

Element-Z Screw Retained Hybrid

Implant-Level Restoration | Step-by-Step Restorative Protocol



The Element-Z™ Screw-Retained Hybrid offers a fixed, all-ceramic implant solution for edentulous patients desiring a stable and esthetic replacement for removable prostheses. Constructed from 100% Element-Z Solid Zirconia, this fully edentulous restoration offers exceptional resistance to chips, fractures and stains while improving chewing and speech function.

First Appointment | Closed Tray Preliminary Impression

Consider anterior-posterior spread before moving forward with the Element-Z Solid Zirconia Full-Arch Implant Prosthesis option. Although a closed-tray impression technique is described here, open-tray impressions are acceptable.

Take an implant-level impression, including the palate and vestibules for maxillary impressions.

- A** - Remove the healing abutments from the implants.
- B** - Seat the impression copings on the implants and tighten the screws (Fig. 1). Take a radiograph to verify complete seating. Check the impression tray for proper fit.
- C** - Take an implant-level impression of the edentulous arch (Fig. 2). After allowing the material to set, carefully remove the impression tray, loosen the screws and remove the impression copings.
- D** - Replace the healing abutments.
- E** - After attaching implant analogs to the impression copings, carefully replace the impression copings back into the impression.
- F** - Send in the case with a lab RX that identifies the system and diameter of the implants.

Note: If the implants are more than 2 mm subgingival, have screw access holes that are too far to the facial, or require an angle correction greater than 10 degrees, an abutment-level restoration is recommended.



Figure 1: Seat the impression copings



Figure 2: Preliminary Impression

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Second Appointment

Verification Jig, Open Tray Final Impression with Custom Tray, and Bite Rim

To ensure a passive fit of your restoration, it is vital to obtain an accurate final impression. You will receive a custom tray and an implant verification jig (IVJ) on a working model. This procedure should be followed to ensure an accurate final impression.

Verification Jig

A - Remove the healing abutments from the implants. Seat each section of the jig onto the appropriate implant and tighten the guide pin (**Fig.3 & 4**).

B - Seat the impression copings on the implants and tighten the screws (**Fig. 1**). Take a radiograph to verify complete seating. Check the impression tray for proper fit.

Note: 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.

C - Lute the sections together with a suitable material (e.g., Triad® DualLine® DENTSPLY; Pattern Resin™ GC America; Zapit® Dental Ventures of America or ADDS-IT American Diversified Dental Systems) (**Fig. 5**).

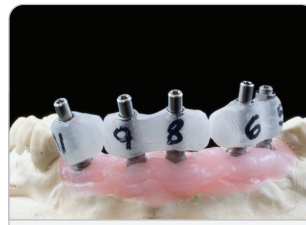
D - Allow the material to flow through and completely around the gaps (**Fig. 5**).

E - Ensure the material is completely cured (**Fig.6**).

F - If any section has a cylinder-implant interface that is subgingival, a periapical radiograph should be taken to verify complete seating.

G - If any cylinder is not completely seated, the jig must be sectioned in that area, reluted and rechecked until a passive fit is obtained.

H - Check for a passive fit of the Custom Tray (no contact with jig or cylinders) prior to taking the impression (**Fig. 7**).



Sectioned and numbered implant verification jig on initial model



Custom Tray for taking second impression, picking up luted verification jig inside impression

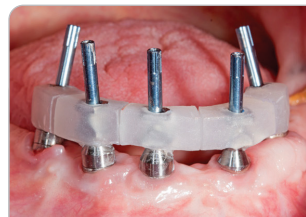


Figure 3 & 4: Ensure each jig section fits passively and is securely seated and tightened

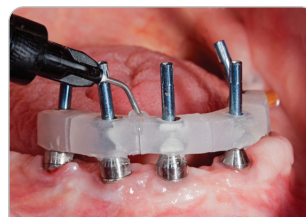
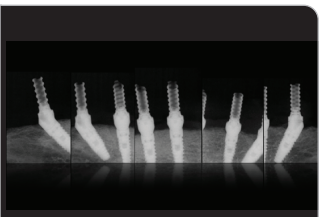


Figure 5: Flow light-cured composite around each section

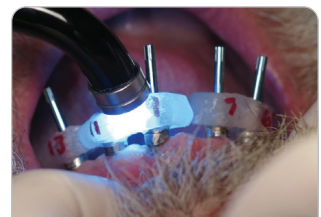


Figure 6: Cure material completely



Figure 7: Ensure passivity of custom tray

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Final Impression

- A** - Using medium body PVS material, take the final impression with an open-tray technique.
- B** - Inject impression material under and around the jig to capture the ridge and all anatomical landmarks as for a full denture including full vestibular extensions and the complete palate (**Fig. 8**).
- C** - Seat the filled impression tray ensuring the heads of the guide pins are exposed through the tray (**Fig. 9**).
- D** - Once the material has set, remove guide pins and then remove the impression (**Fig. 10**).
- E** - Reseat and tighten the healing abutments.

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



Figure 8: Inject impression material under the implant verification jig



Figure 9: Inject light body around tissue and implant sites then load tray with heavy body PVS and seat tray



Figure 10: Remove tray once material sets



Figure 11: Final impression



Figure 12: Seat the bite rim

Third Appointment

Bite Rim

You will receive a bite rim from Oral Arts

- A** - With the patient sitting up, use conventional denture techniques to achieve accurate jaw relation records.
- B** - Take an impression of the opposing dentition and an impression of current denture for study model.
- C** - Select the shade and mold of the denture teeth. The study model for the patient's existing denture can be used as a reference regarding the size and shape of the new teeth.
- D** - Return the case to Oral Arts with the master model, bite rim, bite registration, opposing impression and study model.

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Fourth Appointment

Setup Try-in

You will receive a wax setup from Oral Arts. The provisional CAD/CAM PMMA verification bridge will also be included if it was ordered.

- A** - Seat the wax setup (acrylic base with teeth in wax).
- B** - Evaluate the VDO, CR, esthetics, shade, tooth arrangement, occlusion, phonetics and midline (**Fig. 12**). If CR is incorrect, a new bite registration should be taken.
- C** - Send clinical photos with patient at rest and smiling.
- D** - Install the optional provisional CAD/CAM PMMA verification bridge according to Fourth Appointment instructions.
- E** - Send in entire case, including the wax setup, opposing model, and lab Rx with reset instructions (if necessary). If a reset is necessary, new bite registration should also be taken (**Fig. 13**).

CAD/CAM PMMA Verification Bridge
Optional – If desired, a provisional CAD/CAM PMMA Verification Bridge with Pink Tissue may be ordered prior to completing the case to be worn by the patient as a screw-retained temporary.

Fifth Appointment

Delivery of Final Prosthesis

You will receive a bite rim from Oral Arts

- A** - Remove the healing abutments or the optional provisional CAD/CAM PMMA verification bridge.
- B** - Seat the final prosthesis on the implants.
- C** - Hand tighten the prosthetic screws, alternating from one side to the other.
- D** - Tighten the screws to the appropriate torque per manufacturer instructions. Wait approximately 5 minutes and retorque the screws (**Fig. 14**).
- E** - Confirm the occlusion (**Fig. 15**). Make adjustments as necessary.
- F** - 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**).



Figure 13: Evaluate wax setup



Figure 14: Taking a new bite registration (if necessary)



Figure 15: Seat the final prosthesis.

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



Figure 16: Confirm occlusion



Figure 17: Occlusal view of the final prosthesis in place following sealing of the screw access holes

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Quick Reference

Appointment	Doctor	Oral Arts
First	Implant-level impression	Fabricate implant verification jig and custom tray (4 days)
Second	Lute verification jig, take final impression	Fabricate master cast, fabricate bite block (5 days)
Third	Jaw relation records, select tooth shade/mold, impression of opposing dentition and current denture for study casts	Articulate Casts and set teeth
Fourth	Wax setup try-in, photos	Reset (if necessary - 4 days) OR fabricate provisional CAD/CAM PMMA Verification Bridge (optional - 10 days) OR fabricate final solid zirconia prosthesis (10 days)
Fifth	Delivery of provisional CAD/CAM PMMA Verification Bridge (optional) OR Final prosthetic delivery	



Screw-Retained Prosthesis Liability Waiver

Only required if NOT following Clinical Protocol Impression Techniques

Model accuracy is paramount when completing any screw-retained cross arch implant prosthesis, whether that be a Screw-Retained Hybrid Denture with Titanium Bar or an Element-Z Screw-Retained Hybrid.

A correctly captured Open Tray Impression with Implant Verification Jig (IVJ) is the only way to achieve a model accurate enough to construct the prosthesis. Our experience has proven time and again that when an incorrect impression and unverified model are used to construct these appliances they either do not fit or fail catastrophically.

If you would like to proceed in case fabrication on an unverified model or an incorrectly captured impression, we require that this waiver be signed, dated, and emailed to the lab at **info@oralartsdental.com** or faxed to us at **256-539-8804**. By signing, the lab's liability is waived for improper fit or prosthesis failure.

The pages within the attached Clinical Protocol outline the exact steps to performing a Screw-Retained case with highly accurate results. Please follow these steps to avoid any wasted chair time or hardship due to poor fit or prosthesis failure. If case fabrication is proceeded apart from the laboratory's required Clinical Protocol, a future remake due to poor fit or failure will result in lab charges up to full retail for each subsequent step in case completion. As always, our Management Team is also very willing to help advise you in how to achieve the most predictable outcome when fabricating a Screw-Retained Prosthesis.

**Doctor Signature for release of lab liability for remake
due to improper fit or prosthesis failure:**

Printed Name: _____

Signature: _____

Please fax to **256.539.8805** or email **info@oralartsdental.com**