



How-to Guide:

## Cementing Zirconia to Titanium Bases for screw retained crowns and bridges

Contributed by:

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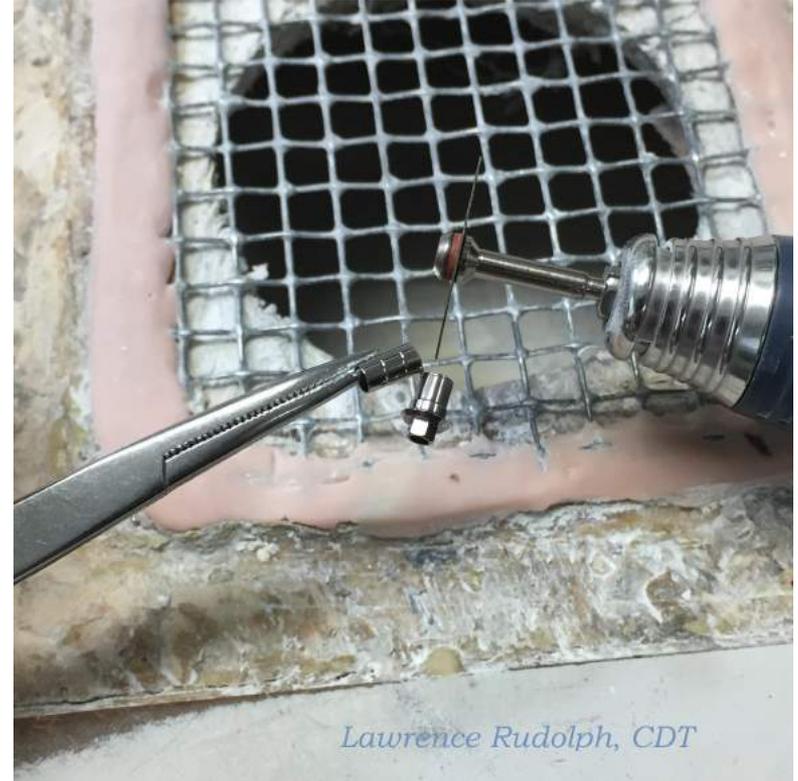
# Step 1.

## Prepare the titanium base



1a. If needed, **cut the ti-base** to the desired height and remove burs.

Tip: For a straighter cut and to protect the interface, hold the ti-base by the chimney end with a pair of hemostats. Holding it between your fingers, is not as secure and it can get very hot. If there is movement, the cutting disc can break and/or you may not get a straight cut. A straight cut will provide a better fit for the restoration.



# Step 1.

## Prepare the titanium base



1a. If needed, cut the ti-base to the desired height and remove burs.



1b. Check the screw access hole for alignment with the model.



1c. **Protect the interface** by screwing the ti-base into an analog. Fill the screw hole with wax to protect screw hex.



Tip: If you don't have an extra analog to use to protect the interface an alternative is to bury the interface into "Blu Tak" putty before blasting.

## Tip: Let the library do the work



Designed for streamlining digital workflow, you can use an OI scan body as usual, even when cutting the ti-base. OI provides corresponding **3Shape** & **exocad** files for each of these heights.

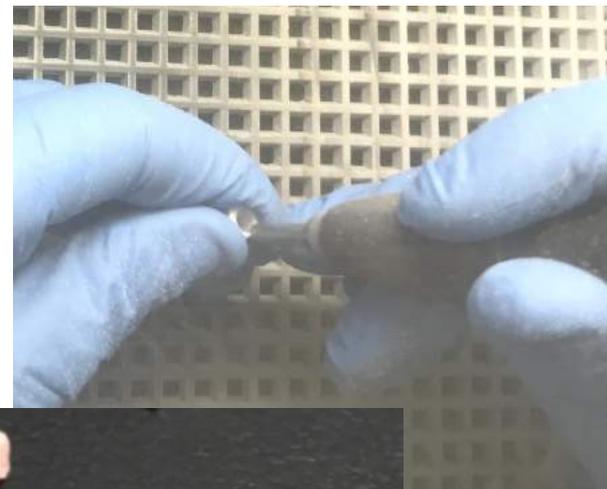
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# Step 2. Sandblast

2a. Holding the ti-base at a 45 degree angle, **sandblast the outside of the ti-base** with 50 micron aluminum oxide with 50 psi.



2b. Carefully **sandblast the inside of the zirconia** with 50 micron aluminum oxide with 50 psi

2c. **Clean both thoroughly** using steam or in an ultrasonic cleaner.



# Step 3. Check the fit

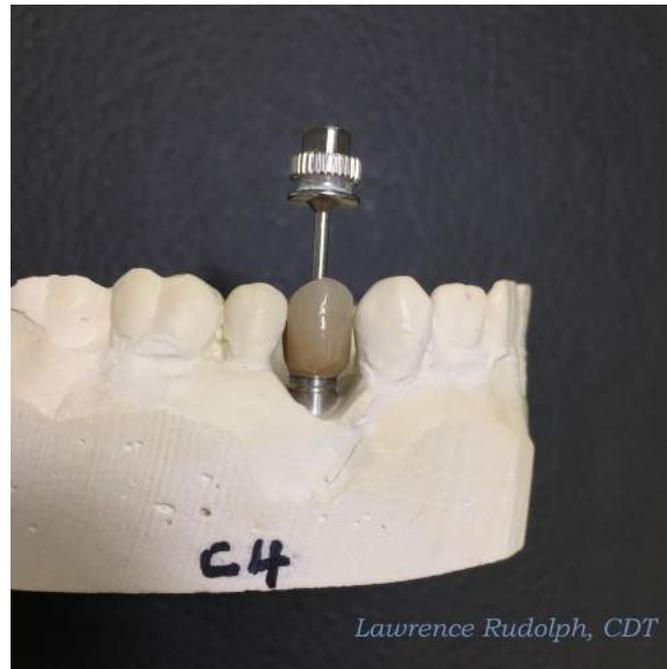
Seat the ti-base into the restoration and make sure it fits correctly.

Make sure the contacts and occlusion is correct along with the proper implant interface orientation.

Check that it seats correctly with the soft tissue placed on the model as well.

Verify that the line-of-draw is correct while maintaining mesial and distal contacts.

Once it is verified, place the screw and remove the restoration top.



# Step 4. Seal the ti-base

to protect it from being filled with cement

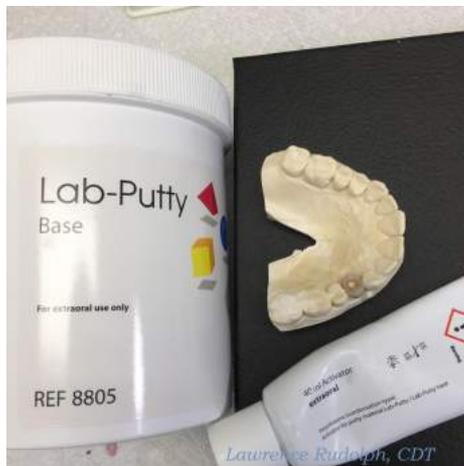


4a. Press some Teflon tape into the screw channel of the ti-base making it flat and even with the top.



4b. Seal it with a small amount of wax.

# Step 5. Seal the channel in the zirconia



Seat the restoration onto the ti-base on the model. Mix a small amount of silicone putty, then press it into the screw channel and let it cure. I use Coltene “Lab Putty.” But any comparable product will work.

The use of Teflon plus wax, and the silicone putty prevents the channel from being filled by cement.

# Step 6.

## Apply the primer

For cementing, I use Ivoclar Multilink Hybrid Cement HO (High Opaque). The HO version helps block out the metal from showing through the restoration. The kit also comes with Monobond Plus bonding agent which you will use as a primer.

**Apply the bonding agent** onto the external surface of the ti-base “chimney” and also into the inside of the restoration (the ti-base interface). Let it dry for 60 seconds.



# Step 7.

## Mix & apply the cement

7a. Mix the cement according to the manufacturer's instructions and **apply the cement to both the ti-base and the inside of the restoration.**

*Tip: Instead of using the supplied mixing tip, you can mix a small amount of equal parts of cement and accelerator from the tube on a mixing pad.*

7b. Seat the zirconia restoration completely on the model (without the soft tissue).

7c. Remove any excess cement and then let it cure according to the manufacturer's instructions.



*Lawrence Rudolph, CDT*

# Step 8.

## Vacate the screw channel

Once the cement is cured, use a handpiece on slow speed and bury a small #2 bur into the putty. The rotation will pull the putty out of the screw channel. Use the bur to remove the Teflon tape. The channel and screw head should be clean of debris.

Remove the screw.

The restoration can be removed once the excess cement breaks at the junction.



# Step 9. Finish the restoration



9a. Clean off any excess and cured cement.

9b. Rubber wheel the cement junction and polish with diamond paste.



9c. Verify the fit of the finished restoration.

9d. Steam clean it.

# Case complete!



This guide is an example for cementing screw retained crowns/bridges onto titanium bases. Follow the instructions for use from the manufacturer of cement or any other products that you use. This guide is not an endorsement or a supplement for instructions from any other manufacturer.

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