



Questions & Answers



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Questions &
Answers

 **NEODENT**[®]
A Straumann Group Brand



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Questions &
Answers



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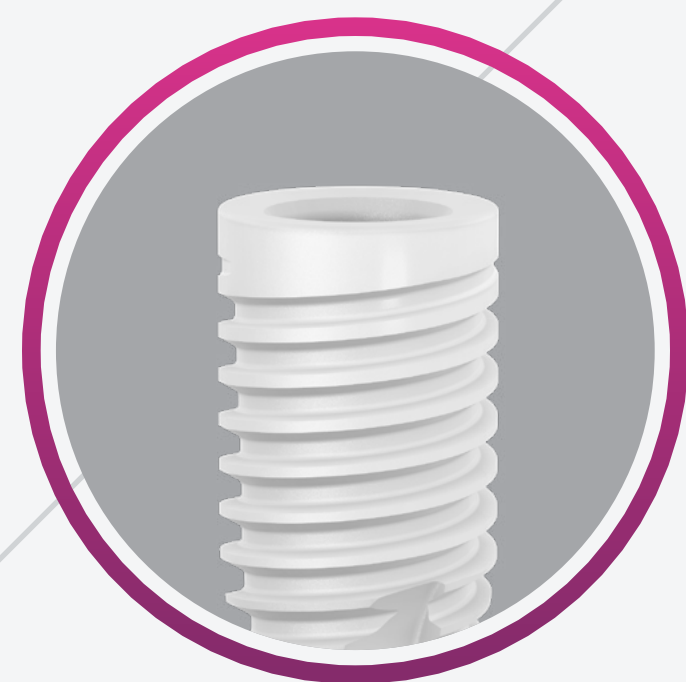
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Implants



1. What is the Zirconia Implant System (Zi™)?

The Neodent® Zirconia Implant System combines the reliable solution of two zirconia components with the internal screw-retained driver ZiLock™, thus providing a unique and immediate solution for single-units and offering high performance and an outstanding natural-looking esthetic.

The implant-prosthesis interface has a direct internal driver on which the prosthetic component fits within the platform. The Neodent® Zi™ implant has an anti-rotation function for indexing the prosthetic component.

2. What are the benefits of Zi™?

It is a complete system which offers several new benefits designed to make the professional's work even more efficient and produce even more esthetic results. These include:

1

A NEW CONCEPT IN FLEXIBILITY OFFERING SOLUTIONS FOR DIFFERENT SITUATIONS.

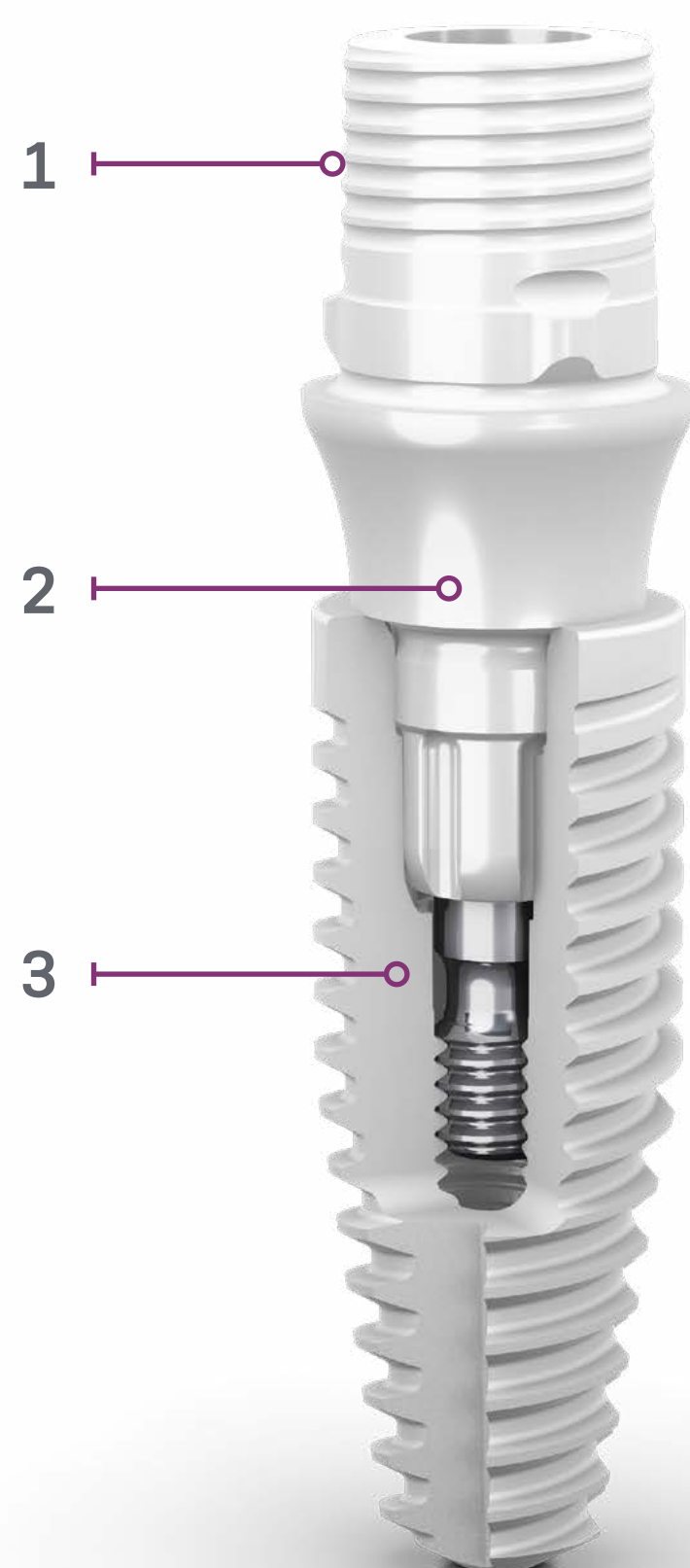
1. Reliable and resistant Zirconia system. Designed with a long screw, optimizing the distribution of forces along the internal driver.

2. Exclusive ZiLock™ driver:

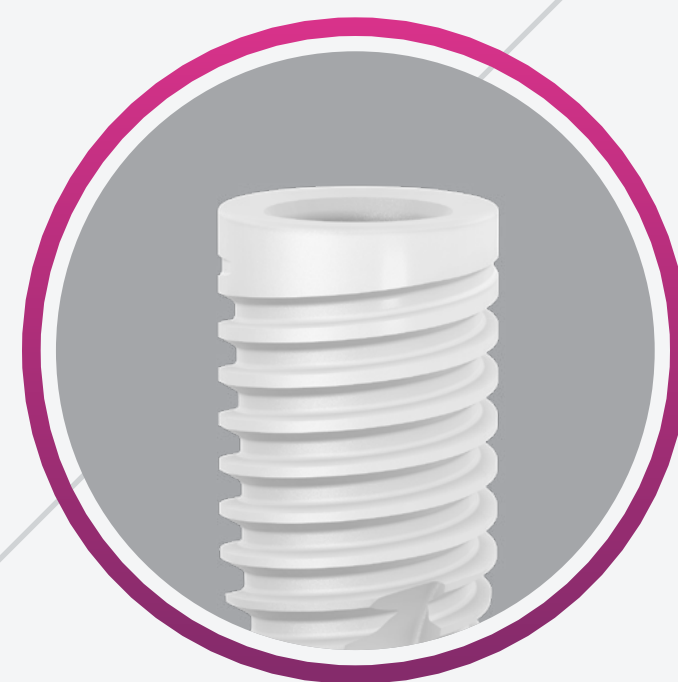
- A 2-part system
- Zirconia-zirconia contact
- Screw-retained driver

3. Diameters and lengths:

- 3.75 and 4.3
- 10/11.5 and 13 mm



Implants

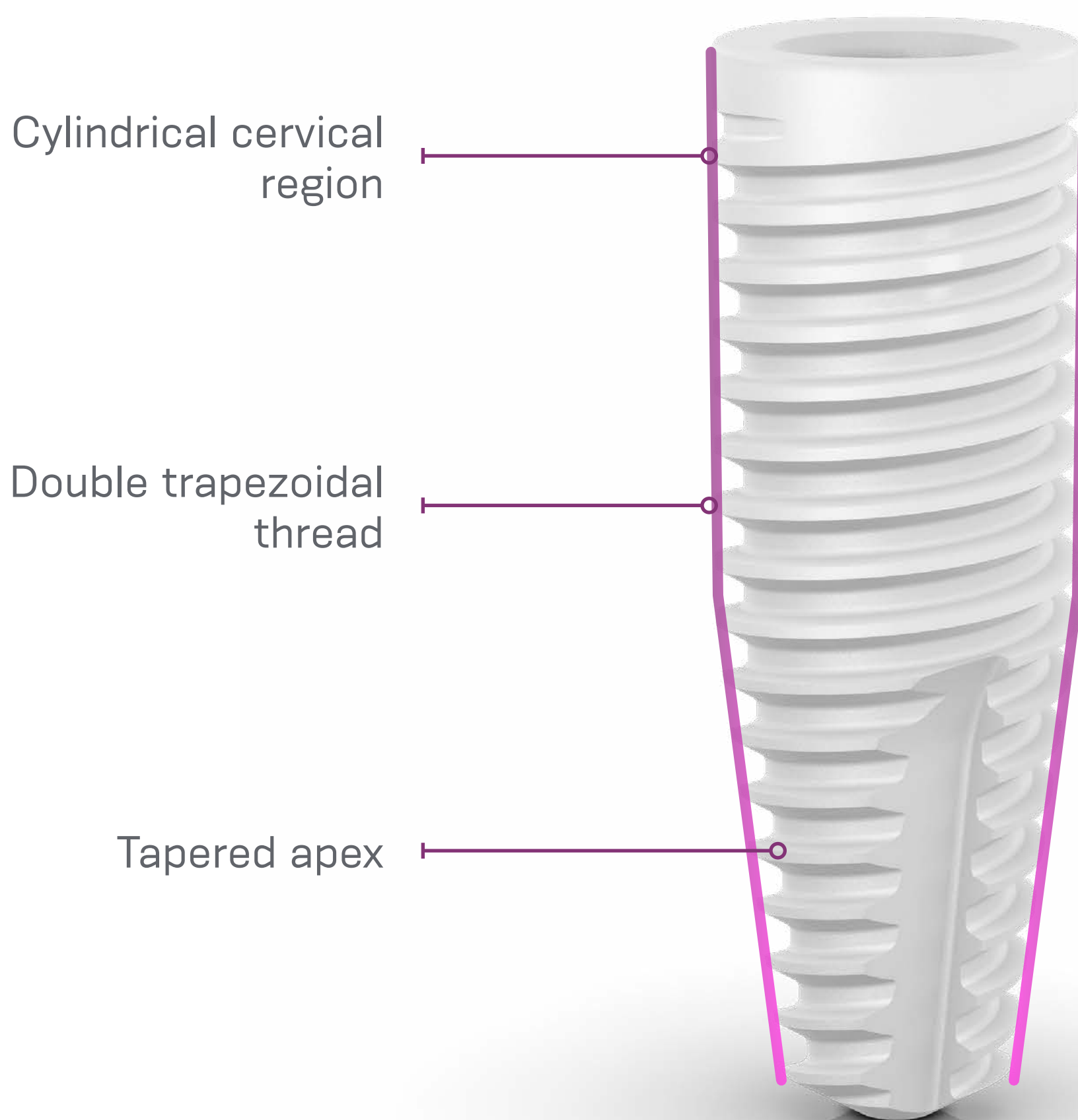


2. What are the benefits of the Zi™ Implant System?

2 A NEW CONCEPT IN STABILITY WITH A SYSTEM DESIGNED FOR IMMEDIATE LOADING AND STABILITY IN OSSEOINTEGRATION.

Predictability in immediate loading for all bone types.

Predictability with surface treatment using abrasive jet and acid conditioning.



Representative image of the implant surface - Scanning Electron Microscope (SEM), magnified 5000x.



Implants



2. What are the benefits of Zi™?

3

A NEW CONCEPT IN ESTHETICS WHICH AIMS TO MEET THE PATIENT'S EXPECTATIONS, OFFERING COMPLETE ESTHETIC SOLUTIONS.

- Prosthetic portfolio with natural-looking results
- Immediate or conventional restorative protocol.
- Digital workflow.

COVER



Cover screw

HEALING



Zirconia Healing abutment

PROVISIONAL



PEEK CR abutment

CEMENT-RETAINED



Zirconia Abutment

CEMENT-RETAINED OR SCREW-RETAINED



Zirconia Base



Implants



3. What material is Zi™ made from?

Zi™ is made from Zirconia Y-TZP (Yttria-stabilized Tetragonal Zirconia Polycrystal).

4. What is Y-TZP (Yttria-Stabilized Tetragonal Zirconia Polycrystal)?

Y-TZP is a metastable material with a high crystalline content, consisting mainly of 0.2-0.5 μm diameter uniform equiaxed grains prepared from fine ZrO_2 (Zirconia) particles and 3.5-8.7% mol of Y_2O_3 (yttria) stabilizer, which stabilizes the Zirconia in its tetragonal phase.^[2]

Stabilizing the Zirconia in the tetragonal phase (t) at room temperature does not completely prevent its transformation into the monoclinic phase (m). Different stimuli (mechanical, physical, and/or chemical) can trigger this transformation.^[3] The t-m phase transformation results in a volumetric increase in grain size of about 4% that creates a local compressive stress capable of hindering crack propagation. This mechanism, known as “transformation toughening mechanism,” increases the material toughness and fatigue threshold.

2. Cattani-Lorente M, Scherrer SS, Ammann P, Jobin M, Wiskott HW. Low temperature degradation of a Y-TZP dental ceramic. *Acta Biomater* 2011;7(2):858-65.

<https://doi.org/10.1016/j.actbio.2010.09.020> 3. Chevalier J, Gremillard L, Deville S.

Low-Temperature degradation of zirconia and implications for biomedical implants. *Annu Rev Mater Res*. 2007;37(1):1-32. <https://doi.org/10.1146/annurev.matsci.37.052506.084250>.

5. What makes Zi™ different?

The Zi implant is manufactured through a cutting edge injection molding technology process. The use of 2 pieces benefits the client when choosing the best solution for the prosthetic treatment. Moreover, if maintenance is required, it is possible to only remove and replace the prosthetic part.

Implants



6. How is Zi™ designed?

Zi has double trapezoidal threads from the crown to the apex, combined with a natural tapered design. It also has a cylindrical crown section and is apically tapered. This means that implant is designed to achieve primary stability. Threads in a trapezoidal format result in greater bone compaction during implant insertion.⁽³⁾

3. Steigenga J, Al-Shammari K, Misch C, Nociti FH Jr, Wang HL. Effects of implant thread geometry on percentage of bone integration and resistance to reverse torque in the tibia of rabbits. *J Periodontol* 2004;75(9):1233-41.

7. How do you explain the efficacy of the surface treatment with abrasive jet and acid conditioning?

Bone deposition on the implant surface depends directly on the physical interaction between cells and implant.⁽⁵⁾

Studies show that the implant surface directly influences cell behavior, especially when it comes to adherence, proliferation, morphology and functional alterations.⁽⁷⁾ Furthermore, zirconia implants roughened by surface treatment result in osseointegration comparable to that of titanium implants.⁽⁸⁾

5. Palmquist A, Omar OM, Esposito M, Lausmaa J, Thomsen P. Titanium oral implants: surface characteristics, interface biology and clinical outcome. *J R Soc Interface* 2010;7(5):515-27. 6. Cochran DL, Schenk RK, Lussi A, Higginbottom FL, Buser D. Bone response to unloaded and loaded titanium implants with a sandblasted and acid-etched surface: a histometric study in the canine mandible. *J Biomed Mater Res* 1998;40(1):1-11. 7. Wennerberg A, Albrektsson T. Effects of titanium surface topography on bone integration: a systematic review. *Clin Oral Implants Res* 2009;20(4):172-84. 8. Depprich R, Zipprich H, Ommerborn M, Naujoks C, Wiesmann HP, Kiattavorncharoen S, Lauer HC, Meyer U, Kubler NR, Handschel J. Osseointegration of zirconia implants compared with titanium: an in vivo study. *Head Face Med* 2008;4:30.

Implants



8. What is the diameter of the straight internal interface of Zi™?

Ø 2.6 mm.

9. In what diameters is Zi™ available?

3.75 and 4.3 mm.

10. What lengths are available?

10/11.5 and 13 mm.

11. What is the apex diameter of the Zi™ implant?

Ø 3.75 mm implant \rightarrow Ø 2.5 mm

Ø 4.3 mm implant \rightarrow Ø 2.6 mm

12. What is the external diameter of the Zi™ implant mount?

Seating on the Ø 3.65 mm implant. Hexagon region, where the hexagonal driver is fitted is Ø 4.40 mm.

Implants



13. What are the recommended uses of Zi™?

The Neodent Implant System is intended to be surgically placed in the bone of the upper or lower jaw to provide support for prosthetic devices, such as artificial teeth, to restore chewing function. It may be used with single-stage or two-stage surgical procedures, for single or multiple unit restorations, and may be loaded immediately when good primary stability is achieved and with physiological occlusal loading. Multiple teeth applications can be rigidly splinted.

This includes::

- placement in bone with density I, II, III and IV
- bone tap and a countersink are required for bone I and II
- a countersink is required for bone III
- post-extraction (always use a countersink and bone tap, regardless of bone density)

LOWER JAW				
SINGLE-UNIT/BRIDGE				
IMPLANT INDICATION	MOLARS	PRE-MOLARS	CANINES	INCISORS
4.3 implant	●	●	●	●
3.75 implant	●	●	●	●

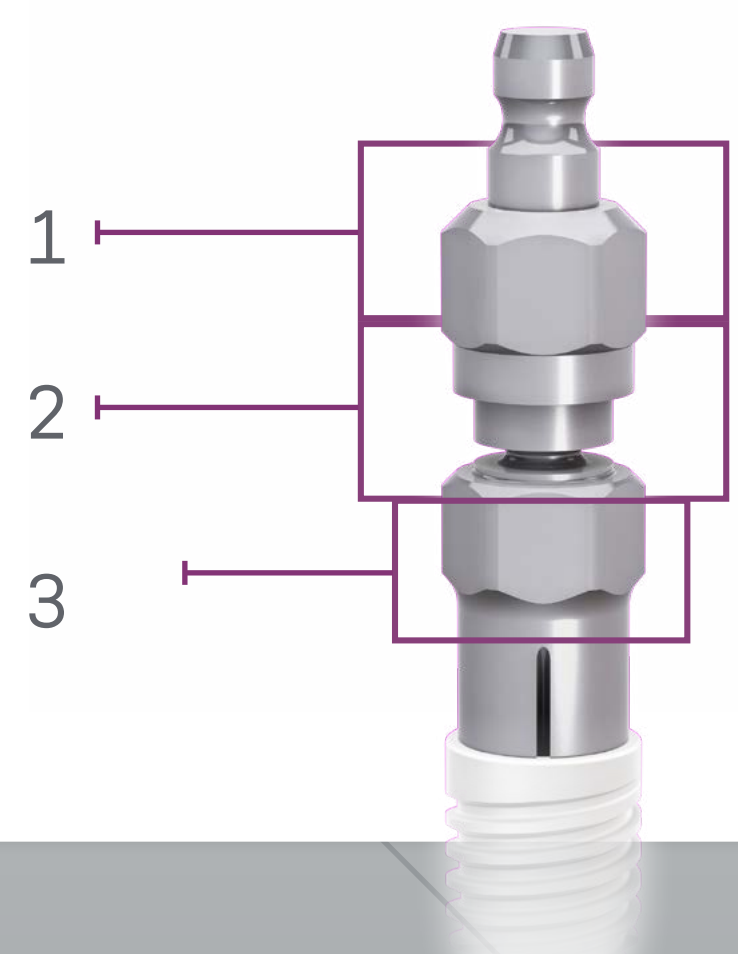
UPPER JAW				
SINGLE-UNIT/BRIDGE				
IMPLANT INDICATION	MOLARS	PRE-MOLARS	CANINES	INCISORS
4.3 implant	●	●	●	●
3.75 implant	●	●	●	●

● Indicated ● Not recommended ● Contra-indicated

14. What material is the mount sent with Zi™ made of and what are its functions?

The mount is made from stainless steel and is used for transferring the applied torque through the driver to the implant. The mount is compatible with the Neodent Hexagonal contra-angle driver (105.002) and short torque wrench (105.001). As shown in the image below, the Mount has the following attributes:

1. A hexagon compatible with the Neodent Hexagonal Driver – element used to apply the torque during placement;
2. An intermediate device (fuse) – designed to break if a torque greater than 60 Ncm is applied to the implant;
3. A secondary hexagon to remove the implant (counter-clockwise).



Implants



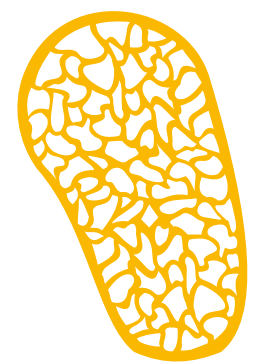
15. What is the surgical protocol for bone types I and II?

- Rotation speed: 800-1200 rpm;
- Use of the Countersink Drill is required (300 rpm);
- Use of the Bone Tap is required.



16. What is the surgical protocol for bone type III?

- Rotation speed: 500-800 rpm;
- Use of the Countersink Drill is required (300 rpm).



17. What is the surgical protocol for bone type IV?

- Rotation speed: 500-800 rpm.

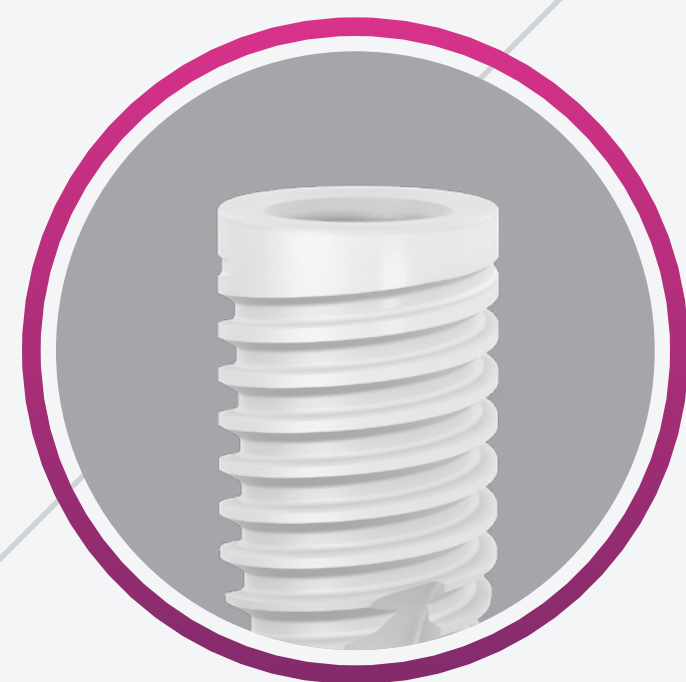


18. What is the purpose of the tap for bone types I and II?

The formation of threads in the implant bed before placement of the Zirconia implants in hard bone, type I/II and post-extraction (regardless of bone density), in the finalization process of preparing the surgical bed of the implant.



Implants



19. What are the steps for using the tap in bone types I and II for the Zi™ implant?

STEP 1:

 TO START THE VIDEO, CLICK ON THE IMAGE BELOW



To start insertion with the Bone Tap, use the Contra-angle. Fit the Bone Tap onto the Contra-angle and set the surgical motor to a maximum rotation speed of 30 rpm and maximum torque of 35 Ncm. Activate the motor and insert the Bone Tap in the implant bed, maintaining the drilling axis until stability is obtained and/or a maximum torque of 35 Ncm is reached.



Implants



19. What are the steps for using the tap in bone types I and II for the Zi™ implant?

STEP 2:

 TO START THE VIDEO, CLICK ON THE IMAGE BELOW

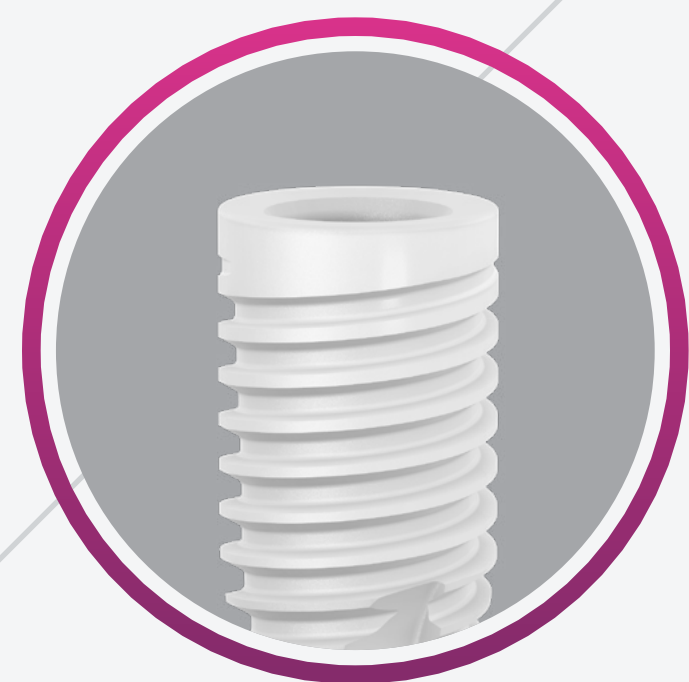


Then proceed with the insertion with the Torque Wrench, using the Hex Connection - Torque Wrench. To do so, fit the Hex Connection - Torque Wrench to the bone tap and turn clockwise to insert, pressing slightly on the Torque Wrench and taking into account the maximum torque of 60 Ncm. If there is a lot of resistance, applying counter-torque is recommended before continuing with the insertion. Proceed with the insertion until the Bone Tap for Zirconia Implant reaches the corresponding marking for the chosen implant. To remove the Bone Tap completely from the surgical cavity, reverse the direction of the Torque Wrench to counter-clockwise and remove carefully. Always check whether the fit between the Driver and the Torque Wrench is firm; otherwise, when the direction of the wrench is reversed, the gearing comes loose and may fall off.

If the procedure is done differently, instrument removal may damage the thread formation.

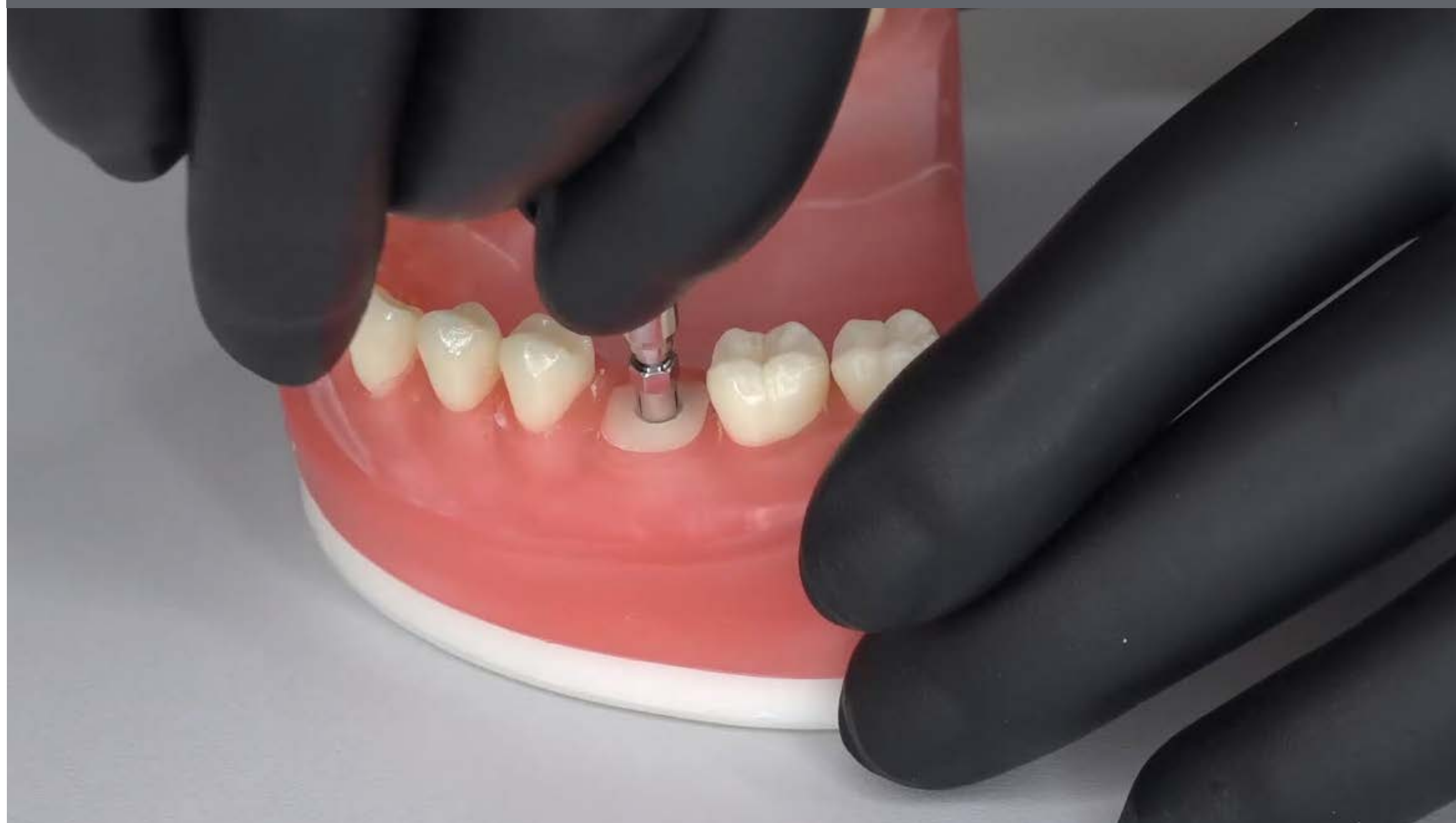


Implants



20. What is Neodent's recommendation for placing Zi™?

 TO START THE VIDEO, CLICK ON THE IMAGE BELOW



Always remove the implant from the packaging with the contra-angle drivers and begin placement. The motor must be programmed at 35 Ncm of torque and 30 rpm, since the motor locks when it reaches this stability. If required, placement can continue with the short Hexagonal Driver - Torque Wrench until the implant reaches its final position.

Important: Before fitting the Hexagonal Driver - Torque Wrench, check that the mount is perfectly adjusted to the implant.

Implants

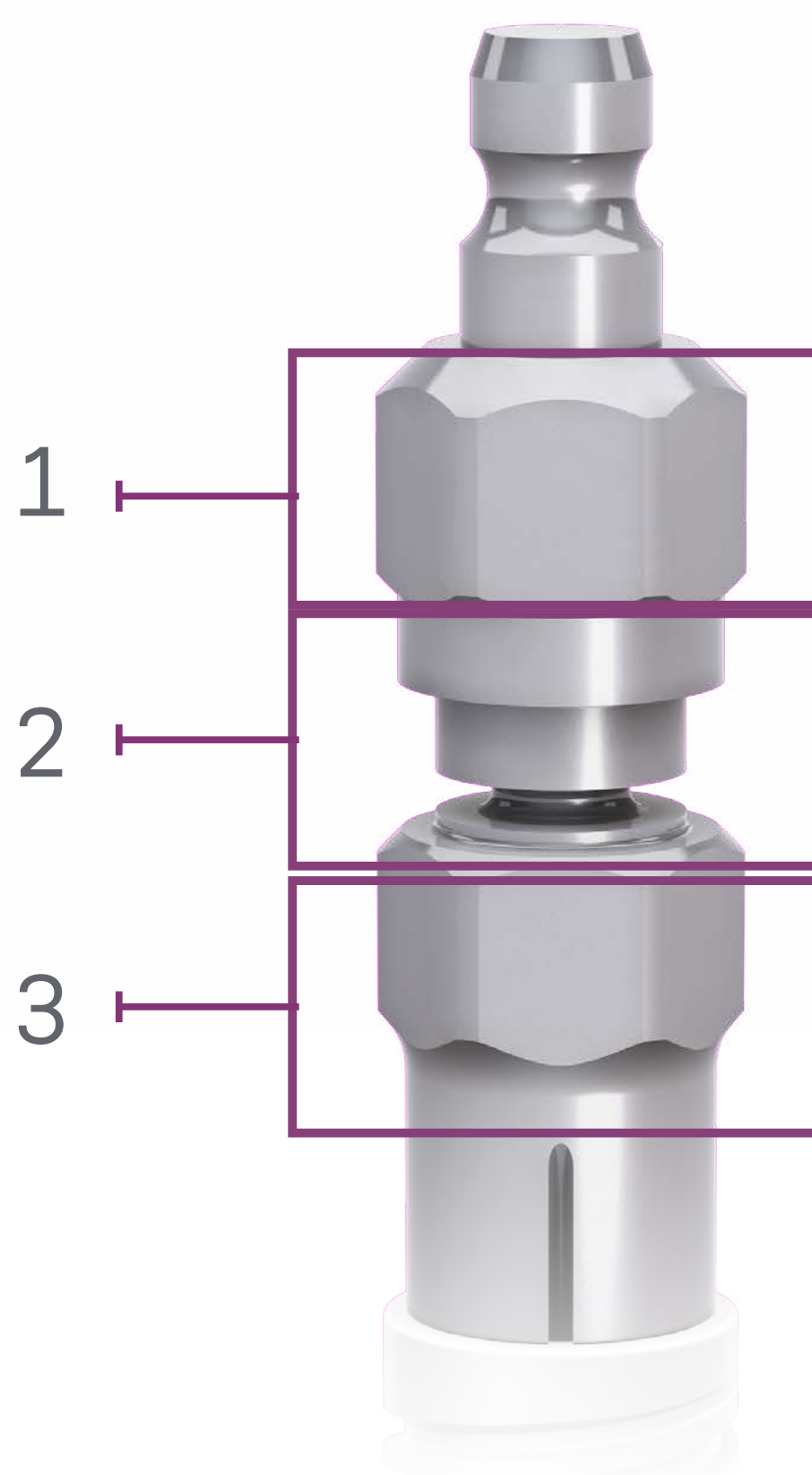


21. What is the maximum insertion torque of Zi™?

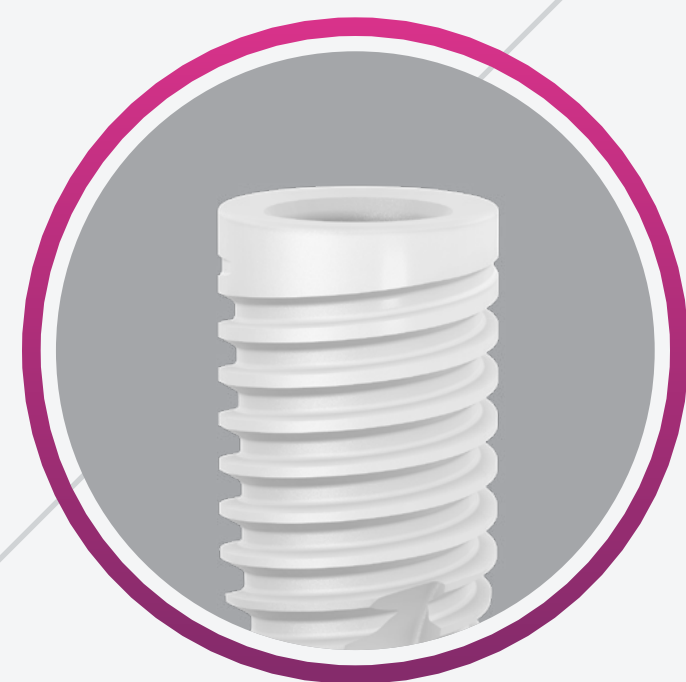
The maximum insertion torque of the Zirconia Implant is 60 Ncm. A torque greater than 60 Ncm may damage and/or break the implant. If the maximum torque is reached and insertion cannot be completed, the implant should be removed and the bed prepared again for another insertion attempt.

If a torque bigger than that which is indicated continues to be used, the Mount has an intermediate device (fuse) – designed to break if a torque greater than 60 Ncm is applied to the implant. This break prevents the practitioner from continuing with the implant insertion. From this moment, implant integrity is no longer guaranteed and Neodent does not accept responsibility for damage caused by incorrect use.

The part must be removed using the secondary hexagonal fitting in a counter-clockwise movement (3). After removal, substitution with a new implant is indicated. The secondary hexagon must only be used to remove the implant. Never use this element to insert the implant deeper. Persisting with insertion may damage the system and the practitioner.



Implants

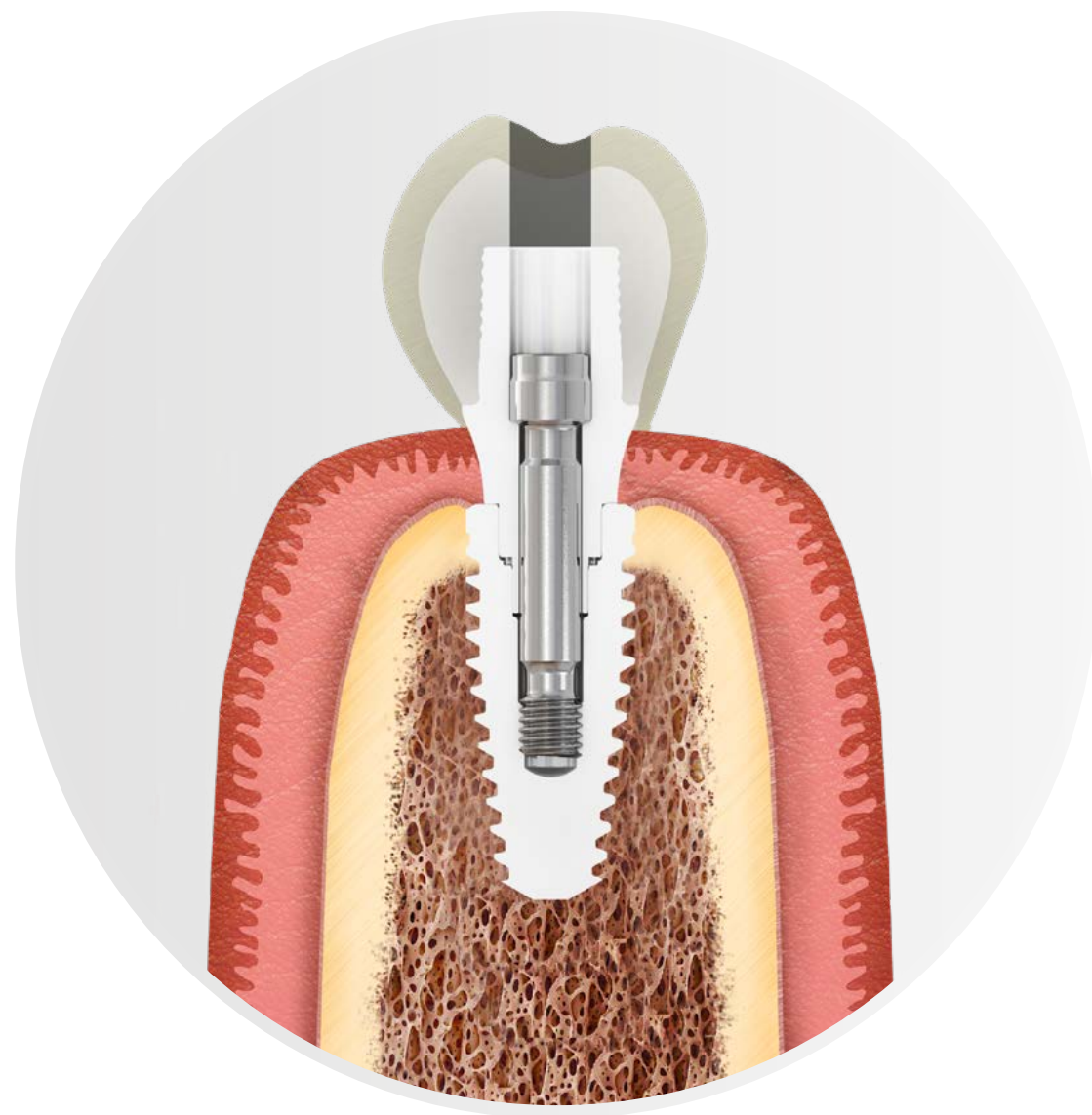
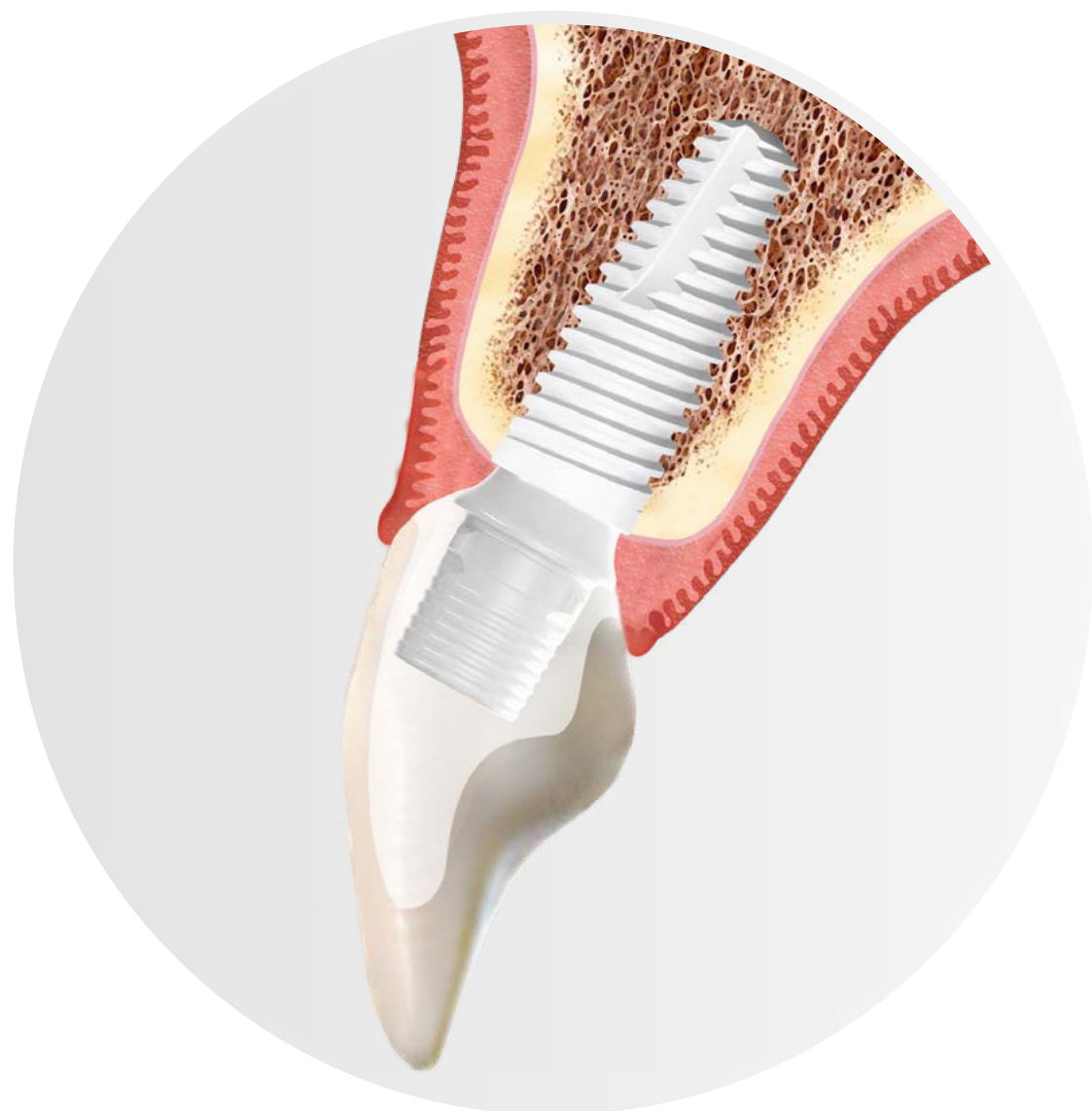


22. How is Zi™ presented and sterilized?

The product is a single-use product and is supplied sterile using Ethylene Oxide; it is packed individually in a package that offers triple protection: carton package, blister and transparent flask.

23. What is the minimum thickness of buccal and palatal/lingual walls for the placement of Zi™ implants?

The buccal and palatal bone plates must be at least 1 mm thick to support the stability of the bone tissue and the condition of the soft tissue.

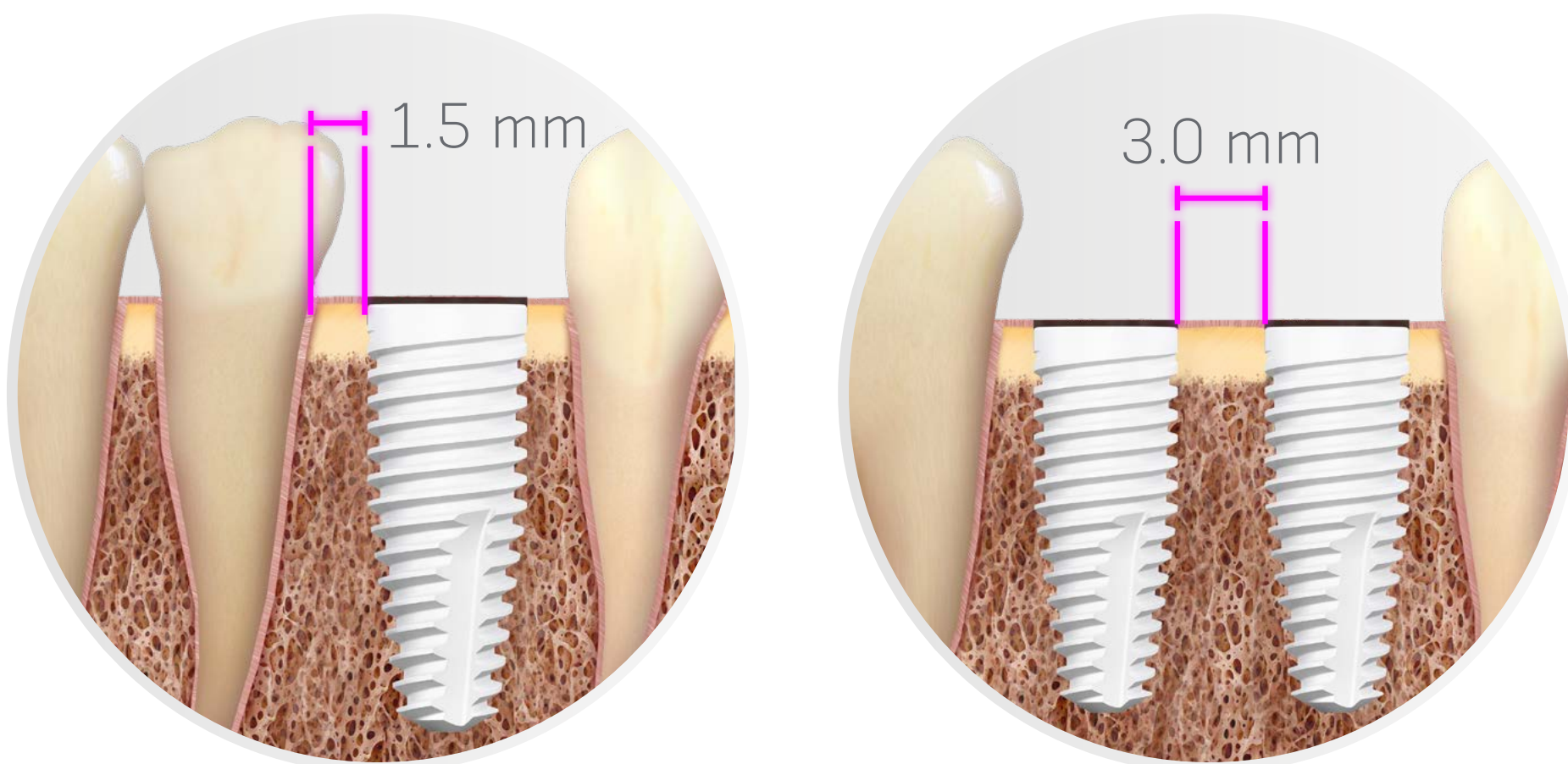


Implants



24. What is the ideal tooth/implant and implant/implant distance, respectively?

1.5 mm (tooth/implant) and 3.0 mm (implant/implant) must be maintained. This distance is recommended to support the bone crest and maintaining the papilla.



25. What is the placement recommendation in relation to the Zi™ implant?

It is recommended at bone level.

26. What is the justification for placement at bone level?

The same philosophy as the Internal Hex (IH) is followed with the classic principles of implant dentistry, except that the implant is white and its exposure is less of a concern.

27. What is the ideal torque to support immediate loading?

At least 35 Ncm.

Implants



28. What is the shelf-life of the Zi™ NeoPoros implants?

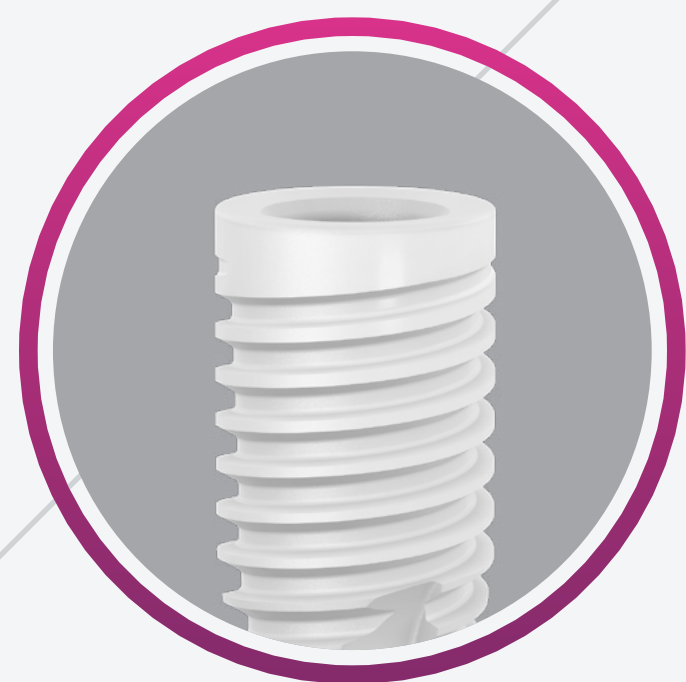
Five years.

29. What makes Neodent implant packaging different?

Neodent® packaging has been specially updated for easy handling during surgical procedures, providing practicality from implant stocking to pick up and transport to the implant bed. The implant's features, such as type, diameter and length, are readily identifiable on the outside of the packaging.



Implants



30. How should you pick up and remove the Zi™ Implant and the support mount?

 TO START THE VIDEO, CLICK ON THE IMAGE BELOW



Pick up the implant mount with the Hexagonal Prosthetic Driver Contra-angle, keeping the driver still and slightly rotating the internal holder, and look for the perfect fit between the driver and the Mount.

After fitting, move sideways to remove the implant mount.

Implants



31. Is the drilling protocol similar to the GM system?

The drilling used for preparing the Zi™ bone bed in bone type IV requires tapered drills from the GM system, but with no sub-instrumentation recommendation. For bone type III, in addition to drilling with the tapered drills, it is necessary to finish with the countersink drill. For bone types I and II, the Bone Tap and Countersink drill are required. The following drills are compatible: initial drill, 2.0 drill, 3.5 drill, 3.75 drill and 4.3 drill.

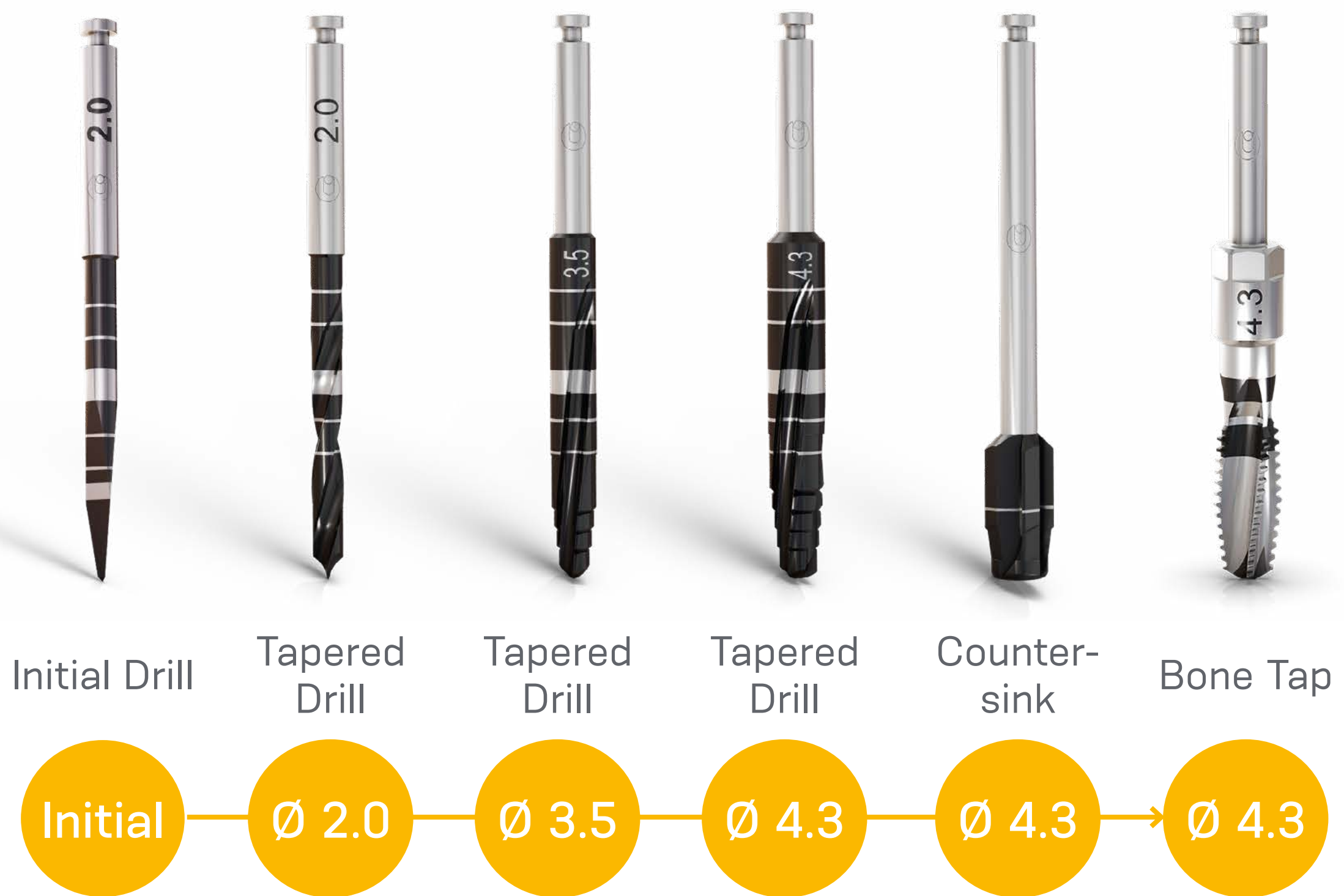
32. What is the drilling sequence for bone types I/II and post-extraction for the Ø 3.75 implant?



Implants



33. What is the drilling sequence for bone types I and II and post-extraction for the \varnothing 4.3 implant?



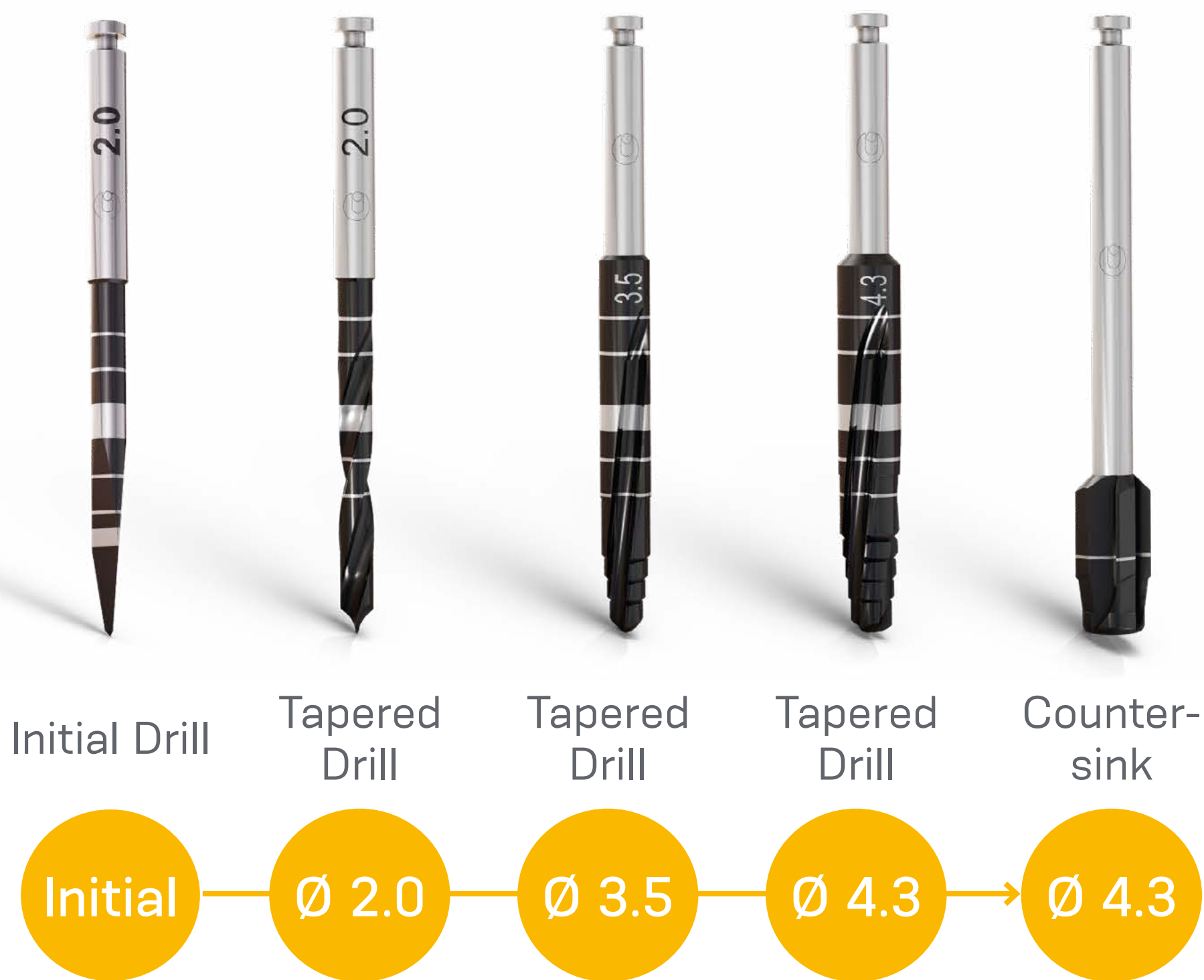
34. What is the drilling sequence for bone type III for the \varnothing 3.75 implant?



Implants



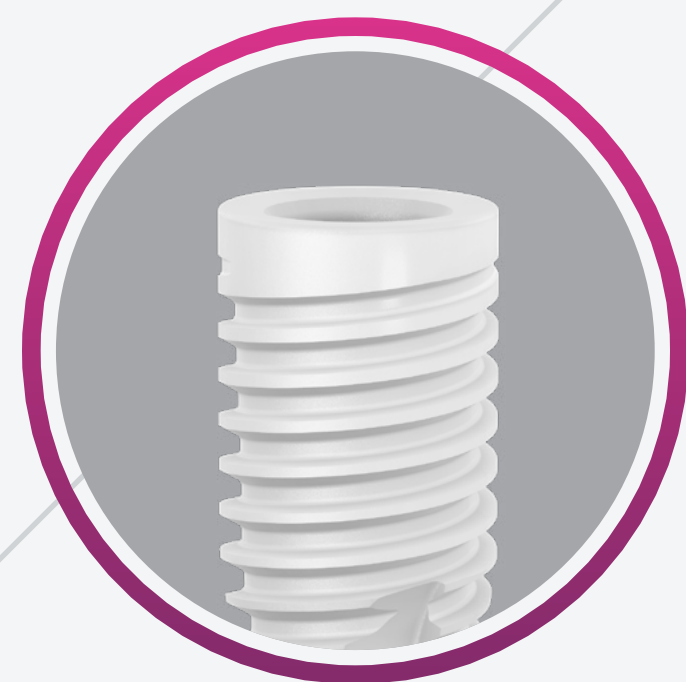
35. What is the drilling sequence for bone type III for the \varnothing 4.3 implant?



36. What is the drilling sequence for bone type IV for the \varnothing 3.75 implant?



Implants



37. What is the drilling sequence for bone type IV for the Ø 4.3 implant?



Abutments and components



1. What is the transmucosal height of the Zi™ Cover Screw?

2. Which screwdriver is used to place the Zi™ Cover Screw?

3. What are the diameters of the Zi™ Healing abutments?

4. What are the transmucosal heights of the Zi™ Healing abutments?

5. Which screwdriver is used to place the Zi™ Healing abutment?

6. What are the benefits of the ZiLock™ Connection?

7. What is the thread pitch of the Zi™ implant?

8. What are the cement-retained height and mesiodistal (M-D) space for conventional prosthetic rehabilitation with the Zirconia Base?

9. What are the cement-retained height and mesiodistal (M-D) space for digital prosthetic rehabilitation with the Zirconia Base?

10. What are the indications, connections and torque of the Zi™ abutments?



Abutments and components



11. What are the measurements (diameter, cement-retained height and transmucosal height) of the PEEK CR Abutment?

12. What is the indication for the PEEK CR Abutment?

13. What is the best work method for the PEEK CR Abutment?

14. What is the maximum time that the PEEK CR Abutment can stay in the mouth?

15. What are the possible work methods with the Impression/Provisional Coping?

16. Are there any contraindications to using the PEEK CR Abutment?

17. What are the measurements (diameter, cement-retained height and transmucosal height) of the Zirconia CR Abutment?

18. What is the indication for the Zirconia CR Abutment?

19. What is the best work method for the Zirconia CR Abutment?

20. Are there any contraindications to using the Zirconia CR Abutment?



Abutments and components



21. What are the measurements of the ZiBase?

22. Is digital workflow available for Zi™?

23. What is the prosthetic workflow of the ZiBase?

24. Are there any contraindications to using the ZiBase?



Abutments and components



1. What is the transmucosal height of the Zi™ Cover Screw?

0 mm.

2. Which screwdriver is used to place the Zi™ Cover Screw?

 TO START THE VIDEO, CLICK ON THE IMAGE BELOW



Neo Manual Screwdriver (104.060). It should be tightened until resistance is felt. Maximum torque of 10 Ncm must not be exceeded.

3. What are the diameters of the Zi™ Healing abutments?

Two diameters are available: 3.75 and 4.5 mm.

Abutments and components



4. What are the transmucosal heights of the Zi™ Healing abutments?

The following transmucosal measurements are available: 1.5/2.5 mm.



5. Which screwdriver is used to place the Zi™ Healing Abutment?

 TO START THE VIDEO, CLICK ON THE IMAGE BELOW



Neo Manual Screwdriver (104.060). It should be tightened until resistance is felt. Maximum torque of 10 Ncm must not be exceeded.

Abutments and components



6. What are the benefits of the ZiLock™ Connection?

ZiLock™ is a straight internal connection with 6 lobes and 6 tips. This indexing results in a prosthetic component with a precise fit, which is designed to protect against rotation.



The result is a Zirconia System that benefits the users, offering greater treatment flexibility compared to single-body implant systems.

7. What is the thread diameter of the Zi™ implant?

1.6 mm.

8. What are the required cement-retained height and mesio-distal (M-D) space for conventional prosthetic rehabilitation with the Zirconia Base?

Cement-retained height: in addition to the height of the abutment, a space of 1.5 mm to 2 mm is necessary for ceramics.

M-D space: in addition to the diameter of the abutment, a space of 1.5 mm to 2 mm is necessary on each side for ceramics.

Abutments and components



9. What is the required minimum thickness of the coping/ crown for digital prosthetic rehabilitation with the Zirconia Base?

3M ESPE Lava Plus Zirconia	0.7
Zirconia (Zerion LT)	0.4
Zirconia (Zerion UTML)	0.5

*In the case of angled structures, the total maximum height of the cement-retained restoration on the Zirconia Base should not exceed 10 mm.

10. What are the indications, connections and torque of the Zi™ abutments?

Abutments	Indication	Connection	Torque
PEEK CR abutment (2 pieces)	Cement-retained provisional single-unit	Neo Screwdriver Torque Connection	10 Ncm
Zirconia CR abutment (2 pieces)	Definitive single-unit in esthetic areas	Neo Screwdriver Torque Connection	32 Ncm
Zirconia Base (2 pieces)	Definitive cement-retained or screw-retained single-unit Digital	Neo Screwdriver Torque Connection	32 Ncm

11. What are the measurements (diameter, cement-retained height and transmucosal height) of the PEEK CR Abutment?

Diameter: 4.0 and 4.5 mm.

Cementable height: 5.0 mm.

Transmucosal heights: 1.5 and 2.5 mm.

Abutments and components



12. What is the indication for the PEEK CR Abutment?

It is indicated for use on Neodent implants to provide support for prosthetic structures for up to 6 months. They can be used in single- or two-stage procedures and they are intended to be placed out of occlusion.

13. What is the best work method for the PEEK CR Abutment?

Place the PEEK CR abutment with a 10 Ncm torque.

Important: Neither the diameter nor the thickness of the abutment wall can be personalized. Torque higher than 10 Ncm may damage the implant.

 TO START THE VIDEO, CLICK ON THE IMAGE BELOW



After placing the abutment, position the provisional coping over it, remove the upper tip at the height of the channel and perform direct acrylization. The provisional prosthesis must be polished before being cemented in the mouth.

Abutments and components



14. What is the maximum time that the PEEK CR Abutment can stay in the mouth?

Six months, because apart from being long enough for the peri-implant emergence profile to heal well and be ready to receive the definitive prosthesis, it is the maximum time specified according to the Indications for Use.

15. What are the possible work methods with the Impression/Provisional Coping?

- 1 As an Impression Coping: Select the model in accordance with the prosthetic plan, taking into consideration the clinical situation and the interface of the prosthetic abutment. Fit until it clicks and carry out the molding procedure in accordance with the technique for closed-tray impression coping. Construct the plaster model following the appropriate techniques.
 - 2 As a Provisional Coping: Position over the prosthetic abutment itself for direct acrylization and remove the upper tip at the height of the channel. The provisional prosthesis must be polished before being cemented in the mouth. For use as a provisional coping, use in parallel prostheses, without angulation. The prosthesis must undergo passive fit and adaptation tests. The prosthesis is then cemented into the mouth following the cement manufacturer's instructions. Prior knowledge of the technique is necessary to avoid excess cement and chemical burns on the tissues adjacent to the implant. Protect the screw access during the cementing process, if applicable.
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Important note: Impression coping and provisional coping compatible with the Zirconia CR Abutment. Check measurements.

Abutments and components



16. Are there any contraindications to using the PEEK CR Abutment?

Yes, the following are the contraindications:

- The PEEK CR Abutment for Zirconia cannot be placed in occlusion.
- This product is cannot be used to support final prostheses.
- This product is contraindicated for patients exhibiting signs of allergy or hypersensitivity to the chemical elements of the material: PEEK (dental grade) and titanium alloy Ti6Al4V-ELI.
- This product is contraindicated for insufficient interocclusal space and unsatisfactory three-dimensional position of the implant.

17. What are the measurements (diameter, cement-retained height and transmucosal height) of the Zirconia CR Abutment?

Diameter: 4.0 and 4.5 mm.

Cementable height: 5.0 mm.

Transmucosal heights: 1.5 and 2.5 mm.

Straight or 17°

18. What is the indication for the Zirconia CR Abutment?

The CR Abutment is placed over Neodent Zirconia implants to provide support for prosthetic restorations, such as copings or crowns. It is recommended for single-unit cement-retained restorations in esthetic areas over implants placed in the upper or lower jaw.

Abutments and components



19. What is the best work method for the Zirconia CR Abutment?

Select the abutment in accordance with the prosthesis plan and place over the implant with a NEO driver and torque of 32 Ncm.

A provisional prosthesis is recommended for gum conditioning. For the impression procedure, fit the corresponding Abutment Impression Coping, check the fit by clicking into place and carry out the impression with the closed-end technique using appropriate materials.

Remove the coping with the Abutment Impression Coping and fit the Analog over it.

Construct the plaster model.

Use the CR Abutment Coping to construct the prosthesis structure.

The prosthesis must undergo passive fit and adaptation tests. Cement the definitive prosthesis onto the abutment.

For cementing in the mouth, follow the cement manufacturer's instructions. Prior knowledge of the technique is necessary to avoid excess cement and chemical burns on the tissues adjacent to the implant. Protect the screw access (with Teflon and compounded resin) during the cementing process.

20. Are there any contraindications to using the Zirconia CR Abutment?

- This product cannot be customized/personalized.
- This product is contraindicated for patients who show signs of allergy or hypersensitivity to the chemical elements of the material: Ti6Al4V-ELI titanium alloy, zirconia (Y-TZP), zirconium dioxide (ZrO_2), yttrium oxide (Y_2O_3), hafnium dioxide (HfO_2) and aluminum oxide (Al_2O_3).
- This product is contraindicated for insufficient interocclusal space and unsatisfactory three-dimensional position of the implant.

21. What are the measurements of the ZiBase?

Diameter: 3.75 and 4.5 mm.

Cementable height: 4.0 mm.

Transmucosal heights: 1.5 and 2.5 mm.

Abutments and components



22. Is a digital workflow available for Zi™?

Zi™ is compatible with a digital workflow. Crowns on a zirconia base can be designed using the following CAD programs available on the market: CARES® Visual, 3Shape, and Dental Wings.

23. What is the prosthetic workflow of the ZiBase?

ZiBase is a flexible prosthetic solution that can be used for:

Immediate or conventional loading protocol;

Digital workflow;

Scanbody for Zi™ must be used for digital workflow, and is compatible with IO or laboratory scanners. The library is available for download on the Neodent website (www.neodent.com/cadcam) and the coping/crown is intended to be sent to Straumann for manufacture at a validated milling center;

24. Are there any contraindications to using the ZiBase?

Yes, there are contraindications:

- signs of allergy or hypersensitivity to the chemical elements of the material: Ti6Al4V-ELI titanium alloy, zirconia (Y-TZP), zirconium dioxide (ZrO_2), yttrium oxide (Y_2O_3), hafnium dioxide (HfO_2) and aluminum oxide (Al_2O_3);
- ZiBase is contraindicated for patients with bruxism;

Instruments



1. How long are the Tapered Drills?

2. How long is the Bone Tap?

3. What are the measurements of the standard Tapered Drill markings?

4. What are the measurements of the short Tapered Drill markings?

5. What are the measurements of the long Tapered Drill markings?

6. What are the features of the Tapered Drills?

7. What are the measurements of the Bone Tap markings?

8. What is the shelf life of the Compact Surgical Kit and drills respectively for the Zirconia Implant?

9. The drills have a thin dark-colored carbon film over the cutting surface. What are the benefits?

10. What is the configuration of the Compact Surgical Kit for Zi™?



Instruments



11. If the client has the GM Complete Surgical Kit or the Helix, which pieces are necessary to begin their experience with Zi™ implants?

12. How should the customer be guided to set up the Compact Surgical Kit for Zi™?

13. What are the lengths of the implant placement connections?

14. What are the lengths of the prosthetic connections?

15. What are the measurements of the Zi™ kit 3.75 Direction Indicator?

16. What are the measurements of the Zi™ kit 4.3 Direction Indicator?

17. At which stages is the Direction Indicator used?

18. What steps are indicated for sanitizing the cassettes and instruments?

19. What steps are indicated for sanitizing the Zi™ Drills?

20. Can the drills be sterilized under dry heat (greenhouse)?

21. Do the connections come sterilized?



Instruments



1. How long are the Tapered Drills?

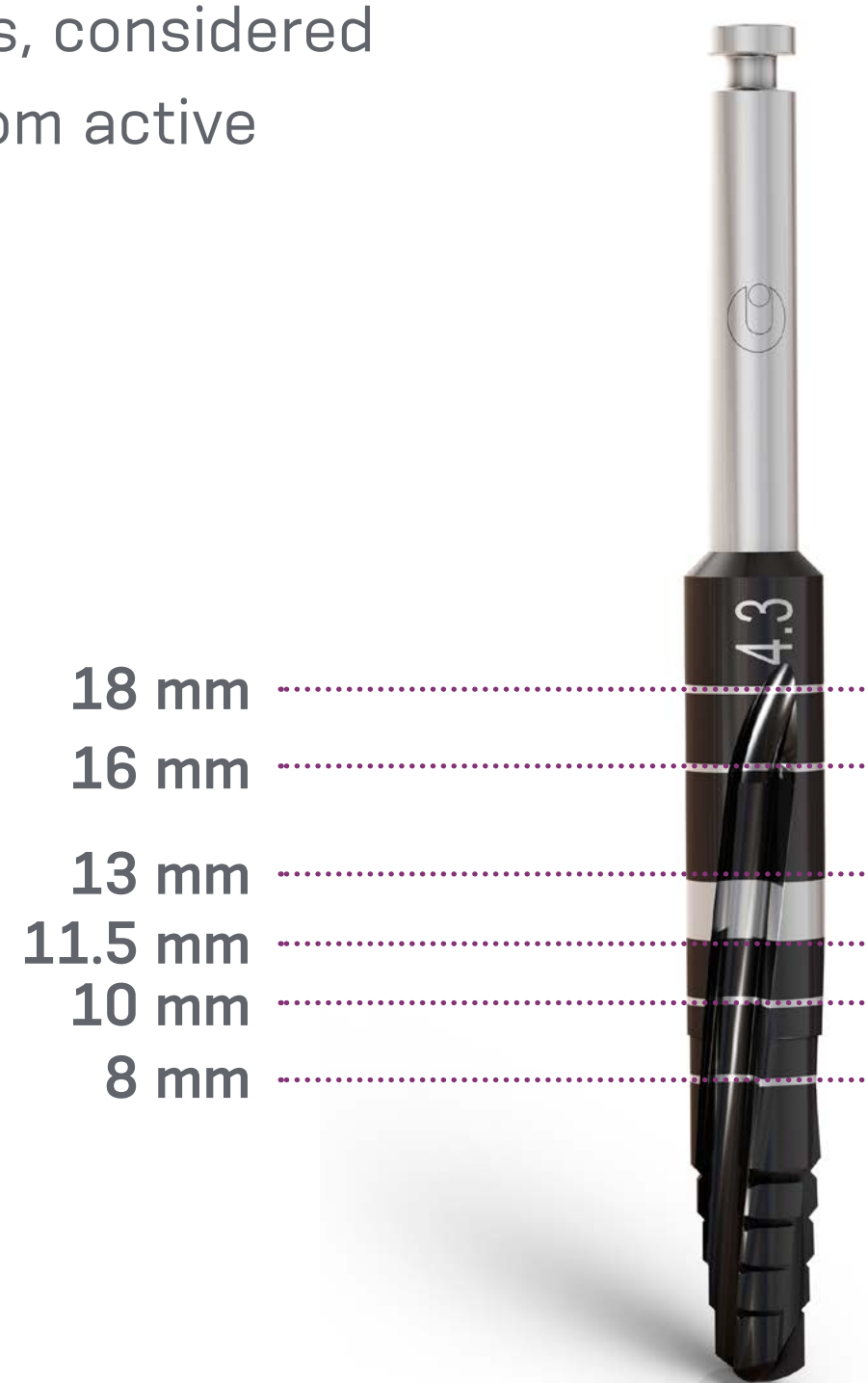
- Short: 31 mm.
- Intermediate: 35 mm.
- Long: 43 mm.

2. How long is the Bone Tap?

35 mm.

3. What are the measurements of the standard Tapered Drill markings?

Below the measurements of these drills, considered to be intermediate (35 mm): starting from active point 8, 10, 11.5, 13, 16 and 18 mm.



Instruments



4. What are the measurements of the short Tapered Drill markings?

13 mm
11.5 mm
10 mm
8 mm



5. What are the measurements of the long Tapered Drill markings?

18 mm
16 mm
13 mm
11.5 mm
10 mm
8 mm



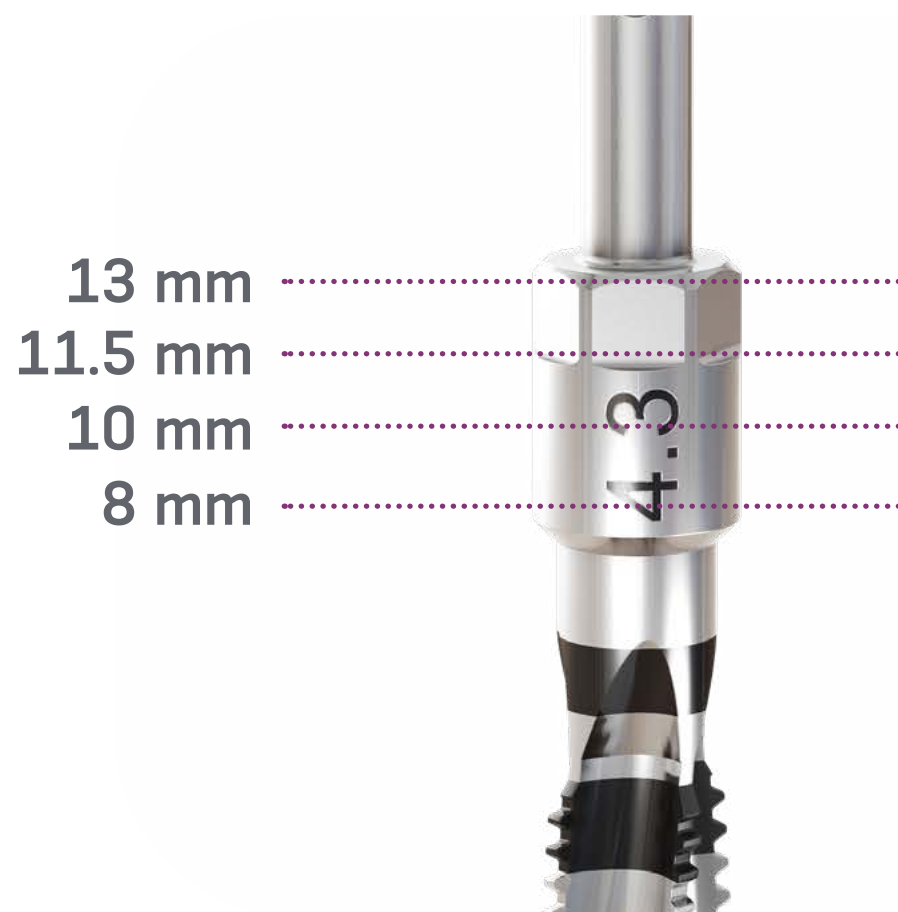
6. What are the features of the Tapered Drills?

The drills are manufactured from surgical stainless steel. At one end there is a contra-angle fitting and at the active end, a conical profile, spherical tip, cutting geometry capability with preparation of the bone bed for conical implants, and marking to identify the drill diameter.

Instruments



7. What are the measurements of the Bone Tap markings?



8. What is the shelf life of the Compact Surgical Kit and drills respectively for Zi™?

Up to 60 uses (kit) and 30 uses (drills), provided that the conditions of use recommended by Neodent are followed. Regardless of the number of times the instruments are used, the practitioner should always assess the condition of the instruments after each use and consider replacing them if they are not fit for use.

9. The drills have a thin dark-colored carbon film over the cutting surface. What are the benefits?

- The drills are designed for reduction of friction between drill and bone, thereby reducing the heat generated during the osteotomy;
- Increased resistance to wear;
- Increased resistance to oxidation.

Instruments



10. What is the configuration of the Compact Surgical Kit for Zi™?



- | | | | | |
|----|---------|---|---------|--|
| | 103.170 | Guide Drill Plus | 103.450 | Countersink drill for Zirconia implant 4.3 |
| | 103.425 | Tapered Drill 2.0 | 111.048 | Bone Tap for Zirconia implant 4.3 |
| OR | | | | |
| | 103.171 | Helicoidal Alvim Drill 2.0 Plus | 129.009 | Alvim X-Ray Positioner 3.75 |
| | 103.399 | Tapered Drill 3.5 | 129.013 | Alvim X-Ray Positioner 4.3 |
| OR | | | | |
| | 103.172 | Alvim Drill 3.5 Plus | 128.020 | Direction Indicator 3.0/3.75 |
| | 105.001 | Short hex driver for wrench | 128.022 | Direction Indicator 3.6/4.3 |
| | 103.426 | Drill Extender | 105.002 | Hex Driver for Contra-Angle |
| | 128.020 | Direction Indicator 3.0/3.75 | 104.060 | Neo Manual Screwdriver (medium) |
| | 103.408 | Tapered Drill 4.3 | 105.132 | Neo Screwdriver Torque Connection |
| OR | | | | |
| | 103.173 | Tapered Drill 4.3 Plus | 104.050 | Torque Wrench |
| | 103.488 | Countersink drill for Zirconia implant 3.75 | 129.001 | Titanium tweezers |
| | 111.046 | Bone Tap for Zirconia implant 3.75 | | |

Instruments



11. If the client has the GM Complete Surgical Kit or the Helix, which pieces are necessary to begin their experience with Zi™ implants?

- 103.488 Countersink drill for Zirconia implant 3.75
- 111.046 Bone Tap for Zirconia implant 3.75
- 103.450 Countersink drill for Zirconia implant 4.3
- 111.048 Bone Tap for Zirconia implant 4.3
- 105.002 Hex Driver for Contra-Angle
- 105.001 Short Hex Driver for Wrench

12. How should the customer be guided to set up the Compact Surgical Kit for Zi™?

It is very easy, since each instrument in the kit is identified by a number, which is also shown in the kit image. The Titanium Tweezers and Torque Wrench are kept under the tray.



- | | | | | | |
|----|---------|---------------------------------|----|---------|-----------------------------------|
| 1 | 103.170 | Guide Drill Plus | 12 | 103.408 | Tapered Drill 4.3 |
| 2 | 103.425 | Tapered Drill 2.0 | 13 | 103.173 | Tapered Drill 4.3 Plus |
| 3 | 103.171 | Helicoidal Alvim Drill 2.0 Plus | 14 | 103.450 | Countersink Drill 4.3 |
| 4 | 103.399 | Tapered Drill 3.5 | 17 | 111.043 | Bone Tap 4.3 |
| 5 | 103.172 | Alvim Drill 3.5 Plus | 18 | 129.013 | Alvim X-Ray Positioner 4.3 |
| 6 | 103.402 | Tapered Drill 3.75 | 22 | 128.022 | Direction Indicator 3.6/4.3 |
| 7 | 103.488 | Countersink Drill 3.75 | 25 | 105.002 | Hex Driver for Contra-Angle |
| 8 | 111.046 | Bone Tap 3.75 | 26 | 104.060 | Neo Manual Screwdriver (medium) |
| 9 | 105.001 | Short Hex Driver for Wrench | 27 | 105.132 | Neo Screwdriver Torque Connection |
| 10 | 103.426 | Drill Extender | 28 | 104.050 | Torque Wrench |
| 11 | 129.020 | Alvim X-Ray Positioner 3.75 | | 129.001 | Titanium tweezers |
| | 128.020 | Direction Indicator 3.0/3.75 | | | |

Instruments



13. What are the lengths of the implant placement connections?



Hex Driver for
Contra-Angle

105.002

← 24.9 mm



Hex Driver for
Wrench (short)

105.001

← 16 mm

14. What are the lengths of the prosthetic connections?

Neo Screwdriver Torque Connection

Neo Screwdriver



104.058

← 21.2 mm

104.060 medium ← 25.2 mm

104.059 long ← 37.2 mm



105.133

← 16.5 mm

105.132 medium ← 22 mm

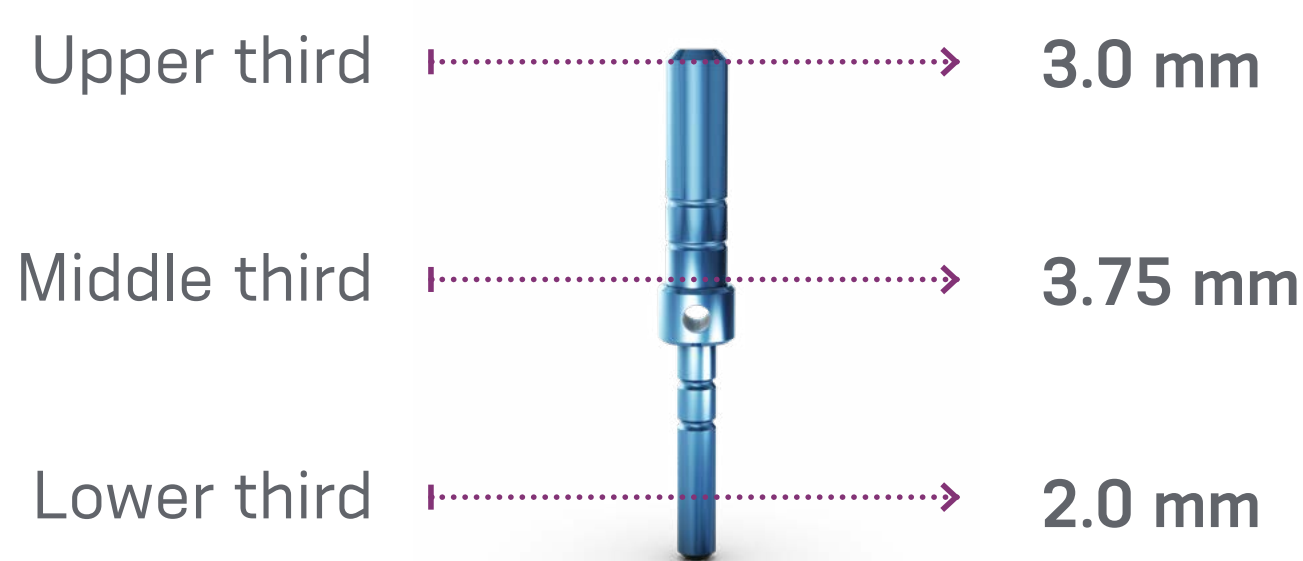
105.134 long ← 35 mm

Instruments



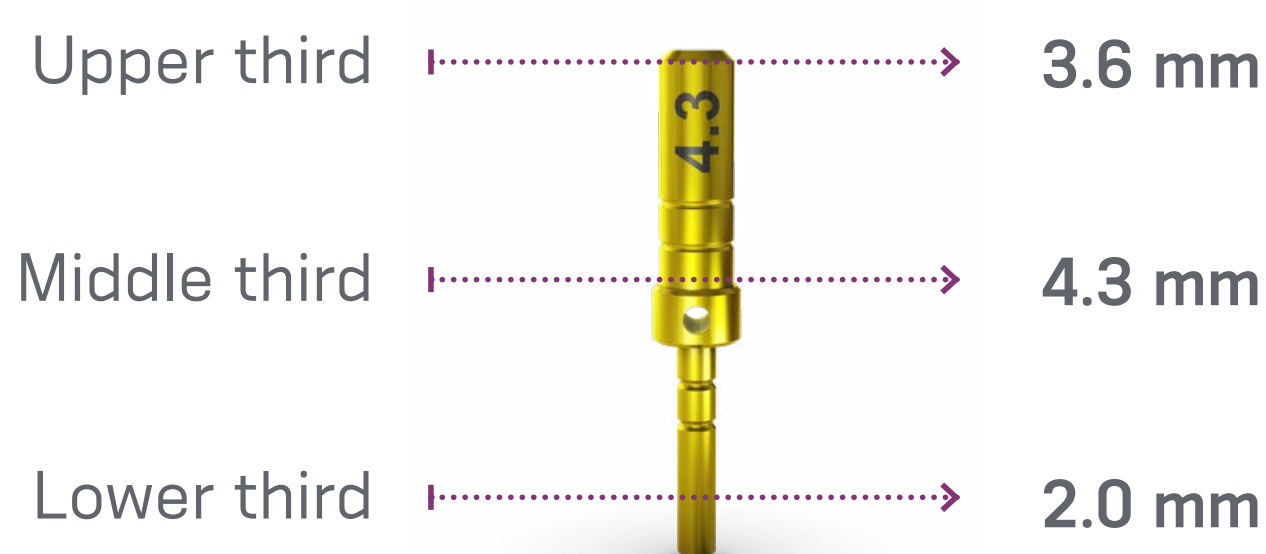
15. What are the measurements of the Zi™ kit 3.75 Direction Indicator?

To facilitate the response, the Direction Indicator has been divided into three parts:



16. What are the measurements of the Zi™ kit 4.3 Direction Indicator?

To facilitate the response, the Direction Indicator has been divided into three parts:



17. At which stages is the Direction Indicator used?

After the 2.0 mm drill, the lower third of the Direction Indicator is introduced into the drill hole to check the drill angle. After drilling with the last drill relative to the diameter of the selected implant, the upper third of the Direction Indicator is introduced to re-check the drill angle and the remaining amount of bone structure (Figure 84), with the middle third indicating the diameter of the cervical portion of the implant.

Instruments



18. What steps are indicated for sanitizing the cassettes and instruments?

The Neodent Surgical kits and instruments must be correctly sanitized after each use. Do not leave them in contact with humidity for long periods. Follow the step-by-step procedure:

- 1 Disassemble the part (if applicable);
- 2 Immerse the part completely in enzymatic detergent (10% to 15% solution);
- 3 Wash in an ultrasonic washer for around 10 minutes;
- 4 Rinse thoroughly in distilled water until all the solution has been completely removed, using brushes if necessary;
- 5 Dry with a paper towel or compressed air;
- 6 Undertake a visual inspection, checking to see whether there are any flaws in the cleaning process;

If there is any dirt, the piece must be immersed in detergent again (steps 1 and 2) and, if necessary, must be cleaned with the aid of a nylon brush for odontological use (repeat the rinsing and drying sequence).

- 7 Select the packaging according to the sterilization process. Preferably use self-sealing packaging of surgical grade paper with laminate film.

Important note:

Never store the material without it being completely dry. Drying is very important to prevent rusting. Do not use descaling products (non-enzymatic) as they tend to darken the pieces and also cause rusting. The use of enzymatic liquid in a concentration above 10%, as well as drying the pieces containing residue of cleaning solution, promotes rusting and must be avoided.

Instruments



19. What steps are indicated for sanitizing the Zi™ Drills?

The instruments must be sanitized after each use. There are two possibilities for cleaning and disinfection: **manual and automatic**.

MANUAL CLEANING AND DISINFECTION

Cleaning:

- 1 Disassemble the instruments, if possible (check the disassembly instructions for each instrument, when applicable).
- 2 Soak the disassembled instruments for at least 1 minute in the cleaning solution (Enzol® enzymatic detergent, prepared per manufacturer directions), so that the instruments are fully covered. Ensure there is no contact between the instruments. Assist cleaning by careful brushing with a soft brush. Shake the moving parts several times during cleaning. Do not use metal brushes or steel wool.

If applicable, wash all internal surfaces at least 5 times, using a single-use syringe (minimum volume of 10 ml).

- 3 Soak the disassembled instruments for 15 minutes in the cleaning solution (Enzol® enzymatic detergent, prepared per manufacturer directions) using ultrasonic treatment, so that the instruments are fully covered. Ensure there is no contact between the instruments.
- 4 Remove the instruments from the cleaning solution, and rinse them thoroughly at least 3 times (for at least 1 minute) in running water.

If applicable, wash all internal surfaces at least 5 times, at the beginning of the immersion, using a single-use syringe (minimum volume of 10 ml).



Instruments



Cleaning, cont'd.

- 5 Repeat the cleaning steps of instruments that remain visibly contaminated.
- 6 Check all instruments after cleaning for signs of corrosion or damage. Do not continue to use corroded or damaged instruments.
- 7 Dry the instruments thoroughly before storage and sterilization; the accumulation of moisture on the instruments may cause corrosion that can detrimentally affect instrument performance.
- 8 Insert the cleaned, disinfected and dried instruments in the corresponding locations of the Case Kit tray and base. Assemble the Kit Case by inserting the tray into the base and attaching the lid.
- 9 Protect the assembled Kit Case from moisture and dust if it will not be used for an extended time.



Instruments



19. What steps are indicated for sanitizing the Zi™ Drills?

Notes:

- 1 Pay attention to the following points when choosing the washer-disinfector:

 - Approved WD efficacy (e.g., EC marking in accordance with EN ISO 15883 or DGHM or FDA approval/clearance/registration);
 - Option for an approved heat disinfection program (A0 value > 3000 or, for older devices, at least 5 minutes at 90 °C/194 °F; in case of hazardous chemical disinfection of remaining disinfectant on instruments);
 - Use the appropriate program for instruments, as well as the information on suitable rinsing in the program;
 - Post-wash only with sterile water or water with low contaminants (e.g. maximum of 10 germs/ml, maximum of 0.25 endotoxin units/ml);
 - Use only filtered air (oil-free, low contamination from microorganisms and particles) for drying;
 - Ensure regular maintenance and check/calibration of the WD.
- 2 Do not clean any instruments using metal brushes or steel wool.
- 3 Check all instruments after cleaning and after disinfection for corrosion, damaged surfaces and impurities. Do not use the devices if they are damaged. Instruments that are still contaminated must be cleaned and disinfected once again.



Instruments



19. What steps are indicated for sanitizing the Zi™ Drills?

Notes:

- 4 Packaging: insert the clean and disinfected instruments into the sterilization trays. The instruments should be placed in the Zirconia Implant Compact Surgical Kit (110.293).

The kits should be individually wrapped in two layers of 1-ply polypropylene wrap (Halyard Health H200 - 510(k) K082554) using sequential envelope folding techniques.

- 5 The cleaning should be done as above.



Instruments



19. What steps are indicated for sanitizing the Zi™ Drills?

Notes:

- 6 In the absence of the aforementioned cleaning/disinfection products, ensure that similar products are used. Any replacement is the user's sole responsibility.
 - 7 Drying the parts is extremely important before storing and sterilization because the accumulation of humidity in the products is damaging and can cause oxidation.
-

Important note:

During sanitization, try to avoid contact between the cutting instruments and other instruments so the cutting power is not impaired.



Instruments



20. Can the drills be sterilized under dry heat (greenhouse)?

No, for sterilization, use only the autoclave sterilization method.

Parameters	Fractional vacuum/ dynamic air removal ¹	Gravity Displacement Sterilization ²
Sterilization time	4 minutes	15 minutes
Sterilization temperature ³	132 °C/270 °F	132 °C/270 °F
Drying time	For at least 20 minutes	For at least 40 minutes

- 1 The required efficacy in drying time depends directly on parameters for which the user is responsible (loading configuration and density, and sterilization conditions), and these must be determined by the user. However, the drying time used should be no less than 20 minutes.

Important notes:

- After sterilization, package the instruments in a dry, dust-free environment.
- The immediate-use/flash sterilization procedure should not be used
- Do not use dry-heat sterilization, radiation sterilization, sterilization with formaldehyde and ethylene oxide or plasma sterilization.
- Autoclaving these products in their original packaging is not recommended

21. Do the connections come sterilized?

No, for sterilization, use only the autoclave sterilization method.

← RETURN TO SUMMARY

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