SURGICAL MANUAL

IN DENTAL IMPLANTOLOGY
Denti®
SINCE 1983

SURGICAL PROCEDURE OF **TWO-PHASE** IMPLANTATION

DR+
ROOT FORM

Denti® SYSTEM

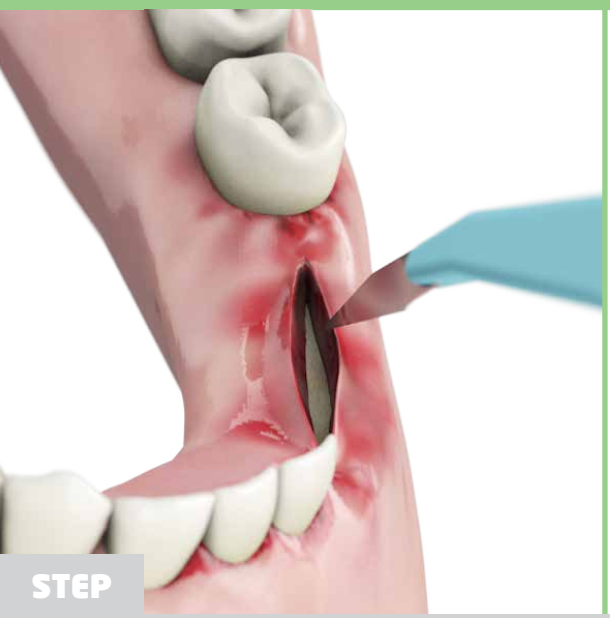
IMPLANTATION OF DR IMPLANTS WITH TWO-PHASE SURGICAL PROCEDURE

We apply two-phase surgical procedure if -we want to provide the optimal osseointegration of the implants

- *the patient wants to wear an interim denture during the period of bone stabilization*
- *we have to perform a periimplantary bone supplementation parallel with the implantation.*

STEP

1.a EXPLORATION



According to the planned location of the implant we usually explore the surface of the mental spine from the incision lead along the spinal line.

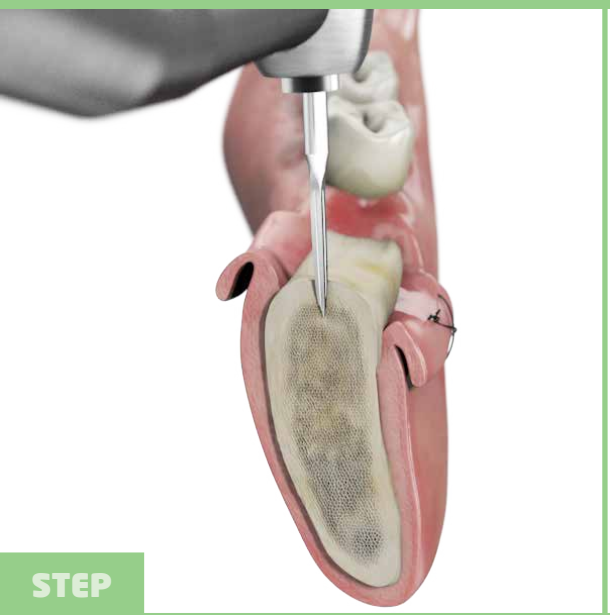
STEP

1.b EXPLORATION

We underpreparate the mucoperiosteum to the sides so that the wound edges can be held apart without any tension. The bone surface becomes visible and then we review it.

STEP

2. MARKING



In case of a thin mental spine we mark the future location of the implant(s) with a spotting drill.

REFERENCE NO.		Ø(MM)	CUTTING DEPTH (MM)	MAX. U/MIN
8000-067	initrial drill	1,50	12,0	1500-2000

STEP

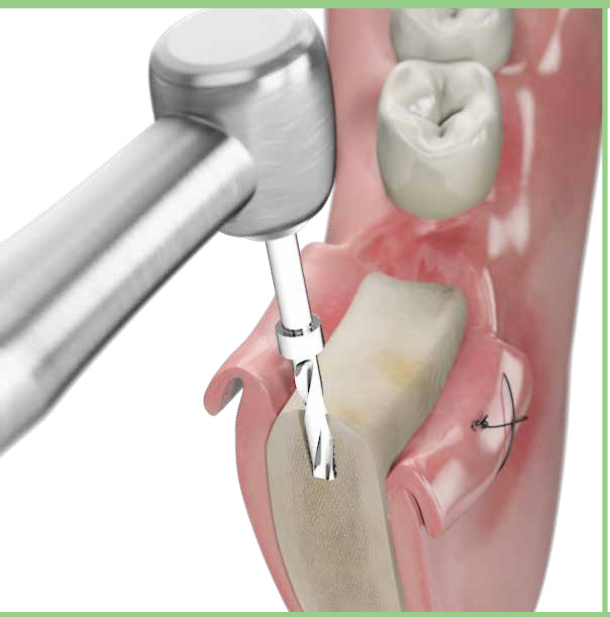
3. SPHERICAL FRASER

After that /in accordance with the previous marking/ we form an approximately 2 mm deep plate-shaped hole on the bone surface with a spherical fraser. This is called the preparation of the bone nest. The recommended speed of the fraser is 1500-2000 U/minute. Accordingly with the planned location of the implant we smooth the possible uneven areas on the mental spine.

REFERENCE NO.		Ø(MM)	MAX. U/MIN
8000-066	spherical fraser	2,70	1500-2000

STEP

4.a PRELIMINARY DRILLING



In case of implantation of DR implants with a two-phase surgical procedure we have to pay attention to the fact that the size noted on the implant package refers to the total length of the passivized body of the implant. During drilling the leading canal special attention should be paid on parallelism of the boreholes.

STEP

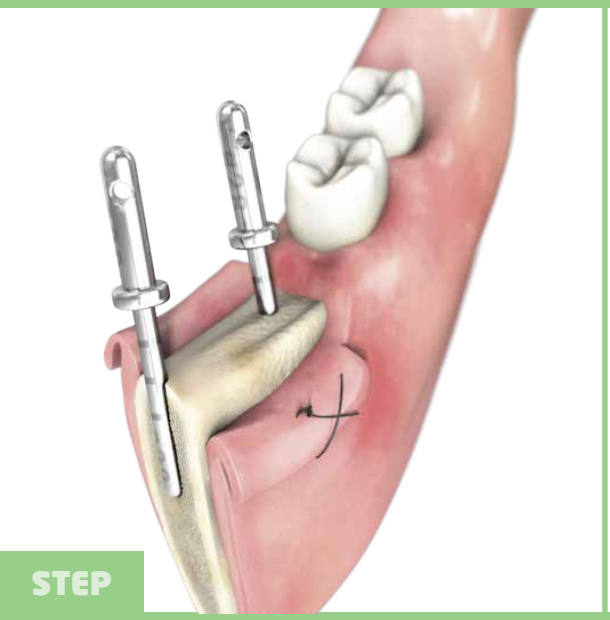
4.b PRELIMINARY DRILLING

Drill with the pilot drill with stop into the direction and depth defined before treatment.

REFERENCE NO.		Ø(MM)	CUTTING DEPTH (MM)	MAX. U/MIN
8010-095	Pilot drill with stop	2,0	9,5	800-1200
8010-115	Pilot drill with stop	2,0	11,5	800-1200
8010-135	Pilot drill with stop	2,0	13,5	800-1200

STEP

5. CHECKING THE PARALELLISM

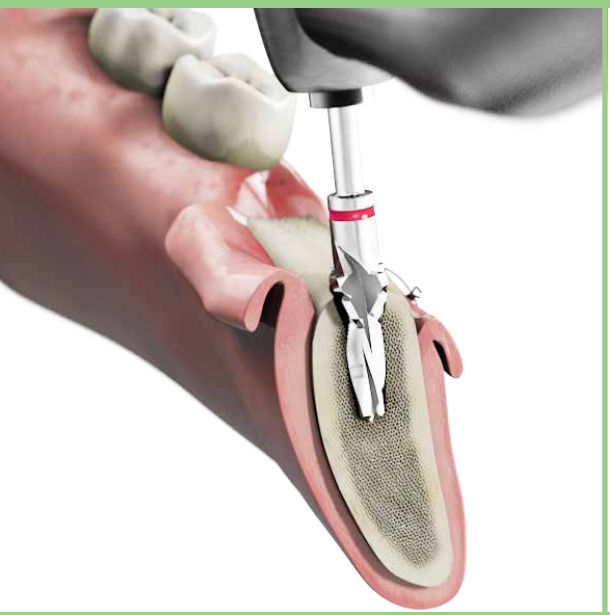


If we push the parallelism-checking probe (8000-058) into the borehole we get good visualization of the direction of the previous bore(s). This way it will help us to form the next borehole, preferably parallel. After that we rinse the borehole with physiological saline solution.

REFERENCE NO.		Ø(MM)
8000-058	Parallel pin	1,8

STEP

6. FORMATION OF THE IMPLANT BED



We are able to perform the expansion of the preliminary borehole to core-size and sinking of the neck in one step by using a „two-in-one" drill. We have to take care of the fact that only with a drill size that fits the implant can we form a nest that completely fits.
The size of the parallel edges of the drills is identical with the body size of the implants. So if we push the two-in-one drill into the bone just until we reach the broadened neck, we can form an expansion bore that completely fits the size of the implant body.

STEP

6. FORMATION OF THE IMPLANT BED

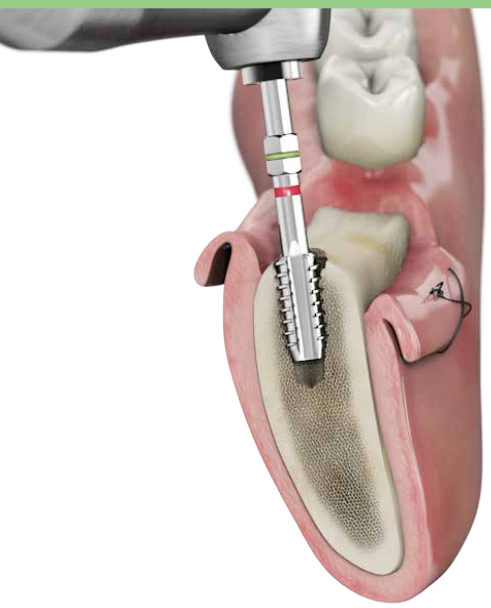
REFERENCE NO.		Ø(MM)	CUTTING DEPTH (MM)	MAX. U/MIN
R 8038-095	Two-in-one drill	3,8	9,5	800-1200
R 8038-115	Two-in-one drill	3,8	11,5	800-1200
R 8038-135	Two-in-one drill	3,8	13,5	800-1200
R 8038-155	Two-in-one drill	3,8	15,5	800-1200

REFERENCE NO.		Ø(MM)	CUTTING DEPTH (MM)	MAX. U/MIN
R 8043-095	Two-in-one drill	4,3	9,5	800-1200
R 8043-115	Two-in-one drill	4,3	11,5	800-1200
R 8043-135	Two-in-one drill	4,3	13,5	800-1200
R 8043-155	Two-in-one drill	4,3	15,5	800-1200

REFERENCE NO.		Ø(MM)	CUTTING DEPTH (MM)	MAX. U/MIN
R 8048-095	Two-in-one drill	4,8	9,5	800-1200
R 8048-115	Two-in-one drill	4,8	11,5	800-1200
R 8048-135	Two-in-one drill	4,8	13,5	800-1200
R 8048-155	Two-in-one drill	4,8	15,5	800-1200

STEP

7.a THREADING



In case of a thick lower jawbone with hard – D1 quality – cortex before screwing the implant in we perform threading with the proper-sized threading drill. The threading is performed with low speed (under 20U/minute) with a surgical drill.

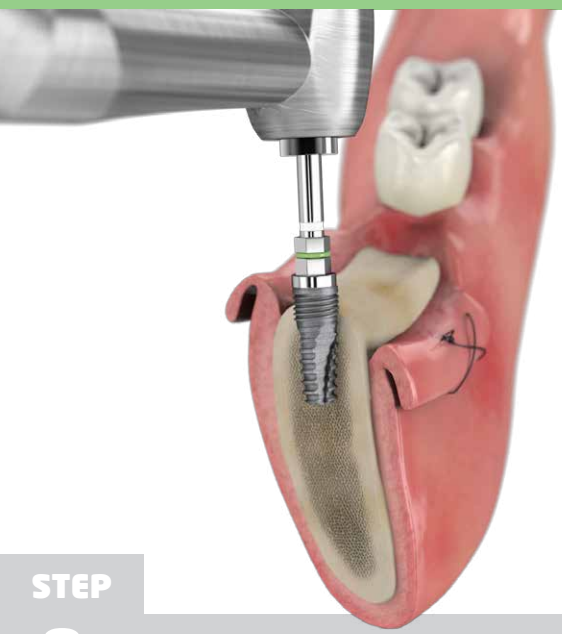
STEP

7.b THREADING

REFERENCE NO.		Ø(MM)	MAX. U/MIN
8038-030	Tap	3,8	20
8043-030	Tap	4,3	20
8048-030	Tap	4,8	20

STEP

8.a MACHINE-MADE SCREWING OF THE IMPLANT



We repeatedly rinse the bone nest, then we screw the implant in with a machine-made screwdriver (8034-070, 8034-170, 8455-079, 8455-179) with an elbow-piece or by hands thus the implant takes place by the neck in the bone surface.

STEP

8. SCREWING OF THE IMPLANT BY HAND

Finally the implant is screwed in – in case of tight fit - with hand wrenches (8034-070, 8034-170, 8455-079, 8455-179) to the nest so that its body is even with the bone surface. Using the adapters 8000-002 or 8000-102 you can convert the implant body drivers from engine-driven into a hand-driven device.

STEP

8.b SCREWING OF THE IMPLANT

REFERENCE NO.		Ø(MM)	APPLICATION	MAX. U/ MIN
8034-070	Implant body driver with short shaft	24,5	For Ø3,3-3,8 implants	20
8455-079	Implant body driver with short shaft	24,5	For Ø4,3-4,8-5,3 implants	20
8034-170	Implant body driver with long shaft	29,5	For Ø3,3-3,8 implants	20
8455-179	Implant body driver with long shaft	29,5	For Ø4,3-4,8-5,3 implants	20
8034-059	Driver for fixtures, manual	25	For Ø3,3-3,8 implants	20
8455-078	Driver for fixtures, manual	25	For Ø4,3-4,8-5,3 implants	20
8000-002	Hand adapter for ratchet	19,90	For Ø3,3-3,8-4,3-4,8-5,3 implants	20
8000-102	Hand adapter for ratchet, long	25,15	For Ø3,3-3,8-4,3-4,8-5,3 implants	20

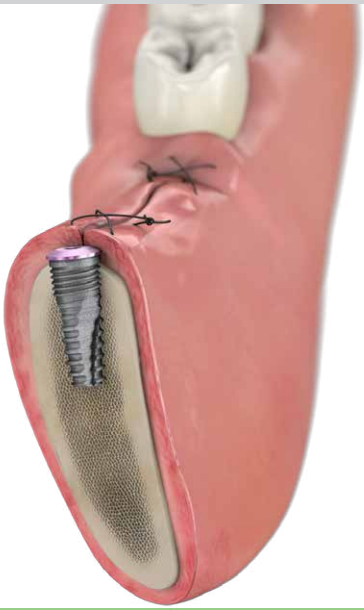
STEP

9.a SCREWING OF THE HEALING SCREW, CLOSING THE WOUND

We close the body part with a healing screw and after that we unify the periosteum above it with knotty stitches without tension.

STEP

9.b SCREWING OF THE HEALING SCREW, CLOSING THE WOUND



We close the body part with a healing screw and after that we unify the periosteum above it with knotty stitches without tension.

SECOND SURGICAL

The disadvantage of the two-phase surgical method is that in order to free the implants under the mucoperiosteum a second operation has to be performed. In such cases we place gingiva-shapers to provide the attachment of the epithelium in the periimplantary sulcus.

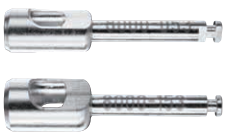
STEP

1. EXPLORATION

To free the neck of the implants we use the trephine (8000-053, 8000-153) to incise the mucous membrane. With the trephine, centrally with the closing screw, we incise the gingiva and remove the incised part.

STEP

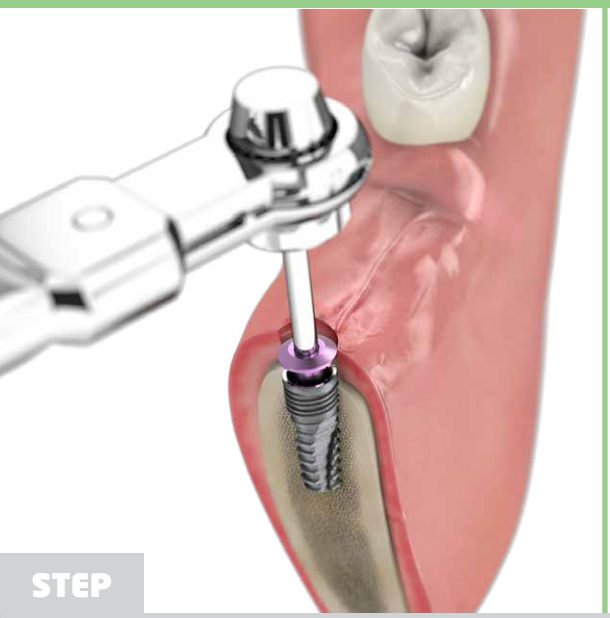
2.a EXPLORATION



REFERENCE NO.		Ø(MM)	MAX. U/MIN
8000-053	Gingiva cutter	4,0	20
8000-153	Gingiva cutter	5,o	20

STEP

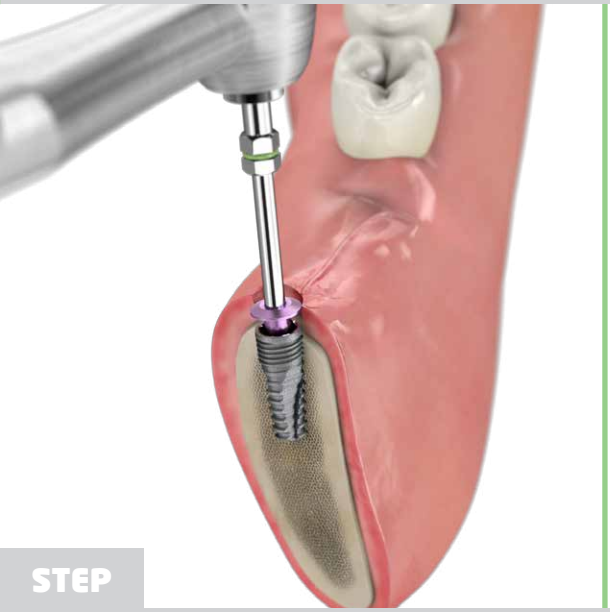
2. REMOVAL OF THE HEALING SCREWS (BY HAND)



For the removal of the healing screw we use a hand wrench.
(8000-076, 8000-077)

STEP

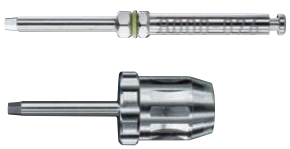
2.a REMOVAL OF THE HEALING SCREWS



For the removal of the healing screw we can either use machine-made screwdriver or a hand wrench.
(8000-076)

STEP

2.b REMOVAL OF THE HEALING SCREWS

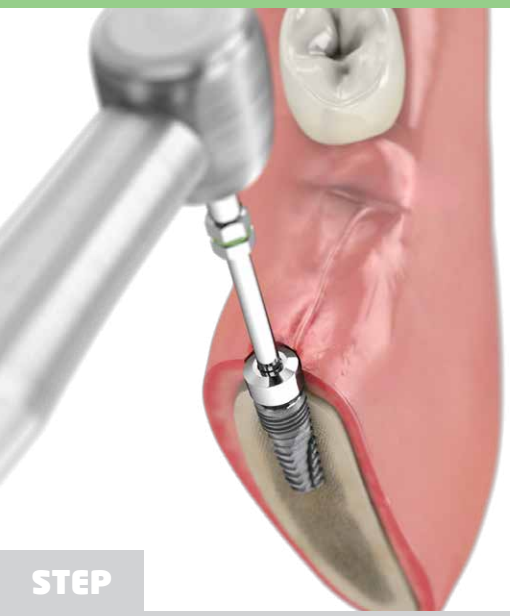


REFERENCE NO.		HEX(MM)	HOSSZ(MM)	MAX. U/MIN
8000-076	Screwdriver with power driver	1,15	30,0	20
8000-077*	Csavarbehajtó kulcs, kézi	1,15	22,0	20

**DR® surgical equipment plates do not contain the hand wrench. The hand wrench can be bought separately.*

STEP

3.a SHAPING OF THE GINGIVA

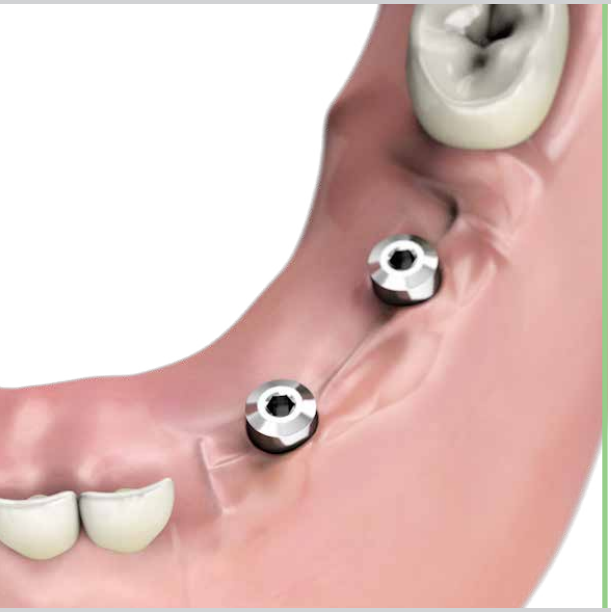


After removing the healing screws during the healing period of the mucosal wound we place gingiva-shapers into the implants. For screwing we use the above mentioned screwdriver.

See more about gingiva-shapers at prosthetics manual/ gingiva-shapers.

STEP

3.b SHAPING OF THE GINGIVA



Leave the gingiva formers in the mouth until you start the prosthetic works.