

# GUIDED SURGERY MANUAL

## ULTIMATE G42 & G52



## Preamble

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The instructions herein describe the different phases of the surgical intervention to be performed with the In-Kone® (NR, ST & WD platforms) and twinKon® implant systems.

This document should not be considered as a teaching tool on implant practice in general; no claims will be received under any circumstances.

### **Warning:**

The installation of NR, ST & WD platform In-Kone® and twinKon® implants concerns surgeons who are already trained in dental implantology and who have the facilities required for this type of intervention.

NR, ST & WD platform In-Kone® and twinKon® systems must be used exclusively in combination with original brand components and according to the instructions presented below.

Global D declines all liability in the event of installation that fails to comply with this manual.

### **General precautions:**

Before using any product from the NR, ST & WD platform In-Kone® and twinKon® ranges, please read the electronic instruction manuals. A QR code and URL link are provided on the device label.

Please also consult the information concerning patient eligibility, room organisation, preparation of surgical staff, equipment preparation, patient preparation, cleaning and decontamination of equipment.

### **Practical information:**

The user instructions hereafter may not be reproduced or disclosed without prior permission from Global D, which reserves the right to modify the technical characteristics of the products and/or make changes or improvements to the In-Kone® (NR, ST & WD platforms) and twinKon® systems without prior notice.



Link to the instruction manual for the In-Kone® PRIMO and UNIVERSAL SA² implant  
(<http://doc-globald.com/0197.html>)



Link to the instruction manual for the 3.0 implant  
(<http://doc-globald.com/0199.html>)



Link to the instruction manual for the WD implant  
(<http://doc-globald.com/0246.html>)



Link to the instruction manual for the twinKon® implant  
(<http://doc-globald.com/0188.html>)



Link to the instruction manual for the surgery kit for ULTIMATE-G42 guided surgery  
(<http://doc-globald.com/0248.html>)



Link to the instruction manual for the surgery kit for ULTIMATE-G52 guided surgery  
(<http://doc-globald.com/0261.html>)



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## The **three skills**, key success factors for your **implant-based restorations**

We aim to encourage an **overall** work approach in a **collaborative** environment.



These three types of skills are closely related and must be combined to **optimise the overall result** of the restoration, both aesthetically and functionally.

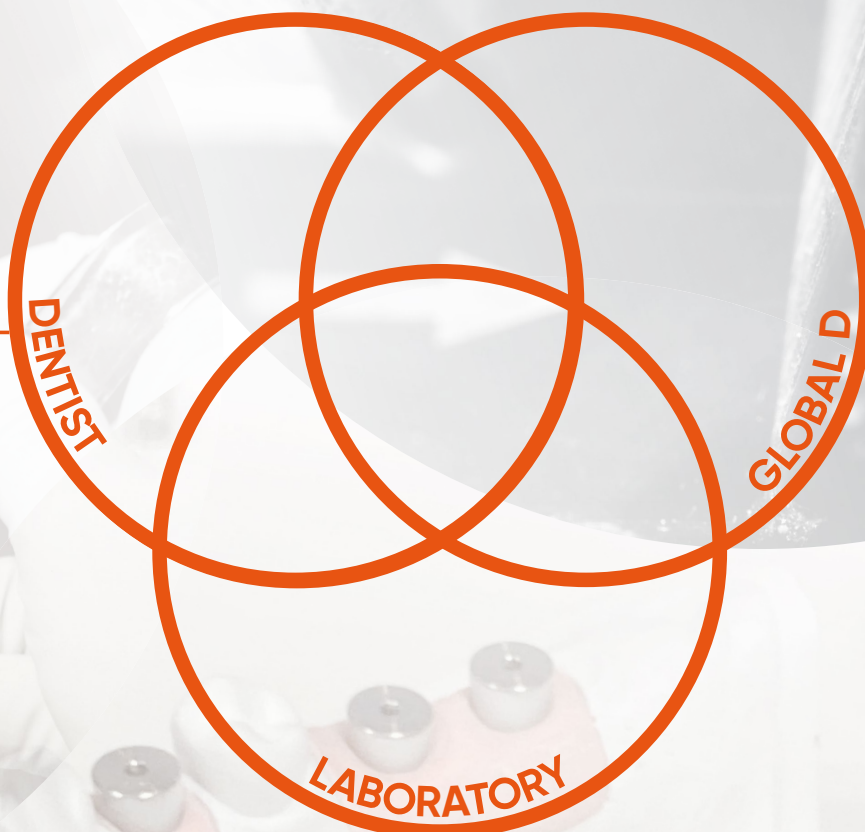
At Global D, we are particularly attentive to **this overall vision, which guarantees a successful and durable treatment plan**; it serves as our reference system for the development of our products.

## Industrial skills

- High-tech manufacture of implantable medical devices
- Customised assistance

## Clinical skills

- Preservation of peri-implant tissue capital
- Durability of rehabilitations



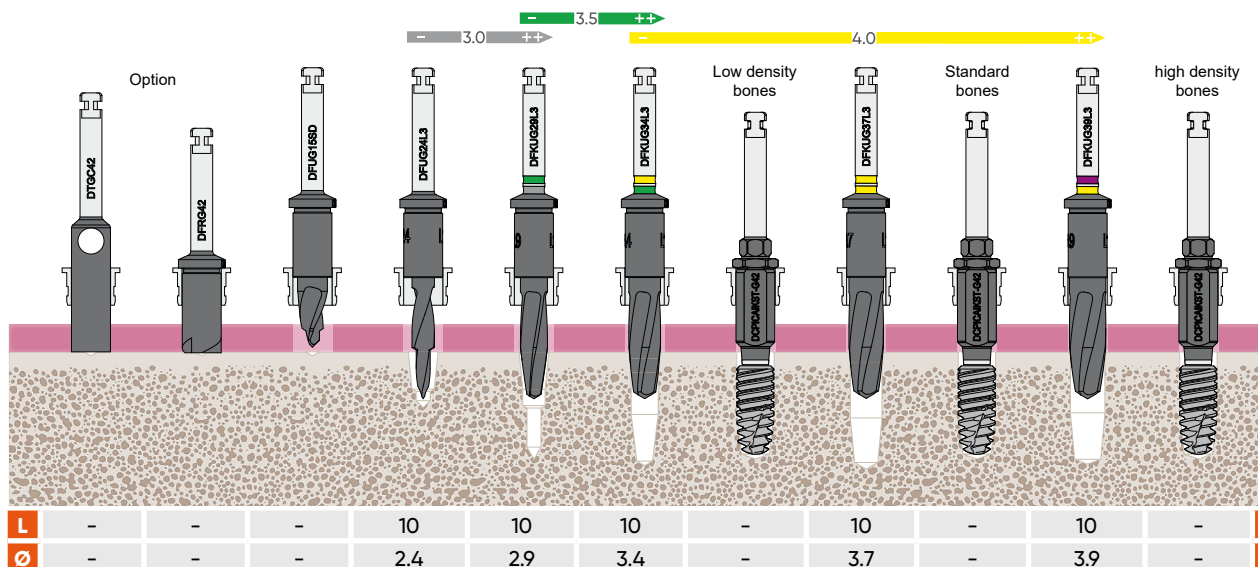
## Prosthetic skills

- Prosthesis customised using CAD/CAM
- Preservation of prosthetic interfaces

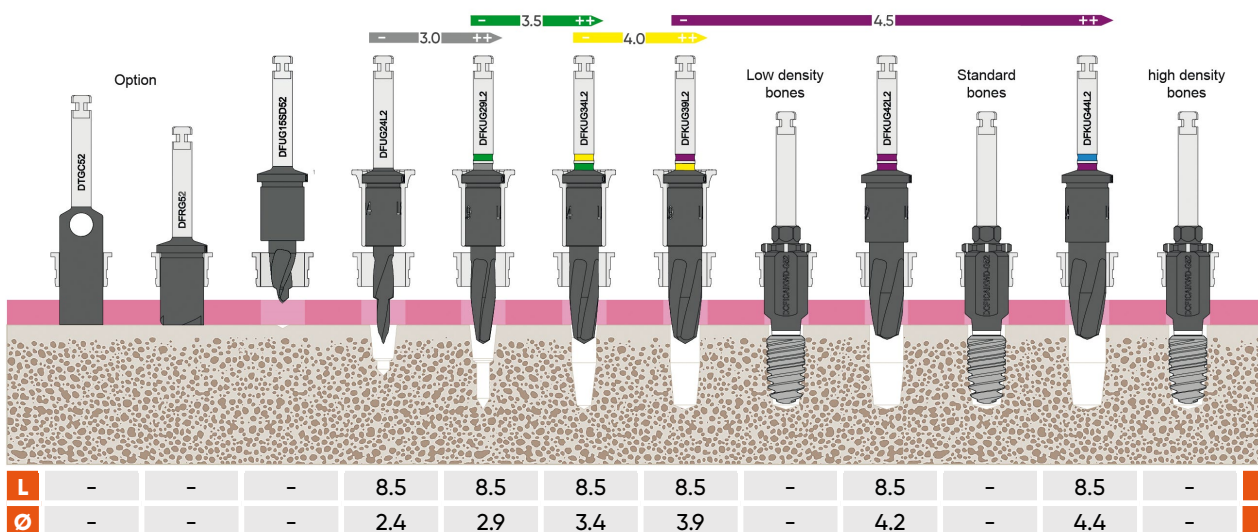


## Quick start & Prior recommendations

### ► In-Kone® Ø4 mm: drilling sequence L10 mm *Direct drilling to the length of the implant*



### ► WD platform In-Kone® Ø 4.5 mm: drilling sequence L8.5 mm *Direct drilling to the length of the implant*



The surgical guides can be supported by teeth or, in the case of total edentation, the guide can be secured to the bone using fixing pins or screws.

Before planning a guided surgery intervention, please check that the **patient's mouth opening is large enough** to allow passage of the drills once the guide is in place.

If the guide is not properly locked on its supports, identify the obstructive contact points and eliminate them.

Check that the Global D protocol is available in the **design software** before using these devices. If the software does not have the data related to our protocol, please contact us.

During the planning stage, make sure that the sleeves are not touching one another and are not in contact with the adjacent teeth.

In the case of total edentation, we recommend making a **scanning prosthesis** with reference markers. This scanning prosthesis can be:

- a duplicate of the current prosthesis,
- a temporary prosthesis,
- a diagnostic mock-up with gutta-percha type radio-opaque markers or radio-opaque titanium balls.

## A. Pre-operative planning and guided surgery

- Use of the **ULTIMATE G42 & G52 guided surgery protocols** is compatible with the following software: **BlueSkyPlan®**, **coDiagnostiX (DentalWings)**, **RealGuide**, **Romexis® (Planmeca)** **Exoplan**, **Sicat**, **Implant studio** and **Smop**. These software programmes help you plan your dental implant placements. They also help you to design surgical guides to make the surgery easier.

*The list of compatible software changes regularly, so please contact Global D if the software you use is not listed in this protocol.*



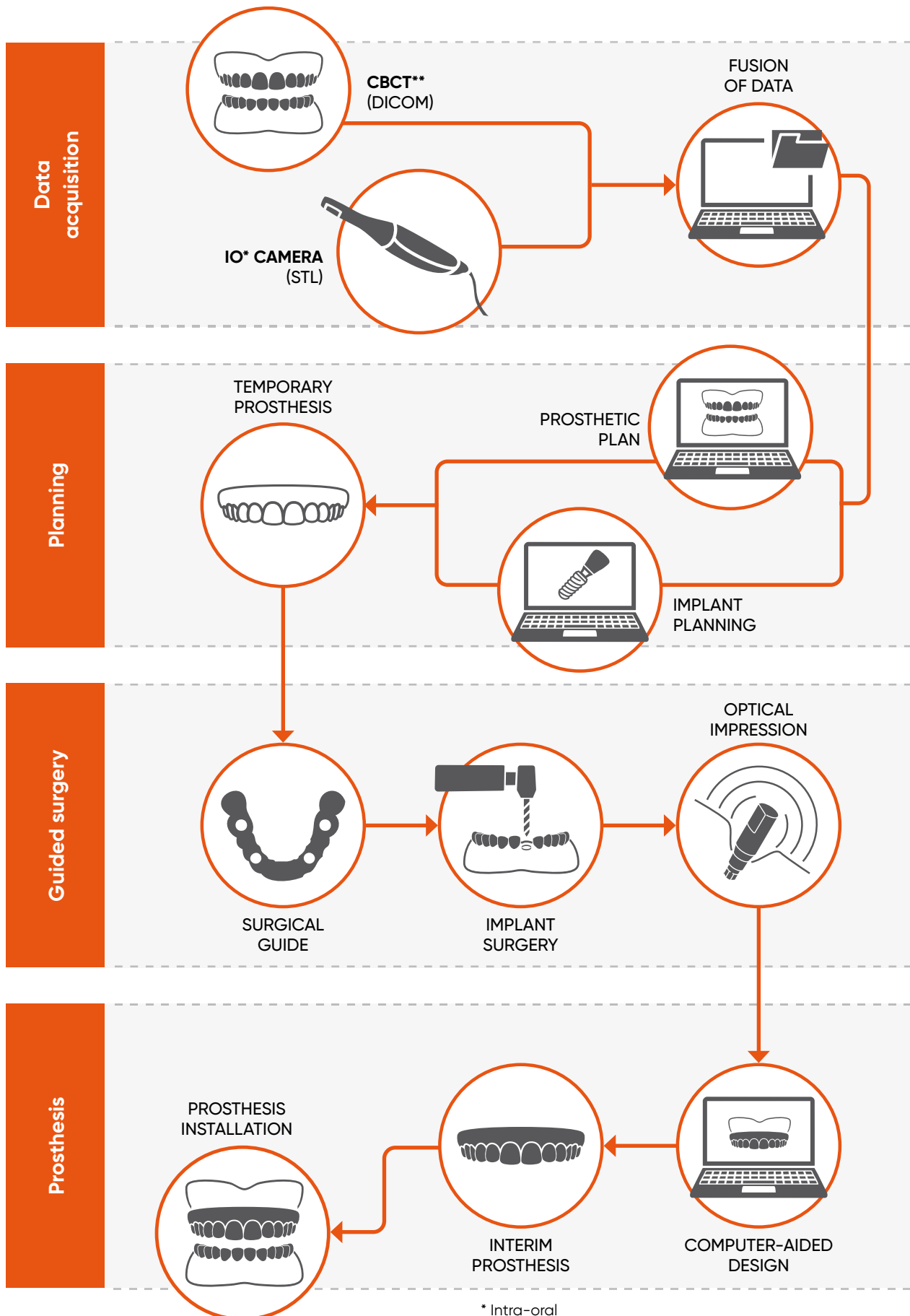
If you have any questions on implant planning, please contact the software publishers. Make sure you monitor any patient movements during the scan process. Movement artefacts result in inaccuracies in the images and may lead to an incorrect diagnosis.

- The **ULTIMATE (G42 & G52)** guided surgery protocols are compatible with **UNIVERSAL (NR, ST & WD platforms)** and **PRIMO In-Kone®** and **twinKon®** implants:

	Drill guiding	Implant guiding
<b>NR In-Kone® Ø 3mm</b> L: 8.5 - 13 mm	YES	YES
<b>ST In-Kone® Ø 3.5 mm</b> L: 8.5 - 13 mm	YES	YES
<b>ST In-Kone® Ø 4 &amp; 4.5 mm</b> L: 6 - 13 mm	YES	YES
<b>ST In-Kone® Ø 5 mm</b> L: 6 - 13 mm	YES	YES
<b>WD In-Kone® Ø 4.5 &amp; 5 mm</b> L: 6 - 13 mm	YES	YES
<b>twinKon® Ø 3.5 mm</b> L: 8.5 - 13 mm	YES	NO, remove the guide first
<b>twinKon® Ø 4 &amp; 4.5 mm</b> L: 6 - 13 mm	YES	NO, remove the guide first

## B. Workflow

### 1. Full digital flow

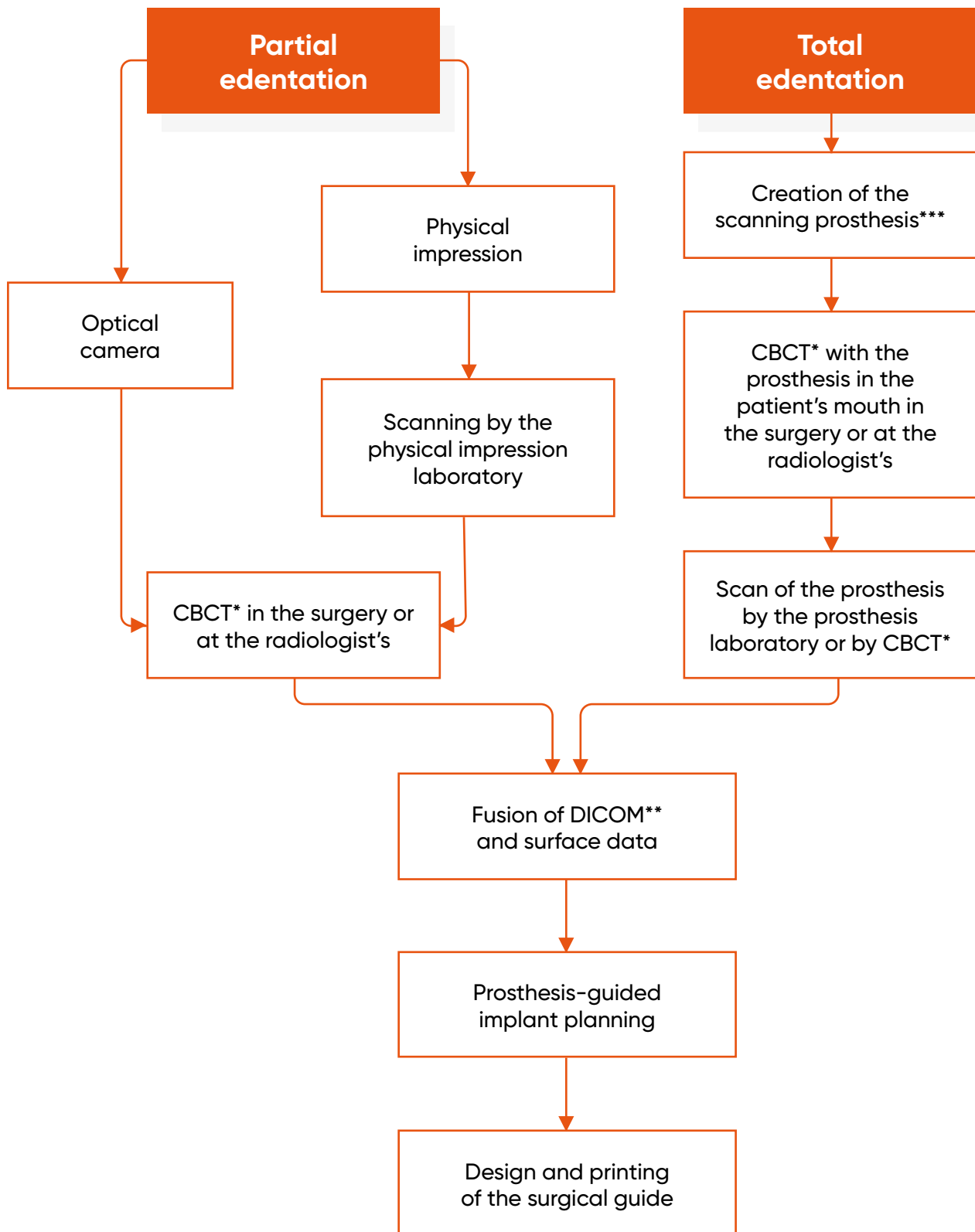


\* Intra-oral

\*\* DICOM: Digital Imaging and Communications in Medicine



## 2. Tree diagram depending on the type of edentulous space



For prosthesis-guided planning, we recommend including the Wax-Up prosthesis project step.

\* CBCT: Cone Beam Computed Tomography

\*\* DICOM: Digital Imaging and Communications in Medicine

\*\*\* with radio-opaque markers to facilitate data fusion and prevent scale errors.

## C. ULTIMATE G42 & G52 Protocol

### 1. Concept of the ULTIMATE G42 & G52 protocol

- This guided surgery protocol was developed in collaboration with experienced dentists and our Research and Development teams to be perfectly compatible with our ULTIMATE surgery protocol and to meet its requirements, i.e.:

**Gradual, homothetic drilling of the implant contour to obtain primary stability distributed uniformly in the bone.**

- **The philosophy of the ULTIMATE G42 & G52 protocol is based on direct guide drills.** No drill key type intermediary diameter reducing systems are therefore required. The protocol is designed to ensure systematic continuity of guiding of the different drills before contact with the bone.

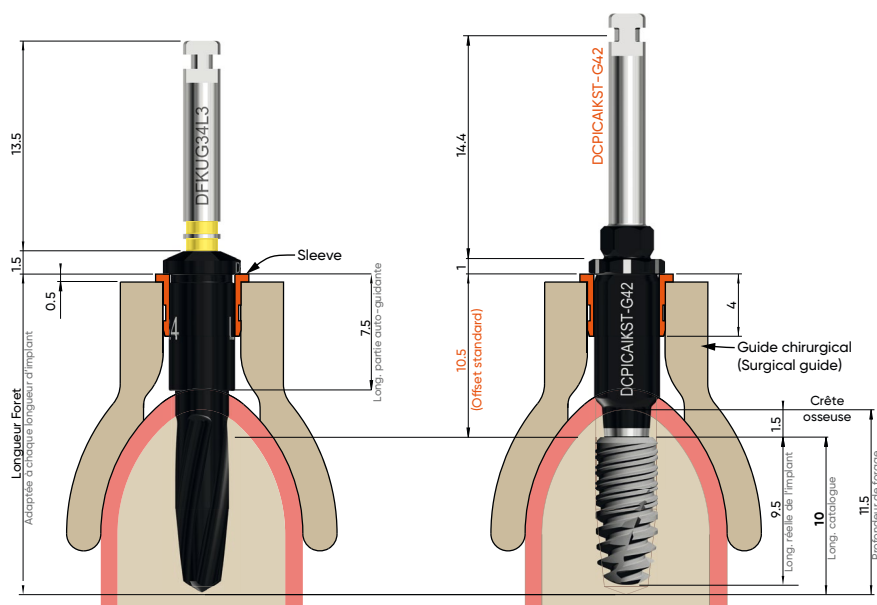
The range of drill lengths enables a unique standard offset between the drill stop on the sleeve and the neck of the implant, regardless of its length.



### 2. General principle

Most of the aforementioned software programmes already include or are in the process of including our guided surgery kits.

However, when designing the surgical guide, it is possible that the practitioner may have to position the sleeve(s) manually during the planning process. The offset value to be indicated depends on the implant model and the software used. We can provide complete tables on request.



Example with a 10 mm long implant

### 3. General recommendations

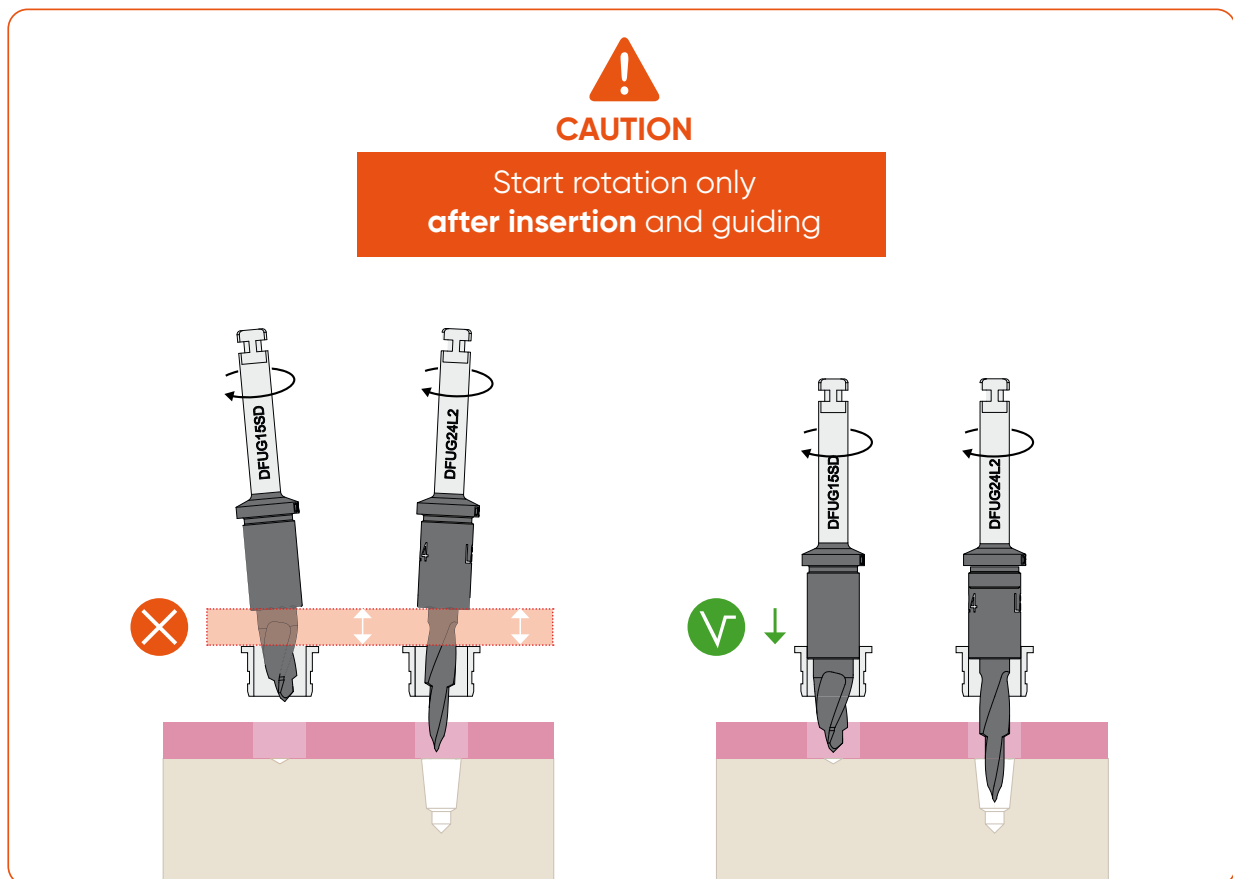
- Beforehand, **assess the quantity and quality of the soft tissues**.

Consider the retraction of a (mini) flap (buttonhole incision) as an alternative to using a trephine in the case of insufficient, reduced or attached keratinised tissue.

- The same applies for twinKon® implants; these cannot be installed through the guide, so the guide must be removed before inserting the implant.
- During the drilling phase, make up-down movements and irrigate generously. Do not hesitate to add external as well as counter-angle irrigation.
- Always drill until the built-in stop reaches the top of the sleeve to obtain the required depth of the osteotomy.

### 4. Specific recommendations

- Before starting the rotation, make sure the **drill is in the drill shaft** prepared previously to ensure centring in the sleeve.



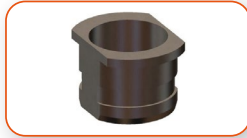
- Before scheduling a Full Guided surgical intervention, remember to check that the **patient's mouth opening is large enough** to allow passage of the drills once the guide is in place.

If this is not the case, there may be a risk of friction and even blockage of the drill in the sleeve due to a possible angle of the drill.



## 5. Sleeves/Master Tubes

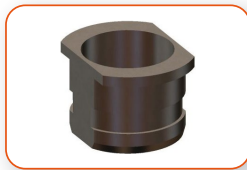
- **ULTIMATE G42 protocol:** The sleeves or Master Tubes to be ordered for the surgical guide have an internal diameter of 4.2 mm and an external diameter of 5.2 mm and are 4 mm high. They are Steco reference M.27.15.D420 and are available from Global D under reference DMTS4.2L4:



**STECO\* titanium guide sleeves**  
**Pack of 5**

Ref. (Global D) DMTS4.2L4 pack of 5  
STECO reference: M.27.15.D420

- **ULTIMATE G52 protocol:** The sleeves or Master Tubes to be ordered for the surgical guide have an internal diameter of 5.2 mm and an external diameter of 6 mm and are 4 mm high. They are STECO reference M.27.15.D520 and are available from Global D under reference DMTS5.2L4:



**STECO\* titanium guide sleeves**  
**Pack of 5**

Ref. (Global D) DMTS5.2L4 pack of 5  
STECO reference: M.27.15.D520

- The surgical guide is designed based on the practitioner's implant plan. It is precision manufactured by 3D printing at the premises of the dental surgeon, prosthetist or in an external organisation. The sleeves are then placed, and glued if necessary, into the prepared holes, arranged according to the plan.

We recommend setting in advance the internal diameter of the recess in the guide on the 3D printer to be used to achieve ideal retention, as it can vary between 5.22 and 5.3 mm for the G42 kit and 6.02 and 6.3 mm for the G52 kit.

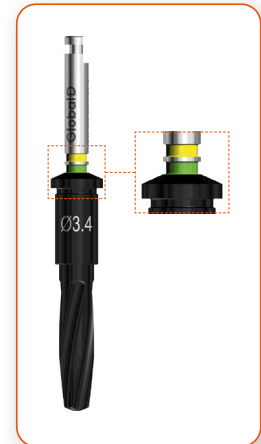
		Global D Reference	Steco reference
G42 surgical guide sleeves	Pack of 5	DMTS4.2L4	M.27.15.D420
G52 surgical guide sleeves	Pack of 5	DMTS5.2L4	M.27.15.D520
Sleeves for the pins	Pack of 10	DMTS1.5L10	M.27.20.D150L10
Sleeves often used with our Graftek VA1.5KL11 VA1.5KL13 and VA1.5KL15 screws.	Pack of 10	DMTS1.5L6	M.27.03.D150L6

## D. Shared description of the G42 & G52 kits

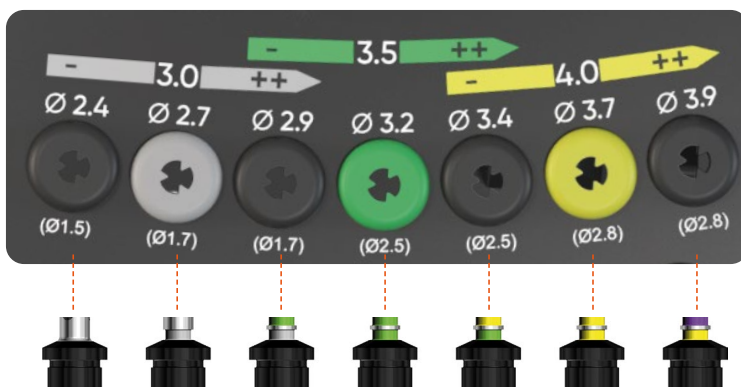
### 1. Standard characteristics

- The set of drills and optional initial instruments are coated with a **surface treatment called DLC (Diamond Like Carbon)**, making the surface more resistant to wear and reducing friction between the instrument and the sleeve, which is particularly important in guided surgery.

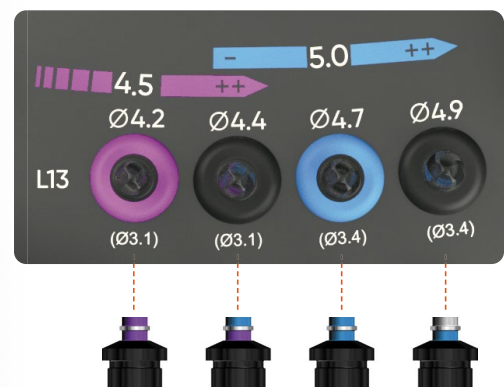
The ULTIMATE G42 & G52 drills use the same sequence of drill colours as our ULTIMATE kit, making them easy to store and ensuring the visual safety of each drill during the operation.



#### G42



#### G52



The value indicated on the plate above the drill corresponds to the main diameter and the value in brackets below is the diameter of the apex.

- The drills comprise two separate parts:**
  - The 7.5 mm long self-centring part for direct guiding in the sleeve
  - The working part of the drill, whose length depends on the drill used.



## 2. Optional initial instruments

- **Circular scalpels (Ref. DTGC42 & DTGC52) for guided surgery**, otherwise known as trephines for soft tissues. These optional instruments are used to enable efficient cutting of the gum, regardless of its thickness and corresponding to the diameter of the sleeve.



- **Bone level drills (Ref. DFRG42 & DFRG52) for guided surgery**, "levelling" drills used to flatten the bone crest in the case of an uneven, "knife-edge" ridge. They are clipping mills for the bone crest, adapted to the diameter of the sleeve. These drills are also recommended in the event of immediate implant placement following extraction.



## 3. Characteristics of the ULTIMATE G42 & G52 drills

For each length of implant, the drills are available in increasing diameters from 2.4 mm to 4.9 mm to match the philosophy and progression sequence of the ULTIMATE surgical protocol.

The first initial drill (**Ref. DFUG15SD & DFUG15SD52**) is the main drill that will determine the drill shaft required to start the guided drilling sequence. Thanks to the short offset of 10.5 mm and the 7.5 mm cutting part of this drill, the drill will necessarily be guided into the sleeve before coming into contact with the bone. This enables better accuracy from the start of the drilling operation.



**This is the quintessence of the direct guiding principle of our ULTIMATE G42 & G52 drills.**

The 6, 8.5 and 10 mm long implants have direct drilling according to the planned implant length, the subcrestal depth having been determined previously during implant planning.

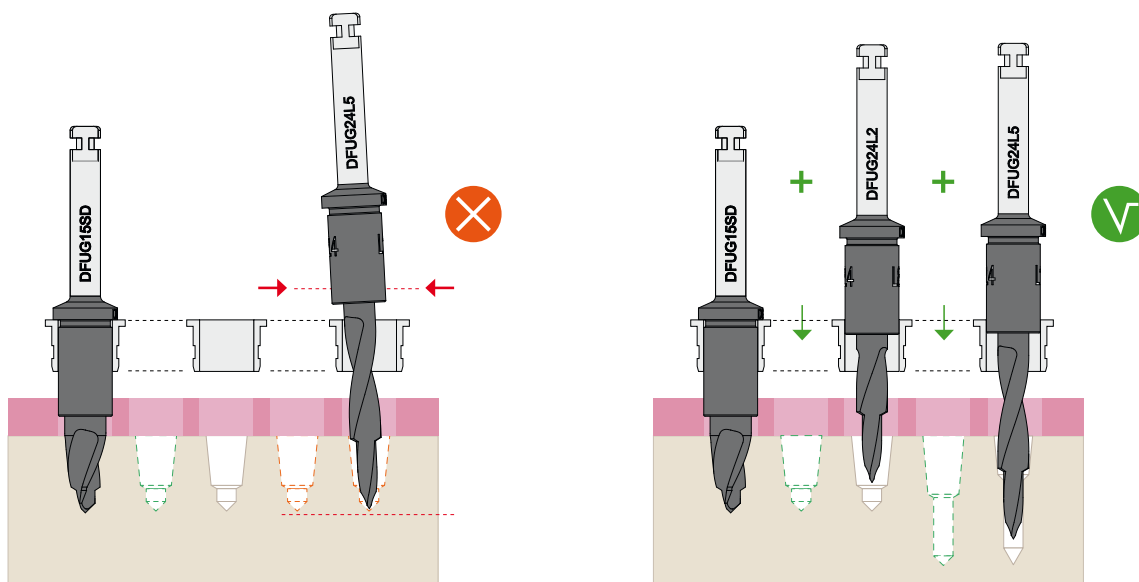
To ensure continuity of guiding of the drill for the installation of 11.5 and 13 mm long implants, **for each drill diameter, the 8.5 mm drill must be used** before the drill corresponding to the length of the implant.





CAUTION

Guiding is lost if the sequence is incomplete



#### 4. Principle of calibrated rings

The **calibrated rings (Ref. DRUA01, DRUA02, DRUA03)** included in the ULTIMATE G42 kit and the **calibrated rings (Ref. DRUA04, DRUA05, DRUA06)** included in the ULTIMATE G52 kit in sets of 3 units of each are spacers (rings) of different thicknesses (1, 1.5 and 2 mm), being placed on the drills.

The yellow ring (**DRUA01**) is added to the initial drill (Ref.DFUG15SD) when installing an NR platform In-Kone® implant, see p.23 of this protocol.

The rings can be used for the purpose of creation of an apical sub-drilling on the set of drills from the G42 and G52 kits.



## 5. Principle of implant driver wrenches and adapter

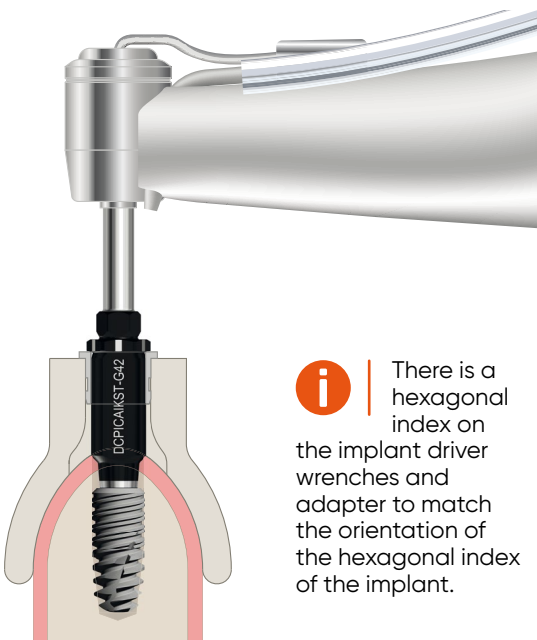
**Contra-angle version implant driver wrenches** are specific to guided surgery because they have a centred part corresponding to the diameter of the sleeve. The body of the wrench is DLC (Diamond Like Carbon) to avoid jamming in the sleeve and has been partly hollowed-out.

It is possible to finish placing the implant manually by removing the contra-angle, leaving the implant driver wrench in the implant (through the guide). Then ensure to engage the manual adapter on the implant driver wrench (as shown in the diagram below) then set up the torque wrench on this and complete the manual insertion.

Ensure the recommended insertion torques for the implant platforms being installed are respected.



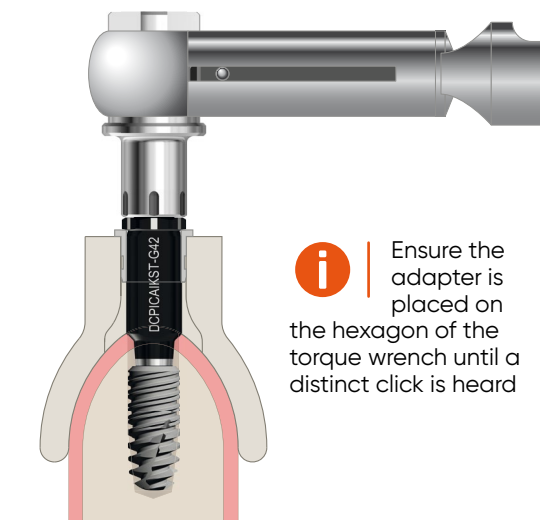
If finishing the implant placement manually (ensure that very few threads are not engaged, otherwise proceed to removal of the implant and drill with a higher diameter to respect the recommended insertion torques).



*Installation with Contra-angle*



There is a hexagonal index on the implant driver wrenches and adapter to match the orientation of the hexagonal index of the implant.



*Manual installation with adapter and torque wrench*



Ensure the adapter is placed on the hexagon of the torque wrench until a distinct click is heard



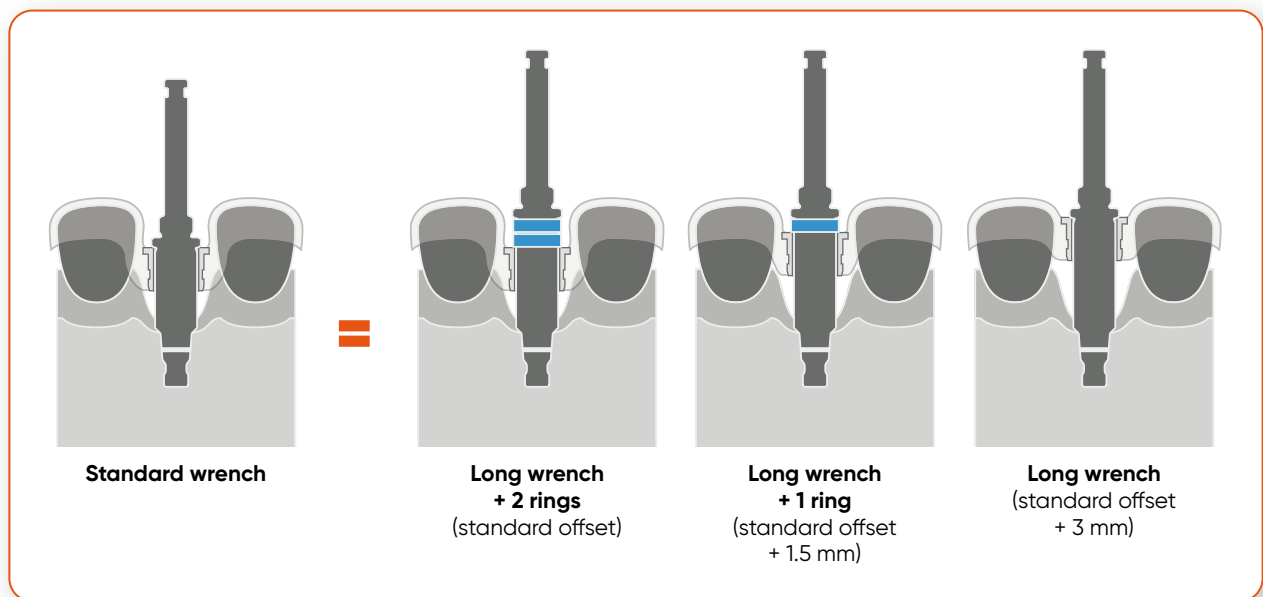
For torques greater than 40 N.cm for an NR platform In-Kone® or 50 N.cm for ST platform and WD platform In-Kone® implants, we recommend alternating between unscrewing the implant by at least one rotation then tightening until secure, if the implant is not completely embedded at the maximum torque indicated for the contra-angle wrench.

If this procedure does not suffice, we recommend using the adapter and the torque wrench to complete screwing manually. When screwing manually, do not exceed a torque of 50 N.cm for an NR platform In-Kone® and 70 N.cm for ST platform and WD platform In-Kone® implants.

It is also possible to remove the surgical guide and install the implants according to the conventional method.

The implant driver wrenches come in **standard version** as well as having an **option for long versions (+3 mm)**. The long version wrenches can be used in the following cases:

- When the sleeve is too close to the gum.
- When the sleeve is touching adjacent teeth.
- When the contra-angle is touching adjacent teeth.



Please check that your software is suitable for offset modification. Consider adapting the drilling protocol as appropriate in the event of offset modification. Do not hesitate to contact Global D for help with this step. It is not possible to do this for all lengths of implants.

## 6. Pins and associated drill – G42 only

There are **3 pins (NLI100003)** included in the ULTIMATE G42 surgery kit, as well as their **associated drill (NLI100001)**. The pins are used to stabilise the guide in cases of total edentation or absence of residual teeth to hold the guide properly in the mouth. The pins are 20 mm long and have a diameter of 1.5 mm. The drill, which is the same size, creates the drill shaft for them to enable easy placement.











Most of the aforementioned software programmes include the pins sold by Global D. If our pins are not found, please contact us.

At the end of the surgical intervention, the pins must be removed before removing the surgical guide.

## E. Description of the ULTIMATE G42 kit












































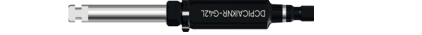


1	Circular scalpel for guided surgery*		DTGC42
2	Bone level drill for guided surgery*		DFRG42
3	Initial drill for guided surgery*		DFUG15SD
4	Calibrated ring 1 for guided surgery*		DRUA01
5	Calibrated ring 2 for guided surgery*		DRUA02
6	Calibrated ring 3 for guided surgery*		DRUA03
7	Guided drill for fixing pin Ø 1.5*		NLI100001
8	Pin Ø 1.5 to secure the guide X 3*		NLI100003

\* Medical Device manufactured and CE marked by BIOMEC SRL (CE 0051) (for Biomec). Please read the manufacturer's instructions before use.







\*\* Medical device manufactured and CE marked by Josef Ganter Feinmechanik GmbH (for josef ganter). Please read the manufacturer's instructions before use.

\*\*\* Medical Device manufactured and CE marked by ANTEEA S.R.L. (for Anteea). Please read the manufacturer's instructions before use.

9	Drill for guided surgery* <b>Length 6 mm</b>		Ø2.4 mm		DFUG24L1
10			Ø2.7 mm		DFKUG27L1
11			Ø2.9 mm		DFKUG29L1
12			Ø3.2 mm		DFKUG32L1
13			Ø3.4 mm		DFKUG34L1
14			Ø3.7 mm		DFKUG37L1
15			Ø3.9 mm		DFKUG39L1
16			Ø2.4 mm		DFUG24L1
17	Drill for guided surgery* <b>Length 8.5 mm</b>		Ø2.7 mm		DFKUG27L2
18			Ø2.9 mm		DFKUG29L2
19			Ø3.2 mm		DFKUG32L2
20			Ø3.4 mm		DFKUG34L2
21			Ø3.7 mm		DFKUG37L2
22			Ø3.9 mm		DFKUG39L2
23			Ø2.4 mm		DFUG24L2
24			Ø2.7 mm		DFKUG27L2
25	Drill for guided surgery* <b>Length 10 mm</b>		Ø2.9 mm		DFKUG29L3
26			Ø3.2 mm		DFKUG32L3
27			Ø3.4 mm		DFKUG34L3
28			Ø3.7 mm		DFKUG37L3
29			Ø3.9 mm		DFKUG39L3
30			Ø2.4 mm		DFUG24L3
31			Ø2.7 mm		DFKUG27L3
32			Ø2.9 mm		DFKUG29L3
33	Drill for guided surgery* <b>Length 11.5 mm</b>		Ø3.2 mm		DFKUG32L4
34			Ø3.4 mm		DFKUG34L4
35			Ø3.7 mm		DFKUG37L4
36			Ø3.9 mm		DFKUG39L4
37			Ø2.4 mm		DFUG24L4
38			Ø2.7 mm		DFKUG27L4
39			Ø2.9 mm		DFKUG29L4
40			Ø3.2 mm		DFKUG32L4
41	Drill for guided surgery* <b>Length 13 mm</b>		Ø3.4 mm		DFKUG34L5
42			Ø3.7 mm		DFKUG37L5
43			Ø3.9 mm		DFKUG39L5
44	Manual hexagonal screwdrivers	1.2 mm	Standard		DCM1.2
45			Short		DCM1.2C
46	Hexagonal contra-angle wrench	1.2 mm	Standard		DCCA1.2
47	Ratchet adapter**	Manual	Standard		518-1000274
48	In-Kone® ST implant driver wrench*** contra-angle	Contra-angle	Ø4.2 mm		DCPICAIST-G42
49	In-Kone® ST implant driver wrench, long, contra-angle (optional)***	Contra-angle	Ø4.2 mm		DCPICAIST-G42L
50	In-Kone® NR contra-angle implant driver wrench***	Contra-angle	Ø4.2 mm		DCPICAINKR-G42
51	In-Kone® NR implant driver wrench, long, contra-angle (optional)***	Contra-angle	Ø4.2 mm		DCPICAINKR-G42L
52	Torque wrench 15-70N.cm**				DCDYN-70D

## F. Description of the ULTIMATE G52 kit





























1	Circular scalpel for guided surgery*		DTGC52
2	Bone level drill for guided surgery*		DFRG52
3	Initial drill for guided surgery*		DFUG15SD52
4	Calibrated ring 1 for guided surgery*		DRUA04
5	Calibrated ring 2 for guided surgery*		DRUA05
6	Calibrated ring 3 for guided surgery*		DRUA06

\* Medical Device manufactured and CE marked by BIOMECH SRL (CE 0051) (for Biomech). Please read the manufacturer's instructions before use.

\*\* Medical device manufactured and CE marked by Josef Ganter Feinmechanik GmbH (for josef ganter). Please read the manufacturer's instructions before use.

\*\*\* Medical Device manufactured and CE marked by ANTEEA S.R.L. (for Anteea). Please read the manufacturer's instructions before use.

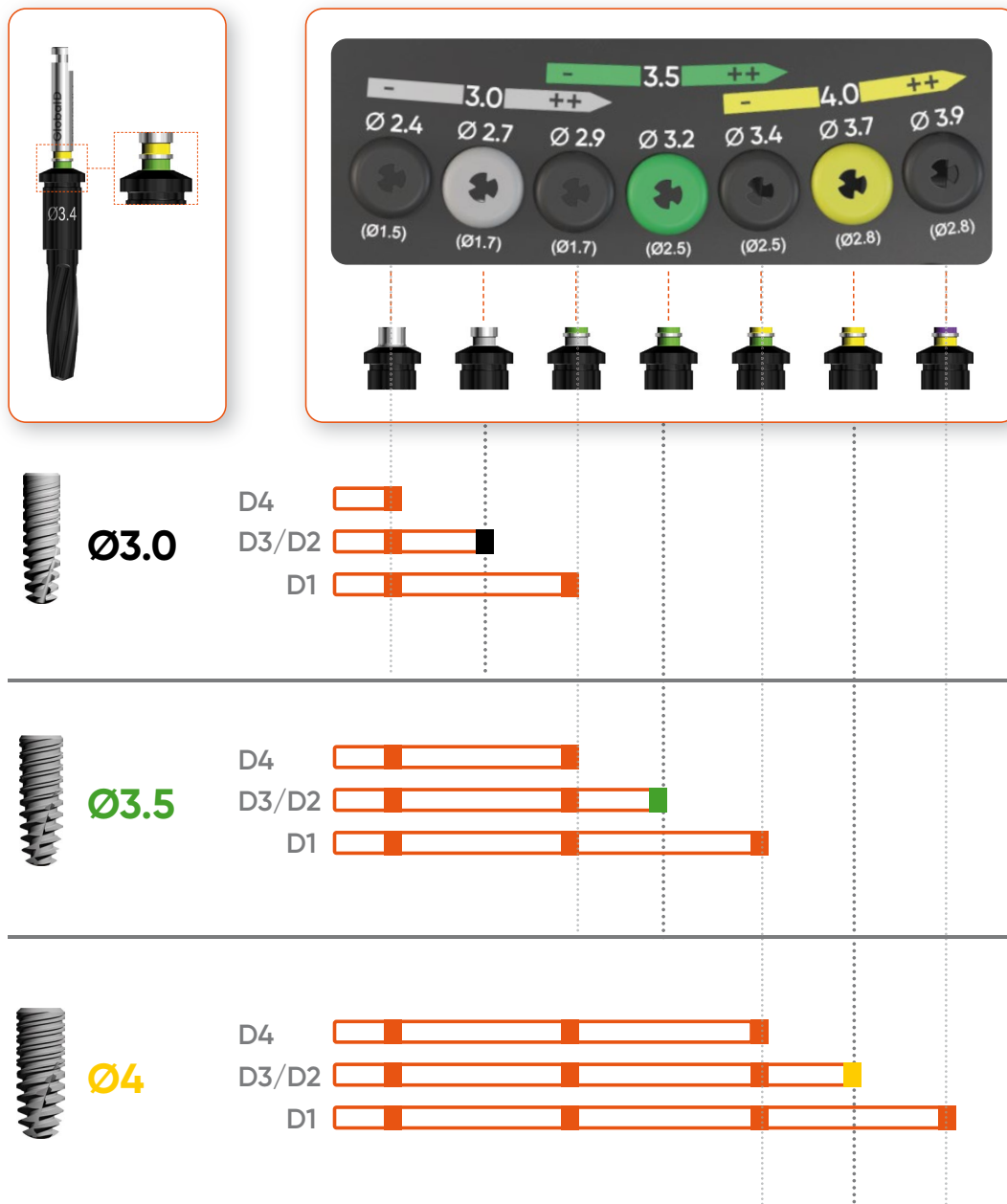


7	drill for guided surgery* length 6 mm		Ø4.2 mm		DFKUG42L1
8			Ø4.4 mm		DFKUG44L1
9			Ø4.7 mm		DFKUG47L1
10			Ø4.9 mm		DFKUG49L1
11	drill for guided surgery* length 8.5 mm		Ø4.2 mm		DFKUG42L2
12			Ø4.4 mm		DFKUG44L2
13			Ø4.7 mm		DFKUG47L2
14			Ø4.9 mm		DFKUG49L2
15	drill for guided surgery* length 10 mm		Ø4.2 mm		DFKUG42L3
16			Ø4.4 mm		DFKUG44L3
17			Ø4.7 mm		DFKUG47L3
18			Ø4.9 mm		DFKUG49L3
19	drill for guided surgery* length 11.5 mm		Ø4.2 mm		DFKUG42L4
20			Ø4.4 mm		DFKUG44L4
21			Ø4.7 mm		DFKUG47L4
22			Ø4.9 mm		DFKUG49L4
23	drill for guided surgery* length 13 mm		Ø4.2 mm		DFKUG42L5
24			Ø4.4 mm		DFKUG44L5
25			Ø4.7 mm		DFKUG47L5
26			Ø4.9 mm		DFKUG49L5
27	Ratchet adapter**	Manual	Ø4.9 mm		518-1000274
28	In-Kone® ST implant driver wrench*** contra-angle	Contra-angle	Ø5.2 mm		DCPICAIKST-G52
29	In-Kone® ST implant driver wrench, long, contra-angle (optional)***	Contra-angle	Ø5.2 mm		DCPICAIKST-G52L
30	In-Kone® WD contra-angle implant driver wrench***	Contra-angle	Ø5.2 mm		DCPICAIKWD-G52
31	In-Kone® WD implant driver wrench, long, contra-angle (optional)***	Contra-angle	Ø5.2 mm		DCPICAIKWD-G52L
32	Guided surgery drill stop*				DBUBG52

## G. The basics of the ULTIMATE G42 guided surgery protocol

### 1. General principle

For each of 3.5 and 4.0 mm diameter **NR & ST platform UNIVERSAL and PRIMO In-Kone® and twinKon® implants**, several protocols can be considered, depending on the bone density encountered. This drilling protocol is similar to the non-guided **ULTIMATE protocol**. We recommend sub-drilling (-) in cases of low density and over-drilling (++) if the bone is dense.



#### Specific counter-indication

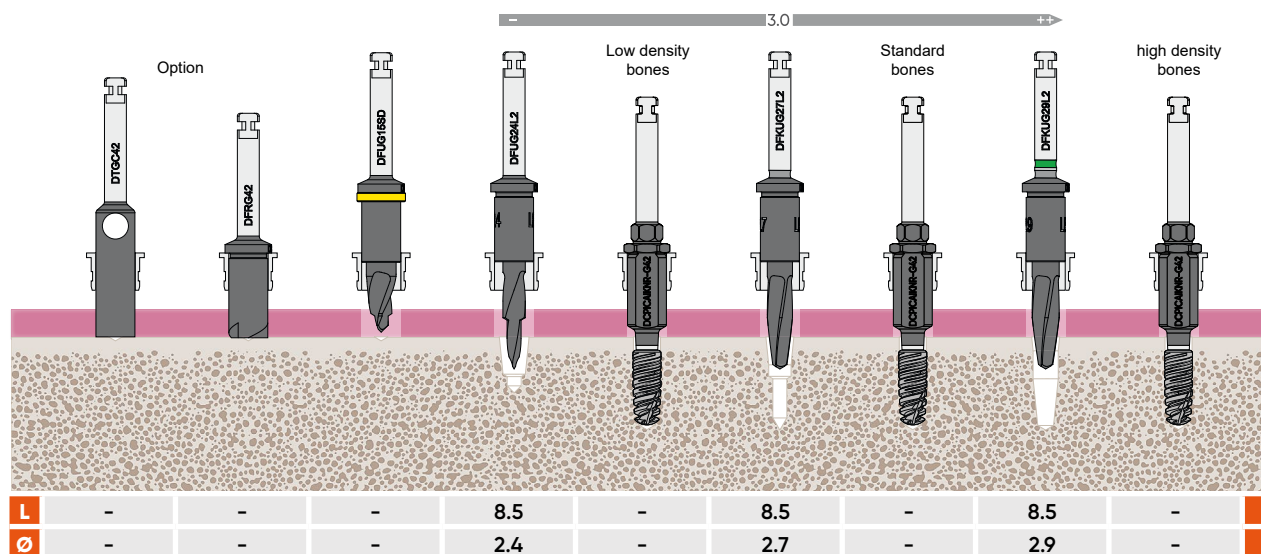
In-Kone® and twinKon® implants must not be installed more than 2 mm deep

## H. ULTIMATE G42 guided surgery protocol

### 1. NR platform In-Kone® implant

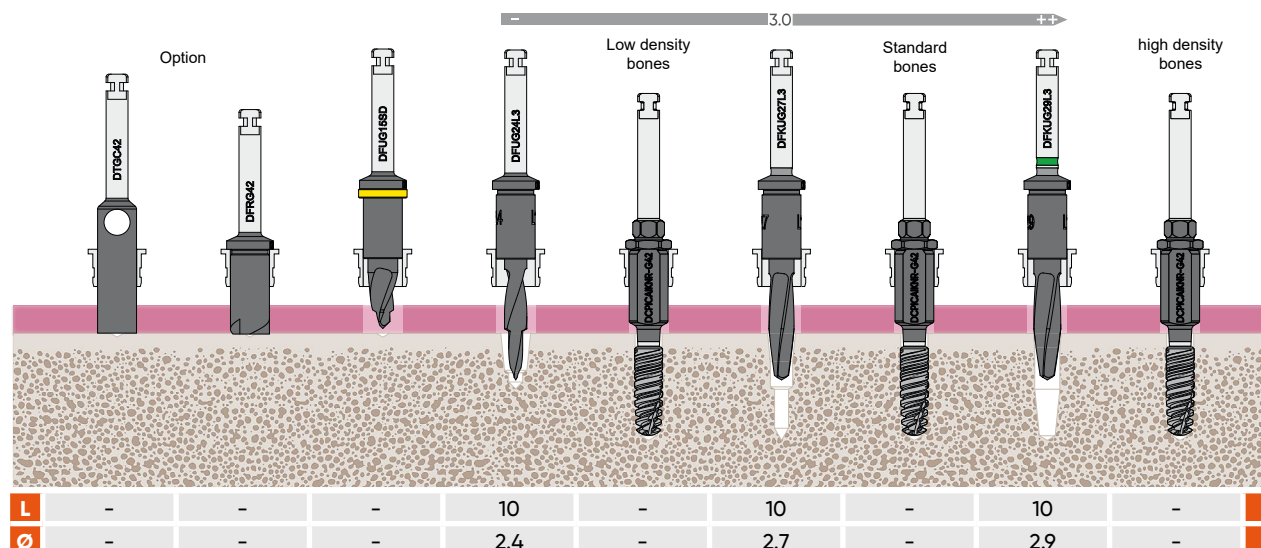
For **NR platform In-Kone® implants**, we strongly recommend **adding a yellow spacer on the initial drill (Ref. DFUG15SD)** to avoid the possibility of reducing implant stability in the case of low bone density, and to limit widening of drilling at the bone crest.

#### ► Implant 3.0: drilling sequence **L8.5 mm** *Direct drilling to the length of the implant*



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

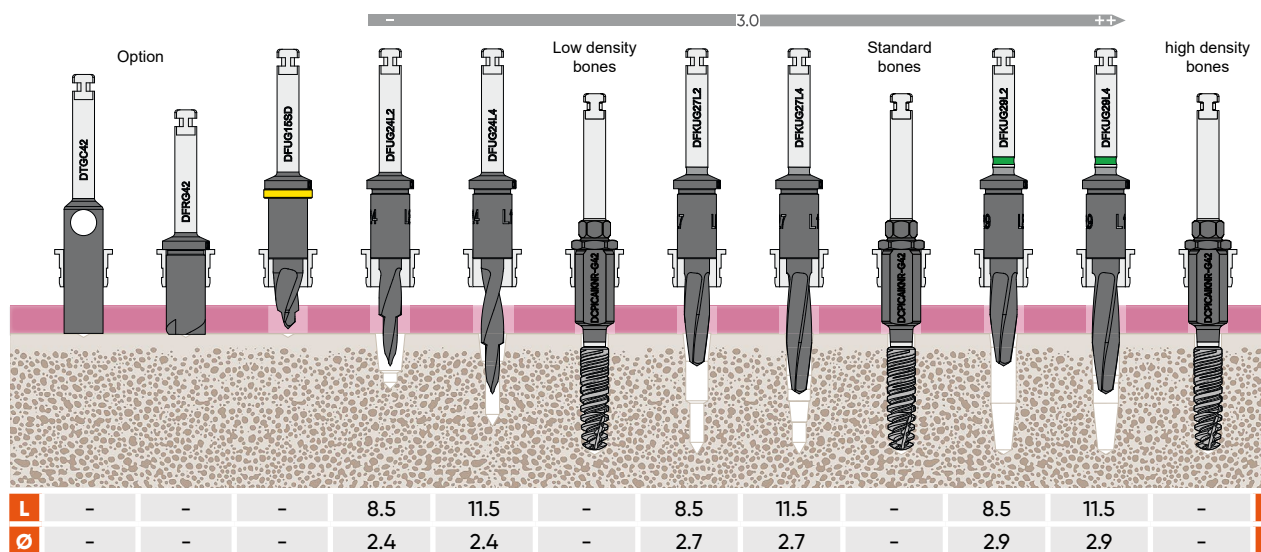
#### ► Implant 3.0: drilling sequence **L10 mm** *Direct drilling to the length of the implant*



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

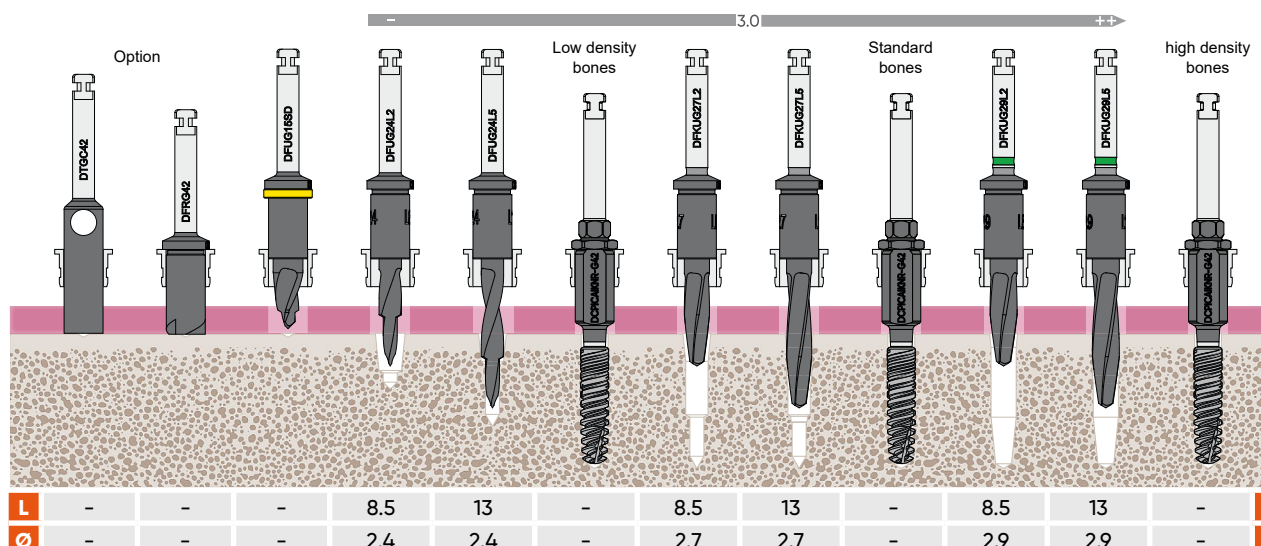
## H. ULTIMATE G42 guided surgery protocol

### ► Implant 3.0: drilling sequence L11.5 mm Alternate drilling drills 8.5/11.5 mm



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

### ► Implant 3.0: drilling sequence L13 mm Alternate drilling drills 8.5/13 mm

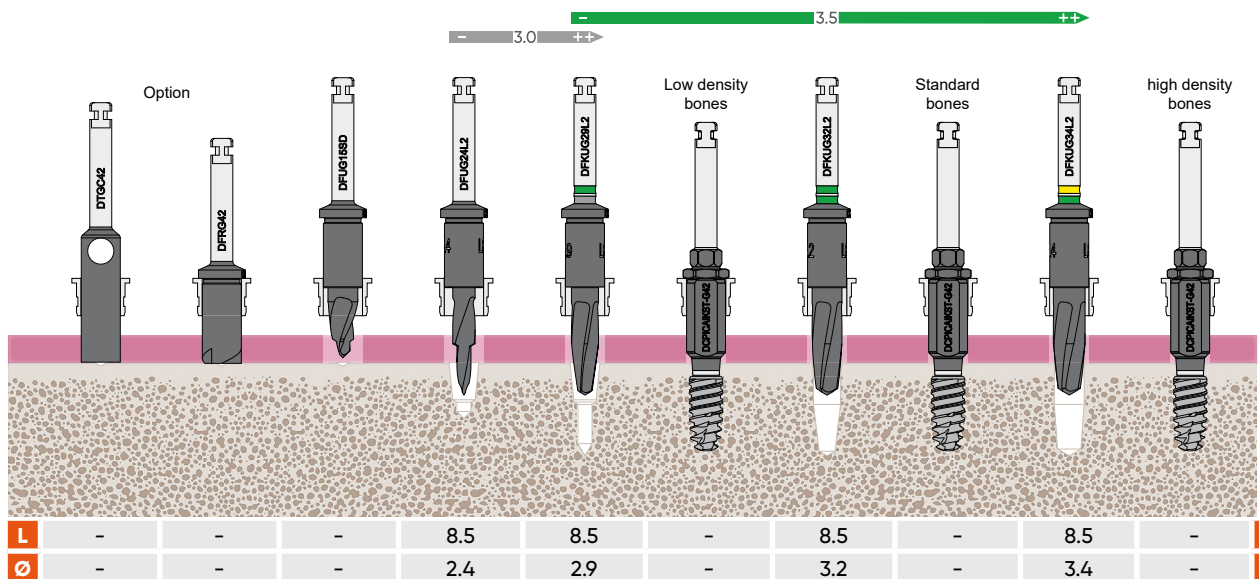


⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.



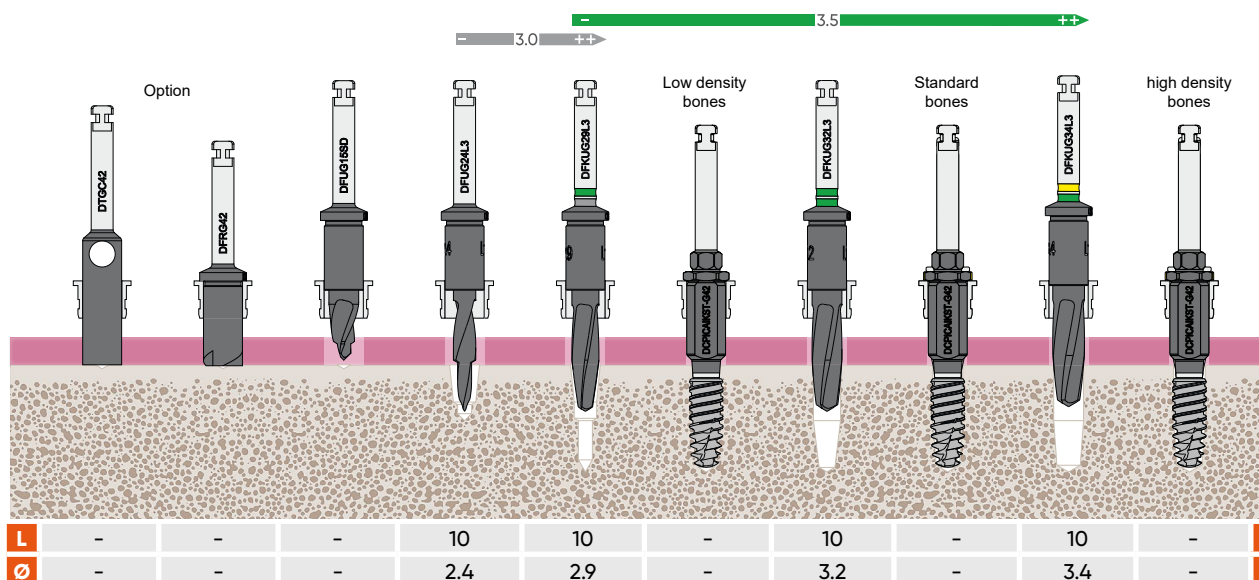
## 2. ST platform In-Kone<sup>®</sup> implant (Ø 3.5 & 4.0 mm)

### ► In-Kone<sup>®</sup> Ø3.5 mm: drilling sequence **L8.5 mm** Direct drilling to the length of the implant



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

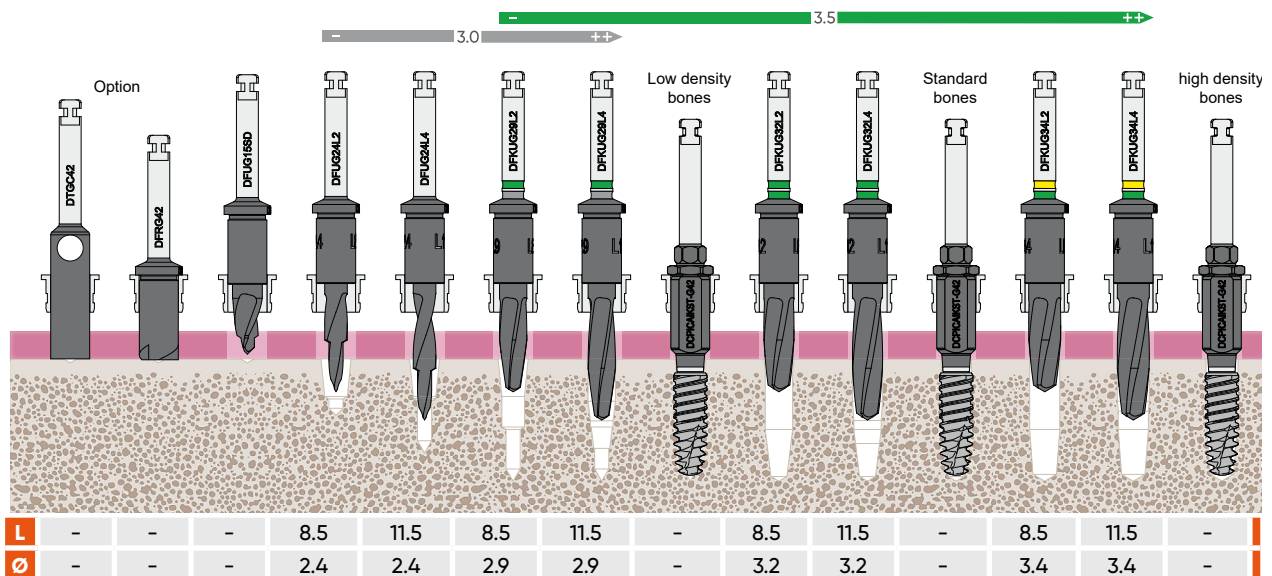
### ► In-Kone<sup>®</sup> Ø3.5 mm: drilling sequence **L10 mm** Direct drilling to the length of the implant



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

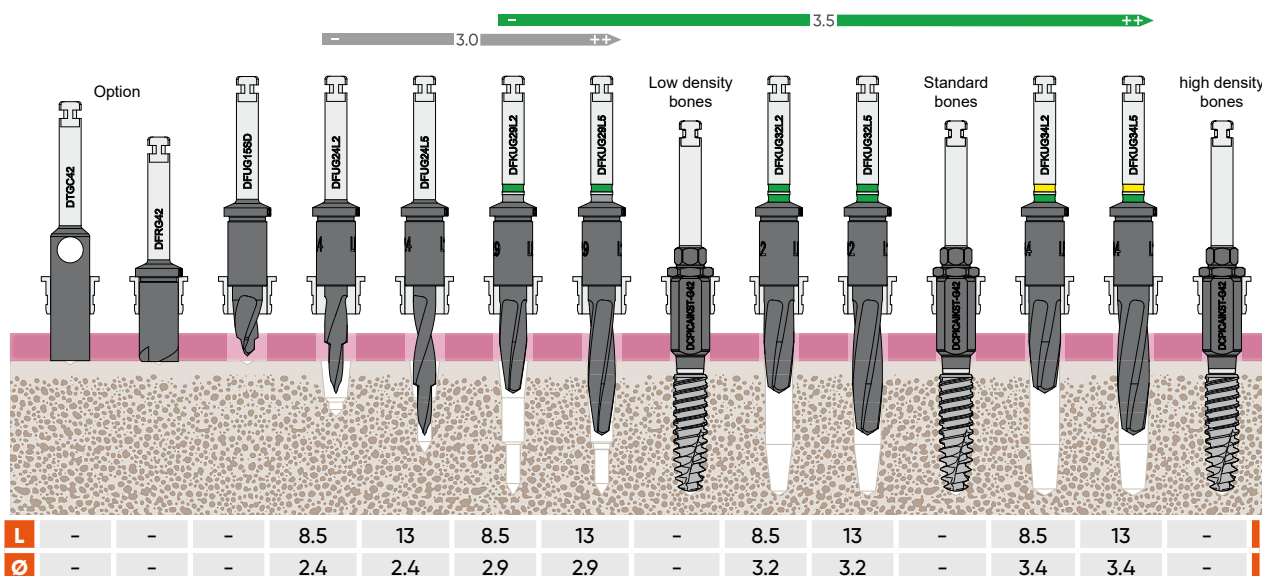
## H. ULTIMATE G42 guided surgery protocol

### ► In-Kone® Ø3.5 mm: drilling sequence L11.5 mm Alternate drilling drills 8.5/11.5 mm



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

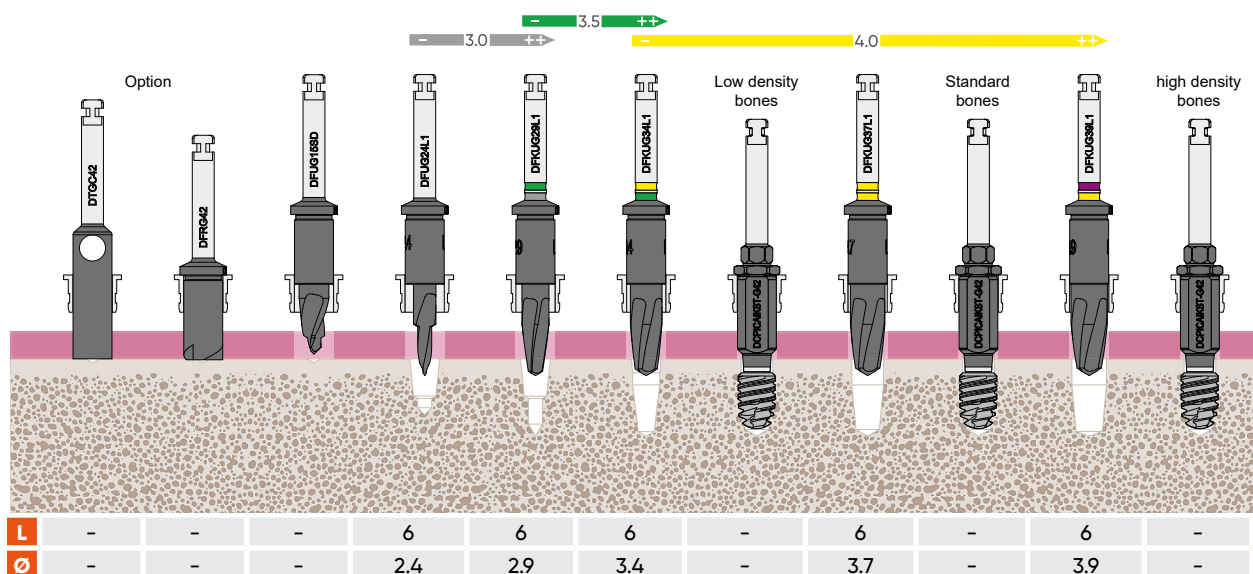
### ► In-Kone® Ø3.5 mm: drilling sequence L13 mm Alternate drilling drills 8.5/13 mm



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

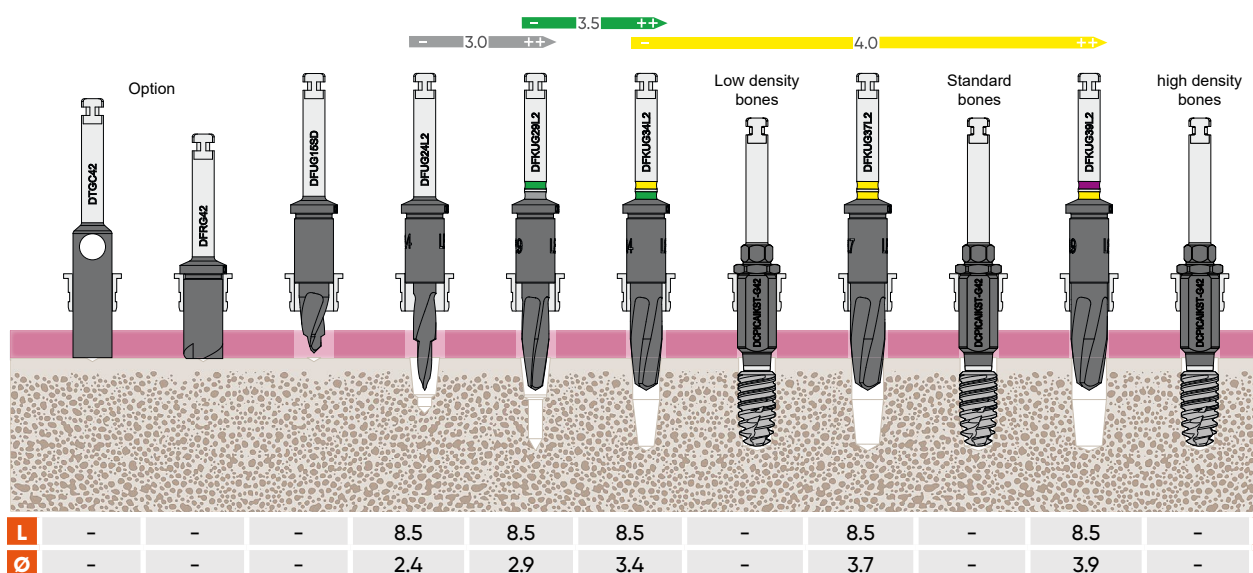


► **In-Kone® Ø4 mm: drilling sequence L6 mm**  
*Direct drilling to the length of the implant*



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

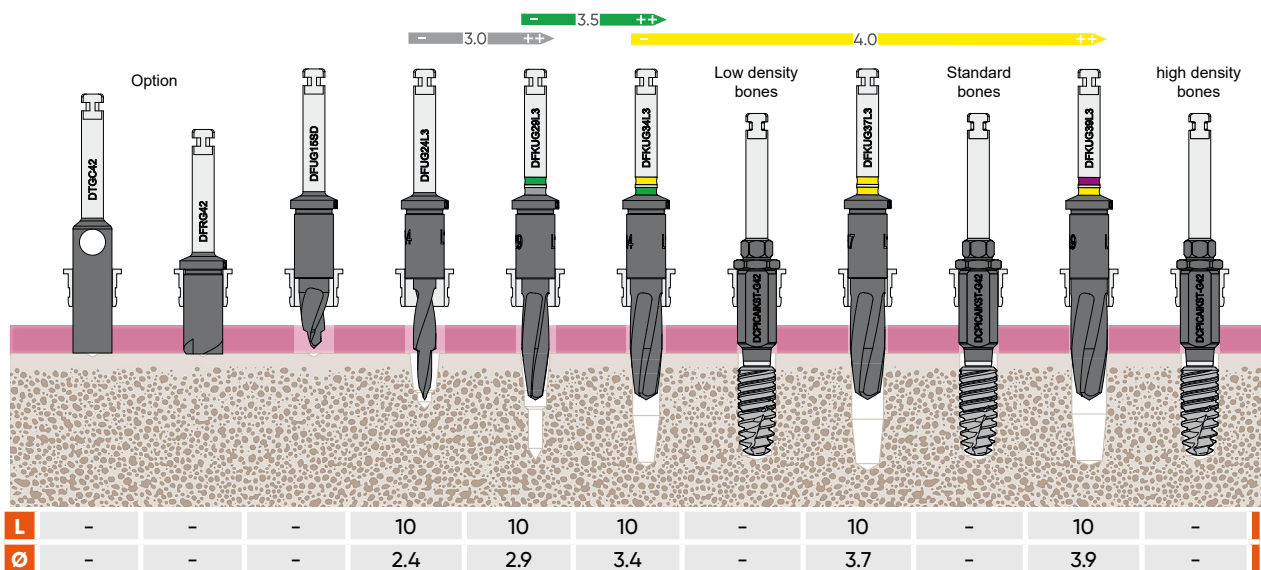
► **In-Kone® Ø4 mm: drilling sequence L8.5 mm**  
*Direct drilling to the length of the implant*



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

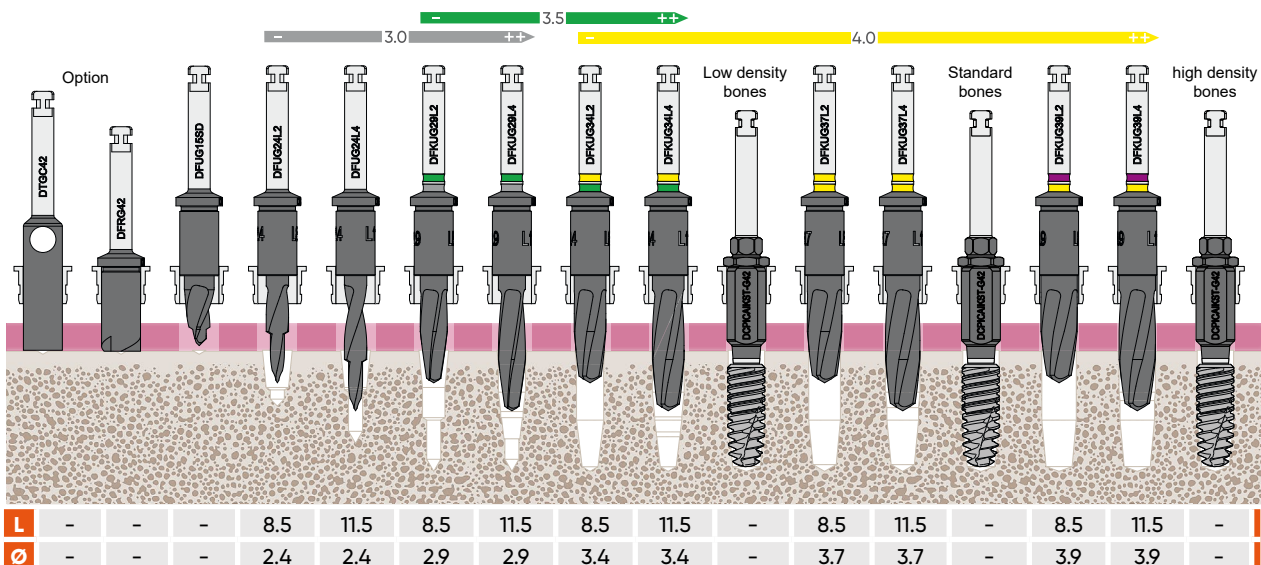
## H. ULTIMATE G42 guided surgery protocol

### ► In-Kone® Ø4 mm: drilling sequence L10 mm Direct drilling to the length of the implant



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

### ► In-Kone® Ø4 mm: drilling sequence L11.5 mm Alternate drilling drills 8.5/11.5 mm



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

Alternate drilling drills 8.5/13 mm



 The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

### 3. twinKon® implant Ø3.5 & 4.0 mm

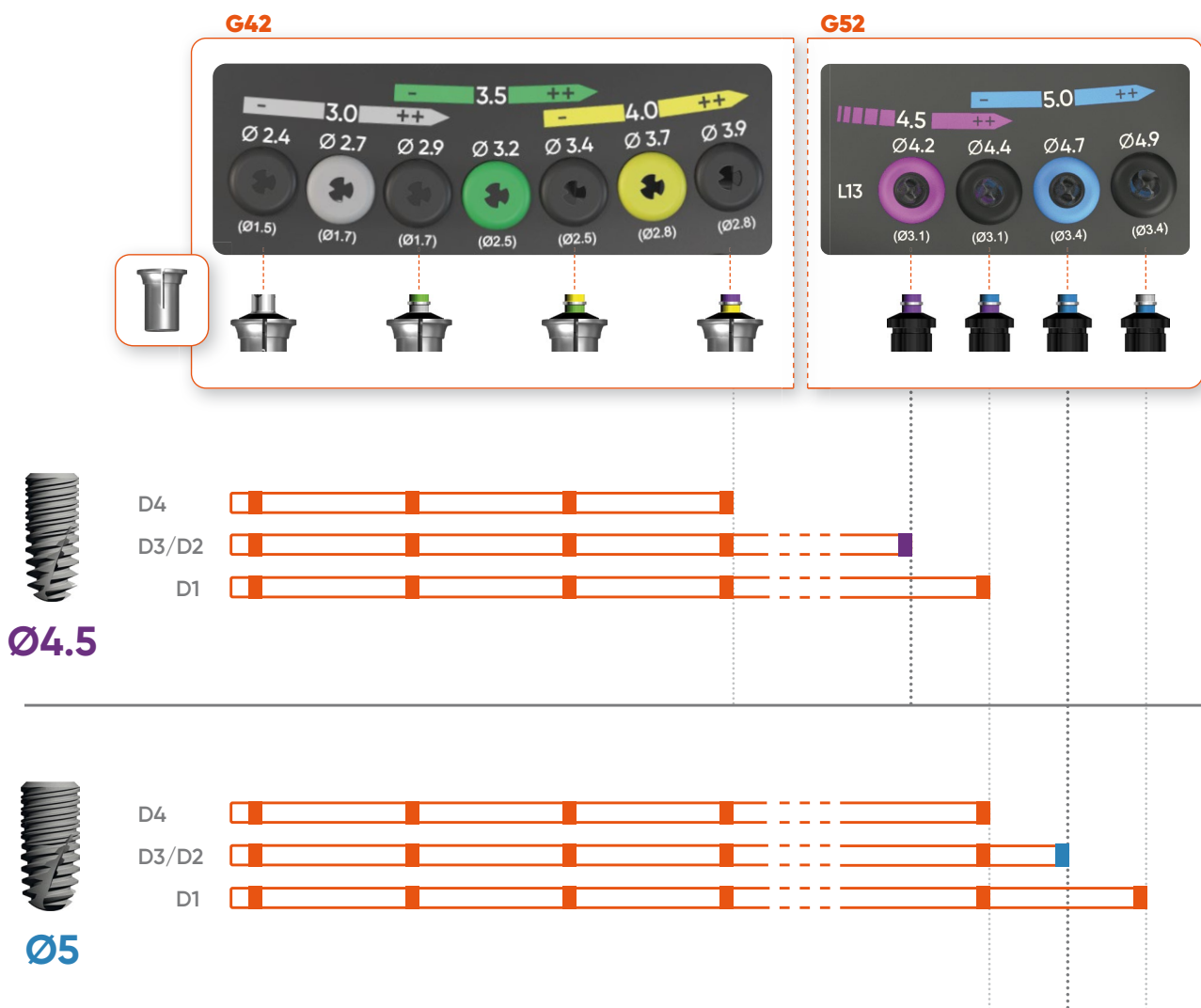
For **3.5 and 4 mm diameter twinKon® implants**, guided drilling is possible as for In-Kone® implants, **the drilling protocol is the same and the implant is installed once the guide has been removed**. The pre-mounted 5 mm diameter implant driver for the twinKon® implant is too large for the 4.2 mm diameter sleeve. Use the conventional implant driver wrenches (Ref. DCPICACEC and DCPICACE).

# I. The basics of the ULTIMATE G52 guided surgery protocol

## 1. General principle

For diameters 4.5 and 5.0 mm of **ST platform UNIVERSAL & PRIMO, WD In-Kone® and twinKon® implants** with 4.5 mm diameter, several protocols can be considered, depending on the bone density encountered. This drilling protocol is similar to the ULTIMATE G42 protocol. We recommend sub-drilling (-) in cases of low density and over-drilling (++) if the bone is high density.

For implants with these diameters, you will need **both the ULTIMATE G42 & G52 guided surgery kits**. Start with the G42 protocol, adding drill stops from the ULTIMATE G52 kit to the drills from the ULTIMATE G42 kit. Next, finish with the drills from the ULTIMATE G52 kit.



### Specific counter-indication

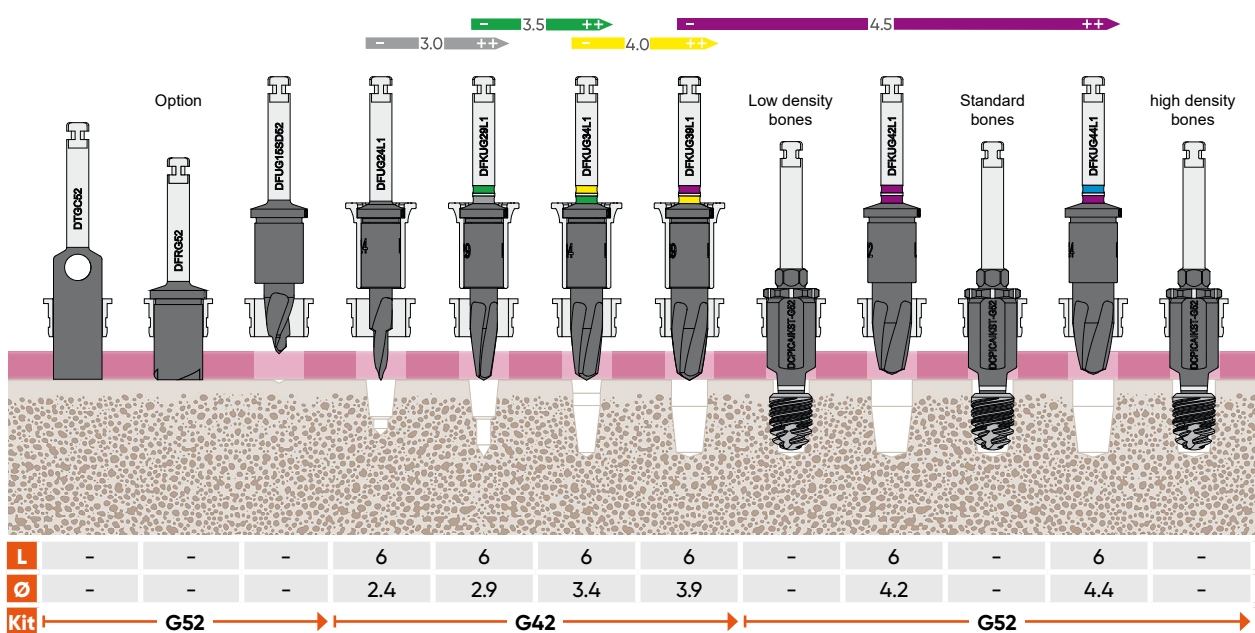
In-Kone® and twinKon® implants must not be installed more than 2 mm deep



# J. ULTIMATE G52 guided surgery protocol

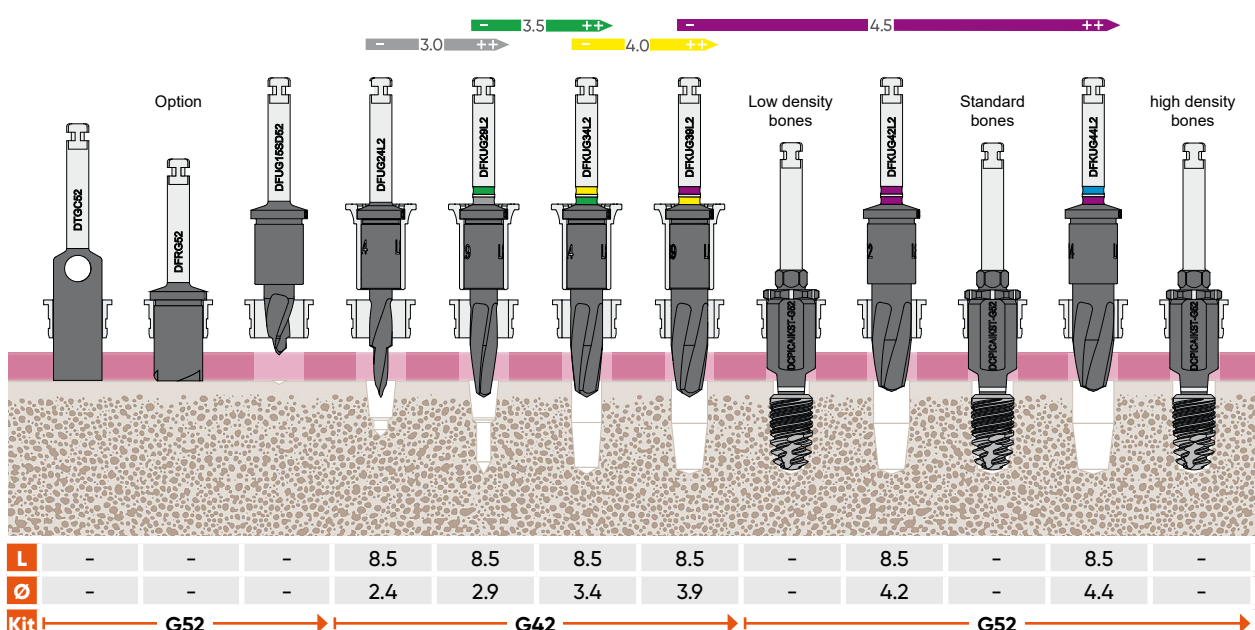
## 1. ST platform In-Kone® implant

### ► ST platform In-Kone® Ø4.5 mm: drilling sequence L6 mm Direct drilling to the length of the implant



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

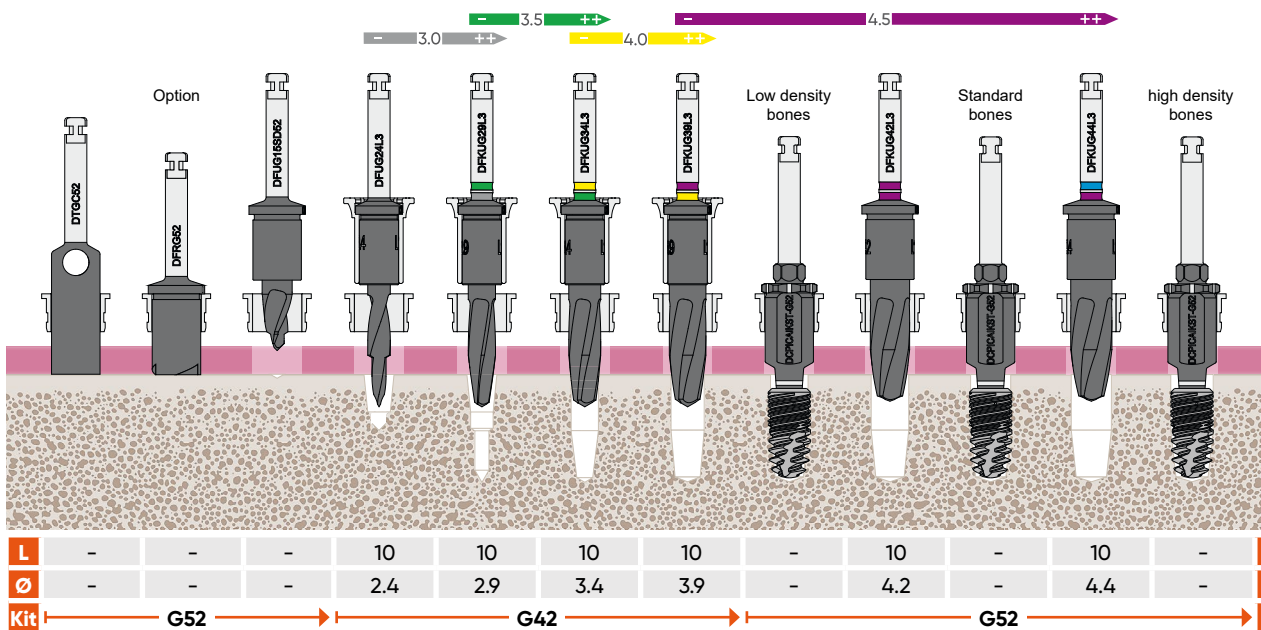
### ► ST platform In-Kone® Ø4.5 mm: drilling sequence L8.5 mm Direct drilling to the length of the implant



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

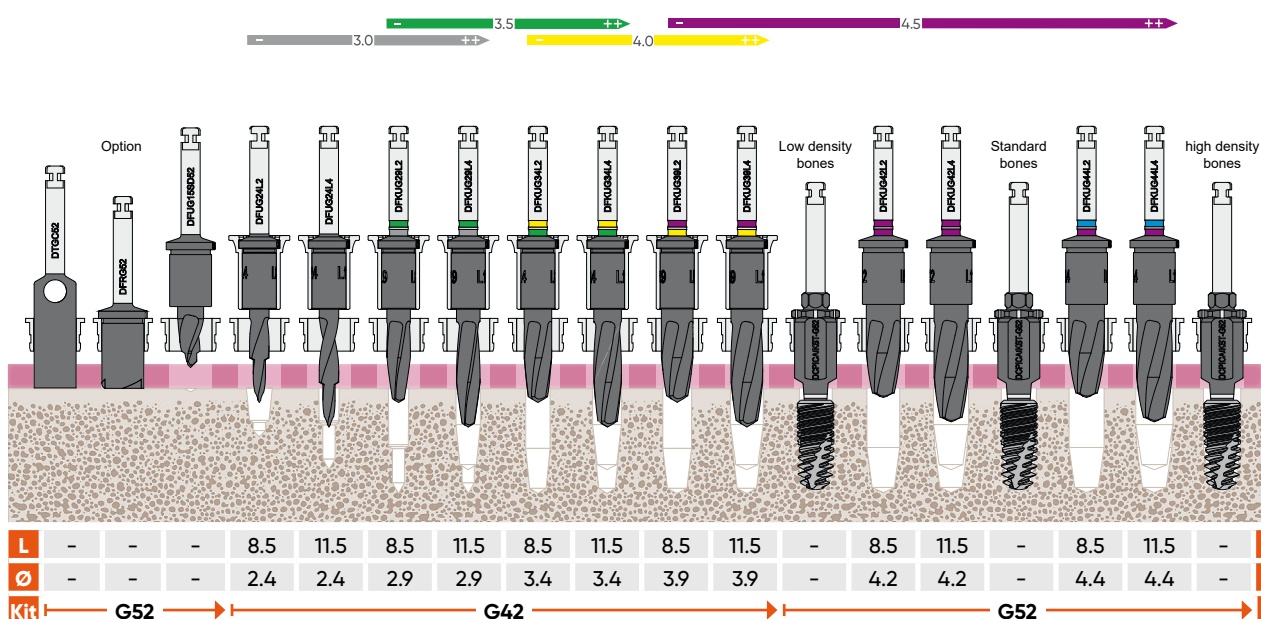
## J. ULTIMATE G52 guided surgery protocol

### ► ST platform In-Kone® Ø4.5 mm: drilling sequence L10 mm Direct drilling to the length of the implant



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

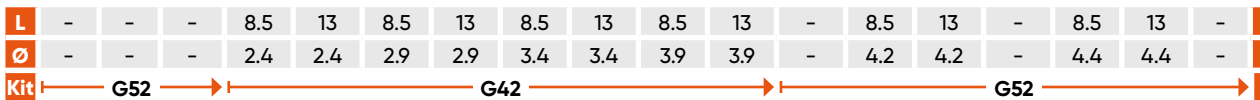
### ► In-Kone® ST Platform Ø4.5 mm: drilling sequence L11.5 mm Alternate drilling drills 8.5/11.5 mm




⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.




Alternate drilling drills 8.5/13 mm



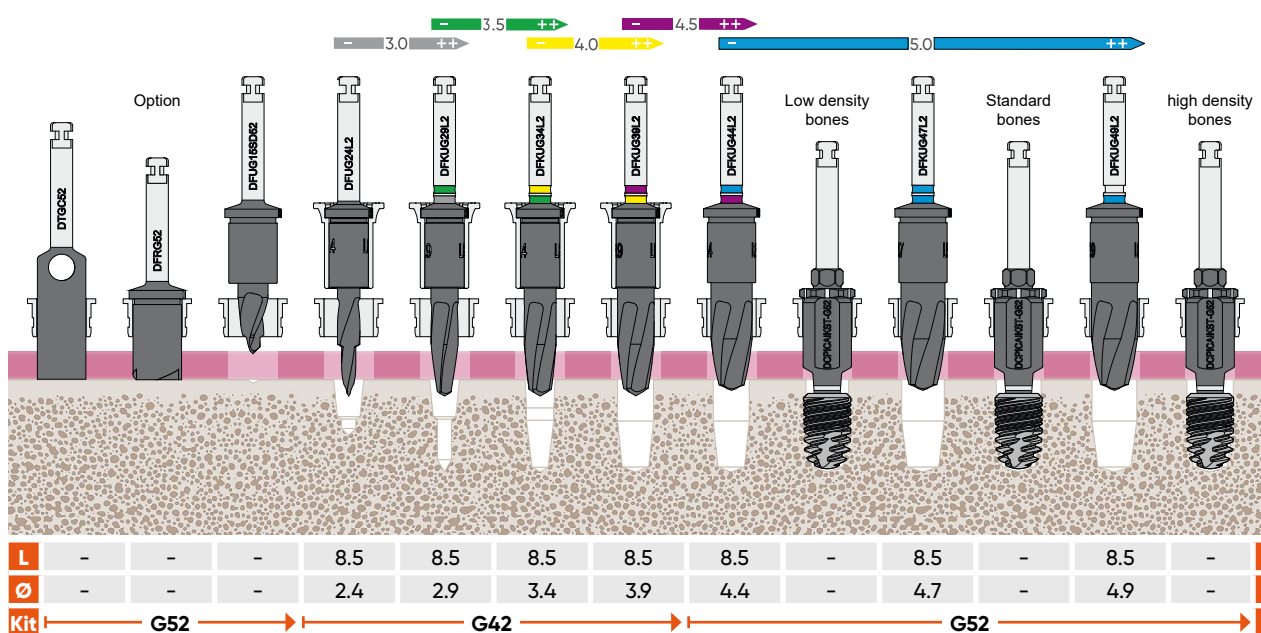
 The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

Direct drilling to the length of the implant



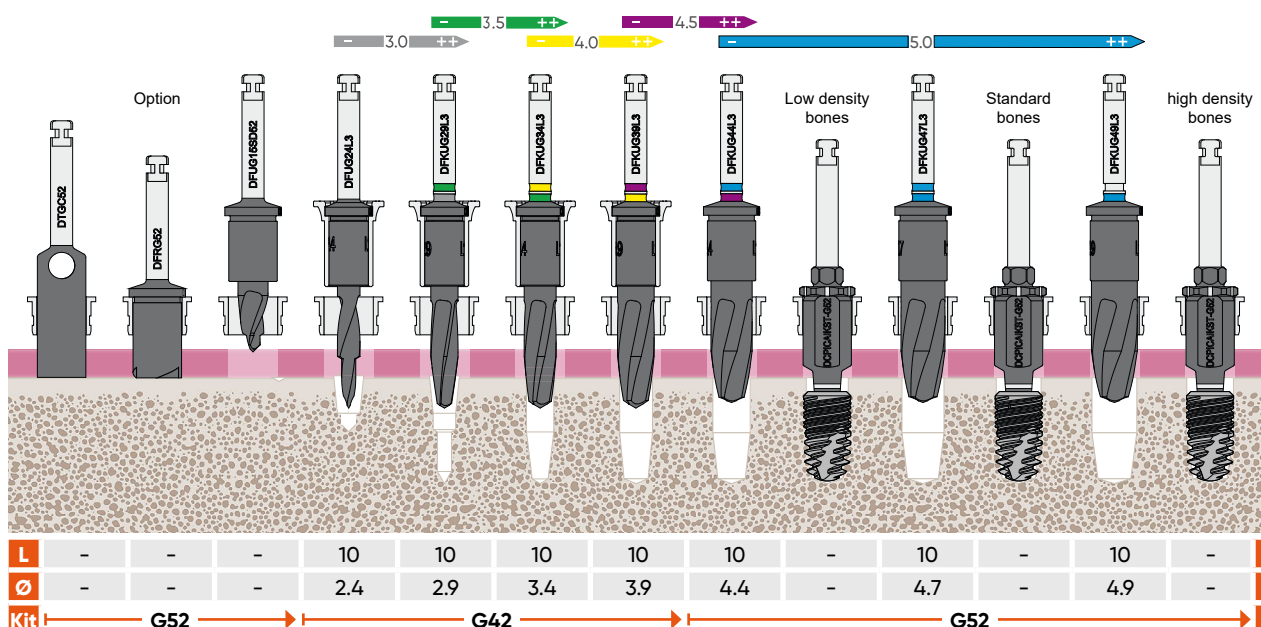
 The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

## ► ST platform In-Kone® Ø5 mm: drilling sequence L8.5 mm Direct drilling to the length of the implant



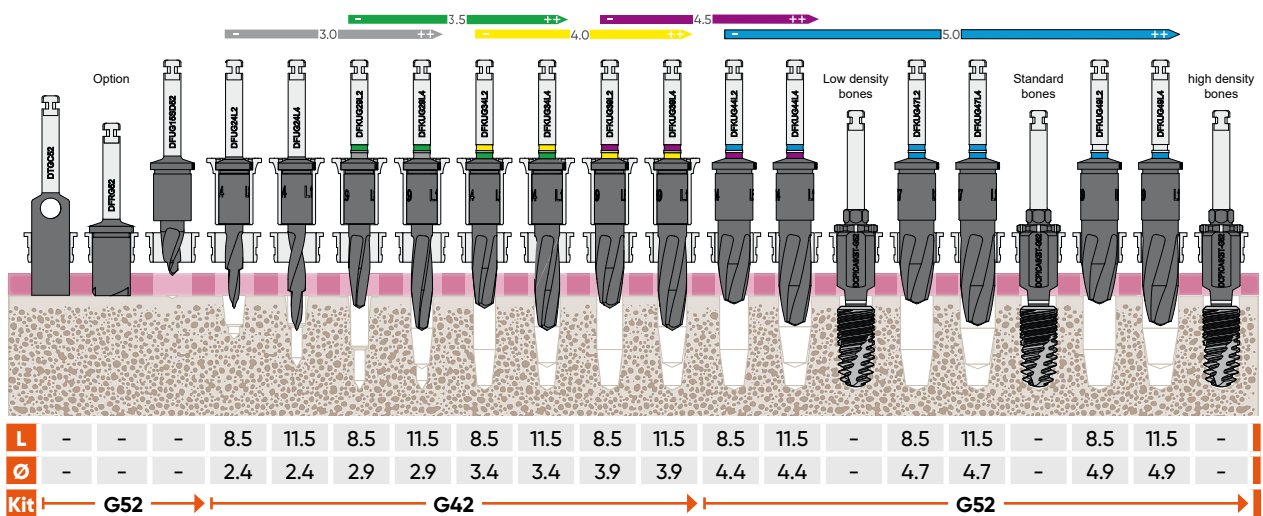
! The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

## ► ST platform In-Kone® Ø5 mm: drilling sequence L10 mm Direct drilling to the length of the implant



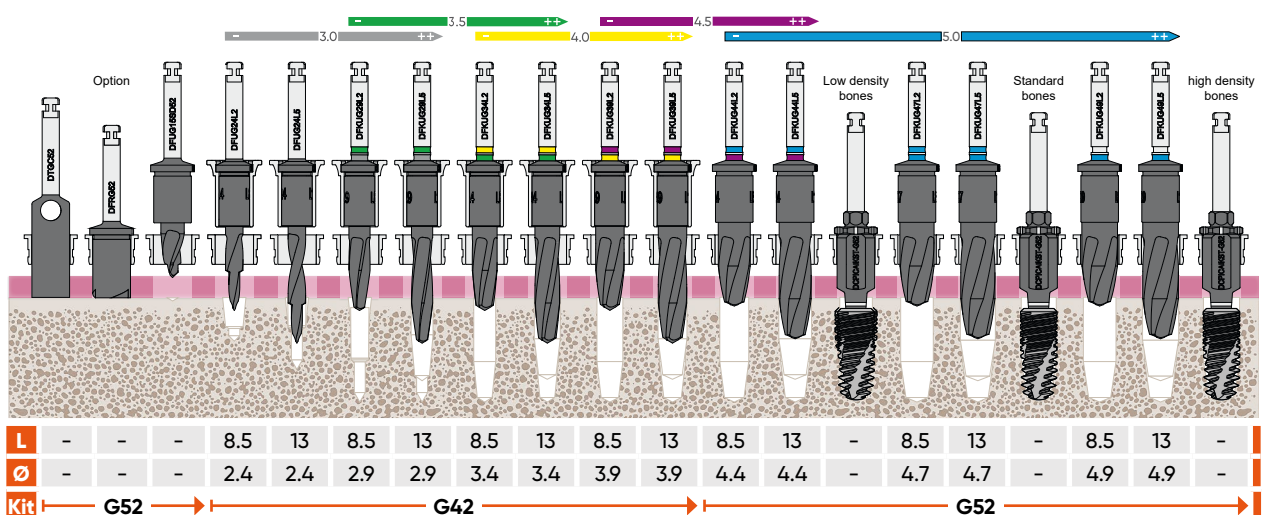
! The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

► **ST platform In-Kone® Ø5 mm: drilling sequence L11.5 mm**  
*Alternate drilling drills 8.5/11.5 mm*



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

► **ST platform In-Kone® Ø5 mm: drilling sequence L13 mm**  
*Alternate drilling drills 8.5/13 mm*

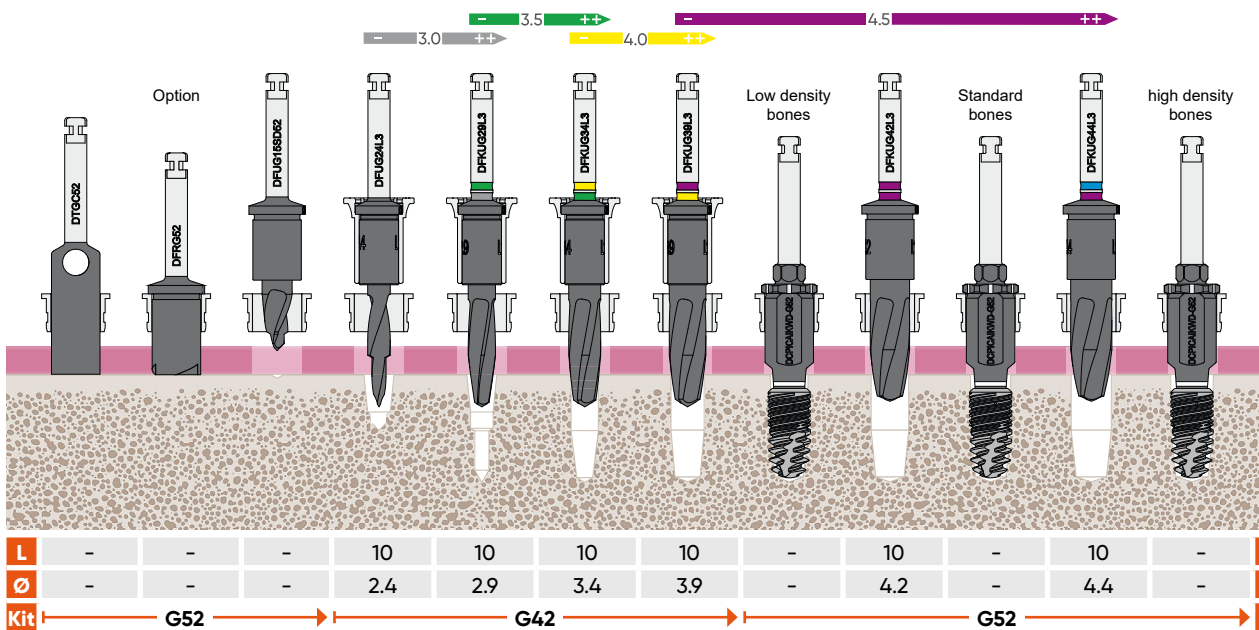


⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.



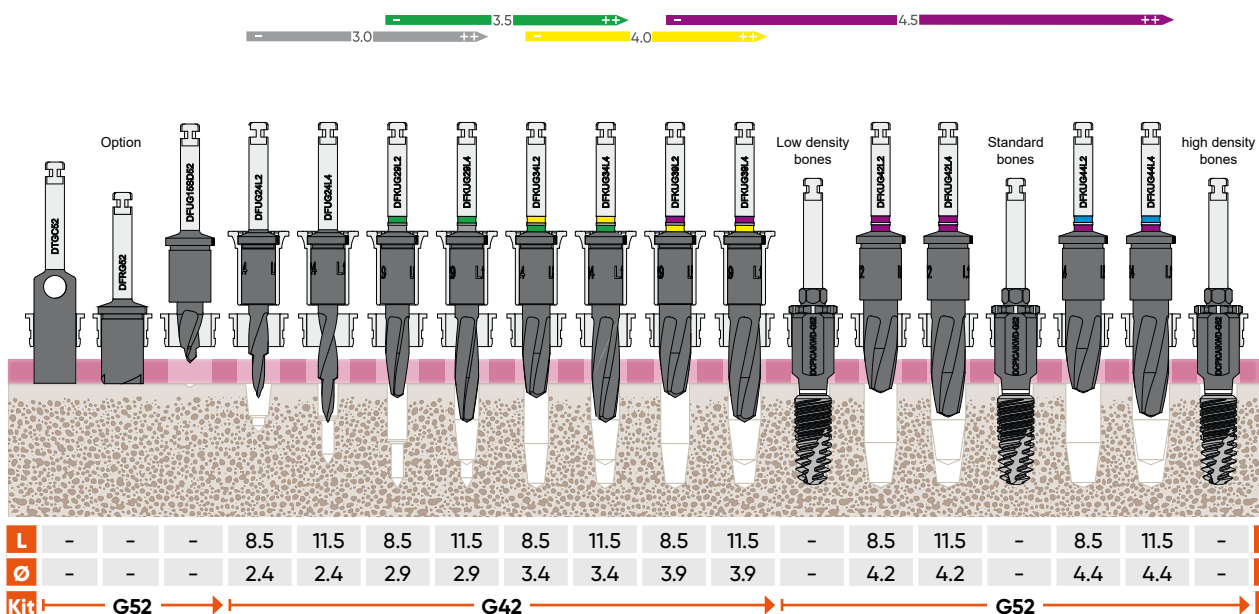


► **WD platform In-Kone® Ø4.5 mm: drilling sequence L10 mm**  
*Direct drilling to the length of the implant*



! The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

► **In-Kone® WD Platform Ø4.5 mm: drilling sequence L11.5 mm**  
*Alternate drilling drills 8.5/11.5 mm*



! The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

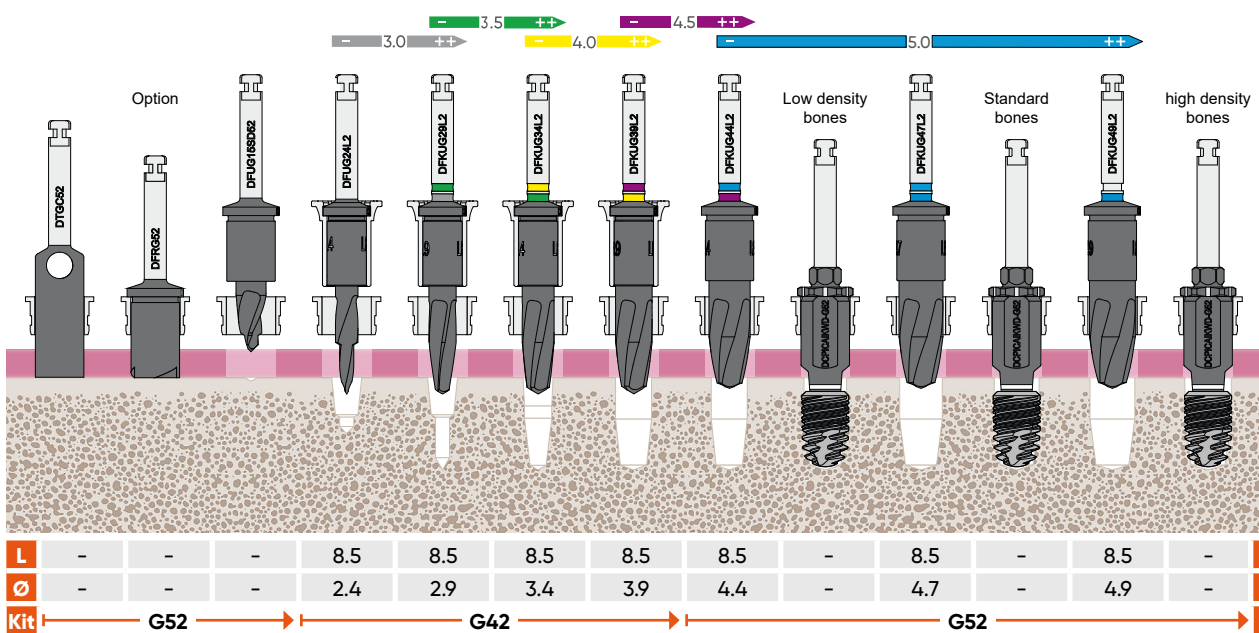
The diagram illustrates the application of various dental drills across different bone densities. The drills are categorized into three groups: Option, Low density bones, and Standard bones. Each drill has a specific model number and is associated with a particular bone layer (pink, white, or brown). A color-coded scale at the top indicates the hardness of the bone layers, ranging from -3.0 to +5.0.

	DTG632	DPR632	DFUG16SD2	DFUG94L1	DFUG928L1	DFUG934L1	DFUG938L1	DFUG944L1	DPTUJWD-5S2	DFUG947L1	DPTUJWD-5S2	DFUG948L1	DPTUJWD-5S2
L	-	-	-	6	6	6	6	6	-	6	-	6	-
Ø	-	-	-	2.4	2.9	3.4	3.9	4.4	-	4.7	-	4.9	-
Kit	G52			G42					G52				

**Warning:** The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

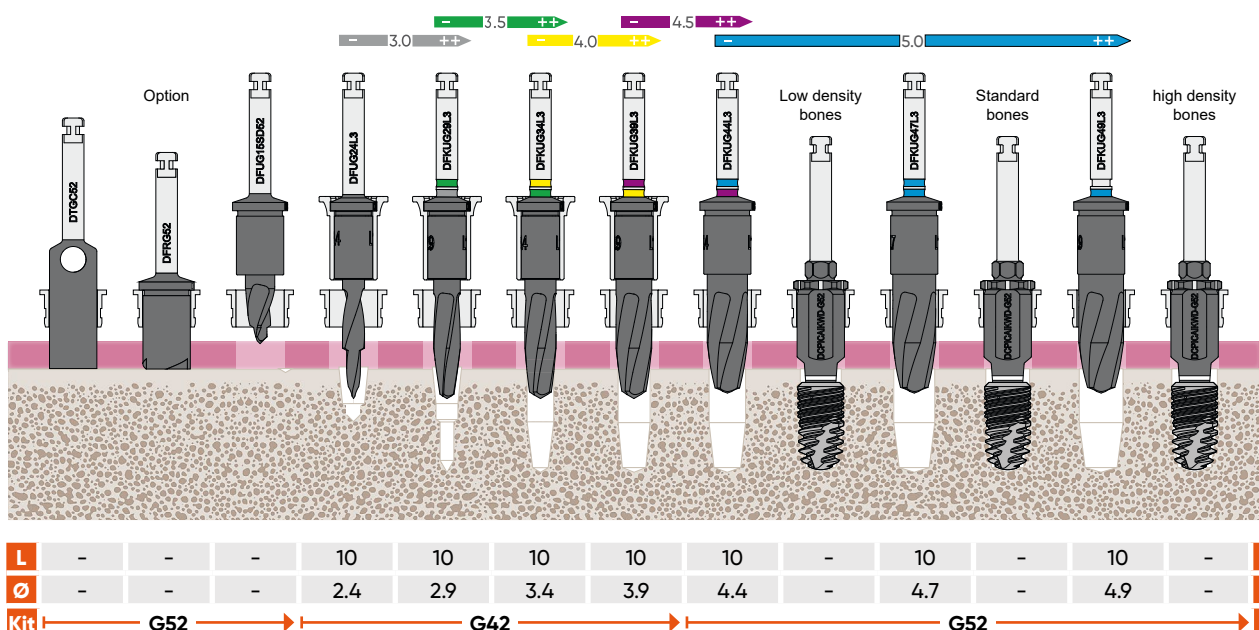


► **WD platform In-Kone® Ø5 mm: drilling sequence L8.5 mm**  
*Direct drilling to the length of the implant*



! The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

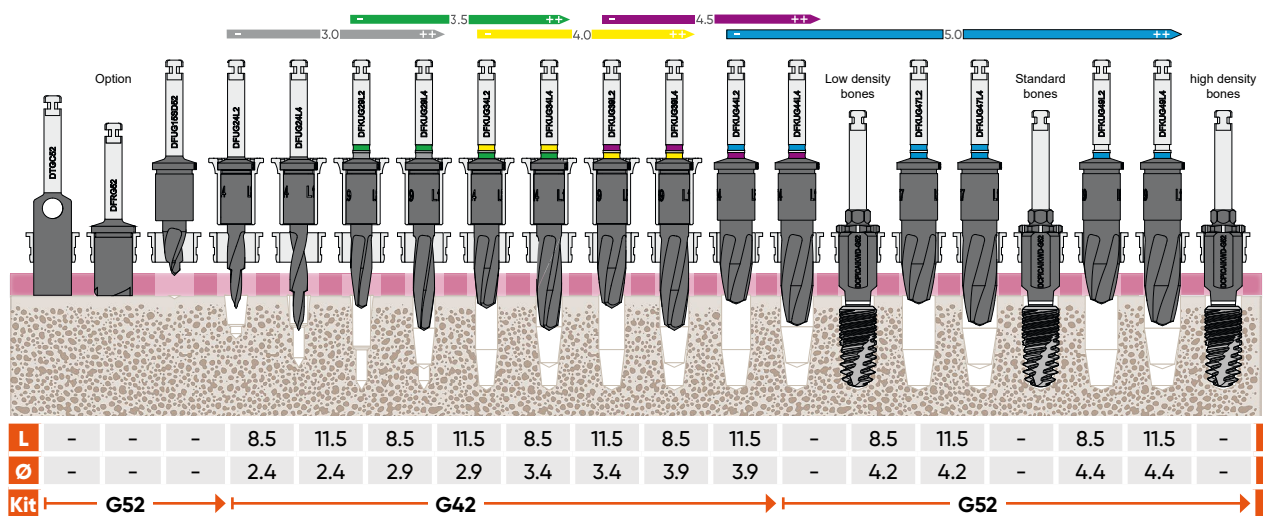
► **WD platform In-Kone® Ø5 mm: drilling sequence L10 mm**  
*Direct drilling to the length of the implant*



! The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

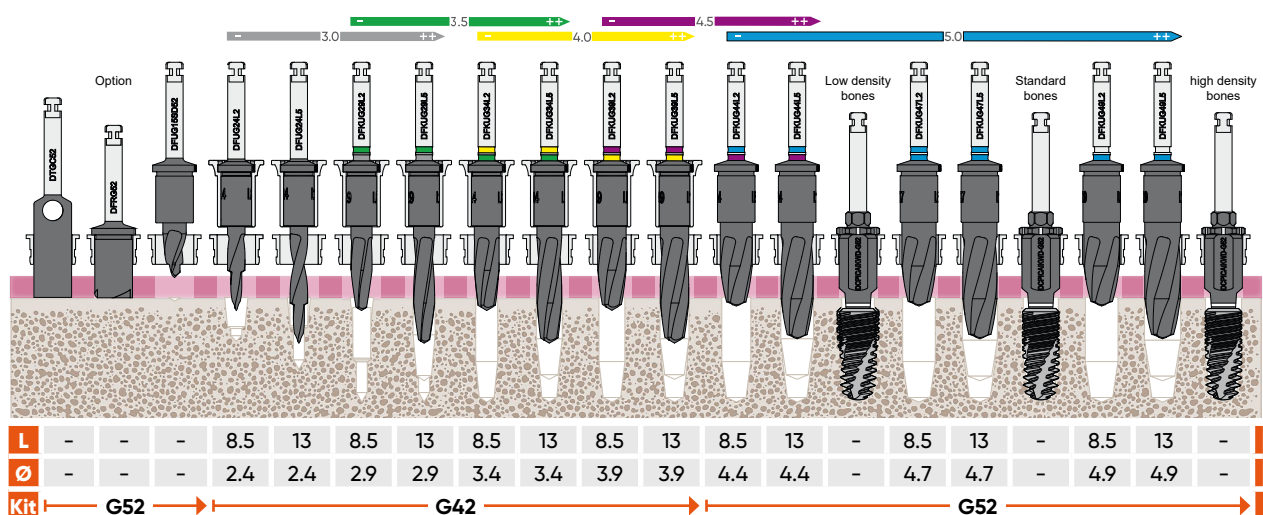
## J. ULTIMATE G52 guided surgery protocol

### ► WD platform In-Kone® Ø5 mm: drilling sequence L11.5 mm Alternate drilling drills 8.5/11.5 mm



⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

### ► WD platform In-Kone® Ø5 mm: drilling sequence L13 mm Alternate drilling drills 8.5/13 mm



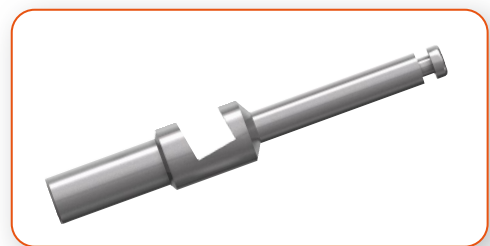
⚠ The speed of use for the circular scalpel is 100 rpm max., that of the bone level drill is 600 rpm max., the other drills should be used at between 600 and 800 rpm.

### 3. twinkKon® implant Ø4.5 mm

For **twinkKon®** implants, guided drilling is possible as for **In-Kone®** implants, the drilling protocol is the same and the implant is installed once the guide has been removed. The pre-mounted 5 mm diameter implant driver for the **twinkKon®** implant can fit the 5.2 mm diameter sleeve, but will not be guided.

### K. Optional instrumentation not provided in the kit

- In certain cases of embedded edentation in particular, a **drill extension (Ref. DPROL)** might be necessary; it can be added in one of the empty spaces.



- **Cortical cutters** can also be used in certain situations once the implants have been installed before inserting a healing screw or a temporary restoration.

They allow the removal of excess cortical bone above the implant and ensure passive insertion of healing screws. The cutters are equipped with a centring tip placed in the implant to stabilise the instrument as it rotates. The PEEK head preserves the integrity of the connection during the operation. They can be added in the empty spaces.



- The activator and extractor used during the temporary and final prosthetic phases for **NR platform In-Kone® implants** can also be added to the kit.

## L. Instrument maintenance

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Please refer to the instructions for each device for inspection, cleaning, decontamination, and sterilization recommendations before use.

Global D disclaims all liability in case of non-compliance with these conditions.

## M. Additional instrumentation

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### Osteosynthesis screws

1.5 mm diameter screws are indicated to hold the surgical guide. These cruciform, self-tapping screws are from the **Graftek range**. The following references have been included in some software programmes: VA1.5KL11, VA1.5KL13 & VA1.5KL15.

They are compatible with the Steco® sleeve:  
Ref. M.27.03.D150L6.



**Graftek is a full range for pre-implant surgery.** It comprises a wide choice of self-tapping screws available in several diameters and many lengths. The screw type is easily identified thanks to the colour code. For more information, please consult the **Graftek** catalogue.

# NOTES



The products described are class I and IIa medical devices bearing the CE mark, they are intended for healthcare professionals in the field of dental implantology. They are used as tools to replace missing teeth.

These products are CE marked by several manufacturers:

The CE compliance evaluation of products manufactured by GlobalD following the directive 93/42/CEE was led by GMED (CE0459), for class IIa devices.

The CE compliance evaluation and CE marking of products manufactured by Biomec and distributed by GlobalD following regulation EU 2017/745 was led by IMQ ISTITUTO ITALIANO DEL MARCHIO DI QUALITÀ (CE055) for class IIa devices.

The CE compliance evaluation and CE marking of products manufactured by SAEG and distributed by GlobalD following regulation EU 2017/was led by KIWA CERMET ITALIA (CE0476) for class IIa devices.

Other class I references manufactured and CE marked following regulation EU 2017/745 by Anteea and Josef Ganter and distributed by GlobalD are also available in this set.





ZI de Sacuny  
118 Avenue Marcel Mérieux  
69530 Brignais - France  
Tel. +33 (0)4 78 56 97 00  
Fax +33 (0)4 78 56 01 63  
[www.globald.com](http://www.globald.com)

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CATALOG-0168-V01-01