HumanTech Dental

# RATIOPLANT®

## SMART

Made in Germany

The other Dental Implant

# Content



# 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.

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.

The RatioPlant® implants are manufactured from biocompatible titanium, titanium alloy and by their blasted and etched surfaces on the state of the art.

# 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 ensures an easy take out with the adapter directly from the tube during surgery.
- Patients labels with all relevant data enable an easy documentation of inserted implants.


# 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.

# RatioPlant® SMART

## Description

RatioPlant® SMART implants are enossal implants available in various lengths and forms. They are inserted surgically in the bone of the upper and/or lower jaw to anchor functional and aesthetic oral rehabilitation in partially and fully anodont patients.

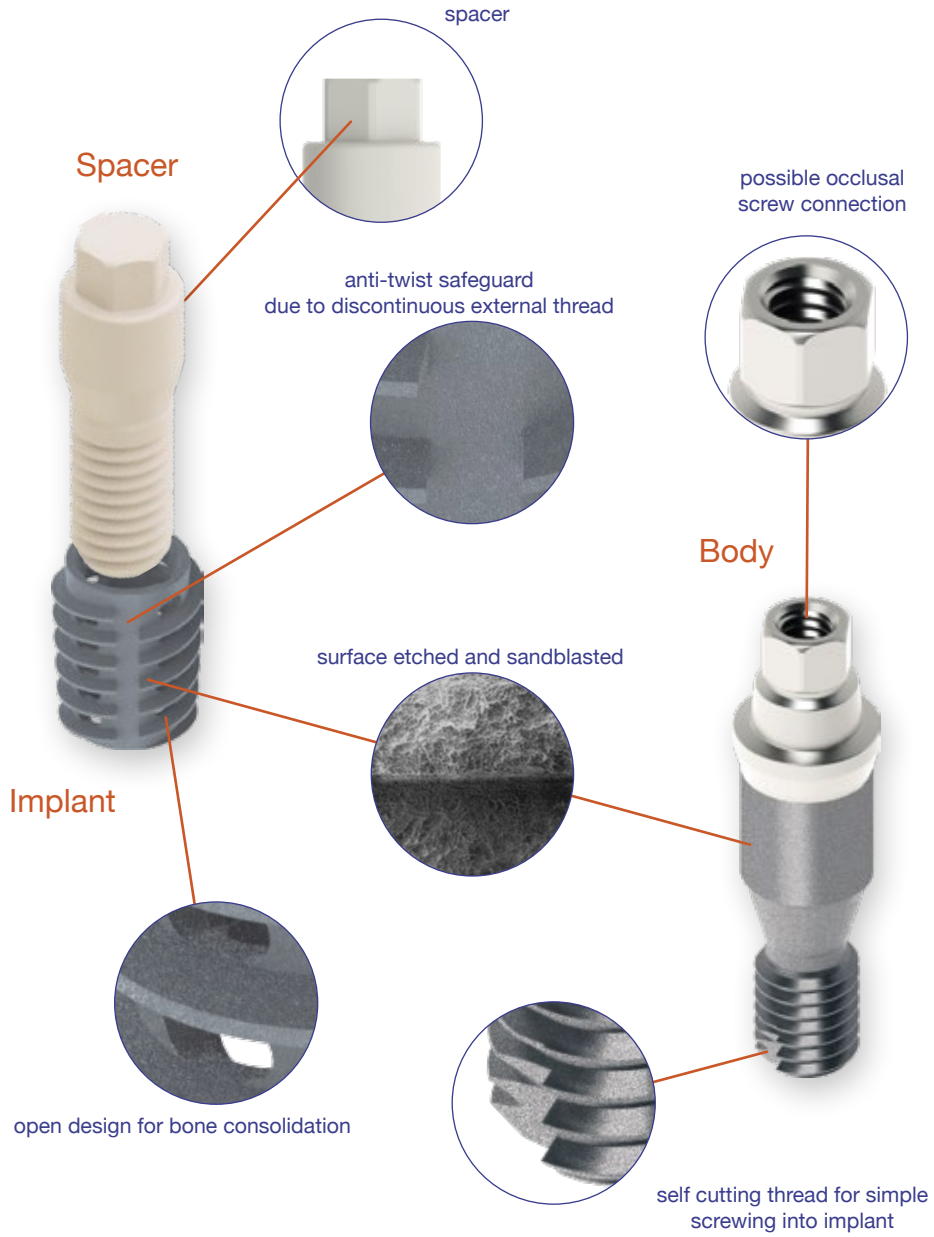
Prosthetic treatment may involve individual crowns, bridges and partial or full dentures, which are connected to RatioPlant® SMART implants through appropriate elements.

The RatioPlant® SMART implant system includes surgical, prosthetic and laboratory components and instruments.

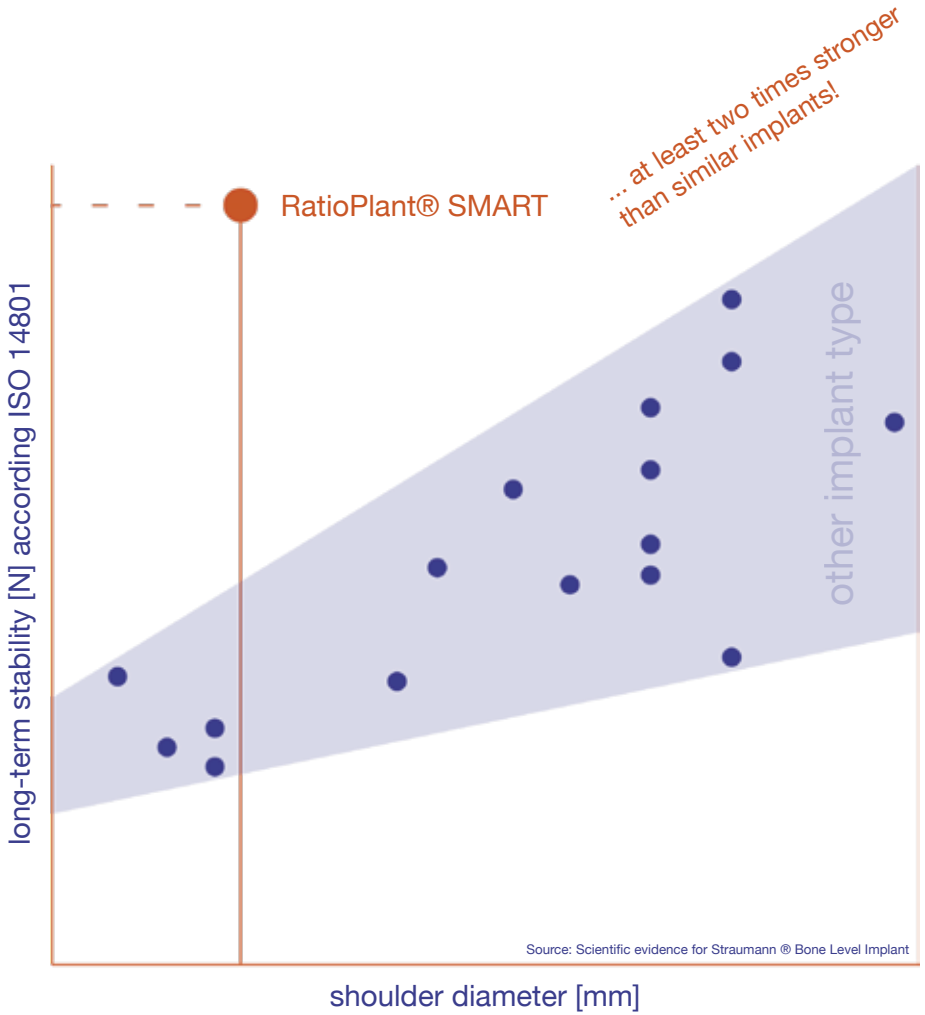
## Advantages

- Immediate implantation without immediate loading after tooth extraction
- Maximum stability more than twice as high as with other implantation systems
- No bacteriological contamination causing peri-implantitis by gap or pumping effect
- Prevention of bone resorption through stimulation of bone cells in the cancellous area due to optimised distribution of masticatory force
- Double 3D anchoring for better bone growth and anti-twist safeguard
- Patented spacer technology
- Simplification of typical treatment course

# Characteristics




# Stability

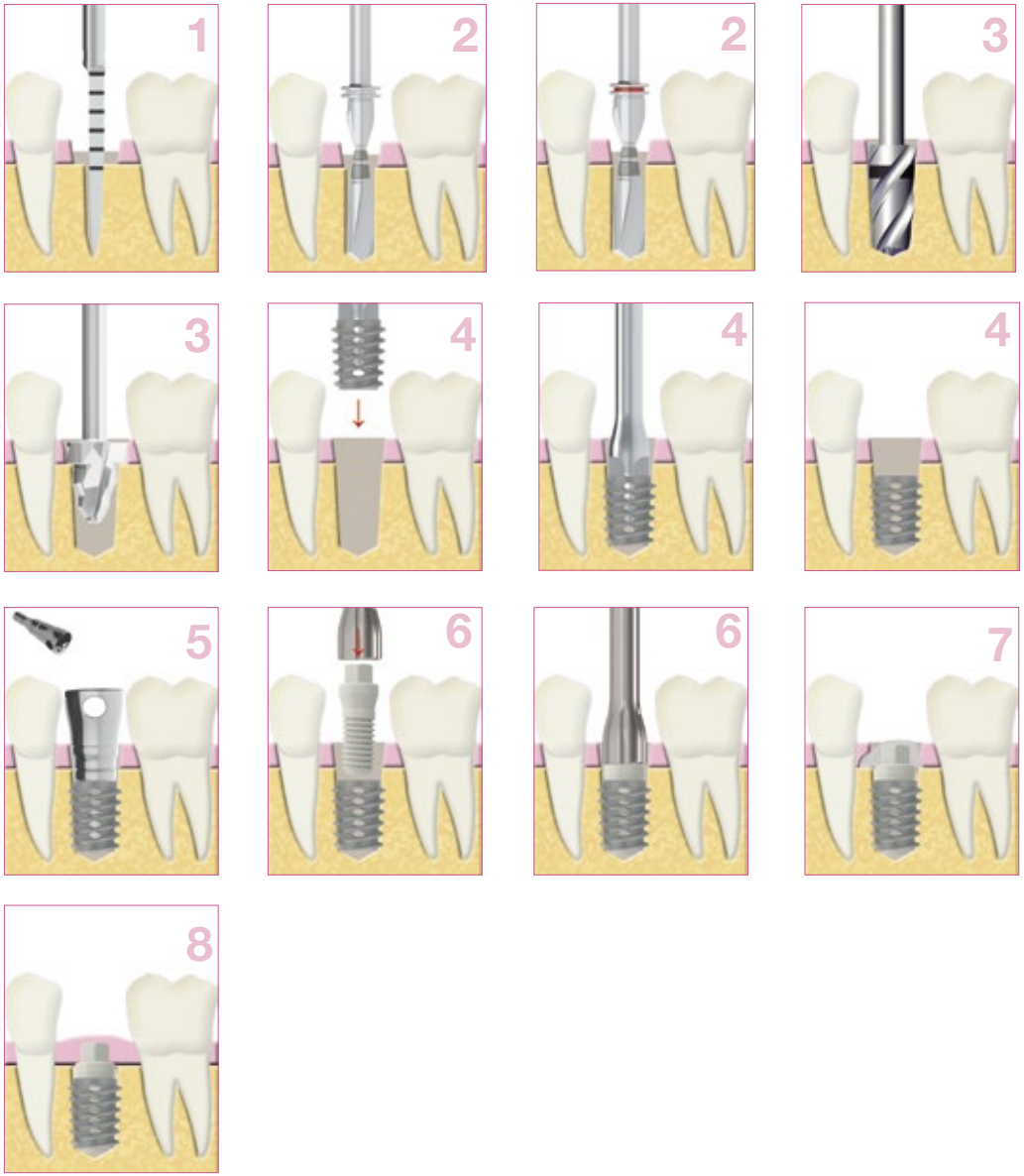



## Surgical phase

1. Extraction of non-viable tooth and preparation of alveolus -see drilling protocol
2. Widening of alveolus with SMART final drill
3. Prepared implant bed
4. Removal of implant from sterile pack directly with implant inserter. Insertion of implant with implant inserter (A)
5. Before applying the spacer, determine the size of the spacer and the body with the measuring gauges (depth gauge SMART 085/095/105). In this case, it must be ensured that approx. 1 mm clearance between the measuring post and the antagonist is provided occlusally (B). The measuring gauges are inserted into the implant as far as the stop. If necessary, lower the implant position.
6. Insertion of spacer with spacer inserter and finger-tight screwing in (C)
7. Removal of spacer inserter
8. Optionally the bone can now be built up with suitable material to improve bone stability.
9. Before the operation wound is closed, the spacer and the bone replacement material can be covered with a suitable membrane.

**Note:**
When removing the sterile parts of the packaging tube, make sure that after unclip the two covers, the opening facing up to prevent falling out of parts!

## Surgical steps - example for late implantation




### Surgical phase

1. After exposure carry out pilot drilling with the triangle drill - see drilling protocol
2. Widening of alveolus with twist drill 2.8 and 3.5.
3. Final preparation of alveolus with SMART final drill. Optional with the countersink 5.0 at hard cortical bone.
4. Prepared implant bed. Removal of implant from sterile pack directly with implant inserter. Insertion of implant with implant inserter.
5. Before the spacer is inserted, determine the size of the spacer and the body with the measuring gauges (depth gauge SMART 085/095/105). In this case, it must be ensured that approx. 1 mm clearance between the measuring post and the antagonist is provided occlusally (B). The measuring gauges are inserted into the implant as far as the stop. If necessary, lower the implant.
6. Insertion of spacer with spacer inserter and finger-tight screwing in and removal of spacer inserter.
7. Optionally the bone can now be built up with suitable material to improve bone stability. Before closure the spacer and the bone substitute material must be covered with a suitable membrane.
8. Closing of operation wound and attend the healing time.

**Note**

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 must 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 11.

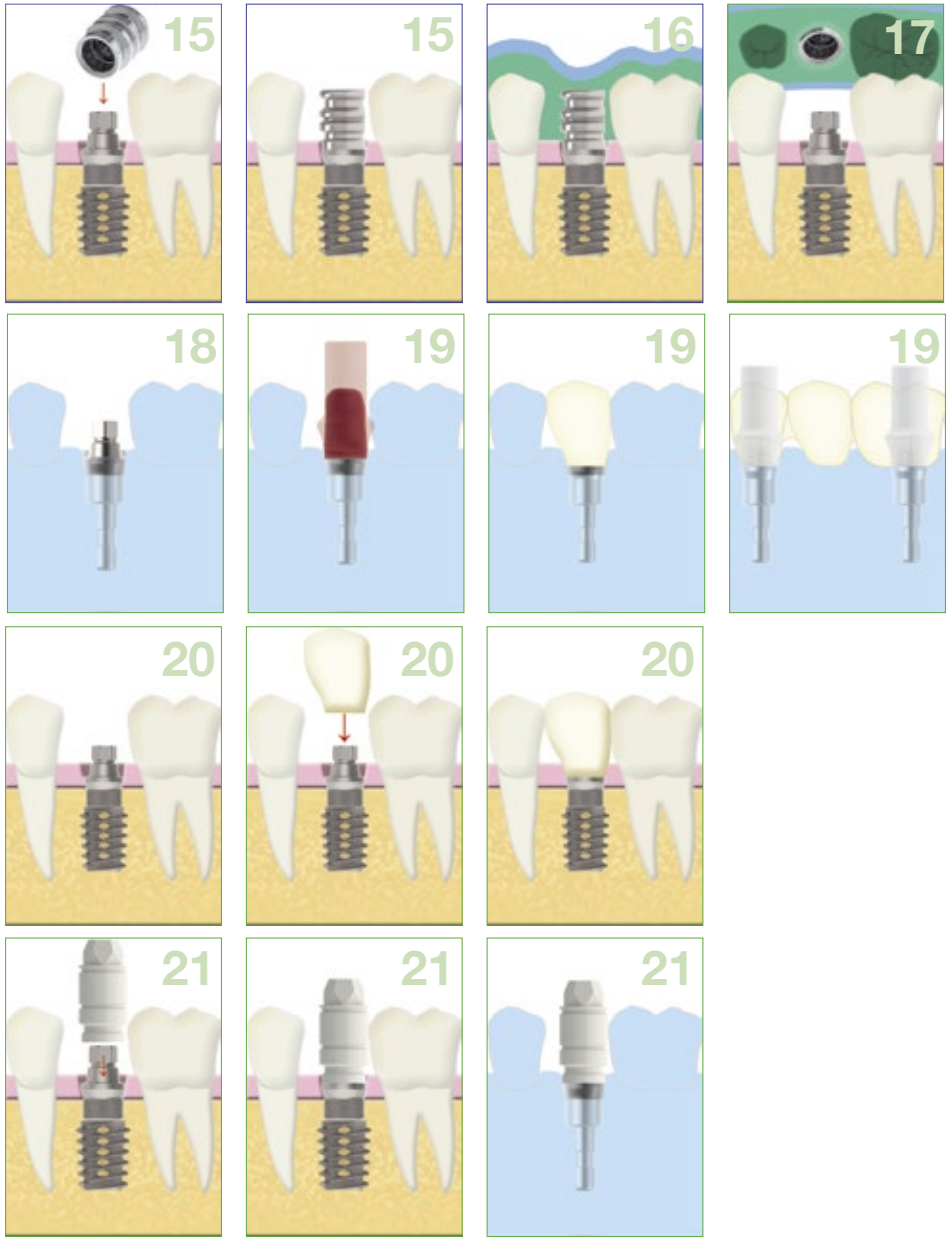

## Healing phase and exposure

10. Healing of implant according to patient's situation (3-6 months)
11. Exposure by scalpel. Then unscrew the spacer with the body inserter.
12. Carefully insert the rasper instrument into the implant and activate the existing bone with light rotating movements.
13. Depending on the depth of the implant position, 3 different bodies are available with 8.5mm, 9.5mm and 10.5mm lengths of the crestal part. Before inserting the spacer, measure the size of the body using the gauge (depth gauge SMART 085/095/105). First remove the healing cap from the tube package and then remove the corresponding body with the body inserter (C) from the sterile package and screw it into the implant. Screw it into the implant and tighten with the torque ratchet and a torque of at least 40Ncm.
14. Then place the healing cap for forming and healing on the body, fix it finger-tight with the cover screw and allow to heal for a further 6-8 weeks for bone integration.

# Bodies

To compensate different bone depth to implant following Bodies are available:


| | | | |
|---|---|---|---|
| Length of Body in mm | 8.5 | 9.5 | 10.5 |
| Depth of implantat bed in mm | 8.5 | 9.5 | 10.5 |
| Total length of complete implant in mm | 13.5 | 14.5 | 15.5 |
| Bone heigth over implant in mm | 1.9 | 2.9 | 3.9 |
| Gingiva area in mm | 1.5 | 1.5 | 1.5 |



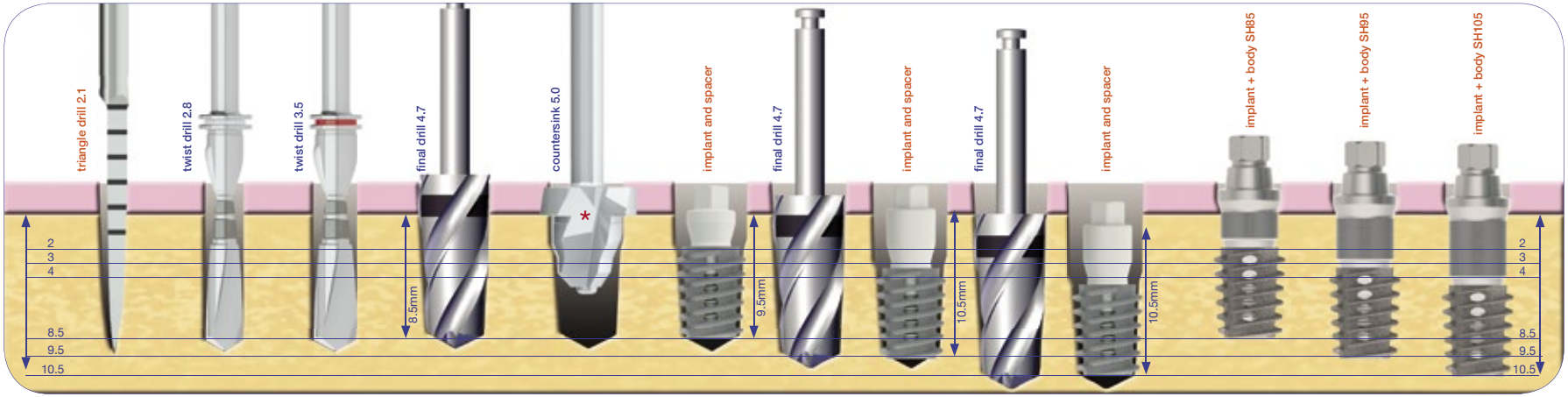

## Impression and prosthetic treatment

15. After integration of the body remove the cover screw, take off the healing cap and put on an impression cap. This will be in the correct position when it is perceptibly engaged on the body.
16. Then fill the impression tray with suitable impression material, coat the area around the impression cap likewise and apply the impression tray.
17. After the impression material has hardened, take off the impression. After impression taking, put the healing cap back on and fix with the cover screw.
18. Reposition the lab analogue in the impression cap and fabricate the master model. It is recommended that the mucosal section be made from soft silicon material. There is a wide range of semifinished parts available for fabricating prosthetic solutions. For further solutions please ask our technical adviser or your local dealer.
19. To prepare an individual crown for example, a plastic abutment SMART S hex(red) can be used as a base, which can be cemented on or occlusally screwed after casting and finishing. For bridges or other connected structures, like bar constructions, the plastic abutment SMART S(White) is used.
20. Before definitive fitting of the prosthetic parts, clean and drain the supragingival part of the body. Then either cement the prosthetic part as appropriate or fix it occlusally with a suitable prosthetic screw. Occlusal screwing is normally employed in the molar and premolar area and must be provided for in the metal framework.
21. Alternatively a digital impression can also be taken with the scan body or the cast can also be used to fabricate a CAD-CAM denture indirectly on the master model.

**Bohrprotokoll für RatioPlant®Implantate**
***Drilling protocol for RatioPlant®Implants***
Document No. 5014040112
Revision 01/2017

SMART

HumanTech Medical Devices




| Tool | Dreikantboher *triangle drill 2.1* | Spiralbohrer *twist drill 2.8* | Spiralbohrer *twist drill 3.5* | Finalbohrer *final drill* | *Versenker countersink* ***optional** |
|---|---|---|---|---|---|
| Durchmesser *diameter* ∅ | 2.1 mm | 2.8mm | 3.5mm | 4.7mm | 5.0mm |
| Drehzahl/*RpM* | 900-1200 | 400-700 | 400-700 | 400-600 | 200-500 |

* Anzuwenden bei Spätimplantation an D1 und optional bei D2 Knochen / Use at late imlantation in D1 and optinal in D2 type bone!

Während des Bohrvorgangs auf ausreichende Kühlung achten! / *During the drilling process to ensure adequate cooling!*
Tiefenmarkierungen am Finalbohrer entsprechend der Implantatbetttiefe bei 8.5, 9.5 und 10.5mm / *Depth markings on final drill according to the implant bed lengths of 8.5, 9.5 and 10.5mm*
Um einer Schädigung des Knochengewebes vorzubeugen, ist die abgebildete Bohrfolge einzuhalten! / To prevent damage of the bone tissue, the imaged drilling sequence is observed!



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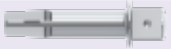
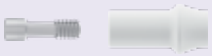
# Tools

| | | |
|---|---|---|
| ratchet torque | 5012303002 |  |
| screwdriver hex ratchet short | 5012301003 |  |
| screwdriver hex ratchet long | 5012301005 |  |
| screwdriver hex motor short / ISO | 5012301001 |  |
| screwdriver hex motor long / ISO | 5012301002 |  |
| triangle drill 21 | 5010315341 |  |
| twist drill 28 | 5010328374 |  |
| twist drill 35 | 5010335377 |  |
| countersink 5.0 | 5010335377 |  |
| final drill SMART | 5003907020 |  |
| implant inserter ratchet short | 5003907009 |  |
| implant inserter ratchet long | 5003907010 |  |
| implant inserter motor short | 5003907011 |  |
| implant inserter motor long | 5003907012 |  |
| body inserter ratchet short | 5003907013 |  |
| body inserter ratchet long | 5003907014 |  |
| body inserter motor short | 5003907015 |  |
| body inserter motor long | 5003907016 |  |
| depth gauge SMART 085 | 5003907024 |  |
| depth gauge SMART 095 | 5003907025 |  |
| depth gauge SMART 105 | 5003907026 |  |
| rasper short | 5003907019 |  |
| rasper long | 5003907023 |  |

# Implants and prosthetic parts

| | | |
|---|---|---|
| Implant SMART 42-065 | 5003142065 |  |
| body SMART Ti 0 SH85 inkl. healing cap inkl. cover screw | 5003114085 |  |
| body SMART Ti 0 SH95 inkl. healing cap | 5003114095 |  |
| body SMART Ti 0 SH105 inkl. healing cap | 5003114105 |  |
| transfer cap SMART S | 5003174201 |  |
| lab analog SMART S | 5003184201 |  |
| plastic abutment SMART S inkl. prosthetic screw | 5003193401 |  |
| plastic abutment SMART S hex inkl. prosthetic screw | 5003193411 |  |
| bar connector SMART Ti S inkl. prosthetic screw | 5003193301 |  |
| scan connector SMART peek S inkl. prosthetic screw | 5003203301 |  |
| prosthetic screw SMART | 5003190001 |  |

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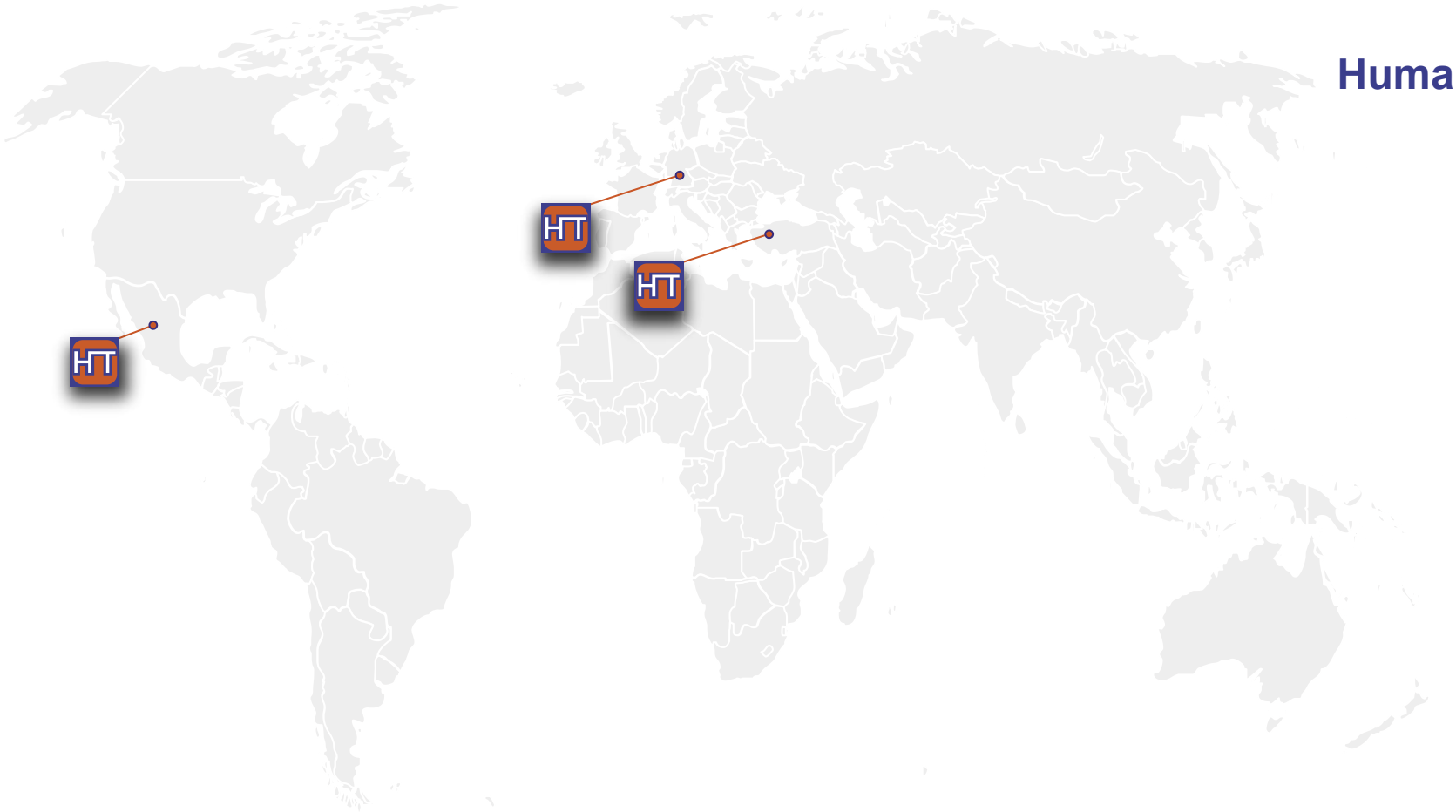

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Mexico

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