

*Navigator™ System For
CT Guided Surgery Manual*

Instructions For Use

OSSEOTITE®, OSSEOTITE XP®, OSSEOTITE Certain®, Certain® PREVAIL®, OSSEOTITE NT®, Encode®, IOL®, Miniplant®, Microminiplant™, GingiHue®, Gold-Tite®, Provide®, STA®, ZiReal®, CAM StructSURE®, NanoTite™, PreFormance®, QuickBridge™

This document applies to dental implants, abutments, overdenture bars and associated surgical, restorative and dental laboratory components.

For detailed information on the specific procedure for the product you are using, please refer to the individual product labels and/or the appropriate manual:

Product Catalog - **CATALOG**: Listing of all products
Surgical Manual - **CATSM**: Dental implant placement, surgical protocol and cover screw insertion
Restorative Manual - **CATRM**: Abutment placement, provisional and final restoration protocols
Additional Restorative Manuals:
CAM StructSURE Manual - **ART868** DIEM™ Guidelines - **ART860**
Encode Restorative Manual - **ART924** QuickBridge Manual - **ART1016**

Description: BIOMET **3i** Dental Implants are manufactured from biocompatible titanium and titanium alloy and abutments from titanium, titanium alloy, gold alloy and ceramic material. BIOMET **3i** Dental Implants and Abutments include various surface treatments and coatings. Other restorative components are manufactured with titanium, titanium alloy, gold alloy, stainless steel and a variety of polymers.

For specific product description and net quantity refer to individual product labels.

Indications for Use: BIOMET **3i** Dental Implants are intended for surgical placement in the upper or lower jaw to provide a means for prosthetic attachment in single tooth restorations and in partially or fully edentulous spans with multiple single teeth utilizing delayed or immediate loading, or as a terminal or intermediary abutment for fixed or removable bridgework, and to retain overdentures.

BIOMET **3i** OSSEOTITE and NanoTite Dental Implants are intended for immediate function on single tooth and/or multiple tooth applications when good primary stability is achieved, with appropriate occlusal loading, in order to restore chewing function.

Additional Indications: BIOMET **3i** Dental Abutments and Overdenture Bars are intended for use as an accessory to endosseous dental implants to support a prosthetic device in a partially or edentulous patient. These are intended for use to support single and multiple tooth prostheses, in the mandible or maxilla. The prostheses can be screw or cement retained to the abutment.

PEEK Abutment Posts and Temporary Cylinders are intended for use as an accessory to endosseous dental implants to support a prosthetic device in a partially or fully edentulous patient. These are intended for use to support single and multiple unit prostheses in the mandible or maxilla for up to 180 days during endosseous and gingival healing, and are for non occlusal loading of single and multiple unit provisional restorations. The prostheses can be screw and/or cement retained to the abutment. These Temporary Posts and Cylinders require a minimum interarch space of 6mm and a maximum angulation of 15°. These also allow for occlusal loading of single and multiple unit restorations of integrated implants for guided soft tissue healing.

The QuickBridge Provisional Components are intended to be mated with BIOMET **3i** Conical Abutments for use as an accessory to endosseous dental implants to support a prosthetic device in a partially or fully edentulous patient. The QuickBridge Provisional Components are intended to support multiple unit prostheses in the mandible or maxilla for up to 180 days during endosseous and gingival healing.

Contraindications: Placement of dental implants may be precluded by patient conditions that are contraindications for surgery. BIOMET **3i** Dental Implants should not be placed in patients where the remaining jaw bone is too diminished to provide adequate implant stability.

Storage and Handling: Devices should be stored at room temperature. Refer to individual product labels and the Surgical Manual for special storage or handling conditions.

Warnings: Excessive bone loss or breakage of a dental implant or restorative device may occur when an implant or abutment is loaded beyond its functional capability. Physiological and anatomic conditions may negatively affect the performance of dental implants. The following should be taken into consideration when placing dental implants:

- Poor bone quality
- Poor oral hygiene
- Medical conditions such as blood disorders or uncontrolled hormonal conditions

It is recommended that small diameter implants not be restored with angled abutments in the molar region.

Mishandling of small components inside the patients mouth carries a risk of aspiration and/or swallowing.

Forcing the implant into the osteotomy deeper than the depth established by the drills can result in: stripping the driver hex interface inside the implant, stripping the driver, cold-welding of the mount-driver interface to the implant, or stripping the walls of the osteotomy that may prevent an effective initial implant fixation.

Clinical data have demonstrated enhanced performance of OSSEOTITE® Implants as compared to other BIOMET **3i** Dental Implants in patients with poor quality bone.

Precautions: For safe and effective use of BIOMET **3i** Dental Implants, abutments and other surgical and restorative dental accessories, these products or devices should only be used by trained professionals. The surgical and restorative techniques required to properly utilize these devices are highly specialized and complex procedures. Improper technique can lead to implant failure, loss of supporting bone, restoration fracture, screw loosening and aspiration.

Sterility: All dental implants and some abutments are supplied sterile and are sterilized by an appropriate validated method. Refer to individual product labels for sterilization information; all sterile products are labeled 'STERILE.' All products sold sterile are for single use before the expiration date printed on the product label. Do not use sterile products if the packaging has been damaged or previously opened. Do not re-sterilize or autoclave except where instructions to do so are provided on the product label, in the Surgical Manual, in the Restorative Manual or in any additional marketing literature for that product. Products provided non-sterile must be cleaned and sterilized according to the directions found in **ART630** or the Surgical Manual prior to use.

Procedural Precautions, Surgery: For a detailed explanation of the procedural precautions refer to the *Surgical Manual*. During the planning phase, it is important to determine the vertical dimension, the actual space available between the alveolar crest and the opposing dentition, in order to confirm that the available space will accommodate the proposed abutment and the final crown restoration. This information varies with each patient and abutment; therefore it should be carefully evaluated before placing any dental implant. The final prosthesis should be designed prior to the placement of the dental implant. Utilize continuous irrigation with a cool, sterile irrigating solution to avoid excessive damage to the surrounding tissue and to prevent compromising osseointegration. This is mandatory during all procedures. Avoid excessive pressure during preparation of the bone site. As the drilling speed varies based on the instrument and the surgical procedure, recommendations for speed can be found in the Surgical Manual. Only sharp instruments of the highest quality should be used for any surgical procedure involving bone. Minimizing trauma to the bone and surrounding tissue enhances the potential for successful osseointegration. In order to eliminate contaminants and other sources of infection, all non-sterile devices should be cleaned and/or sterilized prior to use, per the instructions on the individual product labels.

Procedural Precautions, Restoration: The healing period varies depending on the quality of the bone at the implantation site, the tissue response to the implanted device and the surgeon's evaluation of the patient's bone density at the time of the surgical procedure. Excessive force applied to the dental implant should be avoided during the healing period. Proper occlusion should be evaluated on the implant restoration to avoid excessive force.

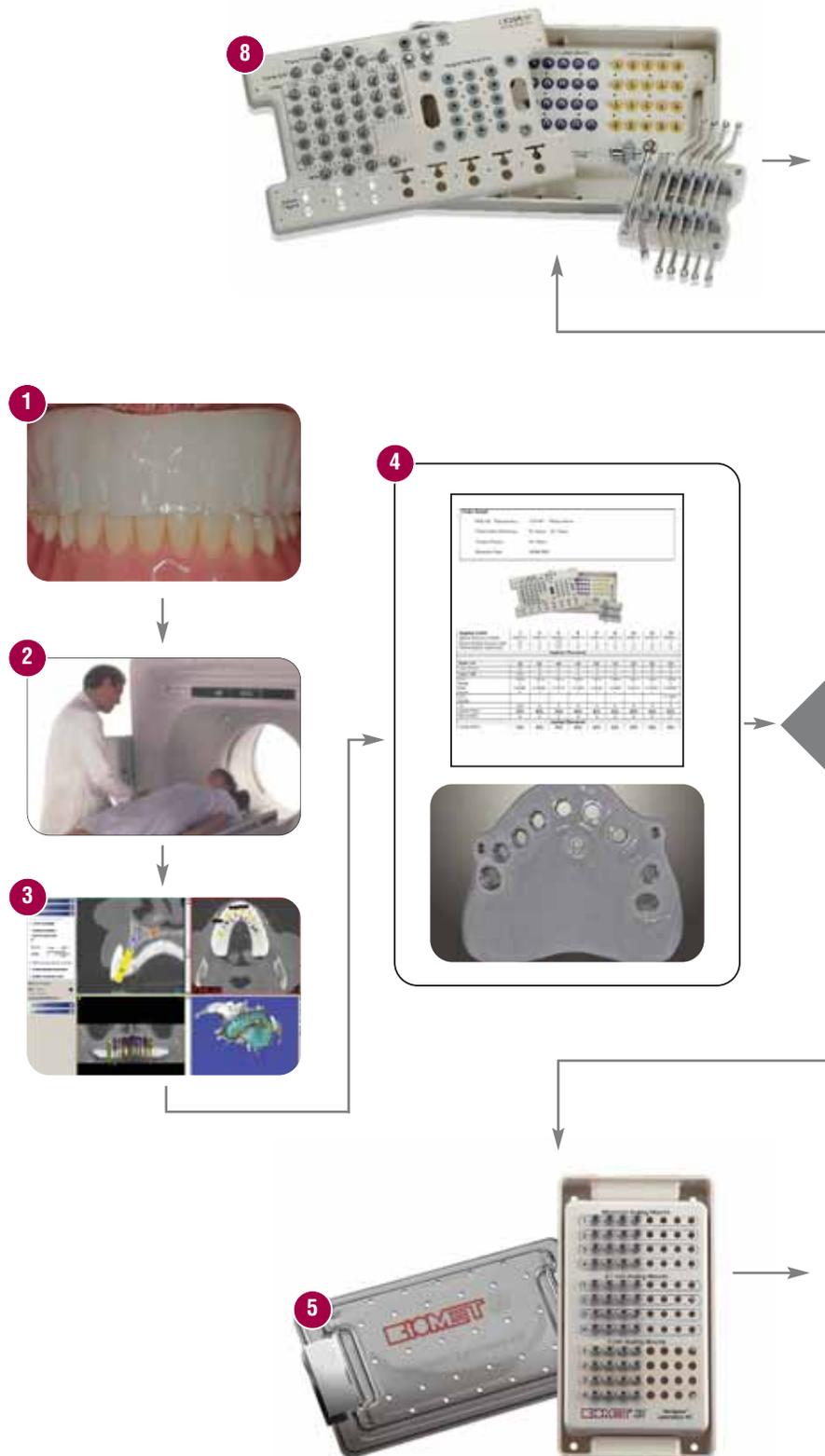
Potential Adverse Events: Potential adverse events associated with the use of dental implants may include:

- Failure to integrate
- Loss of integration
- Dehiscence requiring bone grafting
- Perforation of the maxillary sinus, inferior border, lingual plate, labial plate, inferior alveolar canal, gingiva
- Infection as reported by: abscess, fistula, suppuration, inflammation, radiolucency
- Persistent pain, numbness, paresthesia
- Hyperplasia
- Excessive bone loss requiring intervention
- Implant breakage or fracture
- Systemic infection
- Nerve injury

Caution: U.S. Federal Law restricts this device to sale by or on the order of a licensed dentist or physician.

Navigator™ CT Guidance: Steps to Success

1. The scanning appliance may be created from an existing denture or new waxup to visualize the soft tissue and tooth position in the third party planning software chosen.
2. CT scan of the patient by an imaging center or in the clinician's office. Data from the scan is converted into the planning software.
3. The clinician plans the case within the planning software and the case plan is sent to the surgical guide manufacturer. Fixation of the guide can also be planned at this time.
 - a. The software company may act as the surgical guide manufacturer or
 - b. A laboratory may create the surgical guide.
4. The surgical guide manufacturer develops a case-specific surgical plan and surgical guide.
5. The surgical plan and surgical guide are sent to the dental laboratory or restorative doctor and used in conjunction with the BIOMET 3i Navigator Laboratory Kit (if no immediate provisional is desired, go to step 8).
6. The master cast is poured into the guide or the implant analogs are placed in the preoperative cast on a partially edentulous case using the guide.
7. The abutments are selected and the provisional prosthesis is fabricated and sent to the clinician.
8. The surgical guide and surgical plan are sent to the surgeon and used in conjunction with the Navigator Surgical Kit.
9. The surgical guide is placed and may be fixated with 2mm fixation screws.
10. The clinician will prepare the site(s) with the case-specific surgical plan and surgical guide for implant placement with the BIOMET 3i Navigator Surgical Kit.
11. The implants are placed through the surgical guide.
12. The Implant Mounts and surgical guide are removed.
13. If a traditional procedure is desired, a one or two-stage procedure is completed and a traditional provisional prosthesis – denture/Maryland Bridge/flipper partial – may be delivered.
14. The abutments and the provisional prosthesis are delivered.
15. The patient is able to go home that day with a brand new smile!



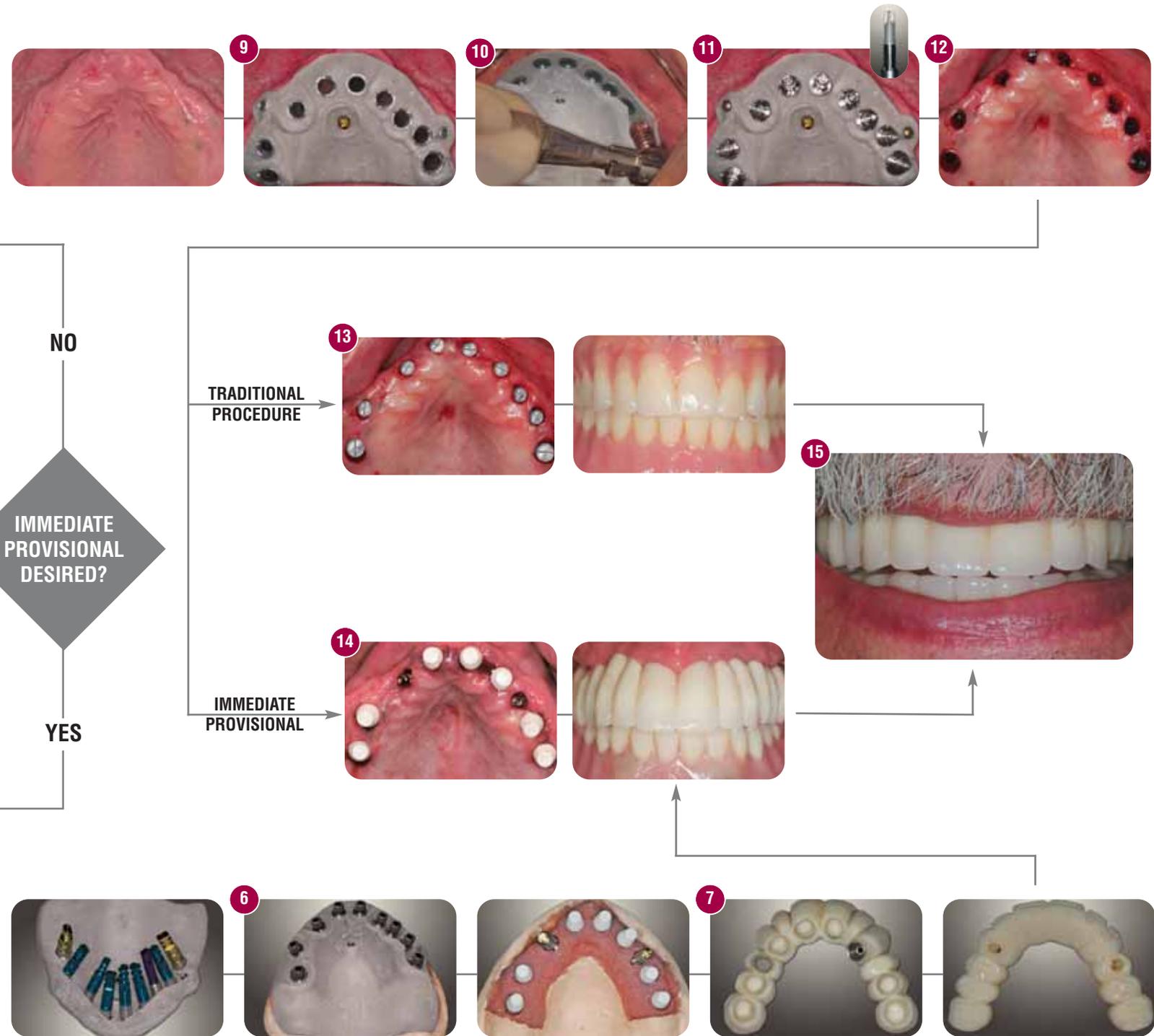


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Getting Started

In order to utilize the Navigator System™, clinicians will need to purchase CT planning software from one of the planning software companies and have access to a CT scanning facility. Training in how to use the CT planning software chosen is essential for all clinicians and technicians involved in case treatment planning. In addition, laboratory technicians will need to obtain the Navigator System Laboratory Kit to fabricate the preoperative master cast and clinicians will need to obtain the Navigator System Surgical Kit to place the implants. The complete system overview which describes each instrument and component included in the kits and their associated use begins on page 4.

Prior to sending the patient to the CT scanning facility, a radiopaque scanning appliance may be fabricated to show the desired tooth position of the restoration when seated in the mouth during the CT scan. Pages 11-26 in this manual are designed to guide surgeons, restorative clinicians and laboratory technicians through the process of fabricating a scanning appliance from an existing denture, a newly fabricated denture or a diagnostic wax up.

A page with tips from clinicians who evaluated the system prior to market release is also included in this manual on page 9. The tips will help to ensure a smooth process from CT scan to the day of surgery and provisional delivery when using the system and may reduce the learning curve associated with use of the BIOMET 3i Navigator System For CT Guided Surgery.

Open Architecture System

The Navigator System is designed to allow clinicians to place and provisionalize BIOMET 3i Dental Implants using a variety of compatible CT planning software and surgical guides. The system is open architecture to be compatible with the current software and surgical guide providers listed below.

Materialise Dental, Inc.

810-X Cromwell Park Drive
Glen Burnie, MD 21061
United States
(443) 557-0121
www.materialisedental.com

iDent – US

2652 NW 31st Ave
Ft Lauderdale, FL 33311
United States
(954) 495-8684
www.ident-surgical.com

Materialise Dental, NV

Technologielaan 15
3001 Leuven
Belgium
+32 16 39 66 20

iDent – Israel

4 Yohanan Street
Box 6402
Hod Hasharon 45241
Israel
+972-52-546-2366
www.ident-surgical.com

Implant Logic Systems

76 Spruce Street
Cedarhurst, N.Y. 11516
(888) 457-1121
www.implantlogic.com

Introduction And Treatment Planning

This manual is designed to serve as a reference guide for dental practitioners to utilize BIOMET 3i Restorative Components and instruments. BIOMET 3i's Implant Systems have been developed to meet the diverse needs of patients and to offer practitioners a choice of customized restorative techniques.

BIOMET 3i's Implant and restorative component designs provide practitioners with a wide range of restorative options, including support for single tooth crowns, fixed and removable prostheses and attachments for securing overdentures. BIOMET 3i's Implant and Abutment Systems utilize proven restorative designs and provide clinicians and patients with predictable treatment options.

General Information

This manual provides guidelines for surgical and restorative practitioners and laboratory technicians in the use of BIOMET 3i's Navigator™ System For CT Guided Surgery. The success of any dental implant system depends upon proper use of the components and instrumentation. This manual is not intended for use as a substitute for professional training and experience.

Treatment Planning Patient Evaluation And Selection

Several important factors must be considered when evaluating a patient prior to implant surgery. The presurgical evaluation must include a careful and detailed assessment of the patient's general health, medical history, oral hygiene, motivation and expectations. If the patient's medical history reveals an existing condition or signals a potential problem that may compromise treatment and/or the patient's well being, consultation with a physician is recommended. In addition, the clinician should determine if the patient presents with an acceptable anatomical foundation that is conducive to implant placement. An extensive intraoral examination should be performed to evaluate the oral cavity for any potential bone or soft-tissue pathology. The clinician should also determine the periodontal status of the remaining teeth, the health of the soft tissue, the presence of occlusal abnormalities or parafunctional habits, such as bruxism or crossbite and any other conditions that could adversely affect the restorative outcome.

Pre-Operative Planning

Proper treatment planning includes selection of appropriate implant lengths, diameters and locations. The number of implants is a fundamental consideration for the long-term success of an implant supported restoration. Before an implant is placed, the anatomical foundation of the treatment area must be carefully assessed.

During the presurgical restorative planning phase of cases with immediate provisionalization, it is important for the surgeon, restorative dentist and laboratory technician to participate in determining the type of prosthesis and restorative components that will be used. Such decision making is critical for determining the location of implants and should be finalized prior to implant surgery. A top-down treatment planning approach is recommended, whereby the final prosthesis is designed, implant locations determined and restorative components selected prior to initiating implant surgery.

Clinical information necessary for determining appropriate treatment options includes but is not limited to: determining vertical dimension, evaluating the space available between the alveolar crest and the opposing dentition to confirm that available space exists to accommodate the proposed abutment and final restoration, locating the position of important anatomic structures and determining bone dimensions where implants are to be placed. The height required by the restorative components varies with the type of abutment. Therefore, the surgeon and restorative dentist should carefully evaluate abutment dimensions. Diagnostic casts should be used pre-operatively to evaluate the residual ridge and to determine the position and angulation of all implants. These casts allow the clinician to evaluate the opposing dentition and its effect on implant position. A surgical guide is helpful in determining the precise intraoral position and angulation of the implants and should be included in the pre-operative treatment plan.

By visualizing the final design of the prosthesis prior to implant surgery, both restorative and surgical clinicians have the opportunity to identify potential restorative problems. They can then make the necessary modifications to implant selection, location and the overall treatment plan prior to actually placing the implants, thus improving treatment predictability and success.

Instrumentation Overview



The BIOMET **3i** Navigator™ System For CT Guided Surgery was developed in response to clinicians' growing interest in dental implant placement utilizing the benefits of Computed Tomography (CT) and the desire to accelerate patient provisionalization.

The Navigator System is open architecture. The system is used in conjunction with the leading planning software and case-specific surgical guides to enhance treatment planning and improve the accuracy of placing BIOMET **3i** Implants.

CT guidance technology allows clinicians to determine more precisely the locations of anatomical structures and the dimensions of underlying bone as well as to ascertain bone densities in order to plan and perform cases. Use of CT scans allows procedures to be less invasive than traditional surgery. The necessary planning and added instrument precision can shorten chair time for full-arch, single-tooth and short-span implant cases, allowing for more efficient procedures.

The Navigator System can be used to fabricate a provisional prosthesis prior to implant placement by creating a master cast using the surgical guide.

The system allows clinicians to place dental implants in predetermined locations with proper hex orientation. This feature is especially beneficial for single tooth and cement retained provisionals. It offers clinicians the option to deliver a provisional prosthesis the day of surgery and the opportunity to perform bone, teeth and tissue supported (flapless) surgery.

BIOMET **3i's** Navigator System For CT Guided Surgery includes the Navigator Surgical Kit and the Navigator Laboratory Kit and makes it possible for clinicians to restore and place Certain® Parallel-Walled MicroMiniplant™ 4 & 5mm Implants, OSSEOTITE XP® 4/5mm Implants, PREVAIL® 3/4/3, 4/5/4 and straight PREVAIL 4/3 and 5/4mm Implants. With this design, BIOMET **3i** is able to support the majority of clinical situations and compliment the use of a wide range of prosthetic options.

A 2mm Fixation System (31-3100) is available through BIOMET Microfixation. To order this Fixation System, please contact BIOMET Microfixation at 1-800-874-7711.

Instrumentation Overview



MASTER TUBES

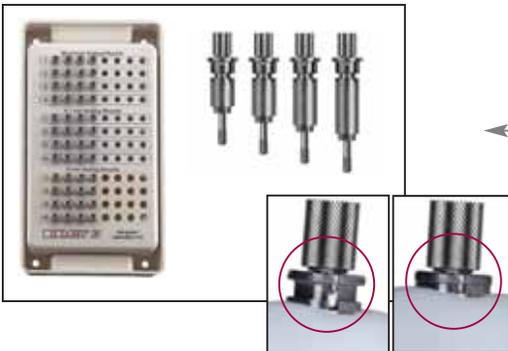
Master Tubes guide instruments through the surgical guide. These provide a predetermined depth stop for the Twist Drills and Implant Mounts and ensure identical hex orientation and positioning between the lab analog and final implant placement. The Master Tubes are positioned in the surgical guide by the surgical guide manufacturer.

The “slot” feature on the Master Tubes is used for alignment with the Analog Mounts for analog placement when fabricating the master cast and for alignment with the Implant Mounts and implants during surgery.

LABORATORY KIT COMPONENTS

IMPLANT ANALOG MOUNTS

The Navigator Laboratory Kit is comprised of Implant Analog Mounts used through the Master Tubes in the surgical guide to position implant analogs into a cast. The laboratory kit, like the surgical kit, contains twelve unique mounts with the Certain® Connection and these mounts are available in three diameters (3.4, 4 and 5mm) and four lengths identified as (1), (2), (3), and (4). Because a specific Analog Mount may be required multiple times, four complete sets of Analog Mounts are available in the kit for a total of 48 Analog Mounts. The Analog Mounts feature a mechanical-locking system to hold the implant analog in place (vertically, laterally and rotationally) within the Master Tube. A peg on the side of the Analog Mounts is aligned with one of the slots on the Master Tube to ensure accurate transfer of the hex orientation from the pre-operative master cast to the mouth.



SURGICAL KIT COMPONENTS

IMPLANT MOUNTS

Implant Mounts are used through the Master Tubes in the surgical guide to place implants. The Implant Mounts have the Certain Connection and are available in three diameters (3.4, 4 and 5mm) and four lengths identified as (1), (2), (3), and (4) for a total of twelve unique Implant Mounts. Because a specific Implant Mount may be required multiple times, five complete sets of Implant Mounts are available in the kit for a total of 60 Implant Mounts. Implant Mounts are depth specific with a flange for a depth stop. A “spline” feature on the flange can be used as a visual reference during implant placement to orient the hex connection of the implant. The cutouts on the flange are aligned with the slots on the Master Tube to ensure accurate transfer of the hex orientation from the pre-operative master cast to the mouth.



Instrumentation Overview



TISSUE PUNCHES

The Tissue Punches are used through the Master Tubes in the surgical guide to remove soft tissue for flapless surgery. The Tissue Punches are available in two diameters (4 and 5 mm) and one length and contain depth markings of (1), (2), (3) and the top of the Tissue Punch (4) to correspond with the surgical plan (protocols) for use during surgery.

The recommended drill speed is 30 - 100rpm.



STARTER DRILLS

The Starter Drills are used through the Master Tubes in the surgical guide to perforate the cortical plate, create a 2mm pilot and countersink the osteotomy. The Starter Drills are available in five diameters (3.4, 3/4, 4, 4/5 and 5 mm) to countersink different implant collar shapes. These contain depth markings of (1), (2), (3) and the top of the Starter Drill body (4) to correspond with the surgical plan (protocols) for use during surgery.

The recommended drill speed is 1200 - 1500rpm.



DRILL POSITIONING HANDLES

The handles contain drill guide tubes that are placed within the Master Tubes of the surgical guide to guide and stop the Twist Drills at a specific predetermined depth for preparation of the osteotomy. There are five handles [handles (1) and (2) for use with 4mm Master Tubes and handles (3), (4) and (5) for use with 5mm Master Tubes]. These contain drill guide tubes to accommodate the various drill diameters (2, 2.75, 3, 3.25, 3.85 and 4.25mm).

Instrumentation Overview



TWIST DRILLS

The Twist Drills are used to prepare the osteotomy for implant placement. Once the surgical guide is in place, the Drill Positioning Handles with drill guide tubes are inserted into the Master Tubes of the surgical guide. The Twist Drills are inserted through these guide tubes. The drills are depth-specific with no depth lines and contain flanges to stop the drills when these make contact with the drill guide tube component of the Drill Positioning Handles. Twist Drills are available in six diameters (2, 2.75, 3, 3.25, 3.85 and 4.25 mm) to allow surgeons to appropriately size osteotomies based on observed bone densities, clinical preference and multiple lengths (A, B, C, D, E).

The recommended drill speed is 1200 - 1500rpm.

The drills included in the surgical kit will accommodate 90% of all possible scenarios. Special drills required for the remaining 10% have been left out to simplify the surgical kit. In these special cases Y or Z drills may be prescribed by the surgical plan. These drills may be purchased separately as needed.

Note: Drill lengths do not necessarily correspond to implant lengths; rather these are dictated by the surgical plan (protocols) based on the prolongation (distance between the position of the Master Tubes and implant seating surface).



BONE TAPS

Bone Taps are used through the Master Tubes in the surgical guide to thread a 5.5mm section of the osteotomy prior to implant placement. The Bone Taps are available in four diameters (3.4, 4, 4/5 and 5mm) and one length. These contain depth markings (1), (2), (3) and at (4) the Bone Tap body has a depth stop. These markings correspond with the surgical plan (protocols) for use during surgery.

The recommended drill speed is 15- 20rpm.

IMPLANT STAGING

The Navigator™ Surgical Kit contains eight implant holder slots to receive the inner packaging of BIOMET 3i Implants, similar to existing surgical kits. Implants will be manually pre-mounted here in preparation for placement.



BONE PROFILERS

Hand-held Bone Profilers are available to manually remove crestal bone for proper abutment seating after the surgical guide is removed for 3.4, 4 and 5mm implants.



MISCELLANEOUS TOOLS

Miscellaneous standard drivers and ratchets are included in the system to place BIOMET 3i Implants. These tools include the following: PHD02N, RASH3N, MDR10, CW100, WR150 and RE100.

Surgical Plan Overview

The Navigator™ System For CT Guided Surgery works in conjunction with the surgical plan, which is provided by the CT planning software company. Each surgical plan is case-specific to provide direction regarding the instrumentation that will be used for each implant site.

Implant Label	3	4	6	8	9	11	12	13	14
Implant Reference Number	IIOS4513	IOSS415	IOSM311	IOSS413	IOSS415	IOSS413	IOSS413	IOSS415	IOSS513
Planned implant diameter (mm)	4/5	4	3.25	4	4	4	4	4	5
Planned implant length (mm)	13	15	11.5	13	15	13	13	15	13
Implant Placement									
Depth Line	(1)	(2)	(4)	(1)	(3)	(1)	(3)	(2)	(1)
Tissue Punch	5	4	4	4	4	4	4	4	5
Starter Drill	4/5	4	3	4	4	4	4	4	5
Drill / Handle	2.0(B)/3	2.0(D)/1	2.0(C)/1	2.0(B)/1	2.0(E)/1	2.0(B)/1	2.0(C)/1	2.0(D)/1	2.0(B)/3
Drill / Handle	3.25(B)/4	3.25(D)/2	2.75(C)/1	3.25(B)/2	3.25(E)/2	3.25(B)/2	3.25(C)/2	3.25(D)/2	3.25(B)/4
Drill / Handle									4.25(B)/5
Tap	4/5	4	3	4	4	4	4	4	5
Implant Mount	5(1)	4(2)	3(4)	4(1)	4(3)	4(1)	4(3)	4(2)	5(1)
Bone Profiler	4	4	3	4	4	4	4	4	5
Analog Placement									
Analog Mount	5(1)	4(2)	3(4)	4(1)	4(3)	4(1)	4(3)	4(2)	5(1)

The surgical plan specifies the depth line for instruments that pass directly through the surgical guide Master Tubes including the Tissue Punch, Starter Drill and Bone Taps. These instruments have landmarks referenced as (1), (2), (3) and (4) that indicate the proper depth to which these instruments should be used through the Master Tubes (figure 1). There are three lines on each instrument; the first line represents depth line (1), while the top of the instrument represents depth line (4). The instruments pass through the Master Tube until the center of the specified line on the instrument reaches the top of the Master Tube (figure 2).

The depth lines also determine what Implant Mount and Implant Analog Mount must be used. These are labeled by diameter and length. Therefore a 4mm implant that has a 3 depth line will be specified as a 4(3).

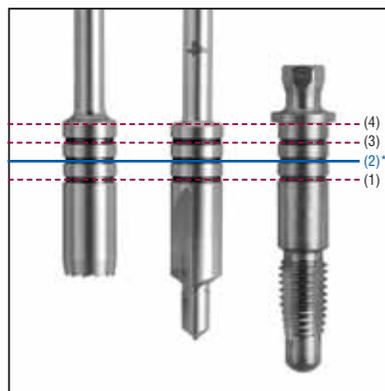


Figure 1



Figure 2

Tips And Techniques

Planning:

- Be sure the CT scanning appliance fits and is seated completely in the mouth before scan is performed. Failure to confirm a stable fit of the scanning appliance may result in a poorly fitting surgical guide affecting the outcome of the procedure.
- Refer to the surgical guide manufacturer for specific instructions on how to mask anatomical structures and plan for fixation of the surgical guide.
- Download the most recent version of planning software including implant libraries.
- Implants currently compatible with the Navigator System Include:
 - Certain® Parallel-Walled MicroMiniplant™ 4 & 5mm Implants
 - OSSEOTITE XP® 4/5mm Implants
 - PREVAIL® 3/4/3, 4/5/4 and straight PREVAIL 4/3 and 5/4mm Implants.
- Height of the master cylinder above the implant platform is variable (7.5, 9, 10.5, 12mm) and determined by the surgical guide manufacturer.
- If planning a cement-retained full arch case, consider implant sites with the greatest potential for stability in order to screw-retain these locations in combination with cement retaining others based on:
 - Bone density readings (in Hounsfield Units) from CT Scan
 - Potential implant length and position relative to the restoration

Preparation:

- Inspect the surgical guide for imperfections and reinforce potential weak areas of the surgical guide with acrylic.
- Try-in the Drill Positioning Handles in case the guide may need adjustments to allow the Drill Positioning Handles to fully seat.
- Clear the Master Tubes of any material remaining from the surgical guide manufacturer.
- Score the Master Tube notch position on the surgical guide to record the hex-orientation landmarks.
- Preparation of a master cast may be advised to confirm the planned position and restorative considerations of implants prior to surgery.
- Review the CT scan data for bone density to anticipate areas of poor bone quality and areas where implant stability may be compromised. During use, surgical guides provide little tactile confirmation of bone density.

Clinical Use:

- For flapless cases, use a Tissue Punch prior to fixation of the guide. Remove the guide and remove the tissue plugs. Then replace and fixate the guide. The Tissue Punch is not intended to be used at high speeds and should be used at no greater than 300–500rpm.
- All instrumentation should be advanced as far as possible through the Master Tube or the drill positioning handle guide tube before rotating. This will limit the possibility of damaging either the instruments or the tubes.
- Use irrigation on instruments prior to and during use to provide lubrication when passing through the Master Tubes and/or Drill Positioning Handles.
- Undersize the osteotomy to increase likelihood of initial implant stability (ie. when planning for a 4mm implant use 3mm as final Twist Drill; 5mm implant use 3.85mm as final Twist Drill. If necessary, increase the diameter of the final Twist Drill appropriately).
- Sequence the placement of implants in an alternating cross arch pattern, moving from one side to the other so as not to compress soft tissue.
- Place all implants close to the final vertical position with the handpiece, then use the hand ratchet to achieve final vertical position and hex orientation.
- Use Bone Profilers prior to placing abutments of any type. Use an oversized profiler when placing angulated abutments.

Immediate Provisionalization Option

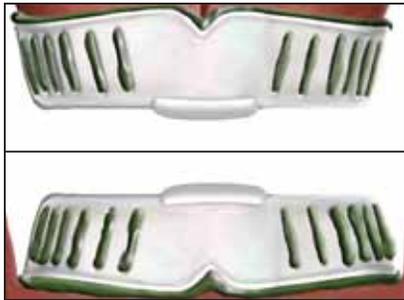
A key benefit of using the BIOMET **3i** Navigator™ System For CT Guided Surgery is the option to use the CT surgical guide to create a preoperative master cast and a fixed provisional restoration in the laboratory prior to the day of surgery. This may allow the clinician to insert a provisional restoration immediately following implant placement using the surgical guide and provides the patient with aesthetic and functional teeth the same day.

Pages 14-26 in this manual are designed to guide surgeons, restorative clinicians and laboratory technicians through the process of fabricating a preoperative master cast and a provisional restoration for insertion following the placement of BIOMET **3i** Implants using the Navigator System For CT Guided Surgery. The CT software company may also offer the option of fabricating a stereolithographic model for use in creating a master cast.

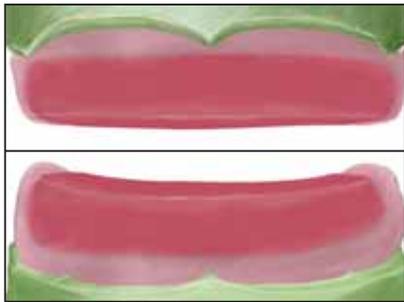
The provisional may be fabricated using a variety of BIOMET **3i** Provisional Components. These components and manual guidelines were developed to provide an easy to use way to deliver an accurately fitting provisional restoration on the day of surgery regardless of potential error from CT scan data, cast fabrication or implant placement. When selecting the provisional component to use, it is important to identify the type of definitive prosthesis and the abutment system that will be used to create it. The chart below includes recommendations that a clinician may want to consider for provisional component selection dependent upon the type of definitive restoration planned.

Provisional Component	Seating Platform	Provisional Restoration	Final Restoration
PreFormance® Posts	Direct To Implant	Cement-Retained	Cement-Retained Or Screw-Retained
PreFormance Temporary Cylinders	Direct To Implant	Screw-Retained	Cement-Retained Or Screw-Retained
Provide® Temporary Cylinders	Abutment Level (For Provide Abutments Only)	Cement-Retained	Cement-Retained
QuickBridge™ Provisional Restoration Components	Abutment Level (for Conical Abutments Only)	Cement-Retained	Screw-Retained

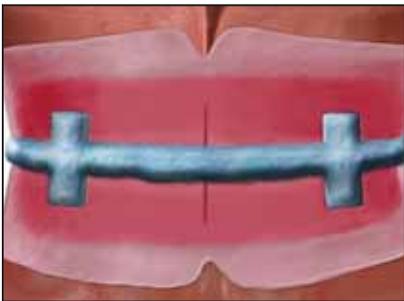
Fabrication Of New Full Or Partial Denture And CT Scanning Appliance



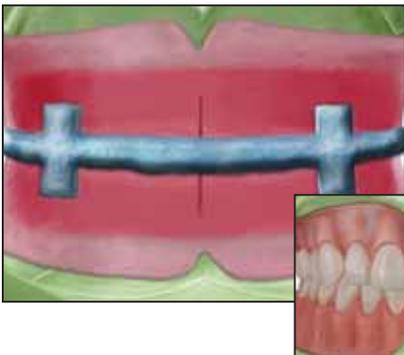
- 1. CLINICIAN**
Make impressions of the maxillary and mandibular arches.



- 2. LABORATORY**
Pour the maxillary and mandibular impressions in die stone. Fabricate baseplate(s) and wax occlusal rim(s) on the cast(s).

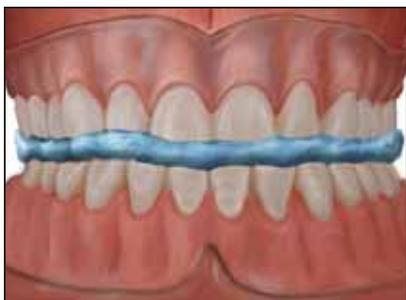


- 3. CLINICIAN**
Place the wax occlusal rim(s) in the mouth, contour appropriately and make the bite records.



- 4. LABORATORY**
Articulate the maxillary and mandibular casts using the bite records. Set denture teeth on the baseplate(s) and wax for try in.

Fabrication Of New Full Or Partial Denture And CT Scanning Appliance



5. CLINICIAN

Place the wax try in(s) in the mouth. Verify the occlusion, aesthetics and phonetics. Make any adjustments necessary. If major adjustments are necessary, make a new interocclusal record and return to the laboratory for a new set up and wax try in.



6. LABORATORY

Wax the denture for the arch in which implants will be placed for processing and flask it. Separate the flask and boil away the wax. Process, finish and polish the denture. Using a denture duplication flask, mix duplication material and place it into one side of the flask. Place the patient's existing denture into the material with the tissue side down. Allow the duplication material to set per the manufacturer's instructions. Apply a separator to the surface. Mix duplication material and place it into the other side of the flask and close the flask over the denture. Allow the duplication material to set. Separate the flask and remove the denture.



7.

Create a mix of 30% barium sulfate and cold cure tooth shade acrylic resin. Pour the mixture into the tooth areas only. Allow the acrylic to set per the manufacturer's instructions. Create a mix of 10% barium sulfate and cold cure tooth shade acrylic resin. Pour the mixture into the flask. Close the flask tightly. Allow the acrylic to set.



8.

Remove the CT scanning appliance from the flask, finish and polish. Place the appliance on the cast. Place the cast on the articulator and make an interocclusal record. Return the scanning appliance to the clinician for the CT scan and set aside the occlusal registration for later use.

Fabrication Of CT Scanning Appliance Using An Existing Denture



1. CLINICIAN OR LABORATORY

Using a denture duplication flask, mix duplication material and place it into one side of the flask. Place the patient's existing denture into the material with the tissue side down. Allow the duplication material to set per the manufacturer's instructions. Apply a separator to the surface. Mix duplication material and place it into the other side of the flask and close the flask over the denture. Allow the duplication material to set. Separate the flask and remove the denture.



2.

Create a mix of 30% barium sulfate and cold cure tooth shade acrylic resin. Pour the mixture into the tooth areas only. Allow the acrylic to set per the manufacturer's instructions. Create a mix of 10% barium sulfate and cold cure tooth shade acrylic resin. Pour the mixture into the flask. Close the flask tightly. Allow the acrylic to set.



3.

Remove the CT scanning appliance from the duplication flask, finish and polish.

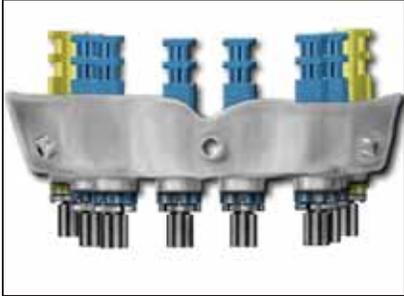


4. CLINICIAN

Place the CT scanning appliance in the mouth and equilibrate. Make an interocclusal record. Send the scanning appliance with the patient for the CT scan and set aside the occlusal registration for use later.

Pre-Surgical Fabrication Of Fully Edentulous Provisional Fixed Bridge

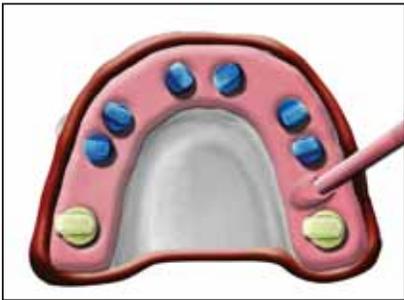
Fabrication Of Master Cast, Articulation And Vacuum Formed Template



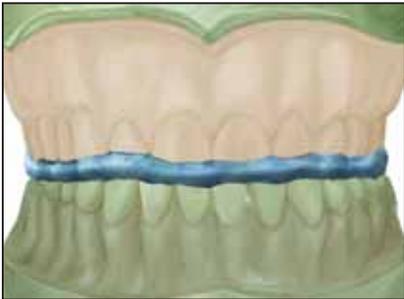
1. LABORATORY

Select the proper diameter and length Analog Mounts for each implant position following the instructions provided by the surgical guide manufacturer. Place the implant analogs onto the Analog Mounts, line up the hexes and thread the thumb screws into these approximately two turns. Place the Analog Mount/analog assemblies through the Master Tubes, engage the rotational positioning pin into the notch and tighten the thumb screws using the Square Driver.

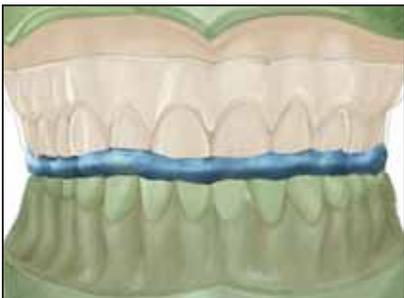
Over tightening the Analog Mounts outside of the Master Tubes may damage the Analog Mounts.



2. Bead and box the surgical guide using rope wax. Apply a stone separator around the inside of the guide. Syringe soft tissue material around the analogs approximately 2mm apical from the interface of the Analog Mount. Pour stone into the surgical guide to create the master cast and allow it to set. Unscrew the thumb screws and remove the Analog Mounts. Carefully separate the surgical guide from the master cast.



3. Place the scanning appliance on the master cast and verify the fit and tooth position. Articulate the master cast with the opposing cast using the scanning appliance and the bite registration.



4. Make a vacuum formed template over the scanning appliance on the cast. Remove the template and the scanning appliance and separate those.

Continue on to step 5 on the following pages for abutment selection and provisional fabrication.

Pre-Surgical Fabrication Of Partially Edentulous Provisional Fixed Crown Or Bridge

Fabrication Of Master Cast, Articulation And Vacuum Formed Template



1. LABORATORY

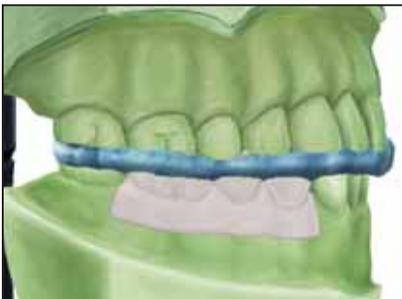
Select the proper diameter and length Analog Mounts for each implant position following the instructions provided by the surgical guide manufacturer. Place the implant analogs onto the Analog Mounts, line up the hexes and thread the thumb screws into these approximately two turns. Place the Analog Mount/analog assemblies through the Master Tubes, engage the rotational positioning notches and tighten the thumb screws using the Square Driver.

Over tightening the Analog Mounts outside of the Master Tubes may damage the Analog Mounts.



2.

Mark the planned implant locations on the preoperative cast and drill holes for each implant that is slightly larger in diameter than the implant analogs. Do not drill through the guide. Insert the implant analogs attached to the surgical guide into the holes and seat the guide onto the remaining teeth on the cast. Fixate the analogs in the cast using stone or pattern resin. Unscrew the thumb screws and remove these. Remove the surgical guide from the master cast.



3.

If a scanning appliance was fabricated on this cast, place it on the master cast and verify the fit and tooth position. Articulate the master cast with the opposing cast using the bite registration.



4.

Make a vacuum formed template over the scanning appliance or diagnostic setup on the cast. Remove the template and the scanning appliance or setup and separate those.

Continue on to step 5 on the following pages for abutment selection and provisional fabrication.

Cement Retained PreFormance® Post Single Or Multi-Unit

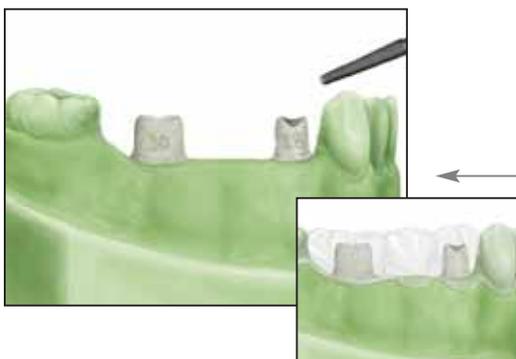


ABUTMENT SELECTION

5. Measure the tissue depth in the interproximal areas at each location and select the proper abutment collar height that will allow the margin to be at tissue level or slightly below after preparation. Also, select the desired emergence profile and a straight or 15° angled post. Finally, match the color of the implant analog to determine the platform diameter.



6. Place the selected PreFormance Posts into each analog. Line up the hexes and place the flat side of the post to the buccal. Press firmly until feeling and/or hearing the audible and tactile click. Secure the abutments into place using a Certain® Titanium Abutment Screw and the Large Hex Driver.



7. Prepare the margin of each PreFormance Post following the gingival contour at tissue level or slightly below and prepare the post area for the proper draw of single or multiple units. A rough diamond bur is recommended. Number each abutment with the tooth position on the buccal side with a bur. Seal the abutment access holes with wax or putty.



PROVISIONAL FABRICATION

8. Place the vacuum formed template on the master cast over the PreFormance Posts. Reduce the posts as necessary so these fit within the template. Block out the undercuts on the adjacent teeth. Place the cast back on the articulator. Apply a separator to the posts and the casts. Fill the tooth portion of the template with acrylic resin. Fully seat the template on the cast over the abutments using the articulation. Allow the acrylic to set per the manufacturer's instructions.

or

Duplicate the master cast with the abutments in place. Articulate, wax the provisional on the duplicate cast and process it in acrylic resin.

Cement Retained PreFormance® Post Single Or Multi-Unit



9. Remove the template from the PreFormance Posts. Remove the provisional from the template. Remove all excess acrylic from around the margin areas of the provisional. Fill in any voids. Finish the crown or bridge to the desired contour and polish.

OPTIONAL: Relieve each abutment area for the intraoral reline of the provisional.

CT GUIDED SURGICAL IMPLANT PLACEMENT

10. CLINICIAN

Place the implants using the surgical guide and following the surgical plan provided by the guide manufacturer.

See page 8 for an example of a surgical plan.



POST SURGICAL DELIVERY OF PROVISIONAL

11. Place each PreFormance Post into the implants, one by one, following the tooth position numbers on the buccal. Press firmly until feeling and/or hearing the audible and tactile click. Thread the titanium abutment screw into each implant using the Large Hex Driver. Verify an accurate fit of each abutment by visualizing the interfaces or take a radiograph. Torque the abutment screws to 20Ncm using the Large Hex Driver Tip and a torque device. Seal each access hole with a temporary filling material. Try in the provisional over the PreFormance Posts and verify it fits to the margins properly. Adjust the occlusion as indicated and remove the provisional.



12. If the provisional did not fit passively, place acrylic resin into each abutment area, seat the provisional onto the abutments and have the patient close into occlusion. Allow the acrylic to set per the manufacturer's instructions. Remove the provisional. Fill in any voids. It may be necessary to remove the PreFormance Posts and place those into the provisional to fill marginal voids. Remove any excess acrylic and polish. Place temporary cement into the provisional, seat it on the abutments and have the patient close into occlusion. Remove any excess cement from around the margin areas. Allow the cement to set per the manufacturer's instructions. If a flap procedure was used during surgery, suture the tissue around the PreFormance Posts and the provisional.



Cement Retained Provide® Abutment And Temporary Cylinder Single Or Multi-Unit



- 5. ABUTMENT SELECTION**
- Select the proper Provide Abutment collar height for each implant by measuring the tissue depth on the buccal side at each position. If a 1mm subgingival margin is desired, subtract 1mm. Also, select the proper post height that will allow approximately 2mm of interarch space between the top of the post and the opposing occlusion. Finally, match the color of the implant analog to determine the platform diameter.



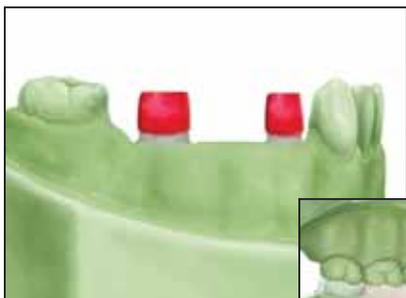
- 6.** Place the selected Provide Abutments into each analog. Line up the hexes and place the flat side of the post to the buccal. Press firmly until feeling and/or hearing the audible and tactile click. Secure the abutments into place using a Certain® Try In Screw and the Large Hex Driver.



- 7.** Preparation of the post portion of the Provide Abutment may be necessary to achieve the proper draw for multiple units. A carbide bur is recommended. Do not prepare the margin area of the abutment as this will impact the fit of interfacing components. Number each abutment with the tooth position on the flat side with a bur. Seal the abutment access holes with wax or putty.



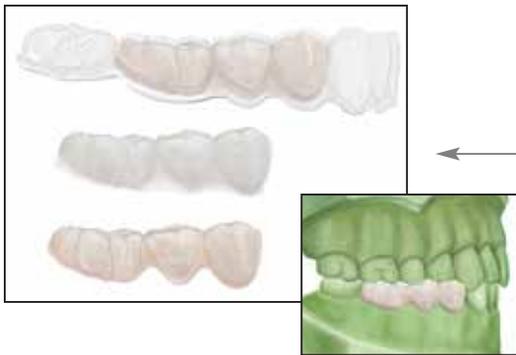
- 8. PROVISIONAL RESTORATION FABRICATION**
- Select the appropriate Provide Temporary Cylinder for single or multiple units. Place the temporary cylinders on each abutment and verify complete seating at the margin. Place a small amount of wax at the margin area of each Provide Temporary Cylinder to ensure that the fit remains passive on the abutment margin during fabrication of the provisional. Place the vacuum formed template on the master cast over the temporary cylinders. Reduce the cylinders as necessary so these fit within the template. Block out the retention facets on the cylinders with wax. Block out the undercuts on the adjacent teeth. Apply a separator to the cast. Fill the tooth portion of the template with acrylic resin. Place the cast back on the articulator. Fully seat the template on the cast over the temporary cylinders using the articulation. Allow the acrylic to set per the manufacturer's instructions.



or

Duplicate the master cast with the Provide Abutments and temporary cylinders in place. Articulate, wax the provisional on the duplicate cast and process it in acrylic resin.

Cement Retained Provide® Abutment And Temporary Cylinder Single Or Multi-Unit



9. Remove the template from the Provide Abutments with the temporary cylinders inside the acrylic. Remove the provisional from the template. Remove the temporary cylinders from the provisional. Remove all excess acrylic from around the margin areas of the provisional. Fill in any voids. Finish the crown or bridge to the desired contour and polish.

CT GUIDED SURGICAL IMPLANT PLACEMENT

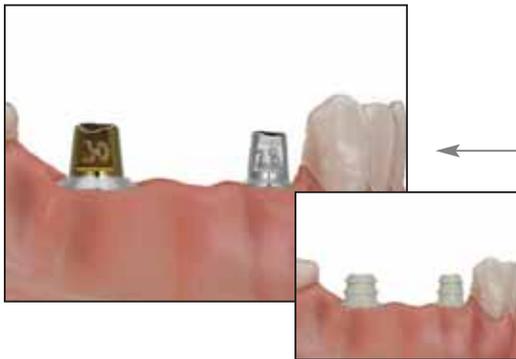
10. CLINICIAN
Place the implants using the surgical guide and following the surgical plan provided by the guide manufacturer.

See page 8 for an example of a surgical plan.



POST SURGICAL DELIVERY OF PROVISIONAL RESTORATION

11. Place each Provide Abutment into the implants, one by one, following the tooth position numbers on the buccal. Press firmly until feeling and/or hearing the audible and tactile click. Thread the Certain® Gold-Tite® Screw into the implant using the Large Hex Driver. Verify an accurate fit of each abutment by visualizing the interfaces or taking a radiograph. Torque the abutment screws to 20Ncm using the Large Hex Driver Tip and a torque device. Seal each access hole with a temporary filling material. Place a small amount of temporary cement inside each Provide Temporary Cylinder and seat it on the Provide Abutment. Try in the provisional over the temporary cylinders and verify it fits to the margins properly. Adjust the occlusion as indicated and remove the provisional.



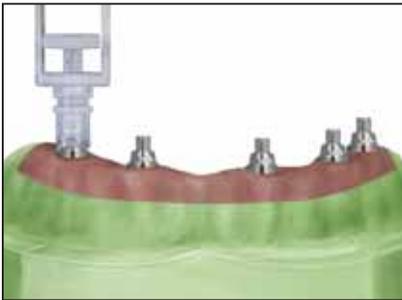
12. If a flap procedure was used during surgery, suture the tissue around the Provide Abutments. Place acrylic resin into the retention facets on each Provide Temporary Cylinder and into each abutment area on the provisional. Seat the provisional on the cylinders and have the patient close into occlusion. Allow the acrylic to set per the manufacturer's instructions. Remove the provisional. Fill in any voids. Remove any excess acrylic and polish. Place temporary cement into the provisional, seat it on the abutments and have the patient close into occlusion. Remove any excess cement from around the margin areas. Allow the cement to set per the manufacturer's instructions.



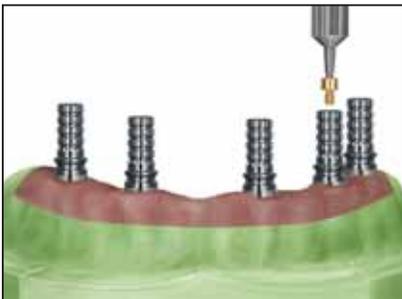
Screw Retained Conical Abutment And Temporary Cylinder Single Or Multi-Unit



- 5. ABUTMENT SELECTION**
- Select the proper Conical Abutment collar height for each implant by measuring the tissue depth on the buccal side at each location. If a 1mm subgingival margin is desired, subtract 1mm. Next, select the proper abutment angulation; straight, 17° or 25°. Allow approximately 2mm of interarch distance space between the top of the abutment and the opposing occlusion. Finally, match the color of the implant analog to determine the platform diameter.



- 6.** Place the selected Conical Abutments into each analog. Line up the hexes and press firmly until feeling and/or hearing the audible and tactile click. Secure the abutments into place using the Conical Abutment Screws and the Abutment Driver.



- 7. PROVISIONAL RESTORATION FABRICATION**
- Select the appropriate Conical Temporary Cylinders for single or multiple units. Place a Conical Temporary Cylinder on each of the abutments. Secure the cylinders into place using a retaining screw and the Large Hex Driver.

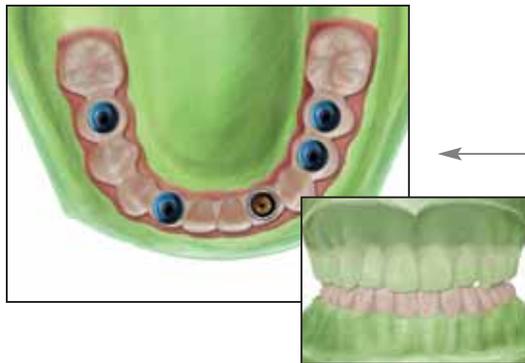


- 8.** Drill holes in the vacuum formed template in the areas of the Conical Temporary Cylinders. Place the vacuum formed template on the master cast over the temporary cylinders. Reduce the cylinders as necessary so these fit within the template using a carbide bur. Seal the cylinder access holes with wax or putty. Select one cylinder in an area with dense bone to process into the provisional. Block out the retention facets on all other cylinders with wax. Place the cast back on the articulator. Add acrylic resin into the retention facets on the selected cylinder and fill the tooth portion of the template with acrylic resin. Fully seat the template on the cast over the temporary cylinders using the articulation. Allow the acrylic to set per the manufacturer's instructions.

or

Duplicate the master cast with the Conical Abutments and temporary cylinders in place. Articulate, wax the provisional on the duplicate cast and process it in acrylic resin.

Screw Retained Conical Abutment And Temporary Cylinder Single Or Multi-Unit



9. Clear the cylinder access hole and remove the retaining screw from the selected cylinder. Remove the template from the cast over the non processed cylinders with the selected temporary cylinder inside the acrylic. Remove the provisional from the template. Remove all excess acrylic from around the margin areas of the provisional. Relieve the holes for the other cylinders as necessary so the provisional can be placed over these and removed easily. Fill in any voids. Finish the crown or bridge to the desired contour and polish.

CT GUIDED SURGICAL IMPLANT PLACEMENT

10. CLINICIAN

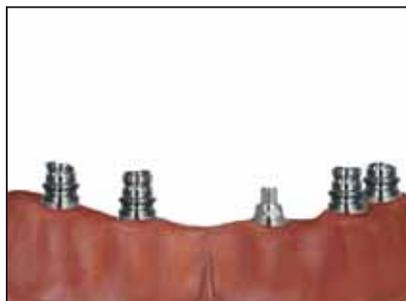
Place the implants using the surgical guide and following the surgical plan provided by the guide manufacturer.

See page 8 for an example of a surgical plan.

POST SURGICAL DELIVERY OF PROVISIONAL RESTORATION

11. Place each Conical Abutment into the implants, one by one, in the proper locations. Press firmly until feeling and/or hearing the audible and tactile click. Thread the Conical Abutment Screws into the implants using the Abutment Driver. Verify an accurate fit of each abutment by visualizing the interfaces or by taking a radiograph. Torque the abutment screws to 20Ncm using the Abutment Driver Tip and a torque device. Place a Conical Temporary Cylinder on an abutment on the opposite side of the arch from the selected lab processed cylinder. Secure the cylinder into place using a retaining screw and the Large Hex Driver. Seal the access hole with impression material. Try in the provisional over the Conical Temporary Cylinder and secure it into place by threading a retaining screw through the lab processed cylinder. Verify that it fits to the cylinder margins properly. Adjust the occlusion as indicated and remove the provisional.

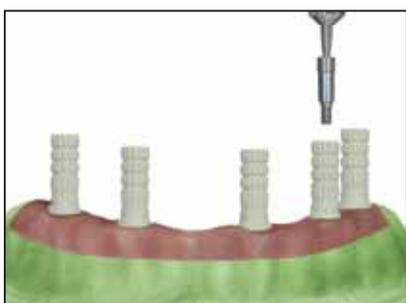
12. If a flap procedure was used during surgery, suture the tissue around the Conical Abutments. Place acrylic resin into the retention facets on the Conical Temporary Cylinder and into the cylinder area on the provisional. Seat the provisional over the cylinder and secure it into place by threading a retaining screw through the lab processed cylinder. Have the patient close into occlusion. Allow the acrylic to set per the manufacturer's instructions. Remove the retaining screws and remove the provisional. Place the remaining Conical Temporary Cylinders on the abutments and lute these into the provisional by repeating the prior steps. Fill in any voids. Remove any excess acrylic and polish. Screw the provisional into place with Gold-Tite® Retaining Screws using the Large Hex Driver. Torque the screws to 20Ncm using the Large Hex Driver Tip and a torque device. Place a temporary filling material in the access holes and seal those with composite resin. Adjust the occlusion as indicated.



Screw Retained PreFormance® Temporary Cylinders Single Or Multi-Unit



- 5. ABUTMENT SELECTION**
- The PreFormance Temporary Cylinders are designed to allow acrylic resin to be added to them to develop the desired subgingival and supragingival contour to the crown or bridge. The hexed cylinder is used for single units and the non hexed cylinder is used for multiple unit provisional restorations. Match the color of the implant analog to determine the platform diameter.



- 6.** Place the selected PreFormance Temporary Cylinders into each analog. Secure the abutments into place using a Certain® Titanium Abutment Screw for hexed cylinders or a large diameter titanium abutment screw for non-hexed cylinders and the Large Hex Driver.



- 7. PROVISIONAL RESTORATION FABRICATION**
- Drill holes in the vacuum formed template in the areas of the PreFormance Temporary Cylinders. Place the vacuum formed template on the master cast over the temporary cylinders. Reduce the cylinders as necessary so these fit within the template using a carbide bur. Seal the cylinder access holes with wax or putty. Select one cylinder in an area with dense bone to process into the provisional. Block out the retention facets on all other cylinders with wax. Place the cast back on the articulator. Add acrylic resin into the retention facets on the selected cylinder and fill the tooth portion of the template with acrylic resin. Fully seat the template on the cast over the temporary cylinders using the articulation. Allow the acrylic to set per the manufacturer's instructions.

or

Duplicate the master cast with the PreFormance Temporary Cylinders in place. Articulate, wax the provisional on the duplicate cast and process it in acrylic resin.



- 8.** Clear the cylinder access hole and remove the abutment screw from the selected cylinder. Remove the template from the cast over the non-processed cylinders with the selected temporary cylinder inside the acrylic. Remove the provisional from the template. Remove all excess acrylic from around the margin areas of the provisional. Relieve the holes for the other cylinders as necessary so the provisional can be placed over those and removed easily. Fill in any voids. Finish the crown or bridge to the desired contour and polish.

Screw Retained PreFormance® Temporary Cylinders Single Or Multi-Unit

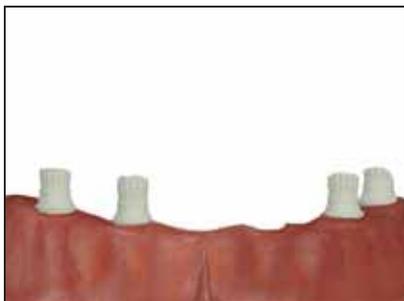


CT GUIDED SURGICAL IMPLANT PLACEMENT

9. CLINICIAN

Place the implants using the surgical guide and following the surgical guide provided by the guide manufacturer.

See page 8 for an example of a surgical plan.



POST SURGICAL DELIVERY OF PROVISIONAL RESTORATION

10.

Place a PreFormance Temporary Cylinder on an implant on the opposite of the arch from the selected lab processed cylinder. Secure the cylinder into place using an abutment screw and the Large Hex Driver. Seal the access hole with impression material. Try in the provisional over the PreFormance Temporary Cylinder and secure it into place by threading an abutment screw through the lab processed cylinder. Verify that it fits to the cylinder margins properly. Adjust the occlusion as indicated and remove the provisional.



11.

Place acrylic resin into the retention facets on the PreFormance Temporary Cylinder and into the cylinder area on the provisional. Seat the provisional over the cylinder and secure it into place by threading an abutment screw through the lab processed cylinder. Have the patient close into occlusion. Allow the acrylic to set per the manufacturer's instructions. Remove the abutment screws and remove the provisional. Place the remaining PreFormance Temporary Cylinders on the implants and lute these into the provisional by repeating the prior steps. Fill in any voids. Remove any excess acrylic and polish. Screw the provisional into place with the titanium abutment screws using the Large Hex Driver. Torque the screws to 20Ncm using the Large Hex Driver Tip and a torque device. Place a temporary filling material in the access holes and seal those with composite resin. Adjust the occlusion as indicated. If a flap procedure was used during surgery, suture the tissue around the provisional.



Combination Cement / Screw Retained QuickBridge™ And Conical Temporary Cylinder Multi-Unit Only



- 5. ABUTMENT SELECTION**
- Select the proper Conical Abutment collar height for each implant by measuring the tissue depth on the buccal side at each position. If a 1mm subgingival margin is desired, subtract 1mm. If using QuickBridge, subtract 2.5mm. Next, select the proper abutment angulation; straight, 17° or 25°. Allow approximately 2mm of interarch distance space between the top of the abutment and the opposing occlusion. Finally, match the color of the analog platform to determine the platform diameter.



- 6.** Place the selected Conical Abutments into each analog. Line up the hexes and press firmly until feeling and/or hearing the audible and tactile click. Secure the abutments into place with the Conical Abutment Screws using the Abutment Driver.



- 7. PROVISIONAL RESTORATION FABRICATION**
- Select one abutment in an area with dense bone to process a Conical Temporary Cylinder into the provisional. Select another abutment area across the arch where a temporary cylinder will be processed into the provisional chairside. Place a Conical Temporary Cylinder on the two selected abutments and secure these into place using retaining screws and the Large Hex Driver. Thread a QuickBridge Titanium Cylinder on each of the remaining abutments using the Large Hex Driver. Place a QuickBridge Cap on each cylinder and press down firmly until fully seated. Block out the retention facets on the QuickBridge Caps and one of the temporary cylinders with wax.

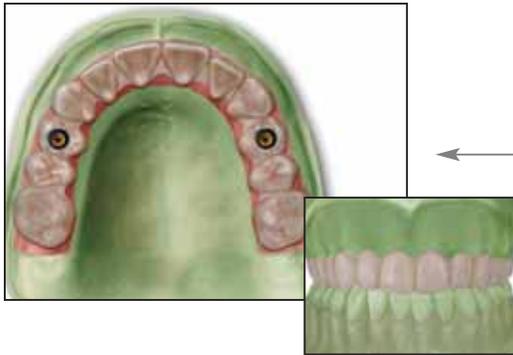


- 8.** Drill holes in the vacuum formed template in the areas over the Conical Temporary Cylinders. Place the vacuum formed template onto the master cast over the cylinders and caps to verify there is no interference with it seating completely. Reduce the cylinders as necessary so these fit within the template using a carbide bur. Seal the cylinder access holes with wax or putty. Place the cast back on the articulator. Add acrylic resin into the retention facets on the selected cylinder and fill the tooth portion of the template with acrylic resin. Fully seat the template on the cast over the temporary cylinders and QuickBridge Caps using the articulation. Allow the acrylic to set per the manufacturer's instructions.

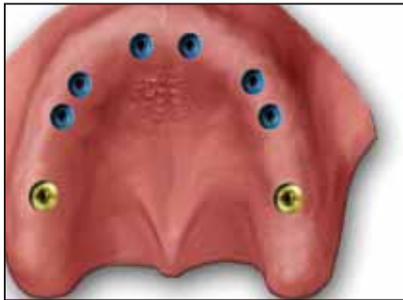
or

Duplicate the master cast with the Conical Abutments, temporary cylinder and QuickBridge Caps in place. Articulate, wax the provisional on the duplicate cast and process it in acrylic resin.

Combination Cement / Screw Retained QuickBridge™ And Conical Temporary Cylinder Multi-Unit Only

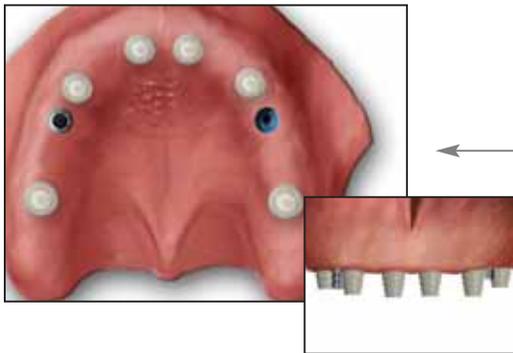


9. Clear the cylinder access hole and remove the retaining screw from the selected Conical Temporary Cylinder. Remove the template from the cast over the remaining cylinder and the QuickBridge Caps with the Conical Temporary Cylinder inside the acrylic. Remove the provisional from the template. Remove all excess acrylic from around the margin areas of the provisional and the access holes. Relieve the holes for the temporary cylinder and the QuickBridge Caps as necessary so the provisional can be placed over these and removed easily. Fill in any voids. Finish the bridge to the desired contour and polish. Remove the wax from the temporary cylinder and the QuickBridge Caps and return these with the case for chairside pick up.



- CT GUIDED SURGICAL IMPLANT PLACEMENT CLINICIAN**
Place the implants using the surgical guide and following the surgical guide provided by the guide manufacturer.

See page 8 for an example of a surgical plan.



- POST SURGICAL DELIVERY OF PROVISIONAL RESTORATION**
11. Place each Conical Abutment into the implants, one by one, in the proper locations. Press firmly until feeling and/or hearing the click. Thread the Conical Abutment Screws into the implants using the Abutment Driver. Verify an accurate fit of each abutment by visualizing the interfaces or by taking a radiograph. Torque the abutment screws to 20Ncm using the Abutment Driver Tip and a torque device. Place the Conical Temporary Cylinder onto the abutment on the opposite side of the arch from the lab processed cylinder and secure it into place with a retaining screw. Seal the access hole with impression material. Place a QuickBridge Titanium Cylinder on each of the abutments using the Large Hex Driver except for the abutment with the selected lab processed temporary cylinder. Place a QuickBridge Cap on each cylinder and press down firmly until fully seated. Try in the provisional over the temporary cylinder and the QuickBridge Caps and secure it into place by threading a retaining screw through the lab processed cylinder. Verify that it fits to the cylinder and cap margins properly. Adjust the occlusion as indicated and remove the provisional.



12. If a flap procedure was used during surgery, suture the tissue around the Conical Abutments. Place acrylic resin into the retention facets on the temporary cylinder and into the cylinder area on the provisional. Seat the provisional over the cylinder and secure it into place by threading a retaining screw through the lab processed temporary cylinder. Have the patient close into occlusion. Allow the acrylic to set per the manufacturer's instructions. Remove the retaining screws and remove the provisional. Place acrylic resin into the retention facets on each QuickBridge Cap and into each cap area on the provisional. Seat the provisional over the caps and secure it into place by threading retaining screws through the two temporary cylinders. Have the patient close into occlusion. Allow the acrylic to set.

Combination Cement / Screw Retained QuickBridge™ And Conical Temporary Cylinder Multi-Unit Only



13. Remove the retaining screws and remove the provisional. Fill in any voids. Remove any excess acrylic and polish.



14. Line the QuickBridge Cylinders with temporary cement. Seat the provisional on the Conical Abutments and snap it over the QuickBridge Cylinders. Screw the provisional into place with a Gold-Tite® Retaining Screw using the Large Hex Driver. Torque the screw to 20Ncm using the Large Hex Driver Tip and a torque device. Have the patient close into occlusion. Remove any excess cement from around the cap margin areas. Allow the cement to set per the manufacturer's instructions. Place a temporary filling material in the access holes and seal these with composite resin. Adjust the occlusion as indicated.



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