

VINTAGE PRIME PRESS



Advanced Product Information



Introduction

Thank you for purchasing VINTAGE PRIME PRESS, the highly aesthetic pressable lithium disilicate glass ceramic.

Please read this Advanced Product Information carefully before use to obtain the maximum benefits from this product.

Kindly keep this information for your future reference.

VINTAGE PRIME PRESS is the new high-strength lithium disilicate glass ceramic for the production of outstandingly aesthetic crowns, inlays, onlays, veneers and 3-unit bridges up to the second premolar.

A restoration can be fabricated in the desired shape by pressing the ingot and completed by staining (with VINTAGE Art Universal or VINTAGE Art LF etc.) or layering (with VINTAGE LD etc.).

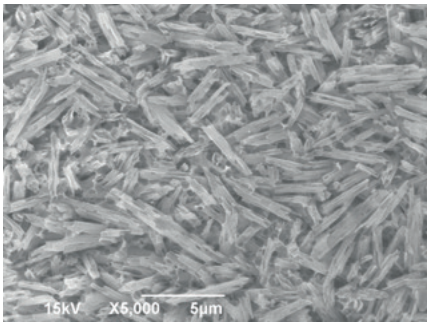


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1. Physical properties

1-1. High flexural strength

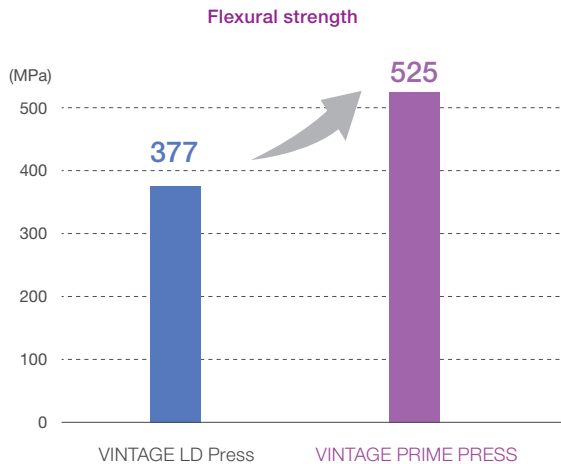
A unique structure called HDIL (High-Density Interlocking), creating an interlocked crystal structure in the glass matrix, gives VINTAGE PRIME PRESS excellent strength values of up to 525 MPa. This structure counteracts crack propagation and improves chipping resistance.



HDIL (High-Density Interlocking) is a unique structure of VINTAGE PRIME PRESS.



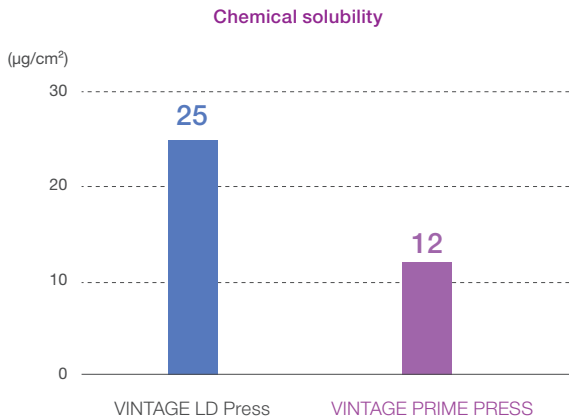
Excellent material strength reduces chipping at the margin



In accordance with ISO 6872:2015/AMD 1:2018 "Dentistry-ceramic materials" (representative value)

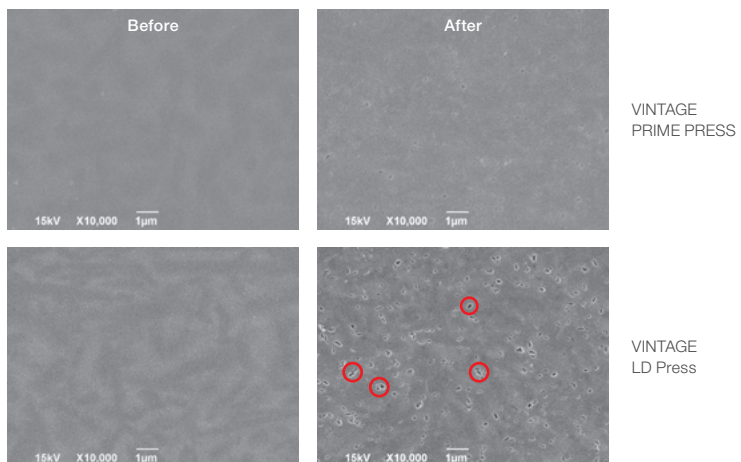
1-2. Low chemical solubility

Chemical solubility of VINTAGE PRIME PRESS is lower than VINTAGE LD Press. VINTAGE PRIME PRESS has high chemical durability (acid resistance).



In accordance with ISO 6872:2015/AMD 1:2018 "Dentistry-Ceramic materials" (representative value)

Surface condition before and after acid resistance test (SEM Image)



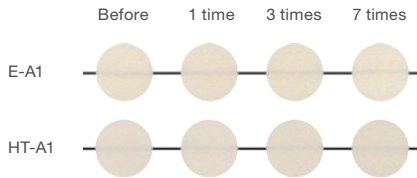
VINTAGE PRIME PRESS showed better properties than VINTAGE LD Press.

1. Physical properties

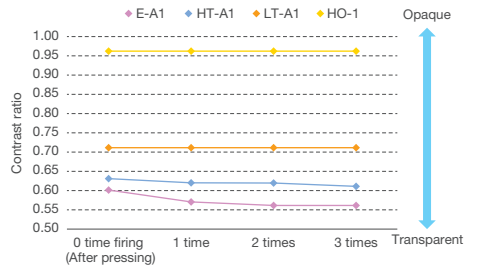
1-3. Excellent colour stability

There only is a minor change in transparency even after multiple firing.

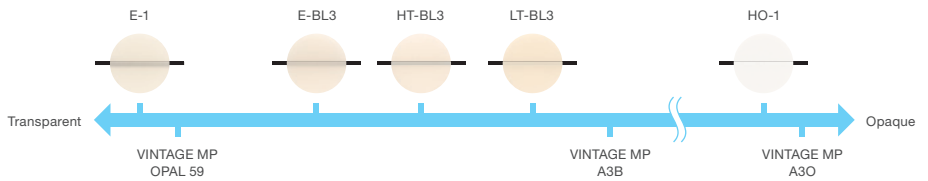
Number of firings



Colour comparison before and after firing at 750 °C



Translucency of each ingot

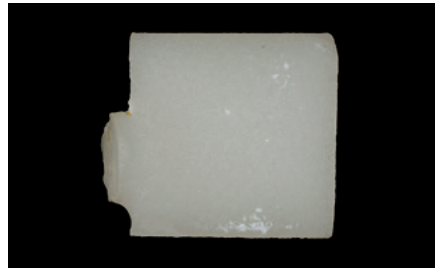


1-4. Formation of a reaction layer is less likely

VINTAGE PRIME PRESS suppresses the formation of a reaction layer due to its unique glass composition.



VINTAGE LD Press
after glass bead blasting
at 0.3 MPa (3 bar) pressure



VINTAGE PRIME PRESS
after glass bead blasting at
0.3 MPa (3 bar) pressure

1-5. Physical properties (E type ingot: representative value)

Property	Units	Value
Flexural strength	MPa	525
Chemical solubility	$\mu\text{g}/\text{cm}^2$	12
Linear thermal expansion CTE (25-500 °C)	$\times 10^{-6}/\text{K}$	10.8
Glass transition temperature	°C	504



2. Shade line-up & shade determination

2-1. Shade line-up

VINTAGE PRIME PRESS is available in 4 levels of translucency and 43 shades of ingots.



E (Enamel)

E-1	E-2	E-BL3	E-BL4	E-A1	E-A2

■ E-1, E-2

Transparent enamel shades

■ E-BL3, E-BL4, E-A1, E-A2

2 Transparent Bleach (BL) enamel shades +
2 VITA® Classical shades

■ Recommended indication

Veneer, inlay, onlay, partial crown

Use for restorations that require high translucency.

■ Recommended technique

Staining technique



Teeth: 13, 12, 11, 21, 22 and 23
Case: Laminate veneer
Material used: VINTAGE PRIME PRESS (E-BL3),
VINTAGE Art Universal



HT (High Translucency)

HT-BL3	HT-BL4	HT-A1	HT-A2	HT-A3	HT-A3.5	HT-A4

HT-B1	HT-B2	HT-B3	HT-B4	HT-C1	HT-C2	HT-C3	HT-C4	HT-D2	HT-D3	HT-D4

Slightly more opaque than E ingots and similar to Enamel colour.

(2 BL shades + 16 VITA® Classical shades)

■ Recommended indication

Veneer, inlay, onlay, partial crown, crown, bridge

Use for restorations that require higher translucency than LT ingots.

■ Recommended technique

Staining technique, cut-back technique



Teeth: 17 and 16
Case: Onlay
Material used: VINTAGE PRIME PRESS (HT-BL3),
VINTAGE Art Universal



LT (Low Translucency)

LT-BL3	LT-BL4	LT-A1	LT-A2	LT-A3	LT-A3.5	LT-A4				
LT-B1	LT-B2	LT-B3	LT-B4	LT-C1	LT-C2	LT-C3	LT-C4	LT-D2	LT-D3	LT-D4

Slightly more opaque than HT ingots.
(2 BL shades + 16 VITA® Classical shades)

■ **Recommended indication**

Veneer, inlay, onlay, partial crown, crown, bridge
Use for restorations that require lower translucency than HT ingots.

■ **Recommended technique**

Staining technique, cut-back technique, layering technique



Teeth: 16
Case: Crown
Material used: VINTAGE PRIME PRESS (LT-A1), VINTAGE Art Universal



HO (High Opacity)

HO-1

HO is suitable for frameworks.

It has a high masking property, and even if the abutment tooth is discoloured or a metal core, sufficient masking is possible.

By building up VINTAGE LD porcelain on the frame made by HO, a highly aesthetic restoration can be fabricated.

■ **Recommended indication**

Frame for crown and bridge

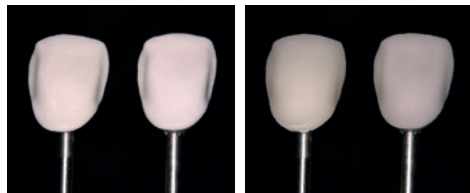
■ **Recommended technique**

Layering technique

Masking ability of HO

Frame made of HO-1

Frame made of LT-BL3









A1 abutment Metal abutment A1 abutment Metal abutment

(Thickness of frame: 0.5 mm)

2. Shade line-up & shade determination

2-2. Recommended indication

	Thin veneer 	Laminated veneer 	Inlay / Onlay 	Partial crown 	Crown 	Bridge 
E-1, E-2 Ingot with high translucency. Suitable for fabricating restorations that require high translucency.	●	●	●	●	—	—
E-A1, E-A2, E-BL3, E-BL4 Bright BL shades and two standard A shades that have a translucency equivalent to enamel. Suitable for laminated veneers, inlays and partial crowns.	●	●	●	●	—	—
HT Slightly more opaque than E ingots and similar to enamel colour. Available in 2 bright BL shades and 16 VITA* Classical shades. It is suitable for veneers, inlays, partial crowns and crowns.	●	●	●	●	●	●
LT Slightly more opaque than HT ingots. Suitable for restorations with lower translucency than HT. Available in 2 BL shades and 16 VITA* Classical shades. It is suitable for inlays, partial crowns and crowns and bridges.	●	●	●	●	●	●
HO Suitable for frames with high masking properties. It masks a discoloured abutment tooth. Available in one shade and can be used in combination with stains and porcelain (body porcelain, enamel porcelain).	—	—	—	—	●	●

● Recommended ● Applicable — Not recommended

2-3. Recommended technique

Depending on personal or aesthetic requirements, the following techniques can be used with the VINTAGE PRIME PRESS ceramic system:

■ Staining technique

The fully contoured restoration is created with VINTAGE PRIME PRESS. After contouring, VINTAGE Art Universal is applied and fired.

This technique is optimal for fabrication of thin ceramic restorations such as veneers and inlays. Aesthetic results can be obtained in a short time.

■ Cut-back technique

The fully contoured restoration is created with VINTAGE PRIME PRESS and then reduced; afterwards Enamel porcelain of VINTAGE LD is built up and fired.

This technique allows to create highly aesthetic restorations even in cases where porcelain space is limited.

■ Layering technique (full build-up)

The framework is created with VINTAGE PRIME PRESS, then Body and Enamel porcelains of VINTAGE LD are built up and fired.

This technique is optimal for cases where a more aesthetic result is required such as anterior restorations.

Translucency	Technique		
	Staining	Cut-back	Layering
E	+++	-	-
HT	+++	+++	++
LT	+++	+++	+++
HO	-	++	+++

+++ Best indicated ++ Well indicated - Not recommended

2-4. Shade selection

Individual shade matching will always be required, but the following combinations are recommended.

Shade group		Bleach				A shade					B shade				C shade				D shade				
Tooth shade		BL1	BL2	BL3	BL4	A1	A2	A3	A3.5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4		
E ^{*1,2}	E-1											●											
	E-2											●											
	E-BL3	-											●										
	E-BL4	-											●										
	E-A1	-				●					-	●		-			●				-		
	E-A2	-				●					-	●		-	●		-	●		-	●	-	
HT	-	BL3	BL3 BL4	A1	A2	A3	A3.5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4				
LT	-	BL3	BL3 BL4	A1	A2	A3	A3.5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4				
HO ^{*3}	HO-1																						

*1 Adjust the shade by staining technique

*2 E ingots are not applicable for crown and bridge

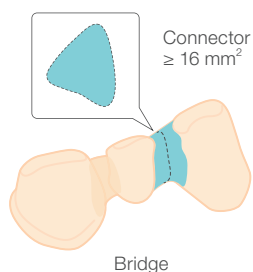
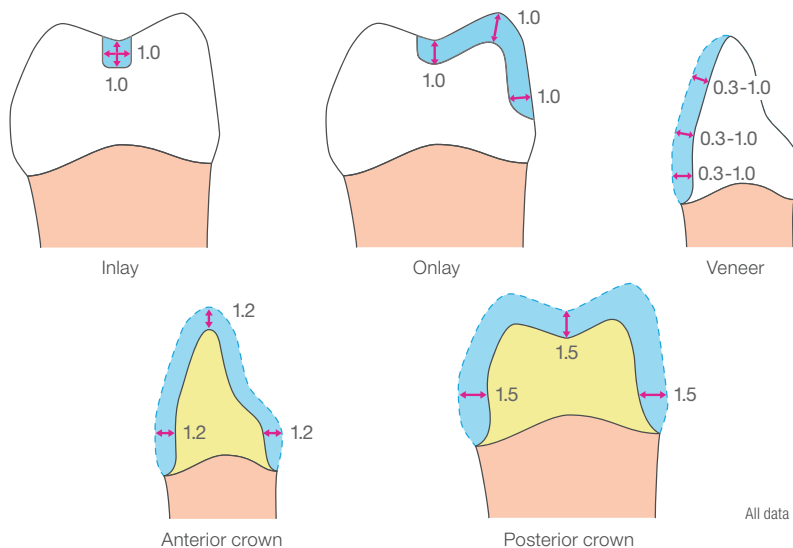
*3 HO is basically used for frame

3. Preparation designs & Framework design

3-1. Preparation designs

The preparation for VINTAGE PRIME PRESS should be performed based on the general guidelines for all-ceramic restorations: no angles or sharp edges, a shoulder preparation with rounded inner edges, and ensuring the minimum wall thickness of the restoration.

Do not fabricate four- or more-unit bridges or three-unit bridges including molars!



Bridge

NOTE

- Please follow the indicated minimum thickness guideline of each restoration.
- The thickness of veneers should be at least 0.3 mm.
- All internal edges and angles should be rounded. Shoulder preparation is recommended.
- The minimum dimension should also be maintained for bridge works.

3-2. Framework design

The following minimum thicknesses have to be ensured to fulfill the requirements of the preparation guidelines.

Restoration	Thickness	Connecting area
Inlay, onlay, laminate veneer, partial crown	≥ 1.0 mm	–
Thin veneer	≥ 0.3 mm	–
Anterior crown	Incisal ≥ 1.5 mm Circular ≥ 1.2 mm	–
Posterior crown	Occlusal ≥ 1.5 mm Circular ≥ 1.5 mm	–
Anterior bridge	Incisal ≥ 1.5 mm Circular ≥ 1.2 mm	≥ 16 mm ²
Posterior bridge	Occlusal ≥ 1.5 mm Circular ≥ 1.5 mm	≥ 16 mm ²

4. Guidelines of press work

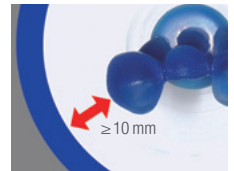
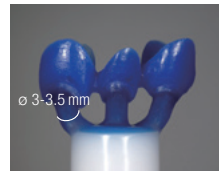
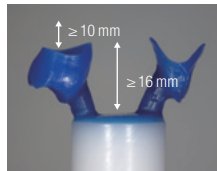
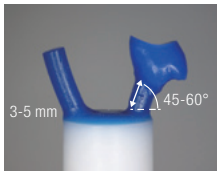
4-1. Wax-up

- Use only organic waxes for the wax-up, since they burn out without leaving residue.
- Wax-up inlay, veneer, crown or bridge (anterior) on the isolated model die.
- Create the anatomical and functional occlusal form.
- Be careful to avoid overcontouring margin.
- Ensure the recommended ratio between the minimum thickness of the pressed ceramic and the overlaid porcelain thickness.
- When employing the cut-back technique or layering technique, sharp edges should not be created on the surface, on which porcelain is built up.
- Select investment ring of appropriate size according to the weight of the wax pattern. Prepare adequate number of ingots.

Weight of the wax pattern	Number of ingots	Ring size
0.7 g or less	1	For mixing 100 g investment material
2.0 g or less	2	For mixing 200 g investment material

4-2. Sprueing

Guidelines for sprueing



Wax patterns are not located around the same height.



Wax patterns are not same volume.

NOTE

- Attach the sprues on the thickest part of the wax-up.
- When sprueing several restorations, all wax patterns should be same volume and located around the same height.
- When sprueing only one restoration, a dummy sprue should be attached to the opposite side.

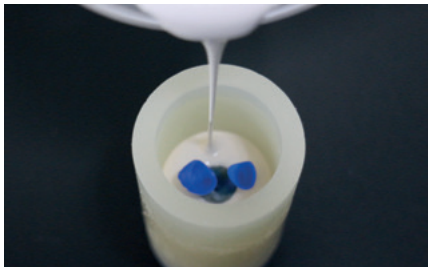
4-3. Investing

Investing with SHOFU Ceravety Press & Cast is recommended.

Refer to the instructions for use of the investment material for detailed processing parameters.

1. The concentration of Ceravety Liquid must first be adjusted with distilled water. Refer to the table below for the optimal mixing ratio.
2. Then, mix with Ceravety Powder in vacuum for one minute. The recommended liquid : powder mixing ratio is 20 ml : 100 g.
3. Avoid entrapping air bubbles when filling the investment material into the ring.
4. Place the ring cap on top of the ring to keep the top and bottom surfaces parallel.

Indications	Amount of Ceravety Liquid and water for 100 g of powder	
	Liquid	Water
Laminate veneer, crown, bridge	8	12
Inlay, onlay	4	16



Avoid entrapping air bubbles when filling the investment into the ring.



Place the ring cap on top of the ring to keep the top surface and bottom surface parallel.

4. Guidelines of press work

4-4. Preheating / burn-out

Quick burn-out method

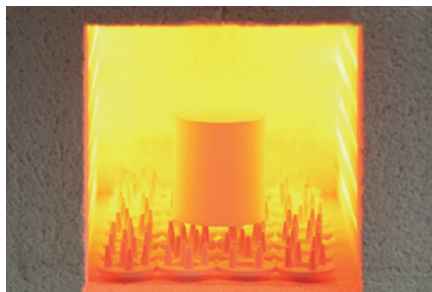
1. In the case of press ceramics, place the hardened mold into the furnace at the temperature of 850 °C, 20 min after investing (If temperature is designated by the ceramic ingot manufacturer, set the designated temperature).
2. According to the size of the ring, hold the temperature: 100 g ring for 45 min, 200 g ring for 60 min.

Normal burn-out method

1. Raise the temperature by 20 °C/min from room temperature.
2. According to the size of the ring, hold the temperature: 100 g ring for 45 min, 200 g ring for 60 min.

NOTE

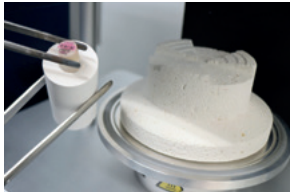
- Please check if the temperature of the preheating furnace is optimal.
- In the event of failed pressing, it has proven useful to increase the temperature of the preheating furnace by at least 20 °C.
- Do not perform burnout within 20 minutes after investing in order to avoid rough pressed surface.
- Mix investment material sufficiently and do not apply excessive vibration while investing in order to avoid entrapping air bubbles and creating rough surface after pressing.
- The burnout should be performed within 3 hours after investing.
- Ceravety Press & Cast hardens in 20 minutes under normal temperature. However, when the ambient temperature is low during winter, it might take about 30-40 minutes for hardening. Make sure not to place the ring into the furnace before the investment material completely hardens. Remove the ring base within 1 hour after the investing. Otherwise, it can be difficult to remove.



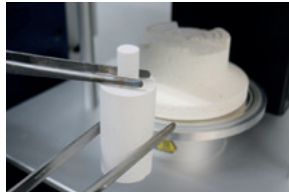
Make sure that the investment ring is completely preheated before pressing.

4-5. Pressing

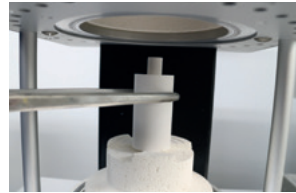
- Remove the investment ring from the preheating furnace immediately after completion of the preheating cycle at 850 °C for 1 hour. This step must not take more than 30 seconds to prevent the investment ring from cooling down too much.
- Insert the VINTAGE PRIME PRESS ingots and press plunger into the hot ring, then place the ring in the center of the hot press furnace and start the press program.



Place the VINTAGE PRIME PRESS ingot into the hot investment ring with the shade imprint facing upward.



Then place the plunger into the hot investment ring.



Place the completed investment ring in the center of the preheated press furnace.

Press program

Programat EP600/EP3000/EP5000 (Ivoclar Vivadent)

Shade Systems	E, HT, LT, HO	
Ring size	100 g	200 g
Start temperature	700 °C	
Heat rate	60 °C / min	
Final temperature	905 °C	920 °C
Holding time	20 min	25 min
Stop speed	300 µm / min	

Please lower the final temperature by 5 to 10 °C when you use a disposable investment plunger.

The preset program for each shade of IPS e.max Press is also applicable.

Austromat 654i (Dekema)

Shade Systems	E	HT, LT, HO	E, HT, LT, HO
Ring size	100 g		200 g
Start temperature	700 °C		
Heat rate	60 °C / min		
Final temperature	915 °C	910 °C	925 °C
Holding time	20 min		30 min
Press duration	Auto		
Press level	5		6

Please lower the final temperature by 5 to 10 °C when you use a disposable investment plunger.

The preset program for each shade of IPS e.max Press is also applicable.

4. Guidelines of press work

Vario Press 300/300.e/300.e ZR (Zubler)

Shade Systems	E, HT, LT, HO	
Ring size	100 g	200 g
Start temperature	700 °C	
Heat rate	60 °C / min	
Final temperature	910 °C	915 °C
Holding time	15 min	25 min
Press duration	6 min	8 min
Press level	low	
Vacuum level	700 mmHg	

Please lower the final temperature by 5 to 10 °C when you use a disposable investment plunger.

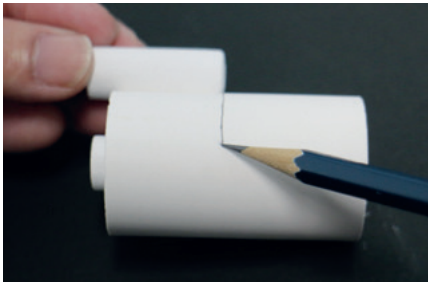
Please refer to the ADVANCED PRESS program for each shade of IPS e. max Press if you use Vario Press 300.e or Vario Press 300.e ZR.

NOTE

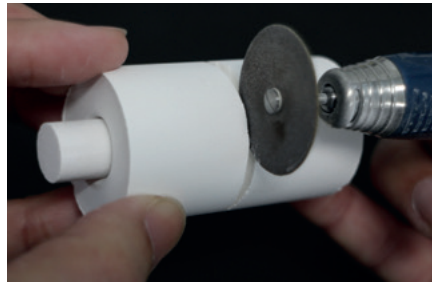
- Before holding the investment ring in a muffle furnace, please ensure that the temperature is restored to the indicated value.
- Remove the investment ring from the preheating furnace immediately after completion of the preheating cycle.
- If a reaction layer is formed on the press ceramic, shorten the holding time by 1 to 5 minutes or lower the pressing temperature by 1 to 5 °C.
- In case of pressure shortage, extend the holding time by 1 to 5 minutes or raise the pressing temperature by 1 to 5 °C.
- The optimum press conditions vary depending on the type, the model and the operating voltages of the press furnace. If the surface or transparency of the restoration do not correspond to the pressing results which are usually achieved the pressing procedure must be adjusted accordingly. It is essential to carry out test pressings before using the press pellets for actual restorations.
- Follow the press furnace manufacturer's instructions for use.

4-6. Divesting

- Divest the restoration once the ring has cooled down to room temperature.
- Mark the length of the plunger on the cooled investment ring.
- Separate the investment by using a separating disk.

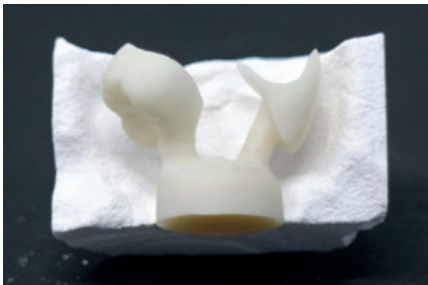


Mark the length of the plunger

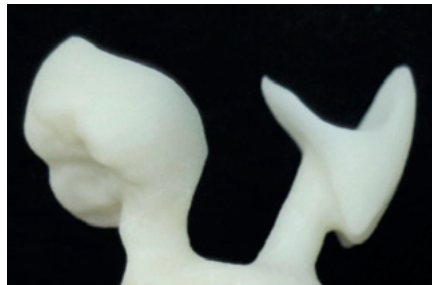


Separate the investment ring by using a separating disk

- Divest roughly with glass beads at a pressure of approx. 0.2-0.4 MPa (2-4 bar).
- Fine divesting is carried out with alumina (Al_2O_3) at a pressure of approx. 0.2-0.3 MPa (2-3 bar).
- Observe the blasting direction and distance to prevent damage to the objects during the divesting.



Rough divestment with glass beads at a pressure of approx. 0.2-0.4 MPa (2-4 bar)



Completely divested objects after fine divesting with alumina (Al_2O_3) at a pressure of approx. 0.2-0.3 MPa (2-3 bar)

4. Guidelines of press work

4-7. Finishing

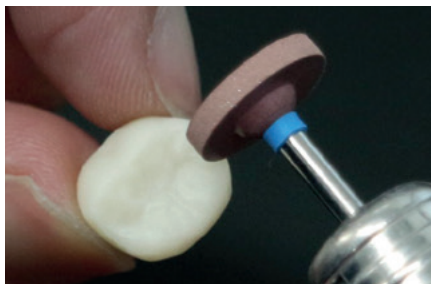
- Wet the cutting area and cut by using a fine diamond disk approx. 2 mm above the attachment point. Overheating of the ceramic must be avoided. Low speed and light pressure are recommended.
- Smooth the attachment areas of the sprues with Dura-Green DIA or other diamond instruments.
- Check the fitting of the restoration after removing the spacer from the die and, if necessary, grind the areas, which affect precise fitting with a fine diamond or Dura-Green DIA.
- Contour the final form and surface texture by using Dura-Green DIA or other suitable grinders.
- Check the occlusion and adjust appropriately with a grinder (if necessary). Then, pre-polish with silicone polishers (ZiLMaster medium / fine is recommended).
- Clean the restoration briefly with alumina (Al_2O_3) at a pressure of approx. 0.1-0.2 MPa (1-2 bar) and afterwards with an ultrasonic or steam cleaner.



Use a fine diamond disk at low speed to cut the sprues



Shape with Dura-Green DIA



ZiLMaster is recommended for finishing and polishing

5. Firing of additional build-up or staining

5-1. Cut-back technique

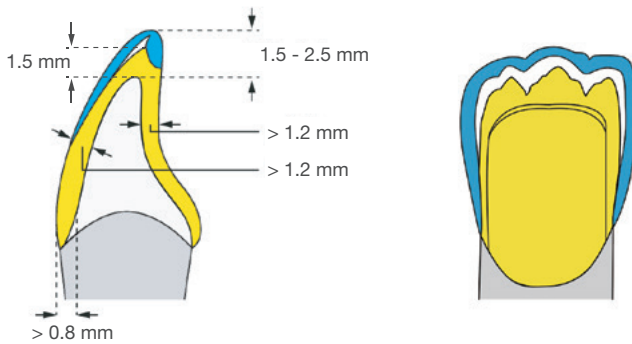
The fully contoured restoration is created with VINTAGE PRIME PRESS and then reduced, afterwards Enamel porcelain of VINTAGE LD is built up and fired. This technique allows to create highly aesthetic restorations even in cases where porcelain space is small.



Translucency	Technique
	Cut-back
E	–
HT	+++
LT	+++
HO	++

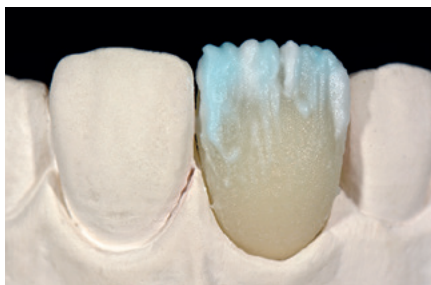
+++ Best indicated ++ Well indicated – Not recommended

Layering diagram with cut-back technique

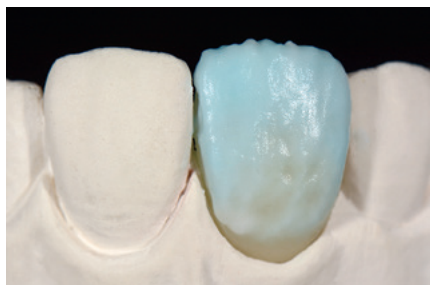


- VINTAGE LD Opal Enamel
- VINTAGE LD Opal Translucent or Effect powders
- VINTAGE PRIME PRESS

5. Firing of additional build-up or staining



The application of Opal Translucent or Effect powders helps to create a natural appearance at the incisal area



Complete the restoration with Opal Enamel porcelain

NOTE

- Drying time should be altered depending on the size of the restoration to be fired. (Restorations might explode inside the furnace if moisture remains inside.)
- Enamel porcelain should be built up slightly oversized with consideration of firing shrinkage.
- When building up additional porcelain onto the dried area, wet the area with a water moistened brush in advance.

Firing schedule of VINTAGE LD

	Wash	1. Body Effect Enamel	2. Body Effect Enamel	Glaze	Correction	Correction-Glaze
Drying temp (°C)	400	400	400	450	400	400
Drying (min)	3-4	4-5	3-5	3-5	3-5	3-5
Preheating (min)	1	1-2	1-2	1-2	1-2	1-2
Vacuum start (°C)	400	400	400	—	400	400
Inc. temp. (°C/min)	45	45	45	55	55	55
Final temp (°C)	780	760-770	760-770	750-760	720	730
Vacuum end (°C)	780	760-770	760-770	—	720	730
Hold (min)	1.0	1.0	0.5	1.0	0.5	1.0

Optimal firing conditions vary due to the different designs and operating voltages of the porcelain furnaces. It is essential to carry out test firings before firing actual restorations.



After correct firing procedure the surface appears slightly glossy



Contour the final form and surface texture by using Dura-Green DIA or other suitable grinders and silicone polishers

Finishing

- Contour the final form and surface texture by using Dura-Green DIA or other suitable grinders.
- Check the occlusion and adjust appropriately by grinding (if necessary).
- Then, pre-polish with silicone polishers (ZiLMaster / SoftCut PA)
- Clean the restoration briefly with alumina (Al_2O_3) at a pressure of approx. 0.1-0.2 MPa (1-2 bar) and afterwards with an ultrasonic or steam cleaner.
- Stain and glaze the restoration as described in chapter 5-3. "Staining / Glazing".

5. Firing of additional build-up or staining

5-2. Layering technique

This technique is recommended when high aesthetics are required such as anterior restorations.

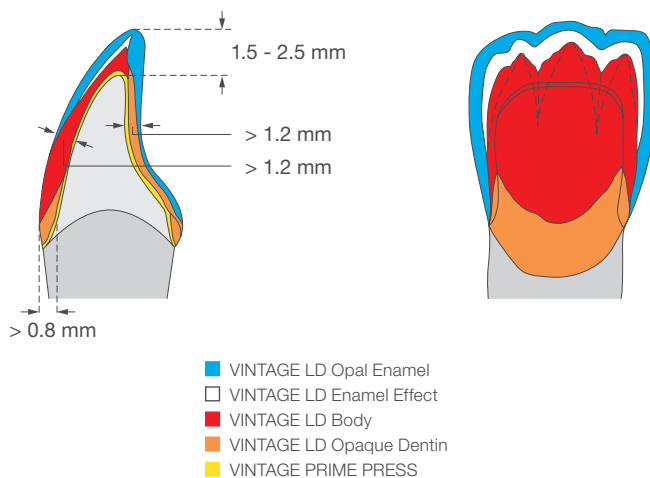
The frame design is created with VINTAGE PRIME PRESS, taking into consideration that the layer thickness of the subsequent VINTAGE LD porcelain masses may not exceed 2 mm.

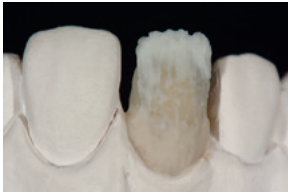


Translucency	Technique
	Layering
E	–
HT	++
LT	+++
HO	+++

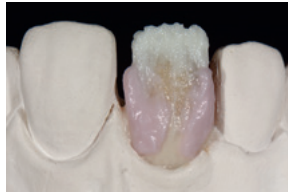
+++ Best indicated ++ Well indicated – Not recommended

Layering diagram

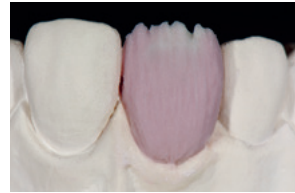




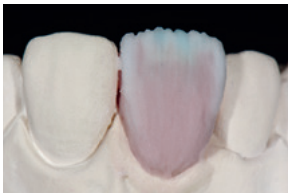
Application of Opaque Dentin to the cervical and incisal areas



Apply the Body porcelain step by step



Create the mamelon structure with consideration of the natural dentition



The application of Opal Translucent or Effect powders help to create a natural appearance at the incisal area



Enamel porcelain should be built up slightly oversized with consideration of firing shrinkage

NOTE

- Drying time should be altered depending on the size of the restoration to be fired. (Restorations might explode inside the furnace if moisture remains inside.)
- Enamel porcelain should be built up slightly oversized with consideration of firing shrinkage.
- When building up additional porcelain onto the dried area, wet the area with a water moistened brush in advance.
- After contouring, put the restoration back onto the model. If the restoration needs an additional build-up, apply the required VINTAGE LD porcelain powders on the pre-fired restoration and perform a second body firing.

5. Firing of additional build-up or staining

Firing schedule

Please refer to page 22 for the firing schedule.

Optimal firing conditions vary due to the different designs and operating voltages of the porcelain furnaces. It is essential to carry out test firings before firing actual restorations.

If necessary, add Correction porcelain to compensate for the areas which are not thick enough and fire.



The restoration after the first firing



Complete the restoration with Opal Enamel porcelain and perform a second body firing



Contour the final form and surface texture by using Dura-Green DIA or other suitable grinders and silicone polishers

Finishing

- Contour the final form and surface texture by using Dura-Green DIA or other suitable grinders.
- Check the occlusion and adjust appropriately by grinding (if necessary).
- Then, pre-polish with silicone polishers (ZILMaster / SoftCut PA)
- Clean the restoration briefly with alumina (Al_2O_3) at a pressure of approx. 0.1-0.2 MPa (1-2 bar) and afterwards with an ultrasonic or steam cleaner.
- Stain and glaze the restoration as described in chapter 5-3. "Staining / Glazing"
- If a correction is required after glazing, apply Correction powder on the roughened surface and perform a correction firing.

5-3. Staining / Glazing

For staining / glazing of VINTAGE PRIME PRESS restorations, use VINTAGE Art Universal stains system. VINTAGE Art Universal low fusing fluorescent stains and glazes are designed for internal and external modifications of all existing ceramic materials including VINTAGE PRIME PRESS. In a very simple way, you can reproduce any natural tooth characteristics with a vital appearance.



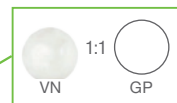
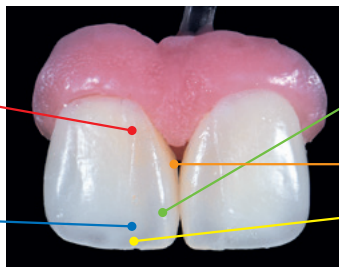
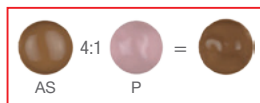
Application of GP-F



O-Br applied on the fissure part



Shade adjustment with VINTAGE Art Universal



5. Firing of additional build-up or staining

Final restorations



Teeth: 11 and 21
Case: Partial laminate veneer
Material used: VINTAGE PRIME PRESS (E-BL3),
VINTAGE Art Universal

VINTAGE Art Universal YAMAMOTO LIQUID *

(True colour mixing liquid)

Contents: 50 ml

Mixing liquid with a similar refractive index as glass.
The mixture with VINTAGE Art Universal stains and
glazes already shows its final colour and effect before
firing.



Glaze powder mixed with
VINTAGE Art Universal LIQUID



Glaze powder mixed with
VINTAGE Art Universal YAMAMOTO LIQUID

* Makoto Yamamoto, the developer of YAMAMOTO LIQUID, is the author of "The Metal-Ceramics – Principles and Methods of Makoto Yamamoto" and the inventor of porcelains such as Opal and Margin. He is also SHOFU's senior technical advisor and the designer of all SHOFU porcelains.

Firing schedule of VINTAGE Art Universal

	Inner/outer porcelain staining / Glazing lithium disilicate
Drying temp (°C)	400
Drying (min)	6 (7-8 ^{*3})
Close (min)	1
Preheating (min)	1
Heat rate (°C/min)	50
Firing temperature (°C) ^{*1}	730
Hold (min)	1
Vacuum /atmosphere ^{*2}	Vacuum
Vacuum start (°C)	450
Vacuum end (°C)	720

*1 VINTAGE Art Universal can be fired at 730 °C or higher temperatures.
If surface gloss is insufficient, increase the firing temperature.

*2 Vacuum 1.3 - 8.0 kPa / full vacuum

*3 When using YAMAMOTO LIQUID

NOTE

Firing conditions may vary, depending on the design and operation voltage of the porcelain furnace used. So, test firing is recommended for appropriate firing conditions and results. Stain and glaze mixtures with YAMAMOTO LIQUID should be predried approx. 1-2 minutes longer than mixtures with VINTAGE Art Universal LIQUID.

For more information, refer to the IFU or Advanced product information of VINTAGE Art Universal.

6. Troubleshooting

Product	Trouble	Cause	Solution	Note
VINTAGE PRIME PRESS	Insufficient pressing	<ol style="list-style-type: none"> 1. Insufficient thickness of wax 2. Temperature of preheating muffles is too low 3. Press temperature is too low 4. Insufficient pressure 5. Position of the multiple wax patterns in the ring is uneven 	<ol style="list-style-type: none"> 1. Ensure a minimum of 1.0 mm of wax 2. Raise preheating temperature at least 20 °C 3. Increase pressing temperature 4. Raise pressure (maximum 0.5 MPa) 5. Level the height of wax patterns in the ring 	<ol style="list-style-type: none"> 1. Ensure enough room for the press ceramic 2. Preheat the ring 3. Raise the pressing temperature to ensure smooth flow of the pressed ingot 4. Refer to the instructions of the pressing furnace for optimal pressure 5. Position the wax patterns at an even height when waxing up
	Rough surface	<ol style="list-style-type: none"> 1. Pressure is too high 2. Pressing time is too long 3. Pressing temperature is too high 4. Insufficient mixing of investment material 	<ol style="list-style-type: none"> 1. Reduce the pressure 2. Shorten the pressing time by 1 to 5 minutes 3. Lower the pressing temperature by 1 to 5 °C 4. Mix investment material properly 	Press under optimal conditions
	Broken mold	Distance between the wax pattern and the outer wall is too close	Maintain a distance of 10 mm or more to the outer wall	Refer to the instructions of the pressing furnace for optimal pressure. When pressing single restorations, the pressure is often stronger compared to pressing multiple restorations.
	Excess material on pressed ceramic	<ol style="list-style-type: none"> 1. Ring is cracked during burning out 2. Pressure is too high 	<ol style="list-style-type: none"> 1. Do not place the ring into the furnace before investment material is completely hardened. 2. Reduce the pressure 	Place the ring into the furnace within 20-60 minutes after investment
	Purple discolouration of the surface	Pressing temperature is too high	Lower the pressing temperature by 20 to 30 °C	Press under optimal conditions
VINTAGE LD	White layer appears after firing	<ol style="list-style-type: none"> 1. Low firing temperature 2. Insufficient drying 	<ol style="list-style-type: none"> 1. Raise firing temperature or prolong the holding time after firing. 2. Raise the drying temperature or prolong the drying time 	Temperature varies depending on the condition of the furnace. Perform periodical checks on the furnace.
VINTAGE Art Universal	Insufficient luster after glaze firing	Glaze layer too thin	Thicken the glaze layer	Apply glaze material in multiple layers and fire
	Surface becomes whitish after glaze firing	<ol style="list-style-type: none"> 1. GP-F layer is too thick 2. Vacuum firing has not been performed 3. When mixing Glaze powder or Universal stains with YAMAMOTO LIQUID 	<ol style="list-style-type: none"> 1. Apply thin layer 2. Fire in vacuum 3. Avoid any contamination with water 	<ol style="list-style-type: none"> 1. GP-F imparts sufficient fluorescence even with a thin layer. Apply it thinly 2. Confirm the firing schedule and conditions of porcelain furnace 3. Don't apply this mixture to wet porcelain or frameworks

Photos courtesy of:

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