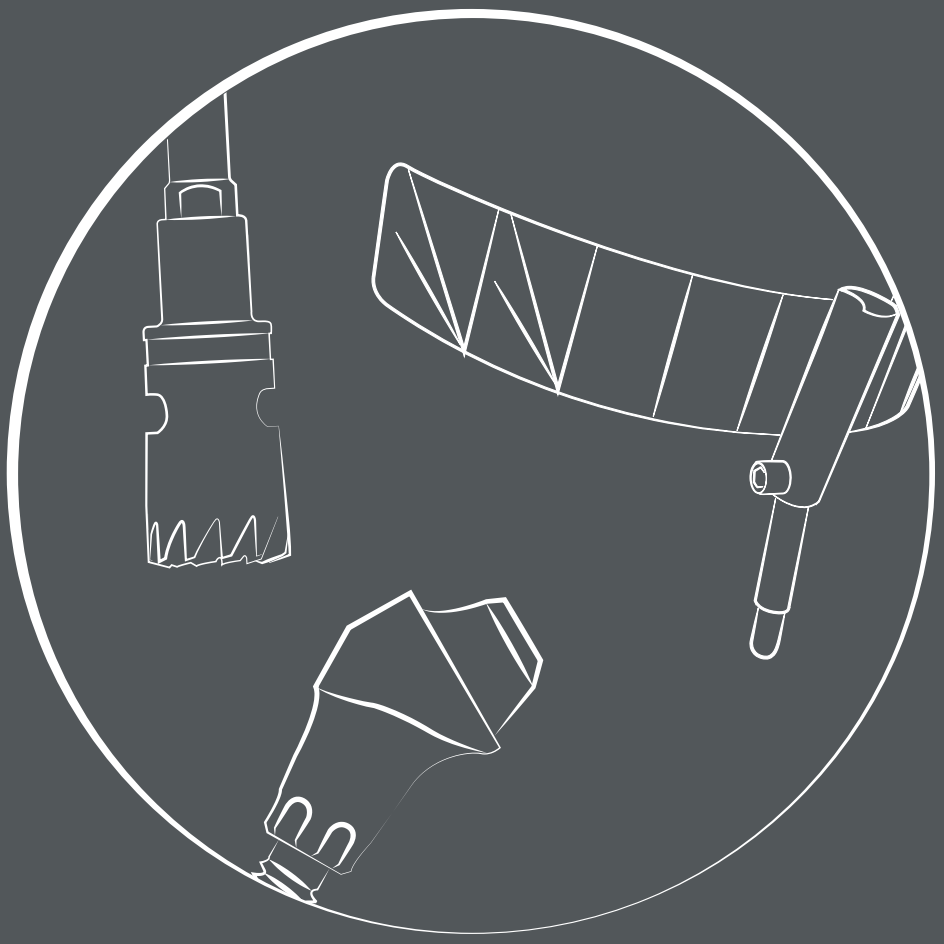


MIS MULTIFIX System
Protocol Guide

MIS® USA

MIS MULTIFIX Fixed Restoration for Atrophic Ridges allows for a comprehensive treatment plan for edentulous patients, of full-arch immediate restoration, using Multi-Unit abutments on just four implants.

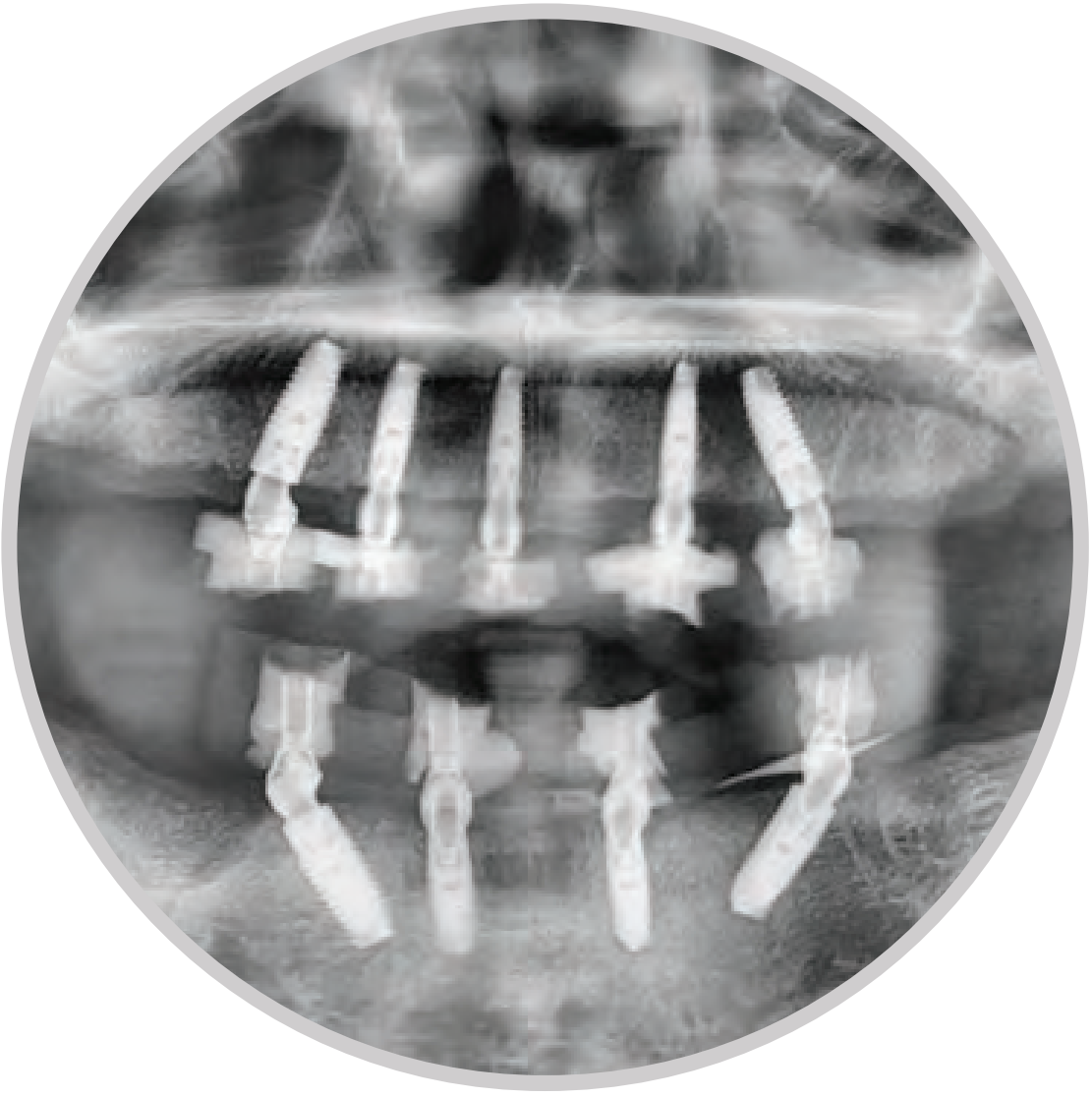
Immediate
Immediate esthetic and functional solution

Permanent
Permanent fixed full-arch restoration

Stability
High stability may be achieved by longer implants and posterior angulated placement

Chair time
Less chair time and more affordable treatment compared to full-arch alternatives

Versatility
Reduced need for bone augmentation, even in low bone volume cases

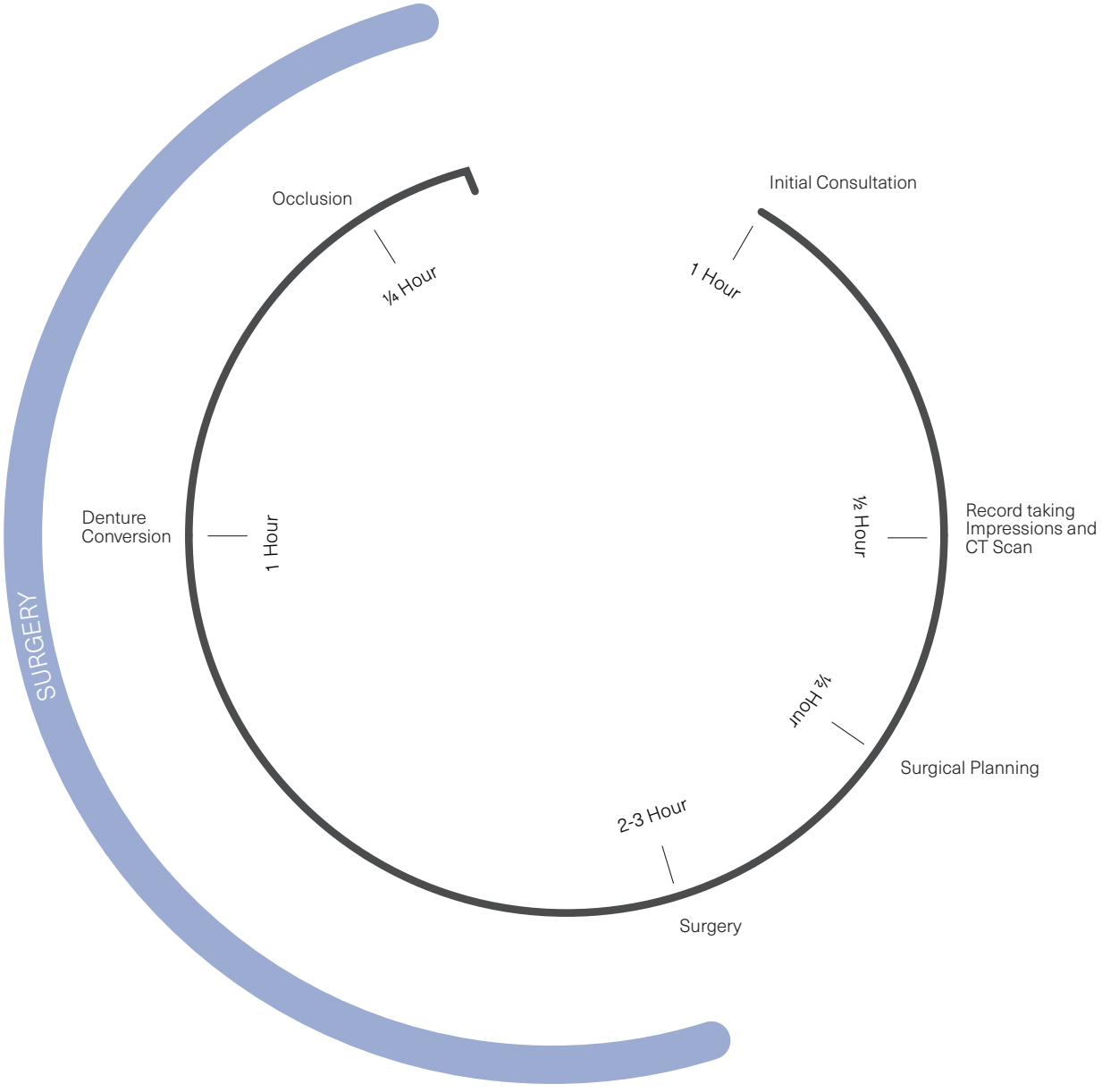


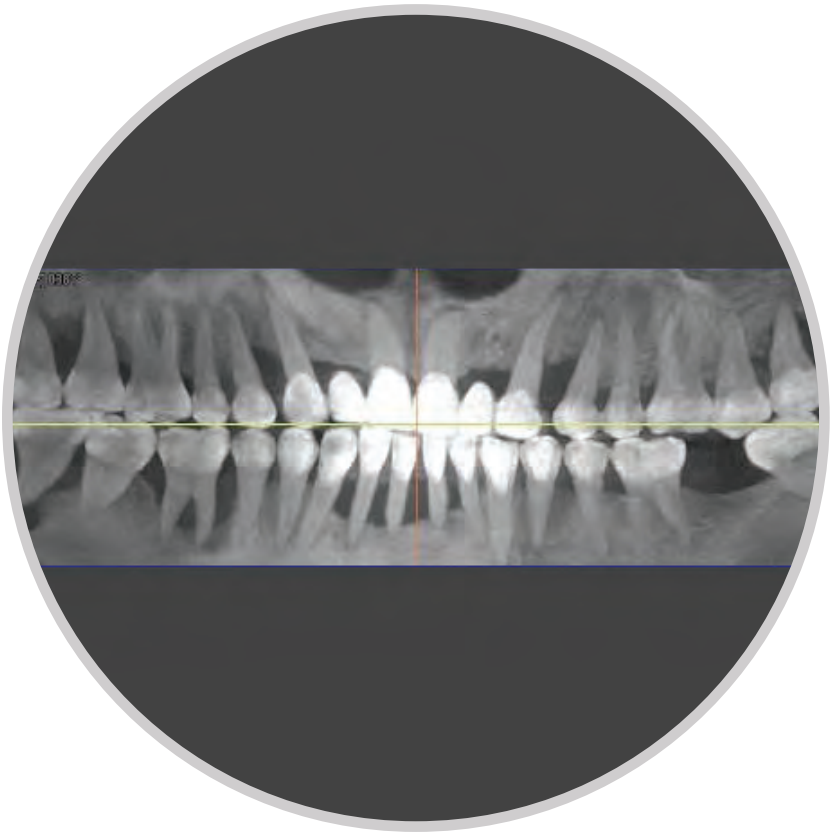
Full Arch Solution Multifix System V3 Implant Protocol

Guide: A step by step quick reference manual by:

Dr. Emilio Argüello MSc. Board certified periodontist

Pre-surgical & Surgical Timeline





1.

Case selection

- Determine the need for full arch extraction

Consider the following:

- Periodontal disease, bone loss and remaining alveolar bone support.
- Implications of poor to hopeless teeth on prosthetic and restorative procedures.
- Evaluate the existing VDO (vertical dimension of occlusion and plan for corrections as needed).
- Assess the existing teeth position in the arch.

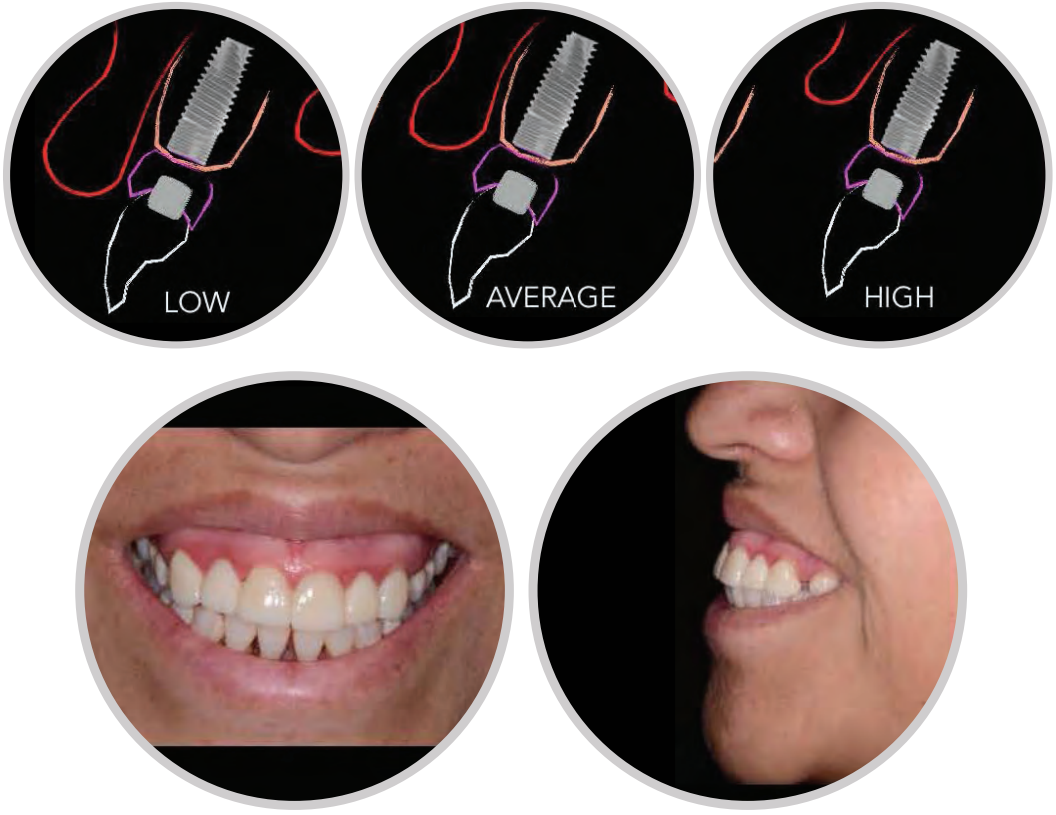


2.

Case selection & Record Taking

Obtain a cone beam CT (computer tomography scan) in MIP (maximum inter-cuspation) utilizing a bite registration.

- Skeletal relationships and inter-arch relationships to determine the feasibility of treatment and plan modifications.
- Assess remaining alveolar bone support for future implant placement.



3.

Case selection & Record Taking

Assess the position of the lip at smile line.

- Consider the feasibility of this modality of treatment, taking into account the need for hiding the transition line of prosthesis (interphase between gingiva and final prosthesis) and lip density.
- If patient presents with high smile and/or poor lip density, it may not be possible to hide such prosthetic transition unless you modify the emergence profile, account for more bone reduction and/or increase the size of prosthetic teeth, or choose another modality of treatment.



4.

Case selection & Record Taking

Obtain additional records as follows:

- Maxillary and mandibular impressions (digital intra-oral scanning or conventional impressions).
- Obtain a bite registration in MIP or Centric Relation as desired.
- Obtain a Face-bow record in order to properly articulate the diagnostic casts.
- Select the teeth shade for the temporary prosthesis in conjunction with patient.
- Send records to laboratory for a diagnostic wax-up (conventional or digital).
- If edentulous, follow conventional steps for fabrication of immediate denture (wax-rim try-in, wax-up try-in, etc).
- Once you receive the diagnostic wax-up from laboratory, make modifications accordingly, taking into consideration, VDO, teeth proportions, arch form, inter-arch relationships, etc.
- If digital planning is desired, digitize (scan such diagnostic wax-up and overlay it into the original CT scan for digital planning of where the future implant positions will be).
- Otherwise, once diagnostic wax-up is approved, instruct laboratory to fabricate an immediate denture to be used for conversion the day of the surgery.



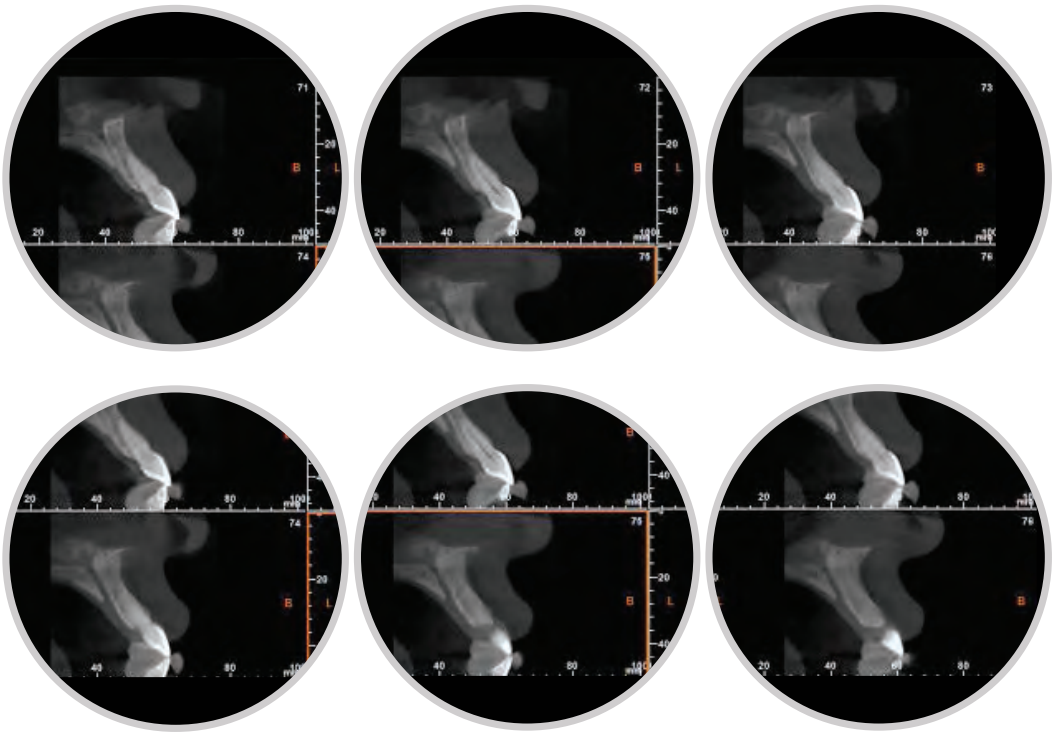
5.

Case selection & Record Taking

IMPORTANT:

Inform the laboratory that the diagnostic wax-up and immediate denture fabrication should measure 15mm from the base of the planned bone reduction to incisal edge/occlusal surface in anteriors and 12-13mm in posteriors.

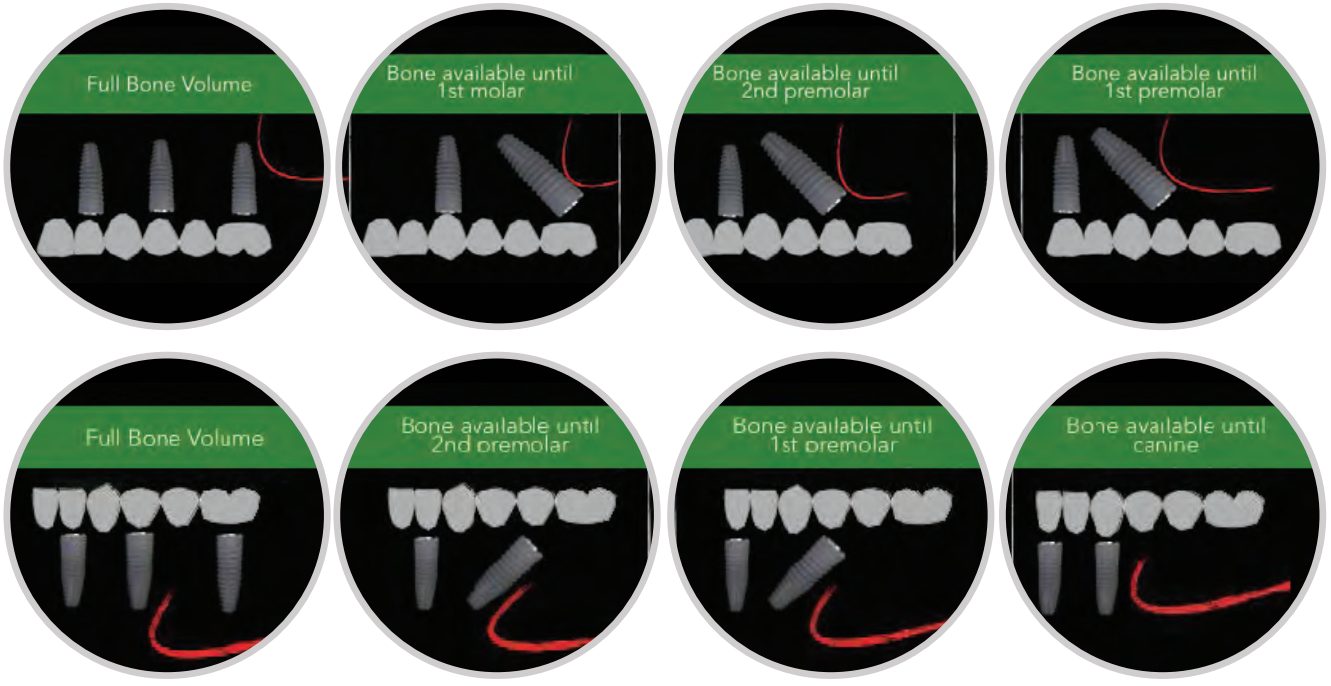
- Ask laboratory to produce a duplicate of the immediate denture to use it during surgery as a “free-hand” angulation guide.



6.

Case Planning/Bone Reduction

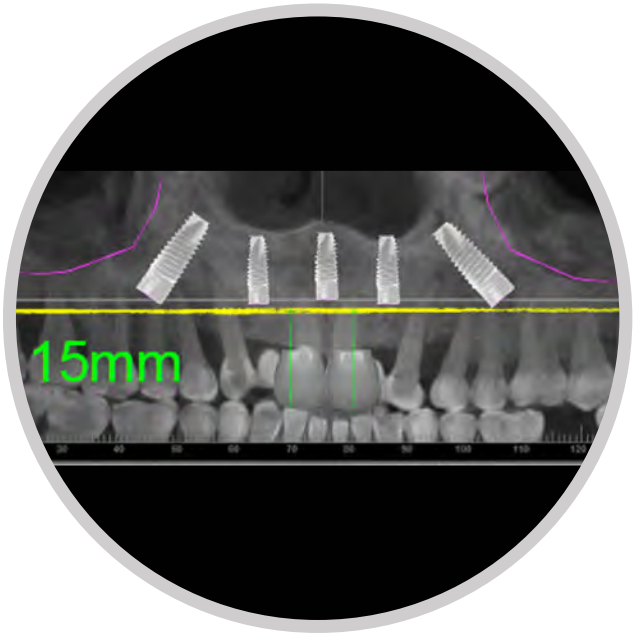
- Consider the bone reduction to be done during surgery in order to accommodate 15mm of space in anteriors and 12-13mm in posteriors, by tracing a line in the CT Scan and recording it.
- Account for how much residual bone you will have in order to select the implant lengths and widths and record it.



7.

Case Planning/Implant position

- Select the implant positions in maxilla and mandible, taking into account anatomical landmarks such as maxillary sinus, inferior alveolar nerve, mental foramen, etc.





8.

Case Planning/Implant position

- Select the implant positions in maxilla and mandible, taking into account anatomical landmarks such as maxillary sinus, inferior alveolar nerve, mental foramen, etc.
- Remember that ideally, each implant should have at least 1.5 to 2mm of buccal and lingual bone, and if placed in fresh extraction socket, you should also have primary stability apically or circumferentially.
- Account for the most distal position of the implant to be as close to the first molar position as possible. Keep in mind that the prosthetic position of the first molar might be a cantilever from the last implant. Such cantilever should not be more than one tooth length from the last implant position (consider such distal cantilever no more than 1 1/2 the AP spread).



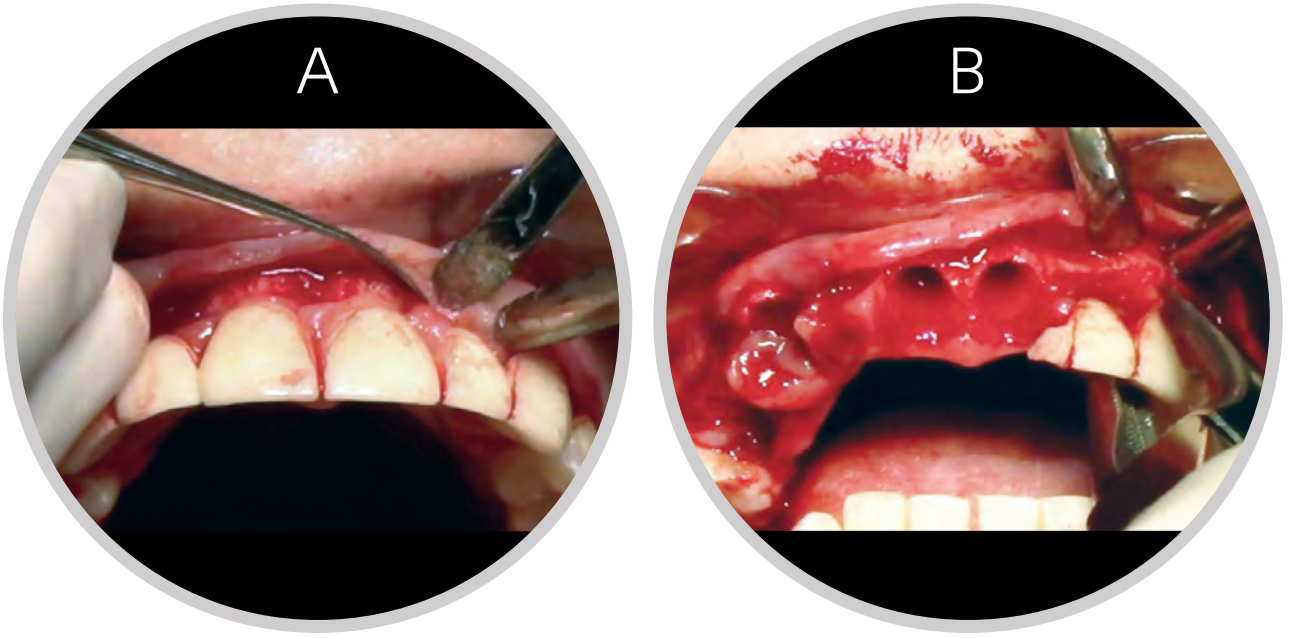
9.

Surgery Day

- Have the patient bite in full MIP and record the VDO.
- Using a permanent marker, place a line on the tip of the nose and another in the chin area. While patient bites on existing MIP, transfer such markings to a wooden stick or tongue depressor.
- For the final prosthetics and through the surgery, you will need to verify that you are maintaining the pre-measured VDO.
- Alternatively, you can use a caliper to measure the two markings.

Remember the following:

if you purposely planned to increase the VDO of the patient through the new prosthetics, still place such marks; the new prosthetics during surgery and at the end should match the increased VDO that you have projected.



10.

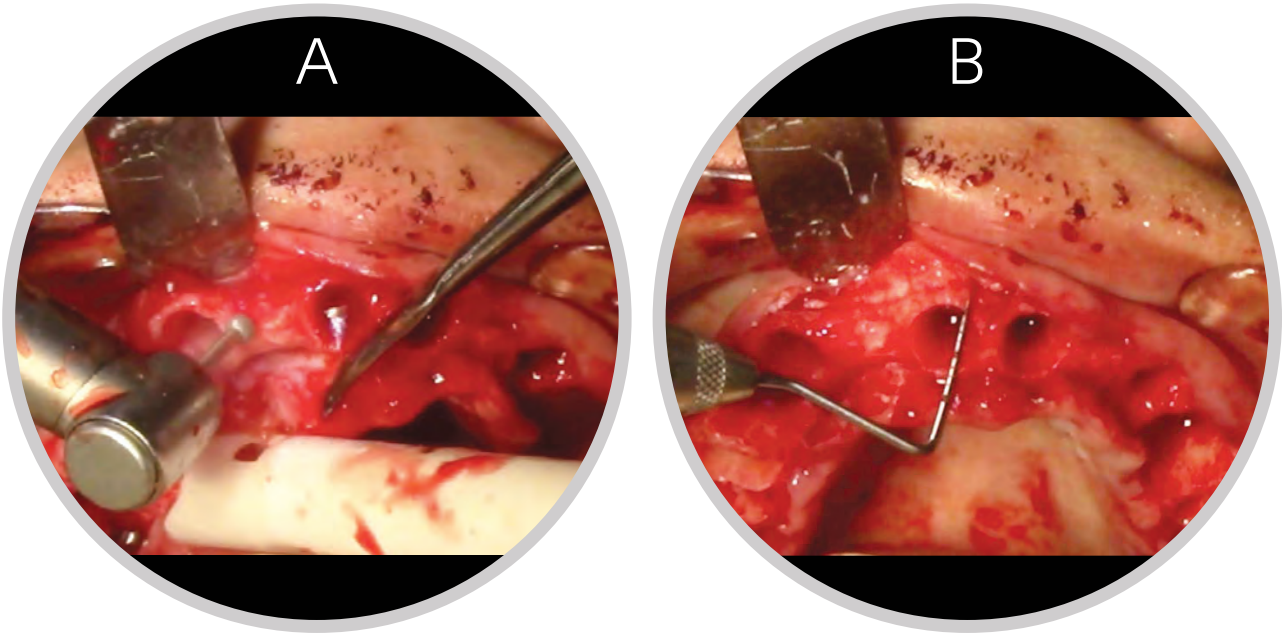
Surgery Day

A:

- If double arch, start with maxillary arch.
- Perform full thickness flap reflection to 2mm apically beyond the projected bone reduction in the buccal aspect.

B:

- Proceed to remove all remaining teeth (although a large part of the remaining alveolus will be removed through a bone reduction, attention should be paid to remove teeth a-traumatically and sectioning such teeth as needed).



11.

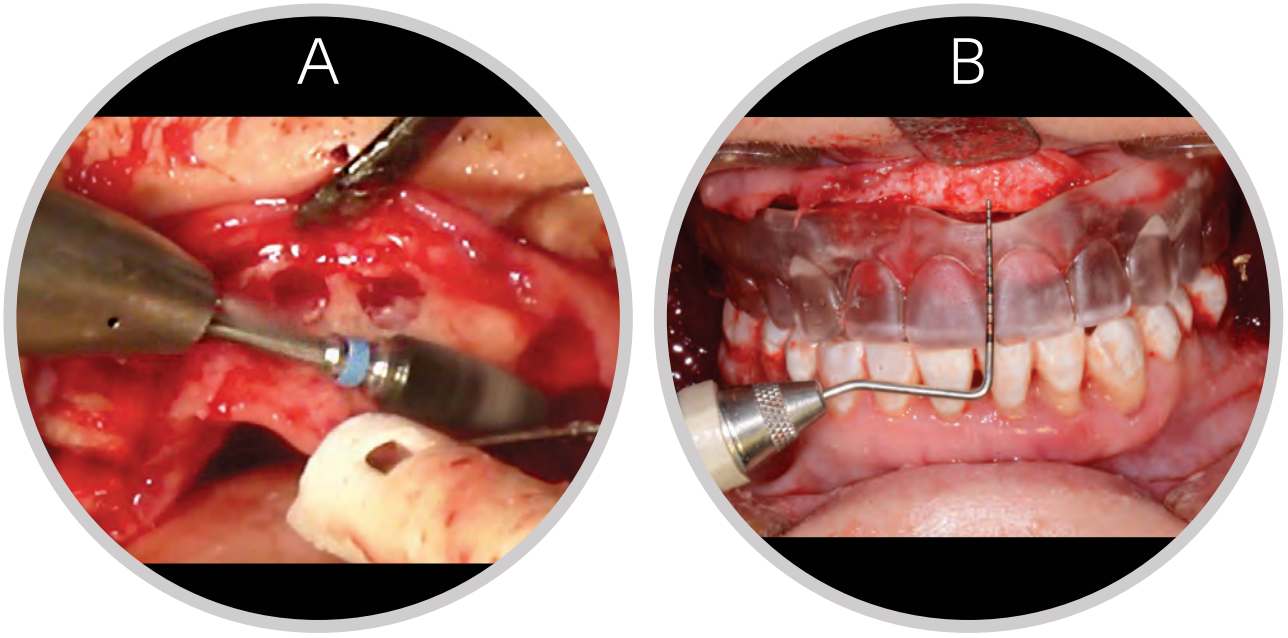
Surgery Day

A:

- Using a round diamond bur and curettes, perform a full debridement of extraction alveolus as well as the remaining bone crest.

B:

- Measure the projected bone reduction to be done on the crestal alveolar ridge.



12.

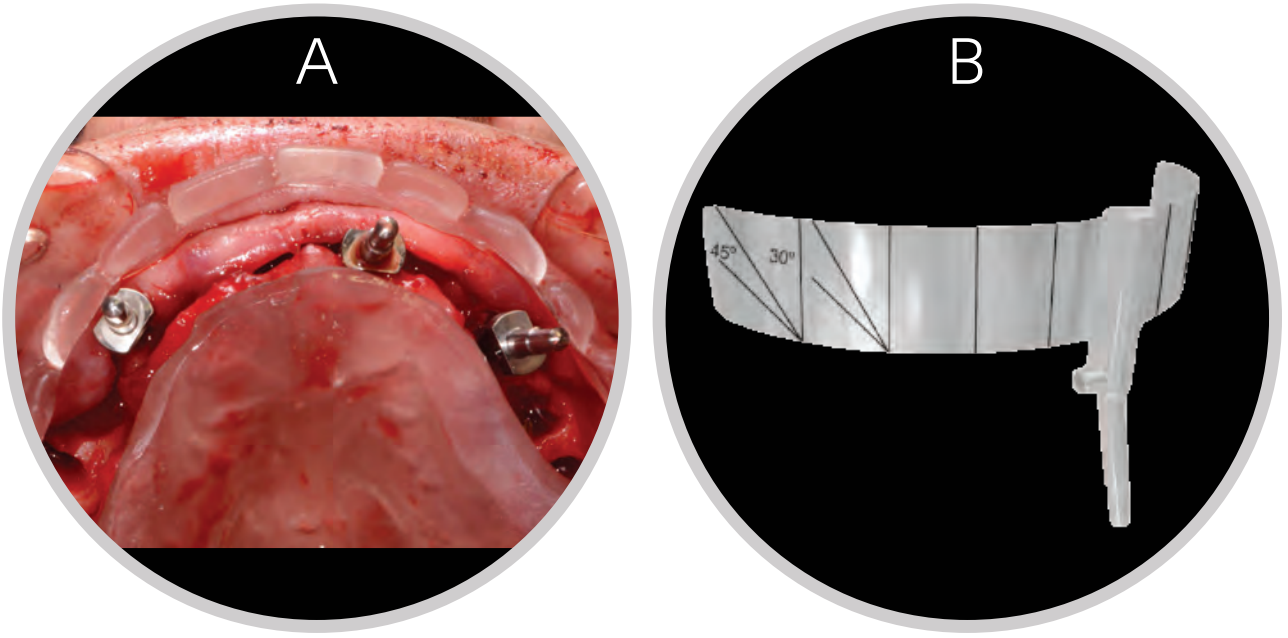
Surgery Day

A:

- Using a straight carbide, low speed bur with copious irrigation, proceed to do alveolectomy (ridge reduction) from anterior to posterior.
- You may elect to collect some alveolar bone using rongeurs prior to reduction, so it could be used as autogenous bone graft as needed.

B:

- Once you have completed the alveolectomy (bone reduction), proceed to insert the duplicate of the denture and have the patient close to verify fit in occlusal scheme and VDO and bone reduction distance from alveolar crest to incisal/oclussal edge of denture (15mm of space in anteriors and 12-13mm in posteriors).



13.

Surgery Day

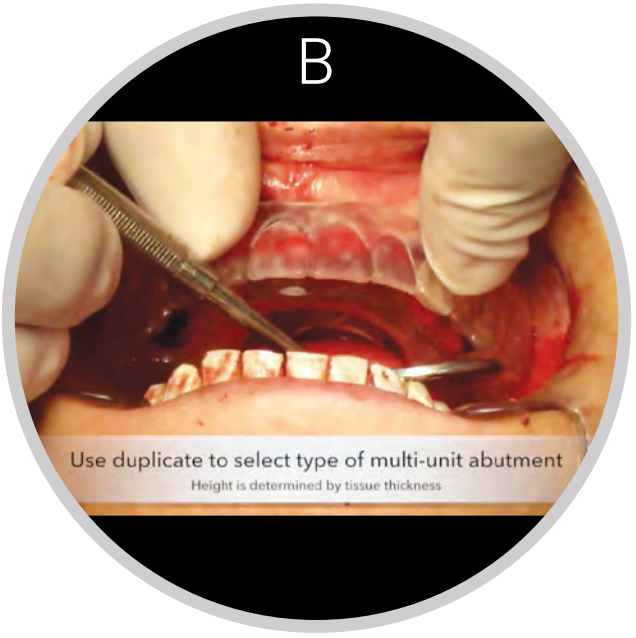
A:

- Using the same duplicate of the denture, start your drilling sequence protocol (pilot drill to initial guide pin indicator) to the full depth of desired implants in the pre-planned locations.
- Make sure neither the initial drilling nor the pins surpass the buccal or lingual aspect of the space in your denture duplicate (angulation guide).

B:

- Alternatively to using the denture duplicate/angulation guide, you may decide to use the MULTIFIX guide strip, by drilling a pilot osteotomy at the mid-line. Insert the guide strip and use the marks on the strip to guide you with the implant placement and distribution, as well as the antero-posterior angulation of your implants.





14.

Surgery Day

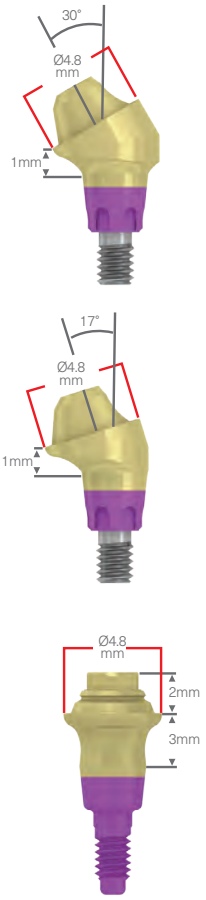
A:

- Once you have finalized all drilling sequences for all implants, proceed to your V3 implant placement, making sure each implant is indexed through the implant driver (handpiece or manual).
- Such a driver has a flat edge that corresponds to the flat edge on the V3 implant platform (which is recommended to be placed towards the side you will need the most bone volume, ie: buccal).

B:

- Use a denture duplicate to determine a final position of all your implants with relation to the mesio-distal and bucco-lingual angulation, in order to determine the type of multi-unit abutment to be used. Remember that the height of the abutments is determined by the amount of tissue thickness, the implant placement, distribution and the antero-posterior angulation of your implants.



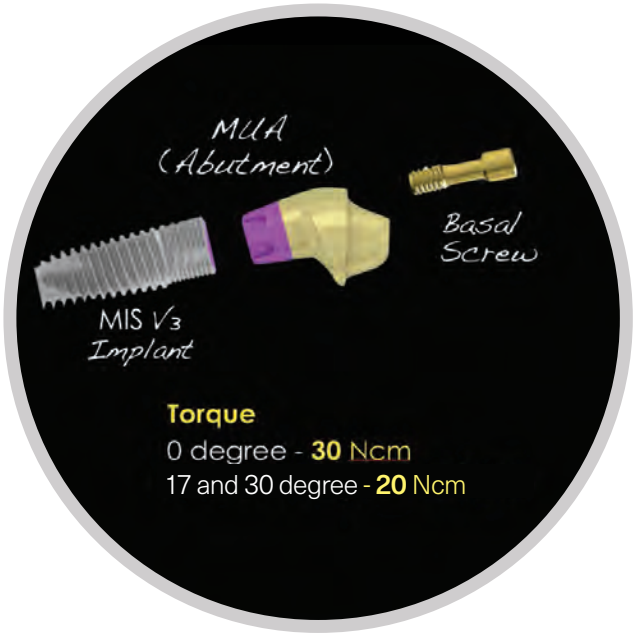


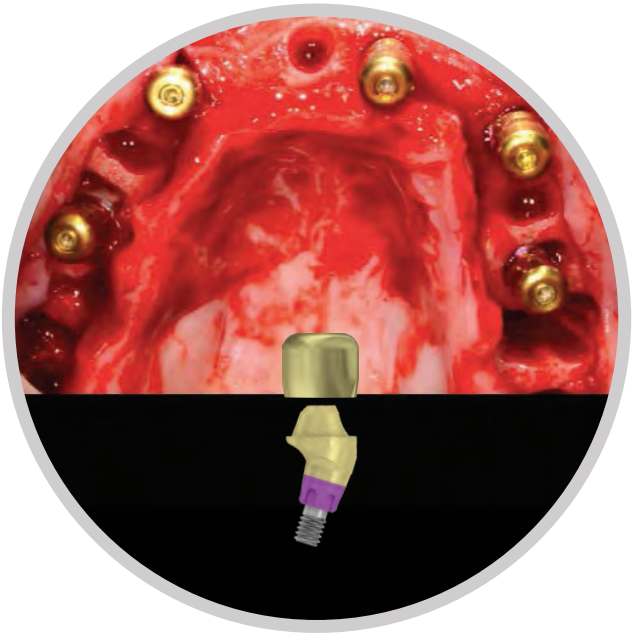
15.

Surgery Day

- Select the multi-unit abutments to be used.
- You can choose either 0, 17 or 30 degrees.
- In the 0 degree (straight), you can select different heights from 1-5mm depending upon the soft tissue thickness.
- With the 17 and 30 degree (angled), you can select either 1 or 2mm height (measured from the inner angle of the abutment (shortest end).
- Use denture duplicate to make sure the emergence of each of the multi-unit abutments you've selected clear completely through the bucco-lingual space on the duplicate denture, and that none of the abutments project towards the buccal aspect of the teeth in the duplicate denture. Full parallelism among the abutments is desired but not strictly necessary.

Angulated multi-unit abutments are not available for narrow platform.





16.

Surgery Day

- Once the multi-unit abutment is placed on each implant, and you have verified the proper angulation through the duplicate denture and parallelism among them, you can go ahead and torque the basal screw of the multi-unit abutment to 30Ncm for straight multi-units and 20Ncm for angulated multi-units. Remember, you should have obtained a minimum of 35 Ncm of insertion torque on each implant to be immediately loaded.
- Place the metal healing caps on top of the multi-unit abutments (hand tightened only)
- These healing caps only serve as a temporary phase during the surgical and prosthetic conversion to help with flap closure and to prevent soft tissue from invaginating into multi-unit abutments.



17.

Surgery Day

- Proceed with the placement of bone graft as needed. It is recommended for you to place the grinded down autogenous chips of bone you collected during bone reduction into implant gaps or exposed implant threads. If needed, you can supplement the autogenous chips with Freeze Dried Bone Allograft (FDBA) in remaining voids or adjacent alveolus and ridge deficiencies, covering those with a reservable collagen membrane.



18.

Surgery Day

- Proceed to suturing and approximating the flaps to primary closure as much as possible. The recommended suturing technique is vertical mattress but other techniques may be used.
- In order to accomplish a better flap adaptation, you may need to trim the excess tissue in the palatal aspect and minimally trim the buccal flap, trying to preserve as much keratinized mucosa as possible.



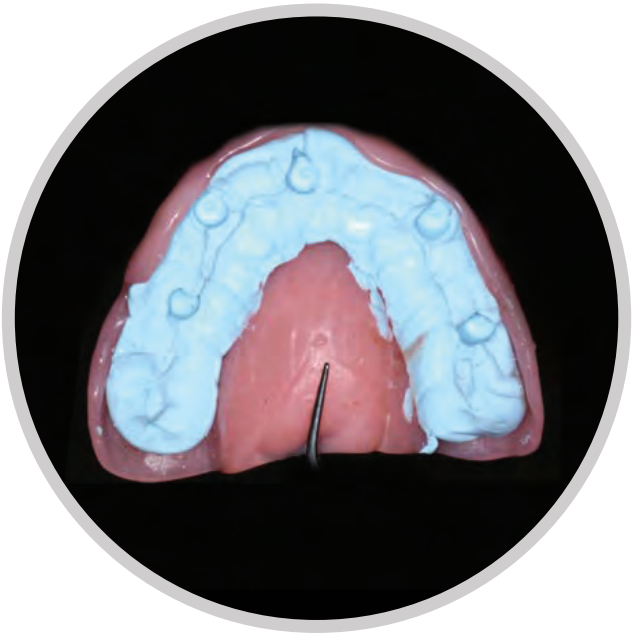


19.

Denture conversion

- The following steps will be to convert the pre-made immediate denture to a fixed hybrid temporary prosthesis.
- Such conversion may be done either at the time of surgery (recommended) or between 24-48 hours maximum from the time of implant placement.
- DO NOT convert or load the implants after 48 hours from the time of placement. If the 48 hour period has finished and the implants have not been loaded, you must wait a minimum of 8-12 weeks to load.





20.

Determine location of the implants/abutments/healing caps

- Proceed to use a bite registration material. Place it into the intaglio surface of the denture and seat the denture into the arch, paying attention so that denture is in the correct position and occlusal scheme as previously tested during implant placement with the duplicate denture.
- Once material has set, remove it and you will see the marks of the healing caps on the registration material attached to the denture.





21.

Drill access holes on prosthesis

- Use the marks on the registration material as reference to drill through them and the denture in order to create access holes.
- Use carbide acrylic burs to accomplish this.
- Remember that the holes have to be wide enough in order to fully clear the healing caps/abutments.
- Prepare for the next step; placing of the temporary copings/cylinders (they are all standard size).

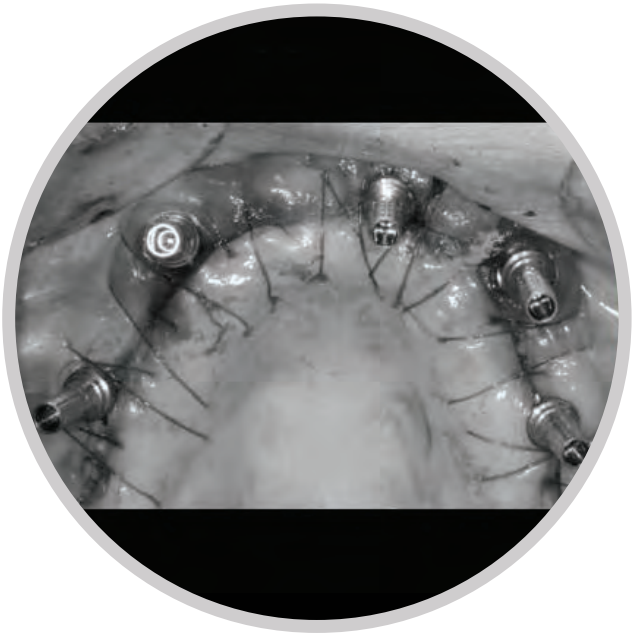


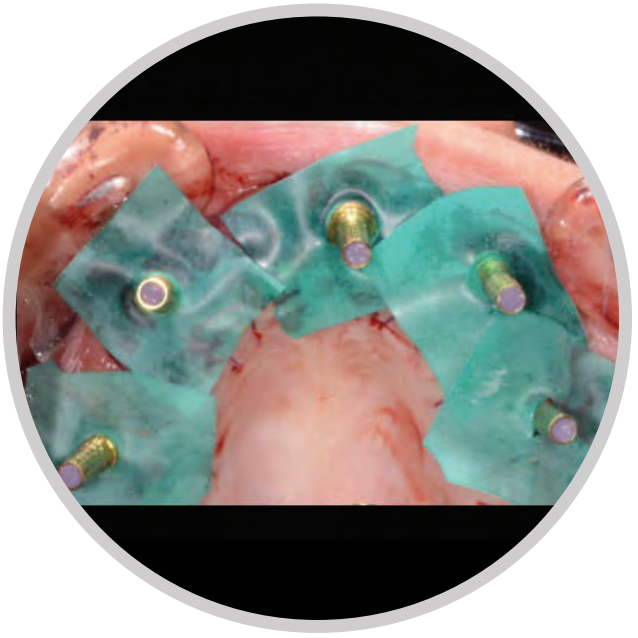


22.

Place temporary cylinders, rubber dam isolation and block screw holes

- Remove the healing caps from the multi-unit abutments and place the temporary copings/cylinders using the occlusal screw, onto the abutments (the occlusal screw must be hand-tightened ONLY in this step. No torque at this moment).
- Make sure each of the temporary copings/cylinders are fully seated in the abutments.
- Prepare for the next step by cutting individual squares of rubber dam material.





23.

Place temporary cylinders

- Place the rubber dam squares through the temporary copings/cylinders to the base (interphase between coping and abutment at tissue level).
- Use Poly-vinyl Siloxane (PVS) medium body silicone elastomer impression material to fill-in occlusal screw access on temporary copings/cylinders to prevent debris entering the chimney.





24.

Intra-Oral Pick Up

- Place the immediate denture in the arch, making sure there is full clearance of the temporary copings/ cylinders through the denture holes and during full occlusion.
- Once denture is in the correct VDO and occlusal scheme is in full closure, proceed to use a pick up material intra-orally. This material can be either Quick-up from VOCO, or self curing acrylic (used for denture repair flowed through a syringe).



25.

Intra-Oral Pick-Up and Un-Screw Prosthesis

- Once pick-up material has set intra-orally, un-screw prosthesis (denture).
- You will notice that rubber dam squares are attached to pick-up material and the temporary copings/cylinders on the denture.
- Be careful on not to misplace the occlusal screws during the dislodgment of the denture from the patient's mouth. Put screws on the side.





26.

Contouring

- Remove the rubber dam squares.
- Pour new self curing pink acrylic resin into the voids in the intaglio and outer surface of denture.
- Continue to contour the denture/prosthesis to form a horseshoe shape utilizing acrylic burs.
- Make sure not to leave any flanges. Try to have intimate contact between the acrylic base and the existing gingiva.



27.

Polishing

- Polish temporary fixed hybrid prosthesis.
- Deliver prosthesis with occlusal screws. Hand tighten only, as you are going to remove prosthesis in 2 weeks in a post-op appointment.
- Use PVS impression material to temporarily seal chimney of occlusal screws on prosthesis.
- IF DOUBLE ARCH SURGERY, THEN SKIP OCCLUSAL ADJUSTMENT AT THE END AND PROCEED WITH MANDIBULAR SURGERY.

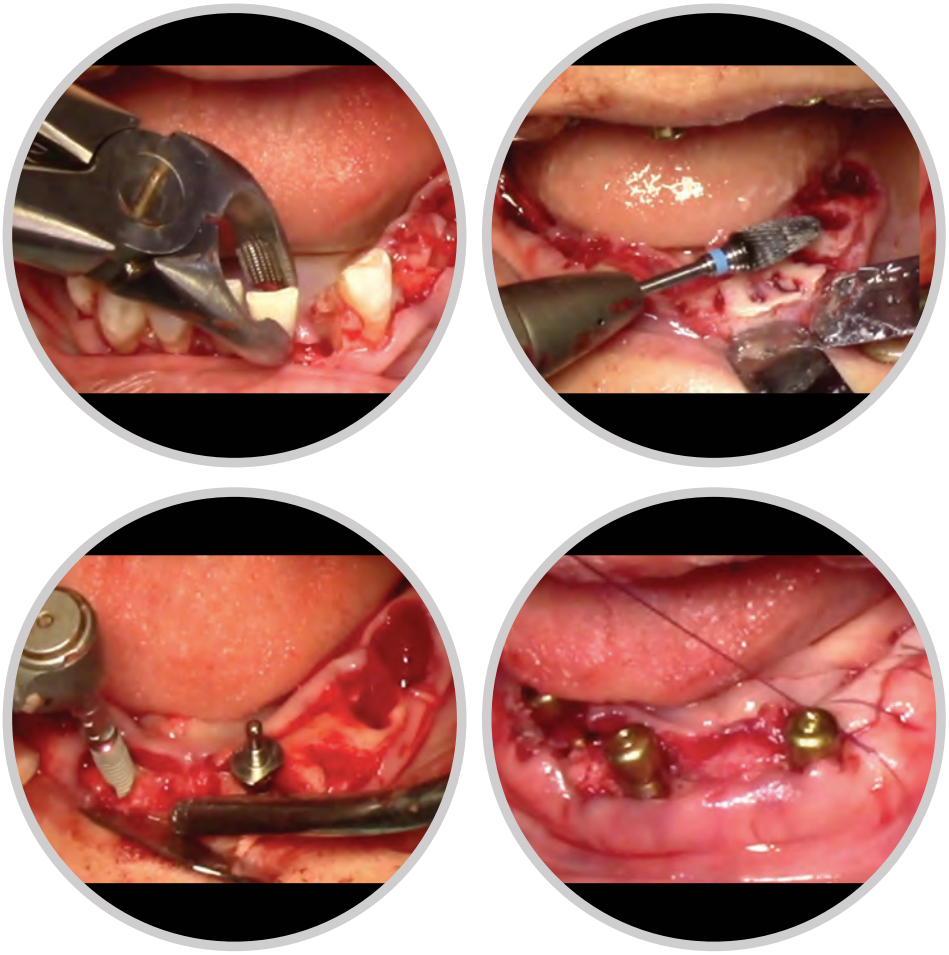


- Even contacts
- No lateral interferences
- Shallow anterior guidance
- Maximum cantilever 1.5 teeth
- No contacts on cantilevers

28.

Occlusal adjustment

- Perform occlusal adjustment as needed with the following considerations:
- Balanced occlusion
- Even contacts
- No lateral interferences
- Shallow anterior guidance
- Maximum cantilever allowed 1.5 tooth surface distal to the most posterior implant.
- No contacts on cantilevers



29.

Proceed with mandibular surgery

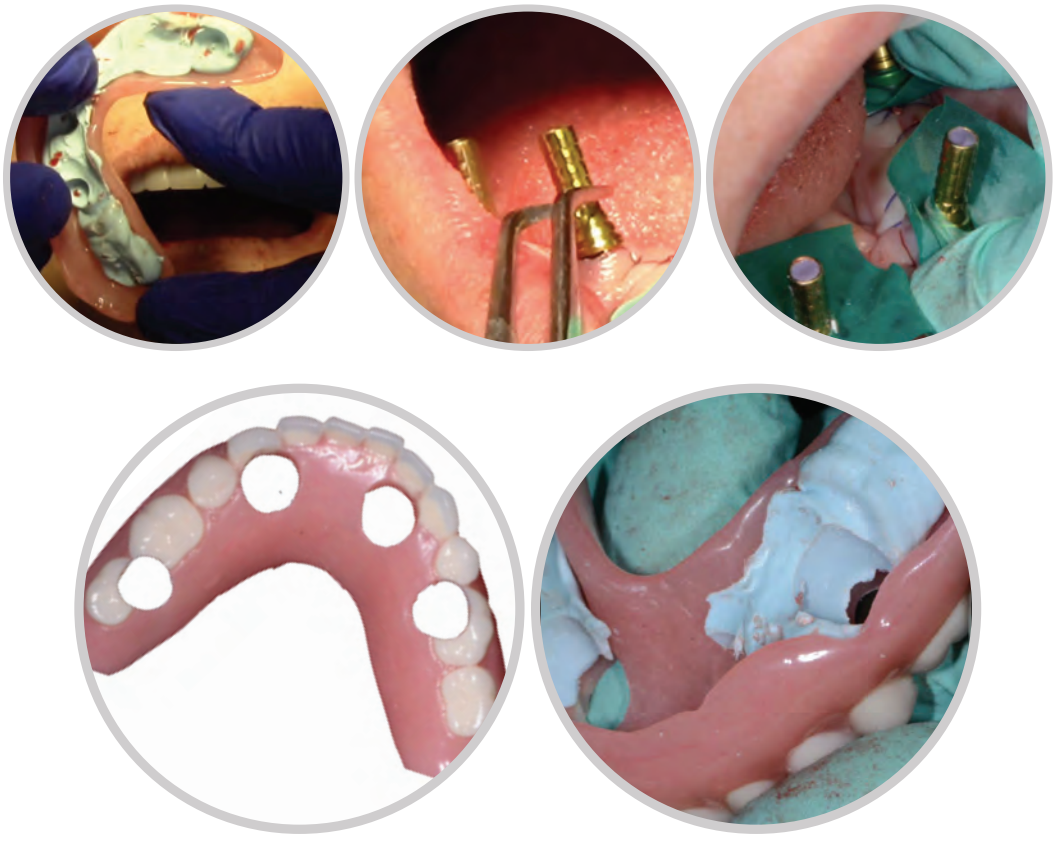
- Proceed with mandibular surgery with the same steps outlined for the maxillary surgery as follows:
- Intra-sulcular incision
- Full thickness flap elevation
- Full arch extraction of remaining teeth
- Alveolar bone reduction to 15mm in anterior & 12mm in posterior
- Drilling sequence with proper angulation through duplicate denture & implant placement with bone grafting and membrane as needed.
- Placement of multi-unit abutments, healing caps and primary closure.



30.

Proceed with the placement

- Proceed with the placement of the mandibular immediate denture, making sure to articulate it with the maxillary fixed temporary prosthesis and verify fit and VDO.
- Once fit is verified, capture the position in occlusion with a bite registration material.
- In order to capture the location of the healing caps/multi-unit abutments, have patient open, place bite registration material in the intaglio surface of the mandibular denture without removing it from occlusion and have patient bite down until material sets.



31.

Remove mandibular denture

- Proceed to remove mandibular denture with bite registration marks of healing caps/abutments.
- Remove healing caps and place temporary copings/cylinders (hand tighten).
- Place rubber dam squares on copings.
- Seal chimney of occlusal screws with PVS medium body impression material.
- Drill holes on denture with acrylic burrs to fully clear copings.
- IMPORTANT: make sure to maintain the bite registration material in the intaglio surface during the intra-oral pick up for denture support.



32.

Place mandibular denture

- Place mandibular denture through copings and verify fit.
- Proceed to intra-oral pick up utilizing self curing acrylic resin through a syringe.
- Once resin has set, remove PVS plugs.
- Recover mandibular denture, paying attention not to misplace occlusal screws.
- Note that bite registration material is still present after denture recovery.
- Proceed to remove rubber dam and bite registration material and fill-in the voids with a self curing acrylic resin through a syringe.



33.

Self-curing acrylic

- Continue to fill-in the voids with a self-curing acrylic resin through a syringe in the intaglio surface as well as in the exterior surface of denture.
- You can place the wooden stick of a cotton tip applicator into the chimneys of the temporary copings/ cylinders to prevent the ingress of the acrylic resin while filling in the voids.
- Proceed to trim denture to a horseshoe shape, removing flanges and polishing it. Remember to minimize cantilevers on the distal aspect of the most posterior implant.



34.

Deliver prosthesis

- Deliver the fixed hybrid prosthesis by placing the occlusal screws (hand tighten as prosthesis will be removed in 2 weeks at the post-op visit).
- Fill in the chimney of the occlusal screws with PVS medium body.
- Adjust the occlusion to a balanced occlusion, with even contacts, no lateral interferences, shallow anterior guidance, and a maximum cantilever allowed 1.5 tooth surface distal to the most posterior implant. No contacts on cantilevers.
- Verify VDO



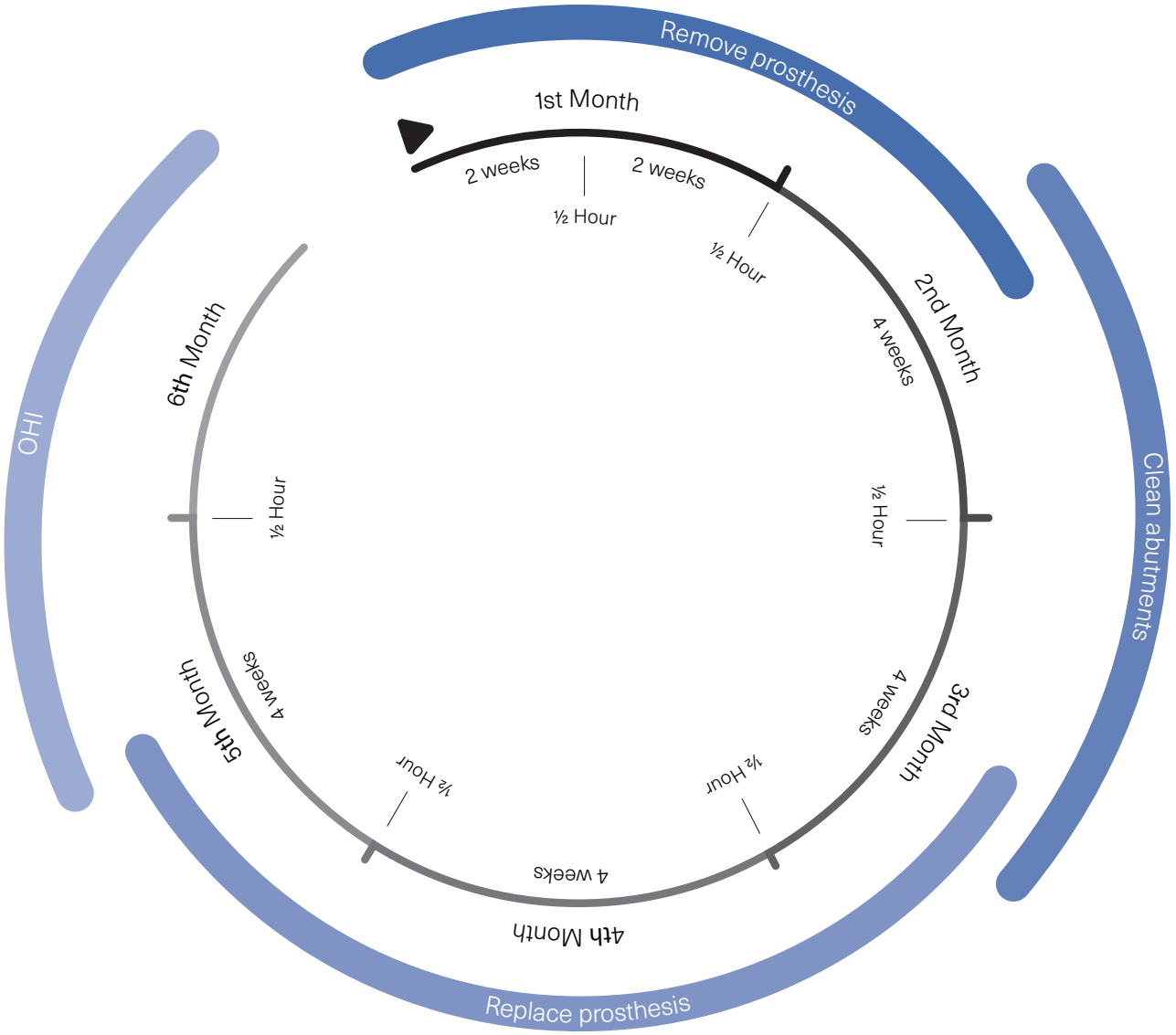
35.

Radiograph

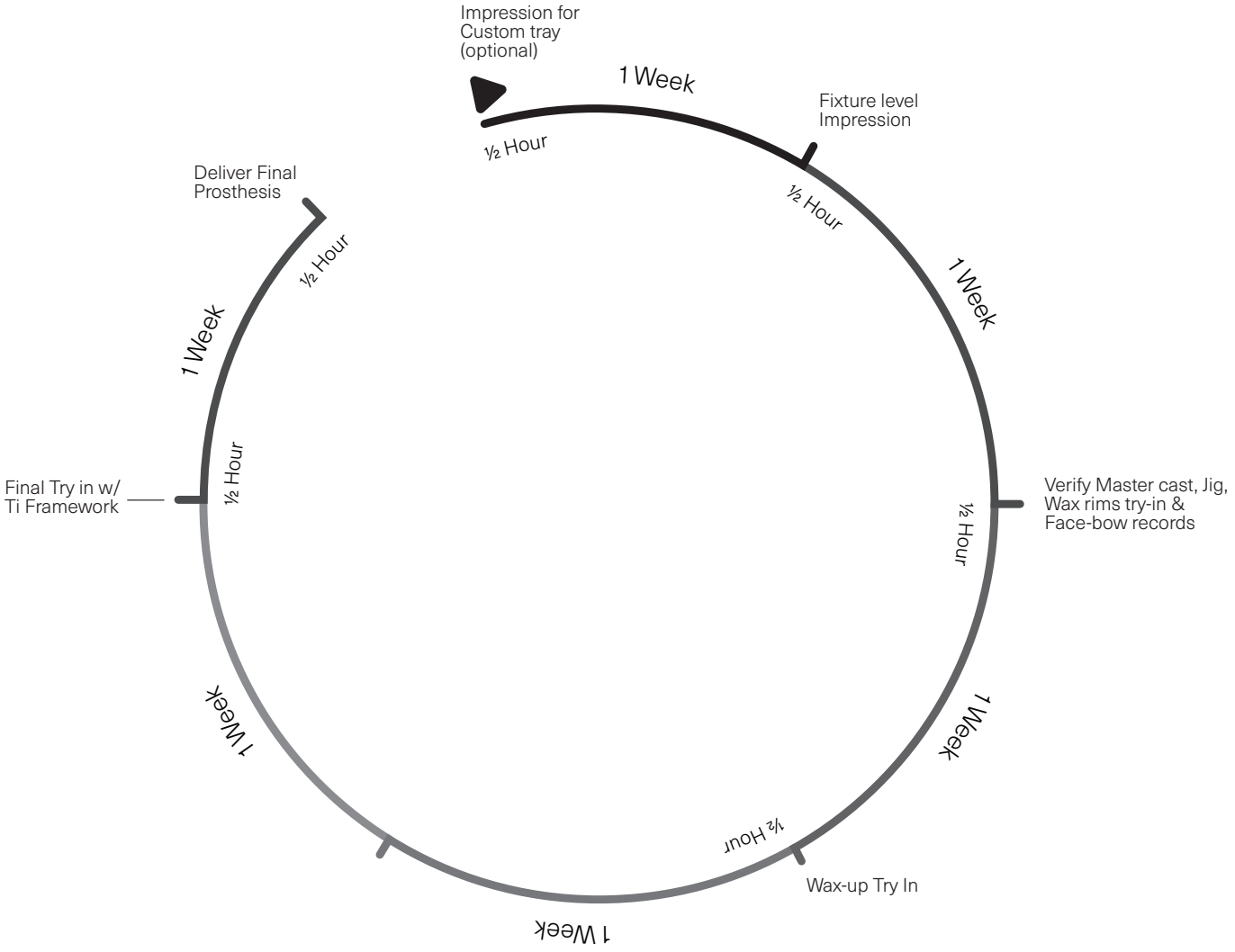
- Take a radiograph.
- Review post-op instructions.
- At your discretion consider prescribing anti-inflammatory drugs as well as pain management drugs and antibiotics.
- Restrict patient's diet to soft food for at least 5 weeks.
- If patient presented with bruxism, you may deliver a temporary thermoplastic occlusal guard.
- Instruct patient on use of a water flosser, used on a low setting for two weeks.
- Set a post-op appointment at two weeks for suture removal, occlusal adjustment, removal and cleaning of the prosthesis and oral hygiene instructions.



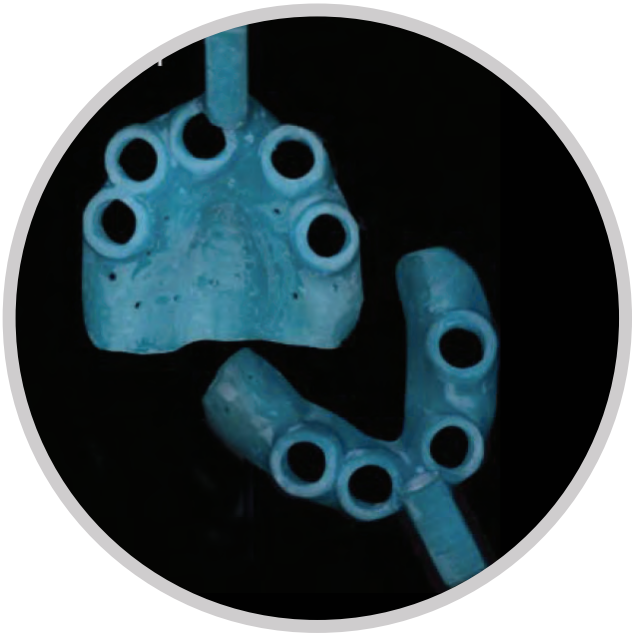
Healing Timeline (4-6month)



Restorative 4-6 months post







39.

Fixture level open tray impression

- 4-6 months post surgery, you may proceed to a final restoration.
- Order impression coping open tray for multi-unit abutment (one per implant).
- Utilize either a stock tray with open access holes on the tray to fully clear impression copings, or a custom tray previously made with the proper access holes.
- Remove temporary fixed hybrid prosthesis.

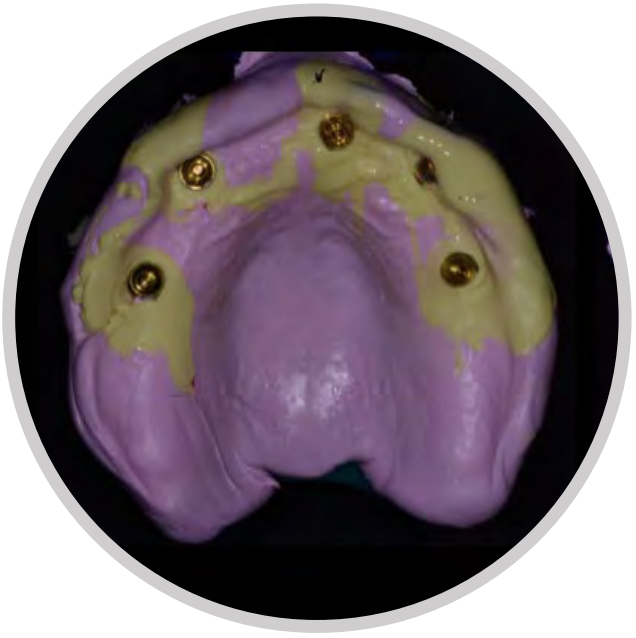




40.

Fixture level open tray impression

- Proceed to place the impression coping on each multi-unit abutment and take a radiograph of each to verify seating.
- Insure that either stock tray or custom tray fully clear impression copings.
- Repeat same steps for mandibular implants.
- Proceed to take the open tray impression for maxilla and mandible utilizing an open tray technique.



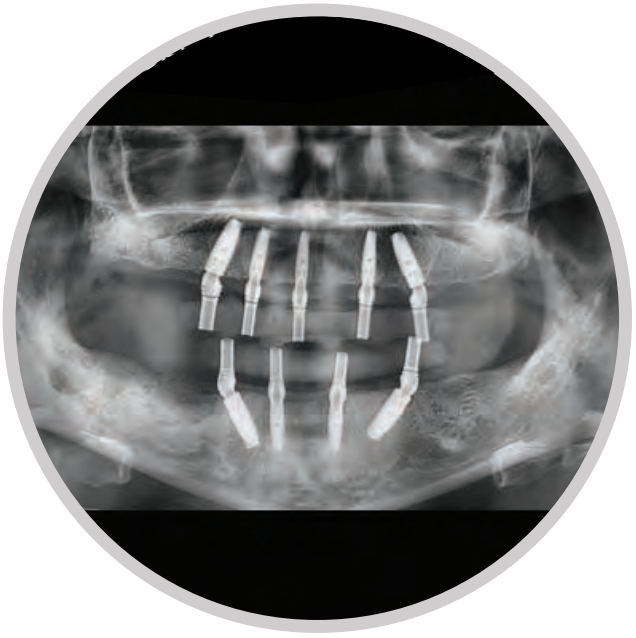


41.

Fixture level open tray impression

- Utilize a Poli-vinyl Siloxane (PVS) light body around impression copings and medium body on the tray.
- Once impression has set, un-screw the impression copings prior to removing the tray, then remove it.
- Replace temporary fixed prosthesis & take a regular PVS medium body impression with a stock tray intra-orally of maxillary and mandibular fixed temporary prosthesis.
- Send impression to the lab for fabrication of a jig verification & wax-rim try-in (1 week turn-around time).

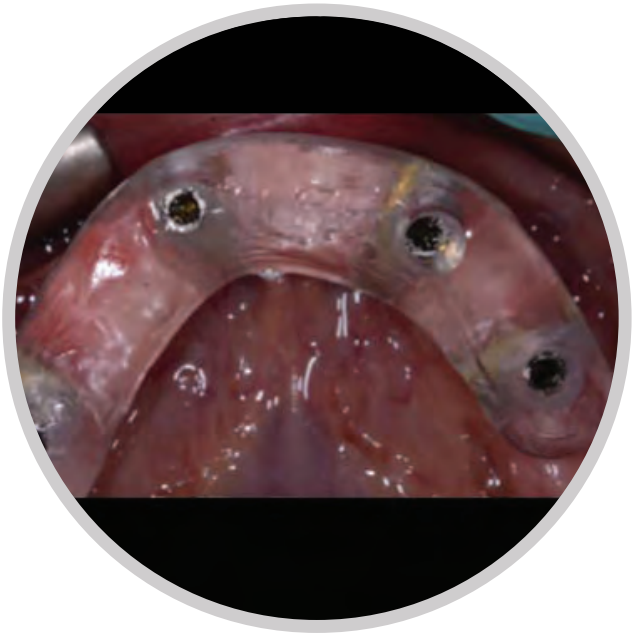




42.

Verification jig, base plate, wax rims and face bow records

- Take a radiograph of jig in place.
- Although a panoramic radiograph can be taken, it is recommended to take individual peri-apical radiographs of each individual jig cylinder abutment interface in order to better observe proper seating.
- If either you cannot clinically seat (screw-in) jig into multi-unit abutment or a space (lack of proper seating) is detected between the abutment and jig cylinder interface, proceed to sectioning jig.

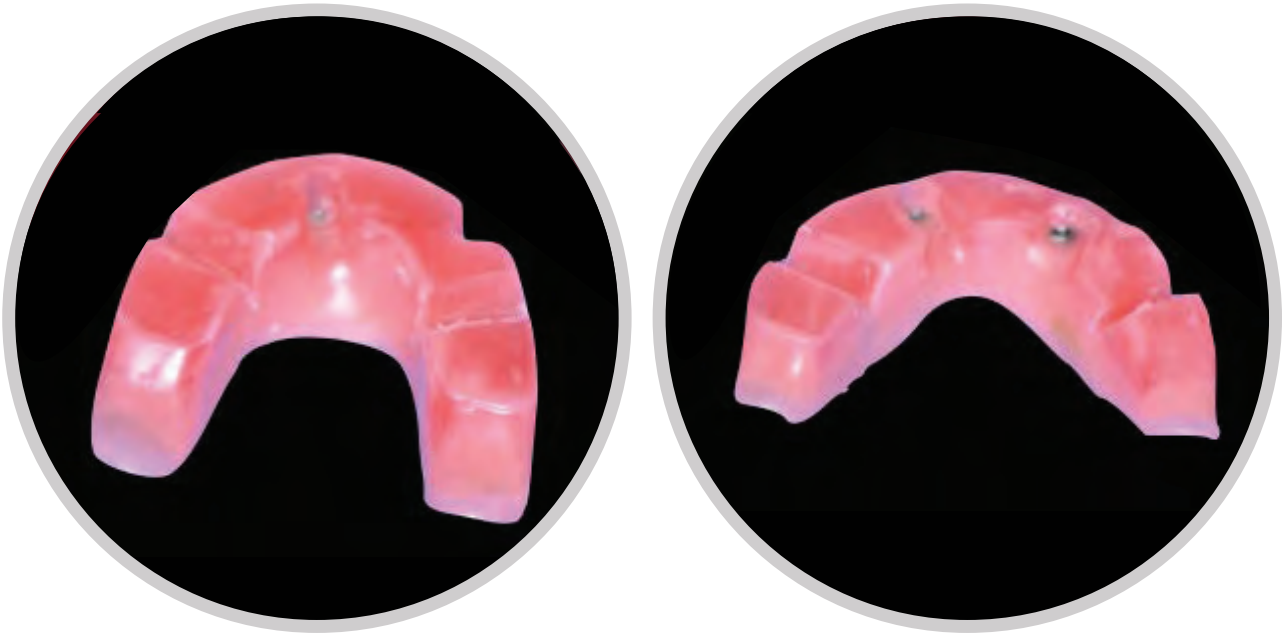




43.

Fixture level open tray impression

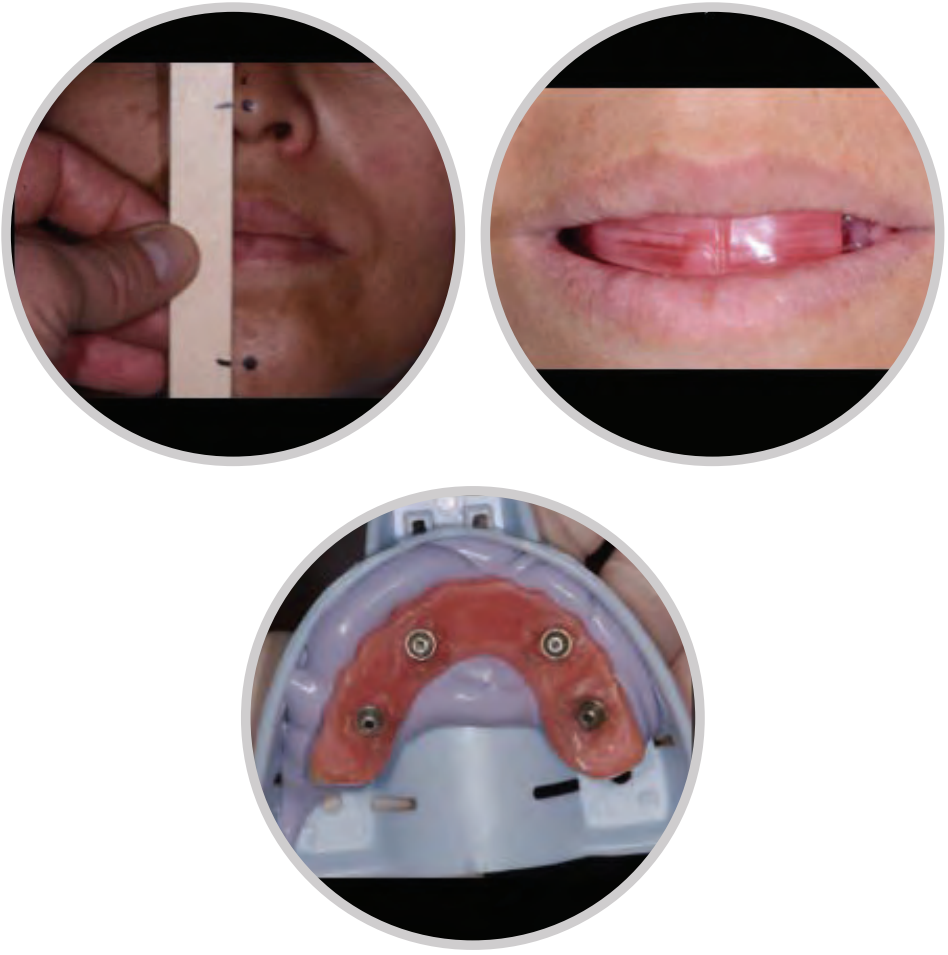
- Sectioning jig for proper seating.
- Utilize a sectioning disk extra-orally to section each of the jig cylinders that are not seating properly (sectioning is done by equally splitting the body of the jig in between the cylinders).
- Once jig has been split, screw it back into abutment and repeat radiograph to verify seating. If correct, repeat for each jig cylinder & proceed to bond them together intra-orally with a self-curing acrylic resin.



44.

Fixture level open tray impression

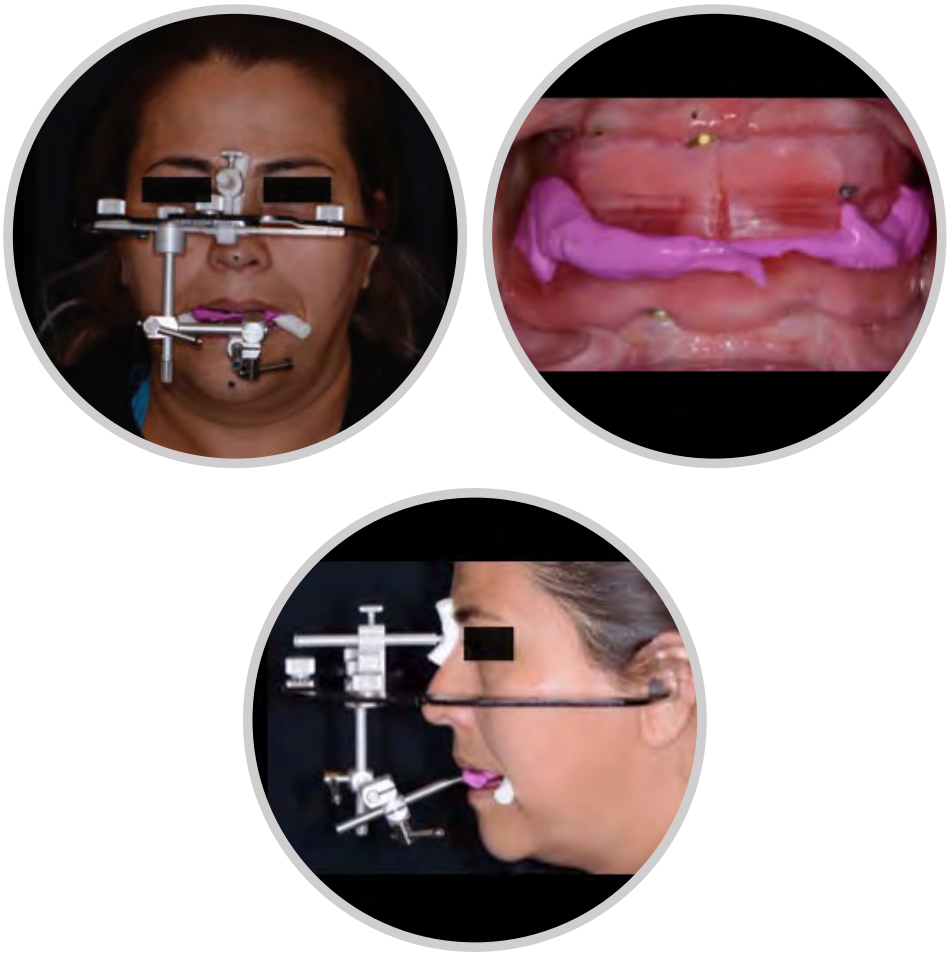
- Once jig verification is completed, you would have received from the lab a maxillary and/or mandibular base plates with wax-rims (typically with only two occlusal screw access holes).
- Place maxillary and/or mandibular base plates and wax-rims intra-orally and secure them to abutments.
- As in any full denture setting, mark on the wax-rims, the occlusal relationships including midline, canine position and first molar position.



45.

Fixture level open tray impression

- Since you have recorded the VDO on patient prior to removing temporary fixed prosthesis at the beginning of the appointment, utilize the VDO marks to verify the VDO on wax rims. Adjust as needed.
- Verify and adjust wax-rims to proper lip support, phonetics, and proper smile display, keeping in mind the adequate teeth proportions.
- Take an extra-oral impression of maxillary and/or mandibular prostheses in PVS medium body.



46.

Fixture level open tray impression

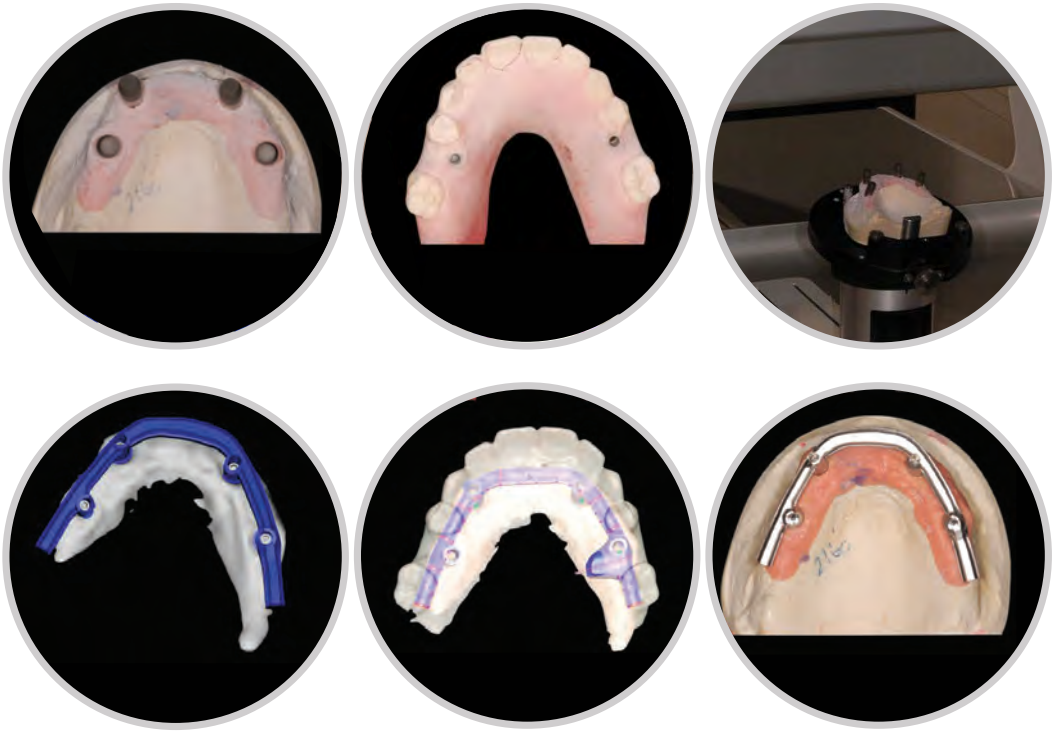
- Finally, once you have completed the VDO verification of wax-rims and proper markings, capture a bite registration between the maxillary and mandibular arches on the wax-rims.
- Utilize a Face-bow with the proper bite registration to capture the position of the maxillary arch and skeletal relationships. Remove wax-rims and base plates from patient.
- Replace temporary fixed prostheses. Send all records taken to lab (1 week turn-around time).



47.

Wax up try in

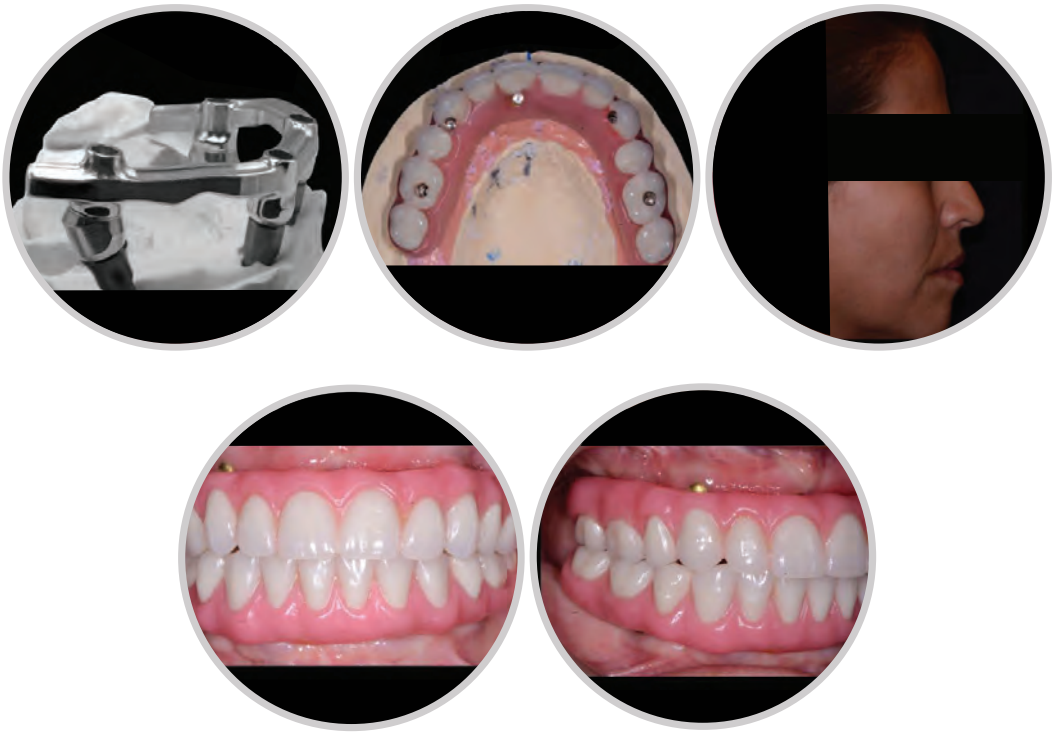
- Once you receive the first wax up from the lab, supported by a couple temporary cylinders; mark the existing VDO before removing the existing temporary prosthesis. Then remove the temporary prosthesis and insert the waxed-up prosthesis.
- Proceed to VDO verification of waxed-up prosthesis, verify freeway space, phonetics, occlusal scheme, mid-line, esthetics, patient satisfaction and functional occlusion (consider group function when needed); capture a bite registration once chair side modifications are made.
- Replace temporary fixed prostheses. Send all records taken to lab (2 weeks turn-around time)



48.

Lab work

- The laboratory will then place scan bodies on model, scan the model and waxed-up prosthesis separately and will produce STL files that will be used to design the titanium bar (or zirconium framework if elected). The files will then be merged in a computer program and will be sent to a milling machine.
- Once the titanium bar is milled, a final wax-up will be replicated by the laboratory based on the original scan and will be sent to you for final wax-up try-in.



49.

Final wax-up try-in with CAD-CAM milled bar

- You will receive the final wax-up from the lab with the titanium framework embeded; mark the existing VDO before removing the existing temporary prosthesis. Remove the temporary prosthesis and insert the final waxed-up prosthesis.
- Proceed to VDO verification of waxed-up prosthesis, verify freeway space, phonetics, occlusal scheme, mid-line, esthetics, patient satisfaction and functional occlusion (consider group function when needed); capture a bite registration once chair side modifications are made.
- Replace temporary fixed prostheses. Send all records taken to lab (1 weeks turn-around time)



50.

Final delivery

- You will receive the final prosthesis from the lab along with all brand new final prosthetic screws and a maxillary occlusal guard, which will serve as a protection of your prosthesis from bruxism. Mark the existing VDO before removing the existing temporary prosthesis. Then remove the temporary prosthesis and insert the final prosthesis.
- Verify that implant-abutment screws are torqued at 30 Ncm for straight MU or 25 for angulated MU prior to inserting final prosthesis.

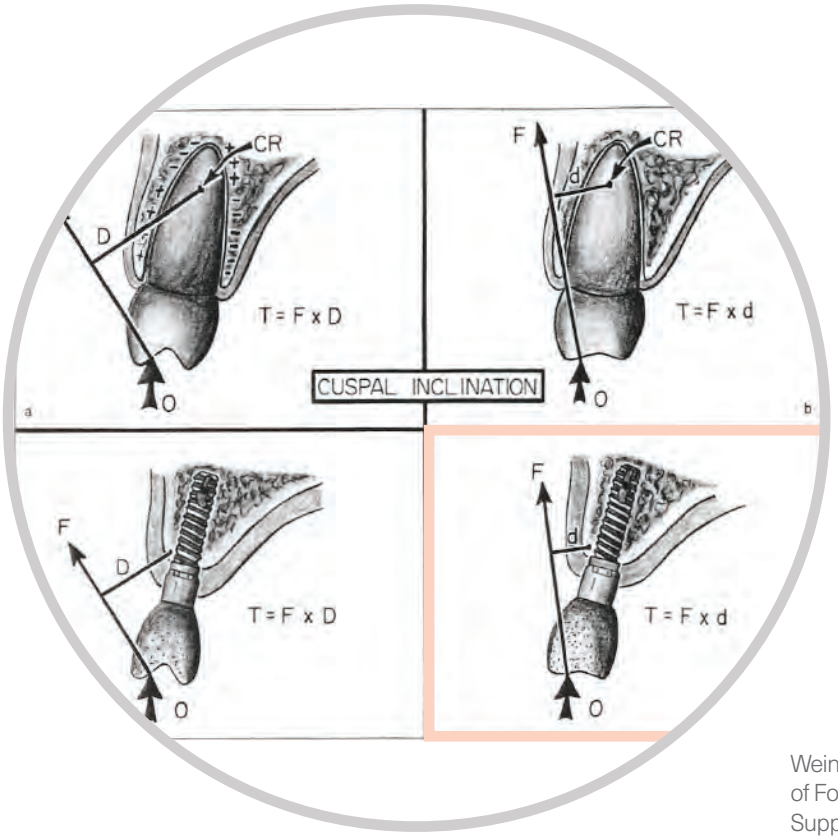




51.

Final delivery

- Proceed to VDO verification of final prosthesis. Verify freeway space, phonetics, occlusal scheme, mid-line, esthetics, patient satisfaction and functional occlusion, and perform occlusal adjustment as needed.
- Remember to torque the prosthetic screws to a maximum of 20Ncm.



Weinberg L. The Biomechanics of Force Distribution in Implant Supported Prostheses. Int J Oral Maxillofac Implants 1993;8:19-31.

ITI Treatment Guide 8, Chapter 7 Prevention of Biological Complications L. J. A. Heitz-Mayfield

52.

Miscellaneous tips on occlusion

Consider the following:

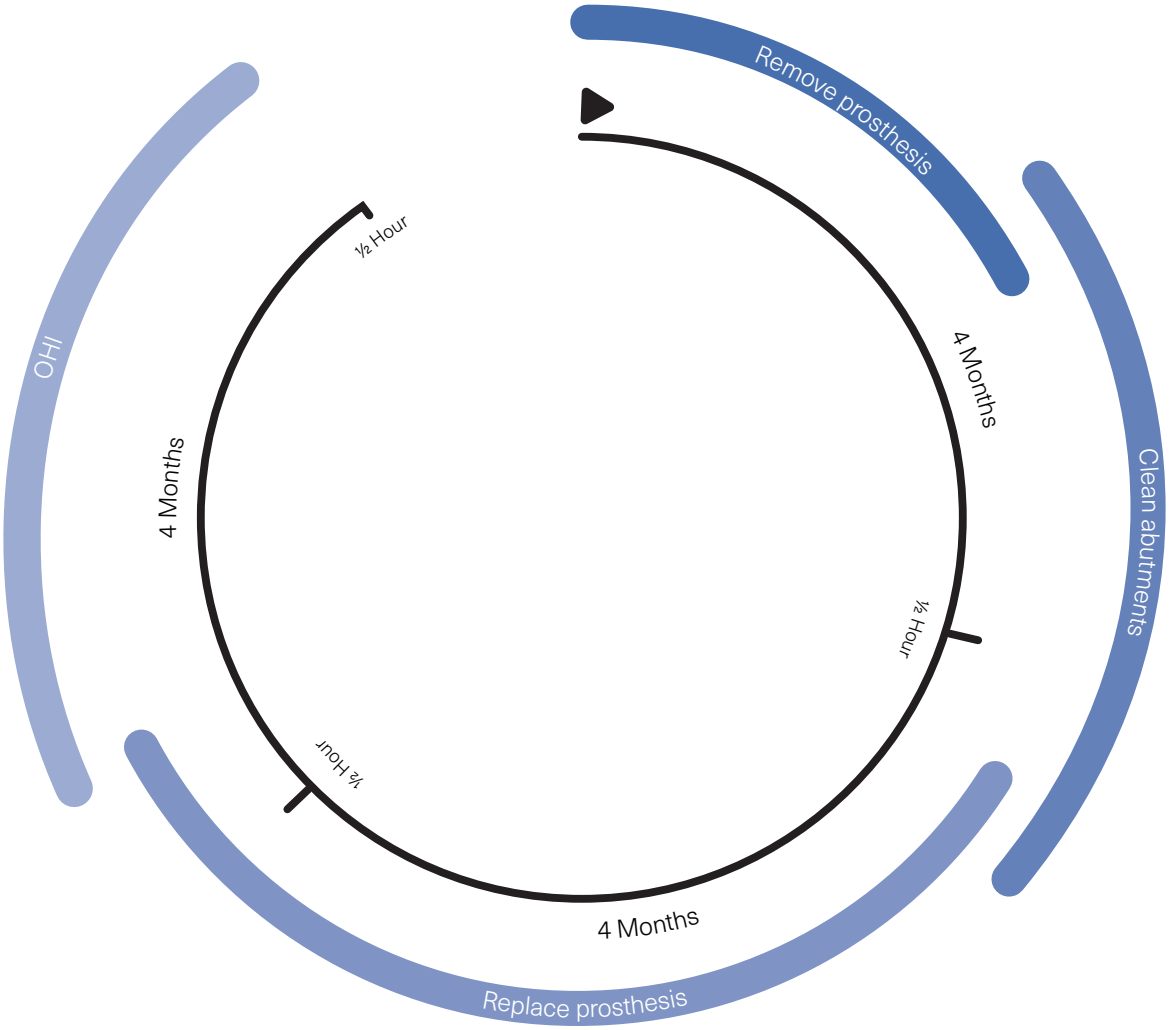
Flat fossa and grooves for wide freedom in centric occlusion, shallow occlusal anatomy, a narrow occlusal table, and reduced cusp inclination.



53.

Final delivery

- Prior to dismissing the patient, close the access holes on final prosthesis by using Teflon tape and composite resin. Deliver the occlusal guard and set up maintenance appointments.
- Put the temporary prosthesis in a box and give it to patient to keep, as they could be used if there is a need of future repair of the final prosthesis.



54.

Maintenance

- The maintenance appointments are done usually by hygienists and in similar scheduling as periodontal maintenance; if one arch prosthesis, hygienist will also perform periodontal maintenance in remaining dentition.
- Remove prosthesis; clean abutments, polish prosthesis, verify implant-abutments torque at 30 Ncm for straight MU and 20 Ncm for angulated MU replace prosthesis, torque prosthetic screws at 20Ncm; seal access holes with Teflon tape and composite resin and review oral hygiene.



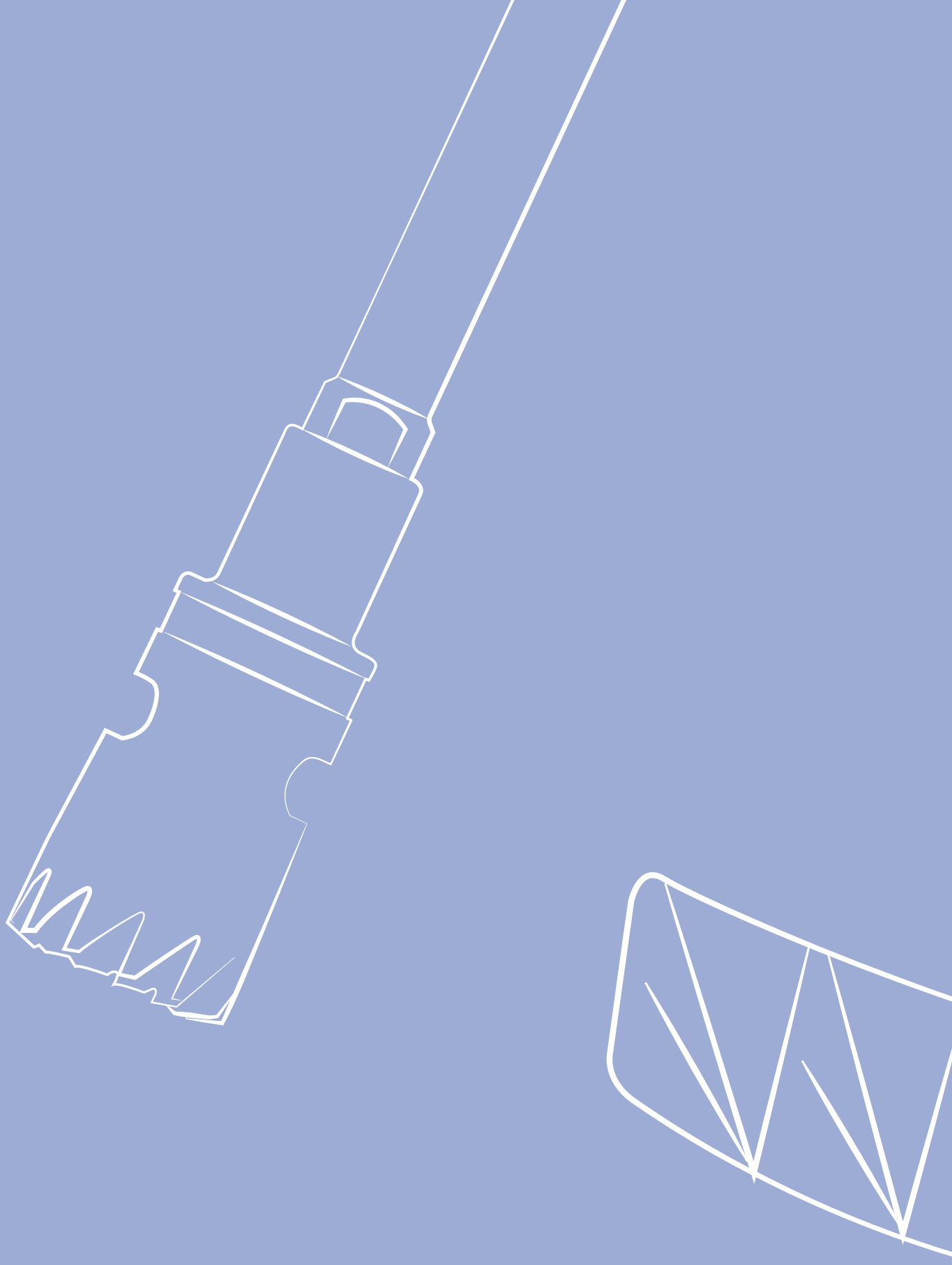
55.

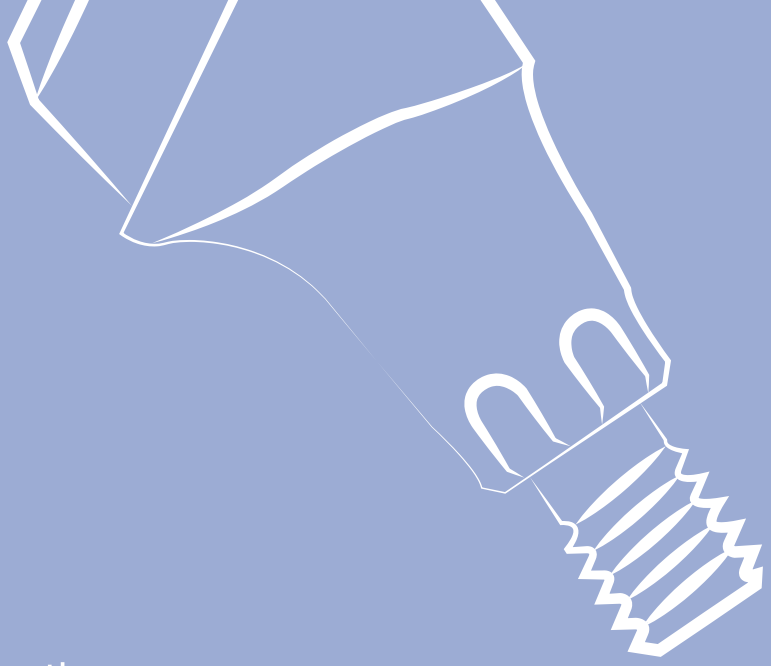
Before



56.

After



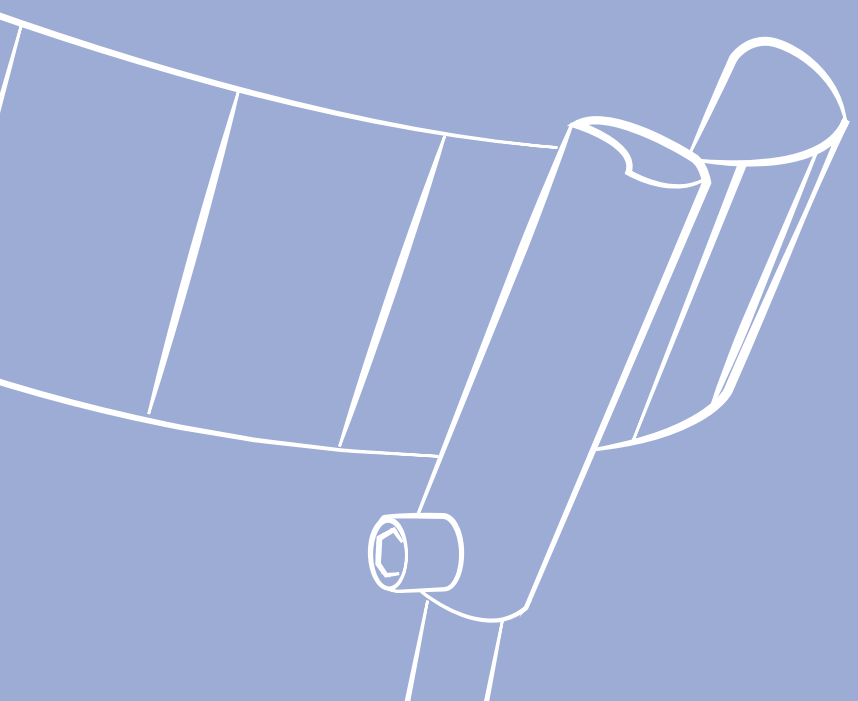


Additional Information

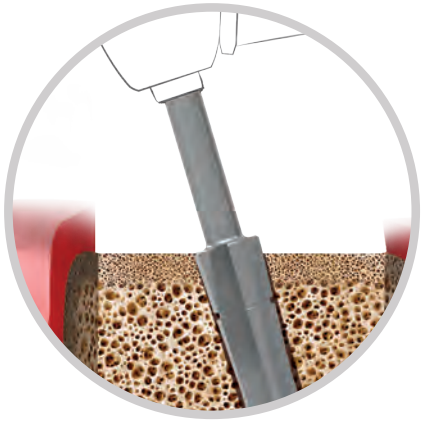
MIS offers a wide range of prosthetic components and realizes the importance of the restoration process, in conjunction with the surgical aspect, as a central factor in the success of the treatment plan.

Our conical components include color coding, a golden shade and a continuous concave emergence profile for optimal functional and esthetic results.

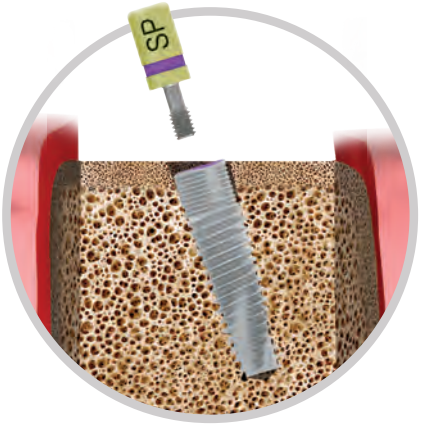
This step-by-step guide is intended as an aid for the dentist, in order to maximize correct usage of the components. These step-by-step instructions, guide the user on key restoration procedures by indication.



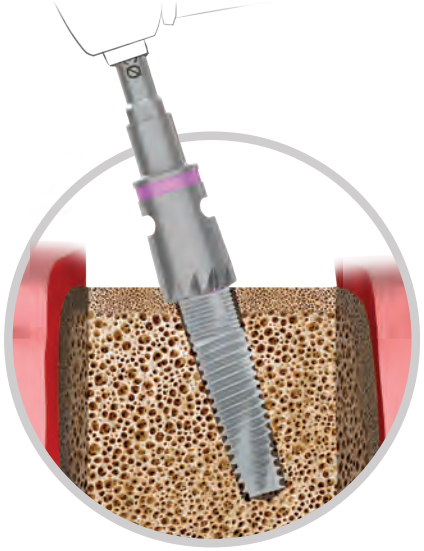
1.



2.



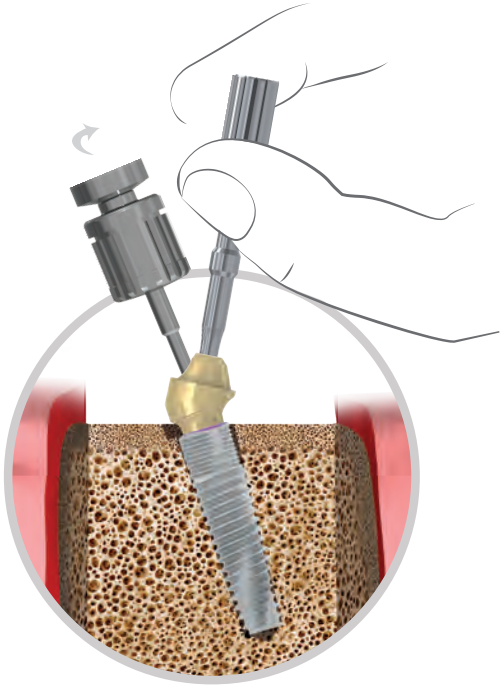
3.



4.

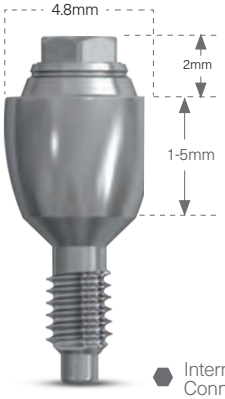


5.



STRAIGHT/ANGULATED SOLID MULTI-UNIT SYSTEM

Simple and easy to use, the straight Solid Multi-Unit abutments provide screw-retained restorative solutions for every clinical scenario in which implants with a divergence of up to 40º are used. Designed to fit all MIS implant connection types for optimal fit between abutment seat and implant connection.



Internal Hex. Connection

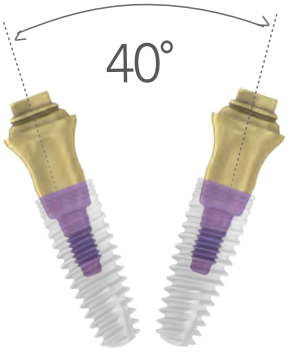


Conical Connection

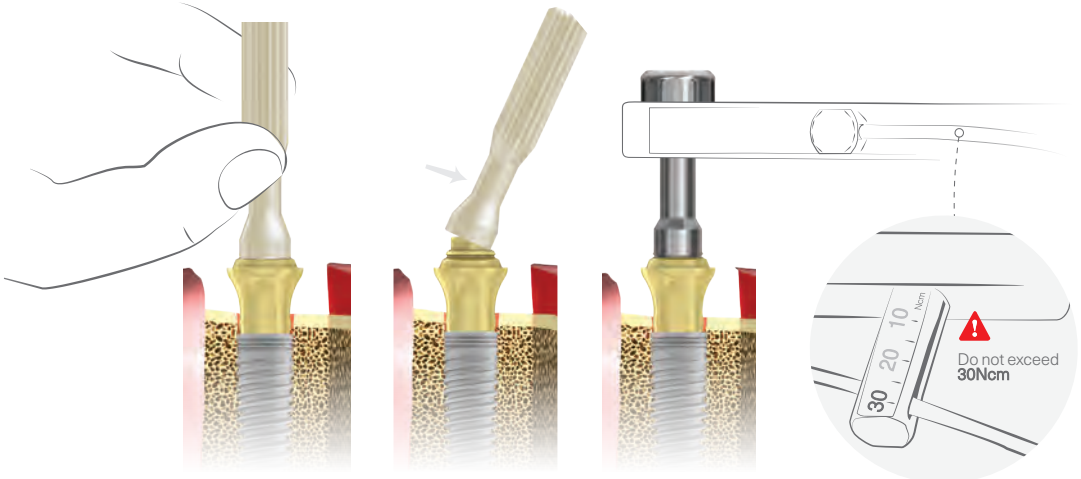
Recommended tightening torque of 30 Ncm.



Straight Solid Multi-Unit Abutment Package:
Plastic gripping bar, Straight abutment



Insertion Path:
Straight Solid Multi-Unit abutments may be used with implants with divergence of up to 40º



A. Use the plastic gripping tool to attach the abutment to the implant.

B. Remove the plastic tool with a slight bending movement.

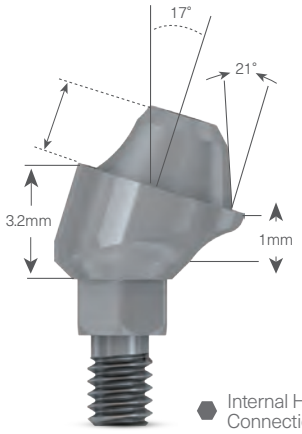
C. Tighten abutment to 30Ncm using the ball attachment anchor key and torque wrench (MT-RI040).

STRAIGHT/ANGULATED SOLID MULTI-UNIT SYSTEM

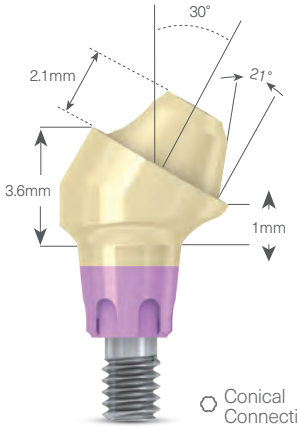
The Angulated Solid Multi-Unit abutment may be used with any of the standard screw drivers in the entire range of 0.05 inch hex. drivers

Options include:

- 17º angulation for use with implants with a divergence of up to 75º.
- 30º angulation for use with implants with a divergence of up to 100º.



Internal Hex. Connection



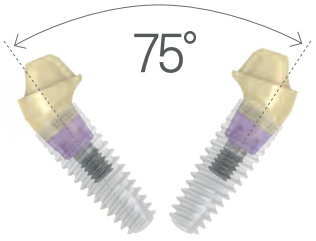
Conical Connection

Recommended tightening torque of 20 Ncm.



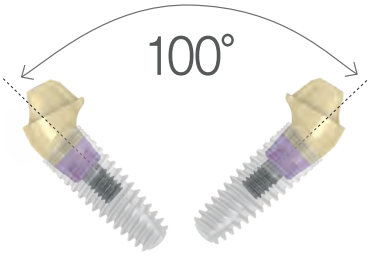
Angulated Solid Multi-Unit Abutment Package:

- Metallic gripping bar
- Angulated abutment



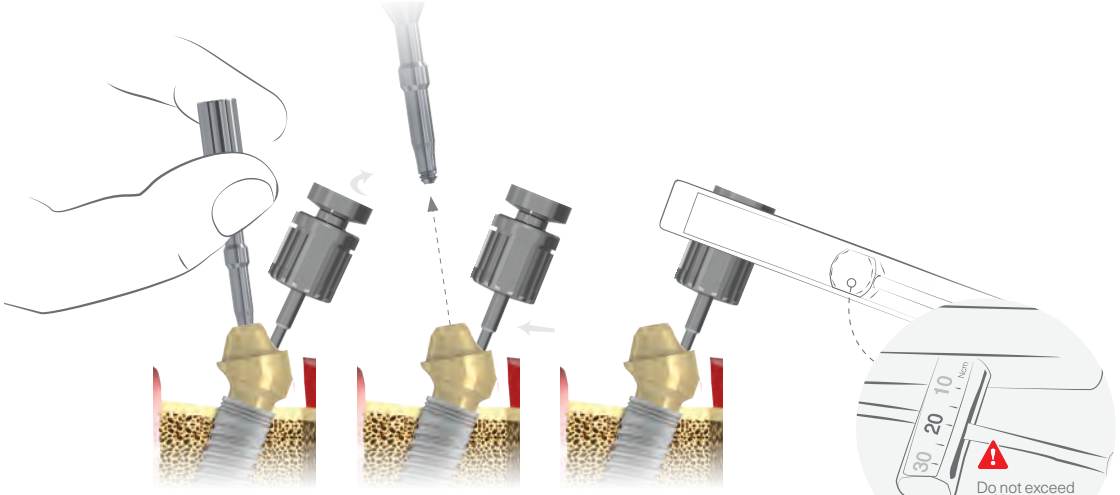
Insertion Path:

17º Solid Multi-Unit abutments may be used with implants with divergence of up to 75º.



Insertion Path:

30º Solid Multi-Unit abutments may be used with implants with divergence of up to 100º.



A. Use the metallic gripping tool to position the abutment, and attach the abutment to the implant with a clockwise screwing motion.

B. Remove the metallic gripping tool with a counter-clockwise movement.

C. Tighten abutment to 20Ncm using the Hex. driver MT-RDL30 and torque wrench (MT-RI040). To screw in or unscrew angulated abutments, insert the Hex. driver into the lateral opening at the side of the abutment as shown.

PROSTHETIC OPTIONS
Step-by-Step

Benefits

- Allow extreme angulation correction prior to taking the impression.
- Working above tissue which takes trauma away from the bone.
- Good distribution of forces between implants.
- Dolder bar options (removable solutions).

Things to consider

- Vertical dimension of final restoration emergence profile might be significantly higher than implant level solution.
- Multiple component system.

Types

- Bridge
- Removable dentures

Components:



Straight Multi-Unit abutment, h. 4mm, SP
CM-S4480



Straight Multi-Unit long ratchet key
MT-MURL2



Direct gold for Multi-Unit
MU-MG480



Titanium temporary cylinder for Multi-Unit
MU-TO480



Solid angulated Multi-Unit abutment, 17°, h. 1mm, SP
CM-SO171



Impression coping, closed tray, for Multi-Unit
MU-IT480



Analog for Multi-Unit
MU-RSM48



Long driver for 0.05 inch hex.
MT-RDL30



Torque ratchet for prosthetic screws
MT-RI040



Surgical adapter driver
MT-MSD20

1.



Fitting the Multi-Units

After implant exposure, the Multi-Units (CM-S4480) and (CM-SO171) are screwed in the patient's mouth. The recommended tightening torque is 30Ncm.

C Clinic

Bridge Overdenture

2.



Multi-Unit impression coping

The Multi-Unit impression copings are connected to the Multi-Units.

C Clinic

Single crown Bridge Overdenture

3.



Impression taking

Apply impression material around the impression coping and then fill up the tray. Follow the impression material's Instructions for Use (IFU). Place the tray in the mouth and wait for setting. Remove the tray and then remove the impression copings.

C Clinic

Single crown Bridge Overdenture



4.

Abutment analogs

The impression coping is removed from the Multi-Units and connected to the abutment analogs by tightening the guide pin. This is then placed in the correct position in the impression and a stone model is prepared.

C Clinic

Single crown | Bridge | Overdenture



5.

Temporary cylinders

Attach temporary cylinders (MU-TO480) to the Multi-Units. Mark the desired height, making sure the abutments are 2mm below the occlusal plane and the post height is at least 4mm. Remove the cylinders from the multi-units and shorten them accordingly. The surgical adapter driver (MT-MSD20) may be used.
The recommended tightening torque is 15Ncm.

C Clinic

Single crown | Bridge | Overdenture



6.

Provisional bridge

Attach the temporary bridge over the temporary abutments, using light-curing acrylic material to define bite position. The recommended tightening torque is 15Ncm. Unscrew and remove the restoration, and adjust as necessary. Use light-curing acrylic resin, followed by polishing and disinfection. Deliver to the patient.

C Clinic

L Lab

Single crown | Bridge | Overdenture



7.

Infrastructure try-in

The gold-plastic cylinders are screwed to the abutment analog and shortened to about 2mm below occlusion. The minimal post height is 4mm. The bite position should be verified using an articulator. A wax carving is prepared on the plastic cylinders. The cylinders' opening must remain exposed during this step.

L Lab

Single crown | Bridge | Overdenture



8.

Metal framework

After casting using the lost-wax technique, the metal framework is tried in the patient's mouth and adjustments are made if necessary.

C Clinic

Single crown | Bridge | Overdenture



9.

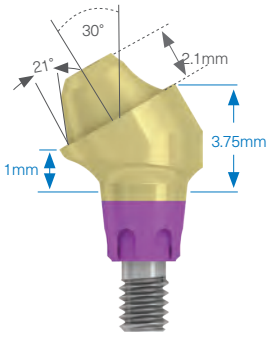
Final restoration

The final restoration is screwed into the Multi-Units. A maximum torque of 30Ncm is recommended for straight Multi-Units. The screw-channels may then be sealed and filled with composite material. Verify that the Multi-Units are tightened at 30Ncm. Pink acrylic resin is carefully added to fill gaps and irregularities and excess resin is removed. The overdenture may now be given to the patient.

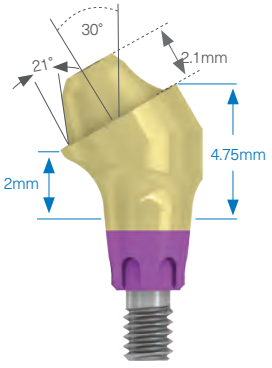
C Clinic

Single crown | Bridge | Overdenture

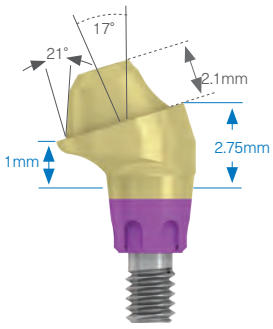
Multi Unit Dimensions



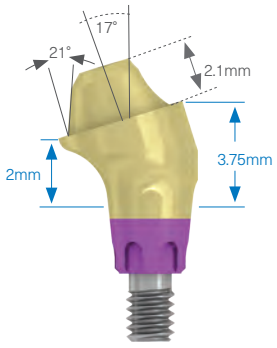
CM-SO301



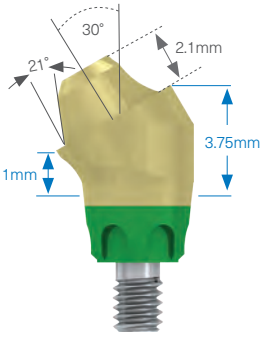
CM-SO302



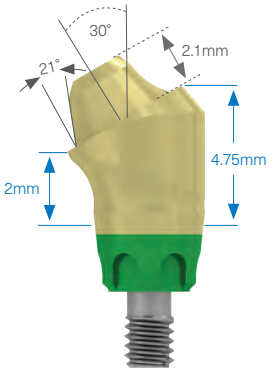
CM-SO171



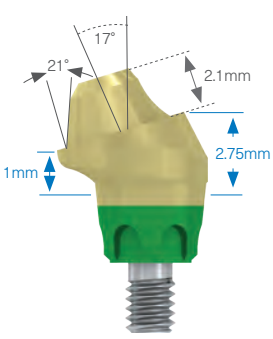
CM-SO172



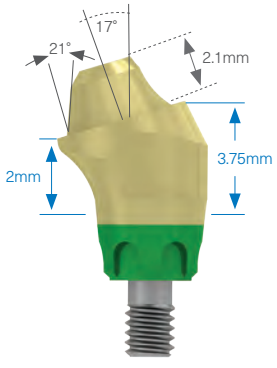
CM-WO301



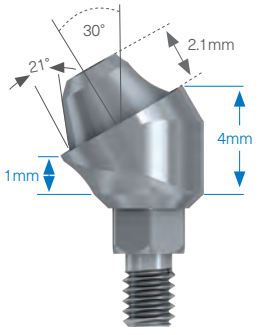
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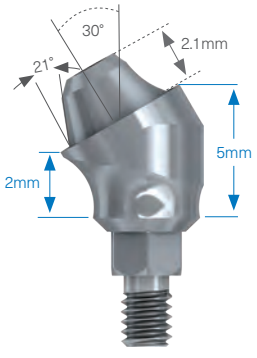
CM-WO171



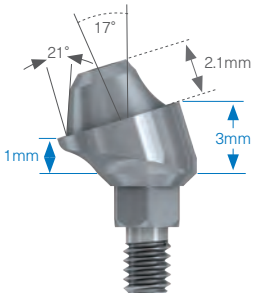
CM-WO172



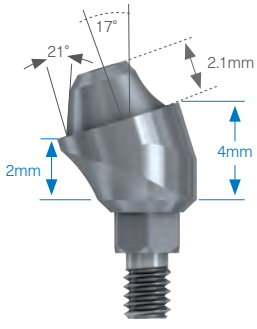
MA-SO301



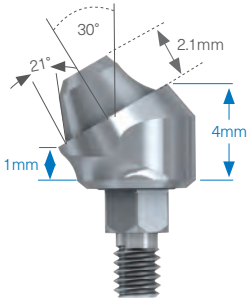
MA-SO302



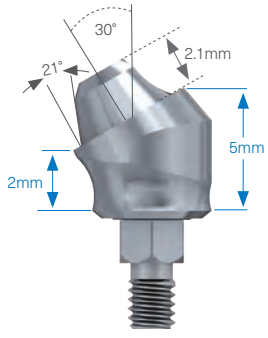
MA-SO171



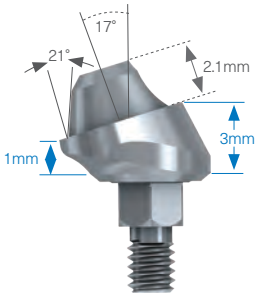
MA-SO172



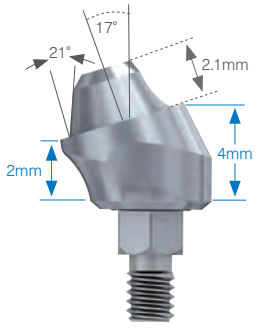
MA-WO301



MA-WO302



MA-WO171



MA-WO172

Bone Profiler Kit
Internal Hex.

MK-0059
Bone Profiler Kit



Bone Profiler Kit
Conical Connection

MK-0060
Bone Profiler Kit



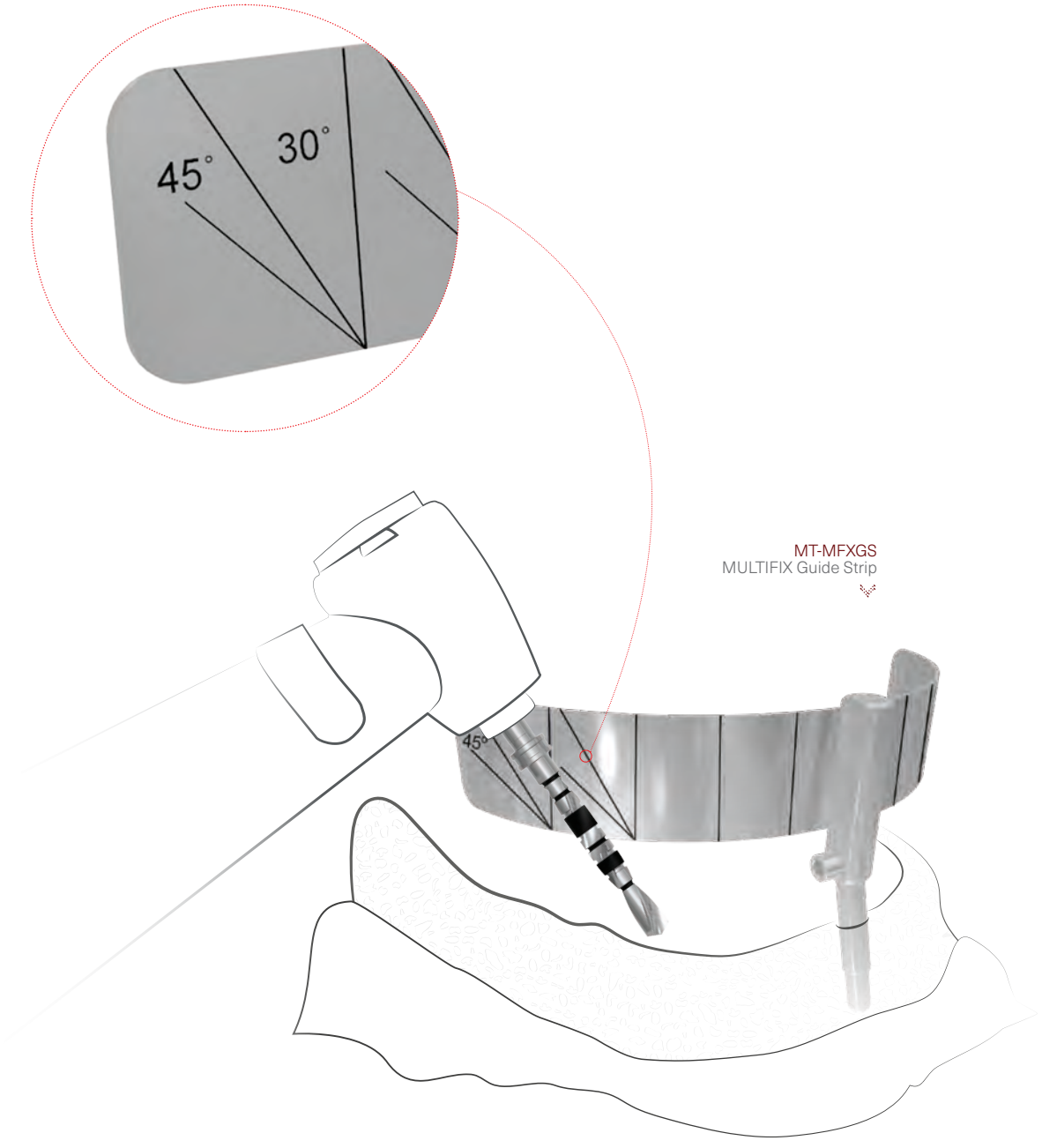
MULTIFIX Guide Strip

MULTIFIX guide strips are used to assist in evaluating the drilling angle, while preparing the insertion site of the tilted implants during the MIS MULTIFIX procedure. These flexible strips are reusable.

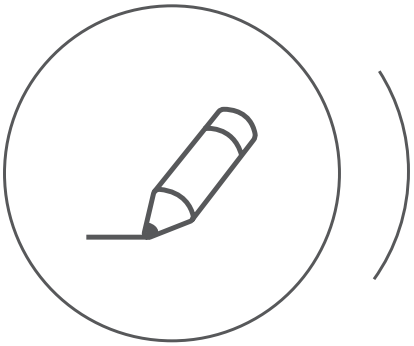
For use, a hole must be drilled in the front and center bone of the lower or upper jaw with a 2.4mm pilot drill at a 10mm depth. Once the guide strip pin is in place within this hole, it may be bent

around the contours of the gingiva, its markings visible, showing guidelines for the drilling angle. This is in order to prevent drilling at an angle greater than 45˚.

MULTIFIX guide strips are provided with extra screws (MT-MFXSS) which are compatible with standard 0.05" screw drivers. Grip force may be adjusted to ease use.



MT-MFXGS
MULTIFIX Guide Strip



NOTES

TERMS AND CONDITIONS OF SALE

The following are the terms and conditions under which MIS Inc. sells its products in North America.

Governing terms Any shipment of products shall be deemed to be on the terms and conditions stated herein. Any and all terms and conditions submitted by Purchaser are hereby rejected. These terms cannot be varied by any oral promises, statements or representations.

Taxes The prices set forth herein do not include any sales, use, excise, ad valorem, property or other taxes applicable to the sale, use or delivery of the products, all of which shall be paid by Purchaser separately or added to the contract price and paid by Purchaser to MIS.

Prices The prices set forth for the products are in United States dollars. Prices may be modified without prior notice.

Delivery Products sold hereunder shall by delivered F.O.B. manufacturer's plant or distributor's plant, as applicable. Purchaser shall assume responsibility for all subsequent delivery or shipping charges.

Payment Payment terms shall be as set forth under the "Terms" section on front of invoice.

Warranty MIS exercises great care and effort in maintaining the superior quality of its products. MIS makes no warranty, express or implied, except that all MIS products shall be free from defects in material and workmanship. This warranty applies only to the original Purchaser and is nontransferable. In event of a product defect, immediately notify MIS of the defect and prior to returning the product. Devices must be sterilized prior to return. As its sole obligation under this warranty, MIS will, at its option, deny liability resulting from the improper use of these products, whether used separately or in combination with other products.

Education: modification of products Only appropriate healthcare professionals should use these products. MIS strongly recommends completion of formal postgraduate implant education and strict adherence to the procedures described in MIS's implant instruction manuals. MIS continually strives to improve its products and therefore reserves the right to improve, modify or discontinue products at any time, or to change specifications of the products without notice and without incurring any obligation.

Return policy Purchaser may return any MIS products within 60 days of the invoice date. MIS products returned within 30 days of the invoice date will be accepted without a restocking fee to the Purchaser. MIS products returned between 31 and 60 days of the invoice date will be subject to a restocking fee. An MIS product will be accepted for return only if the MIS product is (1) returned in its original, unopened package (including autoclavable products); (2) received by MIS within 60 days after the invoice date for that product; and (3) returned freight prepaid accompanied by the MIS return authorization number provided by MIS's Customer Service Department. Purchaser should be advised that MIS products not meeting the above criteria will not be accepted for return.

Exchange policy MIS products may be exchanged within 180 days of the invoice date, without a restocking fee, for other MIS products of equal or lesser value within the same product family as determined by MIS (example, implant for implant, abutment for abutment). MIS products may be exchanged within 180 days of the invoice date for other MIS products of greater value within the same product family as determined by MIS (example, implant for implant, abutment for abutment), with the price differential paid by the Purchaser, provided that the exchanged MIS products is (1) returned in its original, unopened package (including autoclavable products); (2) a currently offered MIS products (discontinued products not included): and (3) returned freight prepaid and accompanied by the MIS return authorization number provided by MIS's Customer Service Department.

Licenses, permits and export control The timely securing of permits, licenses or other local, state or federal government approvals required in connection with Purchaser's use of any products hereunder shall be the sole responsibility of Purchaser and Purchaser shall bear the cost thereof. Unless otherwise agreed between MIS and Purchaser, products sold hereunder are for use only in the North America. Purchaser agrees that Purchaser will comply fully with all applicable state and federal laws and regulations and Purchaser shall indemnify MIS for all losses, damages and penalties incurred as a result of any violation of applicable state or federal law or regulations.

Force majeure or act of god MIS shall not be liable for any loss or damage due for failure or delay arising out of any cause beyond the control of MIS. No such failure or delay shall be the basis for an increase in MIS's obligation or any termination by Purchaser.

Limitation of liability Except for the warranty expressly described in the "warranty" paragraph above, neither MIS nor any of its affiliates makes any other warranty with respect to the MIS products, express or implied, written or oral, including, without limitation, any implied warranty of merchantability, or a warranty of fitness for a particular purpose. MIS shall not be liable for business interruption, loss of profits, special, indirect, incidental or consequential damages of any nature and from any cause whether based in contract, tort (including negligence) or other legal theory, even if MIS has been advised of the possibility of such damages.

Validity If any provision of these Terms and Conditions is found to be illegal or unenforceable in any respect, such illegality or unenforceability shall not affect any other provision of these Terms and Conditions, all of which shall remain enforceable in accordance with their terms.

General provisions The purchase of the products and these Terms and Conditions are governed by the laws of the state of New Jersey exclusive of its conflicts of law principles. This document incorporates all oral and written representations between the parties and constitutes the entire agreement and understanding of the parties with respect to the subject matter hereof and supercedes any and all other agreements either oral or written between the parties with respect to such subject matter. No amendment or modification may be made to this document unless in writing and duly executed by an authorized representative of MIS. Purchaser consents to jurisdiction and venue in the Superior Court of New Jersey for Bergen County and waives the right to trial by jury.

Caution Federal (U.S.) law restricts these devices to sale by or on the order of a licensed healthcare practitioner. Devices labeled "STERILE" are certified to be sterile unless package is opened or damaged.

MC-MFXPG Rev.1

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