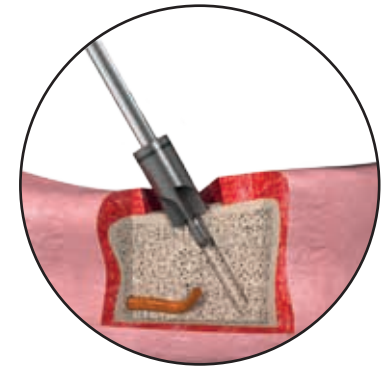


# SIC "Safe on Four"



Taking optimum advantage of the available bone with oblique implants

# “Safe on Four”

## “Safe on Four”



Bridgework



Complete Restoration  
non-removable

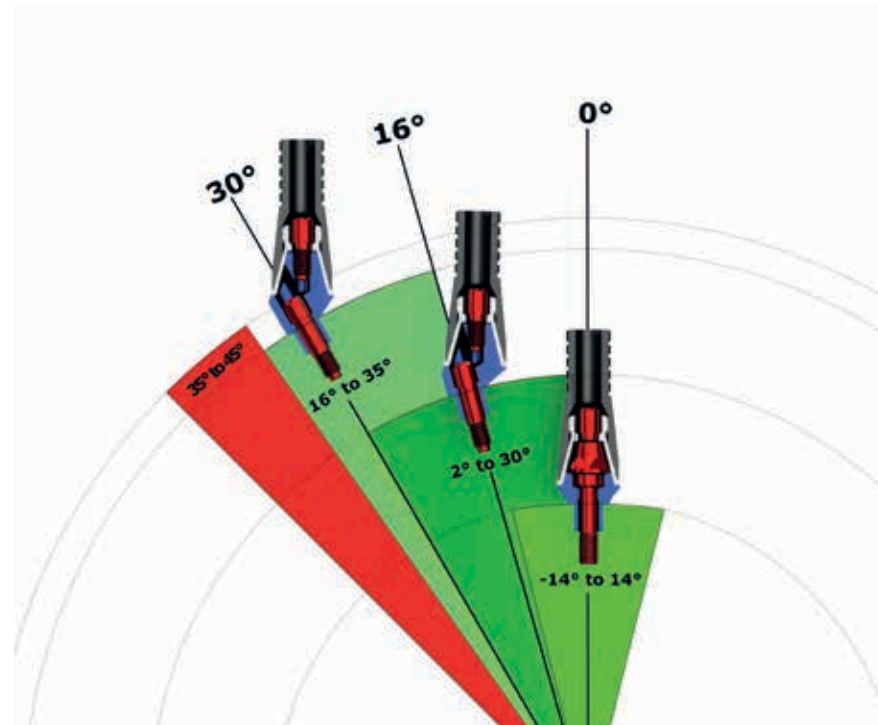


Complete Restoration  
removable

The SIC “Safe on Four” system is a further development of the “bar and bridge abutments” system. In the “Safe on Four” system, the bar and bridge abutments and the “Safe on Four” angled standard abutments are directly screw retained with the respective implant. In this way, a fixed transgingival platform is created over which all further prosthetic and laboratory technical measures are completed. The system is indicated for fixed or removable bridge or full restorations with the stipulation that the distal implants can have a maximum implantation angle of 30°.

The maximum bone availability is utilised distally by displacement of the most distally placed angled implant.

During development of the system, particular value was placed on the greatest possible stability of individual components. The straight bar and bridge abutments consist of a two-part design which includes an abutment component with hex and a “Safe on Four” fixation post that, using the long screw shank, ensures maximum continuous loading capacity. The “Safe on Four” universal fixation screws also have a reinforced screw thread.



## SIC “Safe on Four” – Product Properties at a Glance:



- Anterior bar and bridgework abutments, 2 part and highly stable
- Distal abutments, 16° and 30° angled
- Abutment cone 28°, 3.4 mm high and 5.0 mm in diameter
- Standardised occlusal screw, M 1.6

### Special surgical instruments:

Ø 5.2 mm cutter for determining the level of the implant and removing excess distal bone. (Also for use during SIC Guided Surgery)



## General Guidelines for SIC “Safe on Four” Restorations:

- The generally accepted rules and recommendations for dental implantology also apply here.
- For complete restorations a minimum of four implants must be placed in the mandible and a minimum of six in the maxilla. The bone quality must be D3 or higher.
- The implants must exhibit an intraosseous length of at least 9.5 mm and angled implants 11.5 mm.
- The implant diameter should be as large as possible – minimum: 4.0 mm. The implant should be placed at 16° resp. 30°.
- In case of immediate placement or immediate loading – to ensure adequate primary stability – the placement torque must be between 30 and 40 Ncm.
- The secondary parts (crown bases) must be firmly splinted primarily and distal extensions should generally be avoided.
- Comprehensive diagnosis and patient counselling as well as preoperative planning are essential. CT or CBCT planning is useful for determining the locations of the anatomical structures.
- The opposing dentition and general patient-specific risk factors must be given special attention.
- The operator must be sufficiently competent in surgery and prosthetics.

# SIC "Safe on Four" Surgical Guideline



## Planning Overview: "Safe on Four"

Gingival height [mm] mesial/distal						
Ø Implant connection [mm]	Ø 3.3			Ø 4.2		
	0	16	30	0	16	30
Angulation [°]						
GH 1.5 mm	1.5	1.5/2.4	0.9/3.4	1.5	1.5/2.4	1.5/2.4
GH 3.0 mm	3.0	2.6/4.1	-	3.0	2.7/4.1	2.7/5.4

### 1 Planning Guide:

The planning guide is used for visual and three-dimensional orientation of the implant angulation (mesial/distal) and oral parallelisation. The template is easily bent to adapt it to the dental arch and secured by means of a Ø 2.0 mm pilot drilling in the symphysis and pin in the jaw.

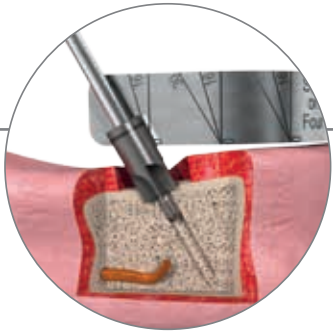
The slider is used to position the template for drilling and the sites drilled according to the surgical protocol. Each drill is aligned parallel to the template surface and at the implantation angle.

### 2 Marking Drill:

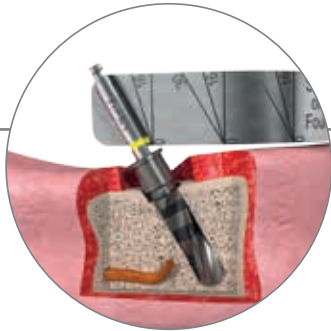
Once the mucous membrane has been raised, the implant site is indented with a marking drill. The drilling depth can be varied but must not exceed the length of the implant. Speed: max. 800 r.p.m.

### 3 Pilot Drill:

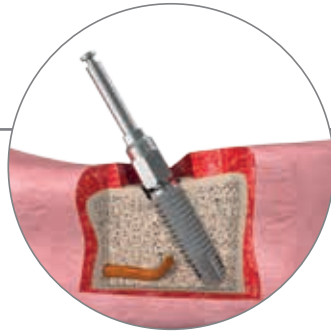
The Ø 2.0 mm pilot drill is used for determining the implant length and axial alignment. The implant site can be drilled to the required depth by either viewing the depth markings on the drills or using the optional stop system. Speed: max. 800 r.p.m.



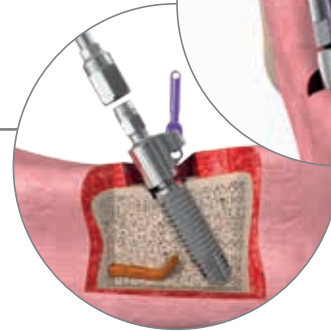
Cutter 5.2 mm



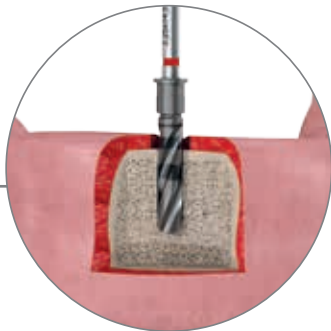
Extension Drill



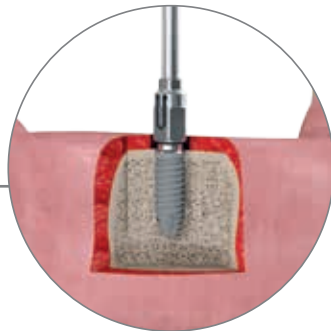
Implant Insertion



Positioning Aid



Extension Drill



Implant Insertion

**4 Cutter:**

The levelling cutter levels the alveolar ridge. When placing angled implants, the cutter widens the distal bone to create space for placing the abutments later. During surgery, the guidance lug of the levelling cutter follows the Ø 2.0 mm pilot drilling. The cutting depth is variable and defines the level of the implant shoulder. Speed: less than 500 r.p.m. When using SIC Guided Surgery, the laser marking defines the depth of insertion at 1 mm.

**5 Extension Drill, Crestal Drill and Bone Tap:**

Which SIC extension drill and crestal drills are used depends on the diameter of the implant planned for use (refer to the surgical guidelines). Speed: less than 500 r.p.m. In cases with very hard bone structures (D1/D2) the thread should be pre-tapped. The thread should normally be tapped to a depth of half the length of the implant. The thread can either be tapped manually or power-driven. Speed: max. 35 r.p.m. (We recommend a lower speed for each of the final extension drillings and with the crestal drill. At speeds lower than 60 r.p.m., external cooling with cooled, sterile physiological saline solution (NaCl) or Ringer's solution is not necessary.)

**6 Implant Placement:**

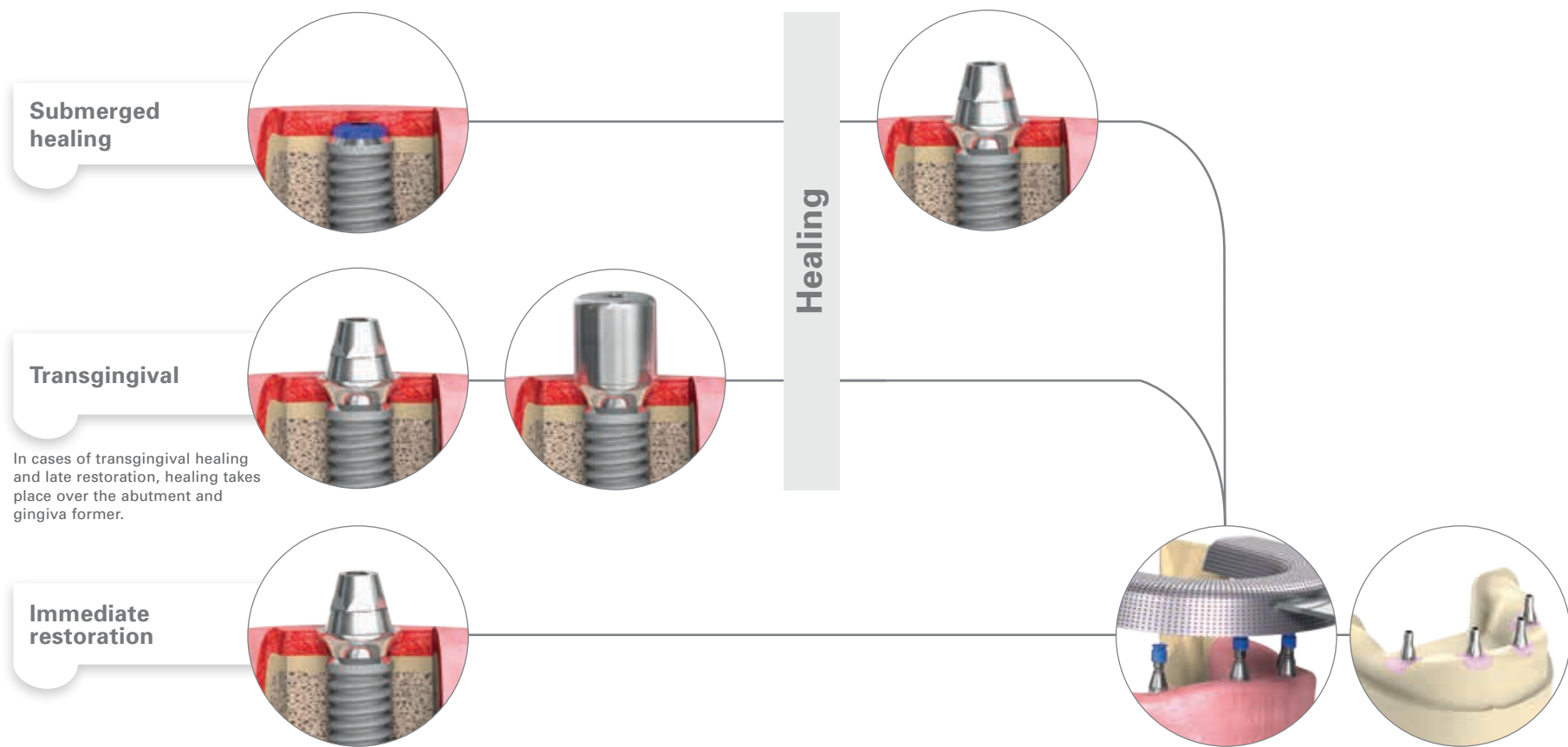
The implants may be wound in power-driven or manually. The implant should be placed flush with the bone surface. Speed: max. 25 r.p.m.

**7 Positioning Aid:**

When using the "Safe on Four" technique, the final position of the implant must always be aligned so that one corner of the outer hex on the insertion tool or the implant insertion post faces buccal aspect. Final adjustment of angled implants is carried out with the positioning aid. First, the pointer is placed at the 16° or 30° position depending on the angle of implantation. The implant can then be aligned so that in the oral direction the pointer is vertical and parallel to the other implant axes.

Align buccally





**Submerged healing**

**Transgingival**

In cases of transgingival healing and late restoration, healing takes place over the abutment and gingiva former.

**Immediate restoration**

**Healing**

**Impression-taking closed repositioning technique**

**Master Model**

**8 Healing:**  
 Finally, implant closure is carried out submerged with the cover screw or transgingivally via the appropriate abutment depending on the treatment plan and resulting in saliva-proof wound closure.

Torque values:

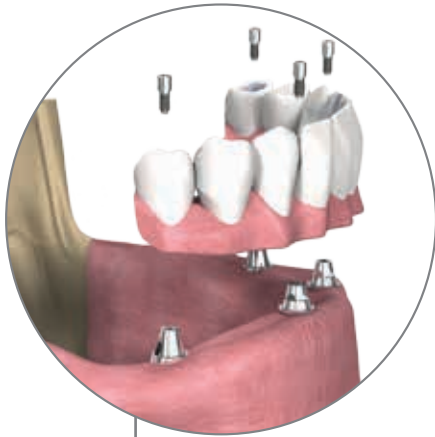
- Implant – Cover screw: Hand tight approx. 5 – 7 Ncm
- All fixation screws with HEX 1.2: 20 Ncm
- Fixation posts for “Safe on Four”: 30 Ncm (with the HEX 3.0 implant insertion tool)

**9 Impression-taking**  
 Once the healing phase is over, an impression is taken of the implant positions either transgingivally or with the functional cone of the abutment using the open tray technique or closed repositioning technique. The fixation screws of the transfer abutments are easy to operate. They are secured against losing. Subsequently the master model is fabricated.

#### 10 Prosthetic Restoration:

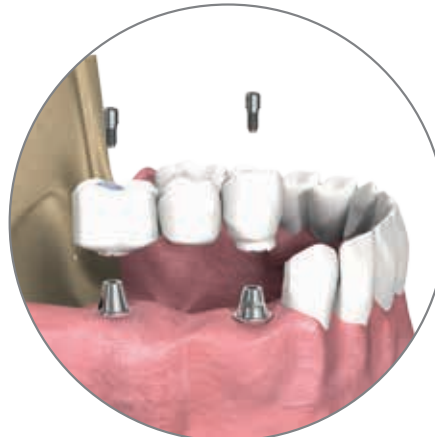
A multitude of options are available for prosthetic restoration.

- Titanium crown bases can be adhered into existing coverdentures to create temporary restorations.
- Superstructure frameworks can be fabricated with non-precious or high-fusing alloy crown bases.
- CAD/CAM bars or bridges.



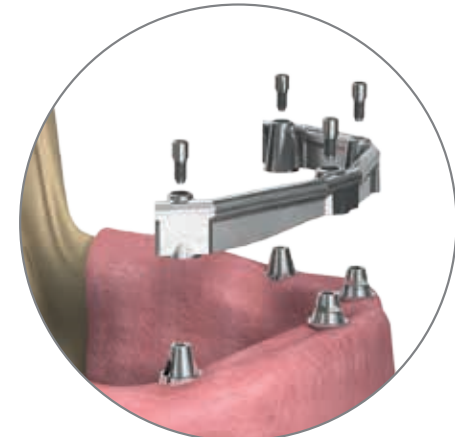
#### A Titanium crown bases adhered into a temporary full denture

The temporary full denture is relieved generously around the titanium adhesive bases before adhering them passively either in-vitro or orally in-vivo.







#### B Definitive placement of a bridge on two posterior implants

The metal framework is trimmed adequately in the region of the titanium adhesive bases before being adhered passively either in-vitro or orally in-vivo. An additional option involves fabricating the framework using directly cast-on, high-fusing or non-precious alloy adhesive bases. Following veneering and final finishing, the bridge is screwed into place passively from the occlusal aspect using the SIC "Safe on Four" fixation screws. This procedure is also suitable for fabricating a definitive full restoration supported on four upper implants or six lower implants, as described in example 1.



#### C Bar supporting a removable full restoration

The "Safe on Four" abutments are either splinted with a cast, custom milled bar or primarily and passively – as described in the example of a CAD/CAM bar. The definitive removable restoration can then be fabricated depending on the indication and patient's wish and in accordance with the appropriate retention unit or lock.

-  936253 SIC Bar and Bridge Abutment  
"Safe on Four" Ø 3.3 mm, GH 1.5 mm<sup>1</sup>
-  936254 SIC Bar and Bridge Abutment  
"Safe on Four" Ø 3.3 mm, GH 3.0 mm<sup>1</sup>
-  936255 SIC Bar and Bridge Abutment  
"Safe on Four" Ø 4.2 mm, GH 1.5 mm<sup>1</sup>
-  936256 SIC Bar and Bridge Abutment  
"Safe on Four" Ø 4.2 mm, GH 3.0 mm<sup>1</sup>

<sup>1</sup>incl. SIC Fixation Post "Safe on Four"

-  936259 SIC Standard Abutment "Safe on Four"  
Ø 3.3 mm, 16° angle, GH 1.5 mm<sup>2</sup>
-  936261 SIC Standard Abutment "Safe on Four"  
Ø 3.3 mm, 16° angle, GH 3.0 mm<sup>2</sup>
-  936260 SIC Standard Abutment "Safe on Four"  
Ø 3.3 mm, 30° angle, GH 1.5 mm<sup>2</sup>
-  936263 SIC Standard Abutment "Safe on Four"  
Ø 4.2 mm, 16° angle, GH 1.5 mm<sup>2</sup>
-  936262 SIC Standard Abutment "Safe on Four"  
Ø 4.2 mm, 16° angle, GH 3.0 mm<sup>2</sup>
-  936264 SIC Standard Abutment "Safe on Four"  
Ø 4.2 mm, 30° angle, GH 1.5 mm<sup>2</sup>
-  936265 SIC Standard Abutment "Safe on Four"  
Ø 4.2 mm, 30° angle, GH 3.0 mm<sup>2</sup>

<sup>2</sup>incl. SIC Fixation Screw, short

-  936252 SIC Gingiva Shaper "Safe on Four",  
cylindrical
-  936275 SIC Transfer Abutment "Safe on Four",  
Open Tray Technique  
(incl. SIC Fixation Screw 16.0 mm)
-  936250 SIC Transfer Abutment "Safe on Four",  
reposition (incl. SIC Fixation Screw  
"Safe on Four" and Transfer Cap  
Ø 3.3 mm)
-  936251 SIC Lab Implant "Safe on Four"
-  936270 SIC Crown Base "Safe on Four", Titanium  
(incl. SIC Fixation Screw "Safe on Four")
-  936272 SIC Crown Base "Safe on Four",  
high fusing alloy (incl. SIC Fixation  
Screw "Safe on Four")
-  936273 SIC Crown Base "Safe on Four",  
for non-precious alloy  
(incl. SIC Fixation Screw "Safe on Four")
-  936274 SIC Bar Coping "Safe on Four"  
(incl. SIC Fixation Screw "Safe on Four")

-  936271 SIC Scan Adapter for  
SIC "Safe on Four"
-  936280 SIC Positioning Aid 16° and 30° for  
SIC "Safe on Four"
-  936281 SIC Planning Guide for  
SIC "Safe on Four"
-  936257 SIC Fixation Post "Safe on Four",  
GH 1.5 mm
-  936258 SIC Fixation Post "Safe on Four",  
GH 3.0 mm
-  936540 SIC Fixation Screw "Safe on Four"
-  935230 SIC Cutter Ø 5.2 mm for  
SIC "Safe on Four", with Guidance Tip

# A product of



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