QUATTROCONE

IPS
Implant Systems

SURGICAL MANUAL

MEDENTiKA®
A Straumann Group Brand

THIS SURGICAL MANUAL DESCRIBES THE CONVENTIONAL APPROACH FOR THE IMPLANT BED PREPARATION.

The general applicable guidelines of the German Society of Dental, Oral and Craniomandibular Sciences (Deutsche Gesellschaft für Zahn-, Mund- und Kieferheilkunde) shall apply for the implantation indication. We recommend an osseointegration period of three to six months, this can also be shortened or extended depending on the case.

Please read this manual very carefully prior to the first application of the system and follow the instructions and notices in the instructions for use of the system components and instruments in each case.

In addition we recommend that all users participate in system-specific training prior to the first use of a new implant system.

INDICATIONS

- Tooth restricted gaps
- Free-end gaps
- Edentulous jaw

PROSTHETIC CONCEPT

- Replacement of an individual tooth
- Fixing of bridges and dentures

WAY OF HEALING

- Submerged
- Transgingival
- Immediate restoration/immediate loading with prosthetic modular components

TIME OF IMPLANTATION

- Immediate implantation
- Delayed immediate implantation
- Late implantation

QUATTROCONE

» Quattrocone is our most innovative implant system. It was developed by implantologists for implantologists.

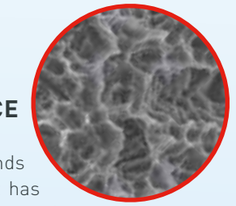
Quattrocone30 provides practitioners with a system that produces reliable results in angulated implant placement with very easy, efficient handling.

A patented innovation in dental implantology «

QUATTROCONE

- PRIMARY STABILITY
- BONE MAINTENANCE
- INNER CONE

SURFACE



The highly pure, sandblasted and acid-etched surface extends the entire length of the implant to the implant shoulder. It has ideally dimensioned micro-macro roughness to allow the apposition of bone-forming cells, thus promoting optimum and particularly reliable long-term osseointegration of the implant. In combination with the coronal micro-thread and conical interface it ensures exceptional crestal bone formation, over the implant shoulder to the interface.

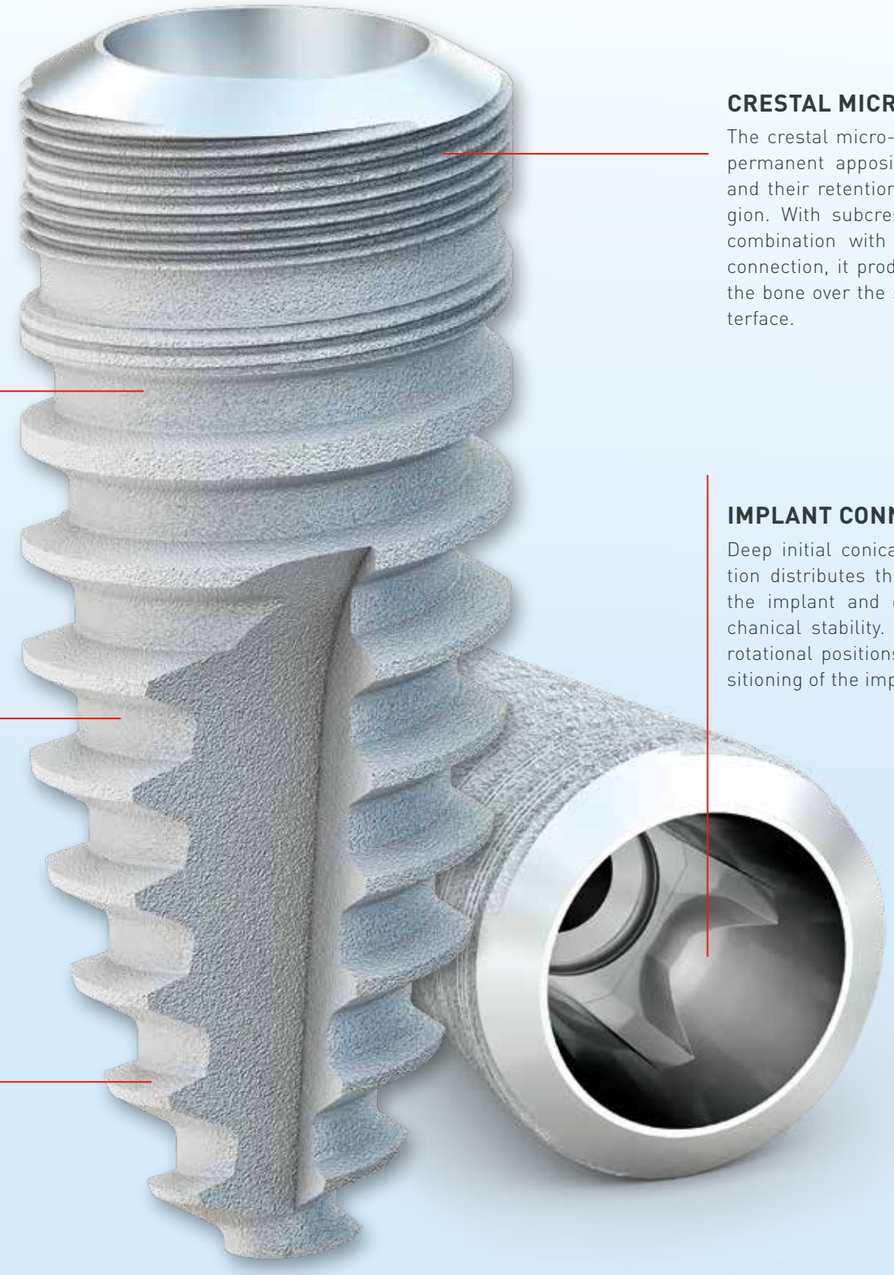
SHAPE

The implant body of the Quattrocone implant extends root shaped and, in combination with a high-profile thread and 3 cutting edges, ensures high primary stability, even in challenging situations. Perfect for immediate implant placement and immediate loading.

MACRO-THREAD

A newly developed high-profile thread provides maximum primary stability in all bone conditions. It is self-cutting and gentle on the bone, despite extremely high primary stability. Short insertion time thanks to a thread pitch of 1 mm per turn.

QUATTROCONE is a completely new implant concept. It is not only suitable for use in the QuattroFix* treatment concept combined with immediate function/loading, but also in soft bone with direct implant placement in extraction sockets and in the aesthetically critical region.



CRESTAL MICRO-THREAD

The crestal micro-thread may be the permanent apposition of bone cells and their retention in the crestal region. With subcrestal placement, in combination with the conical inner connection, it produces apposition of the bone over the shoulder to the interface.

IMPLANT CONNECTION

Deep initial conical implant connection distributes the forces deep into the implant and ensures high mechanical stability. Only four possible rotational positions ensure clear positioning of the implant.

* QuattroFix - fixed restoration for atrophic ridges allows for a comprehensive treatment plan for edentulous patients, of full-arch immediate restoration, using just two straight and two 30° angulated Quattrocone Implants.

Implant diameters and lengths

		LENGTH / DIAMETER	7 mm	9 mm	11 mm	13 mm	15 mm
QUATTROCONE®	RI*	D 3.5 mm		3-01-02	3-01-03	3-01-04	3-01-05
		D 3.8 mm	3-01-16	3-01-17	3-01-18	3-01-19	3-01-20
		D 4.3 mm	3-01-06	3-01-07	3-01-08	3-01-09	3-01-10
		D 5.0 mm	3-01-11	3-01-12	3-01-13	3-01-14	3-01-15
QUATTROCONE30®	AI*	D 4.3 mm		4-01-01	4-01-02	4-01-03	4-01-04
		D 5.0 mm		4-01-06	4-01-07	4-01-08	4-01-09

* **Implant connection RI** (Regular interface) **Implant connection AI** (Angled interface)

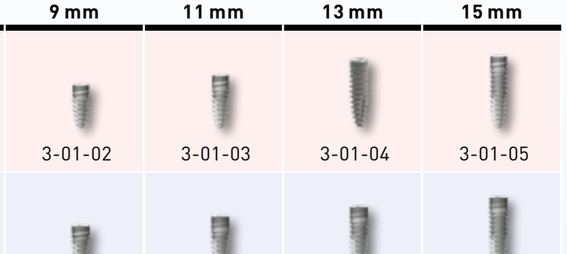
The visible indication of the implant diameter, framed by the colour coding, makes it easier to visually differentiate the respective implant diameters.

The drill parts for the implant bed preparation are also highlighted with these colours.

D 3.5 mm D 3.8 mm

D 4.3 mm D 5.0 mm

In the colour coding field on the implant packaging the diameter of the implant is labelled in millimetres with "D" , the length in millimetres with „L" and the article number „REF".



QUATTROCONE RI D 3,5 - 5,0 MM

QUATTROCONE30 AI D 4,3 - 5,0 MM

Surgical cassette and connections

Our implants are available in two diameters and different lengths. Quattrocone30 implant is only available in 4,3 mm diameter. Due to the needs-based size graduation they are suitable for all dental implantology indications for a minimised number of single implants.

0-13-90 long drills
0-13-89 short drills
0-13-96 extra short drills

The surgical tray is extremely clearly arranged thanks to the greatly reduced number of drills.

RI
D 3.5 MM - 5.0 MM

Quattrocone Implant RI D 3.5–5.0 mm

There is only one conical connection size between the implant and the abutment in the case of implants with a diameter of RI 3.5 to 5.0 mm, which is marked with RI (Regular Interface).

This means that all the Implant pick-ups, gingival formers and abutments fit into each of these implants. This markedly reduces the number of components required and thus achieves maximum transparency and efficiency.

AI
D 4.3 MM - 5.0 MM

Quattrocone30 Implant AI D 4.3 mm - 5.0 mm

Please always note that the implant connection of the Quattrocone30 implant that has a diameter of 4.3 to 5.0 mm is special and you can use it only to treat parts which are marked with the implant connection AI (Angulated Interface).

SYSTEM CONCEPT

SURGERY TRAY

The surgery tray has a clearly structured range of bone drills for the preparation of the implant activities. The drill bits are cooled externally and should not be applied at a rotational speed of more than 800 rpm. The maximum torque should not exceed 35 Ncm.

The picture shows optional equipment, which has to be ordered separately.

2 Placement instrument Hex 1.26 extra-short contra angle 0-13-18

3 Placement instrument Hex 1.26 short manual and ratchet 0-13-22

4 Placement instrument Hex 1.26 short contra angle 0-13-04

5 Placement instrument Hex 1.26 long manual and ratchet 0-13-23

6 Placement instrument Hex 1.26 long contra angle 0-13-05

1 Torque ratchet 0-13-28

9 Placement instrument Optiloc Abutment 0-13-61

10 Placement instrument MedentiLOC Abutment
manual and ratchet 0-13-38 — contra angle 0-13-39

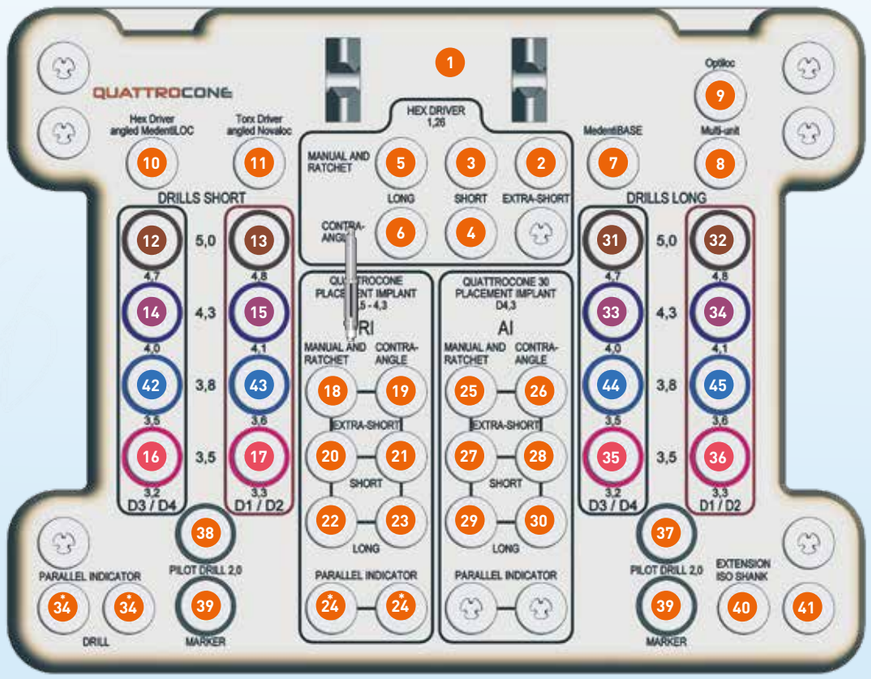
11 Placement instrument Novaloc Abutment
manual and ratchet 0-13-59 — contra angle 0-13-60

8 Placement instrument Multi-unit manual and ratchet 0-13-76

7 Placement instrument MedentiBASE manual and ratchet 0-13-37

Surgery Tray
0-13-89 short
0-13-96 long

* Titanium instruments must be cleaned and disinfected separately!



Depth gauge drill hole
0-13-75*
(Located in the tray floor)

Depth gauge gingival height
0-13-17*
(Located in the tray floor)

12 Standard drill Ø 3.2/4.0/4.7 short 4-14-53

14 Standard drill Ø 2.0/3.2/4.0 short 4-14-04

42 Standard drill Ø 2.0/3.5 short 4-14-71

16 Standard drill Ø 2.0/3.2 short 4-14-02

13 Cortical drill Ø 3.2/4.7/4.8 short 4-14-54

15 Cortical drill Ø 2.5/4.0/4.1 short 4-14-05

43 Cortical drill Ø 2.3/3.5/3.6 short 4-14-72

17 Cortical drill Ø 2.3/3.2/3.3 short 4-14-03

12 Standard drill Ø 3.2/4.0/4.7 extra short 4-14-90

14 Standard drill Ø 2.0/3.2/4.0 extra short 4-14-88

42 Standard drill Ø 2.0/,5 extra short 4-14-92

16 Standard drill Ø 2.0/3.2 extra short 4-14-86

13 Cortical drill Ø 3.2/4,7/,8 extra short 4-14-91

15 Cortical drill Ø 2.5/4.0/4.1 extra short 4-14-89

43 Cortical drill Ø 2.3/3.5/3.6 extra short 4-14-93

17 Cortical drill Ø 2.3/3,2/3.3 extra short 4-14-87

31 Standard drill Ø 3.2/4.0/4.7 long 4-14-55

33 Standard drill Ø 2.0/3.2/4.0 long 4-14-09

44 Standard drill Ø 2.0/3.5 long 4-14-73

35 Standard drill Ø 2.0/3,2 long 4-14-07

32 Cortical drill Ø 3.2/4.7/4.8 long 4-14-56

34 Cortical drill Ø 2.5/4.0/4.1 long 4-14-10

45 Cortical drill Ø 2.3/3.5/3.6 long 4-14-74

36 Cortical drill Ø 2.3/3.2/3.3 long 4-14-08

38 Pilot drill Ø 2.0 short 4-14-01

38 Pilot drill Ø 2.0 extra short 4-14-85

37 Pilot drill Ø 2.0 long 4-14-06

34 Paralleling aid 0-13-74*

39 Needle drill Ø 1.6 mm 0-14-77

18 Placement instrument implant extra-short manual and ratchet RI 2-13-27

20 Placement instrument implant short manual and ratchet RI 2-13-28

22 Placement instrument implant long manual and ratchet RI 2-13-29

24 Paralleling aid implant 2-13-31*

19 Placement instrument implant extra-short contra angle RI 2-13-24

21 Placement instrument implant short contra angle RI 2-13-25

23 Placement instrument implant long contra angle RI 2-13-26

25 Placement instrument implant extra-short manual and ratchet AI 4-13-04

26 Placement instrument implant extra-short contra angle AI 4-13-01

29 Placement instrument implant long manual and ratchet AI 4-13-06

27 Placement instrument implant short manual and ratchet AI 4-13-05

28 Placement instrument implant short contra angle AI 4-13-02

30 Placement instrument implant long contra angle AI 4-13-03

41 Quattrocone30 drill aid 4-13-07

40 Extension ISO shank 0-13-55

Drills and depth stops

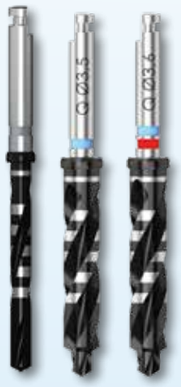
DRILLS

D 3.5 mm

4-14-01 4-14-02 4-14-03

D 4.3 mm

4-14-01 4-14-04 4-14-05



D 5.0 mm

4-14-01 4-14-04 4-14-53 4-14-54

Quattrocone drill D 3.5 mm

Pilot drill D 2.0 mm
Standard drill D 2.0/3.2 mm
Cortical drill D 2.3/3.2/3.3 mm

Quattrocone drill D 4.3 mm

Pilot drill D 2.0 mm
Standard drill D 2.0/3.2/4.0 mm
Cortical drill D 2.5/4.0/4.1 mm

Quattrocone drill D 5.0 mm

Pilot drill D 2.0 mm
Standard drill D 2.0/3.2/4.0 mm
Standard drill D 3.2/4.0/4.7 mm
Cortical drill D 3.2/4.7/4.8 mm

DEPTH STOPS

The Quattrocone depth stop ensures precise control of the drilling depth during implant site preparation for placing Quattrocone implants. The advantage of the depth stop is its applicability both with simple and also more demanding cases in which the location of the mandibular nerve or sinus floor plays a role. The depth stops are supplied nonsterile and should be sterilised prior to use.
The Quattrocone depth stops can only be used with the new, black-coated Quattrocone drills.

The depth stops are available for all implant diameters and lengths.

Important:
Quattrocone depth stops are not indicated for:

1) Extraction sockets in which the bone cavity is often wider than the support diameter required for the depth stop.
2) Use as guide sleeves in surgical stents, as guidance of the drill is not possible.

Combination chart Drills and depth stops

Short drills

Length Implant	Depth stop Nr.	SHORT DRILL BITS				
		Pilot	Standard/ Cortical	Standard/ Cortical	Standard/ Cortical	Standard/ Cortical
		2.0	3.2/3.3		4.0/4.1	4.7/4.8
			Implantat 3.5	Implantat 3.8	Implantat 4.3	Implantat 5.0
7.0	10	(24)*	63	38	52
9.0	8	22	61	36	50
9.0 / 30°	7	(21)*	x	35	49
11.0	6	20	59	34	48
11.0 / 30°	5	(19)*	x	33	47
13.0	4	18	58	32	46
13.0 / 30°	3	(17)*	x	31	45
15.0	2	16	57	30	44
15.0 / 30°	1	(15)*	x	29	43

Long drills

Length Implant	Depth stop Nr.	LONG DRILL BITS				
		Pilot	Standard/ Cortical	Standard/ Cortical	Standard/ Cortical	Standard/ Cortical
		2.0	3.2/3.3		4.0/4.1	4.7/4.8
			Implantat 3.5	Implantat 3.8	Implantat 4.3	Implantat 5.0
7.0	14	(28)*	66	42	56
9.0	13	27	65	41	55
9.0 / 30°	12	(26)*	x	40	54
11.0	11	25	64	39	53
11.0 / 30°	10	(24)*	x	38	52
13.0	9	23	63	37	51
13.0 / 30°	8	(22)*	x	36	50
15.0	7	21	60	35	49
15.0 / 30°	6	(20)*	x	34	48

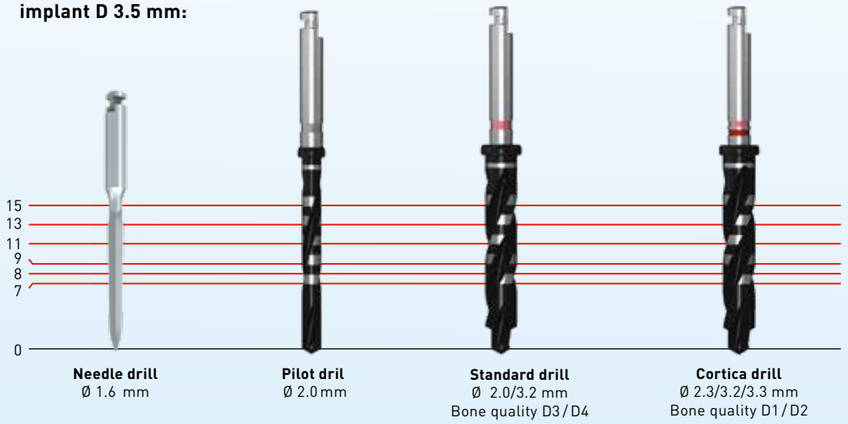
* Drill stop for intermediate drilling (optional)

» Order of drill use «

The 3-blade stepped drills are coordinated with the outer shape of the implant.
Quattrocone is placed using only 2 drilling stages. For larger diameters it is recommended to work with an intermediate drilling.

- Different stepped drills for D1/D2 bone and D3/D4 bone.
- Bright depth markings ensure optimum visibility.
- Long service lives due to black surface coating.
- Clear colour coding and a total of 4 drills greatly simplify the protocol.

Example for implant D 3.5 mm:

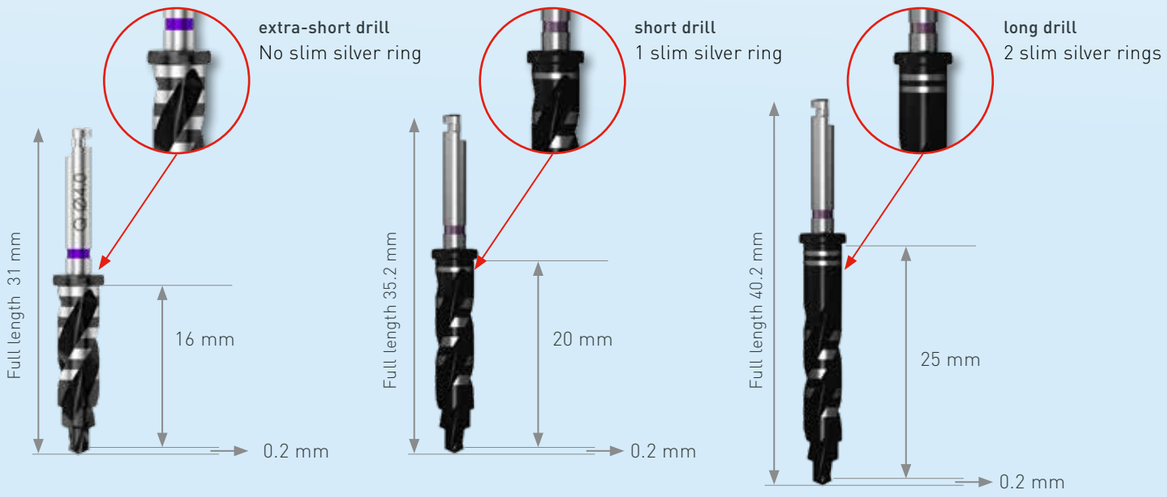


PLEASE NOTE:

The stated drill depths do not include the 0.2 mm tip of the drill bit.

Please observe their length if there is not much space available for anatomic structures. Please consult the table for the drill tip lengths.

THERE ARE THREE DRILL BIT LENGTHS:



The MedentiGuide System supports two drill lengths: 20 mm and 25 mm.

In the planning phase it is important to ensure that the correct drill length is selected.

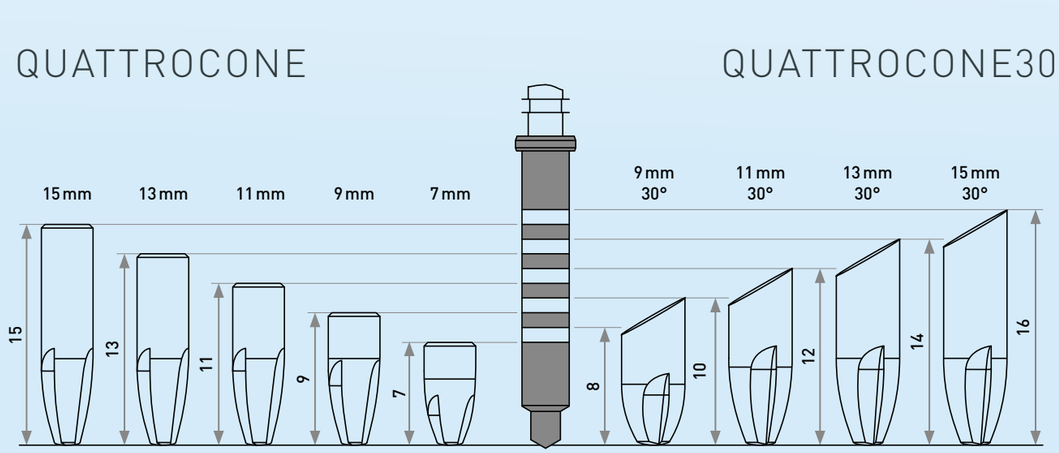
PREPARATION UNTIL THE IMPLANT-SPECIFIC DIAMETER TO REACH IT

The direction and depth of the implantation is determined with externally-cooled machine-driven instruments. The drill bits are depth marked to this end through ground-in laser markings. The maximum torque of 800 rpm may not be exceeded during this preparation cut as there is otherwise the risk of the local overheating of the bone. The necrosis of the bone that is possible as a result endangers the healing of the implant. The drilling should not be performed in a one-off operation, but intermittently at moderate pressure.

FUNDAMENTALLY THE FOLLOWING APPLIES:

- Standard drill: When using the standard drill as a final depth drill always: Implant diameter minus 0.3 mm (e.g. in the case of a implant with a diameter of 3.5 mm = 3.2 final drill hole).
  e.g. in the upper jaw in the case of average bone quality D3 / D4
- Cortical drill: When using the cortical drill as a final depth drill always:
  Implant diameter minus 0.2 mm (e.g. in the case of an implant with a diameter of 3.5 mm = 3.3 mm final drillhole). To be inserted in the case of D1 / D2 bone quality in the lower jaw in particular. Here, if necessary, at fulldepth.

The Quattrocone standard and cortical drills are generally stepped drills, which are matched to the apical shape of the implant in the area of the steps, depending on the respective implant diameter.



CONVENTIONAL TREATMENT PLANNING

The general applicable guidelines of implant prosthodontics as well as surgical aspects such as the patient's general case history, contraindications, intraoral findings, risk factors must be taken into account during the treatment planning.

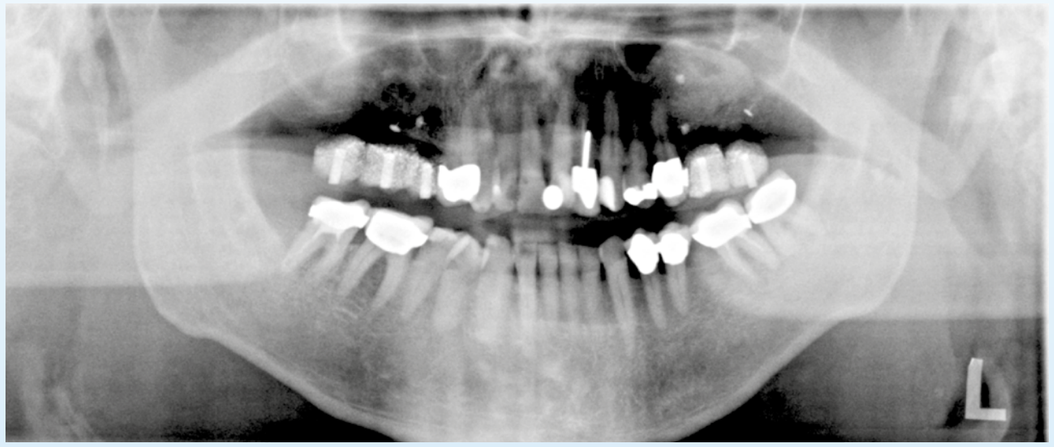
Treatment planning can be carried out in accordance with the following considerations after the evaluation of the findings:

- Preprosthetic planning
- Surgical planning

The indications and contraindications for dental surgery and implantological operations must be observed.

During the preprosthetic planning the best possible insertion of the implants should be planned in accordance with aesthetic functional considerations incooperation with the prosthodontist.

During the surgical planning a careful inspection must be carried out as to whether the existing bone quality is sufficient to primarily insert the implants in a stable manner

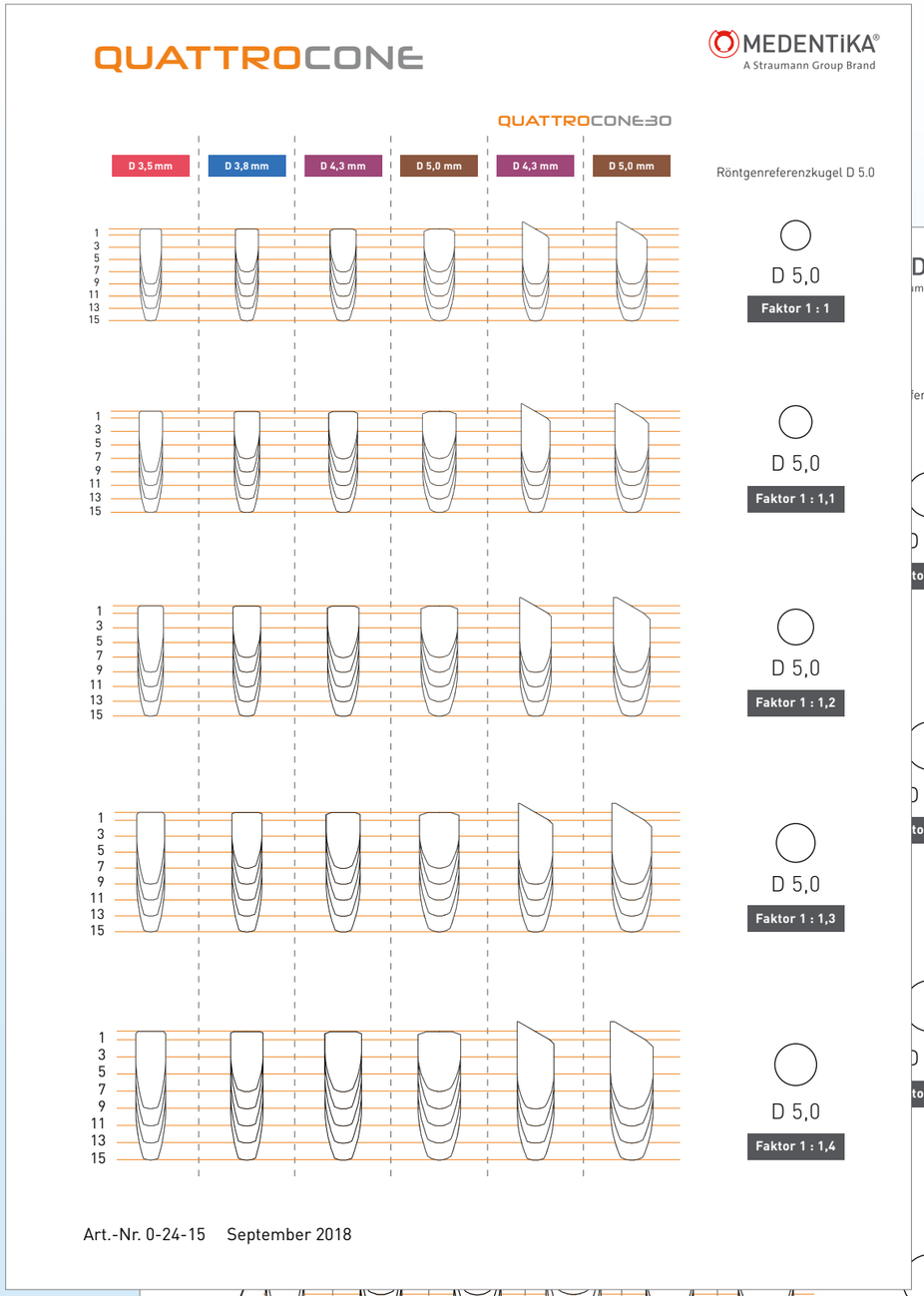


SURGICAL PLANNING

The sufficient height and width of the jaw bone for the insertion of implants must be inspected in the pre-operative planning phase. Vestibular and oral lamella should have a width of at least 1.5 mm following the insertion of the implant. The location and the course of important anatomic
structures such as the mental foramen or the maxillary sinus must be determined by x-ray. If it should be augmented, these areas must demonstrate complete and mechanically stable regeneration before the treatment. The implant lengths and diameters are selected by placing the x-ray template upon the OPG (pay attention to the enlargement scale). The subcrestal placement of the implant must be taken into account during the x-ray analysis.

PREPROSTHETIC PLANNING

Preprosthetic planning and thus the best possible, tooth analogue positioning of the implants is the most important precondition to create the basis for aesthetic and functional prosthetics.



COMPUTER AIDED TREATMENT PLANNING

» MedentiGuide «

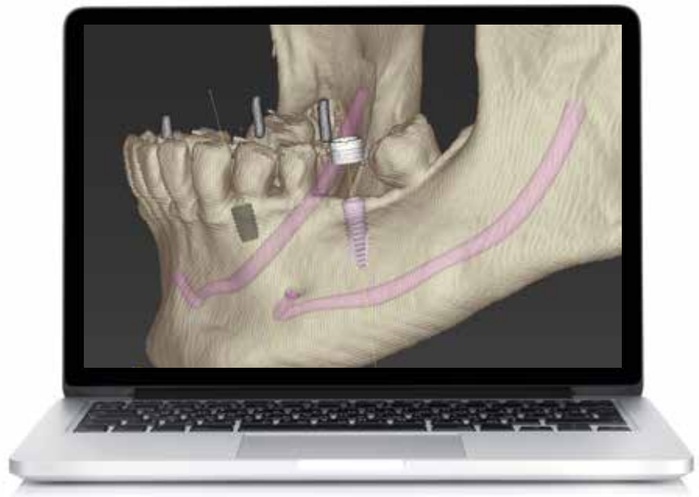
MedentiGuide drill sleeves support the surgeon in preparing the implant bed for MEDENTiKA® implants. Their use must be planned with a specially designed 3D planning system and surgical drilling template. You can plant the surgery with standard planning programs.

Treatment planning based on three dimensional imaging procedures (CT, DVT) enables high precision treatment planning and means that the treatment outcome can be accurately predicted.

The advantages over conventional planning include:

- Precision three-dimensional planning and implantation, taking into account the desired restoration
- Automatic collision control that displays if the distances to the implants or nerves are too short
- Information on peri-implant bone quality so that conclusions can be drawn on the expected primary stability

An individual drilling template can be produced on the basis of the digital planning data. This ensures the exact and precise transfer of the planning outcome to the patient's mouth.



These software manufacturers* currently support the MedentiGuide System

dental wings coDiagnostiX™

3shape

exocad

SICAT A Dentsply Sirona Company

smop powered by swissmeda

PLANMECA Planmeca Romexis

Note:

MEDENTiKA® GmbH accepts no liability for the correct planning, implementation and production of the drilling template. Sufficient knowledge of the 3D planning system being used and the MEDENTiKA® implant system is essential. It is imperative that the user is very confident in the use of 3D planning systems before using the MedentiGuide drill sleeves. Furthermore, sufficient expertise in preoperative implant planning and dental implantology is required.

* to some extent this depends on the availability of the updates of the specific manufacturer.

IMPLANT PACKAGING

The implant is supplied in a sterile blister with surrounding packaging. The packaging guarantees clear and simple storage.

- High levels of product recognition due to the clear and brand-specific design of the packaging
- Detailed label and clear external information label that is reduced to the key essentials
- It can be simply stacked as a result, important product information remains visible at a glance
- Large seal label that can be pealed off two times on the blister packaging
- 2 additional patient labels for use in the dental implant pass

PACKAGING SYMBOLS

REF	**Order number**		**Read operating instructions**
LOT	**Batch Number**		**Not for reuse**
	Manufacturer	CE 0483	**CE marking with the identification number of the Notified Body**
	Expiry date	STERILE R	**Sterilised by irradiation**
RX ONLY	**US Federal law restricts this device to sale by or on the order of a doctor.**		

DENTAL IMPLANT PASS

Implant **direct removal**

01 PREPARING THE IMPLANT FOR REMOVAL

a) Remove the implant from the outer package

b) Open the peel bag

c) Remove paper of the inner blister to lay the implant open

02 INSERTING THE PLACEMENT INSTRUMENT IN THE FINAL POSITION

To remove the implant from the blister pack/ titanium tube insert the placement instrument and turn it clockwise until the square of the placement instrument slides into the corresponding square of the implant. Press the placement instrument into the final position.

Please note:
In isolated cases the implant may slightly jam in the titanium tube. If this happens, turn slightly counterclockwise to release.

03 REMOVING THE IMPLANT FROM THE TITANIUM TUBE

Once you feel the implant is fixed on the instrument you can easily remove it from the titanium tube.

QUATTROCONE

Step by step **preparation of the implant bed**

(Example for implant diameter 5.00 mm x 11 mm)

Incision phase

The incision phase serves to form a mucosa flap to reveal the implantation point as bone. In this process a mucoperiosteal flap is formed, the incision phase is case-dependent and must be considered based on the patient's individual requirements depending on the healing mode (submerged or open healing).

First marker drill with the needle drill Ø 1.6 mm

The marking bore is inserted following the mobilization of the mucoperiosteal flap with the round drill and can also alternatively be performed with the aid of a drilling template.

Pilot drill hole with the pilot drill bit Ø 2.0 mm

Preparation of the implant bed for an straight implant with the pilot drill 2.0 mm. In this process the saggital direction of the implant axis as well as the drilling depth is determined (please observe the depth markings).

The recommended number of revolution is 300 - 600 rpm, the max. number is 800 rpm.

A template-based implantation is recommended for the definitive alignment and to prevent deviations from the implant planning.

Optional intermediate drilling with the standard drill Ø 2.0/3.2/4.,0 mm

The intermediate drilling is drilled with the corresponding drill. In this case with the standard drill D 2.0/3.2/4.0 mm.

The recommended number of revolution is 300 - 600 rpm, the max. number is 800 rpm.

Depth drilling with the standard drill bit Ø 3.2/4.0 / 4.7 mm

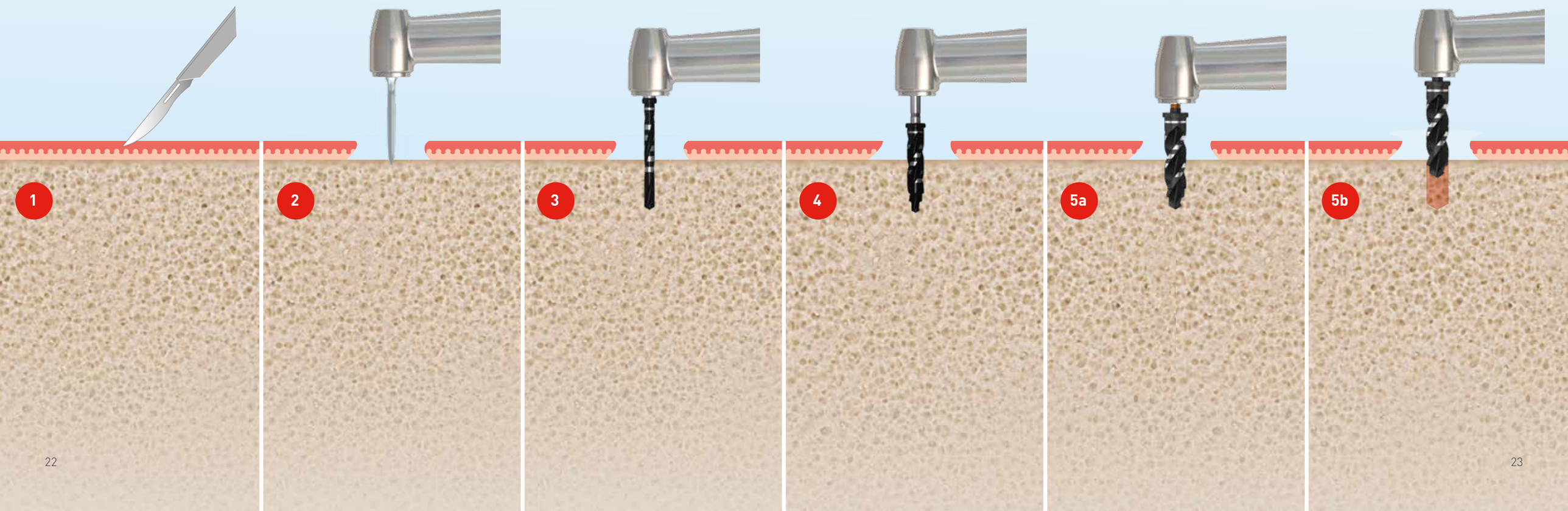
The final depth drilling in bone quality D3/D4 is always completed directly using the final drill. In this case with the standard drill bit D 3.2/4.0/4.7 mm.

The laser markings that correspond to the respective implant length serve to inspect the depths for their part.

The recommended number of revolution is 300 - 600 rpm, the max. number is 800 rpm.

Depth drilling with the cortical drill Ø 3.2/4.7/4.8 mm

It is recommended in the event of an extremely compact cortex and an average spongiosa or D1/D2 bone quality in the lower jaw, using additionally the cortical drill with 3.2/4.7/4.8 mm diameter.



Implant **insertion**

Implant placement with the contral angled handpiece

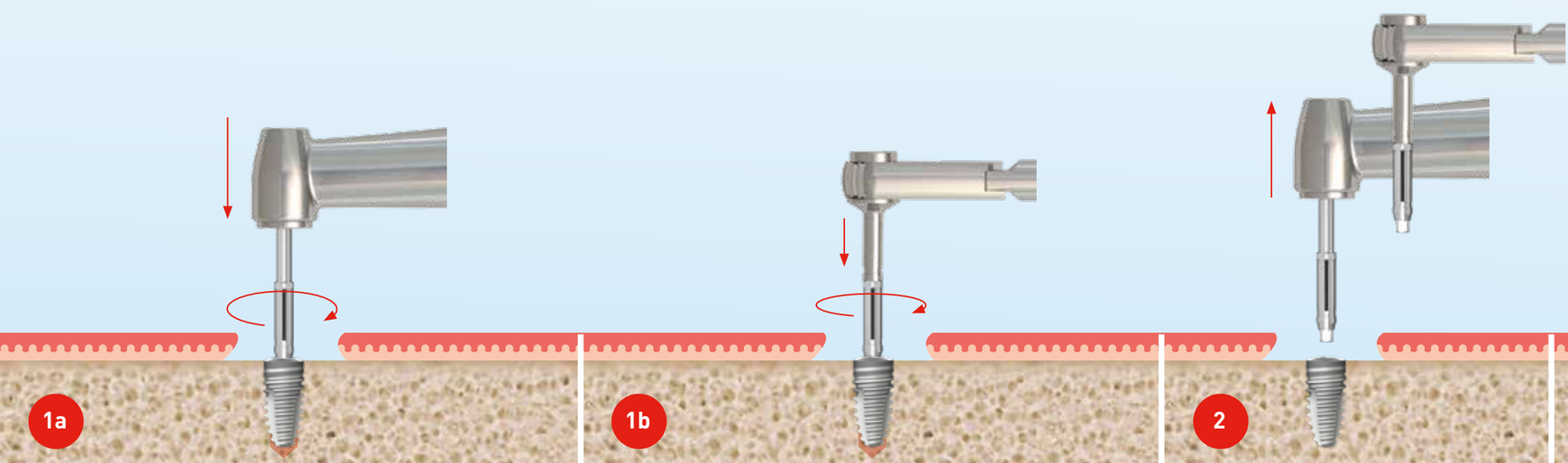
If the implant is inserted with the placement instrument for the angeled handpiece, a max. number of 50 rpm and a torque of 35 Ncm should not be exceeded. When 35 Ncm must be clearly exceeded before getting the final implant position, we recommmend to carefull unscrew the implant and use the cortical drill for enlarging the implant bed.

Final positioning with the torque ratchet

If the implant is inserted with the placement instrument for the manual use with the torgue ratched, a max. torque of 35 Ncm should be set on the ratched and not be exceeded. When 35 Ncm must be clearly exceeded before getting the final implant position, we recommmend that you carefully unscrew the implant and use the cortical drill for enlarging the implant bed.

Remove placement instrument

Once the implant has reached its final position, the placement instrument should be carefully removed from the implant (either by handpiece or by torque ratchet).



NOTE:
The plugged connection between the implant and the insertion instrument means that it is not possible during an open sinus lift operation, for example, to pull the implant back if required, as this could release this connection.
In unfavorable cases there is a risk that an implant could be displaced in the maxillary sinus. Complex surgical measures would then have to be taken to recover the implant.

QUATTROCONE

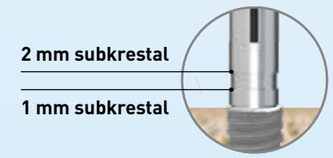
Implant **insertion**

Subcrestal implant position

Due to the internal tapered connection the implant can be inserted approx. 1 mm subcrestally if there is a sufficient amount of bone in a vertical direction, in order to stabilise the periimplant bone better. Such a procedure ensures unencumbered healing even under the mucosa supported dentures and can improve the prosthetic results in aesthetically relevant area if there is not enough soft tissue available.

In the case of the pre-surgical planning and the observation of the ground-in laser marking of the bit you must ensure the subcrestal implant position has been planned in advance.

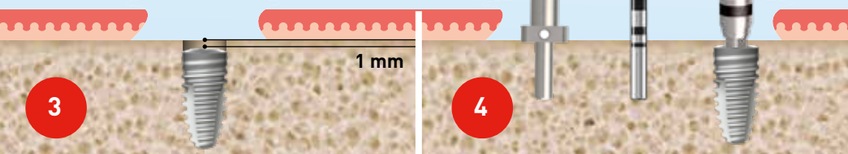
For depth control during subcrestal placement, markings are provided on the insertion instrument.



Paralleling aid

The paralleling aid can be used for orienting to the selected implant axis when inserting several implants.

This can be performed either by placing the paralleling aid in the implant bed or by placing the paralleling aid directly in the implant.



» Option 1: **Submerged** healing «

Locking closer screw

If the implant is intended for submerged healing, the closer screw must be inserted hand tight following the removal of the placement instrument implant.

Closure

The gingiva has to be sutured tension free but salavia close. To document the final implant position, a post operation X-ray could be done. A load-free healing phase must be ensured.

QUATTROCONE

» Option 1: **Submerged** healing «

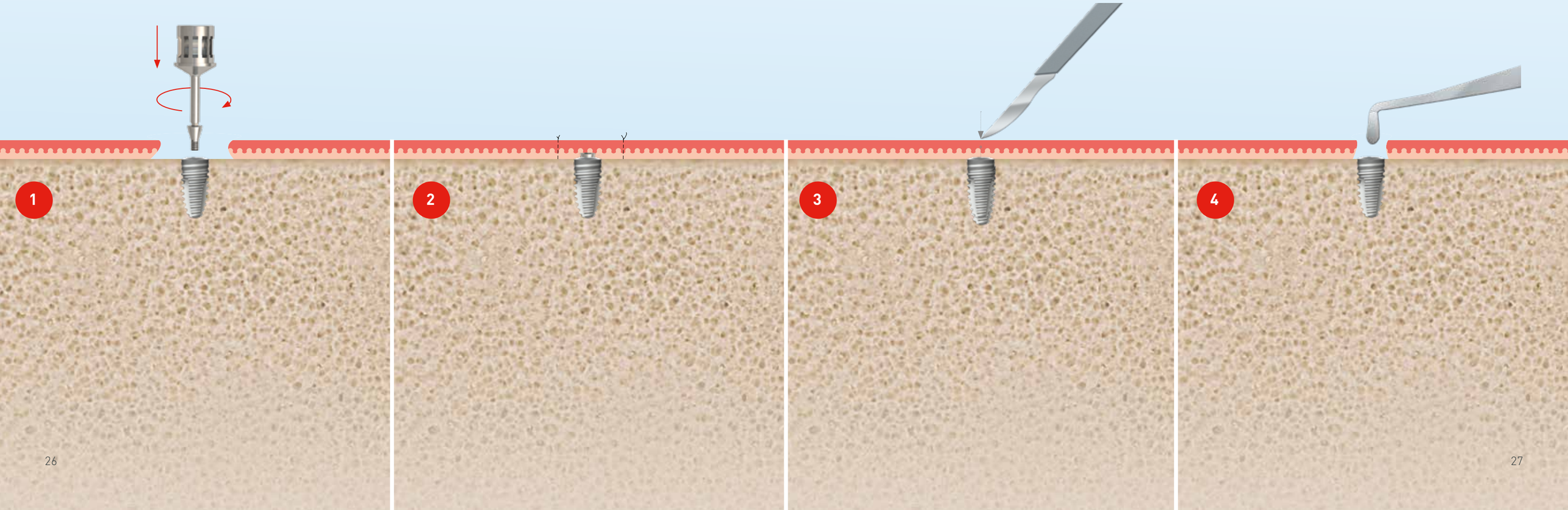
Incision

Following the localisation of the implant and the point-based anaesthetic directly above the implant a limited crestal cut is performed to the implant surface.

Uncovering

The central interior hex of the closer screw is found with the probe. Connective tissue or bone must be removed with the sharp curette above the locking closer screw.

Bones which disrupt the emergence profile must be removed.



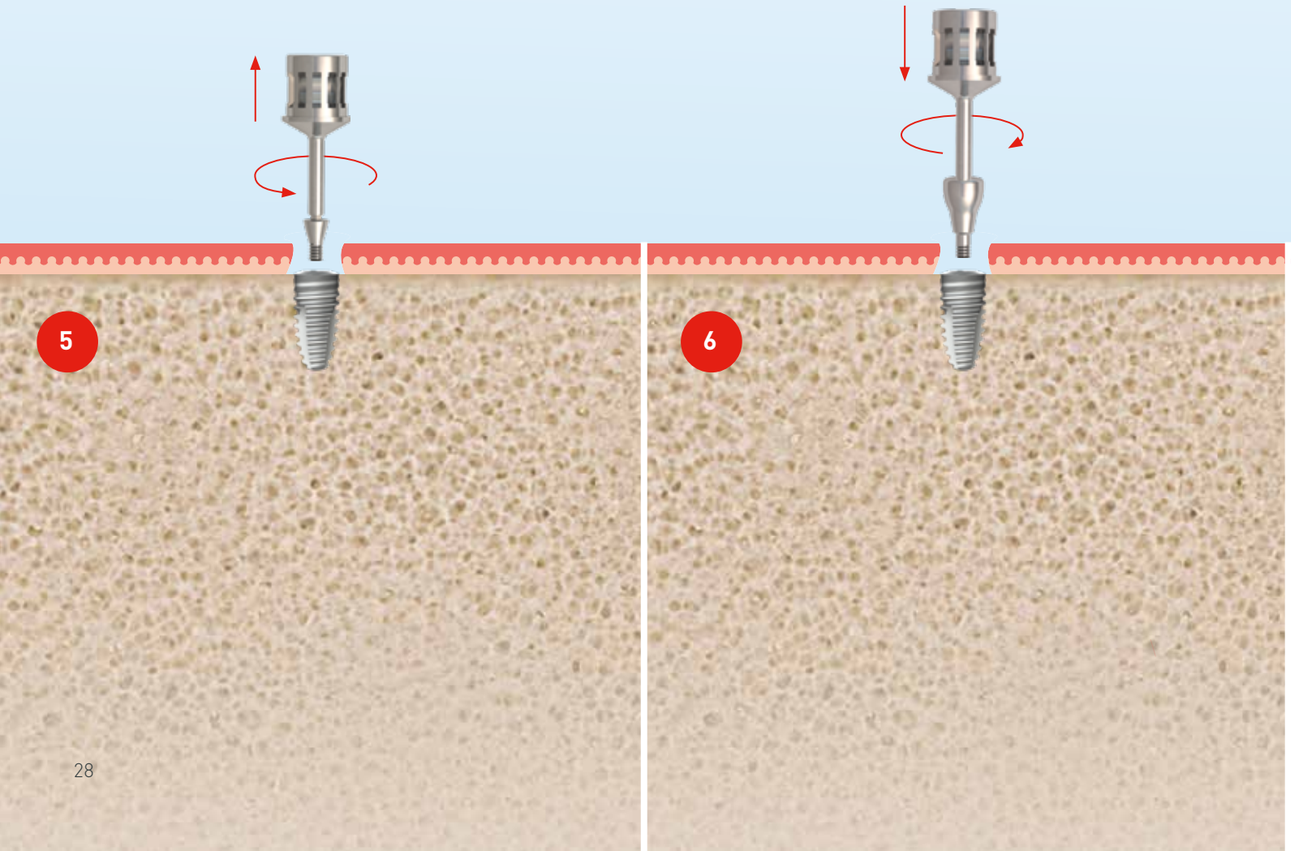
» Option 1: **Submerged** healing «

Removal of the closer screw

The closer screw must be removed with the hand screwdriver.

Inserting the gingiva former

In accordance with the prosthetic requirements the gingiva former that fits must be screwed in with the manual screwdriver.



» Option 2: **Transgingival** healing «

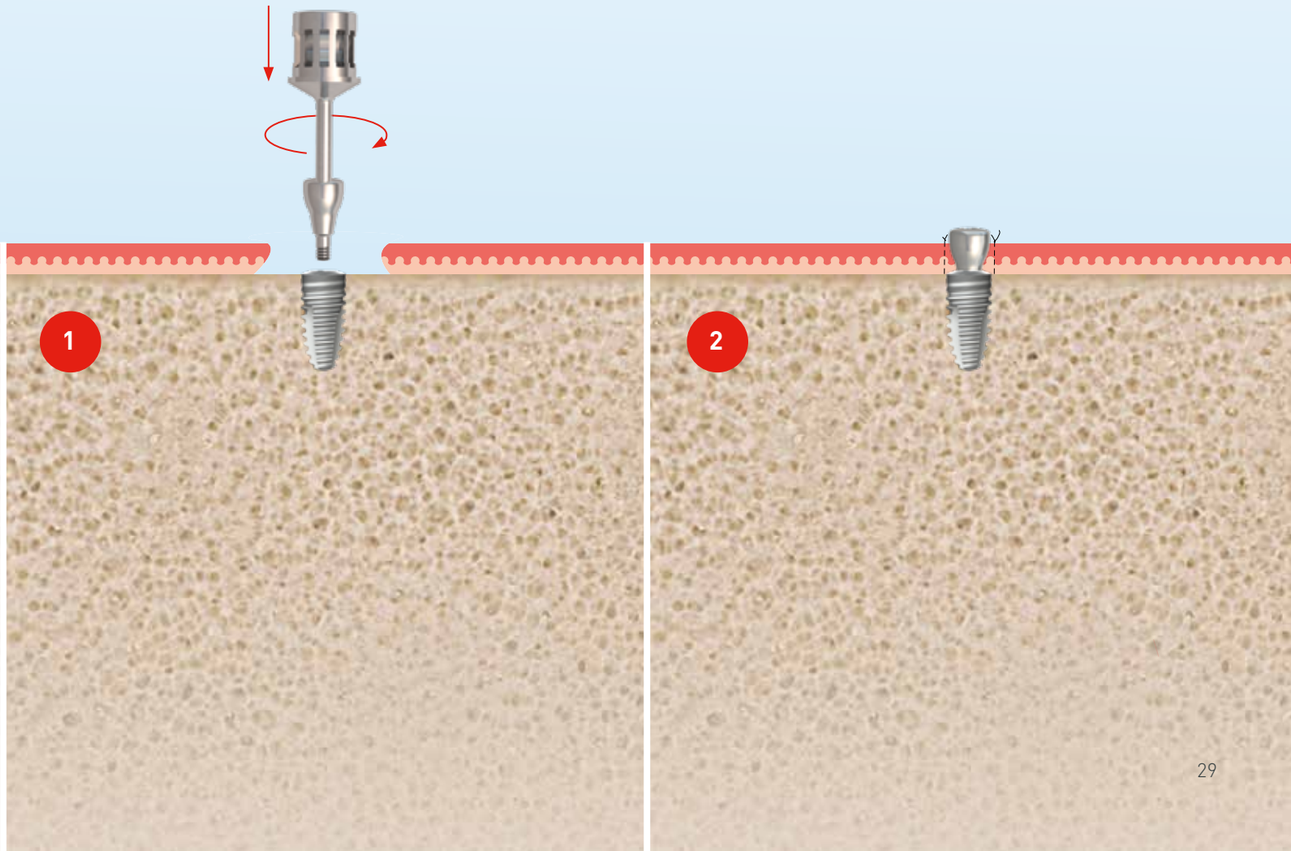
Gingiva former

If the implant is intended for transgingival healing, the gingiva former must be inserted in accordance with the thickness of the soft tissue following the removal of the placement instrument. The diameter of the gingiva former must be selected in accordance with the prosthetic requirements.

PLEASE NOTE:
In the event of temporary restoration with full or partial dentures you must ensure that there is no contact between the gingiva former and the temporary restoration.

Wound closure

The wound edges adapted by sutures to the gingival tension free but salavia close by sutures.



» Option 3: Immediate restoration with a provisional «

Introduction

If the clinical conditions allow an immediate restoration, the patient could get immediately after insertion of the implants an implant-supported denture by using he temporary abutment. It must be pointed out, that the temporary has to stand out of occlusion so the implant can heal unloaded. It is the responsibility of the surgeon to inform the patient about the postoperative behavior of a load-free healing of the implant.

Production of a provisional

The temporary restoration is manufactured on the temporary abutment. The grinding operation should be performed outside of the mouth.

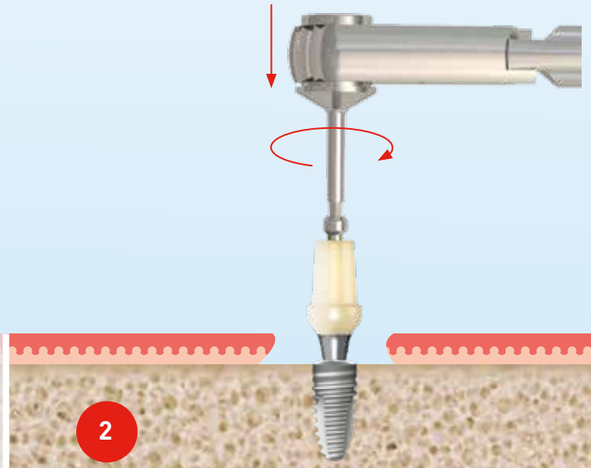
Temporary abutments with an emergence diameter of 5.5 mm, straight and angled, are available to ensure an easy individualisation.

Also available are temporary abutments, which are used as a metal basis for additive procedures.

Insertion of a provisonal

Before inserting the provisional, the interface of the implant should be cleand by an air/water spray. Afterwards the abutment ist inserted by using the rachet or an angled handpiece with 25 Ncm.
For cemented restorations the use of provisional cementum is recommended. The gingiva has to be sutured tension free but salavia close around the abutment.

PLEASE NOTE:
Temporary restorations must be replaced after six months at the latest.



Loads

The precondition for immediate stressing is primary stability that is greater than or equal to 35 Ncm. The possibility of excess stress through the temporary restoration should be ruled out. No occlusion or articulation contacts may be present. An insertion torque of at least 35 Ncm during the initial healing phase reduces the risk of macromovements at the implant bone boundary, for instance through tongue or cheek pressure. Studies[1,2] demonstrate that micromovements up to a threshold value of approx. 150 µm are tolerated during the osseointegration of dental implants.

Successful osseointegration can also take place in the event of "non-functional immediate stress" subject to the precondition that this value is not exceeded and all the other requirements are fulfilled.

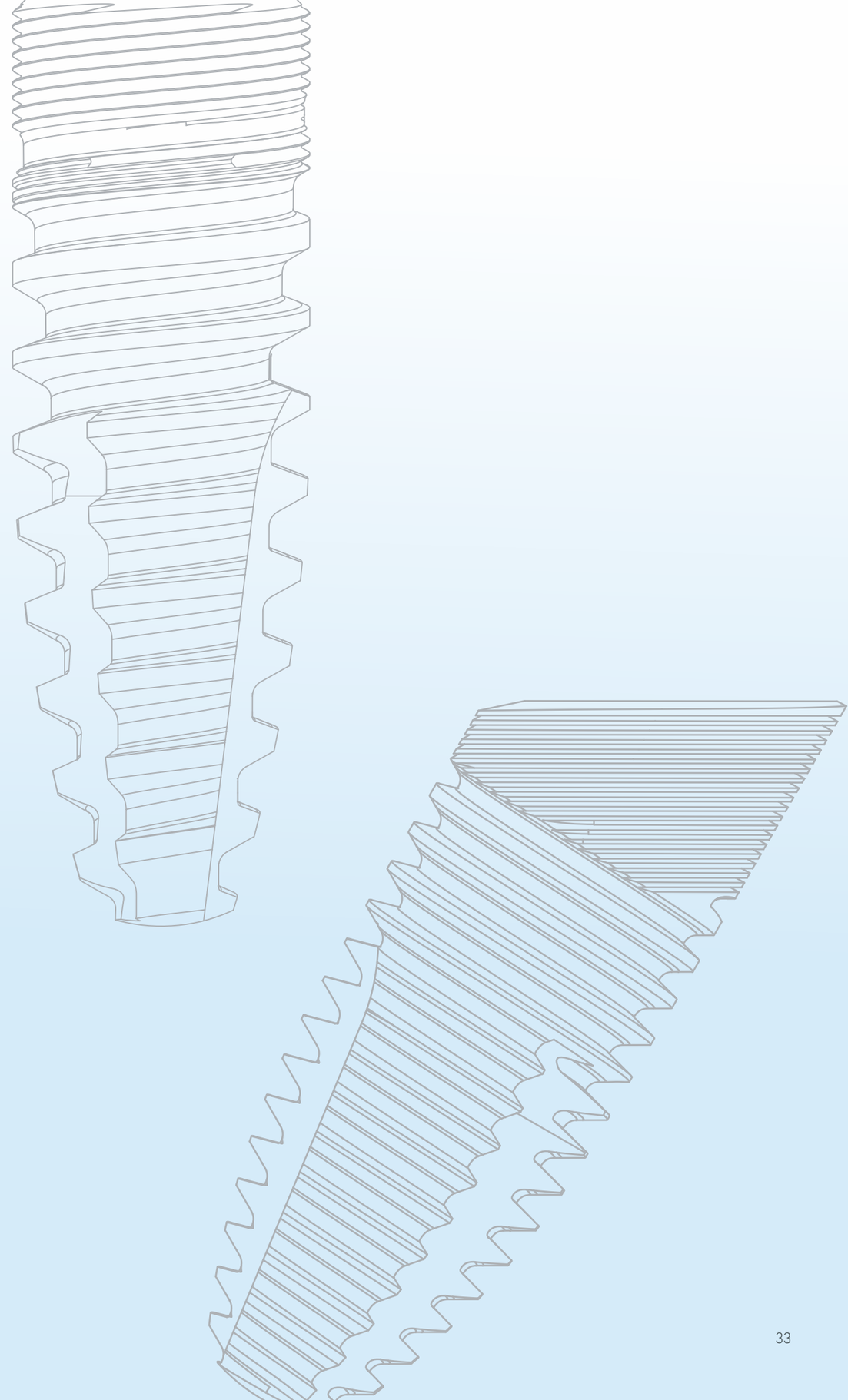
1 Brunski JB: Biomechanical factors affecting the bone-dental implant interface.
Clin Mater 1992; 10 (3): 153–201

2 Brunski JB: Avoid pitfalls overloading and micromotions of intraosseous implants.
Dent Implantol Update 1993;4 (10): 77–81

» Continuity of **Emergence Profile** «

CONTINUITY OF EMERGENCE PROFILE				
	QUATTROCONE RI D 3.5 – 5.0			
IMPLANTS	GINGIVA FORMER			TEMPORARY
GINGIVA FORMER /PROVISONAL				
	Ø 4.5 GH 1–6	Ø 5.5 GH 1–6	Ø 6.5 GH 1–6	Ø 5.5 GH 1–6
IMPLANT PICK-UP				
				
	Ø 4.5 GH 1–2	Ø 5.5 GH 1–2	Ø 6.5 GH 1–2	Ø 5.5 GH 1–2
				
	Ø 4.5 GH 3–6	Ø 5.5 GH 3–6	Ø 6.5 GH 3–6	Ø 5.5 GH 3–6
ABUTMENT				
	Ø 4.5 GH 1.5–5	Ø 5.5 GH 1.5–5	Ø 6.5 GH 1.5–5	Ø 5.5 GH 1.5–5

The form (emergence profile) of the gingiva former and the temporary abutment is exactly based on the form of the prosthetic abutments. You have the additional option of using the individual implant pick-ups to ensure the better transfer of the selected emergence profile onto the model, these are also exactly based on the emergence profile of the gingival formers and abutments.



Prosthetic dentistry

All prosthetic indications can be achieved with our highly hese abutments even more attractive innovative prosthetic dentistry range. The high precision conical implant abutment connection can be securely fixed in place and prevent micromovements between the implant and the abutment. A large number of abutments within our prosthetic range are available even for the most demanding cases. Whether it is a crown, bridge or a removable denture - the most diverse fittings provide you with the room for manoeuvre to securely realise all prosthetic indications.

01 CUSTOMISED IMPLANT PICK-UPS

Our system provides you with the option of transferring the emergence profile that has been ideally moulded by the gingiva former onto the model with the aid of the impression in a consistent manner for the final prosthetics.

The implant pick-ups that can be customized with one simple movement now make it possible for the person administering the treatment to precisely transfer the emergence profile according to the gingiva former into the laboratory. Abutments that are perfectly customised for this are available there.

02 TEMPORARY ABUTMENT ADDITIVE

- Ideal for easy, quick fabrication of temporary restorations
- Their extremely reasonable purchase price makes these abutments even more attractive

03 TEMPORARY ABUTMENT

- For the manufacture of provisional restorations
- Available in a straight or angled form
- Made from tooth-coloured acrylic sprayed onto a titanium core, it is therefore light and can be rapidly customised

04 STANDARD ABUTMENT

- For single crowns and bridges
- Available in a straight or angled form
- In different gingiva heights and abutment diameters
- Can be customised through grinding

05 SOLID ABUTMENT

- For the simple and optimised manufacture of double crowns
- For the fixing of dentures and removable bridges
- Equalisation of marked axial divergences through customised milling technology
- Available in a straight or angled form

06 CASTABLE GOLD ABUTMENT

- For difficult prosthetic situations which require customised solutions for crowns, bridges and dentures
- For the equalisation of axial divergences
- For free contouring in the event of a difficult implant position

07 CoCr ABUTMENT

- For difficult prosthetic situations which require customised solutions for crowns, bridges and dentures
- For non -ferrous metals with a liquidus temperature up to 1420 degrees celsius
- Precise cast-on section
- Less expensive than castable gold abutments

09 TITANIUM BASE ASC FLEX

The titanium base for angled screw channels has been especially developed for complex prosthetics. For unfavorably positioned implants or esthetically demanding cases, it is now possible to move the screw channel in an oral direction.

- in different gingiva heights
- special screw and screwdriver with Ball Torx for easier tightening at difficult circumstances
- Chimney can be shortened

10 TITANIUM BASE 2ND GENERATION

- Two different chimney heights for the ideal static support of the zircon design
- Two gingiva heights, for the ideal design of the ceramic emergence profile
- Platform with reduced diameter with much more creative freedom for the zircon design
- Scanbodies manufactured from titanium grade 5 with much higher levels of precision and durability
- The surface of the scan bodies is coated with a special coating to ensure ideal recording in the scanner

11 MEDENTICAD ABUTMENT

CUSTOMISED SINGLE-PIECE ABUTMENTS:

TITANIUM AND CoCr

- Custom-made in 48 hours
- You design it digitally or manually – we mill it for you
- Manufactured in a highly precise manner
- Less expensive than pre-fabricated abutments

12 LABORATORY IMPLANT CADCAM

- Highly precise, repositionable, radially and axially absolutely stable laboratory implants specially developed for printed models and intraoral scanners.
- The final position can be reliably checked and clearly defined by a highly perceptible >>CLICK<< which prevents the position being changed unintentionally due to vibration or contamination etc.
- This considerably increases the process reliability and avoids often very costly errors.
- The product range is supplemented by the appropriate placement tools for the respective laboratory implants.

13 MULTI-UNIT

The new Multi-unit abutment supports a variety of prosthetic restorations. Thus it is ideal for creating patient oriented individual hybrid restorations or being the base for an individualized restoration in the esthetic zone.

- in straight and angled configurations 17° und 30°
- in various gingiva heights
- great variety of prosthetic components
- sterile packaged

14 MEDENTIBASE

- Using the straight MedentiBASE abutment you have the option of fabricating conventional or CADCAM manufactured bar and bridge restorations in the upper and lower jaws. MedentiBASE abutments are available in 5 different gingival heights.
- Special adhesive bases enable the realization of stressfree patterns ⟶ PASSIVE-FIT
- Can be manufactured simply and precisely using caston and castable crown bases
- Superstructures that have been set once remain in the mouth, the laboratory works on analogous models
- Simplified supragingival impression and trial fitting

15 MEDENTILOC

- Further development of the abutment of the market leader by MEDENTiKA®
- Two-piece with separate screw for an ideal fit in the implant
- Excellent value for money

NOVALOC MATRIX SYSTEM

Novaloc - state-of-the-art technology.
The Novaloc matrix system with its newly developed technology is a prefabricated connector for retaining removable restorations on MedentiLOC and Novaloc abutments. The matrix housing is available in titanium and colour-neutral PEEK.

16 MEDENTiKA® NOVALOC MATRIX SYSTEM

ADLC SURFACE

- The surface quality of the ADLC coating (amorphous diamond-like carbon) sets new standards.
  Maximum hardness in combination with optimum sliding characteristics reduces abrasion on the abutment and damage to the retention insert.

SCREW HEAD OPENING

- The small screw head opening of the straight Novaloc abutment reduces food packing. Can be manufactured simply and precisely using cast-on and castable crown bases.

DIVERGENCE COMPENSATION

- In combination with the angled Novaloc abutments you can compensate for divergences of up to 70° between the implants.

17 MEDENTiKA® OPTILOC MATRIX SYSTEM

ADLC SURFACE

- The surface quality of the ADLC coating (amorphous diamond-like carbon) sets new standards.
  Maximum hardness in combination with optimum sliding characteristics reduces abrasion on the abutment and damage to the retention insert.

CLOSED SURFACE

- The Optiloc abutment does not require a screw opening thanks to the cleverly designed placement instrument. This completely prevents accumulation of food particles in this area.

MINIMUM SIZE

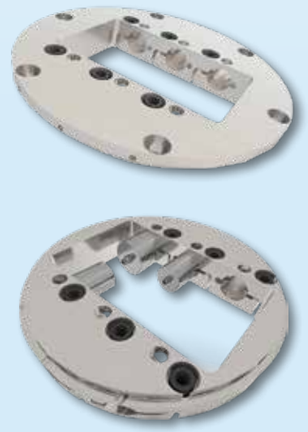
- Slimmer than the market leader, more retentive than ball attachments. Optimum dimensions now also allow the matrix to be placed where only minimum space is available.

18 PREFACE

TITANIUM AND CoCr

Highly precise PreFace abutments as milling blanks. While the diameters 11.5 and 16 millimetres provide the necessary variability, a uniform length guarantees the exact zero point definition.
We always supply PreFace abutments with the abutment screw included. To ensure the greatest possible material variability, the PreFace abutments are available in titanium Grade 5 CF and CrCo.

19 PREFACE ABUTMENT HOLDER



Significantly more precise fabrication instead of using conventional holders – due to the innovative, onepiece design. Short production times – thanks to simultaneous processing of six blanks in one working cycle. Particularly time-saving procedure – by clamping the abutment using only one screw in the holder. Maximum protection for the precisely designed implant interface – by clamping the abutment only on the face side.

Very clear, non-error-prone production – due to a minimum number of components. Extremely favourable investment – because of the simple design of the PreFace abutment holder and the avoidance of expensive expendable parts.

PreFace abutment holders are available for:

VHF®
imes-icore®
Datron D5®
Wissner Gamma 202®
Röders RXD®
Dental Concept DC1/DC5®
MB Maschinen Cobra Mill®
Primacon PFM 24 mediMill®
R+K
Sirona InLab MC X5

PreFace abutment holders must be ordered directly from the machine manufacturer.

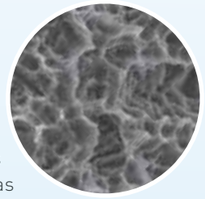
international patent pending

QUATTROCONE30

SPECIALLY DEVELOPED AND PATENTED FOR THE QUATTROFIX TREATMENT CONCEPT AND ALL INDICATIONS WITH ANGULATED IMPLANT PLACEMENT. UNIQUE.

International Patent

SURFACE



The highly pure, sandblasted and acid-etched surface extends over the entire length of the implant to the implant shoulder. It has ideally dimensioned micro-macro roughness to allow the apposition of bone-forming cells, thus promoting optimum and particularly reliable long-term osseointegration of the implant. In combination with the coronal micro-thread and conical interface it ensures exceptional crestal bone formation, over the implant shoulder to the interface.

SHAPE

The implant body of the Quattrocone30 implant extends root shaped and, in combination with high-profile thread and 3 cutting edges, ensures high primary stability, even in challenging situations. Perfect for immediate implant placement and immediate loading.

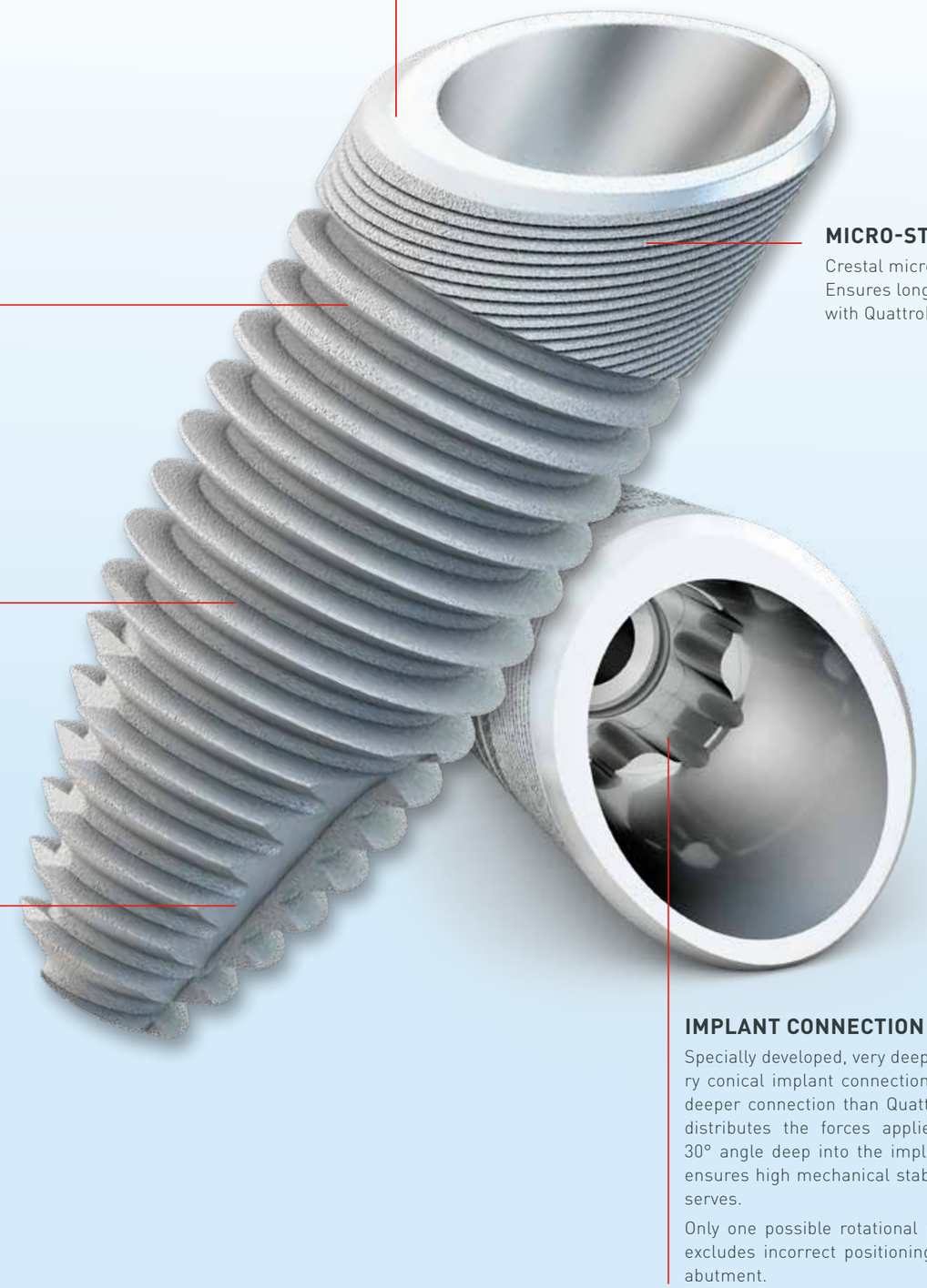
MACRO-THREAD

Macro-thread geometry developed for a 30° inclined position. 30° thread flanks ideally transfer the forces in the bone. No tipping of the implant.

Reduced thread pitch to 0.60 mm (revolution) enables precise vertical positioning of the implant body in the bone and guarantees very high primary stability.

IMPLANT SHOULDER 30°

Shoulder inclined by 30°. For final positioning flush with the bone when positioning at a 30° incline in QuattroFix use.



MICRO-STRUCTURE

Crestal micro-groove structure. Ensures longlasting bone retention with QuattroFix use.

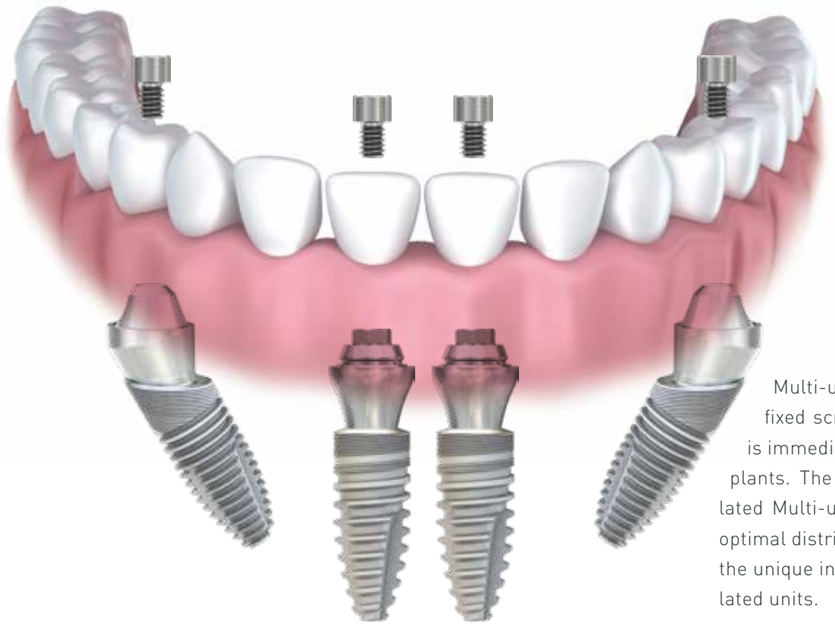
IMPLANT CONNECTION

Specially developed, very deep primary conical implant connection, 1 mm deeper connection than Quattrocone, distributes the forces applied at a 30° angle deep into the implant and ensures high mechanical stability reserves.

Only one possible rotational position excludes incorrect positioning of the abutment.

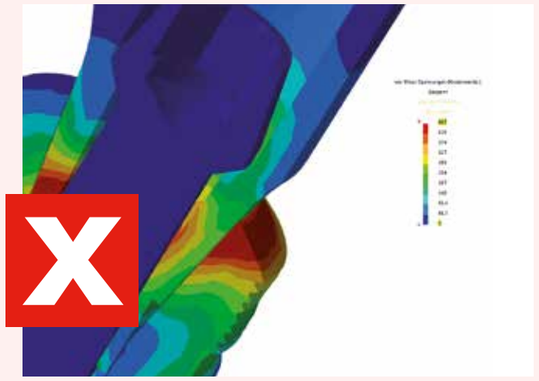
The **QuattroFix** treatment concept

QuattroFix - Fix restoration for atrophic ridges allows for a comprehensive treatment plan for edentulous patients, of full-arch immediate restoration, using just two straight and two 30° angulated Quattrocone implants restored with Multi-unit abutments.

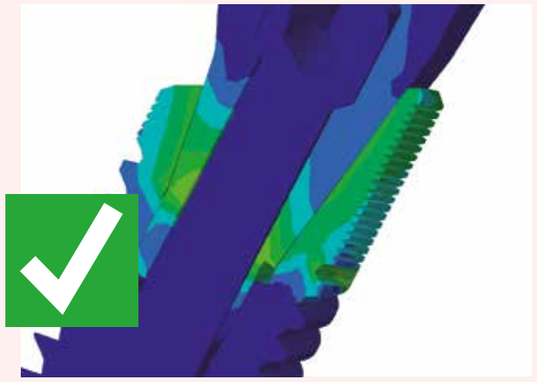


Multi-unit abutments and final fixed screw-retained restoration is immediately placed over the implants. The straight and 30° angulated Multi-unit abutments allow for optimal distribution of force thanks to the unique insertion tool of the angulated units.

Comparison of workload on the implant shoulder



CONVENTIONAL IMPLANT



QUATTROCONE30

The Quattrocone30 **Implants**

Quattrocone30 implant

- angled 30°
- D 4.3
- Titanium grade 4
- Sterile packaged

D 4.3 mm

Length	9 mm	11 mm	13 mm	15 mm
Implant connection	AI	AI	AI	AI
Article No.	4-01-01	4-01-02	4-01-03	4-01-04

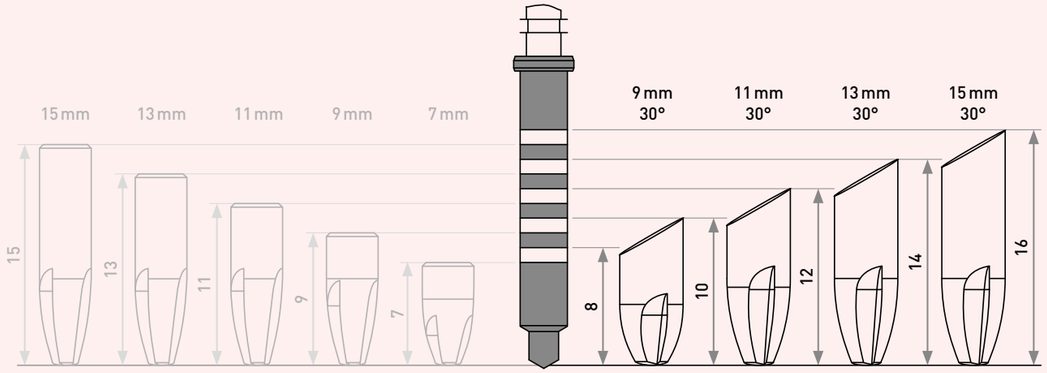
Quattrocone30 implant

- angled 30°
- D 5.0
- Titanium grade 4
- Sterile packaged

D 5.0 mm

Length	9 mm	11 mm	13 mm	15 mm
Implant connection	AI	AI	AI	AI
Article No.	4-01-06	4-01-07	4-01-08	4-01-09

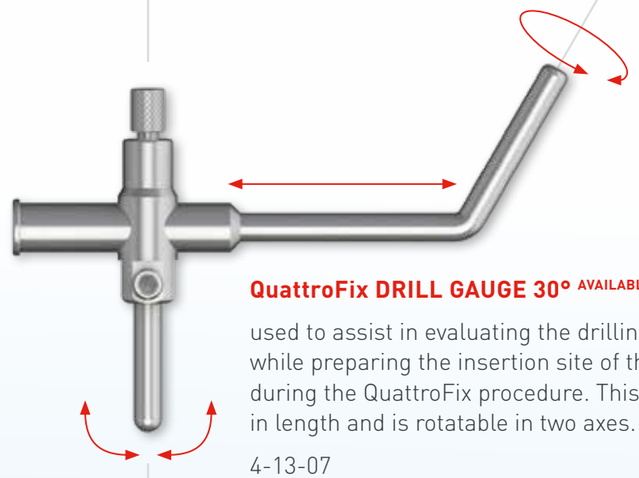
How to measure the **Implant length** of Quattrocone30



Implant placement

For use, a hole for a straight implant must be drilled in the lower or upper jaw with a pilot drill. Once the pin of the gauge is in place within this hole, it may be aligned to the needs of the clinical situation. When fixed it's showing guide-lines for the drilling angle. This is in order to prevent drilling at an angle different than 30°.

QUATTROCONE30



QuattroFix DRILL GAUGE 30° AVAILABLE Q1/2018

used to assist in evaluating the drilling angle, while preparing the insertion site of the tilted implants during the QuattroFix procedure. This gauge is flexible in length and is rotatable in two axes.

4-13-07

Preparation implant bed

Preparation of the later on implant bed for an straight implant with the pilot drill. Preparation depth min. 9 mm.

Insertion drill gauge

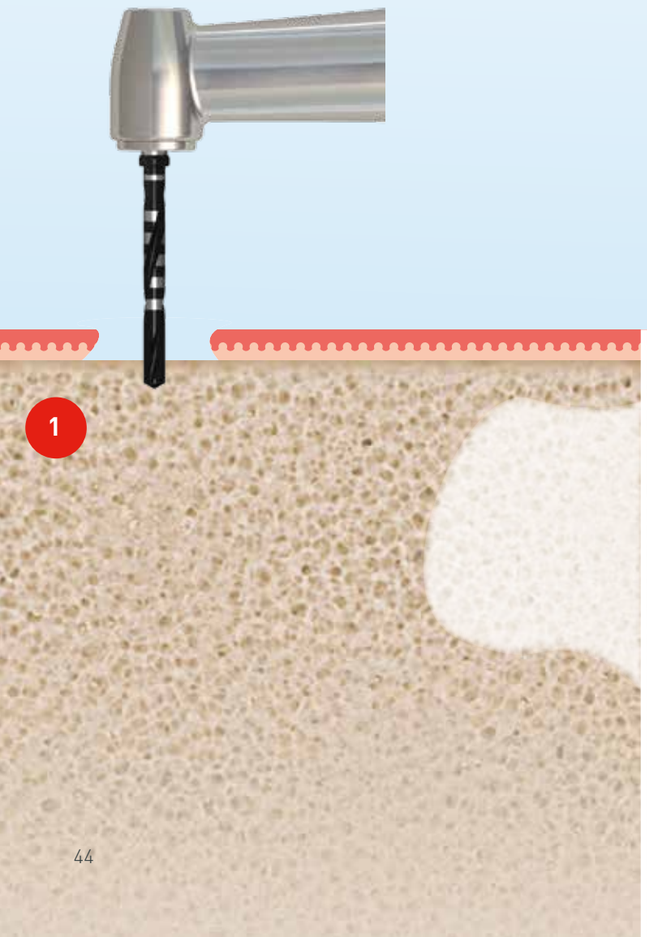
Insert the QuattroFix drill gauge and prepare the implant bed for the Quattrocone30 with the pilot drill in the indicated implant length.

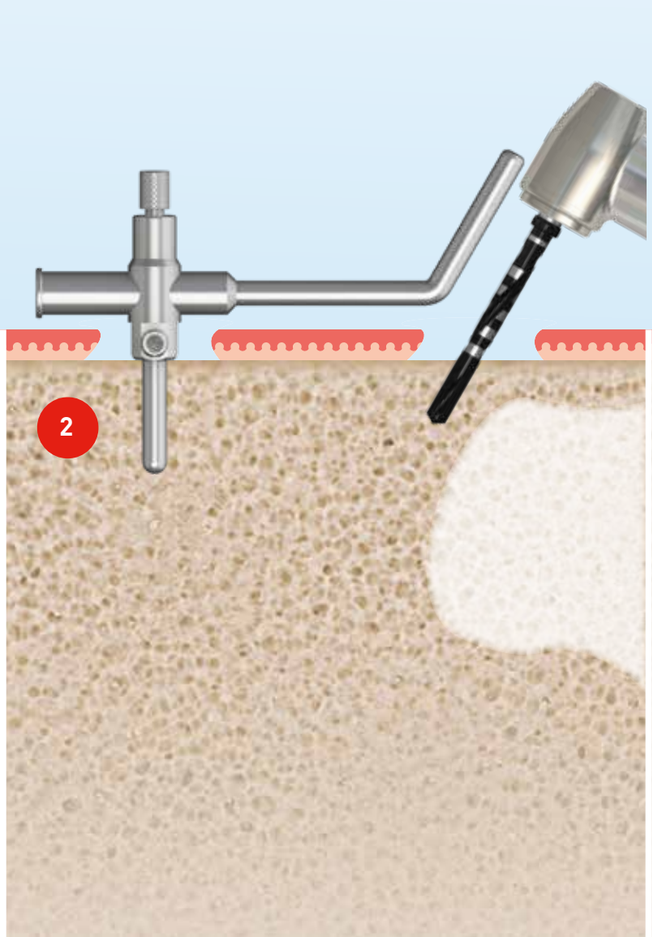
Enlarging implant bed

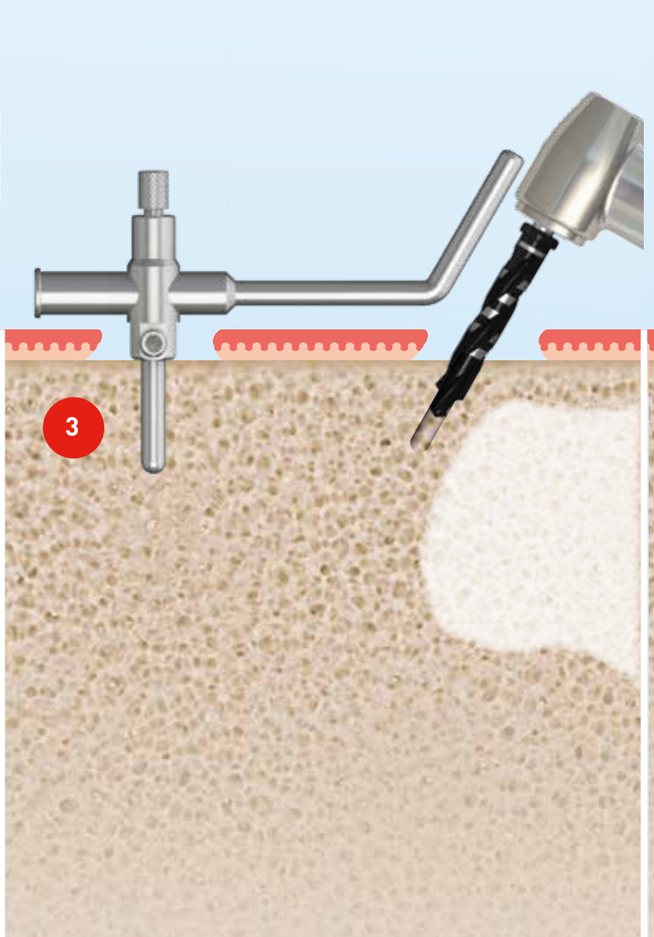
Enlarge the implant bed with the final drill according to the implant diameter.

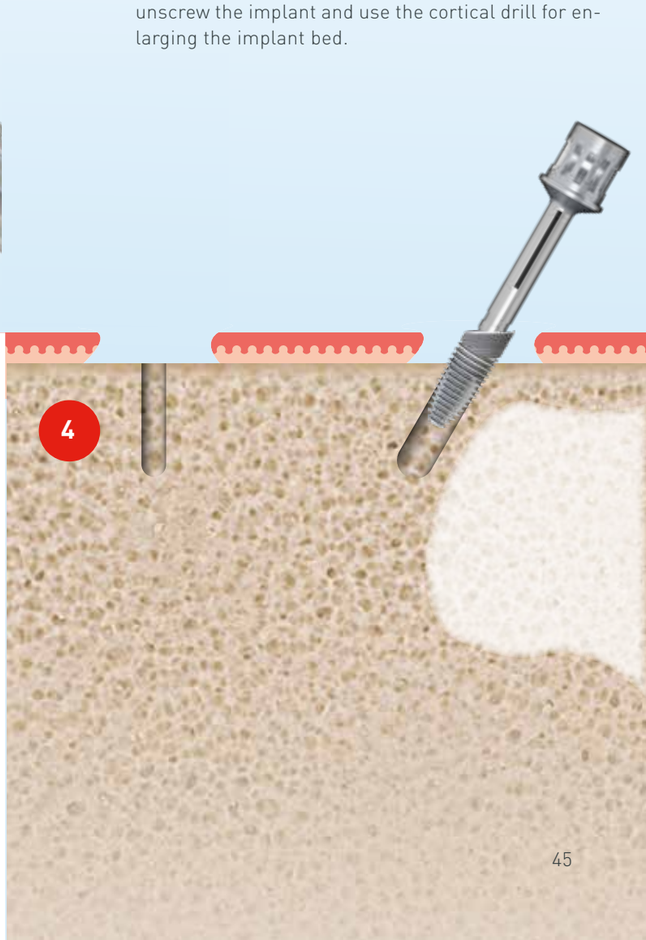
Insertion implant

If the implant is inserted with the placement instrument, either for the manual use with the torque ratchet or with the angled handpiece, a max. torque of 35 Ncm should not be exceeded. When 35 Ncm must be clearly exceeded before getting the final implant position, we recommend that you carefully unscrew the implant and use the cortical drill for enlarging the implant bed.









Implant placement

Paralleling aid

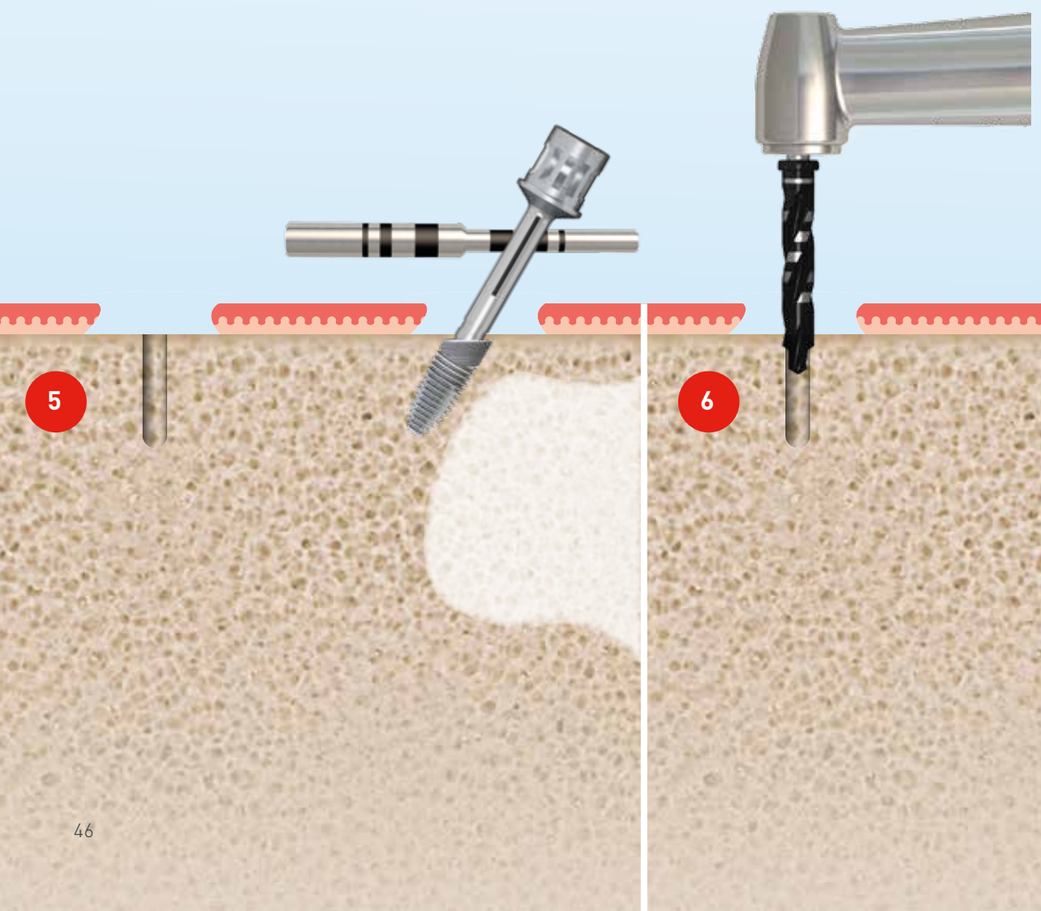
For correct placement of the Quattrocone30 implant you can use the paralleling aid to check the 30°axis and the correct alignment of the prosthetic axis in the run of the alveolar ridge.

Enlarging implant bed

After placing the angulated Quattrocone30 implants enlarge the implant bed for the straight implants with the the final drill in accordance with the Implant diameter.

QuattroFix

Straight and angulated implants placed in the correct relation for the indication QuattroFix.



QUATTROCONE30

Implant placement

» **Abutment** placement «

Multi-unit Abutment 30°

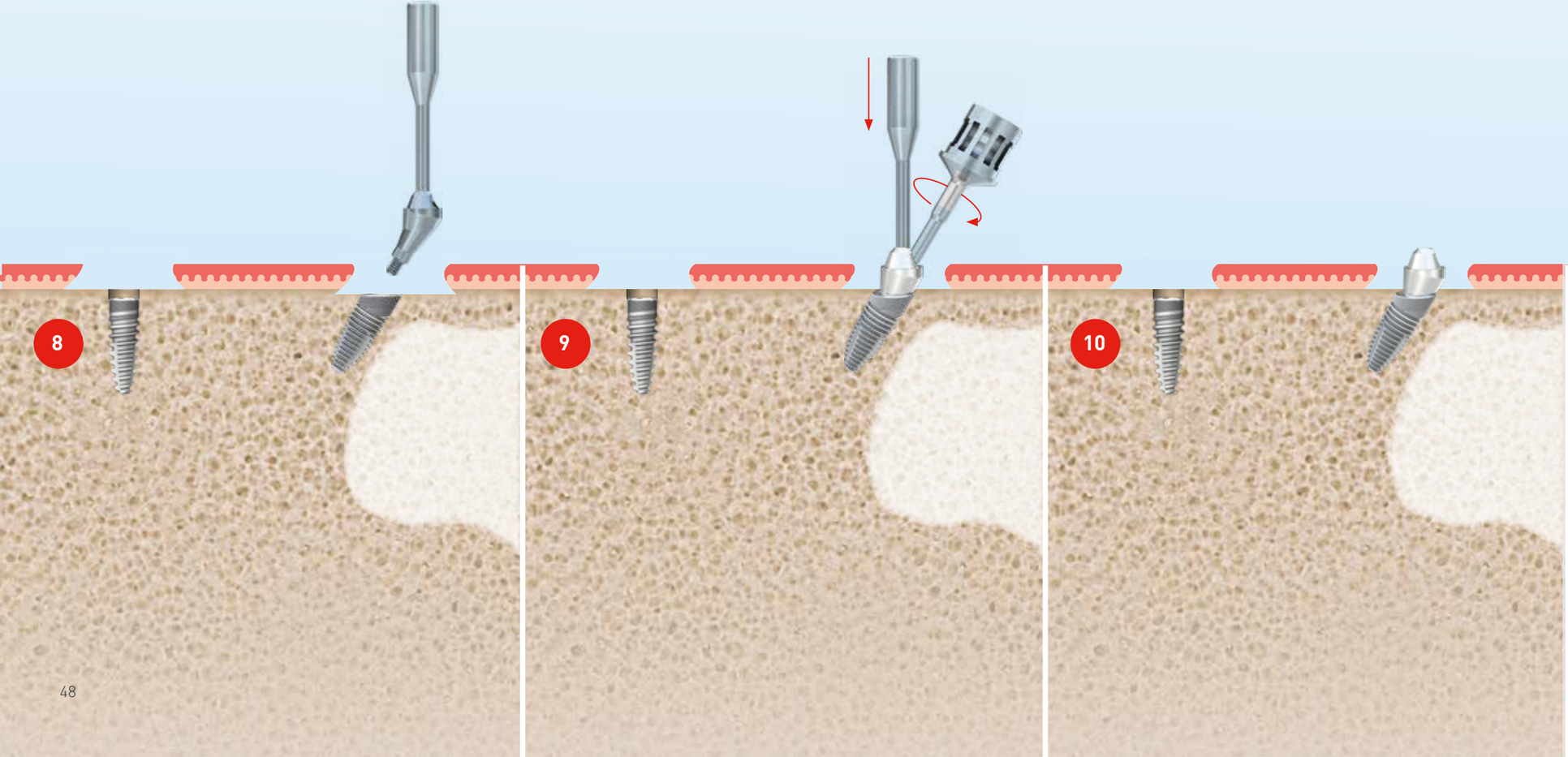
After the implant placement, the 30° angulated Multi-unit abutment is connected to the Quattrocone30 implant with its special insertion tool.

Insertion placement instrument

After placement, the abutment tightened with the screw up to 25 Ncm.

Final situation

Situation after placing and tightening the 30° angulated Multi-unit abutment in the Quattrocone30 implant.

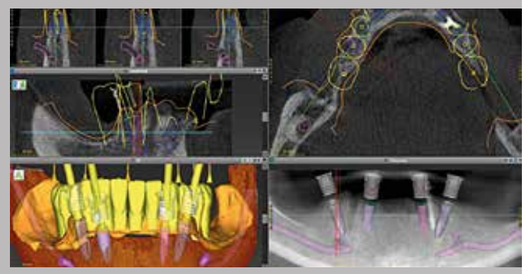


QUATTROCONE30

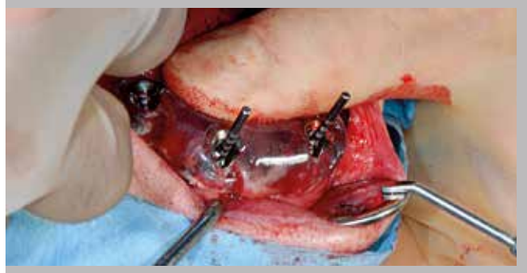
» **Abutment** placement «

Clinical QuattroFix case

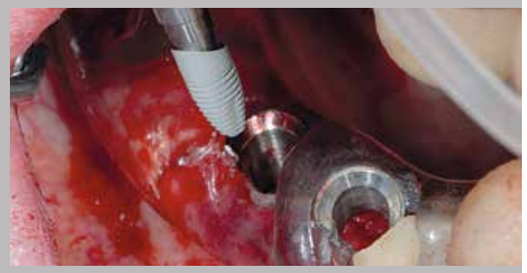
initial situation



3D Planning



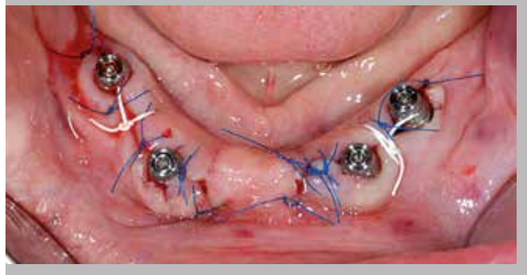
checking the implant bed



implant placement

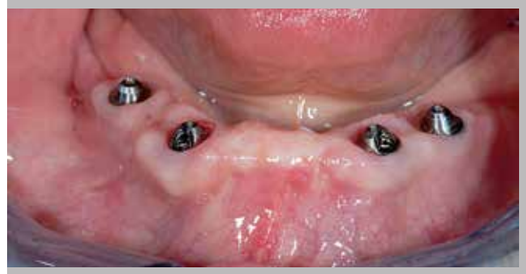
radiograph

abutment placement



situation after suturing

provisioning



situation after healing time

zirconia bridge after milling

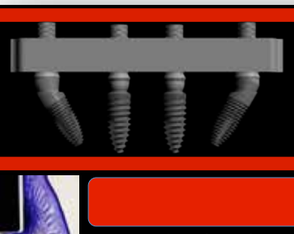
final restoration

final situation

Clinical Case:
Dr. med. dent. Martin Müllauer

SCIENCE

The Quattrocone project is based on many years of science and development of optimum implant screw geometries for immediate loading and immediate implant placement by Professor Dr. M. Abboud (State University of New York Stony Brook, USA). The patented design components were integrated in a new type of implant by MEDENTiKA®, which covers the indications of angulated placement, including QuattroFix, in a unique way.



Functional bone adaptation to angul

Abboud M, Rugova S
Department of Prosthodon
Stony Brook University, School of

Introduction

Conventional implants placed in 25-45 degree angulation have provided a significant alternative for the restoration of maxillary and mandibular posterior segments in order to overcome anatomical constraints. Based on the available clinical studies, the tilted implants are not subject to a higher implant failure rate, but there are strong indications from in-vitro and in-vivo studies that increased stress patterns and tipping of the tilted implant during loading negatively affect crestal bone remodeling. This can lead to ongoing crestal bone loss1 over time, by itself increasing the risk for peri-implant diseases.

Methods

The study was approved by Ethical Commitee of Murcia University, Spain. Six adult Fox Hound dogs have been used in this experiment. All 3 mandibular premolars and the first molar of each dog were extracted and 4 conventional implants (Medentika Implants GmbH, Huegelsheim; Germany) were immediately inserted straight and 4 newly designed tilted implant (Quattrocone, Medentika Implants GmbH, Germany) were inserted in a 30 degree angulation.

Fig 1: All implants are placed using a surgical guide (left). The two newly designed implants are placed in a 30 degree angle to the distal (right).

In the first group the immediate loading of the implants was performed with a bar. In the second group the implants were inserted in the extraction sockets without loading and after 3 months of healing the implants were loaded with a bar for another 3 months. Radiographs were obtained from all implant sites following implant installation, and after 3 and 6 months. The animals were sacrificed and biopsies from all implant sites were obtained and prepared for histological analysis.

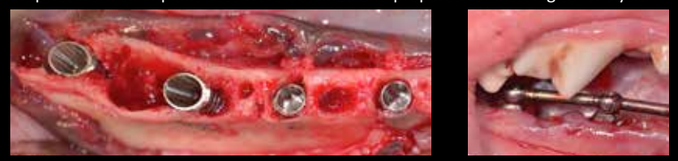


Fig 2: The straight and angulated implants are placed epicrestally (left). Implants in Group 1+2 are connected with a metal bar (SFI bar) and immediately loaded (right).

Fig 3: Radiographs after immediate implant placement in extra

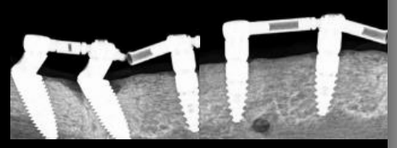


Fig 4: Radiographs 3 months after placement in dog 1. Due t overload only localised crestal bone loss resulted at the surrou

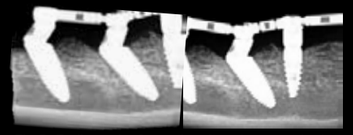


Fig 5: Radiographs 3 months after placement in dog 2. Crestal bone was maintaned around the straight and tilted implants.

Res

The radiographic analysis revealed t occurred following implant installa pronounced at implants without i alterations that were observed at functional load were small and did groups. The histological analysis re Contact (BIC) of 63.48% with values l exposed to functional load exhibited implants without loading. There was regarding the newly designed tilte angulation compared to the convent

ated and straight implant placement

SH, Calvo Guirado JL
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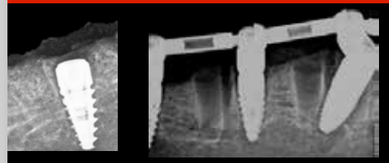
Dental Medicine, Stony Brook, NY



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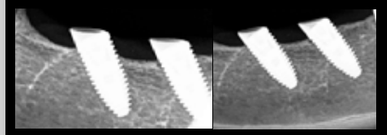


Fig 6: Radiographs 3 months after placement in dog 3 without immediate loading. Crestal bone loss occurred around all of these implants.

sults

hat the largest amount of bone loss tion and that this loss was more mmediate loading. The bone level implants exposed to 3 months of not differ significantly between the vealed an average Bone-to-Implant between 43.39% to 92.05%. Implants a higher degree of BIC than control no significant difference in bone loss d implants placed in a 30 degree ional implants placed straight.

Conclusions

Based on the radiologic anaylsis and the histology results it can be concluded that the newly designed implants placed in a 30 degree angulation show similar cortical bone maintenance with immediate placement and immediate loading compared to conventional implants placed straight. It is suggested that functional load at implants may enhance osseointegration and result in a higher BIC and improved marginal bone stability. It should be expected that implants placed without functional have an increased risk of crestal bone resorption.

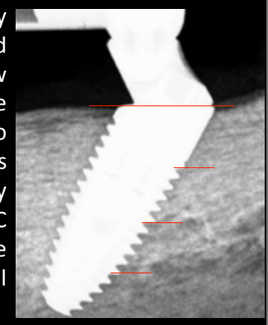


Fig 7: Patented macrothread design parallel to the implant shoulder prevent tilting and successfully maintain the crestal bone level.

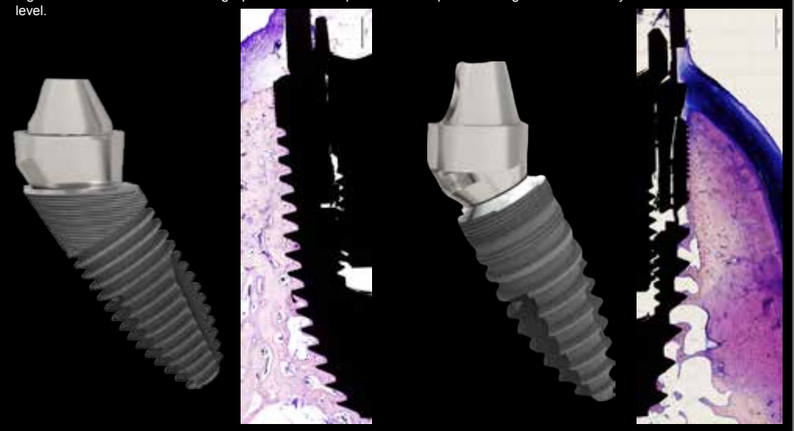
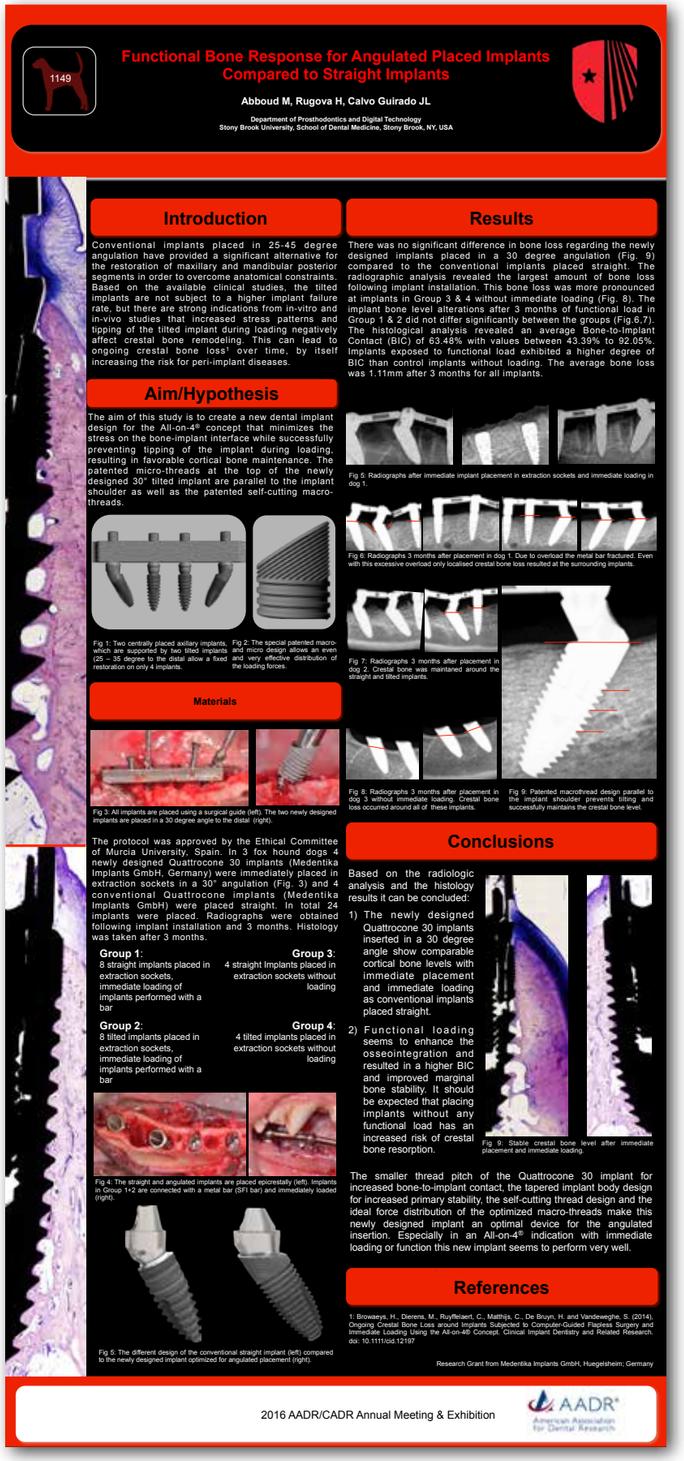


Fig 8: Histology of the convntional implant (right) showed similar results to the newly designed tilted implants (left).

The smaller macro-thread pitch, the tapered implant body design for increased primary stability, the self-cutting macro-and the ideal force distribution of the macro-threads make the newly designed implant an optimal device for the angulated insertion and the All-on-4© concept.

Acknowledgement: Special thanks to Medentika Implant GmbH, Germany for the production of the implants and drill bits

SCIENCE



Functional Bone Response for Angulated Placed Implants Compared to Straight Implants

1149

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Stony Brook University, School of Dental Medicine, Stony Brook, NY, USA

Introduction

Conventional implants placed in 25-45 degree angulation have provided a significant alternative for the restoration of maxillary and mandibular posterior segments in order to overcome anatomical constraints. Based on the available clinical studies, the tilted implants are not subject to a higher implant failure rate, but there are strong indications from in-vitro and in-vivo studies that increased stress patterns and tipping of the tilted implant during loading negatively affect crestal bone remodeling. This can lead to ongoing crestal bone loss[1] over time, by itself increasing the risk for peri-implant diseases.

Aim/Hypothesis

The aim of this study is to create a new dental implant design for the All-on-4® concept that minimizes the stress on the bone-implant interface while successfully preventing tipping of the implant during loading, resulting in favorable cortical bone maintenance. The patented micro-threads at the top of the newly designed 30° tilted implant are parallel to the implant shoulder as well as the patented self-cutting macro-threads.

Fig 1: Two centrally placed axillary implants, which are supported by two tilted implants (25 – 35 degree to the distal allow a fixed restoration on only 4 implants.

Fig 2: The special patented macro- and micro design allows an even and very effective distribution of the loading forces.

Materials

Fig 3: All implants are placed using a surgical guide (left). The two newly designed implants are placed in a 30 degree angle to the distal (right).

The protocol was approved by the Ethical Committee of Murcia University, Spain. In 3 fox hound dogs 4 newly designed Quattrocone 30 implants (Medentika Implants GmbH, Germany) were immediately placed in extraction sockets in a 30° angulation (Fig 3) and 4 conventional Quattrocone implants (Medentika Implants GmbH) were placed straight. In total 24 implants were placed. Radiographs were obtained following implant installation and 3 months. Histology was taken after 3 months.

Group 1:
8 straight implants placed in extraction sockets, immediate loading of implants performed with a bar

Group 2:
8 tilted implants placed in extraction sockets, immediate loading of implants performed with a bar

Group 3:
4 straight Implants placed in extraction sockets without loading

Group 4:
4 tilted implants placed in extraction sockets without loading

Fig 4: The straight and angulated implants are placed epicrestally (left). Implants in Group 1+2 are connected with a metal bar (SFI bar) and immediately loaded (right).

Fig 5: The different design of the conventional straight implant (left) compared to the newly designed implant optimized for angulated placement (right).

Results

There was no significant difference in bone loss regarding the newly designed implants placed in a 30 degree angulation (Fig. 9) compared to the conventional implants placed straight. The radiographic analysis revealed the largest amount of bone loss following implant installation. This bone loss was more pronounced at implants in Group 3 & 4 without immediate loading (Fig. 8). The implant bone level alterations after 3 months of functional load in Group 1 & 2 did not differ significantly between the groups (Fig.6,7). The histological analysis revealed an average Bone-to-Implant Contact (BIC) of 63.48% with values between 43.39% to 92.05%. Implants exposed to functional load exhibited a higher degree of BIC than control implants without loading. The average bone loss was 1.11mm after 3 months for all implants.

Fig 5: Radiographs after immediate implant placement in extraction sockets and immediate loading in dog 1.

Fig 6: Radiographs 3 months after placement in dog 1. Due to overload the metal bar fractured. Even with this excessive overload only localised crestal bone loss resulted at the surrounding implants.

Fig 7: Radiographs 3 months after placement in dog 2. Crestal bone was maintained around the straight and tilted implants.

Fig 8: Radiographs 3 months after placement in dog 3 without immediate loading. Crestal bone loss occurred around all of these implants.

Fig 9: Patented macrothread design parallel to the implant shoulder prevents tilting and successfully maintains the crestal bone level.

Conclusions

Based on the radiologic analysis and the histology results it can be concluded:

1) The newly designed Quattrocone 30 implants inserted in a 30 degree angle show comparable cortical bone levels with immediate placement and immediate loading as conventional implants placed straight.
2) Functional loading seems to enhance the osseointegration and resulted in a higher BIC and improved marginal bone stability. It should be expected that placing implants without any functional load has an increased risk of crestal bone resorption.

Fig 9: Stable crestal bone level after immediate placement and immediate loading.

The smaller thread pitch of the Quattrocone 30 implant for increased bone-to-implant contact, the tapered implant body design for increased primary stability, the self-cutting thread design and the ideal force distribution of the optimized macro-threads make this newly designed implant an optimal device for the angulated insertion. Especially in an All-on-4® indication with immediate loading or function this new implant seems to perform very well.

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Research Grant from Medentika Implants GmbH, Huegelsheim; Germany

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AADR American Association for Dental Research

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Design: Der WeberFink GbR
Graphic Design Studio
www.weberfink.de

As at: December 2019

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