

## Digital Oral Cavity Remediation Technology



SHINVA was established in 1943, the first medical manufacturing enterprise of our party and army. In September 2002, SHINVA successfully went public at Shanghai Stock Exchange. It is now the chairman unit of China Association for Medical Devices Industry (CAMDI).

In the glorious 71 years, SHINVA has always been insisting the Military Enterprise Culture that pays attention to obeying commands, Qilu Culture that pays attentions to persisting and credibility and Modern Enterprise Culture that pays attention to customers' needs, encouraging the workers with goals, uniting the hearts with development, improving the inner quality with innovation and creating power with culture. We unshakably walk the way of healthy industry, technical innovation and

capital operation, now we are the leading medical enterprise in China that is based on medical instruments and equipment, pharmaceutical equipment and medical medicine service. Shandong province is the center of development, manufacturing, marketing and management and we have two core areas: Shanghai and Beijing, forming our basic layout.

We have paid more attention on the development of oral cavity field. Now we are a specialized supplier of Zirconium Blank product & CAD/CAM series product for false tooth remediation and we have a integrated chain including research & develop Department, manufacture department that can help us offer an integrated solution for customer.



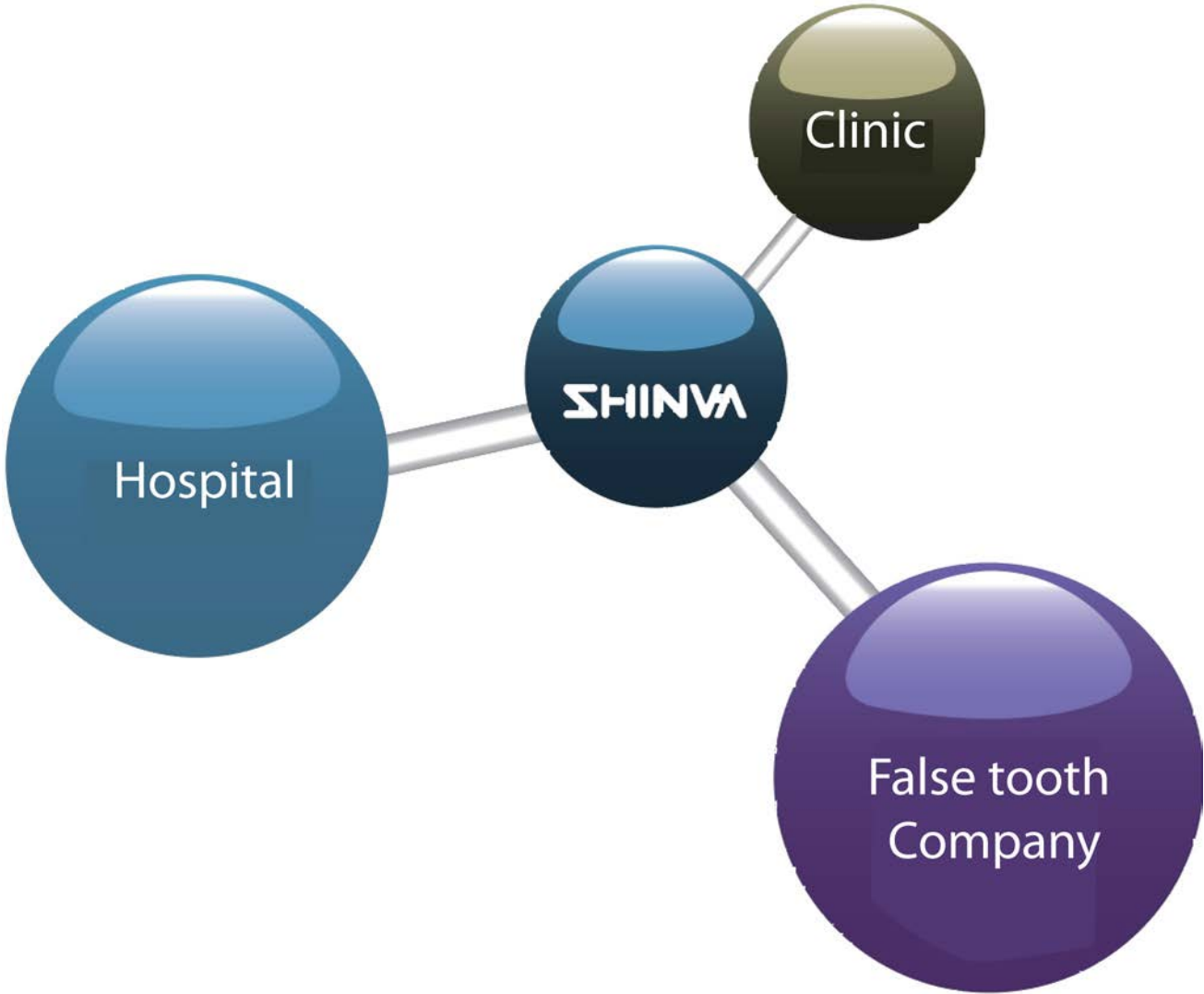
Research, Develop, sales & manage Department  
in Shandong province



Beijing Center



Shanghai Center





### High transparent Zirconia

High transparent Zirconia Blank is specially used in sleeve coping and it is almost similar with the all-ceramic restoration after digital processing & ceramic decoration. Generally , it is used to aesthetic repair.



High tansparent Dental Zirconia Blank

Model	Size
ZC98-10	Φ98*10mm
ZC98-12	Φ98*12mm
ZC98-14	Φ98*14mm
ZC98-16	Φ98*16mm
ZC98-18	Φ98*18mm
ZC98-20	Φ98*20mm
ZC98-22	Φ98*22mm
ZC98-25	Φ98*25mm

### Super-transparent Zirconia Blank

With the CAD/CAM digital processing methods, Super-transparent is mainly used to make full crown and fix bridge. Moreover, the new generation Anatomical form restoration, full zirconia, is put forward.



Super transparent Dental Zirconia Blank

### Color transparent Zirconia Blank

Color transparent Zirconia Blank can avoid the color deviation caused by improper operation during coloring the inside of restoration, since it adopts the pre-color processing that can help the clinically adjustment of jaw to have a little effect on restoration. Workers in the operation room just need to choose the corresponding colors according to colorimetric result. After scanning & designing by computer, CAD/CAM processing, sintering, finishing processing etc, you can get the final product, which is no need to color.



Color transparent dental Zirconia Blank

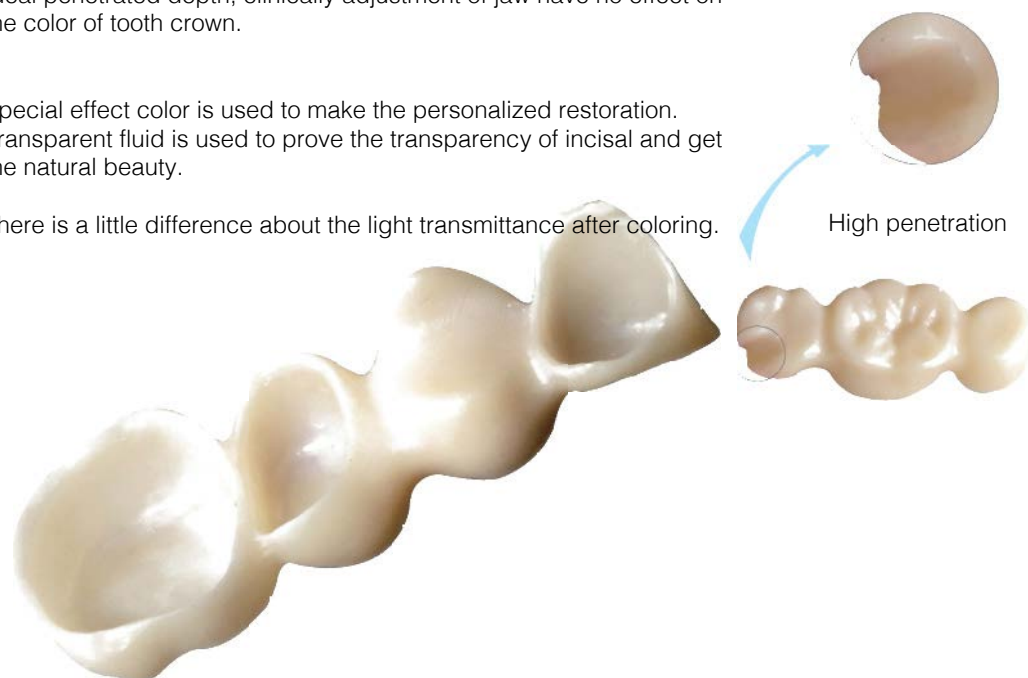


# INNER STAINING FLUID OF FULL ZIRCONIA FALSE TOOTH

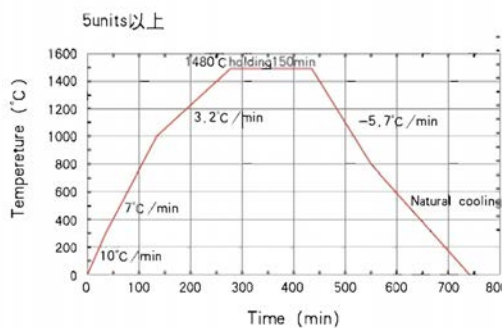
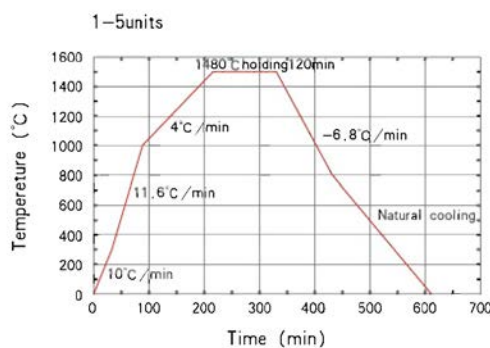
Inner staining fluid products are specialized matched with full Zirconia false tooth, including VITA classical 16 colors, 7 special effect colors and one incisal transparent fluid. Specialized auxiliary inner staining fluid is perfect for the SHINVA Zirconia Blank with its strong penetration. The fluid can penetrate to the inner of the restoration and reach the ideal depth. Therefore there is no color deviation compared with the VITA classical colorimetric plate.



1. After coloring the fix bridge, the color of final product is the same with around tooth crown.
2. Ideal penetrated depth; clinically adjustment of jaw have no effect on the color of tooth crown.
3. Special effect color is used to make the personalized restoration. Transparent fluid is used to prove the transparency of incisal and get the natural beauty.
4. There is a little difference about the light transmittance after coloring.



The full zirconia false tooth processing line  
The drawing of sintering for dental crown



Outside staining

1. Super transparent zirconia Block



2. CAD/CAM milling



3. Inner staining



4. Sintering



5. Polishing



6. Abrasive blasting



7. Preprocessing



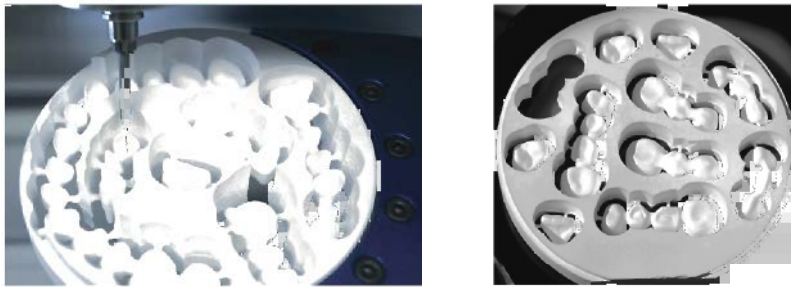
8. Glazing



9. Full zirconia false tooth

THE ZIRCONIA BLANK PARAMETER OF FULL CERAMIC FALSE TOOTH

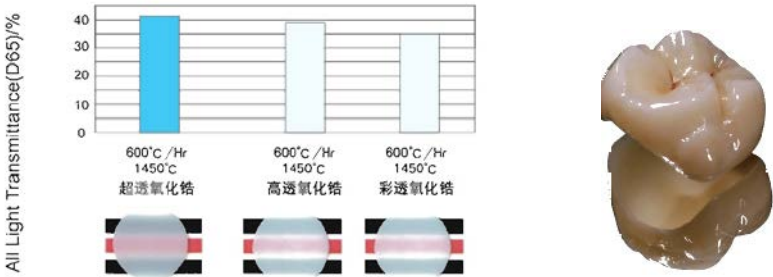
The Zirconia blank is the superior product proved by the milling test & sintering test. Under help of best cutting function, with the abrasion of cutting tool reducing and cutting efficiency increasing, the cost is decreased.



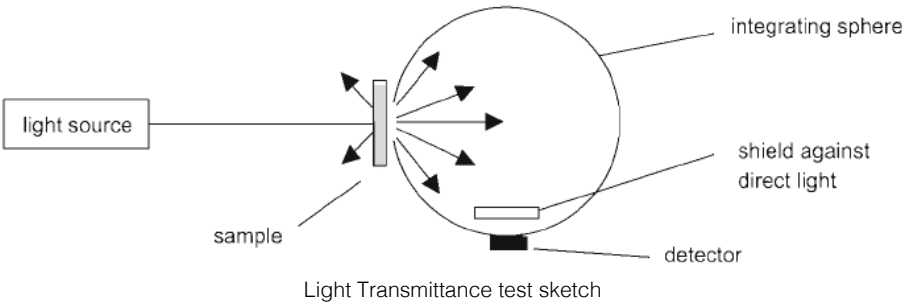
Physical characteristics of Zirconia Blank for SHINVA full ceramic false tooth

Characteristics	High Transparent	Super Transparent	Color Transparent
Sintering temperature (°C)	1450	1450	1450
Density after sintering (g/m²)	6.086	6.071	6.016
Intensity (Mpa)	1400	1100	1100
Average grain size (µm)	0.3	0.3	0.3
Monoclinic phase in the surface after the age increase	< 5	< 10	< 10

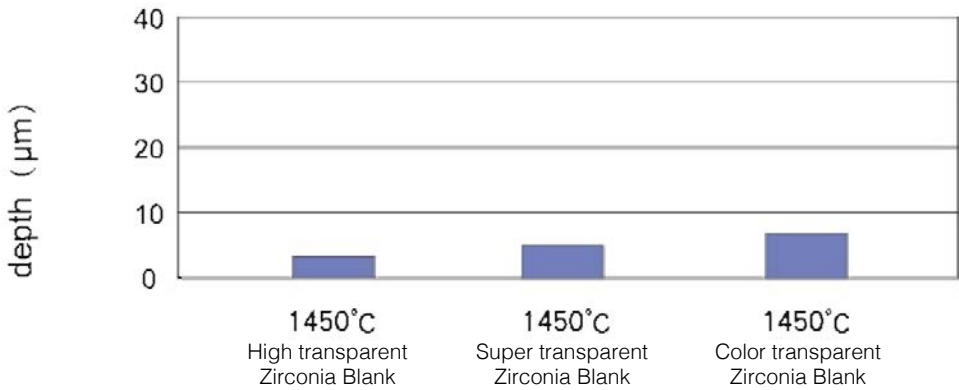
Light transmittance test



The spectrophotometer is used to test the light transmittance. The sample is 0.5 mm spectrophotometer, but our sample is 1mm.



According to the ISO 13356 (2008), the Monoclinic phase should less than 25% on the condition that aging is going on 5 hours under 140 °C.



NO.	Item	Item NO.	Requirement	Test Result	Assessment conclusion		
1	Homogeneity	4.1	It is used to homogenize the inorganic pigment that is for dental ceramic color after sintering. Any dyeing material should be equally distributed in the dental ceramic material	Qualified	Qualified		
2	Foreign object	4.2.1	There should be no any spot & seeable foreign object in the surface of Zirconia Blank	Qualified	Qualified		
		4.2.2	Radioactivity: the activity concentration of sample -238U is less than 0.2Bq/g <sup>-1</sup>	No	Qualified		
3	Flexure strength	4.3.1	3 point Flexure strength of sample is more than 800MPa	Min: 1083.1MPa	Qualified		
4	Chemical dissolve	4.3.2	Chemical Dissolve is less than 100µg.cm <sup>-2</sup>	44,1µg.cm <sup>-2</sup>	Qualified		
5	Density of Zirconia Blank & Density after sintering	4.3.3	Density of Zirconia Blank is 3.13g/cm <sup>3</sup> ±0.05g/cm <sup>3</sup>	Max deviation: -0.02 g/cm <sup>3</sup>	Qualified		
			The Density is more than 6.0g/cm <sup>3</sup>	Min: 6.06 g/cm <sup>3</sup>	Qualified		
6	Chemical component	4.3.4	Content of chemical component should follow the below table		99.75%	Qualified	
			component	Content		Qualified	
			ZrO <sub>2</sub> +HfO <sub>2</sub> +YO	≥99.0%		Qualified	
				Y <sub>2</sub> O <sub>3</sub>	>4.5% and ≤6%	5.40%	Qualified
				HfO <sub>2</sub>	≤5%	3.16%	Qualified
				Al <sub>2</sub> O <sub>3</sub>	≤0.5%	0.25%	Qualified
				Other Oxide	≤0.5%	<0.5%	Qualified
7	Irritation test for oral mucosa	4.4.1	The reaction of oral mucosa should be extremely light	No irritation	Qualified		
8	Delayed type hypersensitivity test	4.4.2	No	Qualified	Qualified		
9	Cytotoxicity test	4.4.3	Cytotoxicity should be less than 1 level	0	Qualified		
10	Ames test	4.4.4	Mutagenic negative	Mutagenic negative	Qualified		
11	Acuteoral toxicity test	4.4.5	No	Qualified	Qualified		
12	Dimension	4.5	Φ98*14mm	Diameter deviation: +0.2mm  Thickness deviation: -0.3mm	Qualified		



CAD/CAM SYSTEM

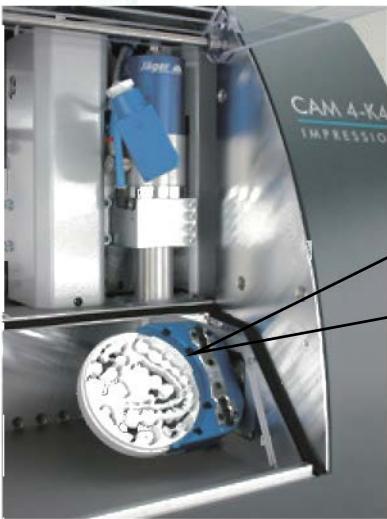


SHINVA is an agent of Germany VHF for false tooth process. SHINVA mainly deals with four-axel CAM4 & five-axel CAM5-S1 cutting equipment, which is sold abroad and have a good honor.

SHINVA has a good cooperation relationship with several scan equipment company, such as Denmark 3Shape, which offer the superior software for Dental CAD/CAM system. SHINVA devote itself to offer integrate proposal to develop the false tooth branch, therefore, we can keep us advanced in this field.

4 Axes 1 Blank 6 Tools Dry CoCr

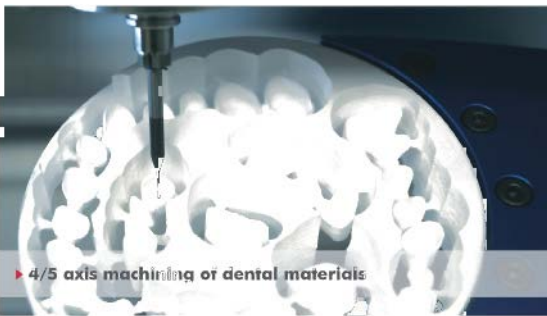
CAM 4-K4 impression technical specification	
Material	Zirconia, wax, resin, composite nano material, CoCr
Structure of machine body	Precision Al sheet
Travel X/Y/Z axis	100*98*40mm
Driving mechanism	Straight axis used the precision ball screw, motor resolution<1μm; high precision straight guide rail, length: 4mm
Repeated accuracy	±0.005mm
Automatic calibration	Realize automatic calibration, ensure equipment accuracy
Safety function	The front door on site can be closed that can ensure the safety lock during the processing and the workshop is a closed region
On-site light	Working light
Outline (W/D/H)	400*385*410mm
Weight	45kg
Motorized spindle	Rated power: 170W, Max power: 240W Max speed of revolution: 60000r Radial runout of Spindle is less than 1μm
Knife tool	Handle: 3mm whole length: 35mm
Rotation axis	A axis can realize rotating 360°, harmonic drive
Specification of Billet	Diameter: 98mm thickness: 10-25mm Circle Billet



Motorized spindle



Variety of material



Zirconia material



Bridge



5 Axes 1 Blank 16 Tools Dry & Wet CoCr



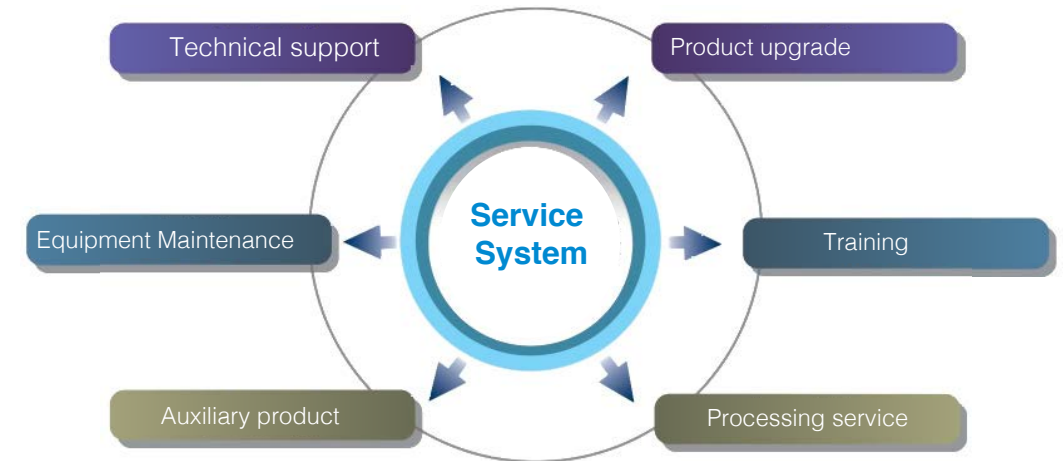
CAM 5-S1 impression technical specification	
Material	Zirconia, wax, resin, composite nano material, glass ceramic, CoCr
Structure of machine body	Cast Aluminum bed
Travel X/Y/Z axis	140*98*76mm
Driving mechanism	Straight axis used the precision ball screw, motor resolution<1μm; high precision straight guide rail, length: 4mm
Repeated accuracy	±0.003mm
Automatic calibration	Realize automatic calibration, ensure equipment accuracy
Safety function	The front door on site can be closed that can ensure the safety lock during the processing and the workshop is a closed region
On-site light	Working light
Outline (W/D/H)	490*445*540mm
Weight	75kg
Motorized spindle	Rated power: 300W, Max power: 600W Max speed of revolution: 60000r Radial runout of Spindle is less than 1μm
Knife tool	Handle: 3mm whole length: 35mm
Rotation axis	A axis can realize rotating 360°, B axis: ±30° harmonic drive
Specification of Billet	Diameter: 98mm thickness: 10-25mm Circle Billet

VHF  
 1. 0\*16\*35\*3  
 2. 0\*16\*35\*3  
 1. 0\*16\*40\*3  
 2. 0\*16\*40\*3  
 0. 6\*3. 0\*35\*3  
 0. 6\*3. 0\*40\*3

- Dental system from 3Shape helps dental false tooth company to research and develop. The efficiency is improved and the customer basement is built.
- Dental system is flexible, which can give the perfect service for any kinds of dental false tooth company.
- Dental system can finish all the workflow of dental, such as three-dimension scanning, CAD modeling, order manager, scanning the inside of mouth and communication between dentist and false tooth company.

SHINVA

CIMA<sup>®</sup>  
Industries Inc.  
Pharmaceutical Equipment



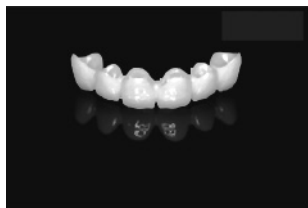
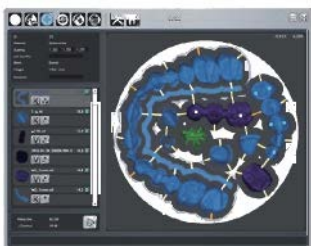
## EQUIPMENT TRAINING

We have a specialized electric mechanical team, so we can install the machine on site for customer. Moreover, we have first-class after-sold service including system upgrading, technical support, training and information support.

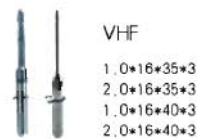


## PROCESSING SERVICE

We have Germany VHF five-axis CAM 5-S1 cutting machine that can offer OEM service for other companies which may have something wrong with their equipment or other problem.



## AUXILIARY PRODUCT



VHF

1.0\*16\*35\*3  
2.0\*16\*35\*3  
1.0\*16\*40\*3  
2.0\*16\*40\*3



3M ESPE LAVA

1.0\*16\*38\*3  
2.0\*16\*38\*3



STUD WELDING MACHINE



GRINDING PIN



WIELAND

0.7\*7\*35\*3  
1.0\*16\*35\*3  
2.5\*20\*35\*3



ROLAND

0.6\*6\*50\*4 1.0\*20\*50\*4  
1.0\*12\*50\*4 2.0\*25\*52\*4  
2.0\*16\*50\*4



Amann Girrbach

1.0\*16\*47\*3  
2.5\*16\*47\*3



Sealing machine for false tooth model bag

1. Power: 220V 50HZ 500W
2. Temperature: 50-250°C
3. Width of sealing: 300mm
4. Creasing width: 9mm
5. Weight: 9kg
6. Outside size: L420\*W380\*H150mm



False tooth model bag



Outside dyeing set



Carve & cut wax sheet



Specialized inner staining fluid



Polished tool



Ceramic powder