### Copy of Sintering Schedule

#### A Sintering Program

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Heat Rate</th>
<th>Heat Rate</th>
<th>Hold</th>
<th>Cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000</td>
<td>1,450</td>
<td>1,450</td>
<td>1,450</td>
<td>400/min</td>
</tr>
</tbody>
</table>

#### B Sintering Program

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Heat Rate</th>
<th>Heat Rate</th>
<th>Hold</th>
<th>Cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>850</td>
<td>1,450</td>
<td>1,450</td>
<td>1,450</td>
<td>300/min</td>
</tr>
</tbody>
</table>

* In the case of 1 unit crown to a 3 unit bridge made of T or HT or a single crown to a 3 unit bridge made of HT.
* In the case of 1 ~ 7 unit bridge, sintered in Fire HTC (Sirona) A Sintering Program.
* In the case of 1 ~ 7 unit bridge, sintered in Fire HTC (Sirona) B Sintering Program.

#### Precaution

- Use with one tray.
- Do not use sintering pins in any case.
- In the case of 1 unit crown to a 3 unit bridge, remove from support pins and follow A sintering program on beads.
- However, in the case of sintering a whole disc without removing from support pins, follow B sintering program.
- Do not touch a tray until the temperature indicator shows under 100 °C.

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### Technical Zirconia

**KZR-CAD NANOZr**

Superior in fracture toughness

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### Esthetic Zirconia

**KZR-CAD Zr SHT**

High Translucent Zirconia Disc

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### Lineup

**KZR-CAD Zr**

<table>
<thead>
<tr>
<th>Color shade</th>
<th>Diameter (Φ) 98.5mm</th>
<th>Thickness (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>● EQUIPMENT</td>
<td>● JAPAN ZIRCONIA</td>
</tr>
</tbody>
</table>

**KZR-CAD Zr HT**

<table>
<thead>
<tr>
<th>Color shade</th>
<th>Diameter (Φ) 98.5mm</th>
<th>Thickness (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>● EQUIPMENT</td>
<td>● JAPAN ZIRCONIA</td>
</tr>
</tbody>
</table>

**KZR-CAD Zr T**

<table>
<thead>
<tr>
<th>Color shade</th>
<th>Diameter (Φ) 98.5mm</th>
<th>Thickness (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>● EQUIPMENT</td>
<td>● JAPAN ZIRCONIA</td>
</tr>
</tbody>
</table>

---

**NANOZr**

<table>
<thead>
<tr>
<th>Color shade</th>
<th>Diameter (Φ) 98.3mm</th>
<th>Thickness (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>● EQUIPMENT</td>
<td>● JAPAN ZIRCONIA</td>
</tr>
</tbody>
</table>

---

**Esthetic Zirconia**

- Purely Made in Japan Zirconia Disc
- With Isostatic Pressure Technique
- And KZR-CAD’s Unique Technology

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**KZR-CAD NANOZR**

- Superior in fracture toughness

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**KZR-CAD Zr SHT**

- High Translucent Zirconia Disc

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**KZR-CAD Zr HT**

- Purely Made in Japan Zirconia Disc
- With Isostatic Pressure Technique
- And KZR-CAD’s Unique Technology

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**KZR-CAD Zr T**

- Purely Made in Japan Zirconia Disc
- With Isostatic Pressure Technique
- And KZR-CAD’s Unique Technology

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**Precaution**

- Do not use sintering pins in any case.
- In the case of 1 unit crown to a 3 unit bridge, remove from support pins and follow A sintering program on beads.
- However, in the case of sintering a whole disc without removing from support pins, follow B sintering program.
- Do not touch a tray until the temperature indicator shows under 100 °C.

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**Manufactured by YAMAKIN CO., LTD.**

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**P:** +81-887-55-0281 **F:** +81-887-55-0053

**E:** contact@yamakin-global.co.jp

**http://www.yamakin-global.com**
NANOZR is a complex structure zirconium oxide/aluminium oxide reinforced with nanocrystals, the physical properties of which are unique. It is much more resilient than comparable dental ceramics. The very high fracture toughness offers the utmost degree of safety. Furthermore, NANOZR is bio-compatible, resistant to aging. It is ideally suitable for crowns and bridges application as well as for telescope structures and superstructures.

Steel balls, weighing 7 grams to 508 grams, were dropped from a height of 60 centimeters onto 1 mm thick discs made of each kind of Zirconia (SHT, HT, T, and NANOZR) which were centered on a steel plate.

The impact force at breakage of NANOZR was 1740N, and the impact resistance was approximately 2 to 15 times or more that of yttria type zirconia.

<table>
<thead>
<tr>
<th>Characteristics (reference value)</th>
<th>SHT</th>
<th>HT</th>
<th>T</th>
<th>NANOZR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fracture toughness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexural Strength (MPa)</td>
<td>770</td>
<td>1,080</td>
<td>1,280</td>
<td>1,110</td>
</tr>
<tr>
<td>Light Transmission (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Translucent</td>
<td>51</td>
<td>43</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>Translucent Coefficient (MPa*1/2)</td>
<td>2.6</td>
<td>4.3</td>
<td>4.5</td>
<td>12.1</td>
</tr>
</tbody>
</table>

By integrating Ce-TZP and Al₂O₃ crystals on a scale of a few nanometers (one billionth of a meter) in grains of the other component, the fracture toughness is increased more than twice as much as that of yttria type zirconia.

**Impact resistance**

Steel balls, weighing 7 grams to 508 grams, were dropped from a height of 60 centimeters onto 1 mm thick discs made of each kind of Zirconia (SHT, HT, T, and NANOZR) which were centered on a steel plate. The impact force at breakage of NANOZR was 1740N, and the impact resistance was approximately 2 to 15 times or more that of yttria type zirconia.

**Fracture toughness**

Fracture toughness of each kind of Zirconia (ISO 15732:2015, three-point bending test) tested by JAPAN FINE CERAMICS CENTER.

**Exquisite Esthetic Qualities with High Translucent**

Y₂O₃ enables high levels of strength and fracture toughness in zirconia, as it stabilizes zirconia crystallization. The raw materials for KZR-CAD Zr are produced by Tosoh Corporation, a Japanese company with a proven record worldwide. This means that KZR-CAD Zr is a purely made-in-Japan product.

**Made in Japan**

KZR-CAD Zr has excellent compatibility thanks to non-directional CIP (Cold Isostatic Pressing) compression molding. Carefully controlled CIP pressure and optimal sintering prevent fracture and chipping, also, they are designed to make machining precision higher.

**High Machining Precision by CIP and Optimal Sintering Technology**

KZR-CAD Zr has excellent compatibility thanks to non-directional CIP (Cold Isostatic Pressing) compression molding. Carefully controlled CIP pressure and optimal sintering prevent fracture and chipping, also, they are designed to make machining precision higher.