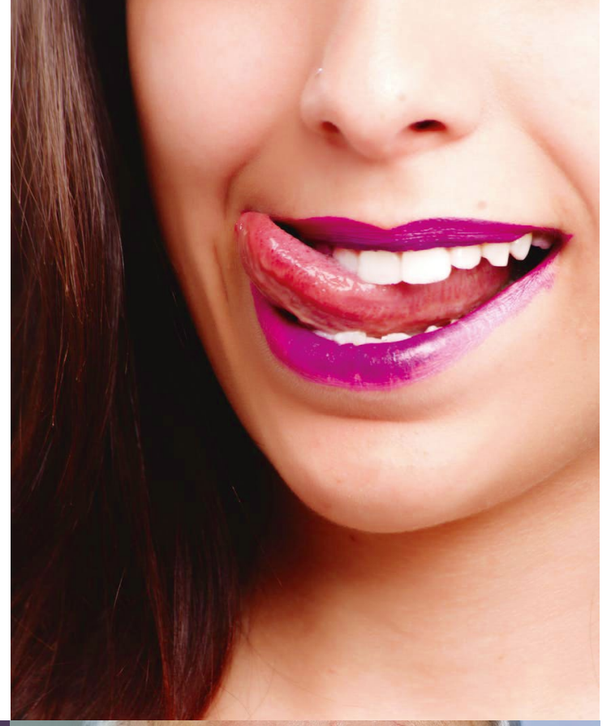
Dental Implants

ALTIMED

Dental structures by Altimed
for reconstructive surgery

Implant-based dental reconstruction

Dental implants are intended for complete replacement of teeth and serve the basis for allceramic and metal-ceramic dental reconstructions.



Anybody can accidentally lose teeth as a result of trauma or development of caries or periodontitis. While being a major problem earlier, nowadays you can restore your lost teeth by applying dental implants.

Implants are designed as small titanium screws - high-tech arrangements similar to natural tooth roots that integrate into the jaw and serve a solid foundation for artificial teeth - both single and bridge designs.

Implants feature a good alternative to bridge-shaped crowns and removable dentures, while surpassing significantly in durability, reliability and uniformity of load distribution on the jaw.

Even at complete loss of teeth, implants can establish a bridge-like structure and restore the ability to eat and show your bright smile.

Implant-based teeth are sensed naturally and imperceptibly in the mouth - like your own teeth given by nature.

For any age
Implants are suitable for people of any age over 18, when bone growth is complete.

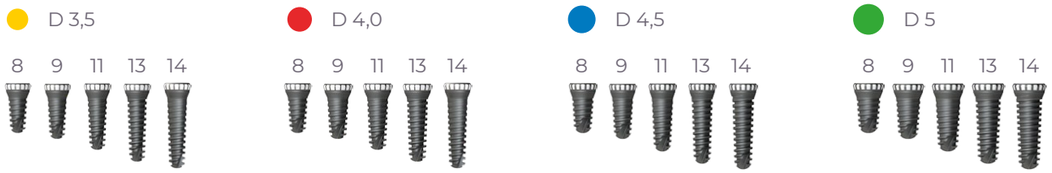
They provide for full-fledged eating and talking experience, and bright smiles. Their appearance is absolutely similar to natural teeth – and often more attractive.

Life time
With proper care, implants can survive your lifetime. Compared to natural teeth, artificial teeth are more resistant to external exposures and not susceptible to caries.

Permanent construction
Implant prostheses are securely fixed, so they do not need to be removed at night. Artificial teeth only require proper brushing and regular visits to the dentist for checkup and professional brushing.

Materials
Implants are made of pure surgical titanium, and then extra coated with titanium dioxide — a special ceramic layer of enhanced biocompatibility. Crowns are made of medical ceramics with a colour similar to natural tooth enamel. These materials are nonmagnetic, so you will never face problems with metal detectors, e.g., at airports.

DUOFIX
Dental implant



Cylindrical screw-type implants with a special area designed for integration with gingival tissues and titanium dioxide coating

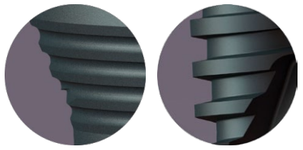
Soft tissue ingrowth area
A soft porous polymer insert provides for the implant integration with the surrounding gingival tissues and serves an infrastructure for the formation of new tissues.

When the gum grows in, the implant bed closes off any access to food particles, plaque, microorganisms, prevents inflammation, infections, loss of bone tissue in the implant bed and benefits to oral hygiene. In a longer perspective, the effect of integrating the gums with the implant increases the life of the artificial tooth.

Reliable positioning
The conical shape and rounding in the apical part contribute to the implant stability and reduce the load to the fulcrum.

Long service
The implant was designed using scientific developments in the field of biomechanics and biocompatibility, with high-quality and durable materials applied and approved for use in medical devices.

Two types of thread
Two types of threads to fit respectively two types of bone tissue – cortical and spongy – contribute to a rigid fixation of the implant in the bone. Micro-carving in the gingival part of the bone bed provides for proper fixation in a dense and hard cortical bone. A wider pitch and a larger thread size in the lower part of the implant allows or mechanical fixation in the spongy bone.



Material and coating
The implant is made of Class 4 titanium and coated with a titanium dioxide layer that features superior biocompatibility and prevents the migration of heavy metal ions in the oral cavity tissue.

Variety of components
A wide range of surgical and orthopedic components (abutments, surgical screws, transfer screws, adapters) makes it possible to find the optimal solution in most cases.

Components

List of surgical and orthopedic components
for implantations and dental structures

Adapter

Auxiliary component for implant placement
in the prepared bone hole.

Adapter D3.5	9012350000-07
Adapter D4.5	9012450000-07

Surgical screw

The surgical screw closes the inside of the implant after the implantation, preventing the ingestion of food particles, plaque, microorganisms.

Surgical screw M1.6	9012350000-061	9012350000-062	9012350000-063
Surgical screw M2.0	9012450000-061	9012450000-062	9012450000-063

Abutments

Metal or ceramic foundations
of ceramic reconstructions.

Abutment D3.5	9012350000-14	9012350000-16	9012350000-17
Abutment D4.5	9012450000-14	9012450000-16	9012450000-17

Fixing screw

Fixing screw M1.6	9012350000-13
Fixing screw M2.0	9012450000-13

There are two ways to get impression copings:
open tray and closed tray techniques.

Open tray

Transfer for open tray impression M1.6	9012350000-10
Transfer for open tray impression M2.0	9012450000-10
Transfer screw (open tray) M1.6	9012350000-12
Transfer screw (open tray) M2.0	9012450000-12

Closed tray

Transfer for closed tray impression M1.6	9012350000-18
Transfer for closed tray impression M2.0	9012450000-18
Fixing screw M1.6	9012350000-13
Fixing screw M2.0	9012450000-13
Transfer cap for closed tray	9012350000-19

Analog implant

Used in dental labs as a replica of implant.

Analog implant D3.5	9012350002-11
Analog implant D4.5	9012450002-11

Surgical protocol

All surgical instruments are designed for external cooling to be applied and drilling at speeds ranging **400-2000 rpm**.

Measurement of mucosal thickness

Probing of the prosthetic bed mucous membrane shall be made the sharp end of the **depth gauge** available in the kit.

The depth gauge marks specify the mucosal thickness.

Bone bed preparation

At the implantation site, **a mucosal incision shall be made**, and the mucoperiosteal flap shall be elevated for further suturing of tissues with the implant placed.

Start drill

First, the start drill is used to perforate the cortical bone, and then follows the pilot drill to pass the bone to the planned depth.

In order to avoid overheating of the bone, drilling should be performed by forward/reverse movements with continuous cooling by use of sterile solution.

Pilot drill

Use the pilot drill with a limiter only, choosing the limiter of the required length from those available in the kit.

Core drills

A set of drills with limiters provides for a bone bed of specific depth to be created. When working with core drills, **focus only on the limiters** (not notches on the drills).

Expand the bone bed gradually, consistently using smaller to larger drills. This allows you to reduce the formation of heat and prevents the bone overheating.

Final hole preparation

For the final preparation of the bone hole, use the **reamers** of the appropriate diameter. They allow you to expand the inlet of the hole to match the shape of the implant.

D 3,5 D 4,0 D 4,5 D 5

Colour marking
The surgical kit for implant placement uses colour markings to make it easier to follow the correct sequence of instruments. You need to start from the lower left corner of the set and move from left to right, and then up.

Length marking
The drills feature laser-applied length markings and a line for subcrestal implant placement. The drill design allows you to collect bone chips for further use at bone plates.

Do not touch the implant with your hands
to avoid cross-contamination!
Use sterile instruments to handle the implant. The implant assembly kit contains an adapter secured with a fixing screw.

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Surgical protocol

The depth of the implant bed is controlled using a **depth gauge**. The depth gauge features special marks to verify that the depth of the bone hole matches the length of the implant selected at the pre-operation planning phase.

Implant removal

Read the label, check the specified implant size as selected. Then, open the package and remove the sterile blister pack, remove the lid from the blister. The implant assembly kit contains an adapter secured with a fixing screw.

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Implant placement

Place the implant in the bone bed with **adapter screwdriver** using a ratchet wrench or screwing machine.

The implant is placed into the bone at the planned depth when the tip is rotated 25-30 rpm clockwise, with the torque being monitored by using a dynamometer key to range 15-50 N/cm.

Torque no more 50 N·cm

Attention! The screwing torque shall not exceed 50 N/cm. Any loads exceeding 100 N/cm may damage the adapter!

If the soft tissue height is less than 2 mm, the implant's porous top may immerse into the bone tissue.

Following the implantation, remove the screwdriver from the adapter, unscrew the fixing screw with a long or short screwdriver and remove the adapter from the implant.

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Test abutments

Using test abutments, check the implant parallelism. If necessary, adjust the implant position using the implant driver and torque wrench.

When placing several implants, use the **parralel pins** to check the parallelism of the holes being drilled.

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Surgical screw placement

Select a surgical screw with such a head height (1 mm; 2.0 mm; 3.0 mm) so that it levels the mucosa.

Open the surgical screw package in the similar way and screw it in with a screwdriver **at 5 N/cm torque.**

This screw protects the inside of the implant from foreign particles penetration during the post-operation healing period.

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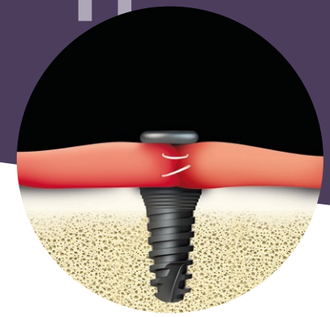


Soft tissue suturing

Following the implantation, soft tissue is sutured to the gingival part of the implant unless the mucous membrane is in close contact with PTFE.

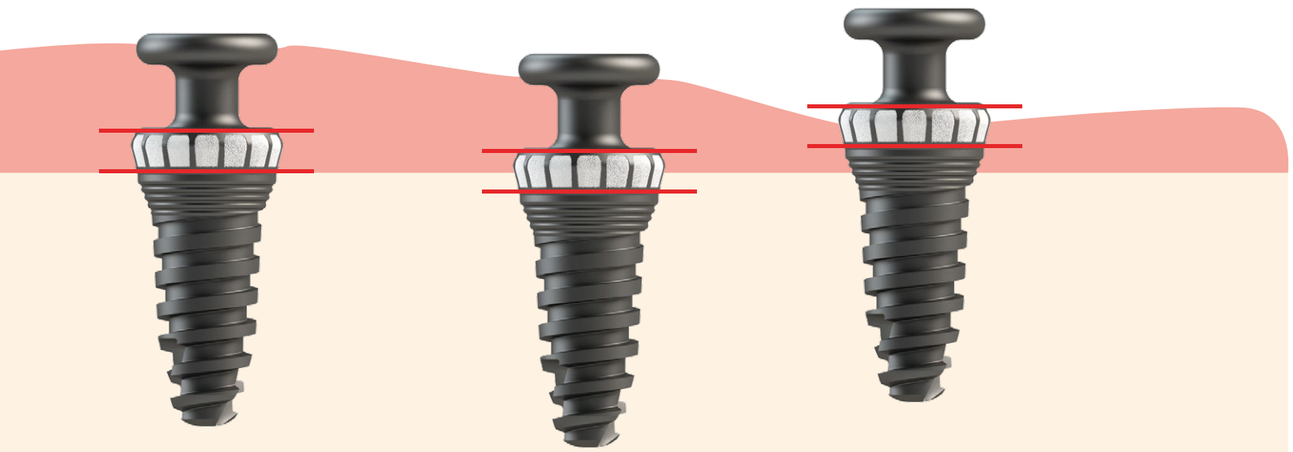
Then, during the healing process, soft gingival tissues are integrated in PTFE porous structure at the implant upper section to prevent foreign particles from penetrating the bed.

Implantation process

The implant location relative to the level of the bone ridge and gingival tissue is a critical point.

The goal is to achieve the integration of gingival tissue into the implant's polymer part. The implant should be positioned in such a way that the gingival tissue covers the implantation area.

The polymer part may be placed below the bone ridge level.



Good position

The ingrowth area is completely under the soft tissues, the implant's threaded part is screwed into the bone.

The implant is stable, the position benefits to proper integration between the gums and implant.

Good position

The ingrowth area is partly in the bone crest.

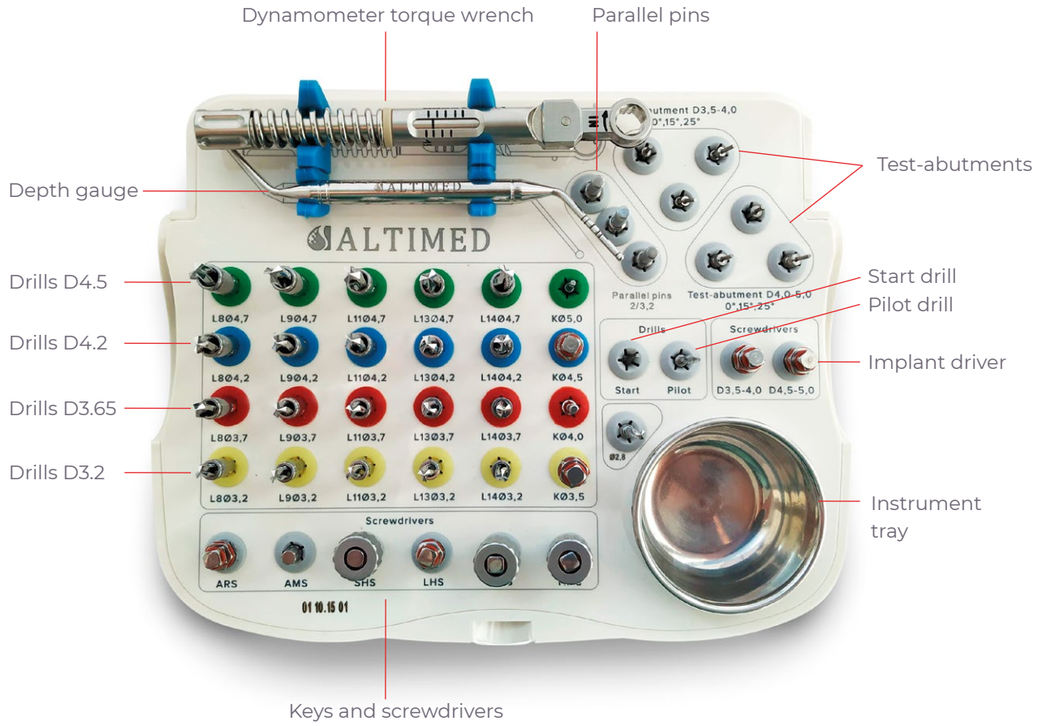
The implant is stable, the position benefits to the ingrowth of tissues into the polymer part.

Inadequate position

The ingrowth area protrudes from the soft tissues and is susceptible to infections, which becomes risky for the implant to go loose and reduce its service life.

Instruments

The instrument kit is supplied in a convenient container, suitable for steam sterilisation.



Accurate pre-operation planning of implantation and prosthetics serves the key to successful and quick rehabilitation.

Planning is carried out on the basis of radiological data (x-rays, computer tomography), as well as on thorough study of the access area to the operation site.

Prior to start of work, the surgical kit and instruments shall be **sterilised** according to the instructions. The assistant shall know well the location and functions of all instruments.

Instruments

Depth gauge
Depth gauge for mucosal probing and bone depth measurements

9012350000-46

Dynamometer torque wrench
Adjustable torque limit wrench (20-80 N·cm)

901401-02

Adjustable torque limit wrench L27

9012350000-50

Machine screwdriver for adapter L27

9012350000-48

Ratchet screwdriver for adapter

9012350000-38

Ratchet screwdriver for adapter

?

Machine screwdriver for adapter

9012350000-29

Machine screwdriver

9012350000-39

Implant driver D3.5

9012350000-35

Implant driver D4.5

9012450000-35

Implant driver D3.5 L27

9012350000-47

Implant driver D4.5 L27

9012450000-47

Short screwdriver L18

9012350000-49

Medium screwdriver L22

9012350000-41

Long screwdriver L27

9012350000-42

Parallel pin

9012350000-25

Start drill

901401-03

Pilot drill D2.0

901401-04

Drill D2.5

?

8 mm | 9 mm | 11 mm | 13 mm | 14 mm

Drill D4.5

901401-08

Test-abutments D3.5

0° | 15° | 25°

Drill D4.2

901401-07

Test-abutments D4.5

0° | 15° | 25°

Drill D3.65

901401-06

Reamers

D3.5 | D4.0 | D4.5 | D5.0

Drill D3.2

901401-05

Reamers with stoppers

D3.5 | D4.0 | D4.5 | D5.0

8 mm | 9 mm | 11 mm | 13 mm | 14 mm

Technologies

Computer planning of operations

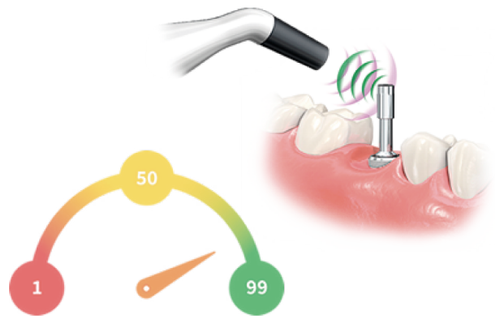
3D digital scan technology allows youto simulate the location of implants and orthopedic components by using a computer model of the patient's oral cavity.

At the simulation phase, the chewing surfaces of teeth and inter-dental colours are subject to analysis, the points of increased load are eliminated, and the bite is optimised for ideal fit.

A new tooth model can be transmitted from any place worldwide for highprecision industrial implant manufacturing.

Contrary to conventional lab environment, 3D computer picture simulates the entire jaw operation and evaluates the impact of teeth on each other.

Implant stability assessment



One of the most important factors for successful implantation is the implant stability.

Using Osstell tools, one can control the osseointegration of our implants.

Measurements are started immediately following the implantation, and prior to installation of crowns. This allows us to evaluate the progress of bone tissue ingrowth with the implant body, as well as soft tissue or bone integration with PTFE structure.

Using Osstell ISQ, one can determine the optimal type of implant for each patient, and monitor its stability over the entire life cycle.

Osstell ISQ is a portable tool designed for non-invasive measurements of dental implant stability by using RFA technique (Resonance Frequency Analysis).

In the process of measurement, SmartPeg pins are used, which are fixed manually by introducer into the implant or abutment.

Catalogue numbers

Dental implant DUOFIX

Dental implant D3.5 L8	9012350802
Dental implant D3.5 L9	9012350902
Dental implant D3.5 L11	9012351102
Dental implant D3.5 L13	9012351302
Dental implant D3.5 L14	9012351402
Dental implant D4.0 L8	9012400802
Dental implant D4.0 L9	9012400902
Dental implant D4.0 L11	9012401102
Dental implant D4.0 L13	9012401302
Dental implant D4.0 L14	9012401402
Dental implant D4.5 L8	9012450802
Dental implant D4.5 L9	9012450902
Dental implant D4.5 L11	9012451102
Dental implant D4.5 L13	9012451302
Dental implant D4.5 L14	9012451402
Dental implant D5.0 L8	9012500802
Dental implant D5.0 L9	9012500902
Dental implant D5.0 L11	9012501102
Dental implant D5.0 L13	9012501302
Dental implant D5.0 L14	9012501402

Transfers

Transfer for open tray impression M1.6	9012350000-10
Transfer for open tray impression M2.0	9012450000-10
Transfer screw (open tray) M1.6	9012350000-12
Transfer screw (open tray) M2.0	9012450000-12
Transfer for closed tray impression M1.6	9012350000-18
Transfer for closed tray impression M2.0	9012450000-18
Transfer cap for closed tray impression	9012350000-19

Adapter D3.5	9012350000-07
Adapter D4.5	9012450000-07
Analog implant D3.5	9012350002-11
Analog implant D4.5	9012450002-11
Fixing screw M1.6	9012350000-13
Fixing screw M2.0	9012450000-13

Surgical screw

Surgical screw M1.6 h0.7	9012350000-061
Surgical screw M1.6 h2.0	9012350000-062
Surgical screw M1.6 h3.0	9012350000-063
Surgical screw M2.0 h0.7	9012450000-061
Surgical screw M2.0 h2.0	9012450000-062
Surgical screw M2.0 h3.0	9012450000-063

Abutments

Abutment D3.5 0°	9012350000-14
Abutment D3.5 15°	9012350000-16
Abutment D3.5 25°	9012350000-17
Abutment D4.5 0°	9012450000-14
Abutment D4.5 15°	9012450000-16
Abutment D4.5 25°	9012450000-17

Instruments

Manual wrench	9012350000-23
Parallel pin	9012350000-25
Machine screwdriver for adapter	9012350000-29
Test-abutment D3.5 0°	9012350000-30
Test-abutmentD3.5 15°	9012350000-31
Test-abutment D3.5 25°	9012350000-32
Test-abutment D4.5 0°	9012450000-30
Test-abutmentD4.5 15°	9012450000-31
Test-abutment D4.5 25°	9012450000-32
Implant driver D3.5	9012350000-35
Implant driver D4.5	9012450000-35
Ratchet screwdriver for adapter	9012350000-38
Machine screwdriver	9012350000-39
Medium screwdriver L22	9012350000-41
Long screwdriver L27	9012350000-42
Drill stopper D3.2 L8	9012350008-45
Drill stopper D3.2 L9	9012350009-45
Drill stopper D3.2 L11	9012350011-45
Drill stopper D3.2 L13	9012350013-45
Drill stopper D3.2 L14	9012350014-45
Drill stopper D3.65 L8	9012400008-45
Drill stopper D3.65 L9	9012400009-45
Drill stopper D3.65 L11	9012400011-45
Drill stopper D3.65 L13	9012400013-45
Drill stopper D3.65 L14	9012400014-45
Drill stopper D4.2 L8	9012450008-45
Drill stopper D4.2 L9	9012450009-45
Drill stopper D4.2 L11	9012450011-45
Drill stopper D4.2 L13	9012450013-45
Drill stopper D4.2 L14	9012450014-45
Drill stopper D4.5 L8	9012500008-45
Drill stopper D4.5 L9	9012500009-45
Drill stopper D4.5 L11	9012500011-45
Drill stopper D4.5 L13	9012500013-45
Drill stopper D4.5 L14	9012500014-45
Depth gauge	9012350000-46
Implant driver D3.5 L27	9012350000-47
Implant driver D4.5 L27	9012450000-47
Machine screwdriver for adapter L27	9012350000-48
Short screwdriver L18	9012350000-49
Ratchet screwdriver for adapter L27	9012350000-50
Start drill	901401-03
Pilot drill D2.0	901401-04
Drill D3.2	901401-05
Drill D3.65	901401-06
Drill D4.2	901401-07
Drill D4.5	901401-08
Dynamometer torque wrench	901401-02
Sterilisation container	901401-01
Instrument tray	901401-09

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