

# BruxZir® Solid Zirconia Full-Arch Implant Prosthesis

Step-by-Step Restorative Protocol



The BruxZir® Solid Zirconia Full-Arch Implant Prosthesis offers a fixed, all-ceramic implant solution for edentulous patients desiring a stable and esthetic replacement for removable prostheses. Constructed from 100% BruxZir Solid Zirconia, this fully edentulous restoration offers exceptional resistance to chips, fractures and stains while improving chewing and speech function. A provisional CAD/CAM implant prosthesis is included, which functions as a temporary appliance and allows for patient evaluation of the definitive prosthesis.

## FIRST Appointment

### Preliminary Impression

Before moving forward with the BruxZir Solid Zirconia Full-Arch Implant Prosthesis option, consider anterior-posterior spread and keep in mind that 10 mm or more of vertical clearance is required. Although a closed-tray impression technique is described here, open-tray impressions are acceptable.

- Take an implant-level impression, including the vestibules. Ensure the palate is included for maxillary impressions.
  - a. Remove the healing abutments or appliance from the implants. If the patient has multi-unit abutments in place, take an abutment-level impression.
  - b. Seat the impression copings and tighten the screws (Fig. 1). Take a periapical radiograph to verify complete seating. Check the impression tray for proper fit.
  - c. Take a VPS impression of the edentulous arch (Fig. 2). Allow the material to completely set, carefully remove the impression tray, loosen the screws and remove the impression copings.
  - d. Replace the healing abutments or appliance.
  - e. Carefully place the impression copings back into the impression (Fig. 3).
  - f. Fill out lab Rx including implant system and diameter of implants. Send the lab Rx in with the case.



Figure 1: Seat the impression copings.



Figure 2: Take preliminary VPS impression.



Figure 3: Carefully reinsert impression copings into impression.

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## ■ SECOND Appointment

### Jaw Relation Records and Shade Selection

You will receive from Glidewell Laboratories a bite block with screw-retained temporary cylinders and a wax-rim checklist (Fig. 4).

- Remove the healing abutments or appliance from the implants.
- Seat the bite block and gently tighten the screws by hand (Fig. 5).
- With the patient sitting up, use conventional denture technique to achieve accurate jaw relation records.
- Unscrew the cylinder screws and remove the bite block. Replace the healing abutments or appliance.
- Take an impression of the opposing dentition and an impression of current denture for study model.
- Select the shade and mold of the denture teeth. The study model of the patient's existing denture can be used as a reference regarding the size and shape of the new teeth.
- Select the gingival shade.
- Return the case to Glidewell with the master model, bite block, bite registration, opposing impression and study model.

*Note: The final restorative option is determined following the Second Appointment, after your bite block has been received. At this point, Glidewell Laboratories may determine that multi-unit abutments are required to correct implant angulation, accommodate screw access holes that are too far to the facial, or connect the prosthesis to implants that are more than 2 mm subgingival. In these cases, the lab will contact the doctor to provide information concerning treatment options and pricing.*



Figure 4: Bite block with temporary cylinders.



Figure 5: Seat the bite block.

## ■ THIRD Appointment

### Setup Try-in, Verification Jig and Final Impression

You will receive from Glidewell Laboratories a wax setup, a custom tray and an implant verification jig (IVJ). If multi-unit abutments are required, they will also be provided.

#### Setup Try-in

A wax setup is provided with temporary cylinders and a checklist.

- Remove the healing abutments or appliance. If multi-unit abutments were supplied by Glidewell, deliver the multi-unit abutments in the same sequence and positions represented on the model.

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- Seat the wax setup (acrylic base with teeth in wax). Tighten the temporary cylinder screws by hand (**Fig. 6**).
- Evaluate the VDO, CR, esthetics, shade, tooth arrangement, occlusion, phonetics and midline (**Fig. 7**). If CR is incorrect, a new bite registration should be taken.
- Send clinical photos per the checklist included with the case.
- Unscrew the temporary cylinder screws and remove the setup.
- If a reset is necessary, a new bite registration should also be taken (**Fig. 8**).

## Verification Jig

To ensure a passive fit of your restoration, it is vital to obtain an accurate final impression. A custom tray is provided along with an implant verification jig (IVJ) that has been sectioned and numbered on a working model. Each acrylic section contains a titanium cylinder. This procedure should be followed to ensure an accurate final impression.

- Seat each section of the jig onto the appropriate implant or multi-unit abutment and tighten the guide pin (**Fig. 9**).
  - a.** The sections should not be in contact. If necessary, remove one section, minimally trim it with a disc, and reseal it. Each section should have a gap about the thickness of a credit card. Visually verify gaps before luting.
- Lute the sections together with a suitable material (e.g., Triad® DuaLine® – DENTSPLY; Pattern Resin™ – GC America; Zapit® – Dental Ventures of America or ADDS-IT – American Diversified Dental Systems) (**Fig. 10**).
  - a.** Allow the material to flow through and completely around the gaps (**Fig. 11**).
  - b.** Ensure the material is completely cured.
- Optional** – If desired, the clinician can test the passivity of the jig with a one-screw test. Tighten a single guide pin into one of the distal cylinders. No lifting of the jig should occur. Check for a passive fit by visibly inspecting completely around each cylinder for complete seating. This process can be repeated for each implant.
  - a.** If any section has a cylinder-implant interface that is subgingival, a periapical radiograph should be taken to verify complete seating.
  - b.** If any cylinder is not completely seated, the jig must be sectioned in that area, reluted and rechecked until a passive fit is obtained.

## Final Impression

Check the custom impression tray for proper fit, ensuring no contact with the jig or cylinders (**Fig. 12**).

- Using a medium body VPS material, take the final impression with an open-tray technique.



**Figure 6:** Seat wax setup and gently tighten temporary cylinder screws.



**Figure 7:** Evaluate wax setup.



**Figure 8:** Taking a new bite registration (if necessary).



**Figure 9:** Implant verification jig seated.

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- a. Inject VPS impression material under and around the jig to capture the ridge and all anatomical landmarks as for a full denture including full vestibular extensions (**Fig. 13**). Capture the complete palate for maxillary cases.
- b. Completely fill the impression tray. Seat the filled impression tray, ensuring the heads of the guide pins are exposed through the tray (**Fig. 14**).
- c. Once the material has set, remove guide pins and then remove the impression.

*Note: the verification jig is picked up in the impression. Inspect the impression for the required detail.*

- Replace the healing abutments or appliance. If multi-unit abutments were supplied by Glidewell, leave them in place if possible.
- Send in entire case, including the wax setup, opposing model, the final impression containing the implant verification jig and guide pins, and lab Rx with reset instructions (if necessary).

## RESET Appointment

Reset Wax Setup Try-in (if necessary)

You will receive from Glidewell Laboratories a reset wax setup with temporary cylinders.

- Try-in reset wax setup according to Third Appointment instructions.
- Approve setup or submit lab Rx with reset instructions.

## FOURTH Appointment

Delivery of Provisional CAD/CAM Implant Prosthesis

You will receive from Glidewell Laboratories the provisional CAD/CAM implant prosthesis. The provisional prosthesis serves as a temporary appliance and allows the patient a trial period to evaluate the definitive prosthesis prior to fabrication of the final prosthesis. The trial period is typically two to eight weeks.

- Remove the healing abutments or appliance.
- Seat the provisional prosthesis on the implants or multi-unit abutments.
- Hand tighten the prosthetic screws, alternating from one side to the other.
- Tighten the screws to the appropriate torque per manufacturer instructions (**Fig. 15**). Wait approximately 5 minutes and retorque the screws.
- Confirm the occlusion. Make adjustments as necessary.



**Figure 10:** Luting sections of the implant verification jig.



**Figure 11:** Implant verification jig luted together.



**Figure 12:** Check fit of the custom tray over the implant verification jig.



**Figure 13:** Inject impression material under the implant verification jig.

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- Place a small amount of cotton in the screw access holes and fill with light cure composite or acrylic to prevent bacteria build-up (**Fig. 16**).
- When the patient is ready for the final prosthesis, return the master cast and opposing model. If any adjustments were made to the provisional CAD/CAM implant prosthesis, return the provisional appliance and list the adjustments on the prescription.

*Note: If adjustments are required, the final restoration cannot be fabricated until the provisional has been returned.*

## FIFTH Appointment

### Delivery of Final Prosthesis

You will receive from Glidewell Laboratories the final prosthesis.

- Remove the healing abutments or appliance.
- Seat the final prosthesis on the implants or multi-unit abutments.
- Hand tighten the prosthetic screws, alternating from one side to the other.
- Tighten the screws to the appropriate torque per manufacturer instructions. Wait approximately 5 minutes and retorque the screws (**Fig. 17**).
- Confirm the occlusion (**Fig. 18**). Make adjustments as necessary.
- Place a small amount of cotton in the screw access holes and fill with light cure composite or acrylic to prevent bacteria build-up (**Fig. 19**).

*Note: Tooth-colored composite or acrylic should be used for access holes in the teeth, while pink composite or acrylic should be used for access holes in the prosthesis base.*



**Figure 14:** Seat the filled impression tray.



**Figure 15:** Occlusal view of provisional prosthesis in place after tightening the prosthetic screws to the appropriate torque.



**Figure 16:** Occlusal view of provisional prosthesis in place following sealing of the screw access holes.



**Figure 17:** Deliver final prosthesis

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## ■ ONE Week

### Follow-Up Check

- Check occlusion.
- Review oral hygiene instructions.
- Set recall schedule.
- Take upper and lower impressions as well as a bite registration in centric occlusion for complimentary bite splint.
- Send impressions to lab for fabrication of complimentary bite splint.

## ■ MAINTENANCE Appointments

### How to Maintain Final Prosthesis

- Six-month hygiene appointment
  - a.** Perform prophylaxis under the prosthesis.
- Twelve-month (annual) hygiene appointment
  - a.** Remove prosthesis for thorough cleaning.
  - b.** If prosthesis screws are damaged or show signs of stripping, screws should be replaced.



**Figure 18:** Confirm occlusion.



**Figure 19:** Occlusal view of the final prosthesis in place following sealing of the screw access holes.

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## Predictable implant lab fees and no hidden costs

Price (per arch) includes: provisional prosthesis; final prosthesis; all labor, model and die work; analogs, set-ups, bite blocks, try-ins and verification jigs.

### Quick Reference

	Doctor	Glidewell
<b>FIRST</b> Appointment	Preliminary impression	Pour models, fabricate bite block (3 days)
<b>SECOND</b> Appointment	Jaw relation records, select tooth shade/mold, impression of opposing dentition and current denture for study casts	Articulate casts, set teeth in wax, fabricate implant verification jig and custom tray (11 days)
<b>THIRD</b> Appointment	Wax setup try-in, photos, lute verification jig, take final impression	Fabricate master cast, fabricate provisional CAD/CAM implant prosthesis (6 days) OR reset (if necessary – 4 days)
<b>RESET</b> Appointment <i>(if necessary)</i>	Try-in and approve reset wax setup, photos	
<b>FOURTH</b> Appointment	Delivery of provisional CAD/CAM implant prosthesis	Fabricate final BruxZir Solid Zirconia Full-Arch Implant Prosthesis (8 days)
<b>FIFTH</b> Appointment	Final prosthetic delivery	
<b>ONE WEEK</b> Post-Delivery Check	Check occlusion, take upper and lower impressions for complimentary bite splint	Fabricate complimentary bite splint (4 days)

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