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## Quick start – Surgery

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Easy and effective

BioniQ

# Implant bed preparation

## IMPLANT CHARACTERISTICS

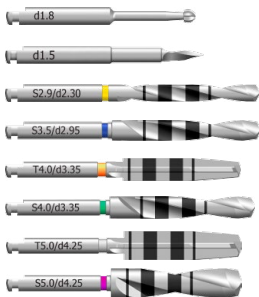


**Tapered implants:** Conical – tapered implants (T) designed for lower density bone (D3 and D4), after teeth extraction, or whenever high primary stability is required. It is necessary to use a threadformer in high density bone (D2).



**Straight implants:** Screw-shaped implants with cylindrical design (S) designed especially for dense bone (D1 and D2), for mandible, or whenever a cylindrical shape of implant is preferred. For the replacement of individual teeth in the molar area it is recommended to use implants of as large diameter as possible.

## BASIC PREPARATION



Instrument	Ref. No.	rpm	Implant Diameter					
			S2.9	S3.5	T4.0	S4.0	T5.0	S5.0
Roundburr	2443.00	800	Yes	Yes	Yes	Yes	Yes	Yes
Pilot drill d1.5	2446.00	800	Yes	Yes	Yes	Yes	Yes	Yes
Final drill S2.9	2420.00	800	Yes	Yes	Yes	Yes	Yes	Yes
Final drill S3.5	2425.00	800		Yes	Yes	Yes	Yes	Yes
Final drill T4.0	2435.00	800			Yes	Yes	Yes	Yes
Final drill S4.0	2430.00	800				Yes	Yes	Yes
Final drill T5.0	2441.00	800					Yes	Yes
Final drill S5.0	2437.00	800						Yes

After marking the implantation site, prepare the bone bed using drills with a diameter corresponding to that of the implant selected. The procedure for using drills is clearly marked on the surgical organizer insert. Adhering to the recommended drilling protocol is obligatory and minimizes the risks of excessive mechanical or thermal damage to the bone tissue.

## SUBSEQUENT PREPARATION



Instrument	Ref. No.	rpm	S2.9	S3.5	T4.0	S4.0	T5.0	S5.0
Counterbore S2.9	2422.00	500	Yes					
Threadformer S2.9	2421.00	20	Optional					
Counterbore S3.5	2427.00	500		Yes				
Threadformer S3.5	2426.00	20		Optional				
Counterbore S4.0/T4.0	2433.00	500			Yes	Yes		
Threadformer S4.0/T4.0	2431.00	20			Optional	Optional		
Counterbore S5.0/T5.0	2439.00	400					Yes	Yes
Threadformer S5.0/T5.0	2438.00	20					Optional	Optional

 obligatory use

 optional use

Subsequent preparation involves use of counterbores and threadformers. All instruments are laser-marked to indicate the implant line, for which they should be used.









**The counterbore** is used for all bone types (D1–D4). In D4 density bone, it is possible to perforate a thin section of cortical bone with partial use of the counterbore.

**The threadformer** is used in D1 and D2 density bones to the total length of the implant. It is not necessary to use the threadformer in lower density bones (D3 and D4), or it can be used to cut the cortical bone. It is recommended to use a threadformer together with the Unigrip and ratchet.

The instruments included in a surgical instrument organizer are sufficient for the bone bed preparation for all implant lines. **The cutting instruments should not be used more than 20 times.**

## IMPLANT INSERTION

Implants may be inserted manually using the insertion wrench/Unigrip and the ratchet, or mechanically using the mechanical insertion wrench and a surgical unit. Do not exceed the speed of 20 rpm. It is appropriate to use a long insertion wrench in the anterior region and a short insertion wrench in the posterior region.

Instrument	Ref. No.	
Insertion wrench – long	2403.00	
Insertion wrench – extra short	2402.00	
Unigrip	2459.00	
Insertion wrench BioniQ – mechanical, short	2412.00	
Insertion wrench BioniQ – mechanical, long	2444.00	
Extend driver	4214.3	
Guide wrench	2410.00	
Ratchet	2408.00	

A cover screw is supplied with the implant. To remove the implant from the inner blister, peel off the paper from the back of the inner blister to about three quarters of its length to prevent the cover screw falling out of the package (Picture 1).

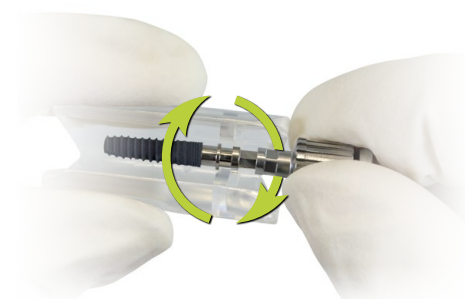
Attach the insertion wrench or Unigrip to the implant carrier and use it to pull out the implant from the plastic holder using a twisting motion (Picture 2). The implant is ready for insertion.

After inserting the implant, peel off the rest of the paper cover from the blister and remove the cover screw (Picture 3).

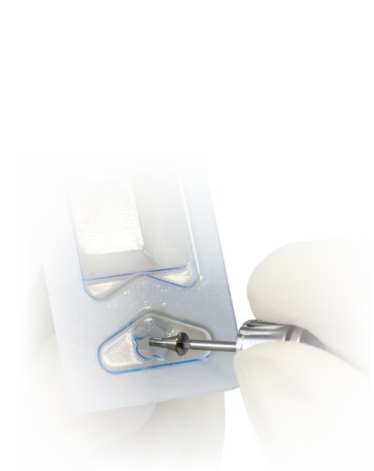
**It is recommended to tighten the cover screws and the gingiva formers manually using a screwdriver (5–10 Ncm).**



Picture 1



Picture 2

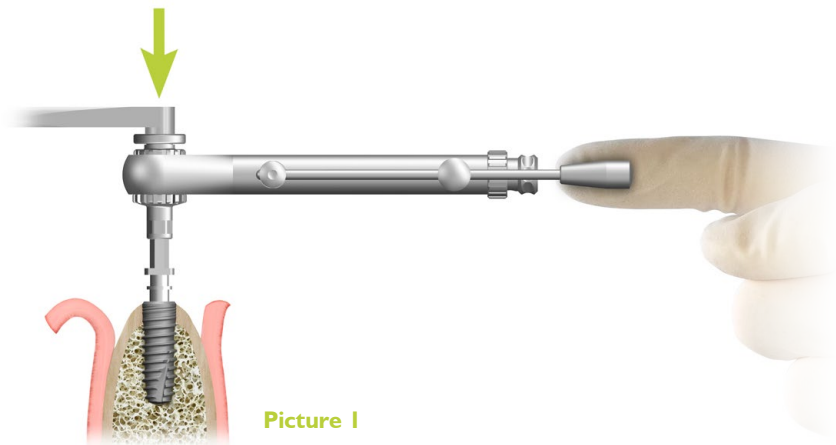


Picture 3

# Implant insertion

Always use your finger, or the guide wrench, as a stabilizer to maintain the direction of the implant insertion (see arrow in **Picture 1**). During use, the ratchet has to be held only at the end of the spring indicator wire (see **Picture 1**).

**The maximum recommended insertion torque of BioniQ implants is 60 Ncm.** Repeatedly exceeding the torque of 60 Ncm may result in damage of the torque adapter.



**Picture 1**

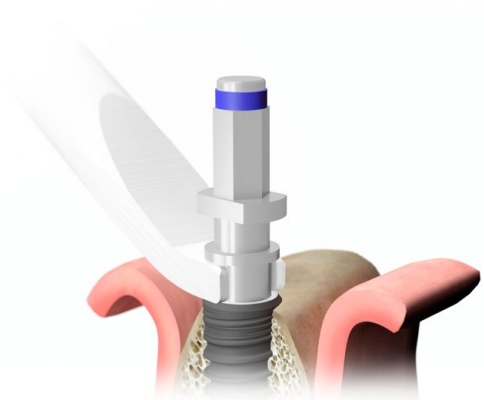
After inserting the implant, remove the insertion wrench/Unigrip and then pull off the carrier from the implant. In case of insufficient stability of the implant in the bone bed, fit the fork of the guide wrench under the lower ring of the implant carrier (**Picture 2**) and remove it from the implant.

If the insertion torque of 60 Ncm is exceeded – a situation that can be caused e.g. by not using a threadformer or a counterbore in higher density bone – it is recommended to unscrew the implant using a reverse motion of the ratchet and to prepare the implant bed completely using the threadformer, counterbore or/and final drill. Higher insertion torques may cause sticking of the implant carrier in the implant. In such a case, set the insertion wrench/Unigrip to the implant carrier and, by turning it slightly counter clockwise, release the implant carrier from the implant.

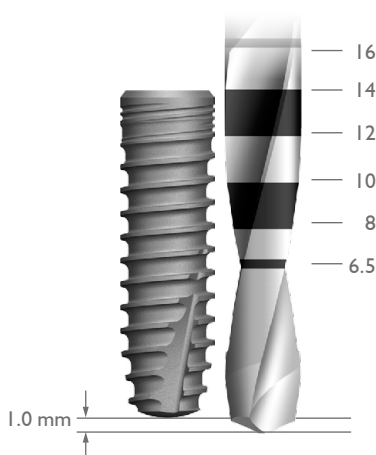
If the insertion torque of 90 Ncm is exceeded when inserting the S2.9 implants, fracture will occur at the top of the implant carrier.

The fragment of the implant carrier can be easily removed from the insertion wrench/Unigrip and the insertion wrench/Unigrip can be set to the remaining part of the implant carrier.

It is recommended to unscrew the implant using a reverse motion of the ratchet and to prepare the implant bed completely using the threadformer, counterbore or/and final drill. Then insert the implant again.

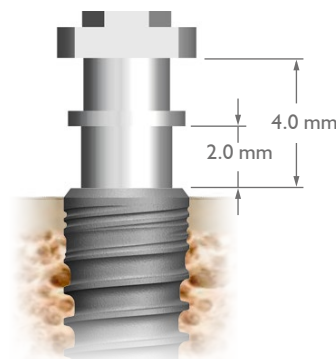


**Picture 2**



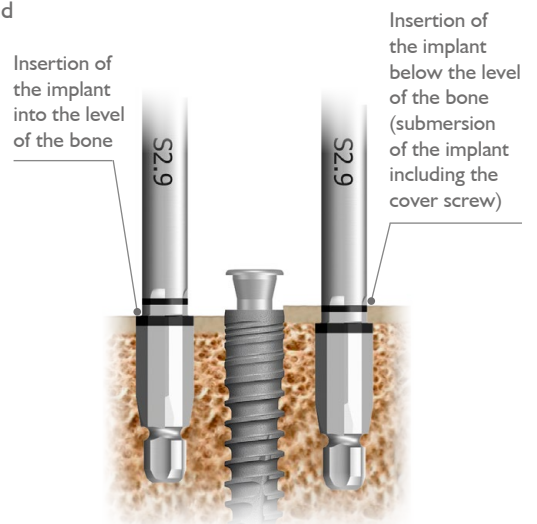
**Picture 3**

The actual length of the final drills measured from the drill's tip to the given mark is 1.0 mm longer than the length of the implant. This should be taken into account when selecting the implant length.



**Picture 4**

The rings of the implant carrier can be used as indicators of the depth of the implant insertion.



**Picture 5**

Counterbore enables two implant insertion/submersion options.