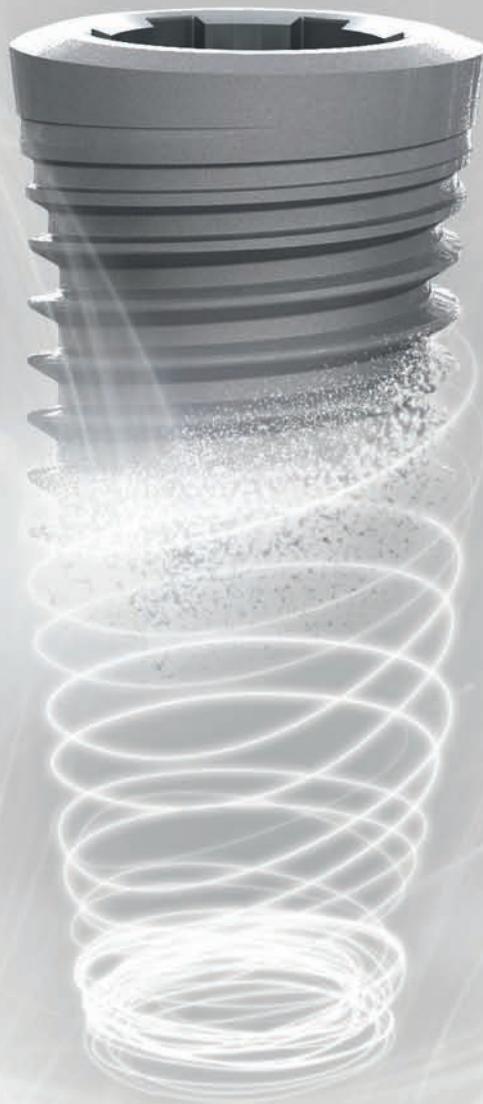


# Neoss tapered implant



Advancing the science of dental implant treatment



[ science and simplicity ]

[www.neoss.com](http://www.neoss.com)

# A Proven Heritage

## Inspiration behind innovation

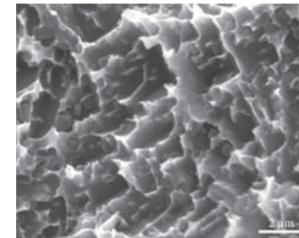


Convinced that existing implant systems were too complex, Professor Neil Meredith and Fredrik Engman founded Neoss in 2000. Their idea was to rationalise both implant design and treatment thus creating a truly simple solution. Through thoughtful collaboration they have created a high quality, optimised implant system.

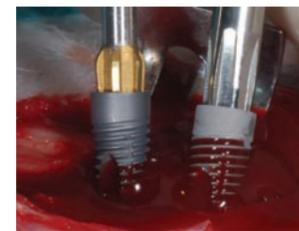


## Added features of ProActive

### Super hydrophilicity

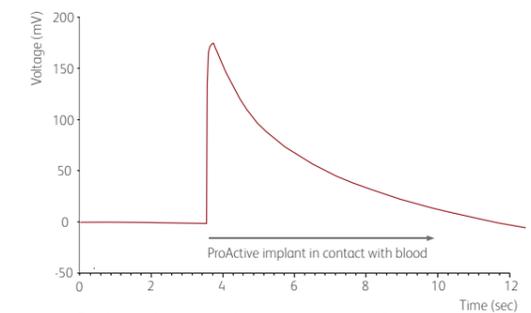


SEM of ProActive surface



Implant placement in Rabbit tibia – left: Bimodal; right: ProActive.

- Surface roughness and hydrophilicity are essential to the absorption of proteins and biomolecules onto implant surfaces thereby facilitating healing and bone formation.<sup>4</sup>
- Neoss has utilised Electrowetting on titanium surfaces to increase hydrophilicity and maximise the penetration of blood and its components onto the implant surface.
- The Neoss ProActive® implant has a super hydrophilic surface demonstrated by an immeasurable low contact angle.



Surface electrical charge generated by ProActive implants.

## Proven design of Neoss Bimodal and ProActive Implants

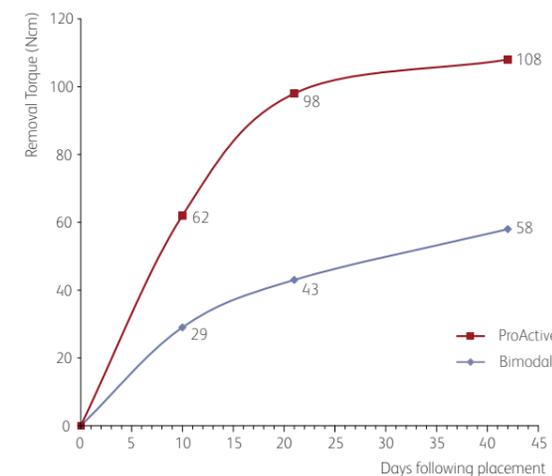
### Dual surface roughness

High levels of coronal implant surface roughness have been implicated as an aetiological factor in peri-implantitis.<sup>1</sup> Both Bimodal and ProActive implants have a low surface roughness flange (Sa 0.4) designed to reduce marginal bone loss.<sup>2</sup> At the same time, higher surface roughness of the threaded body of the implants optimises osseointegration.



### Unique Thread Cutting and Forming design

The universal Thread Cutting and Forming (TCF) design of the implant ensures suitability for all bone qualities. The secondary cutting face is especially helpful in dense bone cases.<sup>3</sup> Threads are extended right down to the tip of the implant ensuring optimised stability along the entire length. The implant cuts well, guides well and provides excellent primary stability.



### Accelerated and increased strength of osseointegration

The etched, blasted and treated ProActive implant surface stimulates bone to form more rapidly and with a greater strength at the implant interface.<sup>5</sup> In-vivo removal torque tests for implants placed in the rabbit tibia showed significantly increased removal torque for ProActive which also surpassed the performance of competitive implants in similar studies.<sup>6</sup>

### Prosthetic freedom, unlimited choices, single platform

The Neoss system provides prosthetic freedom to work in titanium, gold or ceramic, offering patients the most aesthetic and functional solutions. With the single platform concept, restoration is simplified.

### Extraordinary early clinical success

In the first published study of ProActive implants, they recorded a 100% success rate after 1 year of placement in non bone grafted patients and 98.5% in bone augmented patients<sup>7</sup>. In the same study group of patients, marginal bone loss was recorded of 0.4mm at one year.<sup>8</sup> Similar results have been recorded in a follow-up study.<sup>9</sup>

# Neoss Tapered Implant

## Conical coronal flange with additional threads

The conical coronal flange with additional threads has been carefully designed to provide improved stability and faster healing in extraction sites and cases relying mainly on cortical anchorage.

## Dual surface roughness

The Neoss Tapered Implant has a low surface roughness flange (Sa 0.4) designed to reduce marginal bone loss, while the rougher body optimises osseointegration.

## Prosthetic freedom, unlimited choices, single platform

The Neoss System provides prosthetic freedom to work in titanium, gold or ceramic, offering patients the most aesthetic and functional solution. With the single platform, single screwdriver and procedure friendly impression copings, restoration could not be made simpler.

In addition, all prosthetic components in the Neoss system are compatible with both the Neoss Tapered and the Neoss ProActive® implants enabling choice of implant at the time of surgery.

## Tapered implant body and unique Thread Cutting and Forming design

The combination of the unique Thread Cutting and Forming (TFC) design and tapered implant body provides excellent stability in compromised cases and extremely good seating in dense bone.



## ProActive, a super hydrophilic surface

The Neoss Tapered Implant has a super hydrophilic surface demonstrated by an immeasurable low contact angle. The ProActive surface has demonstrated faster and stronger osseointegration.

## Optimal soft tissue support

The single platform abutment/implant interface is designed to optimise soft tissue support. For implant diameter  $\varnothing 4.0$  and greater, the emergence profile of the abutment is narrower than the implant flange diameter providing what is known as platform switching. The  $\varnothing 3.5$  implant flange has a parallel design where space is at a premium.



## Apical profile aids placement

The Neoss Tapered apical profile provides ease of placement in soft bone cases where under preparation is desirable or where there are narrow roots or walls.

## Sinus floor friendly apical tip

The rounded tip is designed to protect the sinus floor membrane.

## Ultraclean low carbon surface

An ultraclean low carbon surface is achieved by a combination of cleaning and packaging in a glass vial.



30° Fatigue testing ISO 14801

## Unparalleled strong connection

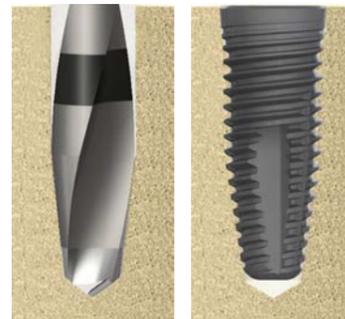
All Neoss implants/abutments and abutment screws are extensively tested and are amongst the strongest available. Warranty data over many years has demonstrated an unparalleled low fracture rate.<sup>10</sup>

# Neoss Tapered Implant - Procedure Simplicity

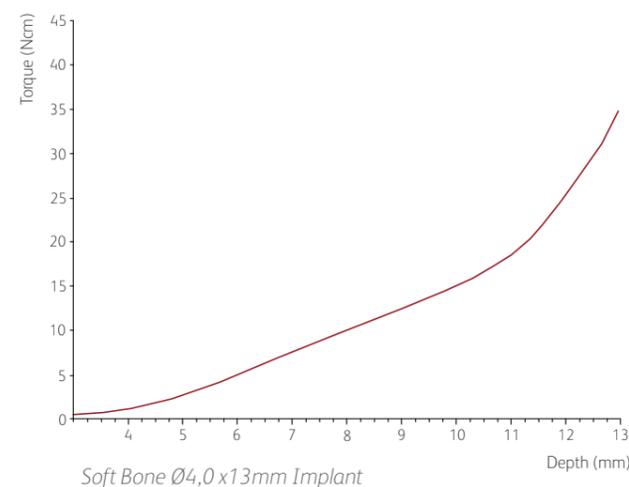
## Implant design and drill compatibility

The Neoss Tapered Implant is provided with proven Thread Cutting and Forming (TCF) features, the TCF concept. This unique design, in combination with a simple and versatile drill protocol, creates a precise fit in soft or dense bone, thereby optimising stability in all bone qualities.

The tapered drills are designed specifically for the tapered contour of the implants.



Tapered Drill      Implant shape



Soft Bone Ø4,0 x13mm Implant

## Increased torque in soft bone

The Neoss Tapered Implant is ideal for installation in soft bone. The narrow apical profile provides ease of placement in soft bone cases where under preparation is desirable or where there are narrow roots or walls. The conical implant flange also compresses cortical bone slightly in a radial direction, resulting in a distinct increase in torque during the final stage of insertion. The Tapered Implant is an excellent choice for soft bone cases including extraction sites.

## Drill protocol (example Ø4.0 implant)

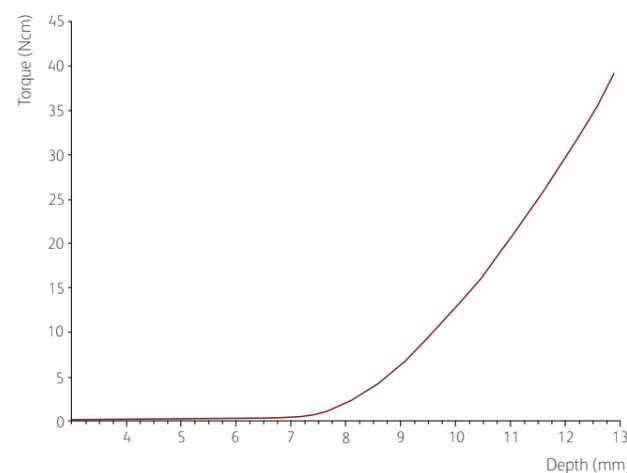
Some clinicians choose to under prepare soft bone cases and only use the Ø2.2 straight drill. For normal procedures in our Ø4.0 implant example, only one tapered drill is required for cavity preparation. Depending upon the hardness of the cortical bone a countersink is available for the conical flange of the implant.

The drilling procedure is simplified by the provision of one tapered drill catering for the different lengths of each implant diameter.

	III, IV Soft Bone	II Regular Bone	I Dense Bone
Start Drill	Ø2.2	Ø2.2	Ø2.2
Drill Tapered	Ø3.0 T	Ø3.4 T	Ø3.4 T
Drill Straight			Ø3.6
Countersink (optional)	Ø4.0 T	Ø4.0 T	Ø4.0 T

## Depth control in dense bone

The TCF feature creates an optimal level of stability, starting from the apex of the threads as the implant is inserted. In uniformly dense bone the TCF feature acts as a thread tap, creating a balanced level of torque throughout the insertion, whereas use of standard tapered implants without cutting features, can lead to local over-compression or failure to seat. By using a separate countersink, rather than being incorporated in the final drill, the depth of the final preparation may easily be adjusted. The countersink is also useful in situations where only the cortical bone is of high density.



Dense Bone Ø4,0 x13mm Implant



## Comprehensive implant system

To make each patient treatment as efficient as possible, the implant, cover screw and two healing abutments are packed together facilitating treatment procedure flexibility.

## Comprehensive yet simple instruments and organiser

Ergonomics are an essential element of a good implant system design. The use and handling of every component in the Neoss System is carefully evaluated. A unique system tray design combines with outstanding instruments to be user friendly and effective for the entire clinical team.



# Prosthetic Solutions

## Prosthetic freedom, unlimited choices, single platform

The Neoss Implant system has been designed to be intelligently simple offering unlimited prosthetic choices. With the single platform concept, single screwdriver and procedure friendly impression copings, restoration is simplified and unambiguous communication amongst the dental team is achieved.

In addition, the Neoss system gives you the prosthetic freedom to work with cemented or screw retained solutions in titanium, gold, or zirconia offering your patients the best possible solution.

### Implant level

#### Provisional Abutments

Tissue Formers are made in a range of anatomical shapes for all positions and enables simple creation of the optimal emergence profile. The natural profile developed during healing is matched perfectly in provisional and permanent restorative components.

Provisional Titanium Abutments are available both for single unit and multiple unit situations. The component may also be used as a waxing sleeve when constructing a crown/framework that will be scanned to produce CAD/CAM prosthesis or copy milled prosthesis.

#### NeoLinks™

NeoLinks™ are precision machined components, made of gold or titanium and provide the interface between an implant and coping or framework. Copings and frameworks may be milled in zirconia, gold, titanium or cobalt chrome to fit NeoLinks™ and they may be CAD/CAM produced. NeoLinks™ are co-packed with straight plastic copings with optional anatomical plastic copings available.

#### Prepable Titanium Abutments

Prepable Titanium Abutments are available in various angulations, heights and range of anatomical shapes for all positions and match perfectly the Tissue Formers and the natural profile developed during healing. Aesthetic abutment designs minimize the need for further adjustments.

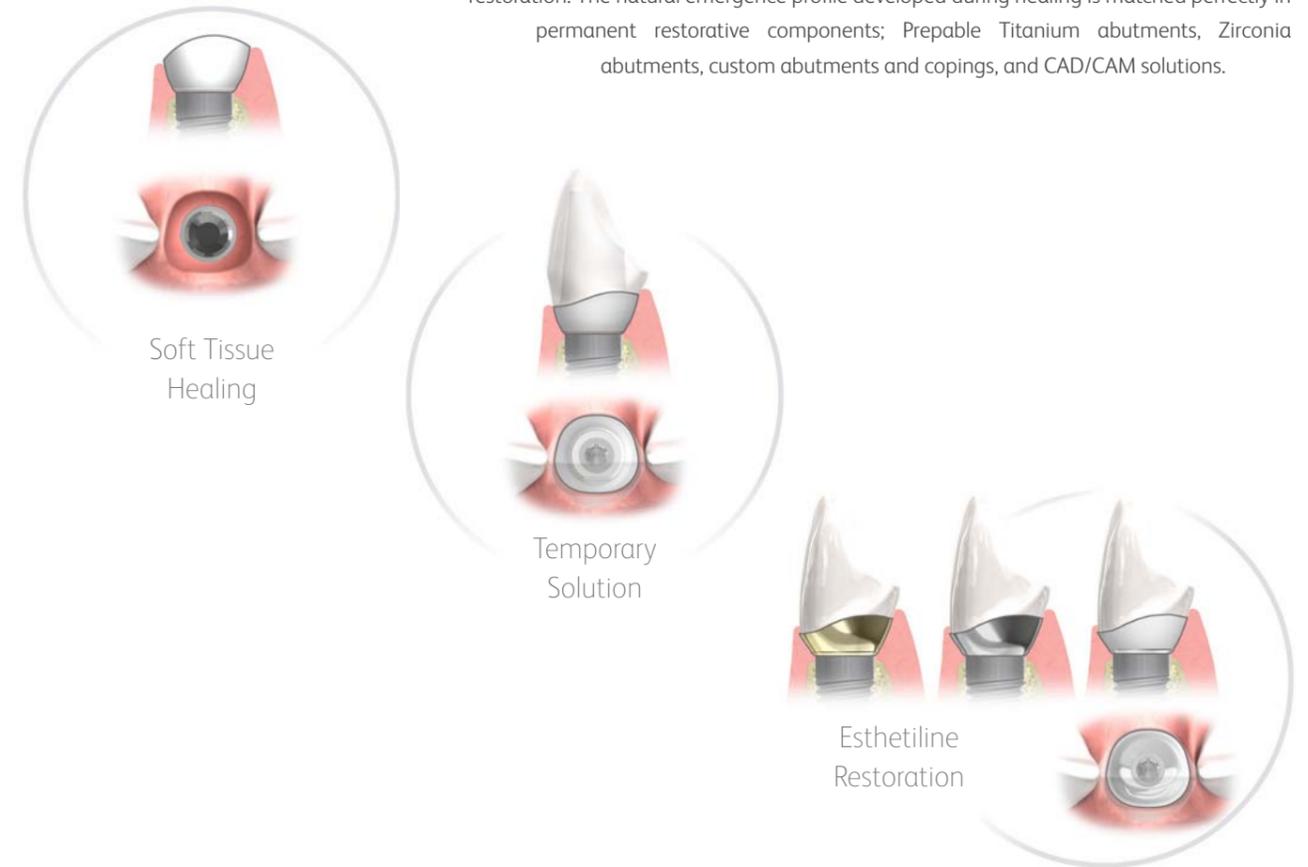
#### Zirconia Abutments

Zirconia Abutments are made in a range of anatomical shapes for all positions and match perfectly the Tissue Formers and the natural profile developed during healing.



## Esthetiline – the complete anatomical restorative solution

The Esthetiline solution enables simple, rapid and effective anatomical tissue contouring to be developed and optimised with matching chair-side and laboratory restorative components. The Neoss Esthetiline solution provides seamless restorative integration all the way from implant placement to final crown restoration. The natural emergence profile developed during healing is matched perfectly in permanent restorative components; Prepable Titanium abutments, Zirconia abutments, custom abutments and copings, and CAD/CAM solutions.



## Abutment level

### Access Abutments

Access Abutments have wide-ranging applications enabling screw-retained straight and angulated restorations (10°, 20°, 30°) to be produced with as little as 4.5mm of interocclusal clearance with the 10° abutment. Access abutments in combination with NeoLinks can be incorporated into gold, ceramic or solid frameworks in titanium or ceramic.



### Express Abutments

Express Abutments are pre-manufactured components enabling immediate impression taking for production of cemented crowns and bridges. Express Abutments are available in various collar heights.



### Overdenture

There are three ways to retain implant supported overdentures using the Neoss system:

- Locator® Abutments
- Ball Abutments
- Bar Abutments



## CAD/CAM integration

There is an unlimited range of CAD/CAM restorations available for the Neoss system, from individual abutments to bridges, bars and incorporated attachments available in various materials.

The NeoLink™ components and designs are already a part of major software libraries making easy integration of Neoss into CAD/CAM solutions.



# Neoss Tapered Implant - Facts and Figures

## Comprehensive implant range

The Neoss Tapered implant is available in a variety of diameters and lengths. The combination of the Neoss Tapered and the Neoss ProActive® implant designs provide optimal surgical flexibility.

Neoss Tapered Implant dimensions

Implant diameter and length	Flange diameter	Tip diameter
Ø3.5 9 - 15	Ø4.0	Ø2.1
Ø4.0 9 - 15	Ø4.3	Ø2.3
Ø4.5 9 - 15	Ø4.9	Ø2.8
Ø5.0 9 - 15	Ø5.4	Ø3.3
Ø5.5 9 - 13	Ø5.9	Ø3.8

(mm)

Neoss Tapered Implants



Neoss ProActive® Implants



## Single prosthetic platform

The Tapered implant abutment connection surface on all implant diameters is Ø4.0mm and identical to the ProActive implants with six internal rotational positions.



## Installation and compatibility

**Implant Inserter** - Tapered implants utilise the same inserter as the ProActive implants.

**Tapered Twist Drills and Countersinks** - There is one nominal tapered twist drill per implant diameter, so only five additional twist drills are required. Tapered twist drills are compatible with Drill Stops. The drills are straight with a tapered portion that corresponds to the tapered portion on the implant. There is one Tapered countersink for each implant diameter should that be required. Both the drills and the countersinks are laser marked with a 'T' on the shaft for identification.

**Screw Taps** - Existing screw taps can be used if required.

**Clinical Organiser** - There is a specific organiser for the tapered protocol. The organiser is marked 'Tapered' to distinguish it from the ProActive implant organiser.



## Tapered implant body design

**Flange** - All flanges are conical. The chamfer between the abutment connection surface and the widest point of the flange is 20° on all diameters except the Ø3.5 implant that has a short straight portion as with the Ø3.5 ProActive implant.

**Mid section** - The mid section is identical to ProActive implants and is extended with the length of the implant. The mid section is slightly tapered.

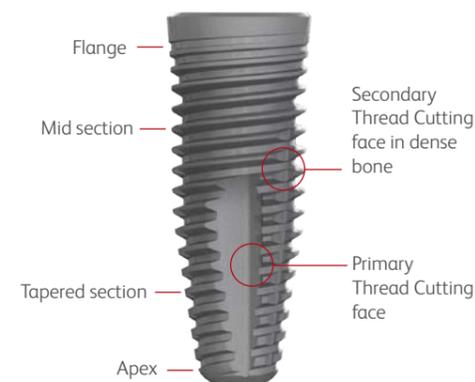
**Tapered section** - 5mm long on all implant lengths and diameters except the 9mm implants where it is 4mm long.

**Apex** - Narrow and spherical.

**Double thread** - The implant is 'double threaded' and is designed to achieve additional compression and increase stability in poor quality bone.

**TCF (Thread Cutting and Thread Forming)** - The Neoss Implant System incorporates TCF geometry combining both Thread Cutting and Thread Forming (TCF) features.

Thread cutting is provided by the primary cutting faces. The secondary cutting faces engage and cut dense bone.



## Surface properties

The Tapered implant surface is the same surface as existing ProActive implants. This surface has been subjected to a multistage blasting, etching and 'electrowetting' treatment.

**Surface roughness** - Sa 1.0µm over the fully threaded part of the implant and a reduced roughness, Sa 0.4µm, over the flange (~2mm) of the implant.

**Ultraclean low carbon surface** - The surface is ultraclean which is achieved by a combination of cleaning and packaging methods.

**Hydrophilicity** - Surface treatment enables the implant to achieve a high level of wettability using a technique called Electrowetting.

"Low Roughness"

"High Roughness"



## Material

Commercially Pure Titanium Grade IV.

## Drill Protocol & Drill Depth Guide

NEOSS	Tapered Implant Ø3.5 mm	Tapered Implant Ø4.0 mm	Tapered Implant Ø4.5 mm	Tapered Implant Ø5.0 mm	Tapered Implant Ø5.5 mm	Drill Stop
Ø2.2	○	○	○	○	○	■
Ø3.0 T	○	○	○	○	○	■
Ø3.2	●	○	○	○	○	■
Ø3.4 T	○	○	○	○	○	■
Ø3.6	○	●	○	○	○	■
Ø3.9 T	○	○	○	○	○	■
Ø4.1	○	○	○	○	○	■
Ø4.4 T	○	○	○	○	○	■
Ø4.6	○	○	○	○	○	■
Ø4.9 T	○	○	○	○	○	■
Ø5.1	○	○	○	○	○	■
Countersink	Ø3.5 T Optional use	Ø4.0 T Optional use	Ø4.5 T Optional use	Ø5.0 T Optional use	Ø5.5 T Optional use	
Screw Tap	Ø3.5 Optional use	Ø4.0 Optional use	Ø4.5 Optional use	Ø5.0 Optional use	Ø5.5 Optional use	
	Bone quality	○ Soft IV & III	○ Regular II	● Dense I		



## Product Information

21221 Implant Kit, Tapered Ø 3.5 mm x 9 mm  
21222 Implant Kit, Tapered Ø 3.5 mm x 11 mm  
21223 Implant Kit, Tapered Ø 3.5 mm x 13 mm  
21224 Implant Kit, Tapered Ø 3.5 mm x 15 mm

21227 Implant Kit, Tapered Ø 4.0 mm x 9 mm  
21228 Implant Kit, Tapered Ø 4.0 mm x 11 mm  
21229 Implant Kit, Tapered Ø 4.0 mm x 13 mm  
21230 Implant Kit, Tapered Ø 4.0 mm x 15 mm

21233 Implant Kit, Tapered Ø 4.5 mm x 9 mm  
21234 Implant Kit, Tapered Ø 4.5 mm x 11 mm  
21235 Implant Kit, Tapered Ø 4.5 mm x 13 mm  
21236 Implant Kit, Tapered Ø 4.5 mm x 15 mm

21239 Implant Kit, Tapered Ø 5.0 mm x 9 mm  
21240 Implant Kit, Tapered Ø 5.0 mm x 11 mm  
21241 Implant Kit, Tapered Ø 5.0 mm x 13 mm  
21242 Implant Kit, Tapered Ø 5.0 mm x 15 mm

21245 Implant Kit, Tapered Ø 5.5 mm x 9 mm\*  
21246 Implant Kit, Tapered Ø 5.5 mm x 11 mm\*  
21247 Implant Kit, Tapered Ø 5.5 mm x 13 mm\*

\*Available October/November 2012

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