

## Attachment

Recommended sintering curve

HT & ST Sintering Curve				
Sintering step	Start Temperature(℃)	End Temperature(℃)	Time(Min)	Rate(℃/Min)
Step 1	20	300	70	4
Step 2	300	1000	175	4
Step 3	1000	1530	177	3
Step 4	1530	1530	120	0
Step 5	1530	800	146	-5
Step 6	800	natural cooling 20	/	/

HTC & STC Sintering Curve				
Sintering step	Start Temperature(℃)	End Temperature(℃)	Time(Min)	Rate(℃/Min)
Step 1	20	300	70	4
Step 2	300	1000	175	4
Step 3	1000	1530	177	3
Step 4	1530	1530	120	0
Step 5	1530	800	146	-5
Step 6	800	natural cooling 20	/	/



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## HONCHON SMILE ZIRCONIA INSTRUCTION

HT / ST / HTC / STC



CHANGSHA HONCHON TECHNOLOGY CO.,LTD

## Instruction of HONCHON zirconia blocks —HT/ST/HTC/STC

### Before use

HONCHON zirconia blocks are pre-sintered dental zirconia. Please handle it carefully. Inspection each shipment for damage and do not use damaged discs for the production of dental restorations. Store HONCHON zirconia in a cool, dry, temperature stable environment (between 5°C and 50°C) in the original package.

### Date Sheet

Components	HT	ST	HTC	STC
Flexural Strength (MPa)	1350	1200	1350	1100
Transmittance	40%	43%	40%	43%
Sintering Temp (°C)	1530	1530	1530	1530

### Indication of HONCHON white zirconia

Indication	HT	ST	HTC	STC
Abutment	*	*	*	
Coping	*	*	*	*
Anterior full crown				*
Posterior full crown	*	*	*	*
Partial crown			*	*
Inlay			*	*
Onlay			*	*
3-4 bridges	*	*	*	*
5-6 bridges	*	*	*	*
Full mouth	*	*	*	*

## Recommended design steps

### Scanning and designing

Please scan with highly precise scanners to get accurate data of the restoration model. Design according to the conditions of patients and the doctor's requirements.

### Milling

Pre-sintered zirconia material has an inherent shrinkage rate associated with each production. The shrinkage rate must be input into the milling preparation software to ensure the accuracy of the eventual restoration.

When milling our zirconia, always follow these general guidelines:

- Only use sharp end mills with carbide or diamond coating.
  - Do not use any restoration that has chips or cracks. Remove the units from the disc using a handpiece with a diamond-coated bur.
  - Smooth the support areas with a medium-grit rubber polishing wheel.
  - Remove any residual zirconia dust with an art brush.
  - If a wet mill is used make sure all the zirconia is completely dry before sintering. Air dry for at least 15 minutes prior to sintering.
- Damp zirconia will crack if placed in the sintering oven.

### Separating restoration and cleaning

Using technician specialized hand piece and grinder to separate restorations from the block. Please clean up the powder on surface and inner side of restorations with brushes. If cleaning is not thorough, powder residues will contaminate coloring liquid when the dyeing is processing and the powder residues will stay on the surface and inner side of restorations after high temperature sintering, forming white spots and therefore having negative effect on aesthetics of the restoration.

### Coloring

Dip the restoration in required coloring liquid, 1-2 minutes. Brush with incisal liquid in the incisal side if needed. Only white zirconia need do the coloring, preshade zirconia doesn't need it.

### Sintering

Put the dry restoration in the crucible with zirconium beads. The bottom of crucible should be covered by the zirconium beads. Make sure the sintering furnace is clean. Sinter the restoration according to the recommended temperature (see the sintering curve at the end attachment). Max heating rate: 10 C per minute. Cooling should be done without temperature control in closed furnace. Never open the furnace until temperature down to 80C to avoid thermal shocks.

### Grinding and polishing

Using special zirconia grinder to trim the surface of restoration. Steps: coarse grinding - fine grinding - rough polishing

### Porcelaining and glazing

When applying porcelain, the abutment tooth should be designed to anatomic form to meet the requirement of even porcelain distribution. Make joint layer according to the requirement of porcelain manufacture. When designing basal structure, avoid bite edge to exert direct force on the teeth edge.

### Finished

The production of restoration is completed.