



SURGICAL PROCEDURE



Surgical Procedure Guide
with Surgical Kit Description
for Computer Guided Surgery



Surgical procedure



CHECKING THE SURGICAL GUIDE

Position the surgical guide making sure it is securely in place; in case of total edentulia, place the silicone **occlusal bite** between the arches and ask the patient to bite in order to check the position and stability of the surgical guide.



POSITIONING THE SURGICAL GUIDE

Insert the **drill pin** in the vestibular sleeve, press until you feel it come into contact with the bone and start the motor, pressing on the hand piece until it comes to a stop.



FIXING THE SURGICAL GUIDE

Remove the drill and insert the **fixing pin**. Repeat the operation for all fixing pins.



MANAGING THE SOFT TISSUES

Perform the mucotomy procedure using the **mucotome** (soft tissue punch) through the surgical guide sleeve until the mucotome comes into contact with the bone.



REMOVAL OF RESIDUAL MUCOUS

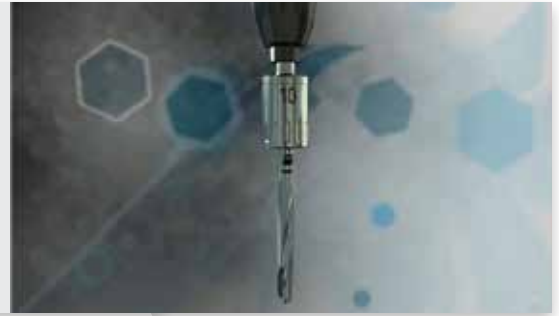
Use the start drill through the sleeve until it comes to a stop. After completing the drilling process, irrigate the area thoroughly, in order to remove all residual mucous and bone that may have been collected.

PROCEDURE FOR MANUAL REMOVAL OF RESIDUAL MUCOUS

1. Remove the occlusal bite and perform the mucotomy inserting the device through the surgical guide sleeve until the tissue punch comes into contact with the bone. Start the micromotor after inserting the tissue punch inside the surgical guide sleeve.
2. Remove the surgical guide and remove all residual mucous using a scalpel, this avoids involuntary dragging of tissue inside the implant site by the drill. Reposition the surgical guide and occlusal bite and proceed with the final fixing of the guide as seen in the sections below.

USING THE PILOT DRILL WITH THE DRILL STOP

Use the **drill stop** which corresponds in length to the planned implant and fasten it to the 2 mm Ø drill.



USING THE DRILL REDUCER

Connect the 2 mm Ø **drill reducer** to the surgical guide, inserting it in the sleeve of the surgical site to be prepared.



OSTEOTOMY

Proceed by drilling the bone, inserting the drill inside the drill handle through the surgical guide as far as possible. Proceed with the osteotomy at moderate drill speed (500 rpm) with vertical oscillating motion to prevent the bone overheating.

Proceed with the preparation of the implant site following the osteotomy sequence, using drills with progressive diameters. Each drill must be used with the corresponding drill reducer and the stop according to the length of the implant to be inserted.



TAPPING

When the bone is very compact (D1-D2) use the **tap screw**: position the tap tip in the prepared site through the sleeve and screw slowly (maximum 15 rpm) applying light pressure. On reaching the correct depth, which coincides with the reference mark on the tap screw at the level of the sleeve, unscrew the tap extremely carefully.



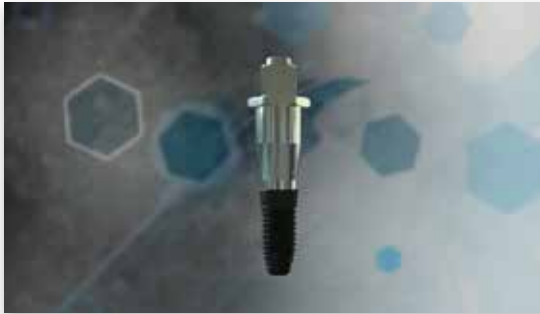
MANAGING THE BONE RIDGE

If it is necessary to use a bone profiler to level the cortical bone (inclined implants in the presence of irregular bone ridges) so as to guarantee the correct tightening of the prosthesis components, use the **bone profiler tool**. This has to be used after the osteotomy and before inserting the implant. Remember to start the micromotor only after having inserted the bone profiler inside the surgical guide sleeve.



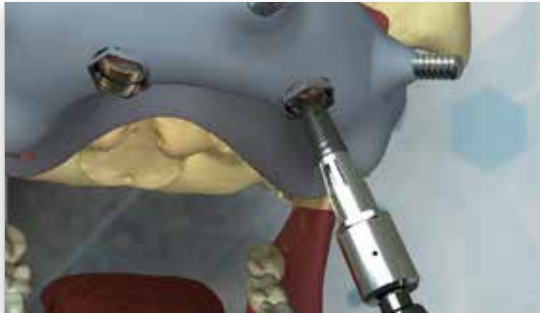
PROCEDURE FOR BT EVO, BT SAFE, BT NANO IMPLANTS

BT EVO, BT SAFE and BT NANO implants used for computer guided surgery are supplied without the mounting device. It is necessary to screw the implants to the implant mount supplied in the BTK-3D Kit to insert them through the surgical guide.



MOUNTING THE IMPLANT

Once the implant site has been created, use the Digital driver ES 1.20 to **fix the implant mount on the implant (max. 15Ncm)** making sure that the device is perfectly aligned with the implant platform. Before performing the surgery, check that the connection of the implant mount corresponds to the connection of the implant to be used.



INSERTING THE IMPLANT

Insert the implant through the surgical guide and screw into place using the **implant driver for handpiece**. If insertion proves difficult due to excessive under-preparation, remove the implant and widen the hole using a larger diameter drill or tap the implant site. Keep the implant mount in position while the next implant is inserted (to increase the stability of the surgical guide). Use the surgical guide to keep a maximum of two or three mounting devices in place (according to the number of implants being inserted) so as to prevent putting it under undue stress.



TIGHTENING THE IMPLANT AND TORQUE CHECKS

Complete the tightening phase using the dynamometric reversible torque wrench and the manual wrench fitting it onto the torque wrench head correctly. Do not tighten beyond where the implant mount and the surgical guide sleeve meet. Refer to the instructions in the catalogue on how to use the dynamometric reversible torque wrench correctly.



REMOVING THE SURGICAL GUIDE

On completing the insertion phase, remove in the following order: the surgical guide fixing pins, the connecting screws and the implant mounts inserted to remove the surgical guide. Inspect the area and check the access to the implant connection to ensure correct patient prosthetic restoration.



MOUNTING THE PROSTHESIS

Screw in the temporary cylinders and mount the prosthesis according to the standard procedures.

PROCEDURE FOR BT-KLASSIC IMPLANTS

There are two options when inserting the BT KLASSIC implant through the surgical guide:

1. Unscrew the original implant mount (holding the implant with a sterile titanium tweezers) and screw in the implant mount supplied in the BTK-3D surgical kit. Then follow the procedure described above;
2. Insert the implant through the surgical guide using the original implant mount and screw in the first spiral threads until the implant head is in level with the sleeve. Now dismount the original driver using the fixed 30° wrench and the ES 1.20 digital driver. Fasten the corresponding implant mount included in the BTK-3D kit using the ES 1.20 digital driver. Before performing the operation, check that the connection of the mounting device is correct according to the implant to be used. Then complete the operation following the procedure described above.

Notes

GENERAL RISKS

The product is designed for use by professionals in the medical field who have had suitable training. Before using medical instruments, check that all components are sufficiently sharp and in good condition.

Please contact Biotec if you have any doubts on how to use the BTK-3D components/tools. As the treatment and surgical application of the product is performed under medical supervision, such professionals are fully liable for the same. Biotec disclaims all and any liability for damages caused by using the product.

INFECTION RISKS

The kit and all components must be disinfected before and after they are used.

REMARKS ON SURGICAL DRILLS

Surgical bone drills are Class IIa medical devices, in accordance with Council Directive 93/42/EEC. The surgical drills must only be used for the BTK-3D guided surgery procedure. Bone surgical drills have a type 1 ISO1997-1:1992 2.35 mm diameter connection stem and must only be used with handpieces with the appropriate coupling.

WEARING OF DEVICES

After 20 implant site preparation procedures and relative sterilisation cycles, the drill may become too blunt to use and need replacing. The working life of the instrument depends on actual operating conditions and can, therefore, need replacing earlier.

ELECTRIC RISKS

The drills can only be used when fitted to a handpiece connected to a low voltage unit for medical use, in accordance with the Medical Device Directives (93/42/EEC)

MECHANICAL RISKS

Check that the drill and handpiece are coupled correctly every time they are used. Never insert or remove the device when rotating. Never handle the rotating device when in motion. Never activate the device replacement system during operations or before the drill rotation has come to a complete halt. The device must never be used in a tunnel created with a larger diameter drill to prevent the onset of bending moments which are incompatible with the resistance of the material.

Sterilising

Immediately after the operation, remove all traces of blood, secretion, bone or tissue residue from the instruments to prevent encrustation which will make subsequent cleaning and sterilising operations more complex. Even minimum traces of organic residue left on surgical instruments for just a few hours can cause the onset of corrosion. Rinse the instruments after use or place them in ultrasonic tubs with sterilising liquids, put them in a sterilising bag and sterilise in a steam autoclave using one of the following recommended cycles:

- 5-6 minutes at 134 °C 2 bar
- 20 minutes at 121 °C 1 bar

Remove the instruments from the autoclave as soon as the cycle has been completed. Instruments should never be left in humid environments for any length of time to prevent the formation of rust and damage to the sharp sections.

Warnings

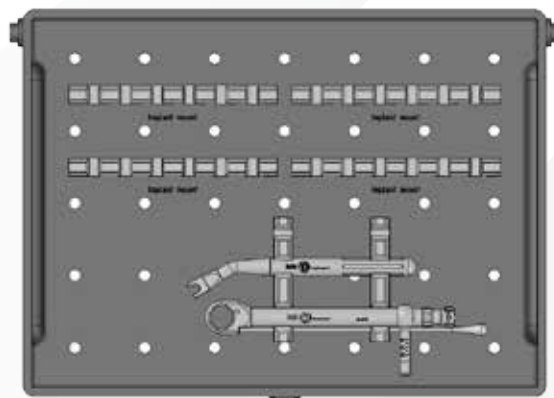
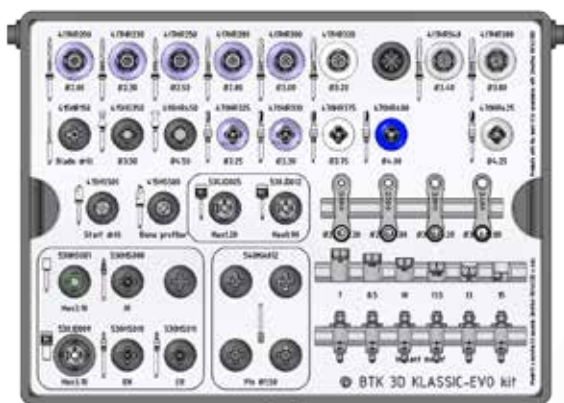
To ensure that the site preparation is performed without causing excessive bone trauma which can delay or compromise the healing process, it is necessary to:

- a) Keep the bone temperature low to avoid necrosis of exposed cells, ensure copious external irrigation of the drills using physiological solutions cooled to about 4°C.
- b) Use motors with adjustable rpm and power settings. Do not apply constant pressure on the handpiece all the way to the bone, but drill using rotating plunge motions, moving forwards and backwards a few millimetres at a time; this facilitates the flow of the physiological solution through the drill handle and allows for elimination of bone drilling residue.
- c) Use sharp intact drills. The efficacy of a drill decreases after 5-6 applications and should be replaced after about 20 implant site preparation procedures.

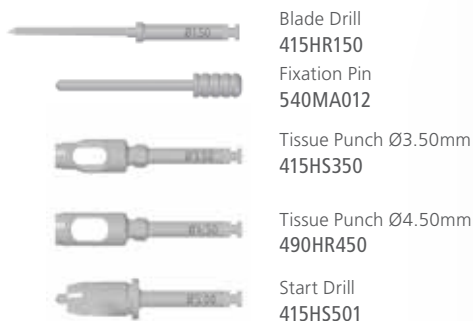
The working life depends on actual cleaning and sterilising conditions: if they are incorrect, they may need changing earlier.

- d) Ensure good suction of blood and excess physiological solution to keep the implant area clean and clearly visible.
- e) Control the force used on the handpiece to prevent sudden collapsing which can cause serious damage to nerves and vascular structures.

Surgical Kit for BT KLASSIC and BT EVO computer guided surgery



POSITIONING OF SURGICAL GUIDES AND HANDLING OF SOFT TISSUES



- Blade Drill
415HR150
- Fixation Pin
540MA012
- Tissue Punch Ø3.50mm
415HS350
- Tissue Punch Ø4.50mm
490HR450
- Start Drill
415HS501

PREPARING THE IMPLANT SITE



- Drill Ø2.0 mm
417HR200
- Drill Ø2.3 mm
417HR230
- Drill Ø2.5 mm
417HR250
- Drill Ø2.8 mm
417HR280
- Drill Ø3.0 mm
417HR300
- Drill Ø3.2 mm
417HR320
- Drill Ø3.4 mm
417HR340
- Drill Ø3.8 mm
417HR380



- Drill Stop H=7.0mm
518NA607
- Drill Stop H=8.5mm
518NA685
- Drill Stop H=10mm
518NA610
- Drill Stop H=11.5mm
518NA611
- Drill Stop H=13.0mm
518NA613
- Drill Stop H=15.0mm
518NA615



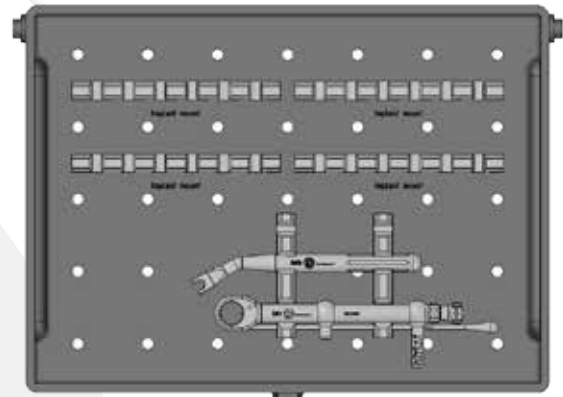
- Drill reducer Ø2.0 - Ø2.3
502MA010
- Drill reducer Ø2.5 - Ø2.8
502MA011
- Drill reducer Ø3.0 - Ø3.2
502MA012
- Drill reducer Ø3.4 - Ø3.8
502MA013
- Tap Screw Ø3.25mm
470HR325
- Tap Screw Ø3.30mm
470HR330
- Tap Screw Ø3.75mm
470HR375
- Tap Screw Ø4.00mm
470HR400
- Tap Screw Ø4.25mm
470HR425
- Bone profiler Ø5.0mm
415HS500

INSERTING THE IMPLANT



- Implant mount
690ER003
- Implant driver for handpiece
530HS001
- Manual wrench
530JD009
- Implant insertion driver
530HS008
- Implant insertion driver Ø3.0mm
530HS010
- Implant insertion driver Ø4.0mm
530HS011
- Digital Driver ES 1.20
530JD005
- Digital Driver ES 0.90
530JD012
- Fixed manual wrench 30°
502MA003
- Dynamometric reversible torque wrench
501JD002

Surgical Kit for BT SAFE and BT NANO computer guided surgery



POSITIONING OF SURGICAL GUIDES AND HANDLING OF SOFT TISSUES



Blade Drill
415HR150



Fixation Pin
540MA012



Tissue Punch Ø3.50mm
415HS350



Tissue Punch Ø4.50mm
490HR450



Start Drill
415HS501

IMPLANT SITE



Drill Ø2.0 mm
416HS200



Drill Ø2.5 mm
416HS250



Drill Ø3.1 mm
416HS310



Drill Ø3.45 mm
416HS345



Drill Ø3.75 mm
416HS375



Drill Ø4.35 mm
416HS435



Drill Stop H=5.0mm
521NA605



Drill Stop H=6.0mm
521NA606



Drill Stop H=8.0mm
521NA608



Drill Stop H=10.0mm
521NA610



Drill Stop H=12.0mm
521NA612



Drill reducer Ø2.0 - Ø2.3
502MA014

Drill reducer Ø2.5 - Ø2.8
502MA015

Drill reducer Ø3.0 - Ø3.2
502MA016

Tap Screw Ø3.30mm
472HR330

Tap Screw Ø3.70mm
472HR370

Tap Screw Ø4.10mm
472HR410

Tap Screw Ø4.80mm
472HR480

Bone profiler Ø5.0mm
415HS500

INSERTING THE IMPLANT



Implant mount
690KR001

Implant driver for handpiece
530HS001

Manual wrench
530JD009

Implant insertion driver KR

Implant insertion driver KW
530HS014

Digital Driver ES 1.20
530JD005

Fixed manual wrench 30°
502MA003

Dynamometric reversible torque wrench
501JD003



We strive to become the reference benchmark for implant dentist technicians in every country in the world, developing partnerships based on trust, guided by respect and aimed at achieving common goals.

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