

RATIOPLANT®

DENTAL IMPLANTS 
Made in Germany



THE ADVANCED WAY TO CARE



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Introduction



Our long years of experience in the field of human implantology and our expertise in the development, manufacture and testing of implants and instrument combinations provide the ultimate guarantee of extreme functionality throughout the entire HumanTech product portfolio. Given the growing need to increase the quality of human life and the dynamic market changes marked by rising pressure on costs and profit margins, factors such as cost-oriented manufacture and distribution are increasingly occupying centre stage.

HumanTech is a company group dedicated one hundred percent to the development, deployment and manufacture of implants and instruments in the medical field, and to the on-going search for ever better solutions.

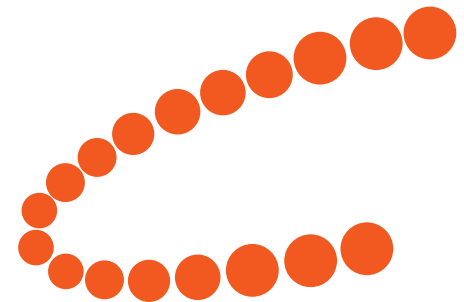
We eliminate unnecessary distribution costs by cutting out the middle man: Customers buy HumanTech products direct from us, the manufacturer:

From development through to the finished product and customer service – all from a single, reliable source.

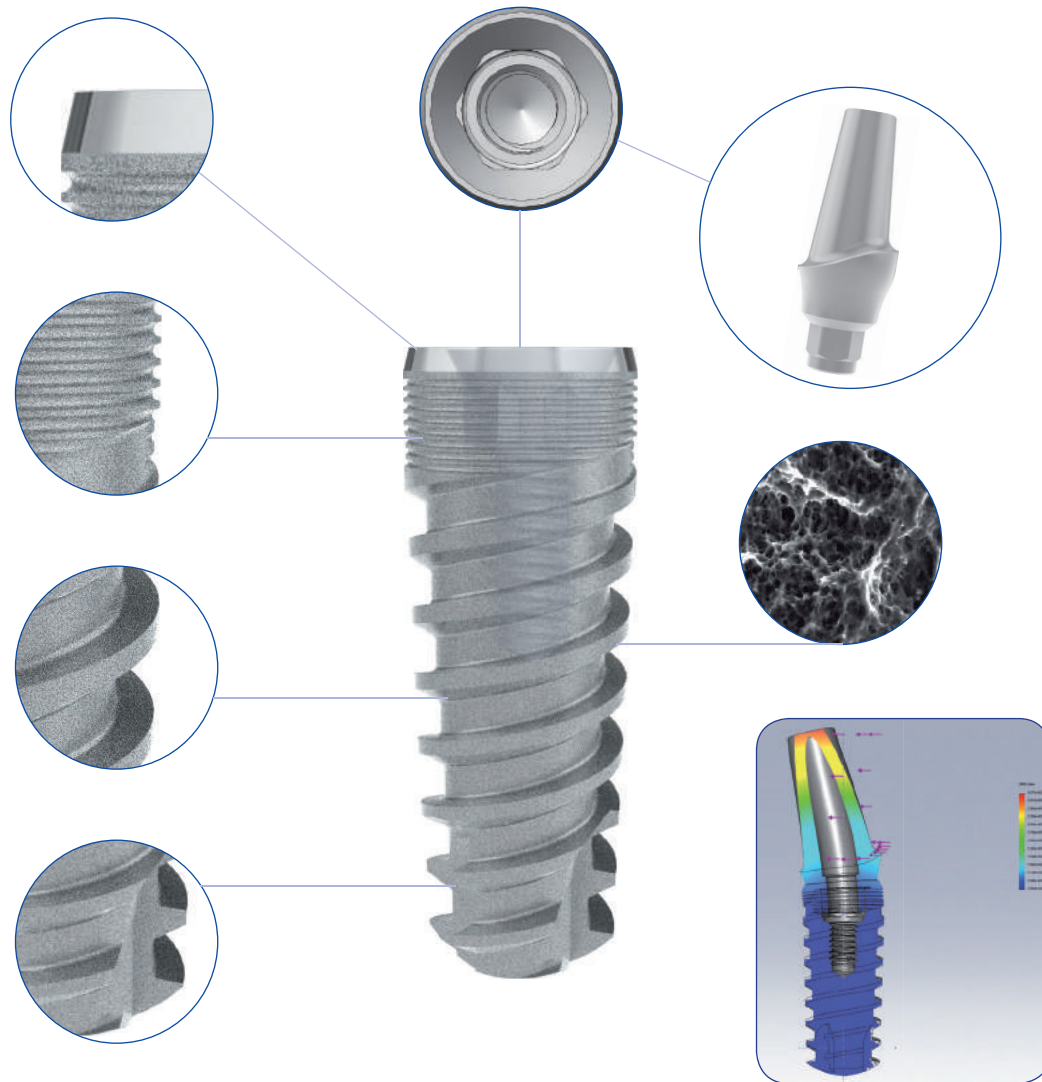
The RatioPlant® implants are manufactured, packed after the up to date guidelines in our house and brought directly to our customers to the dispatch.

The variety of the RatioPlant® implant lines offers a broad range of clinical solutions, up to reconstructions of single crowns, screw connected or fixed cemented bridges and partial or full dentures. Furthermore you can use RatioPlant® of implants in all situations, from the simplest to the most difficult, surgical and bone augmentation procedures. They are manufactured from biocompatible quality titanium and by their blasted and etched surfaces on the state of the art. All RatioPlant® implants fulfill the highest international standards.

We are certified according to DIN EN ISO 13485 as well as appendix II of the guideline 93/42 EEC.



RatioPlant® Avantgarde




































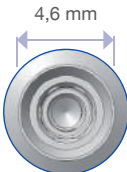
Features

- The implants of the RatioPlant® Avantgarde line are root analogue screw implants with sandblasted and etched surface for all indications.
- The implants show an interior hexagon, a conical edge and an internal thread to US standard.
- Made of Ti6Al4V - ISO 5832-3.
- The Avantgarde line features over an atraumatic cutting thread with three cutting slots to the bone chip admission and rotation protection.
- For an ideal indication with consideration of stability the RatioPlant® Avantgarde implants are available with three different platforms - Mini, Standard and Large.

Advantages

- Easy insertion by double thread guidance at the implant external thread.
- Outstanding a healing with optimum apposition of the osteoblasts to the special nano-surface.
- Familiar handling by the popular hexagonal structure of the connection implant/abutment.
- By the conical transition from the upper edge to the hexagonal the RatioPlant® implants achieves a high sealing between implant and abutment also under load.
- Anatomical root analog design for excellent cosmetic results.
- Possible platform switch at the transition between implant and abutment

Implantatgrößen

	 3,2	 3,8	 4,2	 5,0	 6,0
6,0		New!		 5002150060	 5002160060
8,0	 5002132080	 5002138080	 5002142080	 5002150080	 5002160080
10,0	 5002132100	 5002138100	 5002142100	 5002150100	 5002160100
11,5	 5002132115	 5002138115	 5002142115	 5002150115	 5002160115
13,0	 5002132130	 5002138130	 5002142130	 5002150130	 5002160130
16,0	 5002132160	 5002138160	 5002142160	 5002150160	
	Mini	Standard		Large	
	 3 mm	 4 mm		 4,6 mm	

Simple colour system

RatioPlant® Avantgarde Implants and drills are marked depending the diameter with the colours **yellow**, **red**, **green**, **blue** and **white**. This will simplify the surgical process already in preparation of the surgery and offers additional safety during the surgery.

Platforms

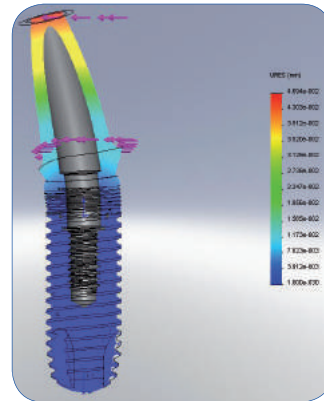
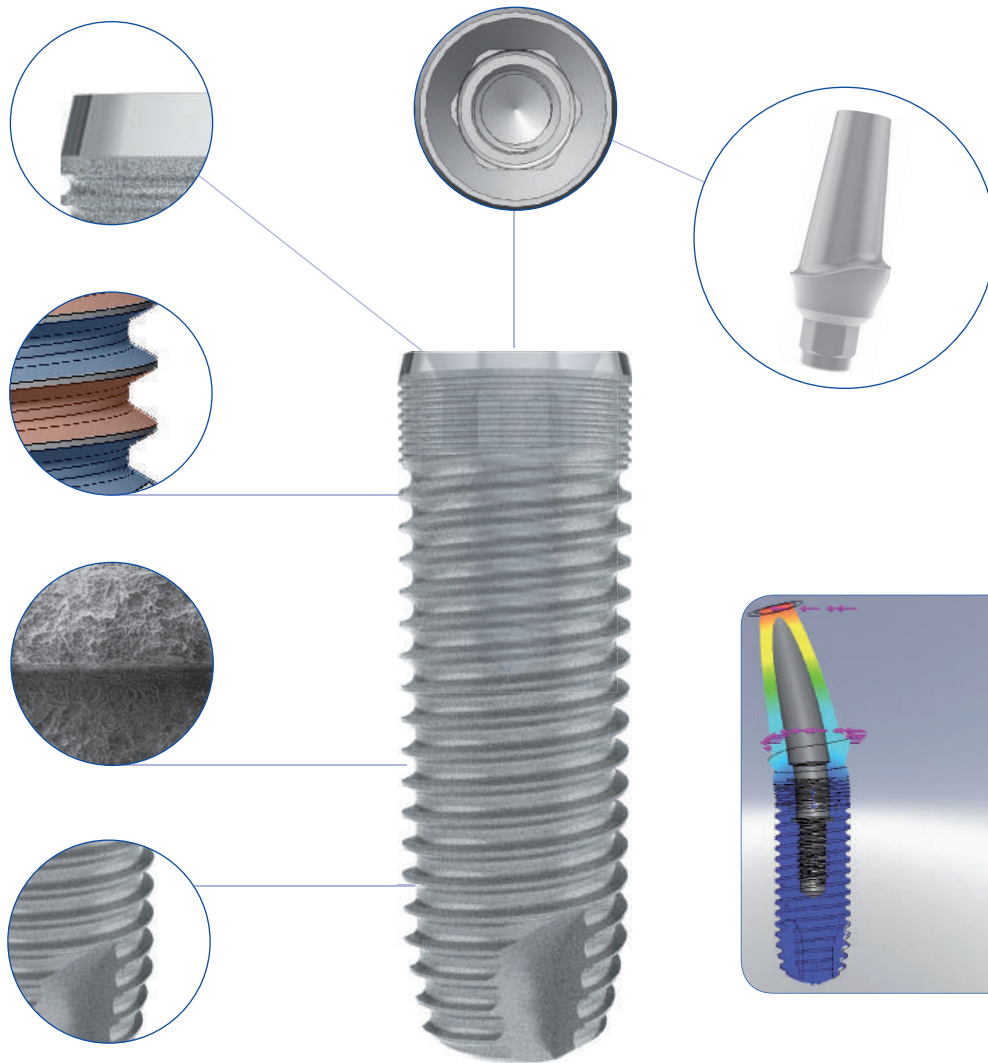
RatioPlant® Avantgarde Implants are available in five diameters and five lengths. All implant sizes are distributed on three platforms:

- **Mini** - implant diameter 3.2 - all lengths
- **Standard** - implant diameter 3.8 and 4.2 - all lengths
- **Large** - implant diameter 5.0 and 6.0 - all lengths excluding 6.0/16.0

Hereby the range of healing caps, tools as well as the prosthetic components is reduced to a minimum.



RatioPlant® Classic



Features

- The implants of the RatioPlant® Classic line are cylindrical screw implants with sandblasted and etched surface for all indications.
- The implants show an interior hexagon, a conical edge and an internal thread to US standard.
- Made of Ti6Al4V - ISO 5832-3.
- The Classic line features over an atraumatic cutting thread with three cutting slots to the bone chip admission and rotation protection.
- For an ideal indication with consideration of stability the RatioPlant® Classic implants are available with two different platforms - Standard and Large.

Advantages

- Easy insertion by double thread guidance at the implant external thread.
- Outstanding a healing with optimum apposition of the osteoblasts to the special nano-surface.
- Familiar handling by the popular hexagonal structure of the connection implant/abutment.
- By the conical transition from the upper edge to the hexagonal the RatioPlant® implants achieves a high sealing between implant and abutment also under load.
- Possible platform switch at the transition between implant and abutment

Implant Sizes

	 3.8	 4.2	 5.0	 6.0
8.0	 5001138080	 5001142080	 5001150080	 5001160080
10.0	 5001138100	 5001142100	 5001150100	 5001160100
11.5	 5001138115	 5001142115	 5001150115	 5001160115
13.0	 5001138130	 5001142130	 5001150130	 5001160130
16.0	 5001138160	 5001142160	 5001150160	
	 Standard		 Large	

Simple colour system

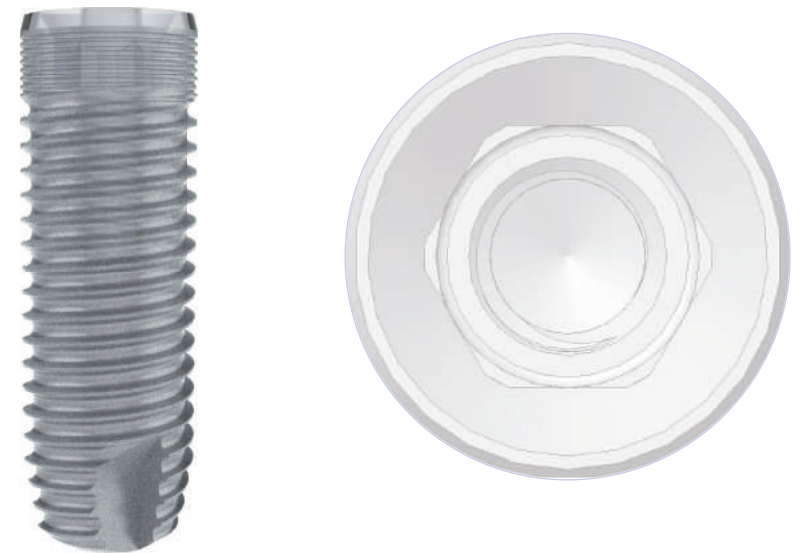
RatioPlant® Classic Implants and drills are marked depending the diameter with the colours **red**, **green**, **blue** and **white**. This will simplify the surgical process already in preparation of the surgery and offers additional safety during the surgery.

Platforms

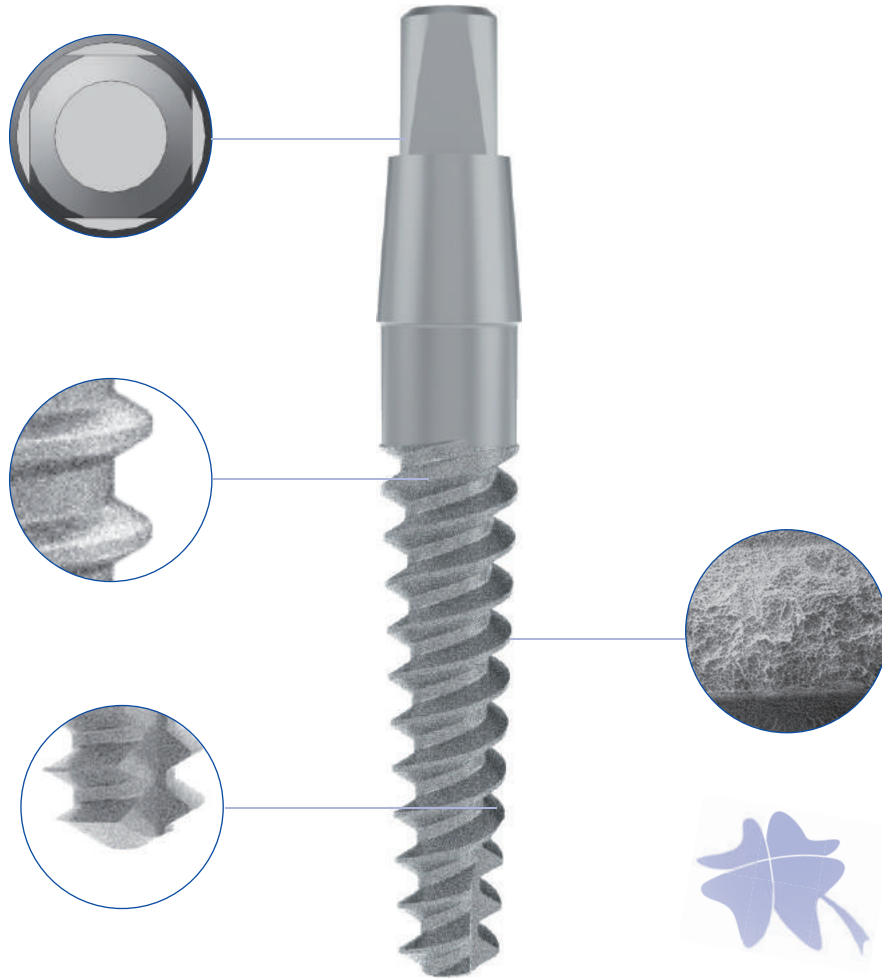
RatioPlant® Classic Implants are available in four diameters and five lengths. All implantsizes are distributed on two platforms:

- **Standard** - implant diameter 3.8 and 4.2 - all lengths
- **Large** - implant diameter 5.0 and 6.0 - all lengths excluding 6.0/16.0

Hereby the range of healing caps, tools as well as the prosthetic components is reduced to a minimum.



RatioPlant® Single



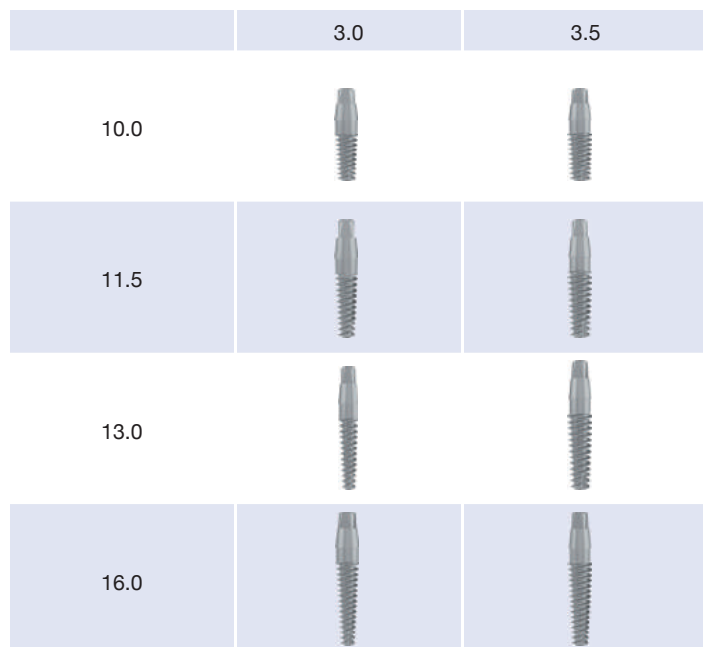
Features

- The implants of the RatioPlant® Single line are one-piece screw implants with sandblasted and etched surface for all indications.
- The implants have a fixed and conical connection with a square connection for insertion and anti-twist safeguard to embed single crowns, telescopic secondary parts or other prosthetic components.
- Made of Ti6Al4V - ISO 5832-3.
- The Single line features over a atraumatic cutting thread with three cutting slots to the bone chip admission and rotation protection as well.
- For an ideal indication with consideration of stability the RatioPlant® Single implants are available with two different diameters and four lengths.

Advantages

- Simple application with only one tool and three drills for all Single implants.
- Anatomical root analogous design for outstanding results at difficult space conditions (mandibula front area).
- Outstanding a healing with optimum apposition of the osteoblasts to the special nano-surface.
- No static connectivity problems between implant and abutment under load by design in one piece.
- Direct loading after insertion possible.

Implant Sizes



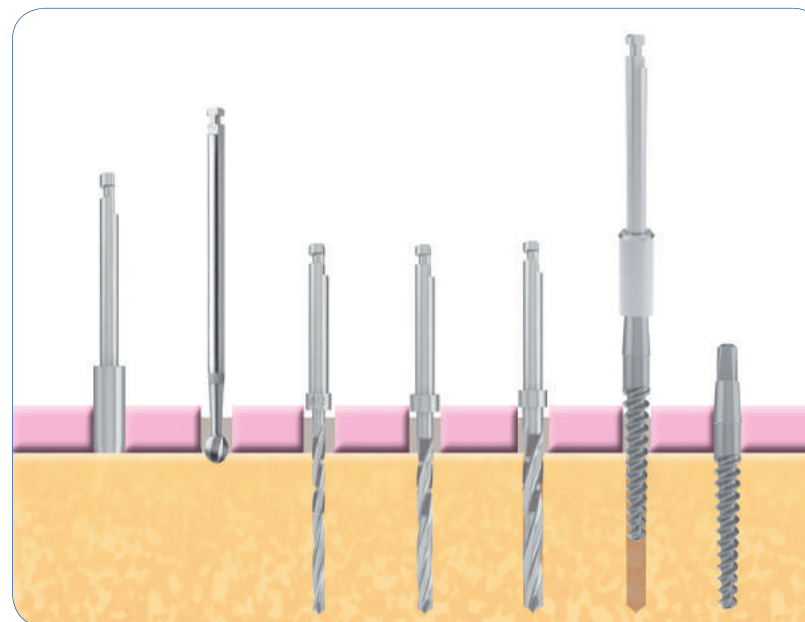
Two sizes - one abutment structure

- Implantat diameter 3.0 - all length
- Implantat diameter 3.5 - all length



Surgical Drills

For the Single-implant offers HumanTech Germany GmbH a small set with only three drills to realize a safe, simple and quick implantation procedure.



Tools

To insert the RatioPlant®Single-implants only one type tool is necessary, that is available in two lengths, one for motor handpiece and one ratchet.

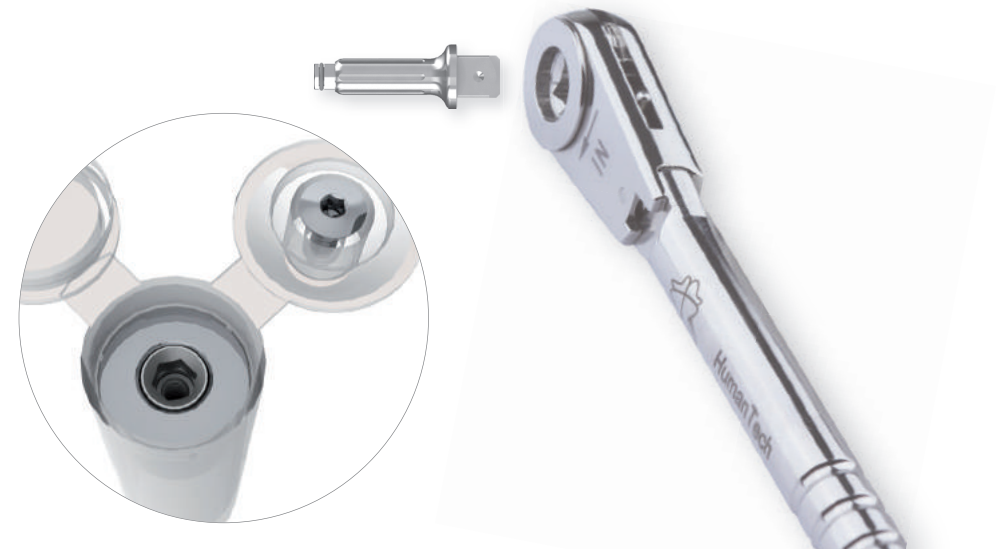


RatioPlant® Avantgarde

Surgical steps - example

Surgical Phase - using the example of RatioPlant® Avantgarde 4.2 / 11.5

1. Exposure of the bone using Scalpel or Gingiva cutter
2. Punch-marking - define implant position
3. Pilot drilling
4. Extension drilling to necessary diameter
5. Depth measurement (optional \varnothing 2.2 - 5.3)
6. Final drilling
7. Countersink
8. Setting of the Implantat using adapter for motor, subsequently tighten using torque ratchet and adapter for ratchet with max. 40 Ncm
Pay attention to final position: Hexagon edge in buccal direction!
9. Attach the coverscrew

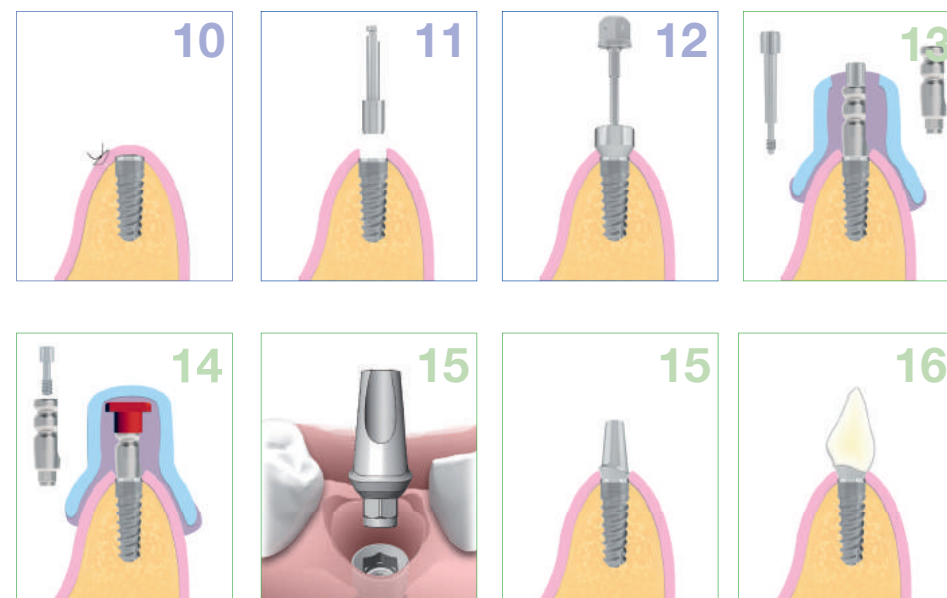
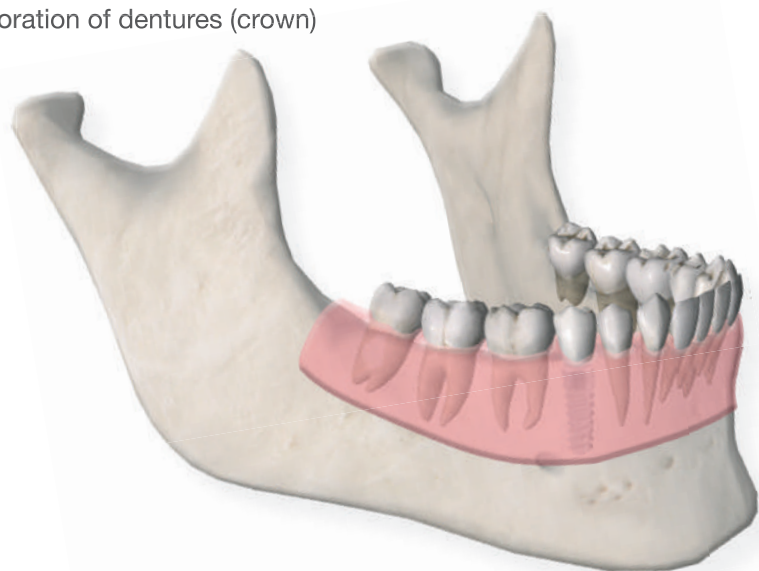


Healing phase

10. Obturation
11. After healing phase (4-6 months) Exposure using Scalpel or Gingiva cutter
12. Use of the healing caps

Prosthetic treatment

13. Impression post (open tray)
14. Impression post (closed tray)
15. Setting of the Abutment (Fixation of new Prosthetic Screw with max. 25 Ncm by using torque ratchet. Repeat after 5 minutes absolutely necessary!)
16. Incorporation of dentures (crown)



Advice

The following descriptions are not sufficient for the immediate application of the RatioPlant® Implant System. We recommend the briefing into the handling of the RatioPlant® Implant System by an experienced surgeon. Fundamentally the RatioPlant® Implant System only should be used by trained dentists, implantologists and dental technicians.

Methodological errors can lead to the loss and damage to the peri-implant bone. Processing and application of the products are beyond our control and are under the responsibility of each user. Any liability for damage which caused in this case is excluded.

Please also see our information on safety, liability and warranty on page 35.

RatioPlant® Classic



Surgical steps - example

Surgical Phase - using the example of RatioPlant® Classic 4.2 / 11.5

1. Exposure of the bone using Scalpel or Gingiva cutter
2. Punch-marking - define implant position
3. Pilot drilling
4. Extension drilling to necessary diameter
5. Depth measurement (optional \varnothing 2.2 - 5.3)
6. Final drilling
8. Countersink
9. Thread cutting - optional at D1/D2-bone quality
10. Setting of the Implant using adapter for motor, subsequently tighten using torque ratchet and adapter for ratchet with max. 40 Ncm

Pay attention to final position: Hexagon edge in buccal direction!

Attach the coverscrew

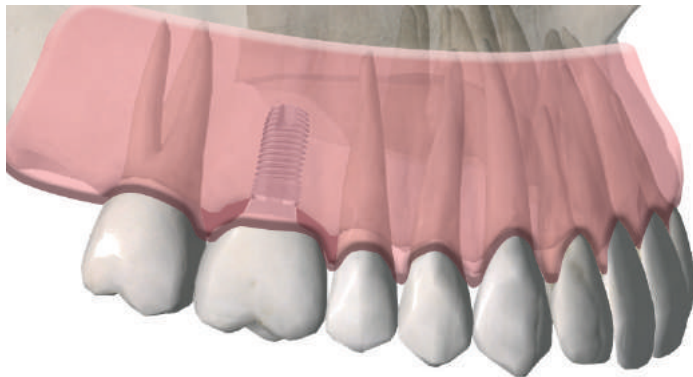


Healing phase

11. Obturation
12. After healing phase (4-6 months) Exposure using Scalpel or Gingiva cutter
13. Use of the healing caps

Prosthetic treatment

14. Impression post (open tray)
15. Impression post (closed tray)
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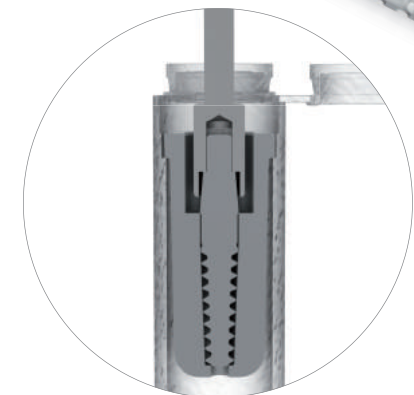
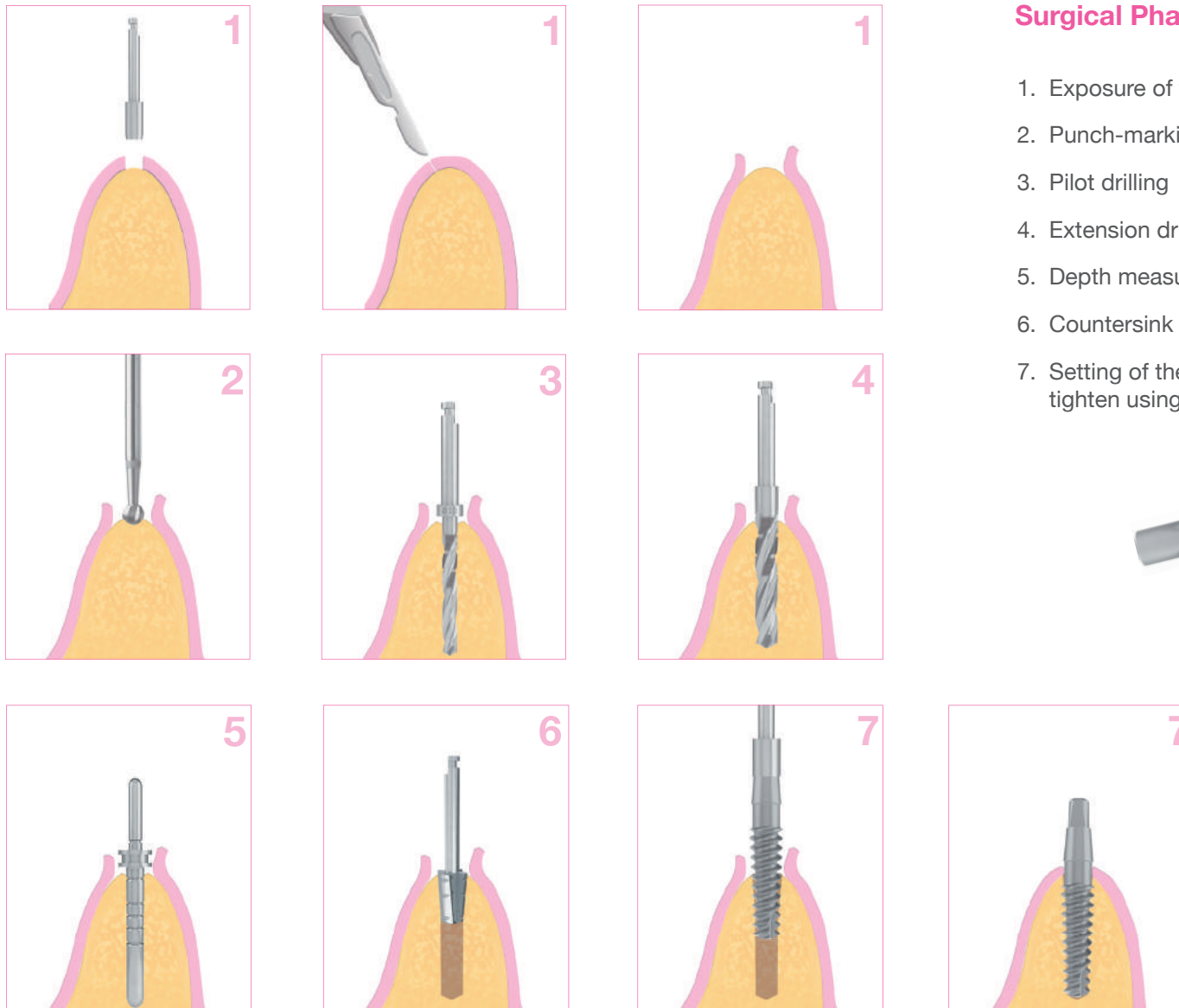
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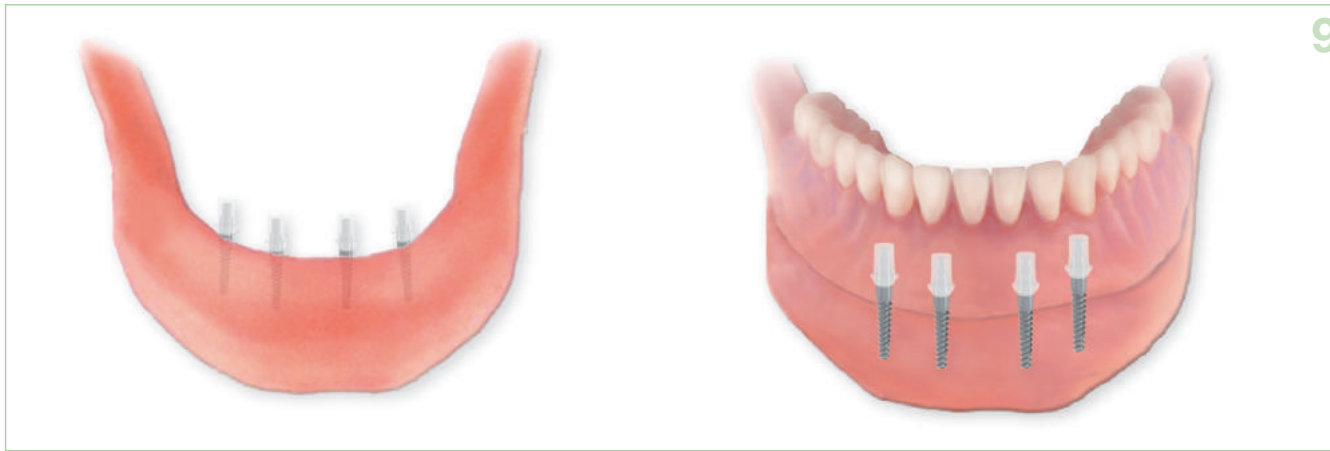
RatioPlant® Single

Surgical steps - example

Surgical Phase - using the example of RatioPlant® Single 3.5 / 13.0

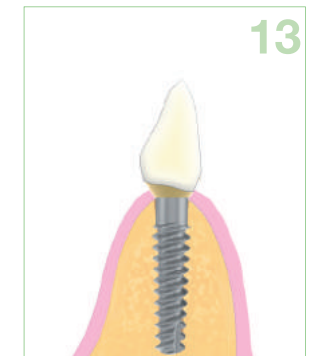
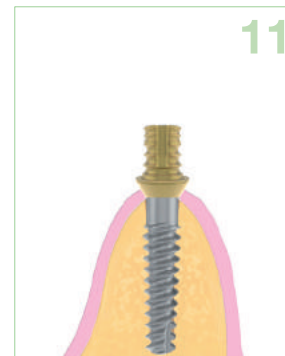
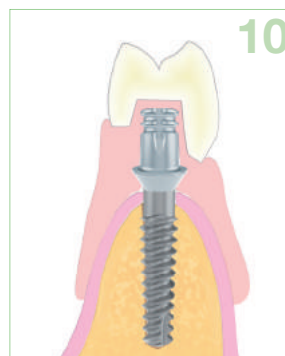
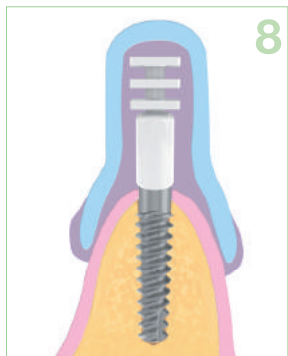
1. Exposure of the bone using Scalpel or Gingiva cutter
2. Punch-marking - define implant position
3. Pilot drilling
4. Extension drilling to necessary diameter and final drilling
5. Depth measurement (optional)
6. Countersink
7. Setting of the implant using adapter for motor, subsequently tighten using torque ratchet and adapter for ratchet with max. 40 Ncm





Prosthetic Care

8. Place transfer cap, proceed impression (closed impression)
9. Quick-abutment Plastic or Titanium Single for removable dentures
10. Application for hybrid prosthesis
11. Quick-abutment Gold Single hex for crowns and bridges
12. Customized abutment design
13. Crown design with porcelain

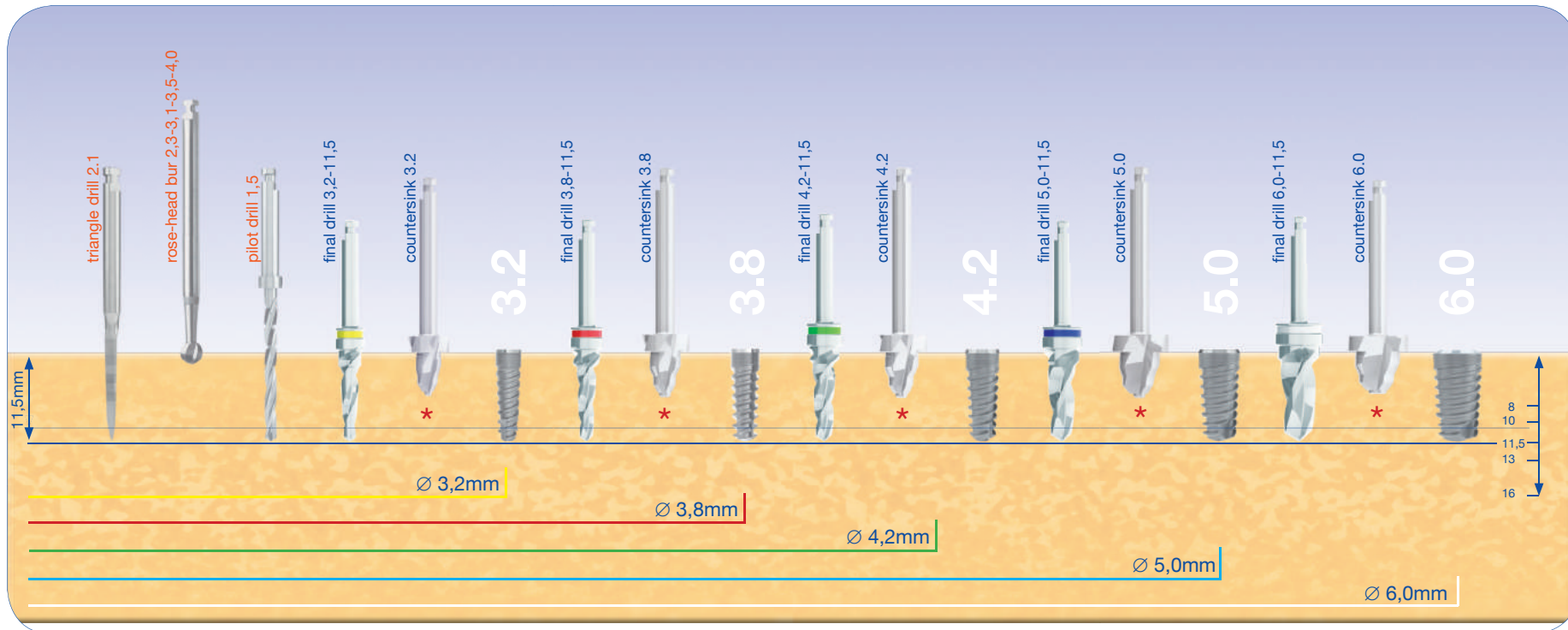


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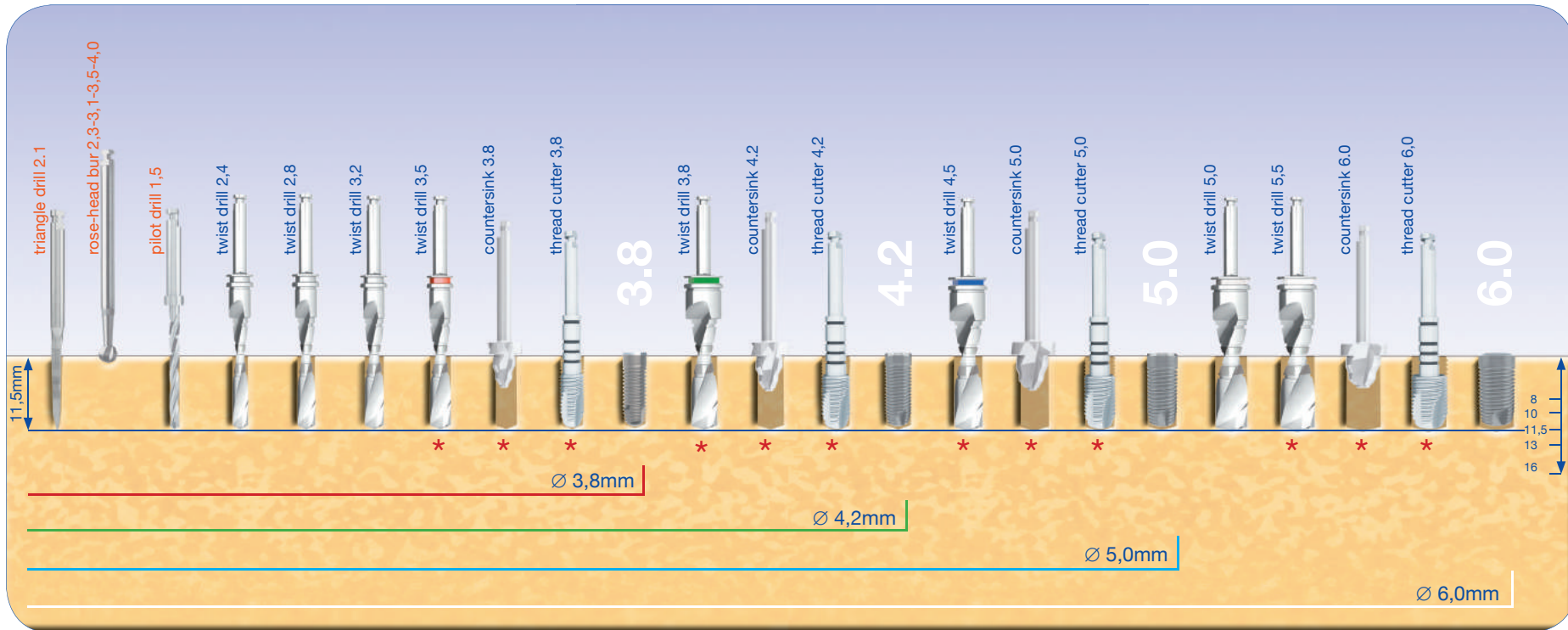


	3 verschiedene Vorbohrer zur Auswahl 3 different gimlet burs at your choice				
Tool	Triangelbohrer triangle drill	Rosenbohrer rose-head bur	Pilotbohrer pilot drill	Finalbohrer final drill	Versenker counter- sink
Durchmesser diameter Ø	2.1mm	2.3 - 3.5 - 4.0 - 5.0 mm	1.5mm	3.2-6.0mm	3.3 - 6.0mm
Drehzahl/RpM	900-1200	1200-1500	900-1200	700-900	200-300

* Anzuwenden bei D1 und optional bei D2 Knochen / Use in D1 and optional in D2 type bone!

Tiefenmarkierungen an allen Spiralbohrern entsprechend den Implantatlängen bei 8, 10, 11.5, 13 und 16mm / Depth markings on all twist drills according to the implant lengths of 8, 10, 11.5, 13 and 16mm

Um einer Schädigung des Knochengewebes vorzubeugen, ist die abgebildete Bohrfolge einzuhalten! / To prevent damage of the bone tissue, the imaged drilling sequence is observed!



	3 verschiedene Vorbohrer zur Auswahl 3 different gimlet burs at your choice										
Tool	Triangelbohrer triangle drill	Rosenbohrer rose-head bur	Pilotbohrer pilot drill	Spiralbohrer twist drill	Finalbohrer twist drill für/for 3,8	Finalbohrer twist drill für/for 4,2	Finalbohrer twist drill für/for 5,0	Spiralbohrer twist drill	Finalbohrer twist drill für/for	Versenker countersink	Gewindeschneider thread cutter
Durchmesser diameter Ø	2.1mm	2.3 - 3.5 - 4.0 - 5.0 mm	1.5mm	2.4 - 2.8 - 3.2mm	3.5mm	3.8mm	4.5mm	5.0mm	5.5mm	S/L	3.8 - 4.2 - 5.0 - 6.0
Drehzahl/RpM	900-1200	1200-1500	900-1200	500-700	400-700	400-600	400-600	300-500	300-500	200-300	15-25

* Anzuwenden bei D1 und optional bei D2 Knochen / Use in D1 and optional in D2 type bone!

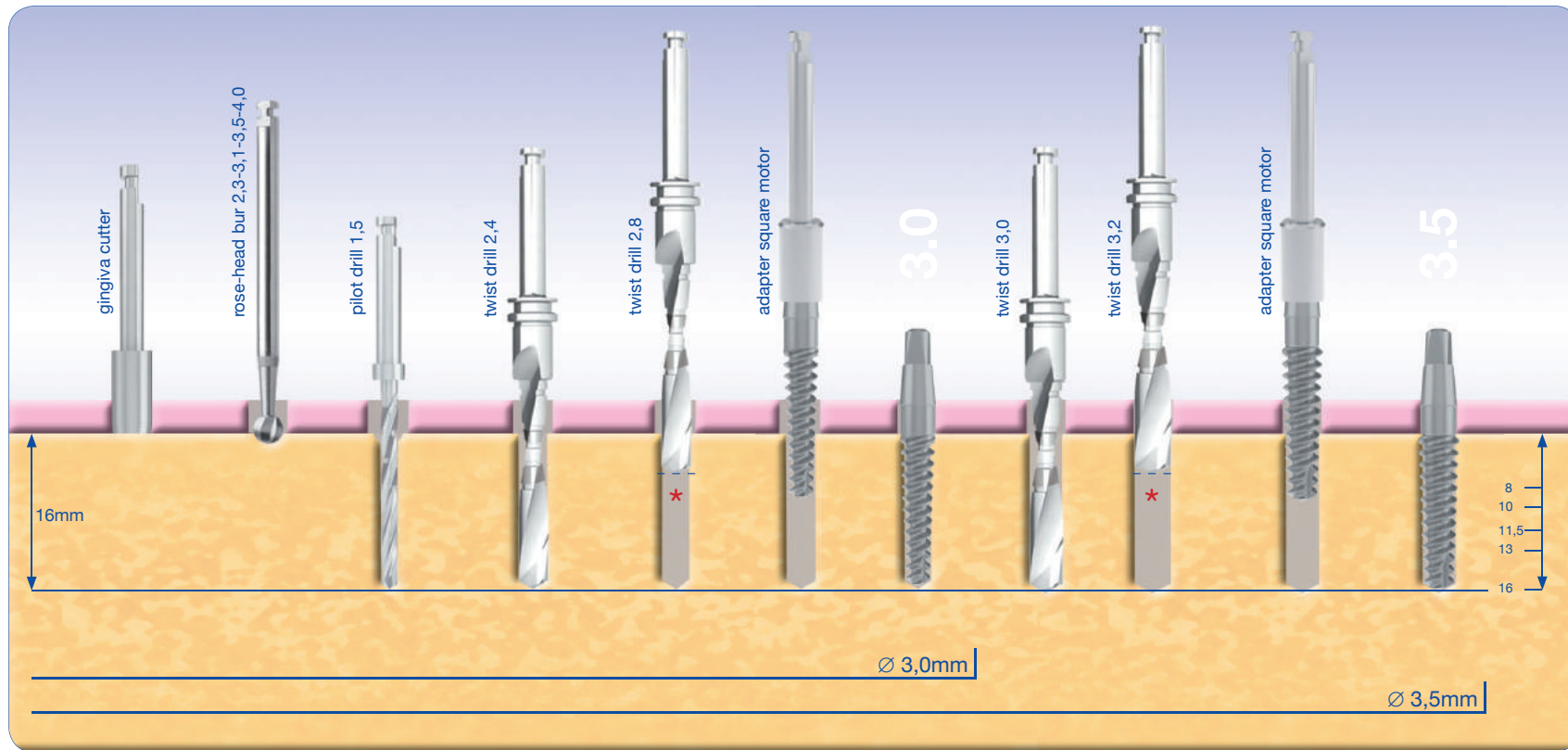
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Um einer Schädigung des Knochengewebes vorzubeugen, ist die abgebildete Bohrfolge einzuhalten! / To prevent damage of the bone tissue, the imaged drilling sequence is observed!

Bohrprotokoll für RatioPlant® Implantate
Drilling protocol for RatioPlant® Implants

Document No. 5014040112
 Revision 01/2015

Single



Tool	Gingivastanze gingiva cutter	Rosenboher rose-head bur	Pilotbohrer pilot drill	Spiralbohrer twist drill	Spiralbohrer twist drill	Spiralbohrer twist drill	Spiralbohrer twist drill	Eindrehadapter adapter square
Durchmesser diameter \varnothing	3.5 - 4.2 - 5.0 -6.0	2.3 - 3.5 - 4.0 - 5.0 mm	1.5mm	2.4mm	2.8mm	3.0mm	3.2mm	square
Drehzahl/RpM	15-25	1200-1500	900-1200	500-700	500-700	400-700	400-700	15-25

* Anzuwenden im Kortikalisbereich bei D1 und optional bei D2 Knochen / Use in cortical area at D1 and optional in D2 type bone!

Um einer Schädigung des Knochengewebes vorzubeugen, ist die abgebildete Bohrfolge einzuhalten! / To prevent damage of the bone tissue, the imaged drilling sequence is observed!

Tiefenmarkierungen an allen Spiralbohrern entsprechend den Implantatlängen bei 8, 10, 11.5, 13 und 16mm / Depth markings on all twist drills according to the implant lengths of 8, 10, 11.5, 13 and 16mm

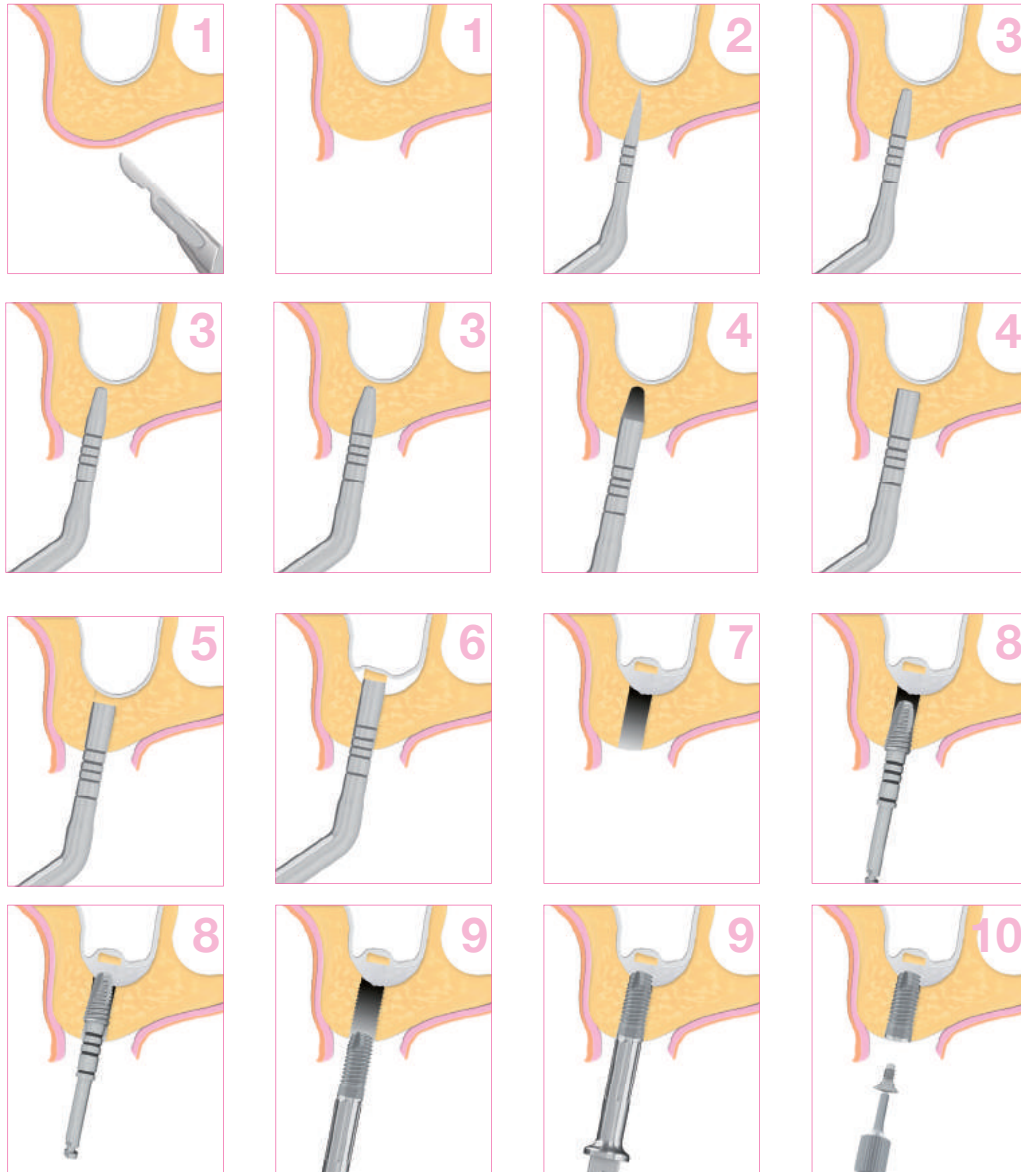
MEDICAL DEVICES

Auxillaries

X-Ray-Planning Templates for all Systems



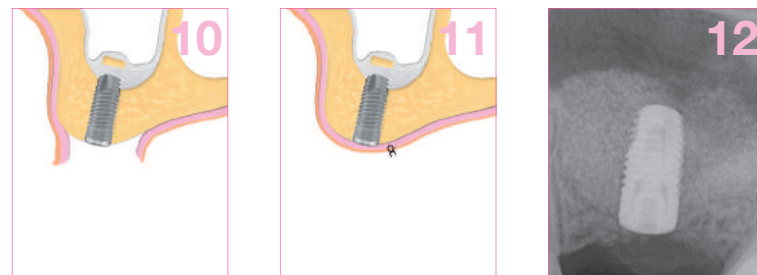
Osteotomy Kit



Example of the clinical procedure

Surgical Phase - example with RatioPlant® Classic 4.2 - 100

1. exposure with scalpel
2. center punching - fix implant position with Awl
3. socket preparation until inner cortical area
4. expansion(Kondensation) to necessary diameter
5. positioning of Osteotom
6. aperture with carefully strokes
7. lifting the Schneiderian membrane and filling with suitable augmentation material
8. thread cutting - optional for D1/D2-bone
9. insertion of implant with Adapter and Adapter for ratchet with max. torque of 40Ncm
10. coverscrew
11. wound closure
12. X-ray control



Surgical Instruments

Multiplex Handle	5012301007
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Osteotom convex 3.0	5012301010
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Osteotom convex 3.4	5012301011
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Osteotom convex 4.0	5012301012
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Osteotom convex 5.2	5012301013
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Osteotom concav 3.0	5012301020
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Osteotom concav 3.4	5012301021
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Osteotom concav 4.0	5012301022
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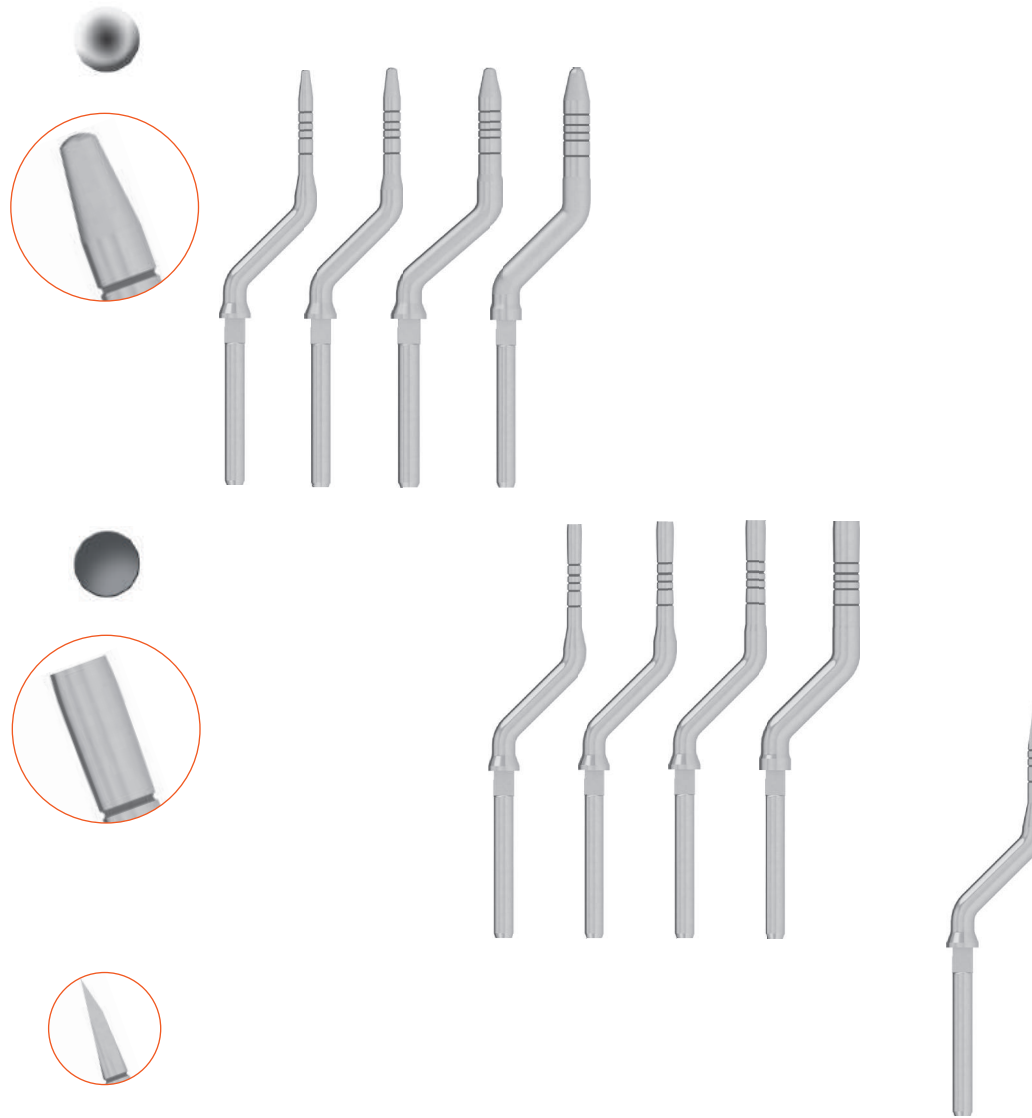
Osteotom concav 5.2	5012301023
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Osteotom Awl 2.5	5012301024
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Konvex

Konkav

Awl











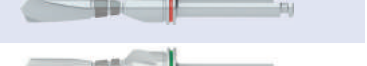
















Handle



Drill Bits

Safety and Liability

- During use of hard materials like bone and tooth substance can cause the premature loss of the cutting edges. Therefore, the drills must be checked after each use for blunt cut or damages and replaced as necessary.
- To avoid instrument fracture, the specified speed is observed.
- Caution: Risk of injury by the sharp edges of the drill! Risk of injury from twisting and slipping of the drill! The user is obliged to inspect the product to accept responsibility for its use before the suitability and the possible uses for the intended purposes. The use of the drill is the responsibility of the user.
- Guideline for the frequency use > 10 - 20 x (assuming no wear is evident, even prolonged use is possible).

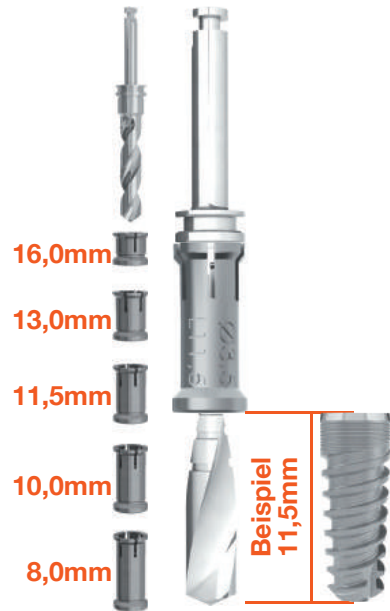
rose-head bur 23	5010323340		twist drill 24 L11,5mm	5010324375	
rose-head bur 31	5010335340		twist drill 28 L11,5mm	5010328375	
rose-head bur 35	5010340340		twist drill 30 L11,5mm	5010330377	
rose-head bur 40	5010350340		twist drill 32 L11,5mm	5010332377	
pilot drill 15	5010315340		twist drill 35 L11,5mm	5010335378	
twist drill 24	5010324374		twist drill 38 L11,5mm	5010338379	
twist drill 28	5010328374		twist drill 45 L11,5mm	5010345383	
twist drill 30	5010330376		twist drill 50 L11,5mm	5010350383	
twist drill 32	5010332376		countersink 3.3	5010333265	
twist drill 35	5010335377		countersink 3.8	5010338265	
twist drill 38	5010338378		countersink 4.2	5010342265	
twist drill 45	5010345382		countersink 5.0	5010350265	
twist drill 50	5010350382		countersink 6.0	5010360265	
twist drill 55	5010355382				

Drilling Stops

All drills drilling stops are available for the shaft diameters of 3.5 mm and 5.5 mm respectively in lengths of 8.0 mm, 10.0 mm, 11.5 mm, 13.0 mm and 16.0 mm, corresponding to the RatioPlant® implants.

The example below illustrates this with reference to a RatioPlant® Avantgarde implant with a length of 11.5 mm.

The sleeve is simply pushed onto the appropriate drill down to the shank, until it clicks in. The Drilling Stops are easy to change and to clean.





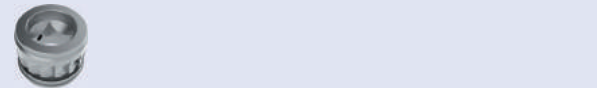








drilling stop Ø3,5 - L8,0	5012307020	
drilling stop Ø3,5 - L10,0	5012307021	
drilling stop Ø3,5 - L11,5	5012307022	
drilling stop Ø3,5 - L13,0	5012307023	
drilling stop Ø3,5 - L16,0	5012307024	
drilling stop Ø5,5 - L8,0	5012307025	
drilling stop Ø5,5 - L10,0	5012307026	
drilling stop Ø5,5 - L11,5	5012307027	
drilling stop Ø5,5 - L13,0	5012307028	
drilling stop Ø5,5 - L16,0	5012307029	

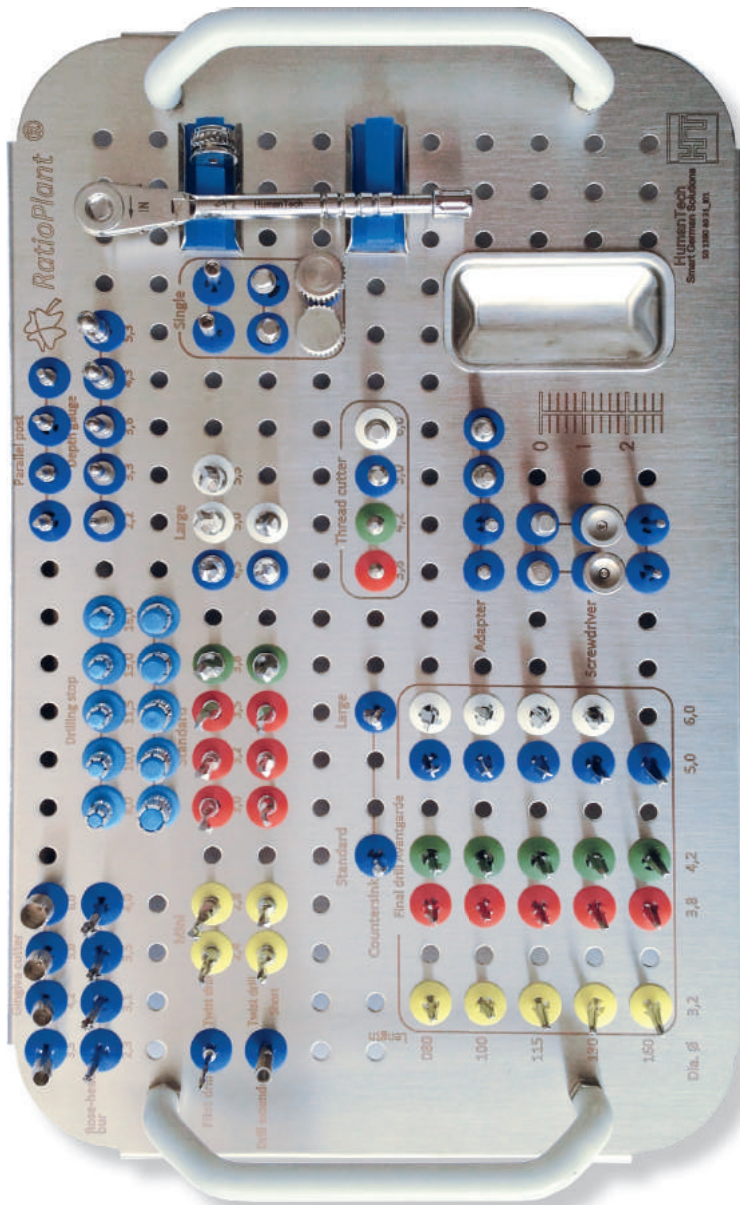
Finaldrills Avantgarde

finaldrill Avantgarde 32 080	5010307020	
finaldrill Avantgarde 32 100	5010307021	
finaldrill Avantgarde 32 115	5010307022	
finaldrill Avantgarde 32 130	5010307023	
finaldrill Avantgarde 32 160	5010307024	
finaldrill Avantgarde 38 080	5010307001	
finaldrill Avantgarde 38 100	5010307002	
finaldrill Avantgarde 38 115	5010307003	
finaldrill Avantgarde 38 130	5010307004	
finaldrill Avantgarde 38 160	5010307005	
finaldrill Avantgarde 42 080	5010307006	
Finaldrill Avantgarde 42 100	5010307007	
Finaldrill Avantgarde 42 115	5010307008	
Finaldrill Avantgarde 42 130	5010307009	
Finaldrill Avantgarde 42 160	5010307010	
Finaldrill Avantgarde 50 080	5010307030	
Finaldrill Avantgarde 50 080	5010307011	
finaldrill Avantgarde 50 100	5010307012	
finaldrill Avantgarde 50 115	5010307013	
finaldrill Avantgarde 50 130	5010307014	
finaldrill Avantgarde 50 160	5010307015	
finaldrill Avantgarde 60 060	5010307031	
finaldrill Avantgarde 60 080	5010307016	
finaldrill Avantgarde 60 100	5010307017	
finaldrill Avantgarde 60 115	5010307018	
finaldrill Avantgarde 60 130	5010307019	

Tools/Instruments

adapter hex ratchet short	5012302003	
adapter hex ratchet long	5012302004	
adapter hex motor short	5012302001	
adapter hex motor long	5012302002	
screwdriver hex motor short / ISO	5012301001	
screwdriver hex motor long / ISO	5012301002	
screwdriver hex ratchet short	5012301003	
screwdriver hex ratchet long	5012301005	
drill extender	5010308001	
screwdriver hex hand short	5012301004	
screwdriver hex hand long	5012301006	
parallel post	5012332240	
depth gauge 2.2	5012307001	
depth gauge 3.3	5012307002	
depth gauge 3.6	5012307003	
depth gauge 4.3	5012307004	
depth gauge 5.3	5012307005	

torque-ratchet	5012303002	
ISO insert for ratchet drill	5012303003	
square insert for ratchet drill	5012303004	
thread cutter 3.8	5001307011	
thread cutter 4.2	5001307012	
thread cutter 5.0	5001307013	
thread cutter 6.0	5001307014	
Gingiva cutter 3.5	5012307010	
Gingiva cutter 4.2	5012307011	
Gingiva cutter 5.0	5012307012	
Gingiva cutter 6.0	5012307013	



Tools Single

insert square hand short

5012302011



insert square hand long

5012302012



insert square motor short

5012302015



insert square motor long

5012302016



insert square ratchet short

5012302013










insert square ratchet long

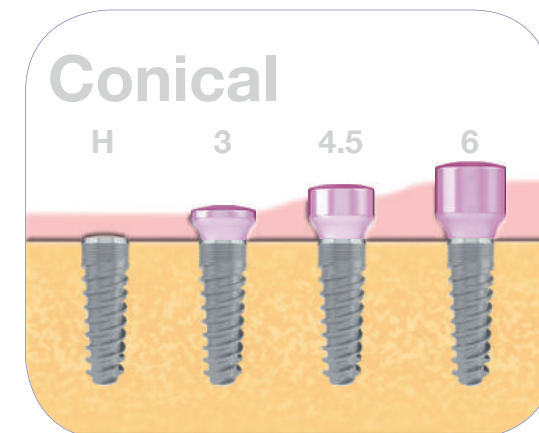
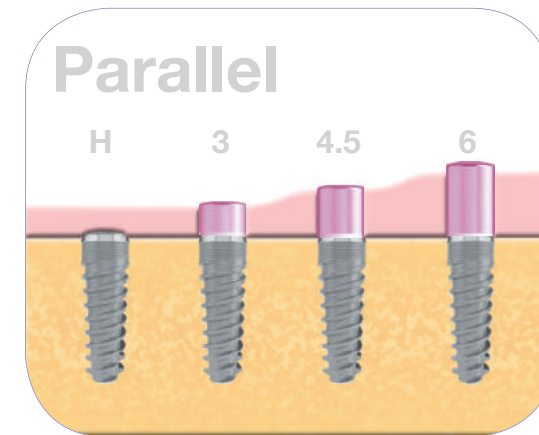
5012302014



Healing Caps

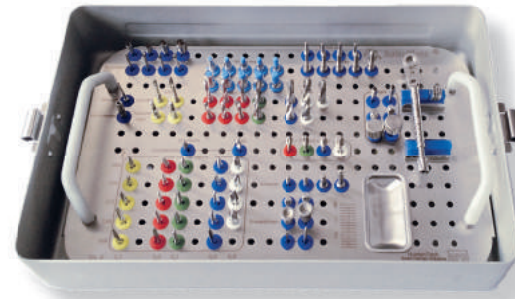
healing cap parallel - Mini Ø 3 mm Height 3 - 4.5 - 6 mm	5011106050 5011106051 5011106052	
healing cap parallel - Standard Ø 4 mm Height 3 - 4.5 - 6 mm	5011106056 5011106057 5011106058	
healing cap parallel - Large Ø 5,5 mm Height 3 - 4.5 - 6 mm	5011106062 5011106063 5011106064	
healing cap conical - Mini Ø 5 mm Height 3 - 4.5 - 6 mm	5011106053 5011106054 5011106055	
healing cap conical - Standard Ø 5 mm Height 3 - 4.5 - 6 mm	5011106059 5011106060 5011106061	
healing cap conical - Large Ø 6,3 mm Height 3 - 4.5 - 6 mm	5011106065 5011106067 5011106068	
healing cap individuell Peek Standard Ø Large Ø	5011206001 5011206002	

After insertion of the implant cover screw Standard or Large is used. After a healing period of 4-6 months, depending on the situation, the soft tissue will be expanded using the healing caps to the desired diameter, in preparation for taking the impression and the prosthetic restoration. Hereby, the healing caps conical or parallel are used chronologically. For individual indication the Peek healingcaps Standard or Large can be customized directly chairside.



Instrument Kits

Container empty	5013904040
Container empty starterkit	5013904082
Complete kit incl. tray and tools Avantgarde, Classic	5013904050
Starterkit incl. tray and tools Classic	5013904075
Starterkit incl. tray and tools Avantgarde	5013904076-2
Starterkit incl. tray and tools Single	5013904084-1
Kit plastik abutments for classification of platform, heigth and angle	5013904085



Reprocessing Instructions

RatioPlant reprocessing instructions according to DIN EN ISO 17664:2004

Document Nr. 5014101120 - Revision 07/2012

ALLGEMEINES

MANUFACTURER

HumanTech Germany GmbH
Gewerbestr. 5
D-71144 Steinenbronn/Germany



PRODUCTS

These reprocessing instructions apply for all dental instruments sold by HumanTech that have been classified as “semi-critical or critical medical devices” pursuant to the joint recommendation of the Robert Koch Institute (RKI) and the Federal Institute for Drugs and Medical Devices (BfArM) in Federal Health Gazette 1 1/2001, following a risk assessment. The operator is responsible for the correct classification of the medical devices and for specifying the type of processing and its implementation. For practical application, sterilisation and storage, HumanTech recommends using the corresponding cases for surgery, prosthetics and osteotomes. The cases provide space for all the relevant instruments and have been validated for these reprocessing instructions.

Medical devices marked as single-use by HumanTech may not be reprocessed!

MATERIALS

- Titanium and stainless steel instruments (silicon o-rings)
- Containers: aluminium, stainless steel and silicon

IMPORTANT INFORMATION

- RatioPlant instruments are delivered in an unsterilised condition and must therefore be subjected to the entire preparation process prior to initial application and after every application.
- Reprocessing of medical devices that can be re-sterilised may only be performed by trained employees.
- Employees who come into contact with potentially contaminated medical instruments must take generally recognised precautions and wear protective equipment in line with the requirements.
- Containers for surgery and prosthetics are not suitable for use as “wash trays” in the thermal disinfectant. Unobstructed rinsing of all individual parts must be ensured.

LIMITATION OF REPROCESSING

Frequent reprocessing under the recommended conditions has a negligible impact on these products. The life of the product is normally determined by wear and damage caused by use and preparation.

LIABILITY

Any further HumanTech liability is excluded in the event that these instructions are disregarded, if reprocessing procedures that have not been validated are applied and in the event of inadequate or missing documentation on the preparation of the dental instruments. These operating instructions may only be used as a guideline for orientation. This document remains subject to changes and errors.

PREPARATION INSTRUCTIONS

AT THE PLACE OF USE

- Surface contaminants on used instruments must be removed immediately after completing the operation. This may be performed using a disposable cloth/paper towel and then with a soft brush under flowing water.
- Do not allow contaminated instruments to dry prior to reprocessing.

PREPARING FOR CLEANING

- Ensure that used and contaminated instruments are individually cleaned and disinfected immediately after use.
- Unused and uncontaminated instruments may remain in the case during the disinfection and cleaning process.
- Instrument trays and wash trays may not be overfilled.

CLEANING

- The use of an enzymatic cleaning agent with an almost neutral pH value is recommended.
- No solvents, abrasive cleaning agents, wire brushes or coarse scouring pads may be used.
- Thorough rinsing under flowing water is necessary in order to remove all residues from the cleaning process.

DISINFECTION

- Disinfection may be performed using a thermal disinfectant or manually.
- Only suitable disinfectants specified on the updated VAH list may be used to disinfect the instruments.
- The manufacturer information regarding dosing, exposure time and temperature must be observed. Only fresh solutions produced on a daily basis may be used.
- The instruments must be thoroughly rinsed with clear water after manual disinfection.

DRYING

- Careful drying after cleaning and disinfection reduces deposits on the surface of the instruments to a non-critical level.
- Drying with compressed air is recommended pursuant to the RKI recommendations.
- A temperature of 93°C may not be exceeded if the drying takes place as part of an automatic cleaning and disinfection cycle.

MAINTENANCE, INSPECTION AND TESTING

- All instruments: perform a visual inspection for cleanliness, damage and wear.
- The entire preparation process must be repeated if the instruments are in an unsatisfactory condition.
- Ratchets and hinged instruments must be inspected for freedom of movement and serviced as necessary.
- Discard blunt or defective instruments.
- Ensure that silicon eyelets and instrument holders are intact and are located in their correct position.
- Check whether the fasteners and grips are secure and in good order.

PACKAGING

- In order to achieve an optimal sterilisation quality, the instruments must be arranged in the case provided so that they protrude from the instrument holders as far as possible.
- The following processes must also be complied with for instruments that are sterilised individually.
- A standard packaging material may be used.
- The sachet must be large enough for the case so that the seal is not stressed.
- A validated packaging process must be used (pursuant to DIN EN 556).

STERILISATION

The reusable instruments from RatioPlant must be sterilised or re-sterilised in autoclaves prior to use using a validated steam sterilisation process. The correct process parameters with regard to the sterilisation temperature and cycle time must be taken from the relevant autoclave manufacturer instructions. The sterilisation must be performed using steam in accordance with the provisions of EN ISO 17665-1. The use of flash sterilisation is not recommended. The minimum recommended sterilisation parameters are as follows:

- Pre-vacuum steam 132°C ≥ 5 minutes
- Pre-vacuum steam 121°C, 20 minutes

Then allow the case with the instruments to dry for at least 40 minutes.

Record the sterilisation date (and sterile batch/LOT) on the packaging. Processes that are not recommended may be performed but these must be completely validated by the user.

STORAGE

- Place the cases on the trolley or grid so that the lid points upwards. This allows for good drying. The cases are designed so that water drains well in this position.
- The case must be provided sufficient time to cool after opening the door of the autoclave. Place the cases on an appropriate rack to allow sufficient air circulation until they have completely cooled. Condensation may form if the case has not completely cooled.
- Observe the guideline recommendations according to DIN 58953 Part 7-9 regarding the packaging type and the storage period for the respective storage location.

ADDITIONAL INFORMATION

The person carrying out the preparation is responsible for ensuring that the preparation performed with the equipment, materials and employees used in the preparation facility achieves the required results. This normally requires the process to be validated and routinely supervised. Every deviation from these instructions carried out by the person carrying out the preparation must be evaluated for its effectiveness and possible adverse consequences. Furthermore, please note that the RKI recommendation published in the Federal Health Gazette 4/2006 and any national provisions in connection with the preparation must be observed.



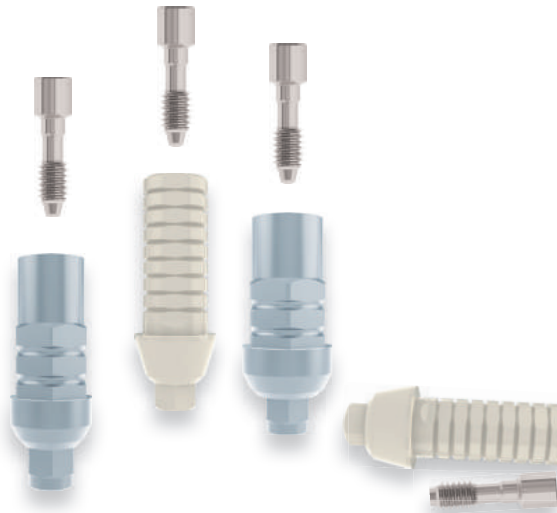
Overview Prosthetic Components

Impression post



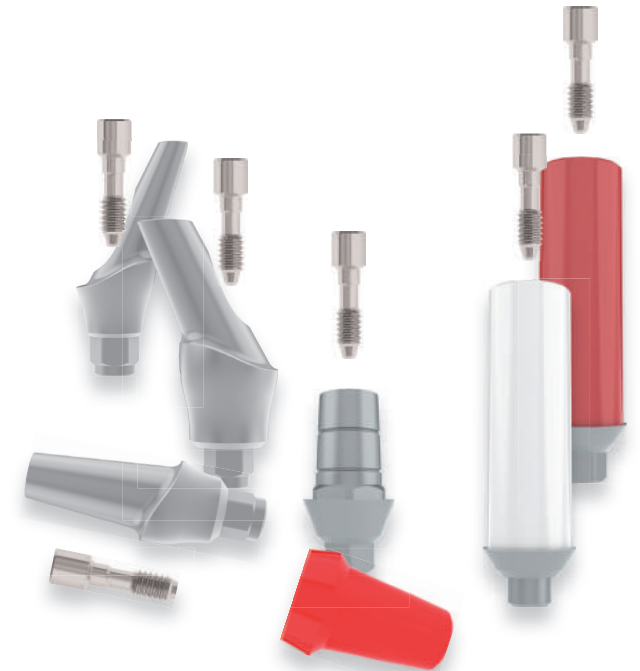
RatioPlant impression posts are available for all platforms, both impression techniques with open or closed tray, as well as for the implementation of a digital impression. The coordinated components ensure precise transfer of the oral situation to the master model, or in the digital work environment.

Provisional abutment



Temporary structures provide solutions for temporary restoration of aesthetics, contouring of tissue and immediate function. Ratio Plant offers a wide variety of temporary structures for both retained and cement restorations.

Cementable abutment



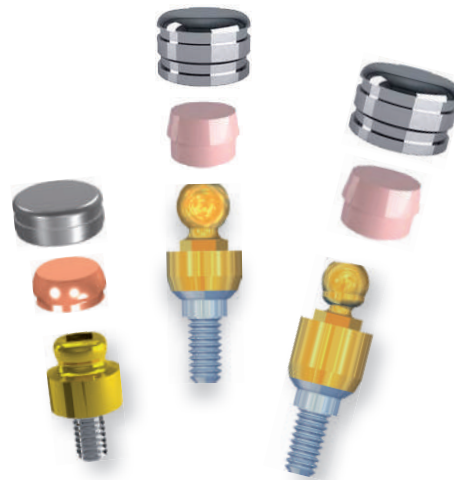
Ratio Plant cemented Abutments are available in a variety of materials, forms, angulation and sizes for all platforms to cover the individual patient's needs.

Esthetic abutment



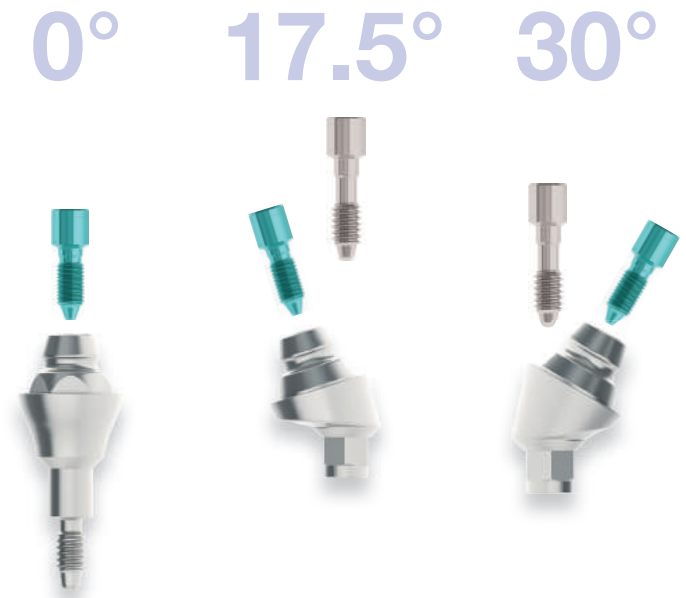
Abutments made of sintered zirconium oxide for the realization of sophisticated and aesthetic crown and bridgework. Ratio Plant adhesive abutments were developed specifically for the production of individual hybrid constructions consisting of an prefabricated Ti-base and individually produced zirconium or press ceramic abutment on top using suitable 2K-adhesive. This is the ideal solution for high-quality anterior restorations.

abutment for hybrid denture



Implant-supported full dentures can be applied already supported with only two implants, which is affordable for many patients. EQUATOR - and ball abutments are ideal for the secure hold of the denture, both in the upper and lower jaw. The handling of these hybrid dentures is to solve problems for elderly and patients with handicap.






Multi-Unit abutment



The Ratio Plant multi-unit abutments serve to solve even difficult initial situations in edentulous patients and offer a number of angulation, shoulder height and prosthetic components for individual and optimal care. The sophisticated design allows an efficient treatment, in appropriate situations, with immediate loading of the structure to and characterized by the excellent system overview and ease of use.

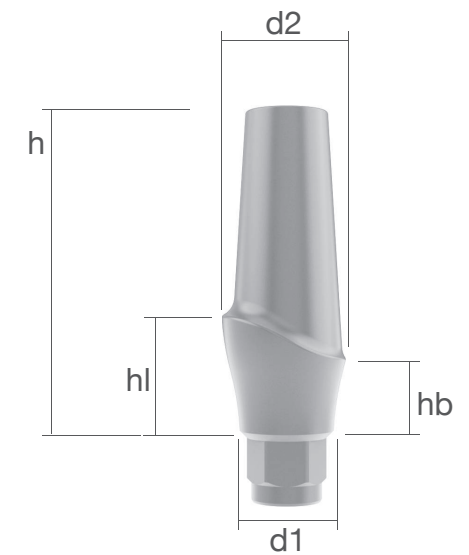
Prosthetic Components Mini

prosthetic screw	5011109001	
lab screw	5011109004	
prosthetic screw ZiO	5011109005	
impression screw long	5011109006	
impression post open tray Mini incl. impression screw long	5011105030	
impression post closed tray Mini incl. prosthetic screw	5011105031	
lab analog Mini	5011110000	

Ti-abutment Mini 0 conical H1 Ti-abutment Mini 0 conical H2 Ti-abutment Mini 0 conical H3 each incl. prosthetic screw	5011110170 5011110270 5011110070	
Ti-abutment Mini 15 angled H1 Ti-abutment Mini 15 angled H2 Ti-abutment Mini 15 angled H3 each incl. prosthetic screw	5011110180 5011110280 5011110080	
Ti-abutment Mini 25 angled H1 Ti-abutment Mini 25 angled H2 Ti-abutment Mini 25 angled H3 each incl. prosthetic screw	5011110190 5011110290 5011110090	
quick-abutment Mini incl. prosthetic screw	5011110009	
quick-plastic cap Mini	5011210061	

Mini

mm	h1	h2	h3
h	9.6	11.0	13.0
hl	2.5	4.0	5.5
hb	1.5	2.5	4.5
d1	3.25		
d2	4.25		



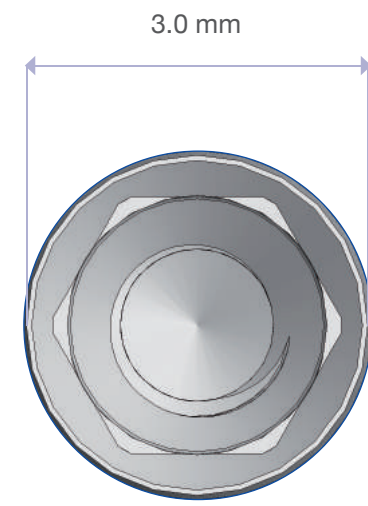
AVANTGARDE Mini



Ø3.2

Platform - Mini

implant diameter of 3.2mm



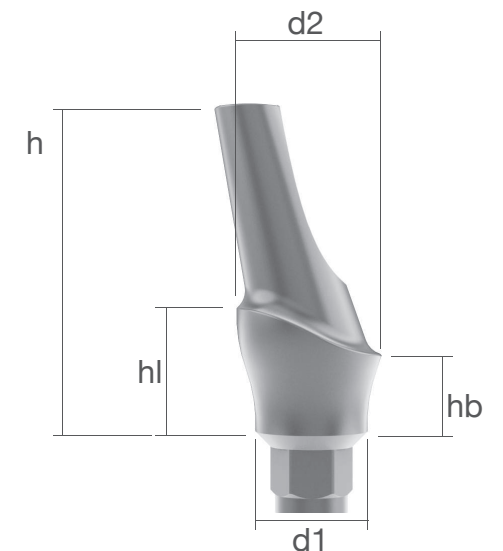
Prosthetic Components Standard


prosthetic screw	5011109001	
lab screw	5011109004	
prosthetic screw ZiO	5011109005	
impression screw long	5011109006	
impression post open tray Standard incl. impression screw long	5011105001	
impression post closed tray Standard incl. prosthetic screw	5011105005	
lab analog Standard	5011110001	

Ti-abutment Standard 0 conical H1 Ti-abutment Standard 0 conical H2 Ti-abutment Standard 0 conical H3 each incl. prosthetic screw	5011110120 5011110220 5011110020	
Ti-abutment Standard 15 angled H1 Ti-abutment Standard 15 angled H2 Ti-abutment Standard 15 angled H3 each incl. prosthetic screw	5011110130 5011110230 5011110030	
Ti-abutment Standard 25 angled H1 Ti-abutment Standard 25 angled H2 Ti-abutment Standard 25 angled H3 each incl. prosthetic screw	5011110140 5011110240 5011110040	
quick-abutment Standard incl. prosthetic screw quick-plastic cap	5011110010 5011210060	
ZiO-abutment Standard 0 conical esthetic ZiO-abutment Standard 15 angled esthetic ZiO-abutment Standard 25 angled esthetic each incl. prosthetic screw ZiO	5011410022 5011410032 5011410042	

Standard

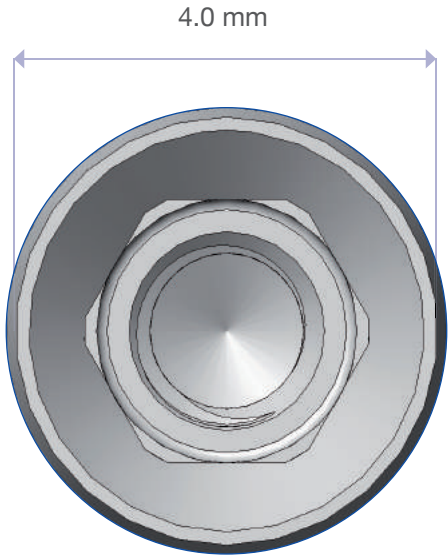
mm	h1	h2	h3
h	9.6	11.0	13.0
hl	2.5	4.0	5.5
hb	1.5	2.5	4.5
d1	3.75		
d2	4.38		



gold-abutment Standard	5011510001	
gold-abutment Standard hex	5011510002	
plastic-abutment Standard	5011210001	
plastic-abutment Standard hex	5011210002	
PEEK-abutment for provisional care Standard	5011610101	
Ti-abutment for provisional care Standard	5011110101	
Ti-adhesive abutment Standard	5011110050	

Platform - Standard

implant diameter of 3.8mm and 4.2mm



Ø3.8 and 4.2

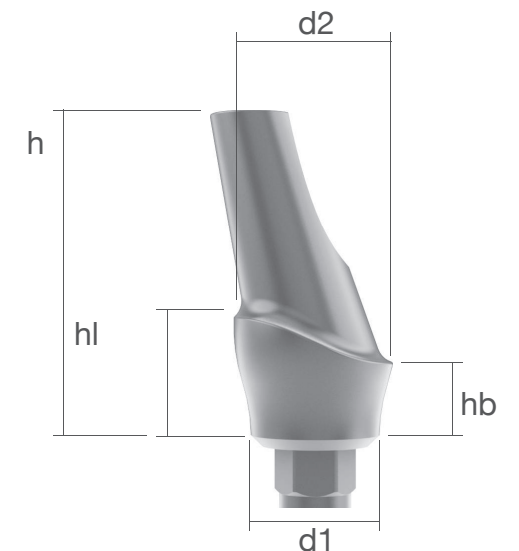
Prosthetic Components Large

prosthetic screw	5011109001	
lab screw	5011109004	
prosthetic screw ZiO	5011109005	
impression screw long	5011109006	
impression post open tray Large incl. impression screw long	5011105002	
impression post closed tray Large incl. prosthetic screw	5011105006	
lab analog Large	5011110002	

Ti-abutment Large 0 conical H1 Ti-abutment Large 0 conical H2 Ti-abutment Large 0 conical H3 each incl. prosthetic screw	5011110121 5011110221 5011110021	
Ti-abutment Large 15 angled H1 Ti-abutment Large 15 angled H2 Ti-abutment Large 15 angled H3 each incl. prosthetic screw	5011110131 5011110231 5011110031	
Ti-abutment Large 25 angled H1 Ti-abutment Large 25 angled H2 Ti-abutment Large 25 angled H3 each incl. prosthetic screw	5011110141 5011110241 5011110041	
quick-abutment Large incl. prosthetic screw quick-plastic cap	5011110011 5011210060	
ZiO-abutment Large 0 conical esthetic ZiO-abutment Large 15 angled esthetic ZiO-abutment Large 25 angled esthetic each incl. prosthetic screw ZiO	5011410023 5011410033 5011410043	

Large

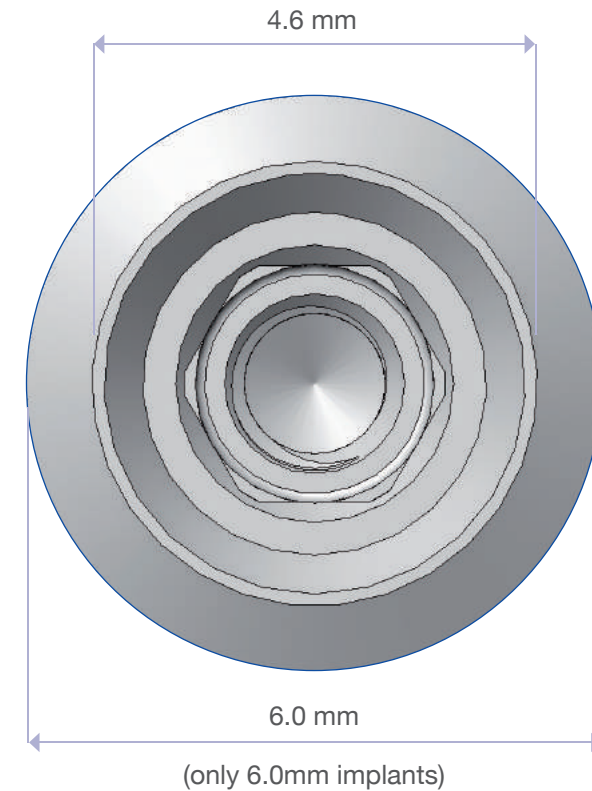
mm	h1	h2	h3
h	9.6	11.0	13.0
hl	2.5	4.0	5.5
hb	1.5	2.5	4.5
d1	4.35		
d2	5.30		



gold-abutment Large	5011510011	
gold-abutment Large hex	5011510012	
plastic-abutment Large	5011210010	
plastic-abutment Large hex	5011210011	
PEEK-abutment for provisional care Large	5011610102	
Ti-abutment for for provisional care Large	5011110102	
Ti-adhesive abutment Large	5011110060	

Platform - Large

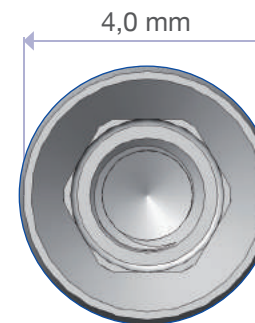
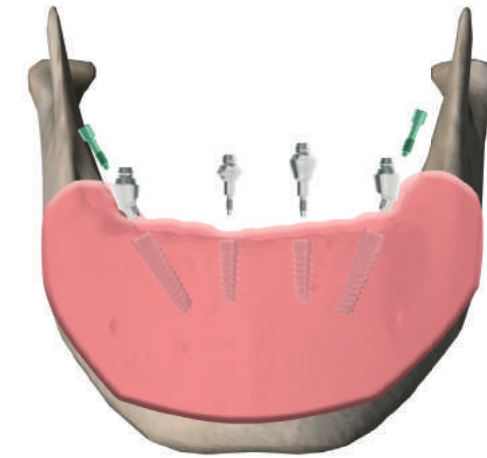
implant diameter of 5.0mm and 6.0mm



Ø5.0 and 6.0

MUA-Multiunit Abutment


MU abutment S 0 H1	5011110420		0°
MU abutment S 0 H2	5011110421		
MU abutment S 17.5 H1 incl. prosthetic screw	5011110423		17,5°
MU abutment S 17.5 H2 incl. prosthetic screw	5011110424		
MU abutment S 30 H1 incl. prosthetic screw	5011110426		30°
MU abutment S 30 H2 incl. prosthetic screw	5011110427		
MU abutment inserter	5012302022		
MU healing cap H1 incl. MU prosthetic screw	5011106100		
MU healing cap H2 incl. MU prosthetic screw	5011106101		
MU impression post open tray	5011110013		
MU impression post closed tray	5011110014		





Ø3.8 and 4.2


Platform - Standard for Implants with 3.8mm and 4.2mm Diameter


Prosthetic Components Single

MU scan connector PEEK incl. MU prosthetic sciew	5011610000	
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MU lab analog	5011110004	
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MU inserter ratchet	5012302020	
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MU prosthetic cap TI incl. MU prosthetic sciew	5011110012	
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MU prosthetic cap plastic incl. MU prosthetic sciew	5011210020	
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transfer cap Single	5011205051	
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lab analog Single	5011110003	
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Quick-Abutment-Kappe Gold mit Verdrehschutz, angußfähig	5011510051	
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Quick-Abutment-Kappe Titan	5011110051	
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Quick-Kunststoffkappe Single mit Verdrehschutz, ausbrennbar	5011210052	
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Quick-Kunststoffkappe Single, ausbrennbar	5011210051	
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Prosthetic Components Hybrid Dentures

Equator-Kit

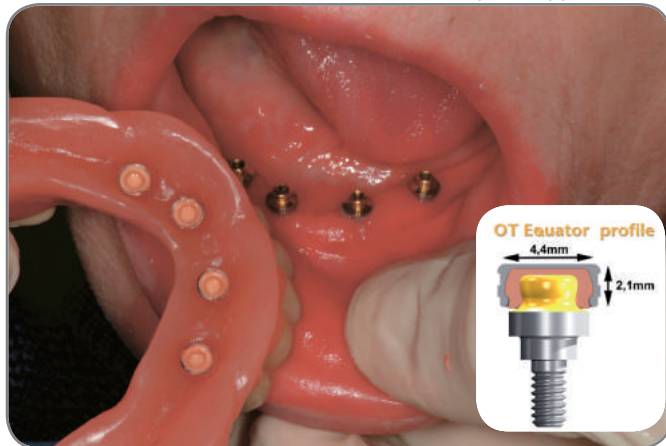


Available for all platforms with gingiva height from 0.5 to 7.0mm

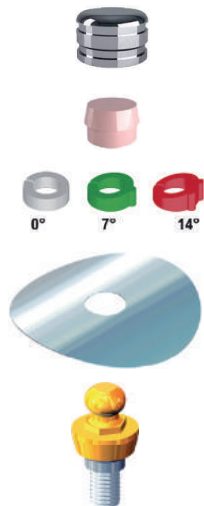
The kit contains:
 1 stainless steel housing
 4 plastic caps with different retention (violet-strong; white-standard; pink-soft; yellow-extra soft)
 1 protective disk
 1 OT Equator profile implant abutment

Please ask about the possibilities.

example of application



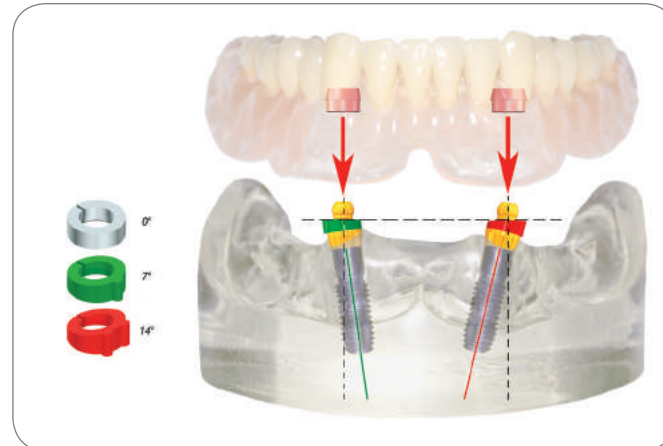
SPHERO BLOC-Kit



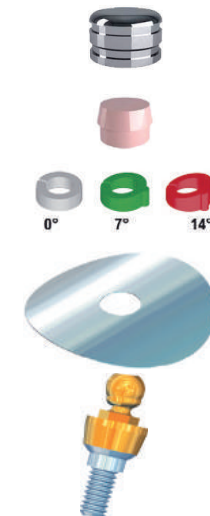
Available for all platforms with gingiva height from 0.5 to 7.0mm

The kit contains:
 1 metal housing
 2 plastic caps pink-soft
 3 directional rings
 1 protective disk
 1 SPHERO BLOCK implant abutment

Please ask about the possibilities.



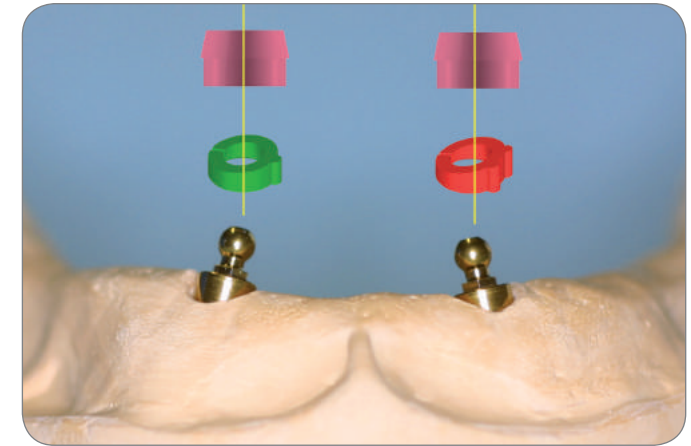
SPHERO FLEX-Kit



Available for all platforms with gingiva height from 0.5 to 7.0mm

The kit contains:
 1 metal housing
 2 plastic caps pink-soft
 3 directional rings
 1 protective disk
 1 SPHERO FLEX implant abutment

Please ask about the possibilities.



Tools and Spareparts

Plastic cap set Equator
(1 metal housing, 1 laboratory cap, 4 retention caps each - 1 extra-soft, 1 soft, 1 standard, 1 strong)



Retention caps Equator (4 pcs. each)
STRONG, NORMAL, SOFT, EXTRA-SOFT

4 laboratory Caps



2 metalhousing



2 impression Cap



2 lab analogue



hand screw-in tool



screw-in tool Equator/ISO ring for torque ratchet



inserting tool for plastic caps



screw-in tool SPERO BLOCK and SPERO FLEX



screwdriver hex ISO ring for torque ratchet and motor
with tool above



SPHERO retention caps (6 pcs. each)
STANDARD, SOFT, EXTRA-SOFT, VERY ELASTIC
RETENTION, EXTRA-SOFT ELASTIC and GUMMY



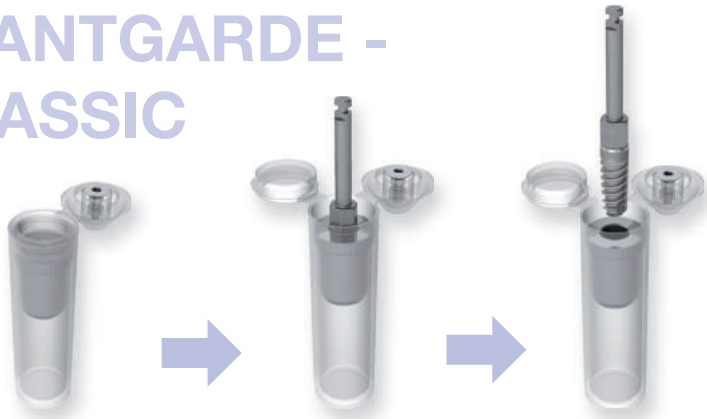
*Equator® is a registered trademark of RHEIN83 SRL, Italy

Packaging

- All RatioPlant®-Implants are available in a new tube packaging, which is packed in a separate blister - user-friendly, safe and double sterile.
- This package provided an easy take out with the adapter directly from the tube during surgery.
- Patients labels with all relevant data enable an easy documentation of the used implants.

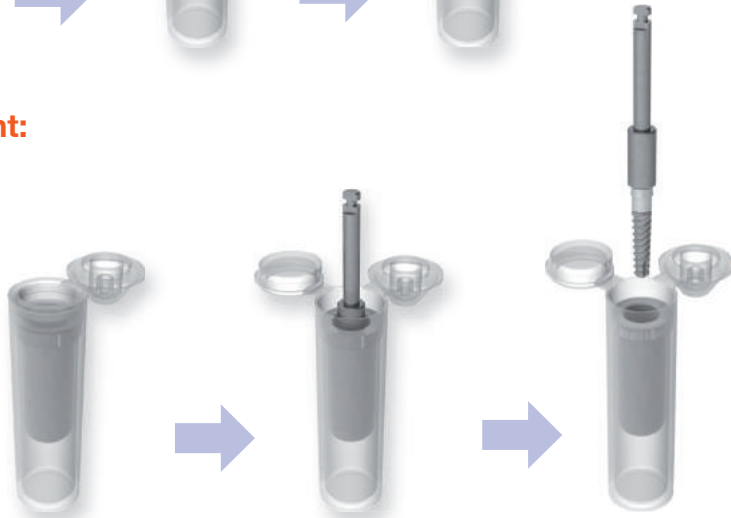
Removal Implant:

AVANTGARDE - CLASSIC

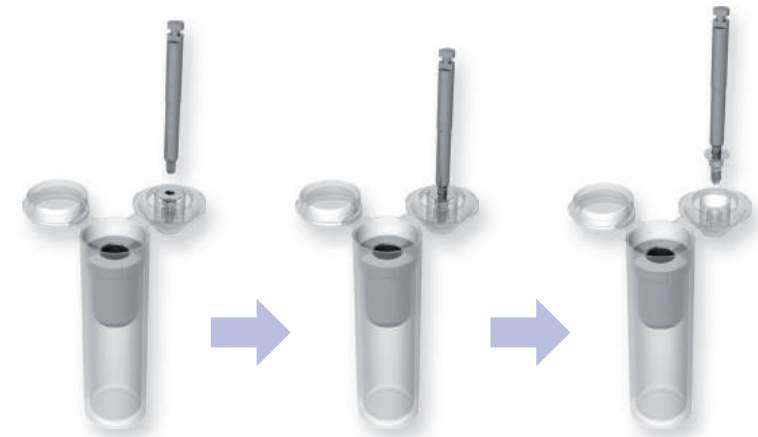


Removal Implant:

SINGLE



Removal Cover Screw:



Safety, Liability and Warranty

Safety

The RatioPlant®-implant system may be used only under the guidance and recommendation of the HumanTech Germany GmbH.

The use of components which are not corresponding original components to the system will impede the functionality and exclude our liability. Guidance on the use of products made verbal and in demonstration events. It corresponds to the current state of knowledge at the time of distributing our products. This does not absolve the user from his obligation to the individual product in each case before the proposed use on its suitability for the intended purpose to verify. The processing and application of the products is up to the responsibility of each user. The liability for damage resulting from the use and application of the product is excluded.

As part of our general business conditions we confirm the product quality of our products with CE certification, according to the current state of science and technology.

Dispensing

The products are delivered only to dentists, doctors, surgeons, dental technicians, dental clinics and dental laboratories.

Replacement

The withdrawal of the products can only be done in the course of an exchange. Condition for redemption of goods:

1. Two years before the end of sterility
2. Undamaged, optically modified and original packed.acktt.

Signs and Symbols

according DIN EN 980:2008-08



Manufacturer



Manufacturing date



Date of expiry



Reference number



Lot number



Sterilization using irradiation



Do not reuse



Do not use with damaged packing



Store in a dry place



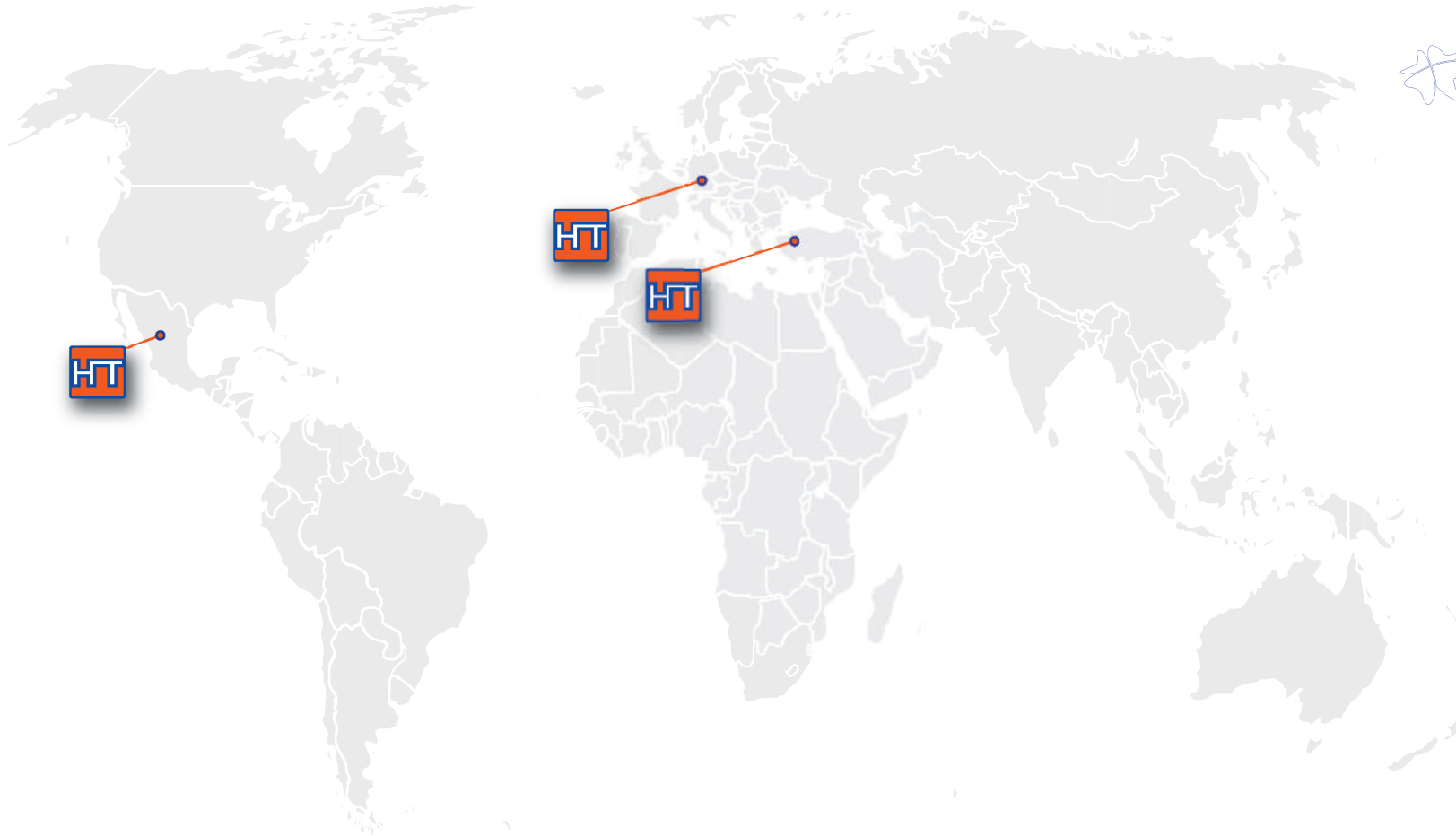
Do not resterilize



Attention, see instruction for use



Attention



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