



**VINTAGE LD PRESS
VINTAGE LD
VINTAGE Art LF**

INSTRUCTIONS FOR USE

SHOFU INC.



Introduction

Thank you for purchasing the VINTAGE LD all-ceramic system.

Please read these instructions for use carefully before use to obtain the maximum benefits from this product. Kindly keep this manual for your future reference.

The VINTAGE LD all-ceramic system consists of highly aesthetic lithium disilicate glass ceramics for the press technique, specifically designed layering porcelains and low fusing porcelain stains.

VINTAGE LD PRESS are high strength lithium disilicate glass ceramic ingots for the fabrication of crowns, inlays, onlays, veneers and 3-unit anterior bridges with excellent aesthetics.

VINTAGE LD low fusing porcelain has been developed especially for lithium disilicate according to the latest standard in porcelain technology. The combination of these ceramic materials with the cut-back or layering technique offers unlimited possibilities in the reproduction of lifelike restorations.

VINTAGE Art LF low fusing fluorescent porcelain stains are designed to realize the internal and external modification of shades and produce lifelike tooth colors with all porcelain materials.

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1-1. Precautions

- This product should not be used if the residual abutment tooth is too small or for patients with bruxism or occlusal abnormality, etc.
- If any inflammation or other allergic reactions occur to the operator while using this product, immediately discontinue use and seek medical advice.
- Avoid contact of this material with skin and eyes. In case of accidental contact with skin, immediately blot with a cotton ball moistened with alcohol and rinse with plenty of water. In case of contact with eyes, immediately flush the eyes with plenty of water and seek medical advice.
- Avoid eye contact with abrasive dust. In case of contact with eyes, immediately flush the eyes with plenty of water and seek medical advice.
- Wear protective glasses etc. while grinding and polishing this product to avoid damage to eyes.
- Use local dust extractor or protective dusk mask etc. while grinding this product to avoid harmful effects of the dust on the body.
- Use local ventilation or fan etc. to avoid inhalation of gas generated by heating Ceravety Press & Cast.
- Wear rubber gloves etc. to avoid direct skin contact with the liquid or the mixture of Ceravety Press & Cast as they are alkaline.
- Do not leave VINTAGE Mixing Liquid HC and VINTAGE Art LF Stain Liquid in areas of high temperature, such as near the heater, etc. Avoid direct sunlight.
- Tightly close the caps of VINTAGE Mixing Liquid HC and VINTAGE Art LF Stain Liquid after use.
- This product is intended only for use by dental professionals.

1-2. Storage

Store at room temperature (1-30 °C / 34-86 °F) and keep away from direct sunlight. Avoid freezing the liquid for Ceravety Press & Cast or storing it in a cold place in winter.

2-1. VINTAGE LD PRESS

VINTAGE LD PRESS are lithium disilicate glass pressable ingots with high mechanical strength.

VINTAGE LD PRESS is available in 4 levels of translucency:

- T** High Translucency in 3 shades
- MT** Medium Translucency available in all VITA Classical shades*
- LO** Low Opacity in 5 shades
- MO** Medium Opacity in 3 shades

With the translucency of **MT** ingots as a standard, **T** ingots present higher translucency, while **LO** and **MO** ingots exhibit lower translucency

- **T-ingots** are highly translucent and ideally indicated for the fabrication of smaller restorations such as inlays, onlays and veneers with staining techniques. The T-ingots offer a truly lifelike adaption to the remaining tooth structure.
- **MT-ingots** are moderately translucent. Due to their translucency, these ingots are suitable for the cut-back, full build-up layering and staining techniques.
- **LO-ingots** are ideally suitable for customized abutments or strongly discolored preparations. The anatomical shape can be individually layered by full build-up or cut-back layering technique.
- **MO-ingots** are ideally suitable for the fabrication of frameworks on slightly discolored preparations. The cut-back or full build-up layering technique is recommended.

* VITA is a registered trademark of VITA Zahnfabrik, Bad Säckingen, Germany.



SHADE DETERMINATION

To achieve lifelike all-ceramic restorations the following guidelines and notes should be considered by the dentist and the laboratory.

The overall aesthetic result of an all-ceramic restoration is influenced by the following factors:

- Shade of the preparation (natural tooth, core build-up, abutment, implant)
- Shade of the restoration (framework, veneer, characterization)
- Shade of the cementation material

The optical effect of the preparation shade must not be underestimated during the fabrication of highly aesthetic restorations. For that reason, the shade of the preparation should be determined together with the desired shade of the final restoration in order to select the suitable ingot. This is of utmost importance with severely discolored preparations or build-ups in other than tooth shades. The dentist must determine the shade correctly and pass this on to the lab accurately. This ensures correct fabrication of the colored restoration for the desired aesthetic result.

Note A suitable shade adjustment is required for individual cases, but the following combinations are recommended.

COMBINATION CHART

Shade group	W			A					B			
Tooth shade	W1	W2	W3	A1	A2	A3	A3.5	A4	B1	B2	B3	B4
MT-ingot	W1	W2	W3	A1	A2	A3	A3.5	A4	B1	B2	B3	B4
T-ingot	-	-	-	1	1	2	2	3	1	1	2	3
LO-ingot	-	-	-	1	2	2	2	4	1	1	2	2
MO-ingot	-	-	-	1	2	2	2	-	1	1	2	2

Shade group	C				D		
Tooth shade	C1	C2	C3	C4	D2	D3	D4
MT-ingot	C1	C2	C3	C4	D2	D3	D4
T-ingot	1	3	3	3	1	1	3
LO-ingot	1	3	3	4	1	5	5
MO-ingot	1	3	3	-	1	-	-

Translucency		Technique			Indication					
		Staining	Cut-back	Layering	Veneer	Inlay	Partial crown	Anterior crown	Molar crown	Anterior bridge
High	T	•			•	•	•	•	•	
Medium	MT	•	•	•	•		•	•	•	•
Low Opacity	LO		•	•				•	•	•
Medium Opacity	MO		•	•				•	•	•

2-2. VINTAGE LD Porcelain

- VINTAGE LD porcelain is a low-fusing leucite containing silicate glass ceramic which offers optical properties of natural teeth due to its micro fine particle structure.
- The VINTAGE LD porcelain system includes Body porcelains based on the VITA Classical shades, Opaque Dentin, opalescent Enamel and Enamel Effect shades, Gum shades and Correction shades.

System and shades

System		Shades
Opaque Dentin (11 shades)		OD-A1, OD-A2, OD-A3, OD-A3.5, OD-A4, OD-B2, OD-B4, OD-C2, OD-C4, OD-D3, OD-N
Body (17 shades)		W3B, A1B, A2B, A3B, A3.5B, A4B, B1B, B2B, B3B, B4B, C1B, C2B, C3B, C4B, D2B, D3B, D4B
Enamel	Enamel (5 shades)	OPAL 56, OPAL 57, OPAL 58, OPAL 59, OPAL 60
	Enamel Effect (10 shades)	OPAL T, OPAL SL, T, BT, PT, GT, YT, OT, AM-Y, T-Glass
Gum (5 shades)		Gum-1, Gum-2, Gum-3, Gum-4, Gum-5
Correction (2 shades)		ADD-ON B, ADD-ON T

• Opaque Dentin

Designed in the same shades as Body porcelains, but slightly more opacious, Opaque Dentin is optimal for areas with limited space such as cervical or lingual areas of the anterior tooth or gingival parts of bridgeworks.

• Body

These porcelains are used to reproduce the dentine shade.

• Enamel

These porcelains transmit light similar to natural enamel (Opal effect).

• Enamel Effect

Translucent enamel effect shades without opalescence can be used individually or mixed with Enamel porcelains.

• Gum

For the reproduction of gingival shades.

• Correction

Can be used in small amounts for correction after contouring or self-glazing.

• VINTAGE Mixing Liquid HC

Mixing liquid for porcelains to obtain ideal viscosity for build-up.

Note

- Do not use this product in conjunction with PFMs and alumina porcelains.
- Do not use this product in conjunction with metal frames and ceramic frames.



VINTAGE LD PRESS / VINTAGE LD PORCELAIN COMBINATION CHART

Shade group	W	A				
Tooth shade	W3	A1	A2	A3	A3.5	A4
MT-ingot	W3	A1	A2	A3	A3.5	A4
T-ingot	-	1	1	2	2	3
LO-ingot	-	1	2	2	2	4
MO-ingot	-	1	2	2	2	-
Vintage LD Opaque Dentin	OD-A1:1 OD-N:1	OD-A1	OD-A2	OD-A3	OD-A3.5	OD-A4
Vintage LD Body	W3B	A1B	A2B	A3B	A3.5B	A4B
Vintage LD Enamel	OPAL 56:1 OPAL 57:1	OPAL 57	OPAL 58	OPAL 59	OPAL 59	OPAL 60

Shade group	B			
Tooth shade	B1	B2	B3	B4
MT-ingot	B1	B2	B3	B4
T-ingot	1	1	2	3
LO-ingot	1	1	2	2
MO-ingot	1	1	2	2
Vintage LD Opaque Dentin	OD-B2:1 OD-N:1	OD-B2	OD-B2:1 OD-B4:1	OD-B4
Vintage LD Body	B1B	B2B	B3B	B4B
Vintage LD Enamel	OPAL 57	OPAL 58	OPAL 59	OPAL 60

Shade group	C			
Tooth shade	C1	C2	C3	C4
MT-ingot	C1	C2	C3	C4
T-ingot	1	3	3	3
LO-ingot	1	3	3	4
MO-ingot	1	3	3	-
Vintage LD Opaque Dentin	OD-C2:1 OD-N:1	OD-C2	OD-C2:1 OD-C4:1	OD-C4
Vintage LD Body	C1B	C2B	C3B	C4B
Vintage LD Enamel	OPAL 58	OPAL 58	OPAL 59	OPAL 60

Shade group	D		
Tooth shade	D2	D3	D4
MT-ingot	D2	D3	D4
T-ingot	1	1	3
LO-ingot	1	5	5
MO-ingot	1	-	-
Vintage LD Opaque Dentin	OD-D3:2 OD-N:1	OD-D3	OD-D3:1 OD-B4:1
Vintage LD Body	D2B	D3B	D4B
Vintage LD Enamel	OPAL 57	OPAL 58	OPAL 59



2-3. VINTAGE Art LF

- VINTAGE Art LF are silicate glass based, pasty low fusing stains.
- VINTAGE Art LF are available in a variety of shades that are optimal for shade adjustment and characterization (refer to the chart below).
- VINTAGE Art LF can be used for adjusting the shade of VINTAGE LD PRESS, VINTAGE LD porcelain, VINTAGE ZR, VINTAGE MP, zirconia and other porcelain materials.

COLORS AND INDICATIONS

	Color		Example of use				
	Shade	Code	Shade adjustment	Cervical	Incisal	Gingival shade	Stain
1	Glazing Paste	GP					
2	Pink	P	•			•	
3	Yellow	Y		•			
4	Blue	Bl			•		
5	Orange	O	•	•		•	
6	Violet	V	•		•	•	
7	Green	Gr					•
8	Black	B			•		
9	White	W			•		
10	Dark-Red Brown	DR-Br		•			•
11	Brown	Br		•			•
12	Orange-Brown	O-Br		•			•
13	Black-Brown	B-Br		•			•
14	Khaki	K	•	•			•
15	Gray	G			•		
16	Blue-Gray	Bl-G	•		•		
17	Corn-Yellow	CY		•			
18	Rose-Pink	RP	•	•		•	
19	Wine-Red	WR		•		•	
20	Vanilla	Vn	•		•		
21	A Shade	AS	•	•			
22	B Shade	BS	•	•			
23	C Shade	CS	•	•			
24	D Shade	DS	•	•			



- VINTAGE Art LF Stain Liquid
Mixing liquid exclusively for VINTAGE Art LF. Mix with VINTAGE Art LF stains to obtain an ideal viscosity for an easy application.

Note

- Use a clean spatula or brush to dispense the material from the container. Water should be completely eliminated from the spatula or brush before use. Entrapped water causes air bubbles.
- Dispense only the necessary amount of paste and Stain Liquid. Do not put remaining material back into the container.
- The stain paste must be mixed with a clean spatula before dispensing on the palette or glass slab. Close the cap tightly immediately after dispensing.
- Use VINTAGE Art LF Stain Liquid to adjust the viscosity of the paste. Do not use water or any other mixing liquid.
- Use the materials immediately after dispensing.
- Do not touch the material with bare hands.

2-4. Package (set composition)

VINTAGE LD Basic Set

Body (6 shades, 15 g each):	A1B, A2B, A3B, A3.5B, B2B, B3B
Enamel (4 shades, 15 g each):	OPAL 57, OPAL 58, OPAL 59, OPAL 60
Enamel Effect (1 shade, 15 g each):	OPAL T
VINTAGE Art LF (5 shades, 3 g each):	Glazing Paste, A-Shade, B-Shade, Blue-Gray, White
VINTAGE Art LF Stain Liquid:	50 ml / 1 bottle
VINTAGE Mixing Liquid HC:	50 ml / 1 bottle

VINTAGE LD Enamel Effect Set

Enamel Effect (10 shades, 15 g each):	OPAL 56, OPAL SL, T, BT, PT, GT, YT, OT, AM-Y, T-Glass
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VINTAGE LD PRESS Basic Set

VINTAGE LD PRESS Ingot 3 g / pc. (8 shades, 5 pcs. each):	MT-A1, MT-A2, MT-A3, MT-B2, LO-1, LO-2, T-1, T-2
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CERAVETY PRESS & CAST

Powder:	100 g / 5 packs
Liquid:	100 ml / 1 bottle



VINTAGE LD Starter Set A2 / A3

VINTAGE LD PRESS

Ingot 3 g / pc. (3 shades): MT-A2 (2 pcs.), MT-A3 (2 pcs.),
T-1 (1 pc.)

VINTAGE LD

Body (2 shades, 15 g each): A2B, A3B
Enamel (2 shades, 15 g each): OPAL 58, OPAL 59
Enamel Effect (1 shade, 15 g): OPAL T

VINTAGE Art LF

Stain (2 shades, 3 g each): Blue-Gray, A-Shade
Glaze (1 shade, 5 g): Glazing Paste

CERAVETY PRESS & CAST

Powder: 100 g / 5 packs
Liquid: 100 ml / 1 bottle

VINTAGE Mixing Liquid HC: 50 ml / 1 bottle

VINTAGE Art LF Stain Liquid: 50 ml / 1 bottle

VINTAGE Art LF Effect Set

Stain (17 shades, 3 g each): Pink, Orange, Violet, White, Orange-
Brown, Black-Brown, Khaki, Gray,
Blue-Gray, Corn-Yellow, Rose-Pink,
Wine-Red, Vanilla, A-Shade, B-Shade,
C-Shade, D-Shade

Glaze (1 shade, 5 g): Glazing Paste

VINTAGE Art LF Stain Liquid: 50 ml / 1 bottle



3 Application

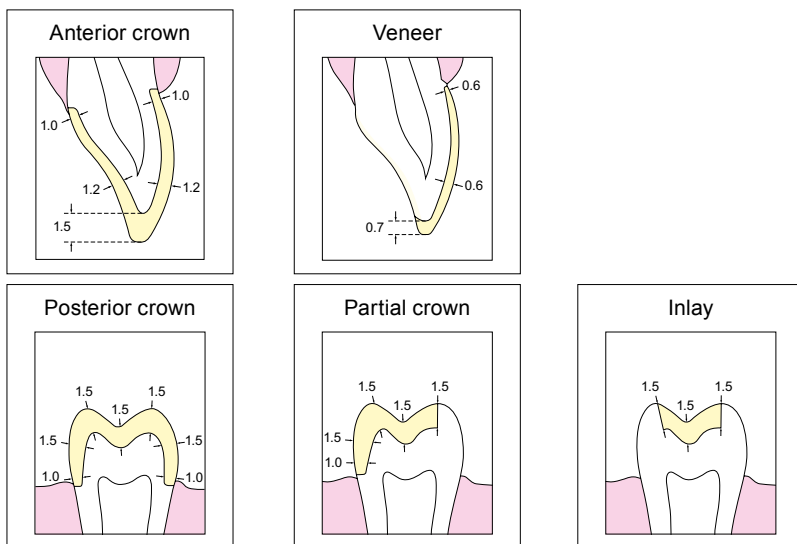
3-1. Preparation

The following criteria need to be checked and determined before creating a restoration with the VINTAGE LD PRESS System.

- Preparation
- Shade of the restoration
- Tooth shade or abutment shade
- Type of the restoration
- Thickness of the restoration
- Processing technique (staining, cut-back or layering)

3-2. Preparation guidelines / Minimum thicknesses of restorations

The preparation for VINTAGE LD 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.



All units are in mm.

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

Minimum Thickness Reference Table

		Veneer	Inlay	Onlay	Crown		3-unit bridge*	
					Anterior	Molar	Anterior	Premolar
Staining	Circular	0.3 - 0.6	1.0	1.5	1.2	1.5	1.2	1.5
	Incisal/ occlusal	0.4 - 0.7	1.0	1.5	1.5	1.5	1.5	1.5
Cut-Back	Circular	0.6	-	1.5	1.2	1.5	1.2	1.5
	labial/ occlusal	0.4	-	0.8	0.4	0.8	0.8	0.8
Layering	Circular	-	-	-	0.6	0.8	0.8	0.8
	Incisal/ occlusal	-	-	-	0.6	0.8	0.8	0.8
Supporting the tooth shape		-	-	-	reduced anatomical tooth shape			
Connector cross section		-	-	-	-	-	16 mm ²	16 mm ²

All units are in mm.

* When creating 3-unit bridges, the maximum width of the pontic should be 11 mm and of the premolar 9 mm.

Note

At least half of the restoration should be composed of pressed material of VINTAGE LD PRESS.



3-3. VINTAGE LD Techniques

Depending on personal or aesthetic requirements, the following techniques can be used with the VINTAGE LD all-ceramic system:

a) Staining Technique

The fully contoured restoration is created with VINTAGE LD PRESS. After contouring, VINTAGE Art LF 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.

b) Layering Technique (full build-up)

The frame design is created with VINTAGE LD PRESS, onto which Body and Enamel porcelains of VINTAGE LD are built up and fired. This technique is optimal for cases where a higher aesthetic result is required such as anterior restorations.

c) Cut-back Technique

The fully contoured restoration is created with VINTAGE LD PRESS and then reduced, onto which 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.



Posterior restorations made with staining technique



Anterior restorations made with layering technique (left) and staining technique (right)

3-4. VINTAGE LD PRESS / Staining Technique

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.

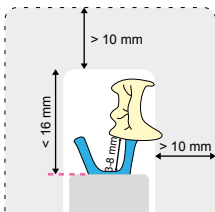
Weight of the wax pattern	Number of ingots	Ring size
0.6 g or less	1	For mixing 100 g investment material
1.2 g or less	2	For mixing 200 g investment material

2. Spruing

Attach the sprues in the direction the ceramic flows to and on the thickest part of the wax-up. This ensures smooth flowing of the ceramic during pressing.

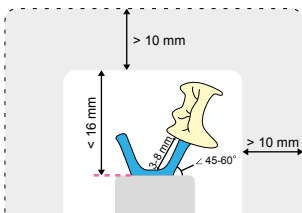
- Attach wax sprues to each waxed-up restoration and attach/wax the sprue to the edge of the ring base. The sprue should be 3.3 mm in diameter with a maximum length of 5 mm.
- Attach/wax the sprue to the edge of the ring base at an angle between 45° and 60°.
- Always keep a minimum distance of 5 mm between wax patterns, while maintaining a distance of 10 mm or more to the outer wall.
- When spruing only one restoration, a dummy sprue should be attached to the opposite side.
- When spruing several restorations, all wax patterns should be located around the same height in order to ensure that all are pressed at the same time.
- For bridges, connect one sprue to each individual pontic and abutment.
- Do not use too much surface treatment agent in order to avoid surface roughness of the pressed restoration.

Spruing with 100 g ring

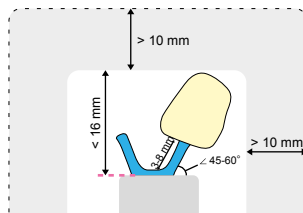


Inlays

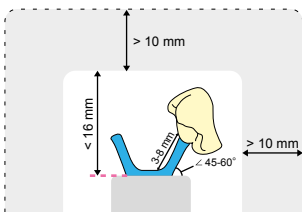
Spruing with 200 g ring



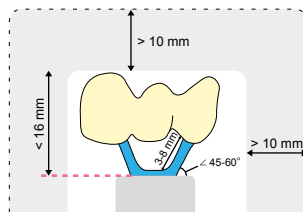
Inlays



Veneers, anterior crowns



Onlays, molar crowns



Anterior bridges





Attach the objects in the direction the ceramic flows to and on the thickest part of the wax-up



Keep a minimum distance of 10 mm or more to the outer wall

3. Investing

Investing with SHOFU Ceravety Press & Cast is recommended. Refer to the instructions for use of the investment material for detailed processing parameters.

- Refer to the table below for the optimal mixing ratio of liquid and water.*
- Mix liquid and water at the recommended ratio. Then, mix with the powder in vacuum for one minute. Avoid entrapping air bubbles when filling the investment material into the ring.
- Place the ring cap on top of the ring to keep the top surface and bottom surface parallel.

* Mixing ratio liquid/powder = 20 ml / 100 g

Indications	Amount of liquid and water (ml) for 100 g of powder	
	Liquid	Water
Crowns, bridges	8	12
Inlays, onlays	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

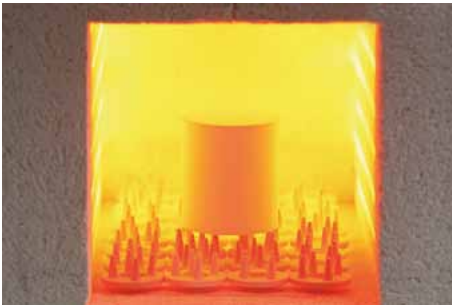


4. Preheating / Burnout

- Remove the base and the muffle former 15 minutes after the investing and allow the investment muffle to dry for another 5 minutes. Then, place the investment muffle in a preheated furnace at 850 °C. The use of disposable investment plunger is recommended (Size: 13 mm x 35 mm). The plunger should also be preheated in the furnace.
- After the furnace temperature is restored to 850 °C, hold the 100 g ring for 45 minutes and the 200 g ring for an hour.
- VINTAGE LD PRESS ingots should not be preheated.

Note

- 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

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 LD PRESS ingots and press disposable 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 LD Press ingot into the hot investment ring with the shade imprint facing upward.



Then place the disposable plunger into the hot investment ring.



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

Pressing procedure

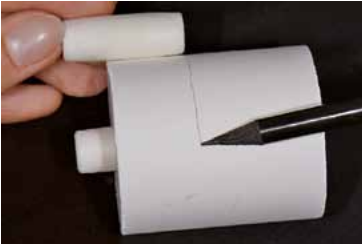
Ring size (g)	Vacuum start (°C)	Heat rate (°C/min)	Pressing temperature (°C)	Hold time (min)	Pressure (MPa)	Pressing time (min)
100	700	50-60	910	15	0.5 (max.)	Single crown: 2-3 3-unit bridge: 2.5-3.5
200			925	25		

Note

- The schedule above is for the Estemat press furnace. Please consider this data only as guiding values. 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.
- Do not reuse the remaining pressed material.

6. Divesting

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



Mark the length of the plunger

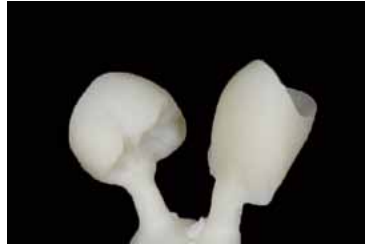


Separate the investment ring by using a separating disk

- Divest roughly with Al_2O_3 at a pressure of approx. 0.2-0.3 MPa (2-3 bar).
- Fine divesting is carried out with Al_2O_3 at a pressure of approx. 0.1-0.2 MPa (1-2 bar).
- Observe the blasting direction and distance to prevent damage to the objects during the divesting.



Rough divestment with Al_2O_3 at a pressure of approx. 0.2-0.3 MPa (2-3 bar)



Completely divested objects after fine divesting with Al_2O_3 at a pressure of approx. 0.1-0.2 MPa (1-2 bar)

Note

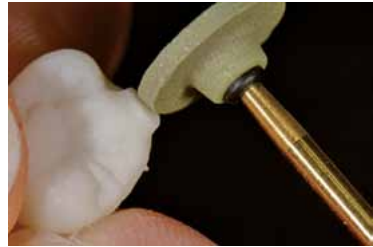
When using Ceravety Press & Cast investment, the reaction layer, which is created during the press procedure, should be removed after divesting. Alternatively, please use a concentration of less than 1% hydrofluoric acid to remove the remaining reaction layer.

7. Finishing

- Wet the cutting area and cut by using a fine diamond disk approx. 2 mm above the accumulation 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 (CeraMaster Coarse / SoftCut PA).
- Clean the restoration briefly with 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 3-7. "Staining Technique".



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



Smooth the attachment areas with Dura-Green DIA

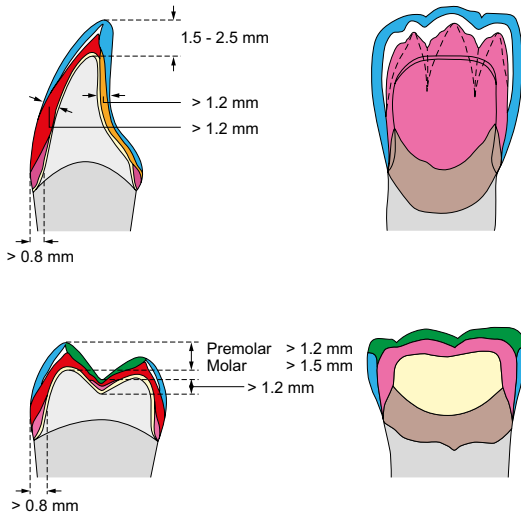
3-5. Layering Technique

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

The frame design is created with VINTAGE LD PRESS, taking into consideration that the layer thickness of the subsequent VINTAGE LD porcelain masses may not exceed 2 mm. Prepare the framework as described in paragraph 7. "Finishing" for the VINTAGE LD PRESS Staining Technique.

Translucency		Technique	Indication					
		Layering	Veneer	Inlay	Partial crown	Anterior crown	Molar crown	Bridge
High	T		•	•	•	•	•	
Medium	MT	•	•		•	•	•	•
Low Opacity	LO	•				•	•	•
Medium Opacity	MO	•				•	•	•

Layering diagram



For a secure bonding and foundation of the VINTAGE LD porcelain masses onto the VINTAGE LD PRESS frameworks, an application of Body or Opaque Dentin in the form of a wash firing or sprinkling of powder on the moistened surface is recommended.



Clean the framework briefly with Al_2O_3 at a pressure of approx. 0.1-0.2 MPa (1-2 bar)



For a secure bond apply a thin layer of Body or Opaque Dentin and fire



After firing, the surface appears matt

After firing, apply the VINTAGE LD porcelains according to on the described layering technique.



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

Firing schedule

LD Porcelain	Drying temp. °C	Drying min.	Pre-heating min.	Vacuum start °C	Inc. temp. °C/min.	Final temp. °C	Vacuum end °C	Hold min.
Wash	400	3-4	1	400	45	780	780	1.0
1. Body, Effect, Enamel	400	4-5	1-2	400	45	760-770	760-770	1.0
2. Body, Effect, Enamel	400	3-5	1-2	400	45	760-770	760-770	0.5
Glaze	450	3-5	1-2	–	55	750-760	–	1.0
Correction	400	3-5	1-2	400	55	720	720	0.5
Correction - Glaze	400	3-5	1-2	400	55	730	730	1.0

Note

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 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.



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 (CeraMaster Coarse / SoftCut PA).
- Clean the restoration briefly with 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 3-7. "Staining Technique".

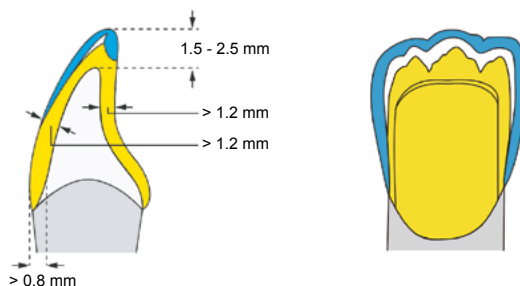


3-6. Cut-back Technique

The fully contoured restoration is created with VINTAGE LD PRESS and then reduced, onto which 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. Prepare the framework as described in paragraph 7. "Finishing" for the VINTAGE LD PRESS Staining Technique.

Translucency		Technique		Indication				
		Cut-back	Veneer	Inlay	Partial crown	Anterior crown	Molar crown	Bridge
High	T		•	•	•	•	•	
Medium	MT	•	•		•	•	•	•
Low Opacity	LO	•				•	•	•
Medium Opacity	MO	•				•	•	•

Layering diagram with Cut-back technique



For a secure bonding of the VINTAGE LD porcelain masses onto the VINTAGE LD PRESS frameworks, an application of Opal T or Opal Enamel in the form of a wash firing or sprinkling of powder on the moistened surface is recommended.



Clean the restoration briefly with Al_2O_3 at a pressure of approx. 0.1-0.2 MPa (1-2 bar)



For a secure bond, apply a thin layer of Opal T or Opal Enamel and fire



After firing, the surface appears matt

After firing, apply the VINTAGE LD porcelains according to the described layering technique.



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



Complete the restoration with Opal Enamel porcelain



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.

Firing schedule

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

Note

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 (CeraMaster Coarse / SoftCut PA).
- Clean the restoration briefly with 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 3-7. "Staining Technique".

3-7. Staining Technique

For staining of VINTAGE LD PRESS restorations use VINTAGE Art LF stains. Glaze firing is carried out with VINTAGE Art LF Glazing Paste. Depending on the situation, a stain or glazing firing can be performed together or separately one after another. After contouring and finishing, VINTAGE Art LF 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.

Translucency		Technique	Indication					
		Staining	Veneer	Inlay	Partial crown	Anterior crown	Molar crown	Bridge
High	T	•	•	•	•	•	•	
Medium	MT	•	•		•	•	•	•
Low Opacity	LO					•	•	•
Medium Opacity	MO					•	•	•

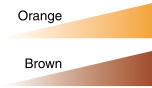
Refer to the following methods for shade adjustment and characterization.



1. Outer staining

Interproximal, cervical and occlusal applications (ridges, fissures and cusps)

To create an individual occlusal surface, Orange and Brown can be applied thinly to the centre of the occlusal area. Dark-Red Brown can be placed in the fissure by using a very small brush. The cusps can be emphasized with White, Orange or Blue. For interproximal and cervical areas, Shade Stains or Khaki can be selected depending on the clinical case.



Adjustment of occlusal center

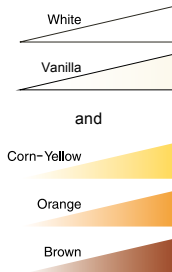


Adjustment of pits and fissures

Shade application of white bands and decalcifications

To create white or bright bands or decalcification areas, White, Vanilla or Corn-Yellow can be used individually or mixed with a brush or a fine instrument.

A 1:1 mixture is often required. It is also possible to stain these effects internally after the first firing of body.



White bands

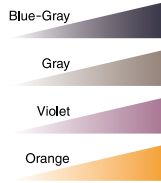


Decalcification



Shade application on the incisal area (adjustment of translucency)

To intensify the translucency of the incisal area and to adjust the light reflection, Blue-Gray, Gray, Violet or Orange can be thinly applied palatally. The frontal application of paste stains creates a stronger coloration.

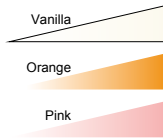


Adjustment of translucency

2. Inner staining

Designing of mamelon shapes and adjustment of translucency

If the mamelon structure is clearly expressed, Vanilla, Orange or Pink can be applied onto the mamelon structure to reduce the dominance.



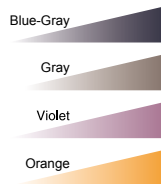
Adjustment of
mamelon structure



Emphasized
mamelon structure

Shade application on the incisal area (adjustment of translucency)

To intensify the translucency of the incisal area and to adjust the light reflexion, Blue-Gray, Gray, Violet or Orange can be thinly applied palatally. The frontal application of Paste Stains creates a stronger coloration.



Adjustment of translucency

3. Firing schedule

For inner porcelain staining

Drying °C	Drying min.	Vacuum start °C	Inc. temp. °C / min.	Final Temp. °C	Vakuu end °C	Hold min.
450	5	-	50- 60	715	-	0

For outer porcelain staining

Drying °C	Drying min.	Vacuum start °C	Inc. temp. °C / min.	Final Temp. °C	Vakuu end °C	Hold min.
450	5	-	50-60	760	-	0.5

For outer glazing of lithium disilicate

Drying °C	Drying min.	Vacuum start °C	Inc. temp. °C / min.	Final Temp. °C	Vakuu end °C	Hold min.
450	5	-	50-60	770	-	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.

Completed restorations



Molar with staining technique



Anterior tooth with staining technique



Anterior tooth with cut-back technique



Anterior tooth with layering technique (full build-up)

4 Specifications

VINTAGE LD PRESS

Description:	Lithiumsilicate glass ceramic
Product specification (accord. to ISO 6872):	MT-ingot
Thermal expansion:	$9.3 \times 10^{-6} \text{K}^{-1}$ (25-500 °C)
Transformation temperature:	535 °C
Bending strength:	377 MPa
Chemical solubility:	26 $\mu\text{g}/\text{cm}^2$

VINTAGE LD porcelain

Description:	Aluminosilicate glass ceramic
Product specification (accord. to ISO 6872):	Body porcelain
Thermal expansion:	$9.3 \times 10^{-6} \text{K}^{-1}$ (25-500 °C)
Transformation temperature:	512 °C
Bending strength:	115 MPa
Chemical solubility:	5 $\mu\text{g}/\text{cm}^2$

VINTAGE Art LF

Description:	Aluminosilicate glass ceramic
Product specification (accord. to ISO 6872):	Glazing paste
Chemical solubility:	5 $\mu\text{g}/\text{cm}^2$

VINTAGE

LD

Product name	Trouble	Cause	Solution	Tips
VINTAGE LD PRESS	Insufficient pressing	<ol style="list-style-type: none"> 1. Insufficient thickness of wax 2. Temperature of burnout 3. Press temperature too low 4. Insufficient pressing 5. Position of the multiple wax patterns in the ring is uneven 	<ol style="list-style-type: none"> 1. Ensure a minimum of 0.6 mm of wax 2. Raise burnout temperature 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
	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. Place the ring into the furnace not before investment material is completely hardened 2. Reduce the pressure 	Place the ring into the furnace within 20-60 minutes after investment
	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.
	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 3. Lower the pressing temperature 4. Mix investment material properly 	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 LF	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	Air released during firing	Fire in vacuum	When glaze material is applied in a thick layer and fired, the surface becomes whitish due to small bubbles remaining in the glaze paste. In that case, fire glaze paste in vacuum.



CE 0120



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