



Instruction for Use

Dental Zirconia Block (Model: HT-Plus, ST, SHT, UT, 3D-Pro) and Coloring Liquid

Effective Date: 2026.06.01



Anhui Miisen Intelligence Technology Co., Ltd

【Device Name】 Dental Zirconia Block

【Model and Specifications】 HT-Plus, ST, SHT, UT and 3D-Pro. (Refer to appendix 1 for details)

【Chemical Composition】

White Block: $\text{ZrO}_2 + \text{HfO}_2 + \text{Y}_2\text{O}_3 \geq 99\%$, Y_2O_3 : 4.5~10%, $\text{Al}_2\text{O}_3 \leq 0.5\%$.

Color & Multilayer Block: $\text{ZrO}_2 + \text{HfO}_2 + \text{Y}_2\text{O}_3 \geq 98\%$, Y_2O_3 : 4.5~10%, $\text{Er}_2\text{O}_3 \leq 0.5\%$, $\text{Al}_2\text{O}_3 \leq 0.5\%$, $\text{Fe}_2\text{O}_3 \leq 0.5\%$.

【Intended Use】 Dental Zirconia Block is intended for use with CAD/CAM technology to produce all ceramic dental restorations as prescribed by a dentist. All blanks are processed through dental laboratories or by dental professionals.

【Accessory】 Recommend use the coloring liquid supplied by Miisen for White Block, refer the specification to the details in IFU of Coloring Liquid.

【Clinical Indications】 Indicated for tooth damage (decayed tooth, damaged tooth, etc.), fixed-bridge restorations for tooth absence, aesthetic restoration for tooth discoloration.

Application: Veneer, Inlay, Coping, Anterior Full Crown, Posterior Full Crown, Planting Full Crown, Bridges (3-unit, ≥ 4 -unit), Coping (3-unit, ≥ 4 -unit). Refer to Appendix 4: Clinical Indications.

The White and Pre-shaded models of HT-Plus, ST and SHT, are recommended for fabricating into anterior coping and 3-unit anterior coping, posterior coping and 3-unit posterior coping, multi-unit coping (≥ 4 -unit), full-arch coping, to restore patients' defective teeth.

The Multilayer models of ST, SHT, are available for fabricating into posterior crown, 3-unit posterior bridge, multi-unit bridge (≥ 4 -unit), full-arch crown and full-arch implant restorations, to restore patients' defective teeth.

The White and Pre-shaded models of UT, are available for fabricating into veneers, inlays, anterior coping, 3-unit anterior / posterior coping, anterior crown and 3-unit anterior / posterior bridge, to restore patients' defective teeth.

The Multilayer models of UT, are available for fabricating into veneers, inlays, anterior crown and 3-unit anterior / posterior bridge, to restore patients' defective teeth.

The Multilayer models of 3D-Pro, are recommended for fabricating into anterior crown and 3-unit anterior bridge, posterior crown and 3-unit posterior bridge, to restore patients' defective teeth.

【Clinical Benefit】 Zirconia blocks, as reliable dental restorative materials, demonstrate a clinical survival rate exceeding 80% and a fracture rate below 5.5% following tooth restoration.

【Applicable Population】 People who need dental prosthesis restoration. Human above 18 years old.

【The Intended user】 All Dental Zirconia Block (Model: HT-Plus, ST, SHT, UT, 3D-Pro) and Coloring Liquid are processed through dental laboratories or by dental professionals using different CAD/CAM or manual milling machines.

【Intended use environment】 Dental Zirconia Block (Model: HT-Plus, ST, SHT, UT, 3D-Pro) and Coloring Liquid are processed in dental laboratories or dental institutes, and intended used in human intraoral.

【Contraindication】 Bruxism and allergic reactions to dental materials / ingredients in this product.

【Precautions & Warnings】

- For dental use only.
- If accidental contact with eyes or prolonged contact with inhalation of oral tissues occurs, flush immediately with large amounts of water.
- Consulting with a doctor in case of toothache, allergy and crack on prosthesis are strongly recommended.
- Possible complications and residual risks must be communicated to the patient by dental professionals, reinforce the necessity of rigorous oral hygiene and emphasize the role of professional maintenance in preventing peri-implantitis or marginal decay if necessary.
- The operator must undergo special training and be skilled in the operation of the product.
- When working with the products, wear suitable safety goggles/face protection, gloves and safety clothing.
- Our products must be used in accordance with the actual version of the instructions for use.
- Any misuse may cause damage, resulting from incorrect handling or usage.
- The user is furthermore obliged to check the product before use with regard to its suitability for the intended area of applications.
- We are not responsible for risks arising from the use of the product in non-intended indication areas.
- If serious incidents have occurred in connection with the product, they must be reported to Anhui Miisen Intelligence Technology Co., Ltd., and the competent authority of the Member State in which the user and/or patient is established.

【Handling】 In the case of dust formation use an extractor unit or the dust mask (or grind when wet). Protective goggles should be worn when grinding the fired ceramic.

【Mode of action/ Principle of operation】

Dental Zirconia Block is composed of Zirconia(ZrO_2) and Yttrium oxide(Y_2O_3), and the flexural strength and transparency are considered mainly in the clinical application. The core distinction lies in the varying content of yttrium oxide (Y_2O_3) for the models of HT-Plus, ST, SHT, and UT. This difference fundamentally alters the material's internal crystal structure, resulting in distinct trade-offs between the two key performance attributes of flexural strength and aesthetics (translucency), which in turn determines their respective clinical applications. In short, it is a delicate balance between flexural strength and exceptional aesthetics: the higher the yttrium oxide content, the better the material's transparency and aesthetics, but its flexural strength decreases correspondingly.

White Block: the white block, which appears white after being final sintered by dental professionals, does not contain inorganic pigments in its raw materials. The finished block can be used in conjunction with a coloring liquid, which dyes the restorations milled by CAM/CAD in pre-sintered state into the desired color. After final sintering, the color will be displayed.

Pre-shaded Block: Color Blocks, which directly present a single color after being final sintered by dental professionals, have a slight amount of inorganic pigment added to the raw material of the color zirconia powder. This is used to create color that closely match the color shades of natural human teeth, saving steps of dyeing with coloring liquid and improving processing efficiency.

Multilayer Block: Multilayer colored Blocks, which present a gradient effect after final sintering by dental professionals, feature colors that gradually lighten from the cervical to the incisal, creating a natural gradient effect. Compared to colored blocks, the colors of multilayer blocks are closer to natural human teeth.

3D-Pro Multilayer Block: 3D-Pro is made from the raw materials of SHT and UT per layering, ensuring cervical strength while also maintaining transparency at the incisal, presenting a multi-layer gradient effect in color. It balances functionality and aesthetics, making it the most popular model on the market currently. Translucency for 3D-Pro layer-dependent: 46% (cervical) - 49% (incisal). And the flexural strength for 3D-Pro layer-dependent: 700 MPa (incisal) - 1100 MPa (cervical).

Coping: A coping is the foundational layer of an indirect dental restoration, designed to fit precisely over the prepared tooth or implant abutment before the outer aesthetic layer is applied, and its flexural strength requirements are much higher than its appearance aesthetics. The coping does not represent the final tooth shape placed in the patient's oral cavity; during the fabrication of a zirconia all-ceramic crown, a zirconia coping is created first, followed by the firing of zirconia ceramic porcelain powder onto it to form the complete crown. Therefore, HT-Plus and ST materials are recommended as their higher flexural strength.

Crown: A full-coverage crown is a complete restoration, also called tooth-shaped "cap" that covers the entire surface of the tooth, to restore the tooth's shape, function, and aesthetics. For full-coverage crowns and long-span bridges in the posterior region, the flexural strength is the priority, then models of ST and SHT are the preferred choices. For full-coverage crowns and short-span bridges in the anterior region, require a delicate balance between exceptional aesthetics and structural integrity, and aesthetics take precedence, models of UT are the preferred choice.

【Instructions】 Open the bag, take out the porcelain block, and place it in special processing equipment for processing, after dyeing, high temperature(1450℃~1530℃). After sintering and crystallization, the finished product will be made after dressing, overlaying decorative porcelain or glazing and other processes.

Select blocks with different flexural strength according to different clinical uses (see Product Properties - Flexural strength);

The user should be aware that the following circumstances may lead to the wrong use of the product:

- Missing labels: may cause the user to misuse the wrong model and color, and the wrong scale rate resulting in failure of the product;
- Improper transportation, damaged packaging: may lead to broken products, cannot be used normally, or contaminated products, resulting in obvious stains;
- Abnormal storage conditions: the product is wet, or soaked by water, resulting in product cutting failure;
- Use of equipment problems: the cutting machine blade is not sharp enough, resulting in hidden cracks inside the product during the cutting process, which will make the product crack.
- Detailed Operation Steps and Attentions are given Appendix 2: Operating instructions.
- Troubleshooting Guide are given in the Appendix 3: Question Guidelines

【Compatible devices】

This product should not be used in conjunction with other devices during clinical use.

【Product Properties】

Scaling ratio	1.250±0.050					
Flexural strength	Models	HT-Plus	ST	SHT	UT	3D-Pro
	Min. value for mean (Mpa) (Standard values)	≥800	≥800	≥800	≥600	≥600
	The range of test mean values (Mpa)	≥1200	≥1100	≥1000	≥600	≥800
Translucency	Transmittance (%)	≥40%	≥43%	≥46%	≥49%	Cervical: ≥46% Incisal: ≥49%
Coefficient of Thermal Expansion	$(10.5 \pm 0.5) \times 10^{-6} \text{K}^{-1}$					
Chemical solubility	$<100.0 \mu\text{g} \cdot \text{cm}^{-2}$					
The Vickers hardness	≥1200HV1					
Radioactivity	The active concentration of uranium- ²³⁸ ≤1.0Bq.g ⁻¹					
Density before sintering	3.15±0.05g/cm ³					
Density after sintering	≥6.0g/cm ³					

【Transportation】 The product is not regulated for transport of dangerous goods. Examine whether the package of the containers are integrate and tighten closed before transport. No divulgence, no collapse, no precipitation or no damage during the course of transportation. Don't put the goods together with strong base, water and so on. During transport should prevent exposure, rain and high temperature.

【Storage】 Do store at proper temperature or keep out of intense light. Keep the product out of the reach of the children. Package tight closed.

【Transport & Storage】 Temperature: -18°C~ 60°C, Humidity: 15% ~ 90% RH.

【Dispose】 This product is not regarded as hazardous waste. When dispose the product or its container can be refer to national or local regulations.

【Date of Manufacturing】 See the labelling.

【Shelf life】 5 years.

【Country of Origin】 Made in China

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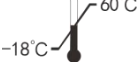
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**【Symbol】**

Symbol	Instruction
	Fragile, handle with care.
	Consult instructions for use, or consult electronic instructions for use(eIFU)
	Keep dry
	Attention(See user's manual)
	Date of manufacturing
	Date of expiry
	Lot number

	Conformity to the requirements of the applicable EC directives
	Do not use when the packing is damaged
	Prevent from heat
	Prescription Use (Rx)
	Manufacturer and address
	Authorized Representative in the European Community/European Union
	Importer
	Medical device, indicates the item is a medical device
	Unique device identification
	Temperature limit in storage and Transportation
	Humidity limitation in storage and Transportation

Suggested profile and training of users

MIISEN Dental Zirconia Block are designed for use by professional users. This specification is made clear by the labeling of MIISEN products with the symbol "Rx only". The specialist users are dentists and dental technicians who have excellent prior knowledge in the use of our products due to their many years professional training and/or university education. Since zirconia block is well-known safety and clinical performance characteristics and a long history on the market, follow-up training is the responsibility of the expert users in dental laboratories or dental institutes.

Product reliability

Information on reporting serious incidents in connection with medical devices, general risks associated with dental treatments, residual risks and (if applicable) short clinical safety and performance reports (SSCPs) can be found in EUDAMED database (URL: <https://ec.europa.eu/tools/eudamed>) under the product Basic UDI-DI: 697580180DZBTQ, 69412445CLCN.

Safety data sheets can be downloaded at www.miisenzirconia.com or requested by fax at (+86) (0) 553-2358187 or by Email: Miisen@miisen.com

Disclaimer

Please note: Our products must be used in accordance with the instructions for use. We do not accept any liability for damage resulting from incorrect handling or usage. The user is furthermore obligated to check the product before use with regard to its suitability for the intended area of applications. We are not responsible for risks arising from the use of the product in non-intended indication areas.

Date of issue of these Instructions for Use: 2026-06. After the publication of these instructions for use, any previous versions become obsolete. The current version can be found at www.miisenzirconia.com

Appendix 1: Specifications of Dental Zirconia Block (DZB)

Specifications of Dental Zirconia Block (ZB) series								
Name	Model	Shades		Spec.(mm)				
				Diameter/ length*width	Thickness			
Dental Zirconia Block	HT-Plus	White		D98	10,12,14,16,18,20,22,25,30			
				D95	10,12,14,16,18,20,22,25,30			
				89*71	10,12,14,16,18,20,22,25,30			
		Color	A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, C4, D2, D3, D4, BL1, BL2, BL3, BL4	D98	10,12,14,16,18,20,22,25,30			
				D95	10,12,14,16,18,20,22,25,30			
				89*71	10,12,14,16,18,20,22,25,30			
				ST	White		D98	10,12,14,16,18,20,22,25,30
							D95	10,12,14,16,18,20,22,25,30
							89*71	10,12,14,16,18,20,22,25,30
	Color	A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, C4, D2, D3, D4, BL1, BL2, BL3, BL4	D98		10,12,14,16,18,20,22,25,30			
			D95		10,12,14,16,18,20,22,25,30			
			89*71		10,12,14,16,18,20,22,25,30			
	Multilayer	A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, C4, D2, D3, D4, BL1, BL2, BL3, BL4	D98		10,12,14,16,18,20,22,25,30			
			D95		10,12,14,16,18,20,22,25,30			
			89*71		10,12,14,16,18,20,22,25,30			
	SHT	White		D98	10,12,14,16,18,20,22,25,30			
				D95	10,12,14,16,18,20,22,25,30			
				89*71	10,12,14,16,18,20,22,25,30			
		Color	A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, C4, D2, D3, D4, BL1, BL2, BL3, BL4	D98	10,12,14,16,18,20,22,25,30			
				D95	10,12,14,16,18,20,22,25,30			
				89*71	10,12,14,16,18,20,22,25,30			
		Multilayer	A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, C4, D2, D3, D4, BL1, BL2, BL3, BL4	D98	10,12,14,16,18,20,22,25,30			
				D95	10,12,14,16,18,20,22,25,30			
				89*71	10,12,14,16,18,20,22,25,30			
		UT	White		D98	10,12,14,16,18,20,22,25,30		
					D95	10,12,14,16,18,20,22,25,30		
					89*71	10,12,14,16,18,20,22,25,30		
	Color		A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, C4, D2, D3, D4, BL1, BL2, BL3, BL4	D98	10,12,14,16,18,20,22,25,30			
				D95	10,12,14,16,18,20,22,25,30			
				89*71	10,12,14,16,18,20,22,25,30			

		Multilayer	A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, C4, D2, D3, D4, BL1, BL2, BL3, BL4	D98	10,12,14,16,18,20,22,25,30	
				D95	10,12,14,16,18,20,22,25,30	
				89*71	10,12,14,16,18,20,22,25,30	
	3D-Pro	Multilayer	A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, C4, D2, D3, D4, BL1, BL2, BL3, BL4	D98	10,12,14,16,18,20,22,25,30	
				D95	10,12,14,16,18,20,22,25,30	
				89*71	10,12,14,16,18,20,22,25,30	
Name	Model	Shades			Spec.(ml)	
Coloring liquid	HT-Plus	20 color series	A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, C4, D2, D3, D4,BL1, BL2, BL3, BL4			50, 25
		29 color series	S0M1, S0M2, S0M3 S1M1, S1M2, S2L1.5, S2L2.5, S2M1, S2M2, S2M3, S2R1.5, S2R2.5 S3L1.5, S3L2.5, S3M1, S3M2, S3M3, S3R1.5, S3R2.5 S4L1.5, S4L2.5, S4M1, S4M2, S4M3, S4R1.5, S4R2.5 S5M1, S5M2, S5M3			50, 25
	ST	20 color series	A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, C4, D2, D3, D4, BL1, BL2, BL3, BL4			50, 25
		29 color series	S0M1, S0M2, S0M3 S1M1, S1M2, S2L1.5, S2L2.5, S2M1, S2M2, S2M3, S2R1.5, S2R2.5 S3L1.5, S3L2.5, S3M1, S3M2, S3M3, S3R1.5, S3R2.5 S4L1.5, S4L2.5, S4M1, S4M2, S4M3, S4R1.5, S4R2.5 S5M1, S5M2, S5M3			50, 25
	SHT	20 color series	A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, C4, D2, D3, D4, BL1, BL2, BL3, BL4			50, 25
		29 color series	S0M1, S0M2, S0M3 S1M1, S1M2, S2L1.5, S2L2.5, S2M1, S2M2, S2M3, S2R1.5, S2R2.5 S3L1.5, S3L2.5, S3M1, S3M2, S3M3, S3R1.5, S3R2.5 S4L1.5, S4L2.5, S4M1, S4M2, S4M3, S4R1.5, S4R2.5 S5M1, S5M2, S5M3			50, 25
	UT	20 color series	A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, C4, D2, D3, D4, BL1, BL2, BL3, BL4			50, 25
		29 color series	S0M1, S0M2, S0M3 S1M1, S1M2, S2L1.5, S2L2.5, S2M1, S2M2, S2M3, S2R1.5, S2R2.5 S3L1.5, S3L2.5, S3M1, S3M2, S3M3, S3R1.5, S3R2.5 S4L1.5, S4L2.5, S4M1, S4M2, S4M3, S4R1.5, S4R2.5 S5M1, S5M2, S5M3			50, 25

Appendix 2: Operating instructions

The operation instructions is used for Dental Zirconia Block (HT-Plus, ST, SHT, UT and 3D-Pro), including White Block and Color & Multilayer Block .

1) Scanning: Position the prepared dental dies into the scanner and adhering to the relevant guidelines in the scanner operating instruction during the data acquisition process.

2) Design: Professional CAD/CAM technologists will utilize the scanned data to create the shapes that meet the requirements, ensuring that both the thickness of the coping and the cross-sectional area of the connection comply with established standards.

* Input the scaling ratio specific to the zirconia block into the CAM software to ensure the accuracy of the scaling ratio during the cutting process.

3) Machining: Select the appropriate zirconia block corresponding to the specific type of medical record. Securely affix the zirconia block to the precision lathe equipment, and then proceed with the cutting procedure according to the pre-determined cutting protocol.

* When installing the connecting rod in accordance with the requirements of the layout software, it is essential to avoid setting on the adjacent surfaces. In the case of the full-arch restorations, the use of support rods and support plates is recommended to stabilize the components, thereby preventing displacement or deformation during the sintering process.

* Precautions for Ceramic Dust Exposure: It is recommended to utilize a dust filter, such as those typically employed in dental laboratories, to effectively eliminate particulate matter. Additionally, the use of protective equipment, including a mask and safety goggles, is essential throughout the entire procedure involving the processing of the coping or restoration.

* Prevention for Contamination: To avoid contamination during processing, the blanks should remain unexposed to water, any other liquids, grease (such as hand cream), or oils, with the exception for the coloring liquid. Exposure to these substances may lead to sub-optimal color matching outcomes.

* Dust Removal: Utilize an appropriate synthetic brush to remove all dust particles from the coping or restoration, ensuring that the inner surface is also thoroughly cleaned.

4) Coloring for White Block : Conduct the coloring process for the coping or restoration per the guidelines provided in the Instruction for Use of Coloring Liquid.

5) Sintering: Start the sintering by input the coping or restoration in a crystallization furnace specially adapted for zirconia.

* Position the sintering beads compatible with zirconia within a designated sintering tray, ensuring a layer thickness of approximately 3 mm.

* Carefully position the dental bridge onto the sintered beads, ensuring that either the occlusal or buccal surface is oriented downward. Similarly, place one single restoration gently on the sintered beads with the occlusal surface or corresponding side facing downward. It is essential that the dental bridge maintains multiple points of contact with the sintered bead layer and receives uniform support along its entire length. However, the restoration must not be embedded within the beads.

6) Polishing: Operating the position adjustment and surface contouring for the coping and restoration by professional ceramic technicians.

* Following the completion of trimming for all coping or restorations, it is imperative that the thickness of the coping and the cross-sectional area of the connection adhere to established standards. Failure to meet these specifications may increase the risk of fracture during clinical application.

Anterior Teeth Area	Minimum Wall Thickness (mm)	Cross-sectional Area of the Connection (mm ²)
Crown	0.4	-
Combined crown/ 3-unit bridge	0.6	7
Multi-unit bridge (≥4-unit, including 2 contiguous pontics)	0.6	9
Bridge with one pontic in the endmost	0.7	12

Posterior Teeth Area	Minimum Wall Thickness (mm)	Cross-sectional Area of the Connection (mm ²)
Crown	0.6	-
Combined crown/ 3-unit bridge	0.6	9
Multi-unit bridge (≥4-unit, including 2 contiguous pontics)	0.7	12
Bridge with one pontic in the endmost	0.7	12

Firing Parameters of Dental Zirconia Block (White Block, Color & Multilayer Block)

HT-Plus (White, C)	0°C -- (5°C/min) -- 500°C -- (6°C/min) -- 1100°C -- (8.6°C/min) -- 1530°C -- holding time for 150min -- (-4.3°C/min) -- 1100°C -- (-4°C/min) -- 700°C -- (-4°C/min) -- 300°C -- natural cooling -- room temperature.
ST (White, C, ML)	0°C -- (3°C/min) -- 100°C -- (6°C/min) -- 1000°C -- holding time for 10min -- (5°C/min) -- 1530°C -- holding time for 120min -- (-15°C/min) -- natural cooling -- room temperature.
SHT (White, C, ML)	0°C -- (3°C/min) -- 100°C -- (6°C/min) -- 1000°C -- holding time for 10min -- (5°C/min) -- 1530°C -- holding time for 120min -- (-15°C/min) -- natural cooling -- room temperature.
UT (White, C, ML)	0°C -- (5°C/min) -- 500°C -- (6°C/min) -- 1100°C -- (7°C/min) -- 1450°C -- holding time for 120min -- (-5.625°C/min) -- 1000°C -- (-2.67°C/min) -- 600°C -- (-3°C/min) -- 300°C -- natural cooling -- room temperature.
3D-Pro	0°C -- (3°C/min) -- 100°C -- (6°C/min) -- 1000°C -- holding time for 10min -- (5°C/min) -- 1500°C -- holding time for 120min -- (-15°C/min) -- natural cooling -- room temperature.
3D-Pro (ten or more units)	0°C -- (3°C/min) -- 100°C -- (6°C/min) -- 1000°C -- holding time for 10min -- (5°C/min) -- 1200°C -- (3°C/min) -- 1500°C -- holding time for 120min -- (-5°C/min) -- 800°C -- (-3°C/min) -- 500°C -- natural cooling -- room temperature.

Appendix 3: Question Guidelines

Questions	Causes	Solutions
1. Inaccurate positioning and dimensional discrepancies of the zirconia restorations	a. An inappropriate scaling ratio leads to the dimensional deviations of the restoration after sintering.	Ensure proper scaling ratio setting before sintering.
	b. Data gaps of dimensional discrepancies result from the failure to capture data from scanning all the dies surface.	Prior to conducting the scanning procedure, it is advisable to apply a scanning spray. Additionally, it is important to pay attention to the size and scope, and subsequently recreate a new coping or restoration.
2. Coping damaged when separated from the fixture	a. The support bar is positioned too far from the target.	Initiate the separation of the coping in close proximity to the target object in order to reduces vibration.
	b. The grinder head appears to lack stability, and the cutting pins exhibit a deficiency in sharpness.	Inspect the grinder head before utilization. Should any problems be detected, it is advisable to replace a new grinder head or cutting needle
3. Fractures in the sintering support structure of the restoration during the sintering process.	Throughout the sintering and cooling phases, the thin-walled section of the large-span restoration undergoes a shrinkage at a rate that differs from solid part of the sintered support structure.	Implement a sintering protocol that incorporates diminished rates of heating and cooling. For further details, please refer to the sintering section and the table of cycle parameters.
4. A possibility to appear excessively dark or gray in color of the zirconia restorations	a. Errors in the sintering cycle, such as those related to sintering temperature and the sintering program, can significantly impact the quality and properties of the final product.	1. Verify the calibration of the sintering furnace. 2. Implement the designated sintering cycle.
	b. Sintered restorations do not undergo an enameling process.	Applying enamel to dental restorations.
5. A possibility to appear excessively light in color of the zirconia restorations	An error in the sintering cycle, such as an excessively elevated sintering temperature.	Verify the calibration of the sintering furnace by utilizing the designated sintering cycle.

Appendix 4: Clinical Indications

Indications	HT-Plus		ST			SHT			UT			3D-Pro
	White	Pre-shaded	White	Pre-shaded	Multilayer	White	Pre-shaded	Multilayer	White	Pre-shaded	Multilayer	Multilayer
Veneer	○	○	○	○	○	○	○	○	★	★	★	○
Inlay	○	○	○	○	○	○	○	○	★	★	★	○
Anterior crown	○	○	○	○	○	○	○	○	★	★	★	★
3-unit anterior bridge	○	○	○	○	○	○	○	○	★	★	★	★
Posterior crown	★	★	★	★	★	★	★	★	★	★	★	★
3-unit posterior bridge	★	★	★	★	★	★	★	★	○	○	○	★
Multi-unit bridge(≥4-unit)	★	★	★	★	★	★	★	★	×	×	×	○
Full-arch crown	★	★	★	★	★	★	★	★	×	×	×	○
Full-arch implant restorations	★	★	★	★	★	★	★	★	×	×	×	○
Anterior coping	★	★	★	★	○	★	★	○	★	★	○	○
3-unit anterior coping	★	★	★	★	○	★	★	○	★	★	○	○
Posterior coping	★	★	★	★	○	★	★	○	★	★	○	○
3-unit posterior coping	★	★	★	★	○	★	★	○	○	○	○	○
Multi-unit coping(≥4-unit)	★	★	★	★	○	★	★	○	×	×	×	○
Full-arch coping	★	★	★	★	○	★	★	○	×	×	×	○

★ Highly recommended

★ Available for this indication

○ Available but not recommended

× Not indicated