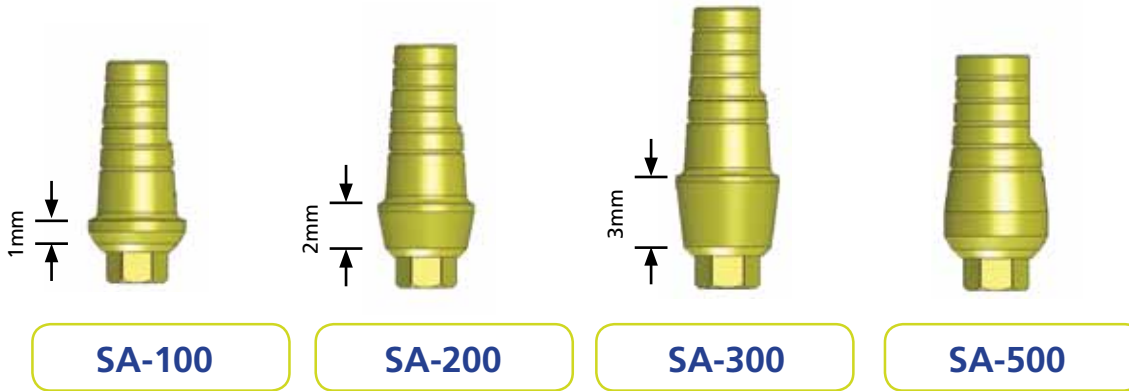


MUS-230

Titanium Abutment for Internal Hex.

Straight Titanium Abutment

Straight Abutment is suitable for 3.75 and 4.1 implant diameter with Internal Hex.



Angled Titanium Abutment.

Angled Abutment is suitable for 3.75 and 4.1 implants diameter with Internal Hex.

15 degree angle abutment



AA-15L

15 degree angle abutment



AA-150

25 degree angle abutment



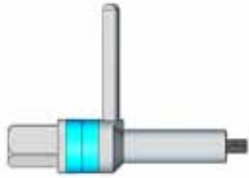
AA-250

Hex. Orientation

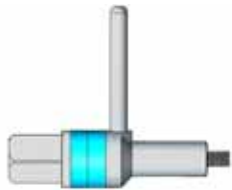


Surgical Instruments

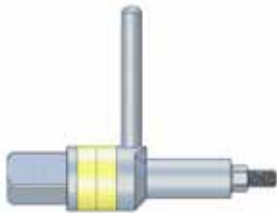
Cat. No. / Description



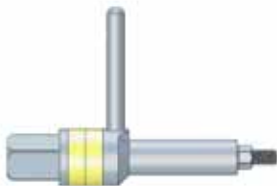
ET-1250 EX – Expansion tool for Ext. Hex. – Long ver.



ET-8500 EX – Expansion tool for Ext. Hex. – Short ver.



ET-1250 – Expansion tool for Int. Hex.– Long ver.



ET-8500 – Expansion tool for Int. Hex. – Short ver.



RT-3500 – Ratchet Torque.



HW-4000 – Hand Wrench.



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