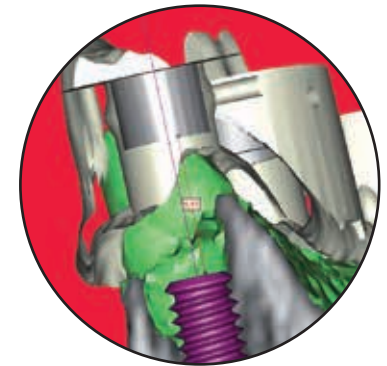
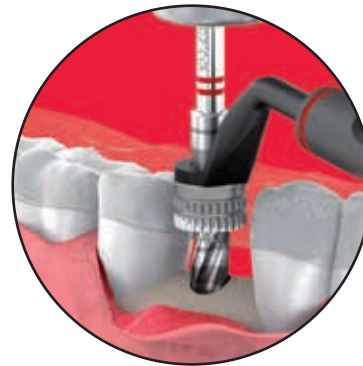


SIC Guided Surgery



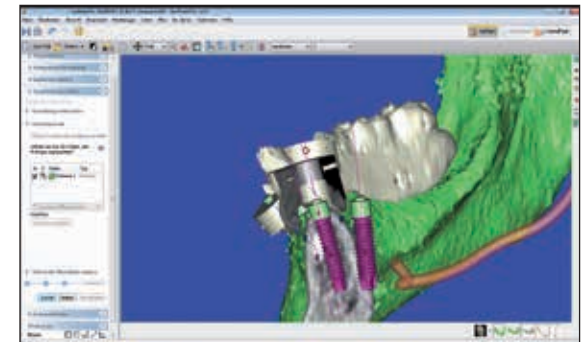
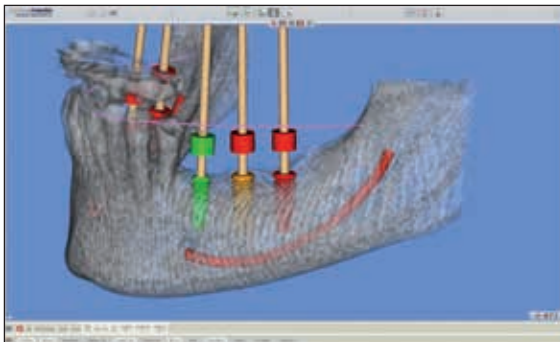
Template surgery –
prosthetically oriented backwards planning

SIC Guided Surgery

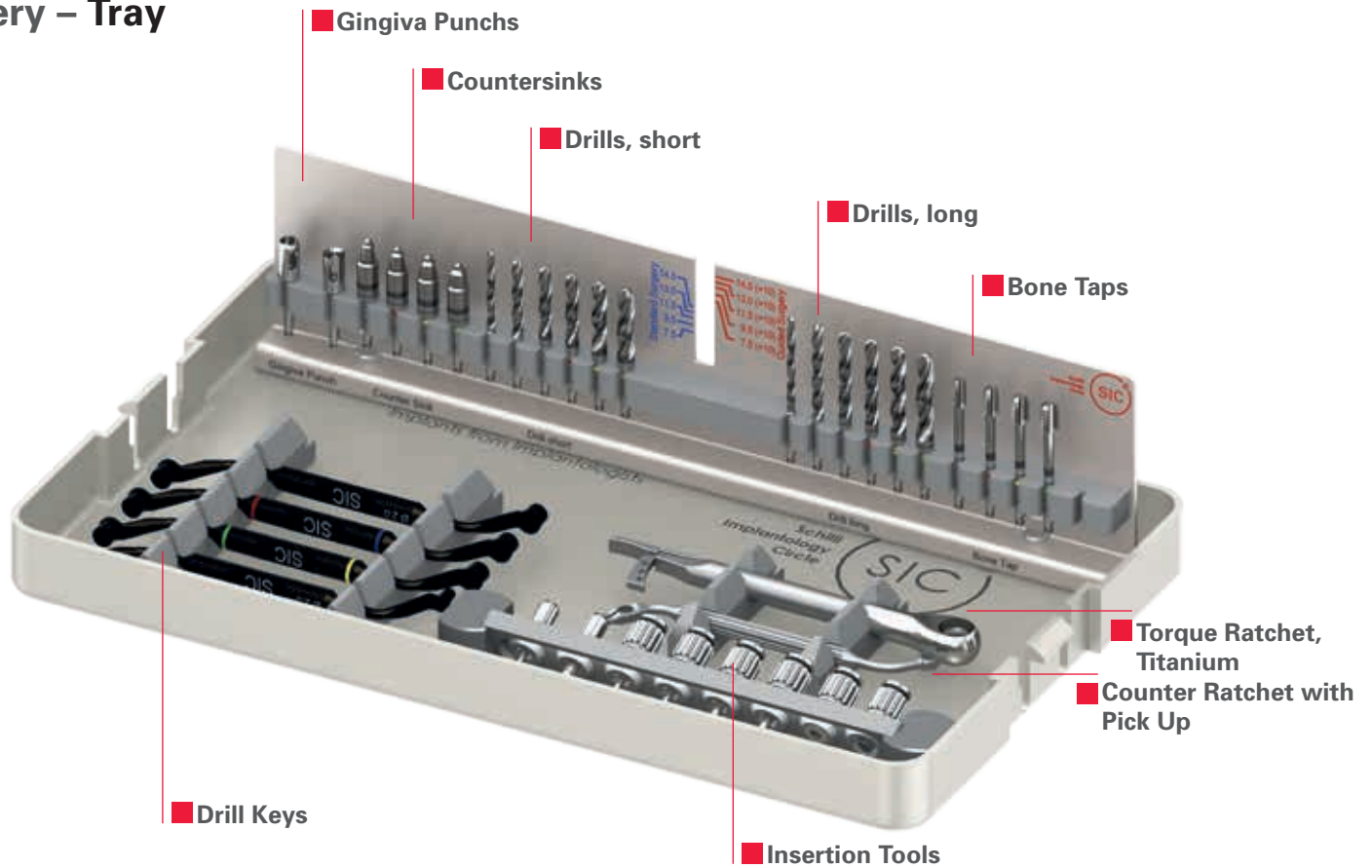
3D diagnosis in combination with prosthetically oriented backwards planning increases reliability for determining the optimal tooth position. **SIC Guided Surgery** is a software-independent surgical system for template-guided, navigated implant insertion. Important characteristics are compactness, efficiency and ergonomics of the instrumentarium.

Maximum flexibility due to open connection to current planning tools, variability due to the possibility of laboratory or industrial production of the guiding templates, surgical freedom with maximum functionality and precision predominated during the conception and development of the system.

- Software-independent, open instrument set
- Implemented in the planning tools:
 - **SimPlant**® (Materialise Dental N.V.),
 - **CeHa imPLANT**® (med 3D), **coDiagnostiX**® (Straumann®), **SKYplanX** (bredent),
 - **SICAT Implant** (SICAT GmbH & Co. KG), **Swissmeda Planning Solution** (Swissmeda AG),
 - **Nemotec** (Software Nemotec, S.L.)
- Fabrication of the guide centrally by Materialise Dental, SICAT GmbH & Co. KG or in a local dental laboratory
- Easy and efficient using familiar, few instruments
- Maximum flexibility for the operator (no fixed depth stops)
- Guidance of implant placement using the guide template
- Master sleeve Ø 5.2 mm for standard indications
- Master sleeve Ø 3.1 mm for lateral and lower incisors



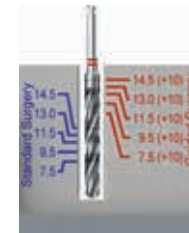
SIC Guided Surgery – Tray



■ **Titanium Ratchet**
 ratchet and insertion tools for manual and handpiece operations



■ **Two Master Sleeves**
 \varnothing 5.2 mm and \varnothing 3.1 mm



■ **Drill Gauge**
 for reliable check of the depth markings

SIC Guided Surgery – Surgical Guideline

Master Sleeve Ø 5.2 mm



1 Initial Situation

Raising a flap of the soft tissue using an incision around the teeth and over the alveolar ridge.



2 Initial Drilling

The countersink is used for initial Ø 2.0 mm pre-drilling and expanding the cortical bone to the planned implant diameter. The recommended motor speed is max. 500 rpm. The insertion depth depends on the local bone quality. **In the case of a severely atrophied alveolar ridge or intentionally planned subcrestal implant position, pre-drilling should initially be completed using the Ø 2.0 mm pilot drill.**



3 Pilot Drilling

The Ø 2.0 mm pilot drill is inserted to the planned implant length using the drill key 935581 with "Ø 2.0 mm" printed on the side. The recommended motor speed is max. 800 rpm.



4 1st Extension Drilling

The Ø 2.8 mm extension drill is inserted to the planned implant length using the drill key 935581 "Ø 2.8 mm" printed on the side. The recommended motor speed is max. 800 rpm.



5 Additional Extension Drilling

Additional extension drilling depends on the planned implant diameter in accordance with the overview on Page 6. **The drill keys are colour coded to correspond with the respective drill.** The recommended motor speed is max. 800 rpm.



6 Bone Tap

The bone tap is used for bone of D1/D2 quality. The instrument is inserted via the shank end into the drill key 935580 with "TAP" printed on the side and locked into the contra-angle. During insertion into the guide template, the tip of the bone tap centres in the bone cavity and the guide sleeve in the template.

Tip:

At the Ø 2.0 mm drilling stage, only spot drill the alveolar ridge briefly, remove the template and check the position of the drill hole!

Master Sleeve Ø 3.1 mm for lateral and lower incisors



For SICace® 3.4 mm and SICmax 3.7 mm

SICace® Ø 3.4 mm
SICmax Ø 3.7 mm



2 Pilot Drilling

The Ø 2.0 mm pilot drill is inserted to the planned implant length using the drill key 935580 with "Ø 2.0 mm" printed on the side. The recommended motor speed is max. 800 rpm.



3 Extension Drill Ø 3.1

The Ø 3.1 mm extension drill is inserted to the planned implant length directly through the sleeve. The final length is attained when the depth marking is 1 mm above the sleeve. The recommended motor speed is max. 800 rpm.

Removing of the template



4 Countersink Ø 3.4

The Ø 3.4 mm countersink is used **without a template** for expanding the cortical bone. The insertion depth depends on the local bone quality. The recommended motor speed is max. 500 rpm.



5 Bone Tap Ø 3.4

The Ø 3.4 mm bone tap is used with D1/D2 bone quality without a template. In D1/D2 bone quality the thread section depth should be 50% of the implant length, but a minimum of 6.0 mm. The recommended motor speed is max. 35 rpm.

SIC Guided Surgery – Surgical Guideline



7 Bone Tap
The depth of the thread section depends on the local bone quality. In D1/D2 quality bone the thread section depth should be 50 % of the implant length, but a minimum of 6.0 mm. The recommended motor speed is max. 35 rpm.



8 Preparation for Placement
The implant is clipped into the contra-angle insertion tool with the Pick Up and inserted using a handpiece or with the aid of the **TR Adapter 937108** and torque ratchet.



9 Implant Placement
The laser marking on the insertion instrument defines the planned insertion depth. When using a handpiece to place the implant, the recommended motor speed is 25 rpm.



10 Implant Alignment
When the implant is in the final position, an outer corner of the contra-angle insertion tool should be facing towards the buccal/labial aspect.



11 Final Steps
To loosen the retention screw, the insertion post should be locked in position using the Pick Up. Remove the insertion post together with the retention screw.



Cover Screw
Fit the cover screw and tighten "finger-tight".



Suture

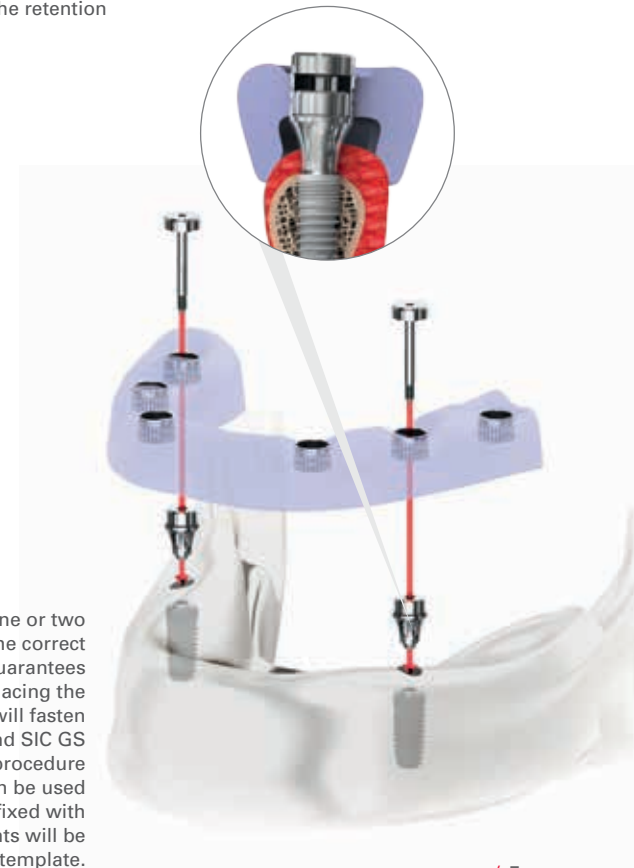


6 Implant Placement
When placing the implant using a handpiece, the recommended motor speed is max. 25 rpm.

- General instructions:**
- Always insert rotary instruments into the matching drill key/master sleeve before starting drilling
 - Always hold the drill key securely
 - Ensure that the template is fixed securely in position
 - Avoid lateral tilting of the drills
 - Drill intermittently
 - Ensure that there is adequate cooling with all instruments in use
 - Use only sharp drilling tools
 - Observe the colour coding of extension drills and matching drill keys

Subsequent stages are the same as the procedure with the Ø 5.2 mm master sleeve

The SIC GS Fixation Post is used for fixing the guiding template on one or two implants. The device assures the fixation of the template with the correct distance of 9 mm from the implant shoulder to the top of the sleeve and guarantees a maximum of local accuracy during multi-implant placements. After placing the first implant through the guiding template, the first SIC GS Fixation Post will fasten the template in position. After placing the second implant, the second SIC GS Fixation Post will secure the template stable and precise for the surgery procedure of the following implant placements. Further the SIC GS Fixation Post can be used in the lab to create the set-up of a provisional bridge. Lab implants will be fixed with the SIC GS Fixation Posts to the guiding template. Then the lab implants will be bonded to the master model in the exact position of the template.



SIC Guided Surgery – Drill Sequence and Surgical Planning Dimensions

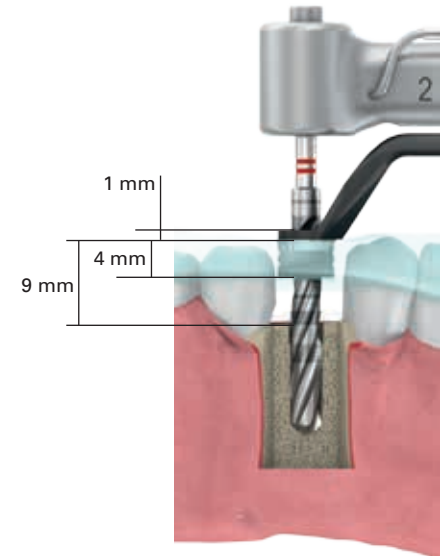
Overview of the drill keys and surgical instruments

SICace®	Ø 3.4 mm	Ø 4.0 mm	Ø 4.5 mm	Ø 5.0 mm
SICmax	Ø 3.7 mm	Ø 4.2 mm	Ø 4.7 mm	Ø 5.2 mm

Level bone situation and paracrestal implant placement

Implant diameter		Ø 3.4 mm and Ø 3.7 mm					Ø 4.0 mm and Ø 4.2 mm					Ø 4.5 mm and Ø 4.7 mm					Ø 5.0 mm and Ø 5.2 mm				
Length		7.5	9.5	11.5	13.0	14.5	7.5	9.5	11.5	13.0	14.5	7.5	9.5	11.5	13.0	14.5	7.5	9.5	11.5	13.0	14.5
	Key:																				
Countersink Ø 3.4	no	x	x	x	x	x															
Countersink Ø 4.0	no						x	x	x	x	x										
Countersink Ø 4.5	no											x	x	x	x	x					
Countersink Ø 5.0	no																x	x	x	x	x
Pilot Drill Ø 2.0	2.0	x	x	x	x*	x*	x	x	x	x*	x*	x	x	x	x*	x*	x	x	x	x*	x*
Extension Drill Ø 2.8	2.8	x	x	x	x*	x*	x	x	x	x*	x*	x	x	x	x*	x*	x	x	x	x*	x*
Extension Drill Ø 3.10	3.10	x	x	x	x*	x*															
Extension Drill Ø 3.25	3.25						x	x	x	x*	x*	x	x	x	x*	x*	x	x	x	x*	x*
Extension Drill Ø 3.75	3.75											x	x	x	x*	x*					
Extension Drill Ø 4.25	4.25																x	x	x	x*	x*
Bone Tap Ø 3.4	TAP	(x)	(x)	(x)	(x)	(x)															
Bone Tap Ø 4.0	TAP						(x)	(x)	(x)	(x)	(x)										
Bone Tap Ø 4.5	TAP											(x)	(x)	(x)	(x)	(x)					
Bone Tap Ø 5.0	TAP																(x)	(x)	(x)	(x)	(x)

x = short or long version
 x* = only long version
 (x) = for bone quality D1/D2
 All dimensions in mm



■ Planning dimensions for sleeve positioning in the guide template

Irregular bone situation and subcrestal implant placement

Implant diameter		Ø 3.4 mm and Ø 3.7 mm					Ø 4.0 mm and Ø 4.2 mm					Ø 4.5 mm and Ø 4.7 mm					Ø 5.0 mm and Ø 5.2 mm				
Length		7.5	9.5	11.5	13.0	14.5	7.5	9.5	11.5	13.0	14.5	7.5	9.5	11.5	13.0	14.5	7.5	9.5	11.5	13.0	14.5
	Key:																				
Pilot Drill Ø 2.0	2.0	x	x	x	x*	x*	x	x	x	x*	x*	x	x	x	x*	x*	x	x	x	x*	x*
Countersink Ø 3.4	no	x	x	x	x	x															
Countersink Ø 4.0	no						x	x	x	x	x										
Countersink Ø 4.5	no											x	x	x	x	x					
Countersink Ø 5.0	no																x	x	x	x	x
Extension Drill Ø 2.8	2.8	x	x	x	x*	x*	x	x	x	x*	x*	x	x	x	x*	x*	x	x	x	x*	x*
Extension Drill Ø 3.10	3.10	x	x	x	x*	x*															
Extension Drill Ø 3.25	3.25						x	x	x	x*	x*	x	x	x	x*	x*	x	x	x	x*	x*
Extension Drill Ø 3.75	3.75											x	x	x	x*	x*					
Extension Drill Ø 4.25	4.25																x	x	x	x*	x*
Bone Tap Ø 3.4	TAP	(x)	(x)	(x)	(x)	(x)															
Bone Tap Ø 4.0	TAP						(x)	(x)	(x)	(x)	(x)										
Bone Tap Ø 4.5	TAP											(x)	(x)	(x)	(x)	(x)					
Bone Tap Ø 5.0	TAP																(x)	(x)	(x)	(x)	(x)



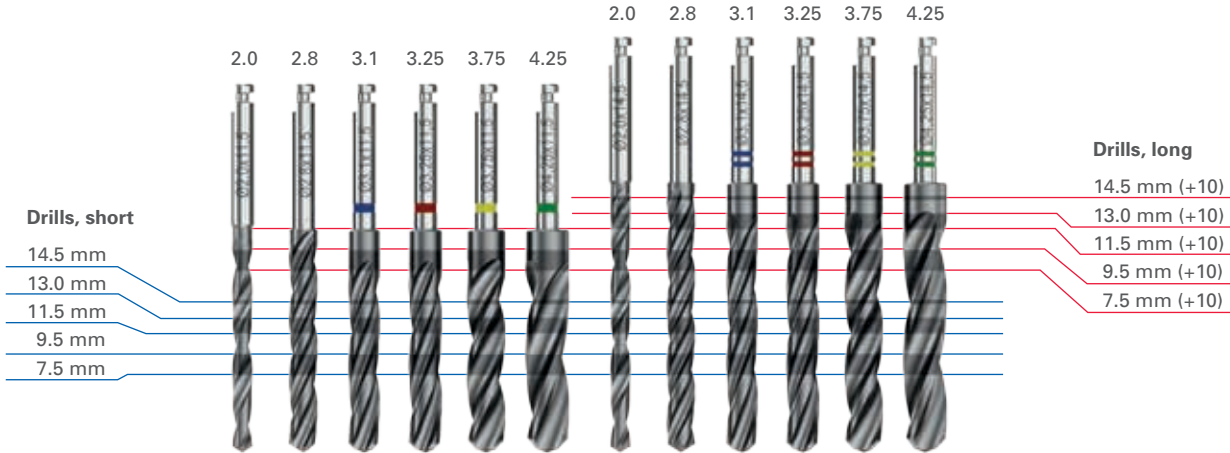
■ Master Sleeve Ø 5.2 mm



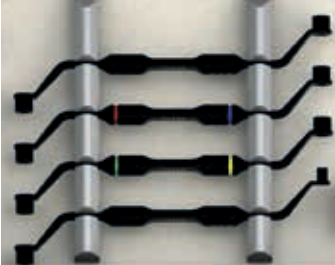
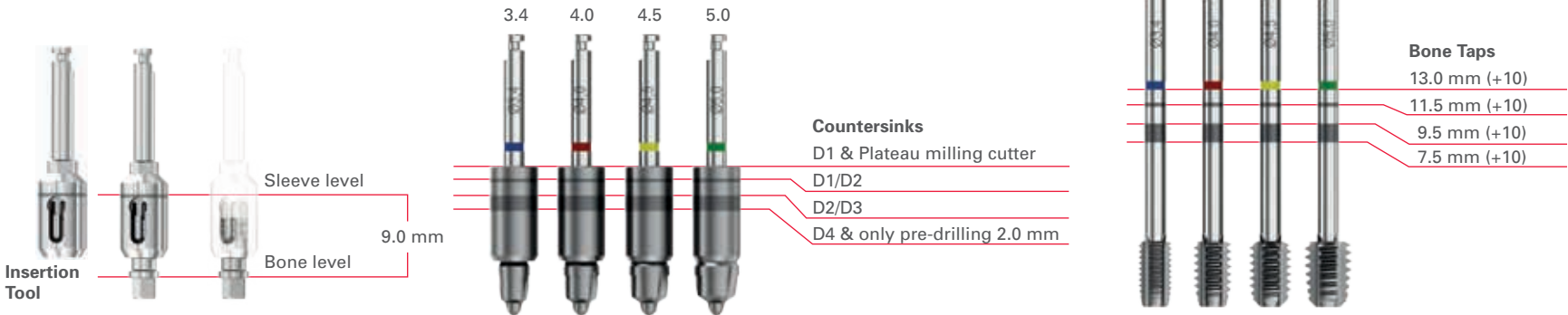
■ Master Sleeve Ø 3.1 mm

SIC Guided Surgery – Overview of Tools

Standard Surgery



Guided Surgery



- 935581 SIC GS Drill Key Ø 2.0 mm and Ø 2.8 mm, for Sleeve Ø 5.2 mm
- 935582 SIC GS Drill Key Ø 3.10 mm and Ø 3.25, for Sleeve Ø 5.2 mm
- 935583 SIC GS Drill Key Ø 3.75 mm and Ø 4.25 mm, for Sleeve Ø 5.2 mm
- 935580 SIC GS Drill Key Ø 2.0 mm, for Sleeve Ø 3.1 mm and Bone Tap, for Sleeve Ø 5.2 mm



Note:
The depth control using the laser marking on the insertion instrument only applies with implants in the packaging with a viewing window!



933110 SIC Surgical Tray, Guided Surgery, equipped



937154 SIC GS Gingiva Punch Ø 4.2 mm

937155 SIC GS Gingiva Punch Ø 5.2 mm



935550 SIC GS Countersink Ø 3.4 mm

935551 SIC GS Countersink Ø 4.0 mm

935566 SIC GS Countersink Ø 4.5 mm

935552 SIC GS Countersink Ø 5.0 mm



935553 SIC GS Pilot Drill Ø 2.0 mm

935555 SIC GS Extension Drill Ø 2.8 mm

935556 SIC GS Extension Drill Ø 3.10 mm

935557 SIC GS Extension Drill Ø 3.25 mm

935567 SIC GS Extension Drill Ø 3.75 mm

935558 SIC GS Extension Drill Ø 4.25 mm



935554 SIC GS Pilot Drill Ø 2.0 mm, long

935559 SIC GS Extension Drill Ø 2.8 mm, long

935560 SIC GS Extension Drill Ø 3.10 mm, long

935561 SIC GS Extension Drill Ø 3.25 mm, long

935568 SIC GS Extension Drill Ø 3.75 mm, long

935562 SIC GS Extension Drill Ø 4.25 mm, long



935563 SIC GS Bone Tap Ø 3.4 mm

935564 SIC GS Bone Tap Ø 4.0 mm

935569 SIC GS Bone Tap Ø 4.5 mm

935565 SIC GS Bone Tap Ø 5.0 mm



935580 SIC GS Drill Key Ø 2.0 mm, for Sleeve Ø 3.10 mm and Bone Tap for Sleeve Ø 5.2 mm

935581 SIC GS Drill Key Ø 2.0 mm and Ø 2.8 mm, for Sleeve Ø 5.2 mm

935582 SIC GS Drill Key Ø 3.10 mm and Ø 3.25 mm, for Sleeve Ø 5.2 mm

935583 SIC GS Drill Key Ø 3.75 and Ø 4.25 mm, for Sleeve Ø 5.2 mm



937115 SIC GS Insertion Tool, Angle Piece

937114 SIC GS Insertion Tool, Angle Piece, long



935590 SIC GS Sleeve Ø 3.1 mm

935591 SIC GS Sleeve Ø 5.2 mm



935592 SIC GS Fixation Post, for Sleeve Ø 5.2 mm

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