



A CLINICIAN'S GUIDE TO SYNERGETIC WORKFLOW FROM SURGERY TO FINAL

NAVIGATION™ SYNERGY ZERO



GUIDED WORKFLOW
Patent Pending



Dear Doctor,

An accurate, and properly executed, CBCT scan ultimately has the biggest influence on a predictable surgery and conversion process. In return a precise, diagnostically driven, conversion prosthesis gives the restorative clinician the data required to communicate a correct VDO, without the need for a bite rim. This more predictable starting point allows for a simplified restorative process, ultimately leading to more referrals. The ability to accurately match the DICOM data with the STL or PVS model, in the design and planning software, directly influences not only the accuracy of the implant placement but also affects the efficiency with which the surgical conversion is done.

This protocol manual addresses the most commonly asked questions from clinical teams regarding;

- set up for scanning edentulous as well as dentate patients
- DICOM data capture and equipment settings
- information required to process a guided case
- transfer of data to lab

Today's technology is allowing the technical, restorative and surgical teams to come together starting at the planning phase. We can now plan our surgical cases with a true, transferable, digital diagnostic wax-up. Superimposing this wax-up onto actual patient pictures assists in patient approval and allows us to place implants based on the final prosthesis, not a pre-op or existing denture tooth position. Once patient approval is received, we process the entire case within the parameters set by the approved wax-up. Absolute's in-house surgical planning software is allowing our pre-planning team to assist the surgeon with model matching, DICOM cleanup, suggested bone-reduction as well as proposed implant placement. This saves the clinician precious time and renders unnecessary the need to stay updated with ever-changing implant planning and design software.

Our NavaGation™ Synergy Guided Workflow now allows for true all-encompassing process; from diagnostic planning, tooth down implant placement, guided surgery with chairside immediate latched conversion to a final prosthetic solution.

I invite you to restore your next case with us!

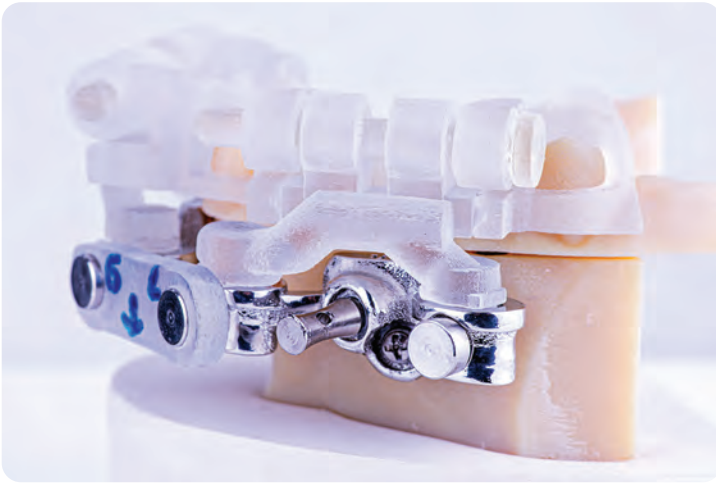
Conrad J. Rensburg



Why Choose the Synergy Zero Guided Workflow?

ZERO TISSUE REFLECTION FOR SEATING

Our previous Synergy system boasted an incredible improvement of up to 80% reduced seating volume without sacrificing stability. The original Synergy system offered minimal tissue reflection for efficient seating. Our new patent-pending Synergy Zero system builds upon that momentum by introducing a tissue borne mounting via our patent-pending Tissue Depth Indicators (TDI's), spikes that pierce through the patient's tissue and index onto the buccal bone. These TDI's are the indexing solution for the Tissue Borne Fixation Base Frame (TBF), which serves as the base guide for the system. As a result, the Synergy Zero System requires no tissue reflection for seating. This greatly reduces the patient's recovery time, postoperative discomfort, and any risks involved in reflecting buccal tissue.



REVOLUTIONARY SEATING

Synergy Zero demonstrates a revolutionary change in the way guides are seated. Two Fixation Bodies, backed with Tissue Depth Indicators, are latched to a hinged seating guide to enable free rotation. The seating guide is placed onto the patient's anatomy, confirming a perfect fit. Once the guide is securely seated, the Fixation Bodies are rotated into position. The TDI's on the Fixation Bodies pierce into the patient's tissue, indexing on the bone, enabling a secure fit with no reflection whatsoever.

TRUE SEQUENTIAL WORKFLOW

A true sequential workflow allows the surgeon to complete the Synergy Zero surgery without the need for transfer bites. The conversion process is guided by the accurate seating of the TBF guide and not by closing the patient into occlusion by hand with a nose-chin measured vertical. In case of a dual arch, the entire case may be converted at the same time.

In documented "simple cases" a dentate single arch case (surgery to conversion) is regularly processed in 120 to 160 minutes, while the conversion process is reduced to between 20 and 30 minutes. Dual Arch cases are regularly processed with our team in 4 hours or less.

10-BUSINESS-DAY PROCESSING FROM REVIEW TO SURGERY

The NavaGation™ Team has processed hundreds of surgical cases with some of the leading clinicians in the US. Complete in-house processing from planning to final prosthetics, by some of the best technicians in the industry, not only allows for an impressive 10-day Synergy turnaround but also gives our surgeons a world class prosthetic support structure for the final.



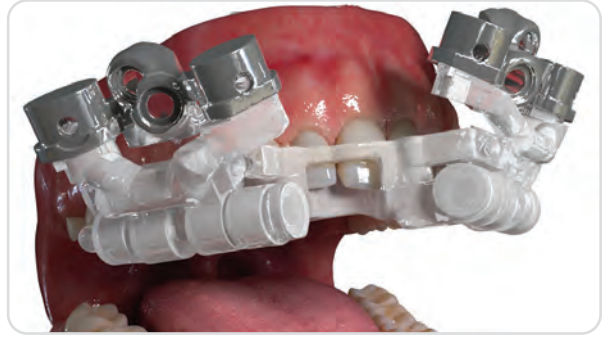
SYNERGETIC LINK FROM SURGERY TO FINAL (YOUR PROSTHODONTIST WILL LOVE YOU)

The Synergy Zero Workflow creates a predictable link between the surgical plan, converted PMMA, prototype and the final prostheses. All cases are planned from the final prosthesis back to the surgical plan, this minimizes any potential restorative surprises or complications. The NavaGation™ team is led by experienced technicians who ensure the Synergy workflow is designed to support the final prosthetic solution.

NavaGation™ Synergy Zero Quick Reference Guide



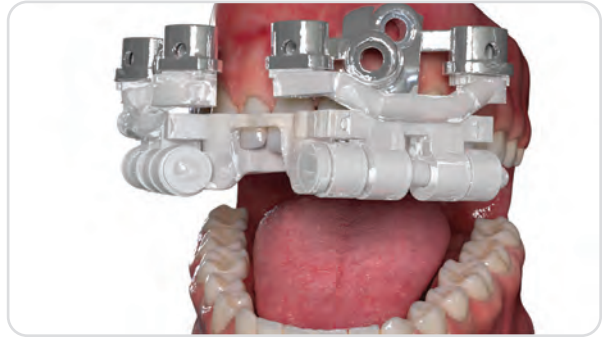
DENTATE PATIENT



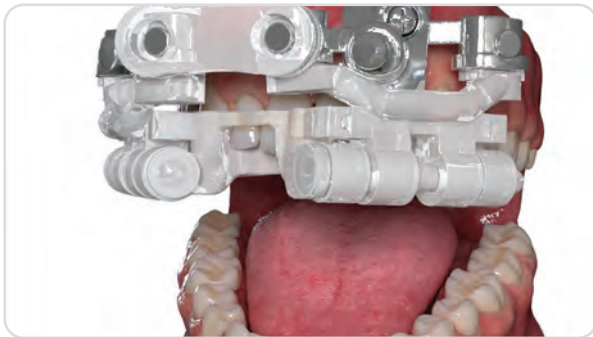
SEAT HINGED ALIGNMENT GUIDE



ENGAGE TDI'S AGAINST BONE



BASE FRAME SEATED



DRILL FIXATION



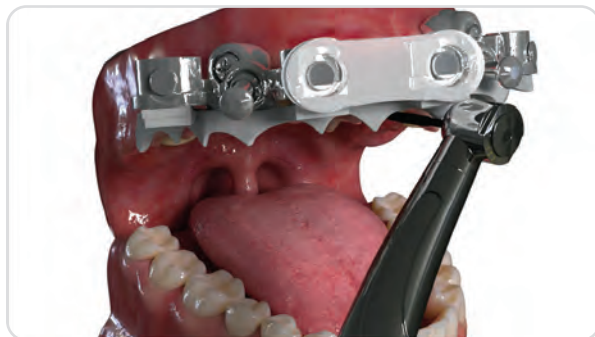
REMOVE HINGED ALIGNMENT GUIDE



EXTRACT TEETH



SEAT SCALLOPING GUIDE



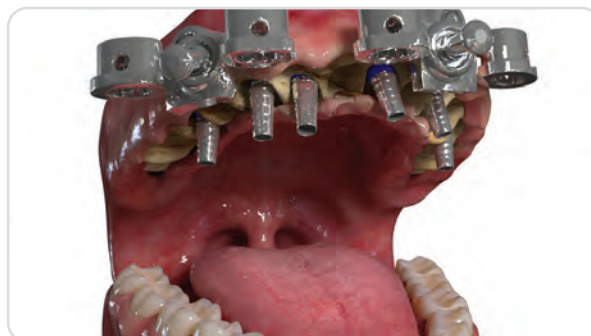
PROCESS BONE REDUCTION



*DRILL OSTEOTOMIES AND PLACE
IMPLANTS THROUGH GUIDE*

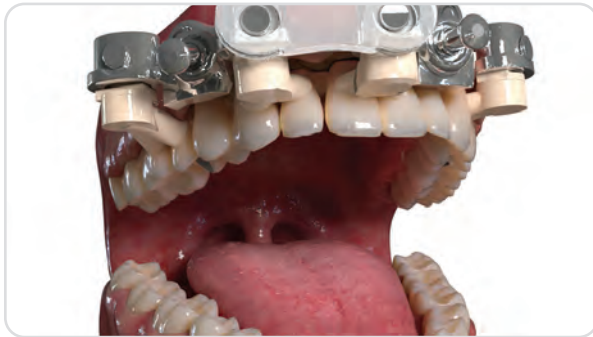


*LATCH ABUTMENT ALIGNER - POSITION
AND TORQUE MUA ABUTMENTS*



*PLACE TEMPORARY CYLINDERS AS PER
CONVERSION INSTRUCTIONS*

NavaGation™ Synergy Zero Quick Reference Guide (cont.)



LATCHED PMMA SEATED



LUTE TEMPORARY CYLINDERS



REMOVE TBF BASE GUIDE AND SUTURE



*CUT LATCHES FROM TEMPORARY
PROSTHETIC AND REPLACE CONVERSION*



*Photo Courtesy of Dr. Jeffery Ganeles of the South
Florida Center for Periodontics & Implant Dentistry*

*"No Occlusal adjustment was Done!
Pretty Amazing System!"*

Diagnostic Implant Pre-Planning



PRE-OP STL SCANS



PRE-OP



WAX-UP



DIAGNOSTIC WAX-UP

SUPER IMPOSED WAX-UP FOR PATIENT APPROVAL

In this step our diagnostic team performs a full digital diagnostic work-up. Once completed, the restorative clinician can remotely evaluate and make changes, if required, via TeamView.

The diagnostic wax-up can now be superimposed over the original patient pictures for approval. Pre-op and post-op mounted models can also be requested for patient evaluation.



DIAGNOSTIC SCAN



Case processed with
Uday Reebye MD, DMD
Triangle Implant Center

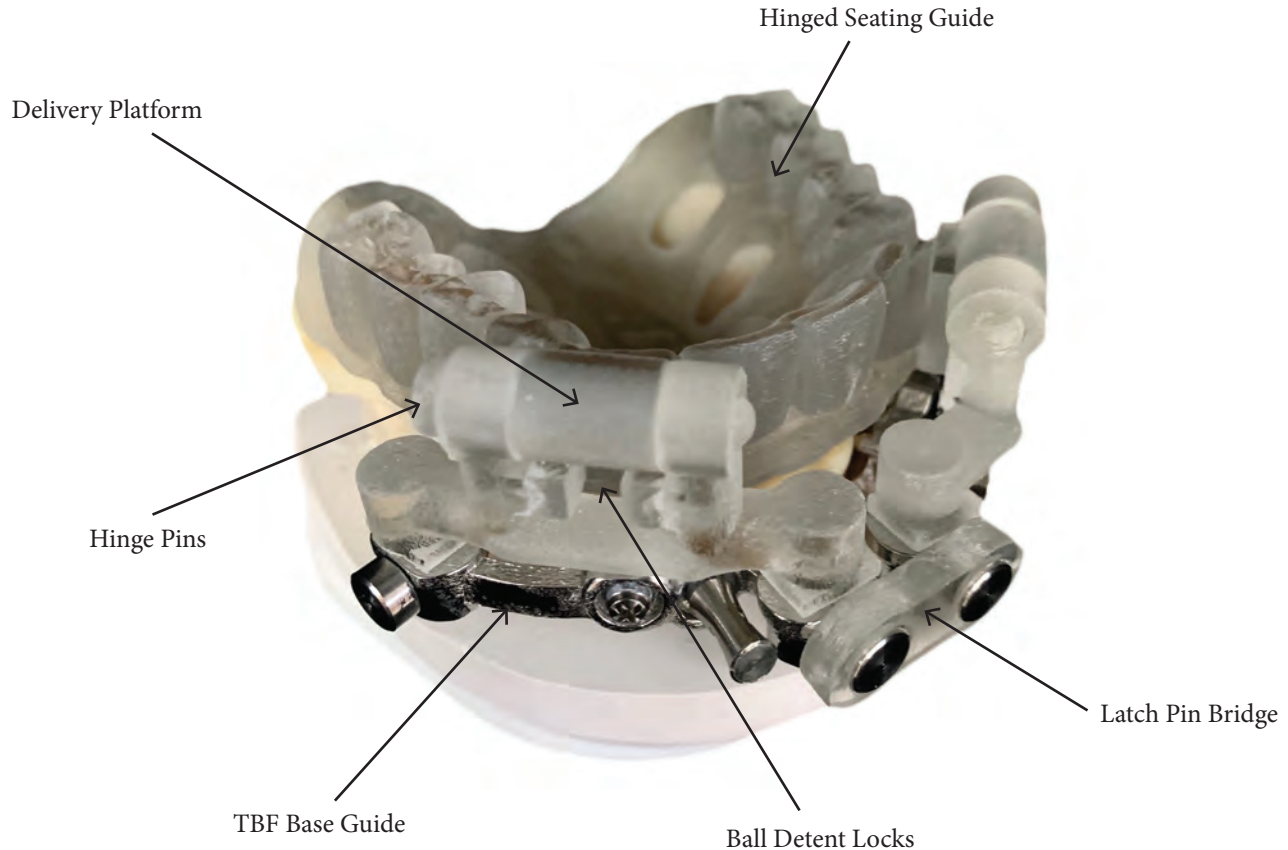


DIAGNOSTIC FOR SURGICAL PLANNING

The diagnostic wax-up, pre-op model STL and DICOM scan are now imported into the NavaGation™ implant planning software. The suggested plan is designed based off of these three data points .

Single-Arch Surgery

COMPONENT IDENTIFICATION



HINGED ALIGNMENT GUIDE

The Synergy Zero hinged alignment guide will be shipped to you in one piece and may be sterilized without disassembly. The Synergy Zero Tissue Borne Fixation Base Frame must be latched into the TBF carriers on the alignment guide. Before insertion of the guide, complete any pre-extractions as planned.



*TISSUE DEPTH INDICATORS (TDI'S) ON
INTAGLIO SURFACE OF TBF*



*COMPLETE HINGED ALIGNMENT GUIDE AND
TBF BASE FRAME*

DENTATE PATIENTS: SEATING THE BASE FRAME

The NavaGation™ Synergy Zero Protocol utilizes a Tissue Borne Fixation Base Frame (TBF) as a fixed point between the pre-operative centric occlusion and planned diagnostic/conversion tooth position. The TBF base frame makes use of Tissue Depth Indicators (TDI) (pictured above), these TDI's punch through the patient's tissue and engage with the buccal bone. The TBF Base Frame also acts as a carrier for all surgical and prosthetic devices. Accurate seating of the base guide is the most crucial component to ensure a predictable conversion process. Always latch the components before every step using the supplied latch pins and latch pin bridge. These pins play an integral part in securing the accuracy and predictability of the Synergy Zero system. The TBF Base Frame can only be printed in Cobalt-Chrome.

Once pre-extractions are complete, the assembled Alignment Guide will be hinged open slightly and the Alignment Guide will seat onto the patient's existing dentition, tissue, or bone ridge. While maintaining firm pressure on the aligner, rotate the TBF carriers until the TDI spikes are fully seated onto the patient's bone. This will be identified by the engagement of the ball detent locks on either side of each TBF carrier. Once firm engagement is confirmed, place the latch pin bridge and pins into the anterior latches of the TBF Base Frame. The latch pin bridge will provide cross arch stabilization during the remainder of the surgery, and will be removed and replaced with each guide as with the latch pins. Confirm seating a second time.

After TBF seating has been verified and the latch pin bridge inserted, fixation pilot holes will now be drilled, and the base frame will be secured with pins or screws as per the NavaGation™ plan. Each fixation will be drilled and placed individually. Keep firm pressure on the alignment guide and TBF carrier while drilling and placing, especially when placing screws. Proceed around the arch drilling and fixating, and return to check for tightness after fixation is complete.

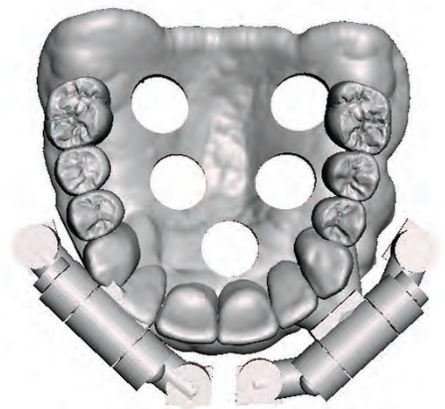


ROTATE TBF CARRIERS INTO POSITION

ADDENDUM FOR EDENTULOUS CASES

Synergy Zero may also be used in edentulous cases. The system is a best fit for edentulous cases with a well-fitting denture. When it is necessary to expose bone for a ridge aligner, the benefits of Synergy Zero are reduced. A denture-based aligner will be fabricated from the dual-scan data of a new or hard-relined denture. The digital impression will be matched to the CBCT with the use of scan markers, please refer to the Synergy Scanning Protocol for dual-scan instructions.

The only difference between dentate and edentulous surgical workflows is the dual-verification method of seating the base frame. After the base frame has been seated and fixated, all latched surgical and prosthetic steps are the same as a dentate surgery.



DENTURE-BASED ALIGNER

EDENTULOUS PATIENTS: SEATING THE BASE FRAME

Hinge the assembled Alignment Guide open slightly and seat onto the patient's existing tissue. The palatal area will serve as primary seating verification. Secondary verification will be provided by occlusal seating against the opposing dentition. If the opposing dentition is sufficient to do so, it is possible to maintain firm pressure on the aligner by asking the patient to bite down on the aligner. While maintaining firm pressure on the aligner, rotate the TBF carriers until the TDI spikes are fully seated onto the patient's bone. This will be identified by the engagement of the ball detent locks on either side of each TBF carrier. Once firm engagement is confirmed, place the latch pin bridge and pins into the anterior latches of the TBF Base Frame. The latch pin bridge will provide cross arch stabilization during the remainder of the surgery, and will be removed and replaced with each guide as with the latch pins. Confirm seating a second time.

After TBF seating has been verified and the latch pin bridge inserted, fixation pilot holes will now be drilled, and the base frame will be secured with pins or screws as per the NavaGation™ plan. Each fixation will be drilled and placed individually. Keep firm pressure on the alignment guide and TBF carrier while drilling and placing, especially when placing screws. Proceed around the arch drilling and fixating, and return to check for tightness after fixation is complete.



"The Navigation protocol is a very unique, digitally planned, fully guided surgical, restorative, and laboratory approach for immediate full arch implant reconstruction. It makes the surgical placement of implants and immediate prosthetic conversion very precise because the fit of the guides is very accurate. The details taken into account on the planning phase makes the process very reliable for the patient, restorative dentist, and implant surgeon. Completely eliminates all the guesswork."

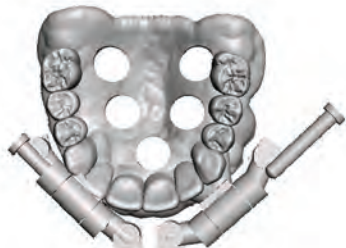
—Jose Arauz DMD
Dr. Jose I. Arauz Periodontics

ALIGNMENT GUIDE REMOVAL

Removal of the alignment guide may be accomplished by two methods. First, remove latch pins and latch pin bridge and attempt to remove the Alignment guide in one piece. If the patient has an excessive buccal undercut, the guide may not be removable as a whole. In this case, remove both hinge pins and remove the guide in parts. The aligner, hinge pins, and TBF carriers can all be discarded.



*UNLATCH AND REMOVE TOOTH
ALIGNER*



*REMOVE HINGE PINS IF
NECESSARY*



*BASE FRAME SEATED AND
FIXATED*

*Case Photos Courtesy of
Dr. Mark Ludlow MUSC South Carolina*

EXTRACTIONS AND BONE REDUCTION

After fixation is complete and the Alignment Guide has been removed from the stack, extractions are completed and the bone reduction guide is latched and pinned in place. The bone reduction guide will combine with the profile of the TBF Base Frame to identify the plane of reduction.



EXTRACTIONS COMPLETE

BONE REDUCTION AND CONVERSION TEST-FIT

The bone reduction guide can be printed with multiple innovative materials ranging from cobalt alloys to the latest biocompatible polymer, carbon, and nylon materials. These options will be discussed at the NavaGation™ review. After bone reduction is completed, the latched conversion prosthesis is seated into the TBF and a bite and bone height check is done. Note: cases with little room in the vestibule for guides may require the Base Frame to sit at the plane of reduction and serve as the reduction guide.



BONE REDUCTION GUIDE PLACED



“The haptic feedback I get from the SLM guides is invaluable.”
—Mark Suttle DDS, MS
Forsyth Periodontal associates



MULTIPLE PLANES OF REDUCTION

A case may require two or more unique planes of bone reduction due to available bone or implant placement. Synergy guides can be ‘stepped’ to accommodate this possibility.



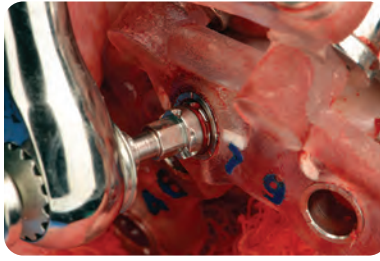
MULTIPLE-PLANE BONE REDUCTION GUIDE

SURGICAL PROCEDURE

All surgical devices are now latched into the TBF and guided surgical procedures are processed as normal. Implant rotation is marked on the hex point and marked on the drill guide with a line. Synergy Zero requires a fully-guided kit and can be processed on most all popular implant systems. Please discuss any questions about a surgical kit at the NavaGation™ review.



OSTEOTOMY



IMPLANTS PLACED TO
DEPTH AND ROTATION



SURGICAL GUIDE

ANGLE-CORRECTION ABUTMENT PLACEMENT

After implant placement, the drill guide is unlatched and removed. The abutment aligner is now latched into the TBF base guide to assist with placing the correction abutments in the proper rotational position. The line indicates the screw access position, which aligns the abutment rotation. IMPORTANT - Torque all restorative abutments to manufacturer specified torque values before proceeding to the conversion process.



ABUTMENT ALIGNER



“The Navagation team is ‘absolutely’ outstanding! Their chairside experience and exceptional Synergy solution truly supports me and my patients with excellence.”
—Patrick McDonough, DDS



CHAIRSIDE CONVERSION PROCESS

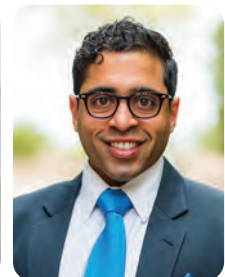
The Synergy Zero workflow greatly streamlines and simplifies the conversion process. The latched PMMA hybrid system significantly reduces the required chairtime and technical skill required to complete the conversion. The NavaGation™ team can be chairside to assist with a conversion and/or teach surgical team members the conversion process.

CONVERSION WITH COMMON PATH OF INSERTION

Included with every case is a detailed drill and conversion report. This explains the sequence of placing the temporary cylinders to allow for a common path of insertion, simply place the temporary cylinders, slide the PMMA over, latch it into the TBF base guide and lute them into the PMMA. The NavaGation™ team suggest a self- or dual-cure luting agent such as VOCO's Quick-Up.

CONVERSION WITHOUT COMMON PATH OF INSERTION

If allowed by the implant position in the bone, the NavaGation™ team will always plan to create draw with all the temporary cylinders and lute those into the PMMA as noted in the conversion notes. After luting these cylinders, unlatch and remove the PMMA, place the remaining temporary cylinders and lute into the PMMA to complete the chairside pickup.



Case processed with Dr. Mark Ludlow and
Dr. Baber Khatib, MUSC Charleston

CONVERSION - CHAIRSIDE WORKFLOW

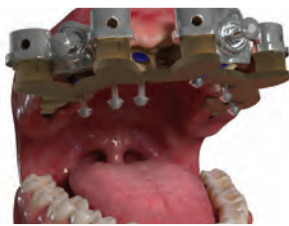
The conversion process will also be discussed at the case review and extensively described in the NavaGation™ conversion instructions included with every case. Polymerization sleeves can be provided on request.

In a case with a common path of insertion:

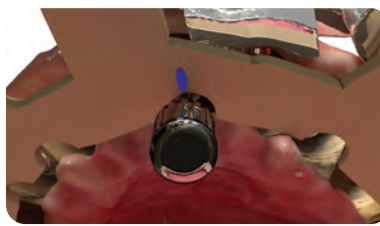
Place all temporary cylinders, seat the PMMA, latch into the TBF and lute the pick-up.

In case a common path of insertion between all temporary cylinders could not be established:

Place all temporary cylinders with a common path of insertion according to the conversion plan, latch and lute the PMMA. Repeat the process with remaining temporary cylinders. After all components are luted, remove the PMMA and simply cut the latches to prepare the temporary for conversion. The surgeon will remove the base frame and suture the patient, replace the PMMA after suturing. Remove the fixation and TBF base frame, suture the patient and seat the PMMA to complete the conversion process.



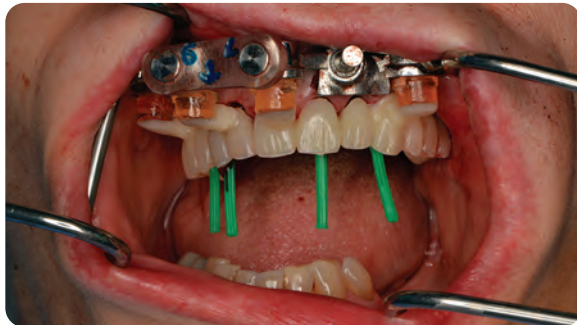
PLACE MUA ABUTMENTS



*MUA ABUTMENT ROTATION
MARKED ON GUIDE*



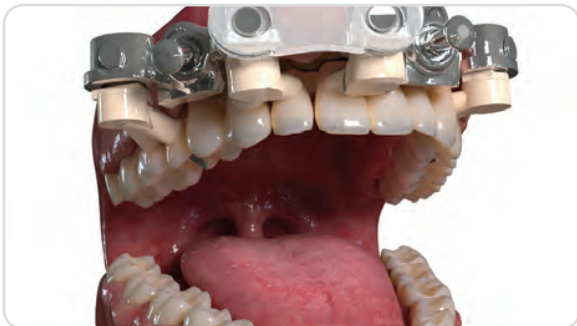
*SEQUENCE TEMP CYLINDERS
ACCORDING TO CONVERSION PLAN*



PLACE SCREW ACCESS PROTECTORS



LUTE PMMA TO TEMP CYLINDERS



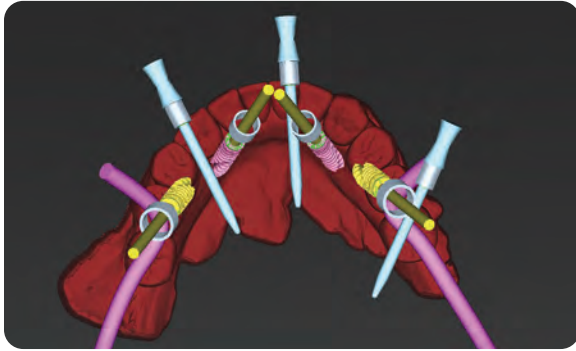
REMOVE PMMA, CUT LATCHES AND REPLACE



TRANSITIONAL PMMA IN PLACE

NAVAGATION™ SYNERGY ZERO WORKFLOW:
SURGERY TO LATCHED CONVERSION

The Synergy Zero guided workflow not only provides the surgeon with a predictable surgical solution, but also gives the restorative clinician an efficient restorative starting point. Planning the implant emergence, bone reduction, and conversion PMMA from a true diagnostic work-up equates to no economical or restorative surprises when processing the final. The Synergy Zero diagnostically designed latched conversion is now the starting point of a predictable hybrid restorative workflow.



SURGICAL PLANNING



IMMEDIATE POST-OP



DIAGNOSTIC LATCHED CONVERSION



LOADING TEMPORARY PROSTHETIC



3 DAYS POST-OP

Crown-and-Bridge Conversions

The Synergy Zero system is ideally suited for cases in which the prosthetic teeth will seat into the patient's gumline, without artificial 'Pink' revealing a prosthetic waterline. Commonly called "Crown and Bridge Style" or "Scalloped," these conversions provide a seamless, natural smile fit for patients with high aesthetic requirements.

MODEL MATCHING & CLEAN-UP

Please note if you are planning for a Scalloped case at the time you submit the case. As with any NavaGation™ Synergy system, case planning will flow from patient photos through to the waxup and into diagnostic planning. Bone scalloping will be planned to fit the waxup teeth. A Scalloped Synergy Zero case will proceed much the same as those listed above, but will include the following diversions from Synergy Zero protocol.

SCALLOPING GUIDE

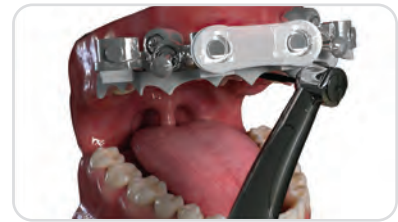
The Scalloping guide takes the place of a bone reduction guide and is used to profile the bone in advance of osteotomies. Commonly, the scalloping guide will be of Cobalt-Chrome. Once the TBF Base Frame has been successfully delivered and fixated, seat and latch the scalloping guide into the Base Frame. Unlike the bone reduction guide, the scalloping guide is not a direct guide for surgical tools. Instead, the guide is a continuation of the bone's final profile. Remove bone to match this 'bowl' profile, creating a space for each pontic. After bone reduction is completed, the latched conversion prosthesis is seated into the TBF and a bite and bone height check is done. The temporary should fit into the profiled bone with clearance for tissue. Refer back to Surgical Procedure and continue until Conversion.



BASE FRAME SEATED



SEAT SCALLOPING GUIDE



*REDUCE BONE ACCORDING
TO SCALLOPING GUIDE*



READY FOR CONVERSION



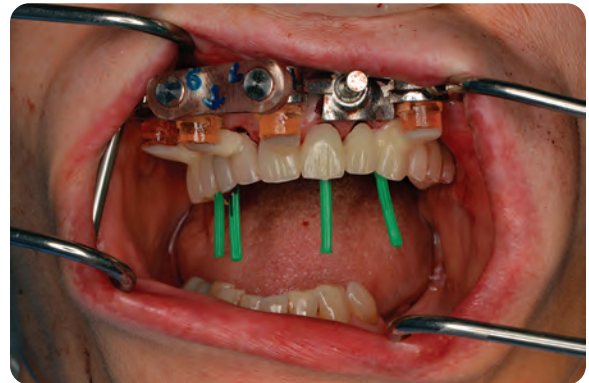
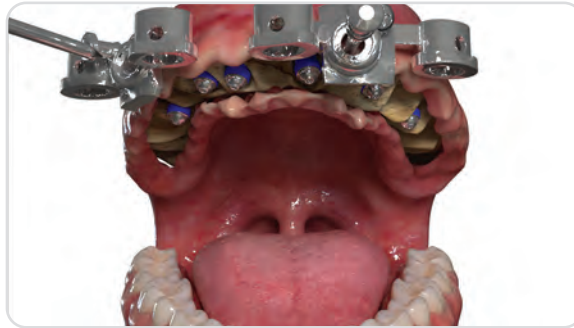
"I have worked with Absolute for the last several years in designing surgical implant guides for my patients. Their team is always professional, helpful, and thoughtful. I have been very happy with our ability to set timely meetings and plan and fabricate high quality surgical guides to help provide great care for our patients."

—Adam D. Serlo DMD, MD



SCALLOPED CONVERSION

The temporary prosthetic for a scalloped case has a unique profile, the pontic of each tooth is exposed. Ideally, the tissue will heal around the temporary and be shaped by these pontics. Delivery of the temporary prosthetic will be done similarly to that of a conventional PMMA, but may require some reglazing where the latch connections are removed.



SCREW ACCESS PROTECTORS SUPPLIED FOR CONVERSION



Sequenced Dual Arch Surgery

The Synergy Zero system supports dual arch cases with the same consistency as traditional Synergy Cases. In fact, it is possible to process one arch using Synergy Zero and one using traditional Synergy guides.

The system allows for a sequential workflow, and does not require bite verification during surgery. Furthermore, the dual arch surgery does not require one arch to be converted before proceeding to the opposing. As a result, the NavaGation™ Synergy Zero system allows for simultaneous processing of both arches. Extractions, bone reduction or contouring, implant and abutment placement, and conversion can be done in sequence on both arches. With NavaGation™ Synergy, this has proven to produce a more predictable surgical result when compared with conventional surgical systems. By obviating the need for in-process bite checks, a dual arch conversion can be completed with the same predictability as a single arch. In addition, as the patient's bite can be idealized during pre-planning and delivered accurately, the need for post-surgical bite adjustment will be minimized.

THE SYNERGY ZERO DUAL-ARCH WORKFLOW

- | | |
|---|--|
| <ul style="list-style-type: none">• Complete pre-extractions as noted in your surgical plan• Seat hinged alignment guide on arch of choice• Hinge and seat Tissue Borne Fixation base frame• Primary confirmation of seating: in window cut-outs on alignment guide• Secondary confirmation of seating: Complete locking of ball-detent locks• Drill and place fixation, remove alignment guide• Repeat above steps for opposing arch | <p>After seating both base frames, continue with the sequential surgical process on both arches</p> <ul style="list-style-type: none">• Extractions• Bone reduction or contouring• Check seating of temporary prosthetic• Osteotomy and implant placement• Abutment Placement• Conversion Process |
|---|--|



"With the Synergy guided surgery protocol/system, Absolute Dental has given me, as a surgeon, a predictable, efficient system to treat full arch reconstruction cases. Our patients love the results!"
—Dr. Aaron Sarathy DMD



Dr. Aaron Sarathy



Dr. Drane Oliphant



Dr. Edward Strauss

"We have been using Absolute dental lab for our full-arch procedures exclusively now for nearly 2 years and have recommended them highly. We have been able to increase our cases by several fold through our partnership because they facilitate every step with the surgical and restorative specialist using their fully digital workflow. This protocol makes the surgery appointment much more efficient and decreases appointment and total chair time which benefits the patient as well as the profitability of the case. I will not perform a full arch case in the traditional way again without the digital protocol."

—Dr. A. Drane Oliphant DMD, MD

Absolute Signature Prosthetics



MONOLITHIC UPPER AND LOWER ZIRCONIA HYBRID



TRANSITIONAL PMMA LONGTERM PROTOTYPE



NANO - CERAMIC HYBRID



Jack Marrano CDT

- Voted one of the top 40 ceramists in the USA by LMT
- Nationally renowned speaker
- Mastership with International Congress of Implantologists
- Fellowship with Misch Institute
- Specializes in high esthetic monolithic zirconia
- Author of multiple articles and publications
- Director of Technical Artistry with Lee Culp
- Division manager with Microdental DTI
- Member - American College of Prosthodontists
- Member - Academy of Osseointegration
- Contact Jack at 844-293-2371 or jack@absolutedentalservices.com



Absolute Dental Lab

Established in 1994, Absolute Dental Services started as a small fixed prosthetics lab in the Triangle area of North Carolina. More than two decades later, Absolute's restorative focus is much broader but their attention to product detail and exceptional customer service has not changed.

Today, Absolute is a true full-service partner, with a team nationally and internationally renowned for their expertise in creating world-class esthetics. Their use of cutting edge technology in CAD and milling as well as their extraordinary dental implant, guided surgery and high-end removables sections, enables them to deliver lifelike and functional dental prosthetics in even the most complex cases.



The company motto, *Perfection Is Not Optional*, holds true and serving their customers with Absolute Excellence has always been the primary focus of the owners, branch partners and team members. They welcome clinicians from all over the country to become part of the Absolute family!

NavaGation™ Team

The NavaGation™ guided surgery division was established in 2014 with the goal to create synergy between the surgeon, restorative and technical teams. Today, with more than 2000 guides and successful surgeries behind them, Absolute is proud to offer their expertise in diagnostic work-up, pre-planning, guide design, processing and chairside support to our clinicians.

By offering a true “prosthetic down” planning approach, our NavaGation™ team has become a trusted partner for surgical and restorative teams across the United States. Advancements in planning software, 3D printing and other technologies like select laser melting, has created a true synergy between the surgical plan and the final prosthetics. Having an experienced technician assist with plan set-up, team review and fabrication of the final prosthesis has proven to create a very predictable workflow.

Select Laser Melting
done exclusively by



We invite you to restore your next case with us!

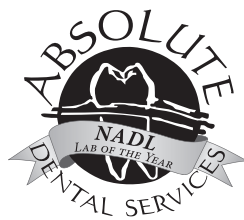




Ceramic Artistry

By Yunsoo Kim

*NavaGation™ Synergy Zero:
the ultimate link between
surgery and final prosthetics*



1-844-NAVAGAT
NAVAGATION.NET