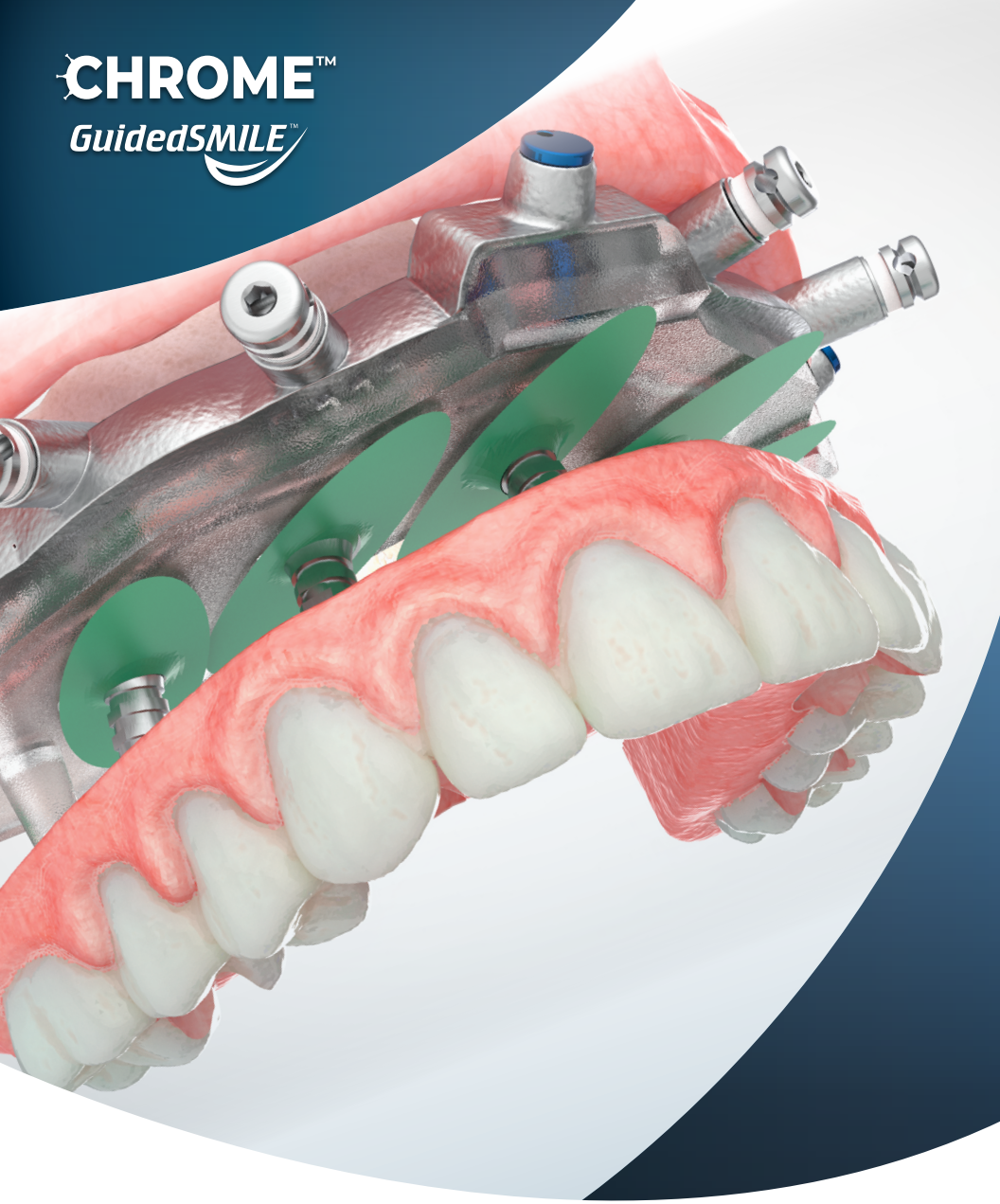
CHROME™
GuidedSMILE™



Surgical Protocol of

CHROME GuidedSMILE

Safer. Faster. Smaller. Stronger.

CONTENTS

CHROME™ GuidedSMILE™

T: (888) 521-9771
E: info@chromeguidedsmile.com
www.chromeguidedsmile.com

SURGICAL PROTOCOL

Introduction

This booklet is an introduction to the **CHROME GuidedSMILE** surgical protocol; a patented, fully guided, “prosthetic-down” approach to all-on-x. This protocol was developed for doctors who desire a safer, faster, smaller, and stronger immediate solution for their full arch patients.

CHROME has been adopted by thousands of doctors and is an extremely predictable protocol that produces consistent results regardless of the patient’s dental situation.

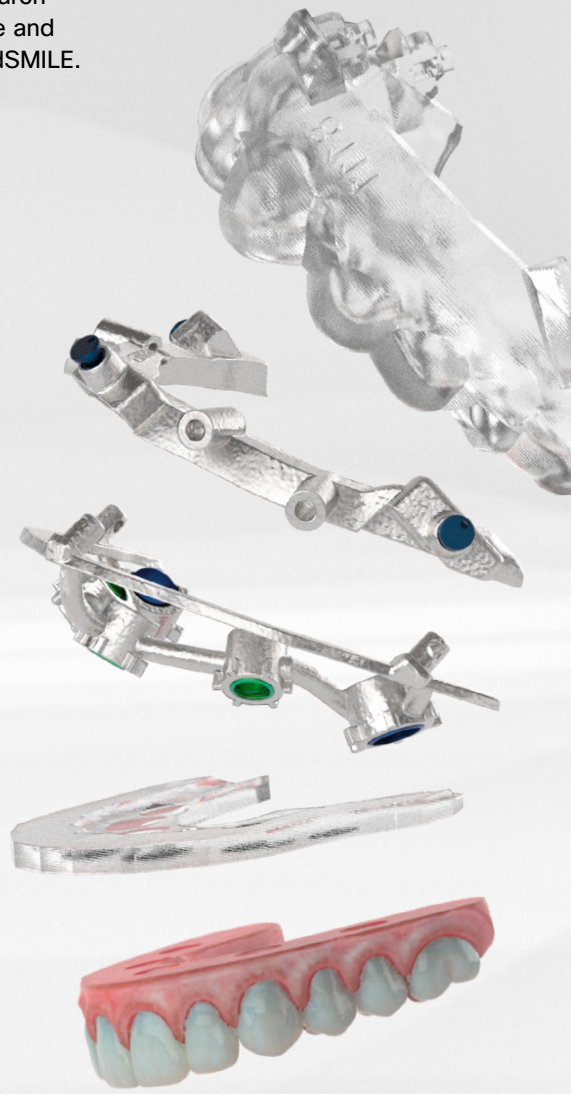
The surgical protocol described in this booklet is typical for most CHROME GuidedSMILE cases, but as with any complete solution, there are some small adaptations depending on the patient’s clinical situation.

SURGICAL PROTOCOL

CHROME in Motion

Watch an animation of a full-arch surgery to view the sequence and precision of CHROME GuidedSMILE.

Watch the Animation



SURGICAL PROTOCOL

Case Contents

With some exceptions, due to case design and surgical needs, CHROME case contents consist of the following:

1. Bone Model
2. Reduced Bone Model
3. Tooth Model
4. Osteotomy Guide
5. Pin Guide
6. Fixation Base
7. Provisional Prosthetic
8. RAPID Appliance
9. Carrier Guide
10. CHROME Pouch:
    Includes blockout plugs, gaskets, models, misc.
11. CHROME Box:
    Contains all listed above

SURGICAL PROTOCOL

1. Pin Guide

Pre-Surgical

- Use cold sterilization prior to surgery.
- Passively assemble the Pin Guide and Fixation Base.
- Push in all three CHROME Locs with components fully seated.
- Place Pin Guide assembly on the tooth model to observe how the tooth structure contacts the guide in the occlusal windows.
- Notice which teeth the guide uses for support. Guides may require some teeth to be extracted prior to seating.

Surgical

1. Seat Pin Guide with Fixation Base and use the windows to ensure full seat. This is very important and sets the foundation for the surgery. If the guide is not fully seating, review these questions: Did the patient have restorations since planning?; Did the plan call for extractions prior to surgery?; Is the tissue holding up the guide? If no to these questions, adjust the guide until seated, then continue.
2. Lay full facial flap to expose bone apical to Fixation Base. **(FIG. 1A)** *Edentulous only:* Keep the palatal portion of the ridge intact until after the Fixation Base is pinned in step 4. **(FIG. 1B-C)**
3. Return the guide to the mouth and drill the facial holes for the pins, holding the Pin Guide firmly in place. **(FIG. 2)** Use the provided pins and drills as they are calibrated with the guide and plan.
4. Drill to depth and place the pins. **(FIG. 3)** If the first pin is inserted without resistance, drill 7/8 deep on the remaining pin sites and tap with the surgical mallet.
5. Once all the sites are drilled and pins are placed, pull out the CHROME Locs to remove the Pin Guide. If the CHROME Locs are tight, rotate with the fingers or forceps and pull.


FIG. 1A

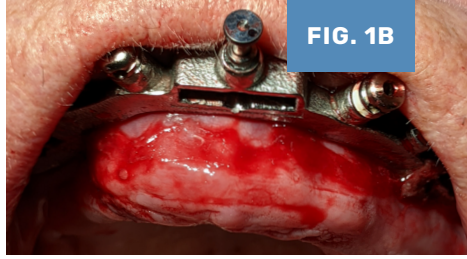


FIG. 1B

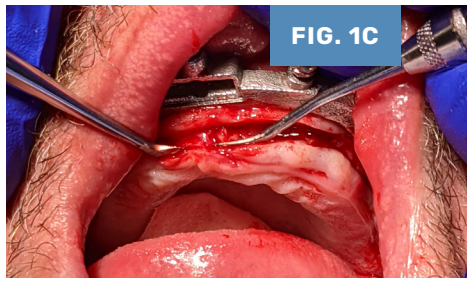


FIG. 1C

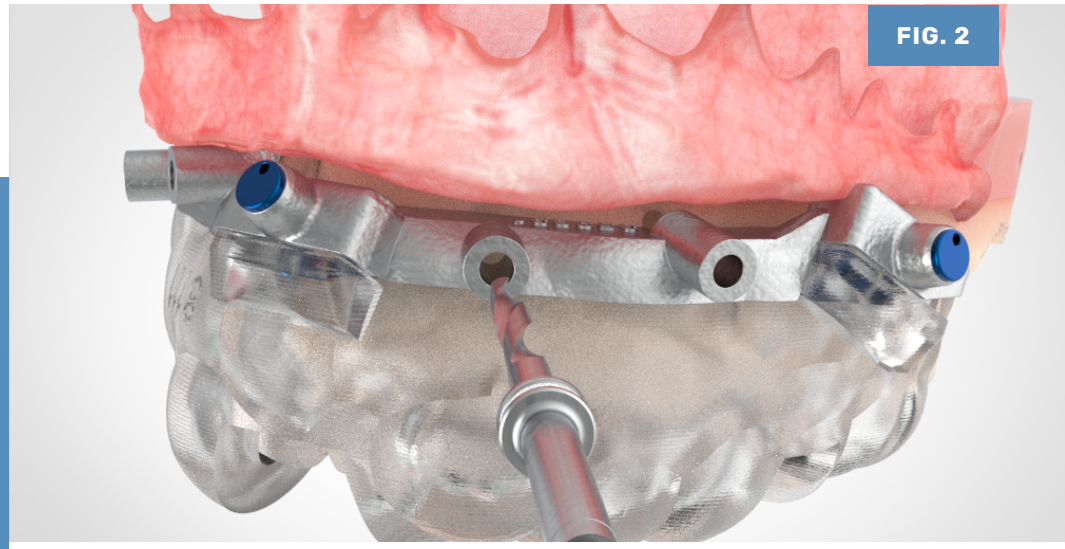


FIG. 2

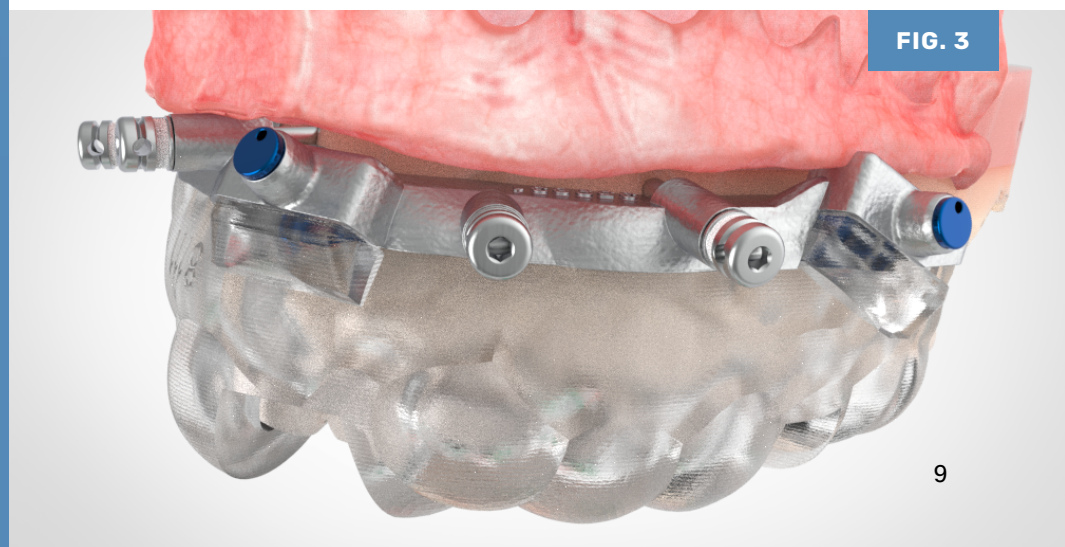


FIG. 3

2. Fixation Base

Pre-Surgical

- Pin the Fixation Base to the reduced bone model and feel the transition from guide to bone.
- Notice that this guide does not contact bone. The guide is fully supported by the pins.
- Verify that the pins easily pass through each of the anchor sites.

Surgical

1. Extract teeth and reduce the bone to the top coronal aspect of the Fixation Base. Ensure a smooth, horizontal plane of bone following the upper plane of the Fixation Base. **(FIG. 4)** This must be a smooth transition or the Carrier Guide will not seat.
2. Insert the Carrier Guide to ensure enough reduction. **(FIG. 5)** Repeat steps 1 and 2 until passive.
    - If posterior area has a step up due to bone reduction, use a bur to create a sloped transition.
3. Complete bone leveling. **(FIG. 6)**

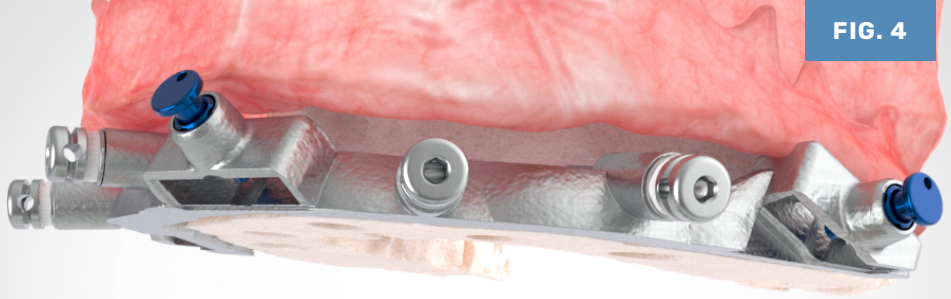


FIG. 4

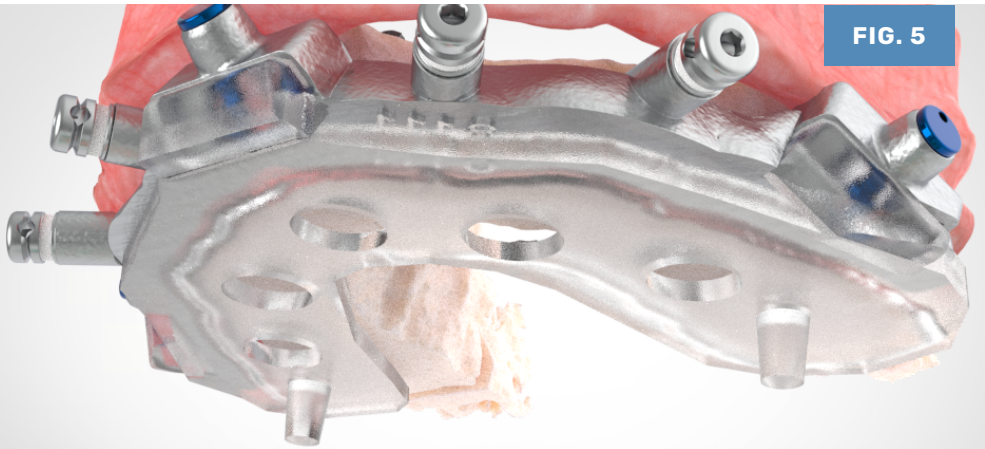


FIG. 5

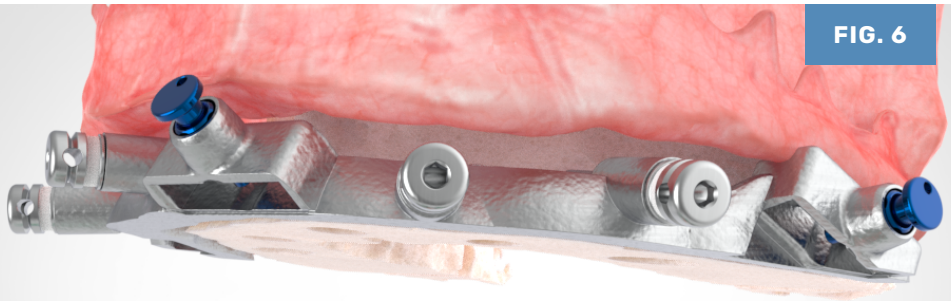


FIG. 6

SURGICAL PROTOCOL

3. Osteotomy Guide

Pre-Surgical

- Using the CHROME Locs, connect the Osteotomy Guide to the Fixation Base and ensure a passive connection.
- Check the passive fit of the surgical kit components at each site.
- Study the enclosed drill report for tool sequence, abutment rotation, images of parts, etc.

Surgical

1. Insert the Osteotomy Guide into the anchored Fixation Base. Use the CHROME Locs to ensure the guide is fully seated. **(FIG. 7)**
2. Perform osteotomy drilling according to protocols determined by your implant system of choice. **(FIG. 8)**
3. Place implants through the guide if the surgical kit allows. **(FIG. 9)** Otherwise, remove the guide and place. The Osteotomy Guide may be temporarily removed to relieve torqueing pressure on the handpiece.
    - Allow the last 1/4 of the implant to be above the bone crest and hand-torque to final position.
    - 0° abutments (straight implants) are indicated with round holes on the Osteotomy Guide.
    - Angled abutments are indicated by “nubs” on the Osteotomy Guide. The nub indicates the specific rotational stop. Implant mounts have rotational markings that must be precisely lined up with the nubs to ensure abutments, temporary copings, and prosthetic holes align.
4. Once all implants are seated, remove the Osteotomy Guide.

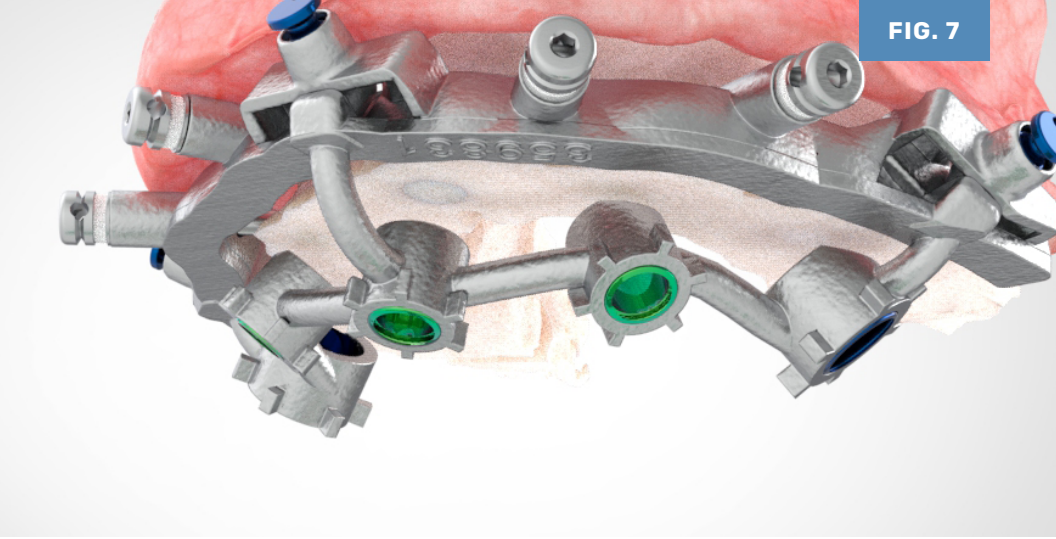


FIG. 7

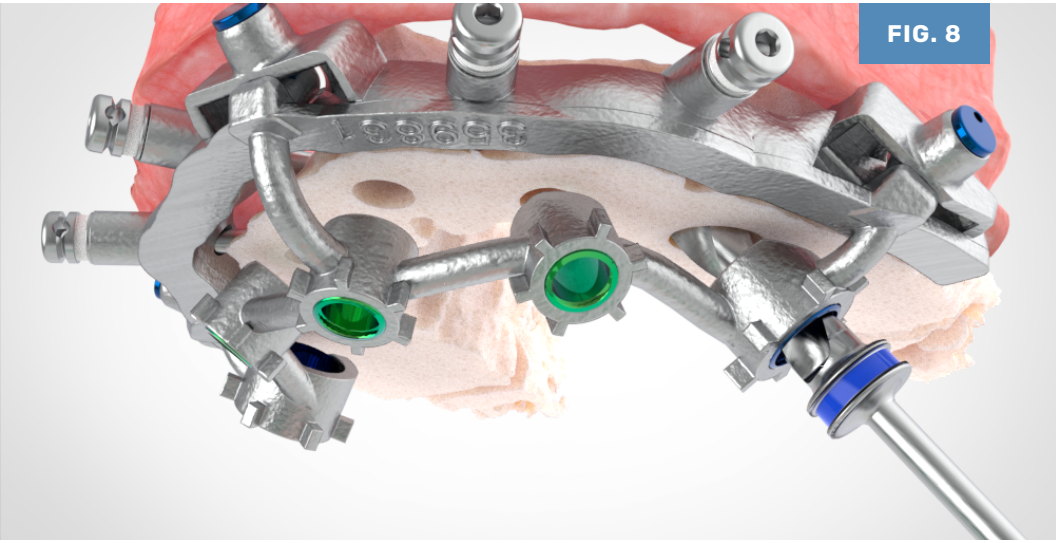


FIG. 8

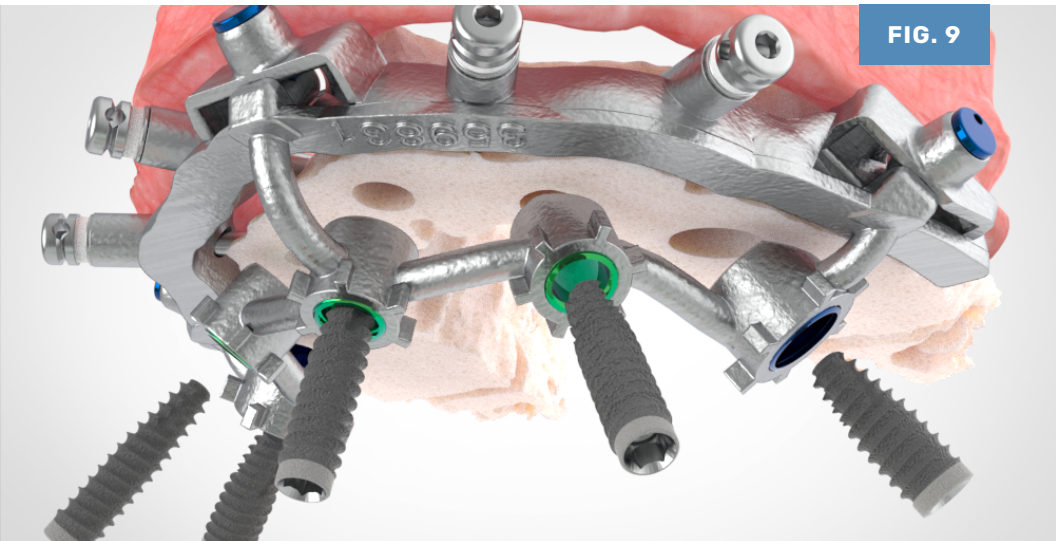


FIG. 9

4. Carrier Guide

Pre-Surgical

- Passively assemble the Carrier Guide to the Fixation Base and engage CHROME Locs to observe fit. Ensure a passive seat.
- Notice the direction of the square access sites off of each angled implant site on the Carrier Guide. These squares provide the access for the driver. The driver will drop into the square and engage the abutment screw.

Surgical

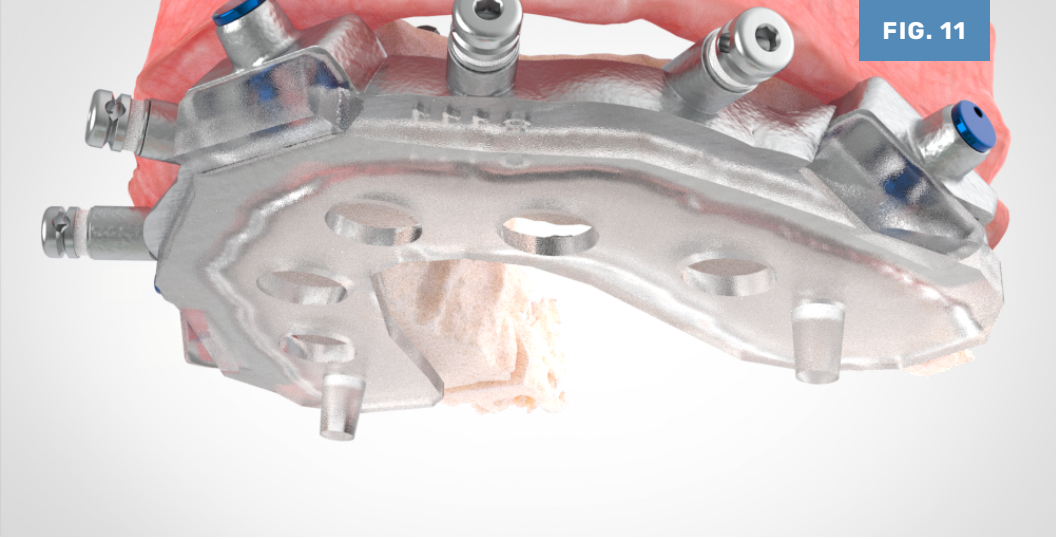
1. Place the Carrier Guide. **(FIG. 11)** Screw down the multi-unit abutments as indicated in the drill report. Images in the report indicate the abutment screw access angle. The Carrier Guide indicates the rotation of the abutments - the abutment screw is positioned through the square area of the hole marked in black.

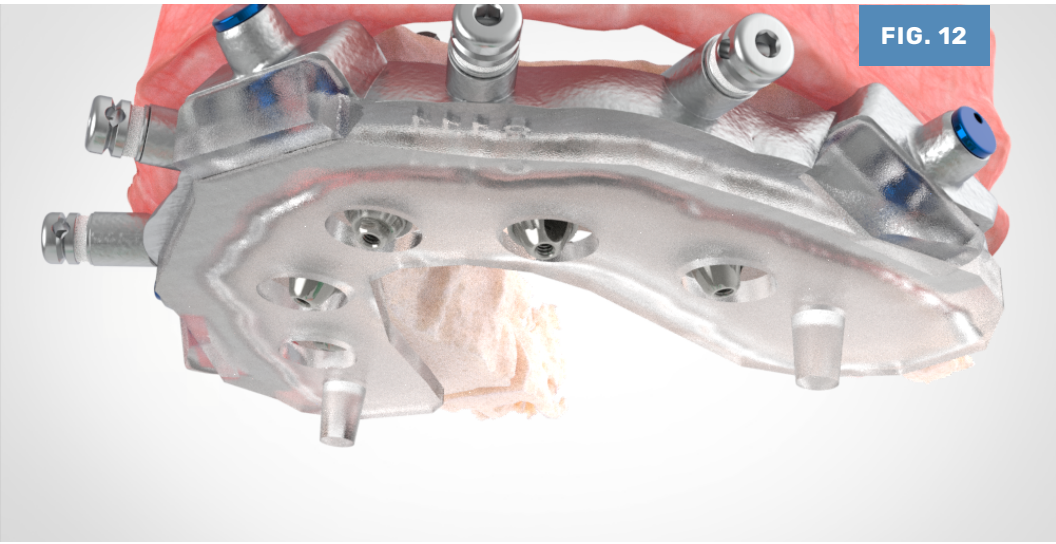
2. Once the abutments are placed in the correct rotation, the driver will be able to engage the screws. If a multi-unit abutment's screw access hole does not line up with the squares, remove and rotate the implant into the proper direct/index, then seat the abutment. **(FIG. 12)**

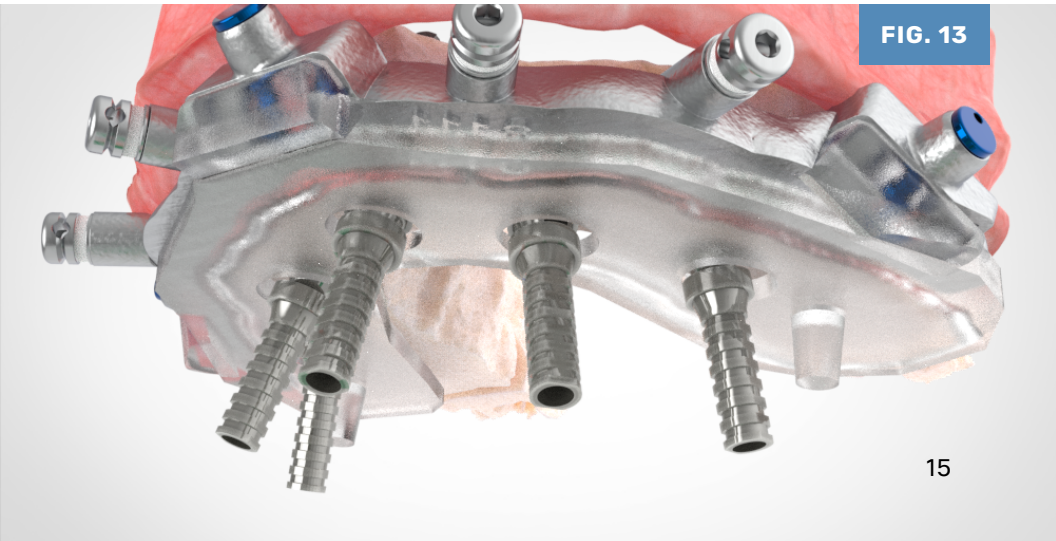
3. With all abutments seated and torqued, screw the temporary cylinders to the abutments and verify their correct position and trajectory using the drill report and ultimately the Provisional. **(FIG. 13)**

    - The cylinders should emerge vertically, near the middle of the holes in the provisional. If they are close to an edge but not touching, this is acceptable.

    - If there is contact, you have the choice of rotating the implant or adjusting the provisional. This has implications for the final screw access holes. If the cylinders aren't parallel, that is usually due to the plan and are acceptable. However, there will be draw issues







5. Provisional Prosthetic

Pre-Surgical

- Seat the Provisional Prosthetic to the Carrier Guide to ensure a passive fit.
- Notice the thickness of the Carrier Guide and how it simulates the tissue thickness of the patient - approximately 3mm.

Surgical

1. With the Carrier Guide and temporary cylinders in place, slide the gaskets over the cylinders to protect the multi-unit abutments. **(FIG. 14)**
2. Seat the Provisional onto the carrier pegs.
    - If draw is still an issue, loosen the non-parallel copings and set the prosthetic. Or, remove the non-parallel copings, pick up the parallel ones and pick up the remaining. Or, drop the copings from the occlusal into place.
3. Use the provided blue plugs to block-out the temporary cylinders.
4. Backfill the voids between the temporary cylinders and the Provisional with STELLAR. **Do not allow any material to enter the cylinders! (FIG. 15)**
5. Once fully set (dual cure, follow instructions), unscrew the cylinders and remove the Provisional. **(FIG 16)**
6. Trim down the temporary cylinders with a disc or bur, fill all voids in the Provisional with acrylic, adjust and polish to finish.

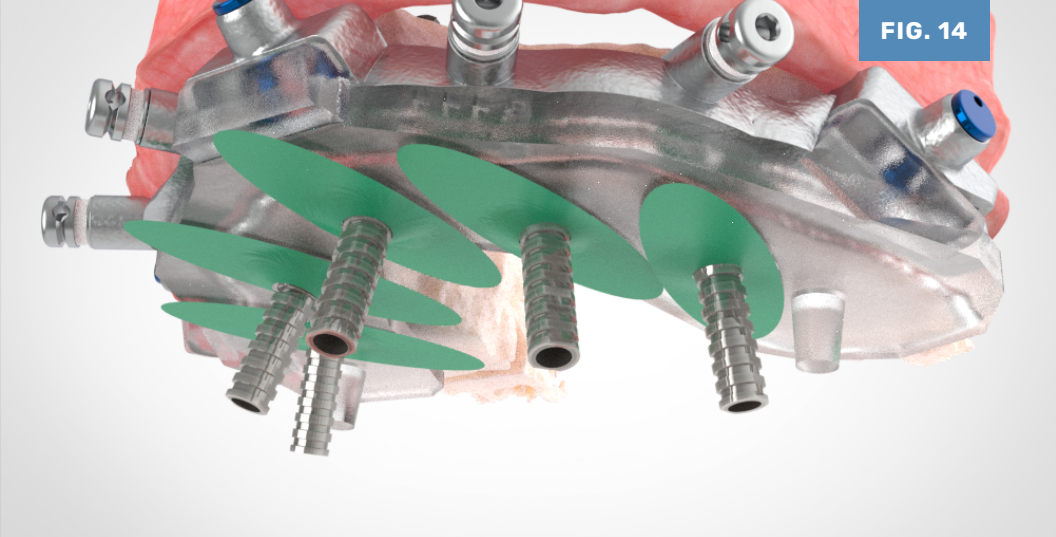


FIG. 14


FIG. 15

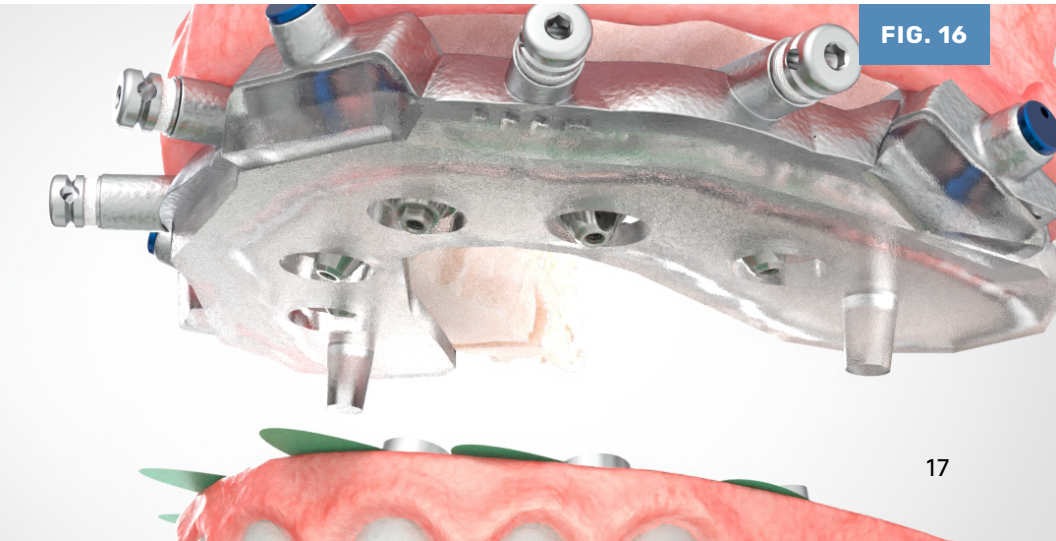


FIG. 16

6. RAPID Appliance

Pre-Surgical

- Seat the RAPID Appliance to the Carrier Guide to ensure a passive fit.

Surgical

1. Seat a new set of temporary cylinders and provided gaskets to protect the multi-unit abutments. **(FIG. 17)**
2. Seat the RAPID Appliance onto the carrier pegs. **(FIG. 18)**
3. Use the provided blue plugs to block-out the temporary cylinders.
4. Backfill the voids between the temporary cylinders and the RAPID Appliance with STELLAR. **Do not allow any material to enter the cylinders!**
5. Once fully set (dual cure, follow instructions), unscrew the cylinders and remove the RAPID Appliance. **(FIG. 19)**

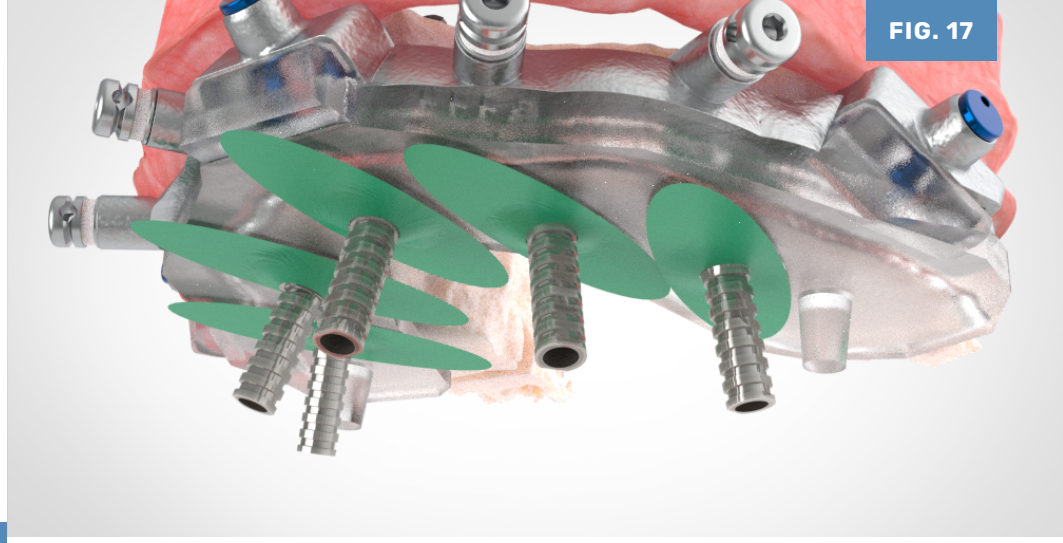


FIG. 17

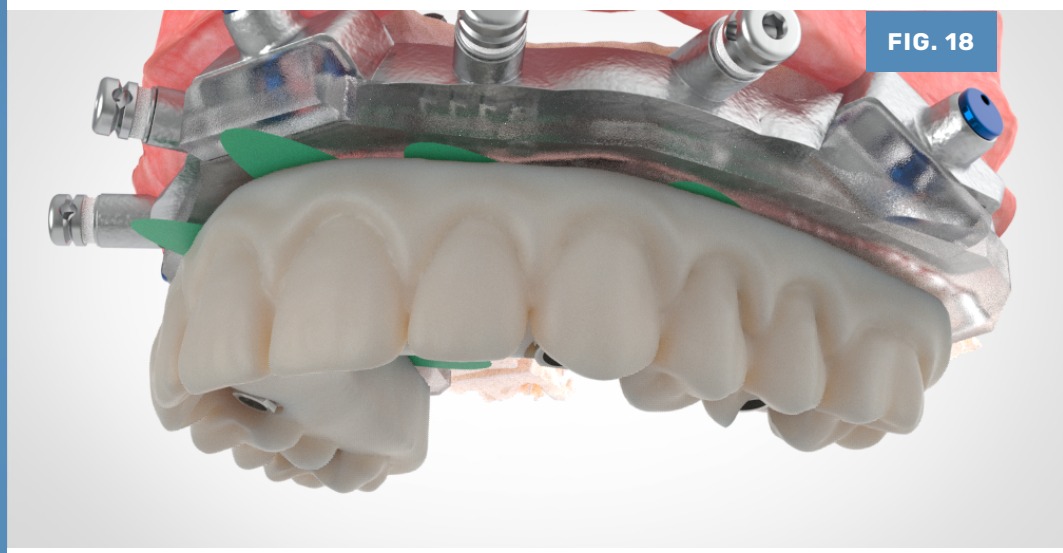


FIG. 18

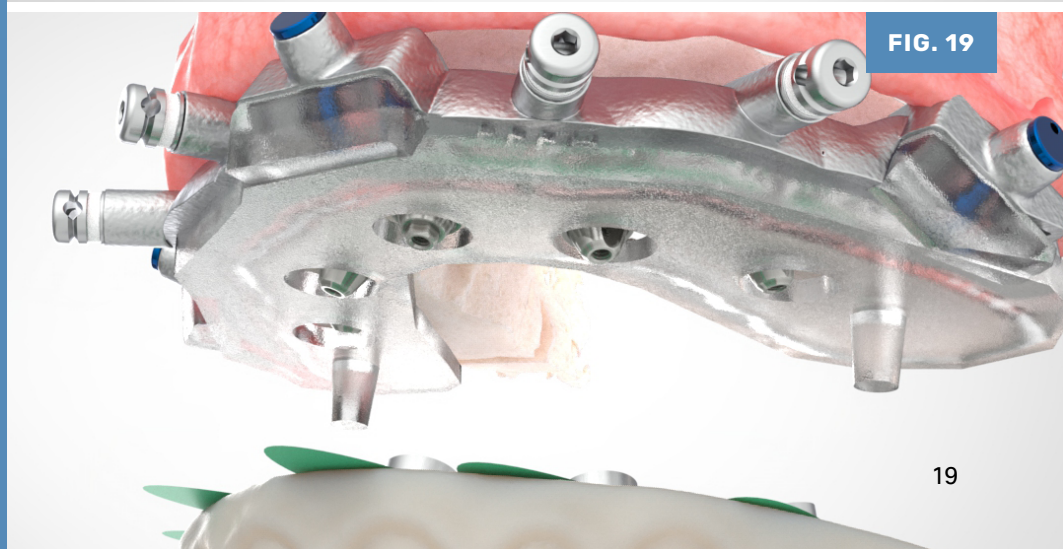


FIG. 19

7. Guide Removal & Seating

Surgical

1. Disengage and remove the Carrier Guide. **(FIG. 20)**
2. Disengage the CHROME Locs and remove the pins and Fixation Base. **(FIG. 21)**
3. Suture the gingival flap.
4. Place the provisional prosthetic. **(FIG. 22)**. Leave the screws loose until all screws are seated, then tighten all down following protocol per the implant manufacturer.

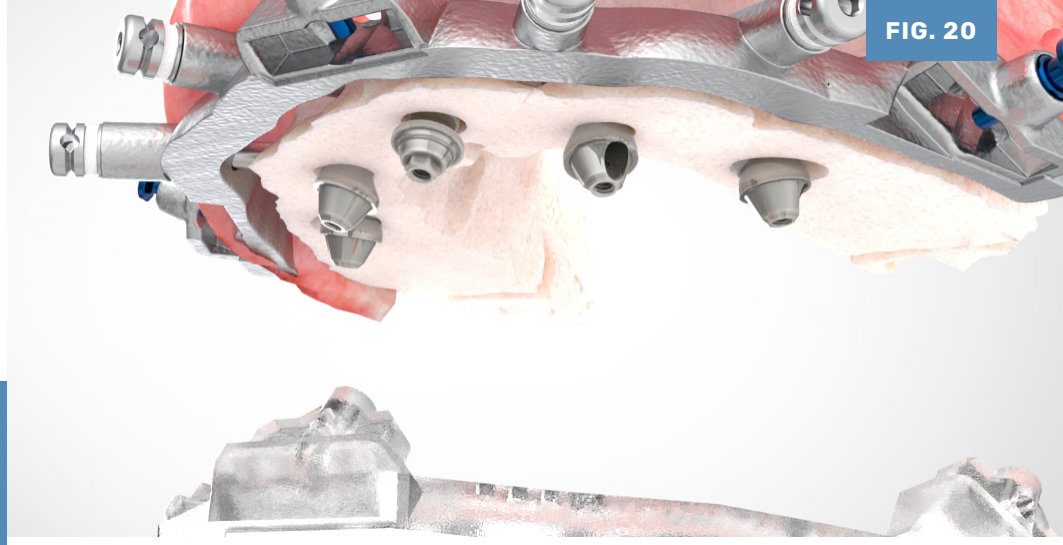


FIG. 20

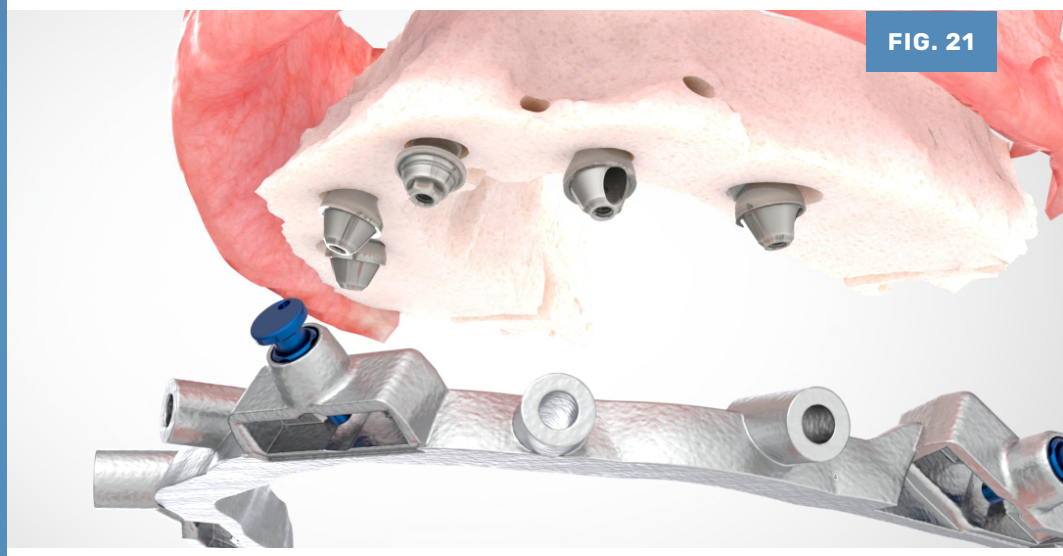


FIG. 21

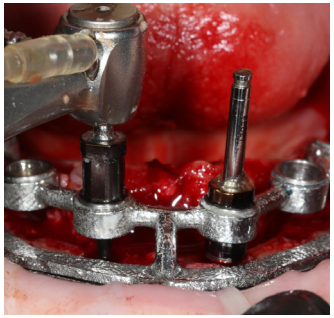
FIG. 22

WHY CHROME?

Benefits of CHROME

Safer. Faster. Smaller. Stronger.

- **Predictable surgery** – CHROME stacked metal guides offer an uncomplicated and highly methodical approach to guided surgery.
- **Precise planned placement** – Metal guide facilitates accurate implant depth and trajectory.
- **Planned bone reduction** – Prosthetically driven plan ensures ideal space and bone reduction.
- **Full visibility and irrigation** – Watch your osteotomies safely take shape with highly visual floating guide technology. Floating guide technology means zero bone contact and minimal lingual flapping, improving patient comfort and healing times.



Metal guides allow full visualization of drills and implant sites

Safer. **Faster.** Smaller. Stronger.

- **Dedicated CHROME team** – Our expert CHROME team takes your case from record capture to patient surgery in just under a month.
- **Efficient surgery** – Many doctors finish a full arch all-on-x surgery in under 2 hours.
- **Efficient conversions** – C2F Small Hole Technology allows for extra-oral conversions while the patient is sutured.
- **Enhanced healing** – Minimal lingual flapping and shorter surgery time results in reduced patient healing time.

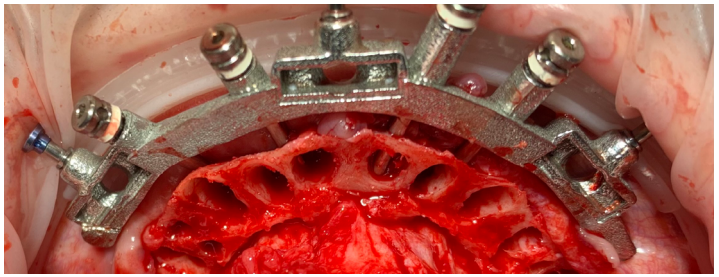
Metal guides streamline surgical and restorative processes for less chairtime

WHY CHROME?

Benefits of CHROME

Safer. Faster. **Smaller.** Stronger.

- **Functional design** – Core components of CHROME GuidedSMILE are made of strong a CoCr alloy resulting in a guide with a smaller oral footprint when compared to plastic guide systems.
- **Mechanical pinning** – A small, incredibly strong pinning system removes the significant patient discomfort caused by larger pins required by other non-metal guided systems.
- **Precise actions** – Doctors fit our guides to the tissue and/or teeth, not the bone, as with plastic guides.
- **Smaller prosthetic holes** – C2F Small Hole Technology allows for extra-oral conversion, stronger prosthetics, and small 2.5mm holes, similar to final restorations.



Small oral footprint: metal guide does not touch bone

C2F Small Hole Technology

C2F extra-oral equilibration

Safer. Faster. Smaller. **Stronger.**

- **Inherent strength** – The CoCr CHROME guides are 20x stronger than surgical resin and do not flex or break under pressure during surgery.
- **Prosthetic choice** – CHROME allows for strong, beautiful, metal-reinforced FP1 to FP3 provisionals.
- **Superior Anchorage** – A special cortical engagement drill and pin design ensures a stable guide to stack the componentry.
- **Stronger support network** – The CHROME Lab Network offers experts in CHROME throughout the country.

Metal guides do not flex or break under the pressures of surgery

Patient Records

To learn more about what records are required on a per-case basis, please scan the QR code to view our **Patient Records Checklists.**

1. Clinical Photographs

CHROME requires six photographs to start a case:

1. Full face full smile
2. Full face exaggerated smile
3. Full face profile

For ideal smile design

4. Center retracted in occlusion
5. Left retracted in occlusion
6. Right retracted in occlusion

For verification of bite

- Have the patient wear any existing prostheses in the photos.
- Have the patient standing up, looking directly at the camera.
- Capture photos before taking impressions to keep the lips and teeth clean.

Ideal photos

Not ideal

2. Impressions & Bite Registration

- Capture ALL land areas of any dentate arch(es).
- Must capture full palate.
- If patient has a partial for the surgical arch, take impressions with & without it seated.
- When taking a bite, ensure patient is in full occlusion or specify if it's a CR bite.
- Use enough material to capture occlusion without opening bite.
- If patient has a prosthesis, have them wear it to stabilize bite.

Full palate

Full occlusion

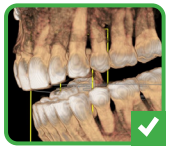
Missing palate

Centric only

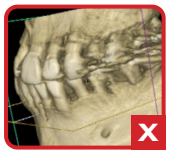
3. CBCT Scans

Depending on the patient's existing dentition, a CBCT scan of both arches in open position OR a dual scan protocol is required.

Dentate

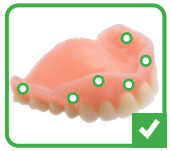


Bite is open

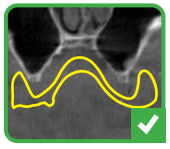


Bite is closed

Edentulous (Dual Scan Protocol)



O Scan marker, placed randomly



Denture fully seated, no voids

Do not place on teeth/intaglio

Not fully seated, black voids

Educational Videos

Live Surgery Video Series

This video walks through all of the CHROME GuidedSMILE guided surgery steps of a single arch dentate patient, from a patient smile simulation all the way through to prosthetic delivery.

Watch the series free on-demand

C2F: Extra-Oral Conversion

This video introduces C2F (Conversion to Final); a system which integrates **Small Hole Technology**. C2F immediate prosthetics have just 2.5mm diameter holes and are equilibrated extra-orally if necessary.

See the step-by-step conversion

Support Network

CHROME Lab Network

CHROME is delivered through an extensive network of partner laboratories throughout the United States. These laboratories provide expert local assistance and chairside services to doctors nationally. Let an expert CHROME team take your case from record capture to patient surgery in just under a month.

Find a lab near you

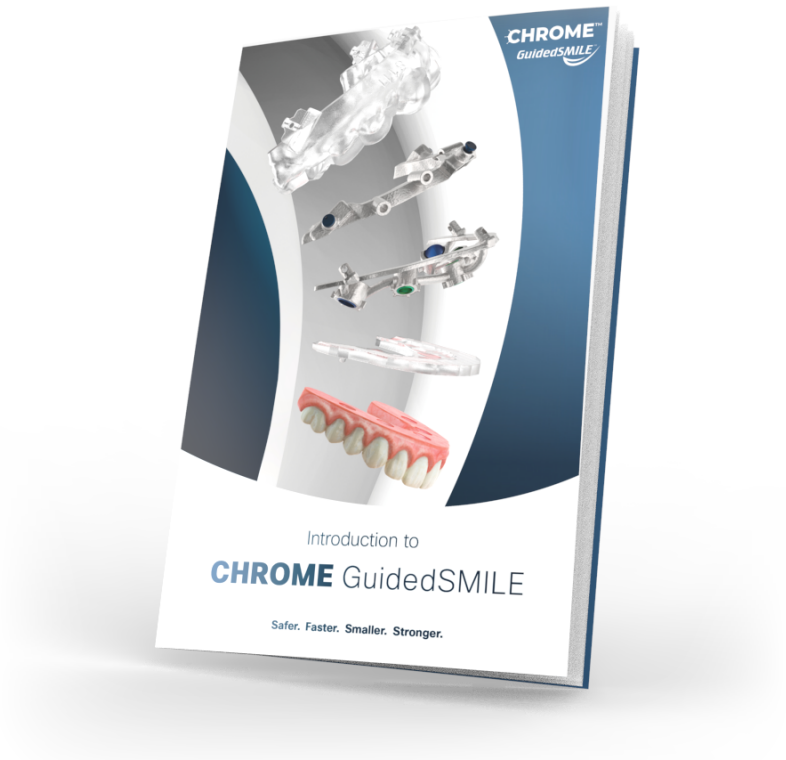
Chairside Support

CHAIR is the reliable chairside support service matching dentists with technicians based on location and need. Doctors schedule online, on-demand, and CHAIR takes care of the rest.

Ready to learn more?

Interested in learning more about the components of **CHROME GuidedSMILE**?

Visit **www.chromeguidedsmile.com/chrome** to download the 'Fundamentals of CHROME GuidedSMILE' eBook for in-depth component information, helpful tips, QR codes to product videos & more!



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