GENESISZR
MULTI PRO

CE 0197

Multi Pro Zirconia Disc User Instructions

Document No：ADT-QT-ZC-IN-053/01-00

[Before Use]

GenesisZr® Multi Pro zirconia discs are produced by CIP technology and are pre-sintered in low temperatures. Due to its porosity, please handle your disc carefully to avoid damage. Please inspect your disc as noted below prior to use. If there is any discrepancy, please call (708) 746-5730 to speak with a representative.

1. Disc: The product is complete without any damage.
2. Packaging: The product box and its contents are complete without any damage.
3. Label: The company name, product name, batch number, inspectors and inspection date are all present.

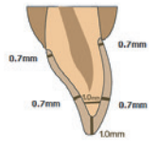
[Application Range]

Anterior Crown, Posterior Crown, Full Contour Crown Bridge, Veneer, Inlays, Onlays and upper part of the implants.

[Color]

This zirconia disc is pre-shaded and does not require dyeing. After sintering, Multi Pro discs are directly colored with gradient effects.

[Requirements for Preparation]

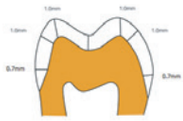


Anterior Crown:

- Inner edge of shoulder must be slick or be fluted.
- Preparation width of incisal, labial and palatal should be above 0.7mm.
- Axial wall must be blunt to ensure the zirconia can be milled to the highest quality using CAD/CAM.

Posterior Crown:

- Inner edge of the shoulder must be slick or be fluted.
- Minimum width of the incisal edge, labial side, and palatal side is at least 0.7 mm.
- Width of occlusal surface of lateral side of the lip, tongue preparation is more than 1.0mm.
- Axial wall must be blunt to ensure the zirconia can be milled to the highest quality using CAD/CAM



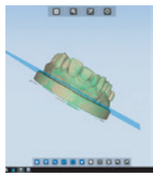
[Application method]

Scanning → Designing → Nesting → Milling → Cleaning → Sintering → Polishing → Finishing

[Application Method—Scanning and Designing]

Scanning Equipment:

- Use a high-precision scanner to obtain the most accurate and detailed restoration model data.

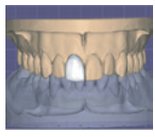


Precautions:

- Before scanning, check the impression and model for air bubbles, gypsum tumors, and layers; check the undercut of the abutment; check whether the abutment, adjacent teeth, and contralateral teeth are complete; check whether the occlusal space is suitable.
- Check to ensure that the abutment fits perfectly with the base of the model. Regularly calibrate the scanner to ensure scanning accuracy.

Designing:

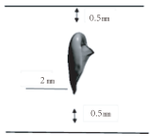
- Verify your model is designed according to the actual situation of the patient and the requirements of the doctor.
- As an all-ceramic restoration, the following points need to be met:
  - The thinnest area should be no less than 0.7mm.
  - Since the geometry of zirconia bridges is crucial to crack resistance, the cross-sectional area of the anterior connector should be at least 9mm² and the cross-sectional area of the posterior connector should be at least 12mm².
- There should be no more than 1 consecutive units of pontics in the bridge.
- There should be no free pontic.



[Application Method—Nesting and Milling]

Nesting:

- Select a zirconia disc of suitable thickness. When nesting your model, place data in the middle of disc (vertical direction). The most suitable distance between tooth data and the disc surface should be at least 0.5mm.
- The connector should be placed in the most protruding position on buccal side.
- The thickness of the connector should be 2mm (as picture shows).



Disc Placement:

Locate the arrow on the side of the disc. This arrow indicates the direction of incisal edge, namely the part of disc showing lighter color. Place your disc accordingly.

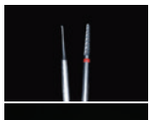
Milling:

- Before milling, check to see if the bur used is sharp enough and ensure the stability of the cutting equipment.
- During processing, liquid cooling of zirconia blanks is not allowed.
- After milling is finished, check that if there are any defects happening listed below:
  - Are there any cracks?
  - Is there any contamination?
  - Is there any breakage or chipping?
- If any of these defects occur, your model and equipment should be inspected. After identifying the cause of the error, your restoration must be milled again.

[Application method—Separating and Cleaning]

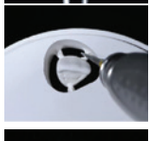
Separating:

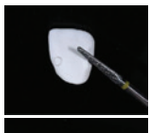
- Use a specialized tool and grinding head to separate newly-milled restorations from blocks.
- Before grinding, cover your work surface with a soft material to avoid damaging or breaking restorations. Polish the connector successively in one direction. Do not separate the connector complete. Finally, the rest of the connector should be lightly polished. Note that it is not advised to make extensive adjustments to pre-sintered restorations to avoid causing damage, such as fissures or chipping.



Cleaning:

Remove the powder on the surface and inner side of your restorations with a soft bristle brush. Note that if the restoration is not cleaned properly, zirconia powder will contaminate coloring liquids when dyeing and the excess powder will remain on the surface and inner side of restorations after high temperature sintering, forming white spots that will negatively effect the esthetics and positioning of restorations.





[Application Method—Sintering]

The now dry restoration with the lingual or occlusal side facing down should be placed on the beads in a sintering sagger. Then, sinter strictly in compliance with the included process guide.

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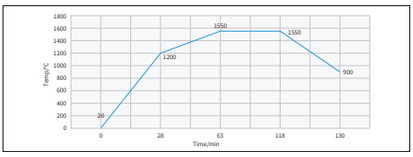
Sintering Program:

3-Unit Bridge (2h)

Start Temp	Phase 1 Heating Rate	Phase 1 Maximum Temp	Phase 2 Heating Rate	Phase 2 maximum temp	Holding Time	Cooling Rate	Cooling Temp
20°C	43°C/Min	1200°C	10°C/Min	1550°C	55Min	55°C/Min	900°C

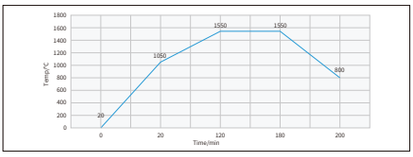
Phase	Temp/°C	Time/Min
1	20	28
2	1200	35
3	1550	55
4	1550	12
5	900	-121



6-Unit Bridge (3.4h)

Start Temp	Phase 1 Heating Rate	Phase 1 Maximum Temp	Phase 2 Heating Rate	Phase 2 Maximum Temp	Holding Time	Cooling Rate	Cooling Temp
20°C	51.5°C/Min	1050°C	5°C/Min	1550°C	60Min	37.5°C/Min	800°C

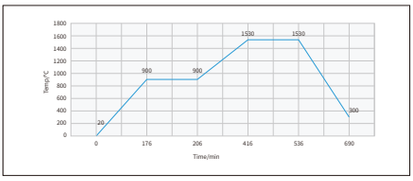
Phase	Temp/°C	Time/Min
1	20	20
2	1050	100
3	1550	60
4	1550	20
5	800	-121



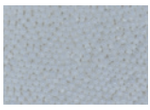
7-Unit Bridge (11.5h)

Start Temp	Phase 1 Heating Rate	Phase 1 Maximum Temp	Holding Time	Phase 2 Heating Rate	Phase 2 Maximum Temp	Holding Time	Cooling Rate	Cooling Temp
20°C	5°C/Min	900°C	30Min	3°C/Min	1530°C	120Min	8°C/Min	300°C

Phase	Temp/°C	Time/Min
1	20	176
2	900	30
3	900	210
4	1530	120
5	1530	154
6	300	-121



[Zirconium Beads]

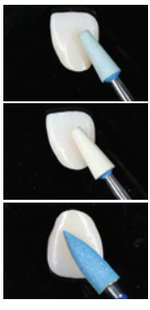


- When the zirconium beads are severely discolored, break or appear damaged, they should be replaced immediately.
- If the zirconium beads are stuck together, be sure to separate them to ensure proper bead function.
- The amount of zirconium beads used should be enough to completely cover the bottom of the box (2 - 3 layers).
- When replacing zirconium beads, first sinter the zirconium beads with remnants of the green-state zirconia and conduct a normal sintering cycle.
- It is recommended to use zirconium beads with a diameter less than or equal to 1.0mm to sinter long bridges.
  Use zirconium beads with a diameter greater than 1.2mm to sinter a single crown.

[Sintering Furnace]

- The sintering furnace must use a voltage regulator to ensure a stable operating voltage.
- The sintering furnace must be cleaned regularly (once a week) by scraping off the impurities in the furnace and kept dry.
- Place green-state scrap zirconia beads into the furnace and sinter them according to the normal zirconia sintering curve.
- If the furnace has not been used for more than a week, it must be decontaminated before use.
- When the equipment is not in use, the furnace should be closed to ensure a dry environment inside the furnace. Please keep the operation room of the sintering equipment clean, and free of dust and debris. Do not place the sintering furnace in a dusty environment. Metal shavings or dust, can adversely affect the heating elements.
- The heating elements of the sintering furnace must not show damage. If there is a small amount of peeling on the surface of the heating rod (silicon-molybde num rod), the leftover material can be burned off and to return the sintering furnace to normal.
- Check the furnace temperature regularly (every 3 months) to ensure the stability of the furnace temperature.
- Be sure to sinter in strict accordance with the Multi Pro standard curve.

[Application method—Grinding]



Use a specialized zirconia grinding head to trim the surface of your restoration. The following three procedures (rough grinding, fine grinding and rough polishing) can make restoration surface smooth.

Rough Grinding:

This should be done first after sintering your restoration. This will allow you to seat your restoration, adjust adjoining and occlusion, and trim the anatomic contour.

Fine Grinding:

Fine grinding makes the tooth surface even and uniform as well as the surface texture more smooth.

Rough Polishing:

Rough polishing evens and smooths out the tooth surface to a finished state. After fine grinding, use a rough polishing head to polish the cervical margin to avoid chipping.

[Application Method—Staining and Glazing]

- Clean the surface of your restoration with steam or an ultrasonic cleaning machine prior to staining.
- Use **Biomic** Stain & Glaze Kits with included user guides to achieve better esthetics and effects.