match Maker

Pressable for Zirconia Frameworks

PRESS to Zr

Perfect shades first time every time

Instruction Manual

THE QUEEN'S AWARDS FOR ENTERPRISE 2004

matchMaker PRESS to Zr

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Perfect shades
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Matchmaker PRESS to Zr for Zirconia Frameworks

Matchmaker PRESS to Zr is an amorphous glass/leucite ceramic that has been developed for pressing over zirconia frameworks. There are two translucencies of pellets to enable either a Full Layering or Press & Stain technique to be employed, depending on the clinical requirements. Extremely aesthetic results can be achieved when used in conjunction with Matchmaker Zr Layering Porcelain and Matchmaker CTE Fluorescent Stains.

Matchmaker PRESS to Zr is a component of the Matchmaker range of ceramic products. It enables CAD/CAM technology to be combined with the beauty of ceramics to produce incredible bridgework, 360°C all-ceramic porcelain margins and a complete ceramic solution for the patient. The dental laboratory has a system that is both highly reproducible and fast and simple in production taking advantage of the well proven lost wax technique. White, neutral or coloured zirconia copings can be used in the technique as well as both sintered and HIP.

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Matchmaker PRESS to Zr - for the Press & Stain Technique

Matchmaker PRESS to Zr Translucent pellets are designed both for Press & Stain and the majority of situations where only an incisal edge needs to be added to the pressing together with staining at the glaze stage where required. Use the complementary Matchmaker Zr Layering Porcelain and Matchmaker CTE Stains. The range of shades shown below includes three Hollywood bleach shades and is supplied in **standard 2g and 5g pellets.**

Product Selection Chart

Shade	HA0	A1	A2	A3	A3.5	A4	HB0	HB00	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Matchmaker Zr Interface	PI1	PI1	PI1	PI2	PI2	PI4	PI1	PI1	PI1	PI1	PI2	PI4	PI1	PI3	PI3	PI4	PI3	PI3	PI3
Matchmaker PRESS to Zr Pellet	THA0	TA1	TA2	TA3	TA3	TA3	THB0	THB00	TAB1	TB2	TB3	TB3	TC1	TC2	TC2	TC2	TD2	TD2	TD2
Matchmaker Zr Enamels	E6	E8	E8	E9	E9	E10	E6	E6	E7	E9	E9	E9	E10	E9	E9	E10	E10	E9	E9
Matchmaker CTE Stains					A	A						B			C	C		D	D

Matchmaker PRESS to Zr - for the Full Layering Technique

Matchmaker PRESS to Zr Standard pellets have higher chroma and less translucency and are suitable where a full layering technique is required. Such situations would occur when the underlying tooth is particularly dark in colour or the restoration needs additional colours to be added to match an adjacent tooth. Because a thin layer of Matchmaker LF Clear is applied under the enamels, great vitality can be attained. The range also includes three Hollywood bleach shades and is compatible with the whole range of Matchmaker Zr Layering Porcelain and is **supplied in standard 2g pellets.**

Product Selection Chart

Shade	HA0	A1	A2	A3	A3.5	A4	HB0	HB00	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Matchmaker Zr Interface	PI1	PI1	PI1	PI2	PI2	PI4	PI1	PI1	PI1	PI1	PI2	PI4	PI1	PI3	PI3	PI4	PI3	PI3	PI3
Matchmaker PRESS to Zr Pellet	HA0	A1	A2	A3	A3	A3	HB0	HB00	B1	B2	B3	B3	C1	C2	C2	C2	D2	D2	D2
Matchmaker Zr Dentine	HA0	A1	A2	A3			HB0	HB00	B1	B2	B3		C1	C2			D2		
Matchmaker Zr Enamels	E6	E8	E8	E9	E9	E10	E6	E6	E7	E9	E9	E9	E10	E9	E9	E10	E10	E9	E9
Matchmaker CTE Stains					A	A						B			C	C		D	D

Matchmaker CTE stains are available in the complete range of 12 shades.

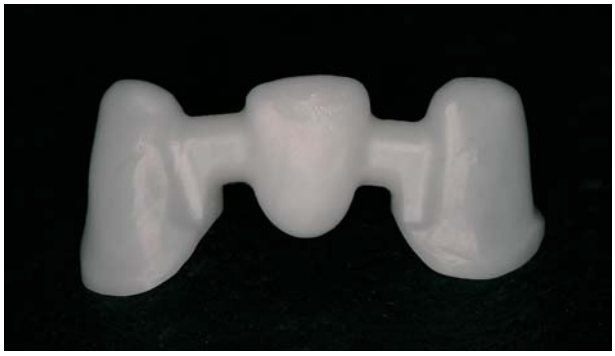
Framework Design

The milled zirconia framework must be designed to fully support the layering ceramic. Avoid sharp angles since soft rounded contours are required. Ensure that there is sufficient reduction on the palatal-occlusal surfaces and that the milled zirconia does not come into direct occlusal contact with opposing teeth.

Preparation of Framework

Avoid trimming the zirconia framework wherever possible. When it is necessary to do so, only use Matchmaker Zirconia Burs for adjustments.

Always follow the minimum thickness recommendations for framework and connectors stipulated by the framework manufacturer. Never trim the connectors.



Matchmaker Zr Interface Layer

It is recommended to apply Matchmaker Zr Interface layer, this improves the bond and also maintains the correct value and establishes the hue. Mix with modelling liquid and apply evenly over the whole coping as an **EXTREMELY** thin wash.

Care: Never use an alternative liner for this application since it may lead to short or long-term failure of the restoration or bridge.

Hint: Model Making
We recommend the use of chip resistant non-reflective die stone to which silicone and resins have not been added as reinforcement. For bridges, the positions of the dies in the model system must be completely stable. Use double positioning pins or similar. For long span bridge work an additional and separated model is recommended.

Hint: Recommendations for scanning models
Use an accurate split cast model system to ensure the dies seat accurately in the base without movement. Do not apply die spacers. Identify the margins by implementing a defined finishing line.

Waxing up

Weigh the zirconia framework both before and after waxing up and sprueing in order to calculate the weight of wax.
Isolate the model and fit the framework to it without applying pressure, ensuring that the interior of coping is kept free of wax. Depending on the technique, either wax up to full anatomical contour or allow space for subsequent application of layering porcelain. Allow a minimum thickness of 0.4mm for the press material. Use Matchmaker Ash free carving wax for residue free pressings.

Sprueing

Directly sprue as per photograph. The wax wire should be 3mm in diameter, 5-7mm long and should not taper towards the pattern. The patterns must be attached to the edge of the ring former, be at least 3mm from each other and positioned slightly divergent.

Pellet Size selection

Weigh the wax pattern with the sprue attached. Select pellets in accordance with table opposite. For units which are 0.2g or less (small inlays, veneers etc) a phantom sprue (a sprue without a restoration attached) with a height the same as the sprue unit may be used.

Wax Weight	Pellets Required	Ring Size
Up to 0.6g	1 x 2 g	200g (100g)
From 0.6 to 1.4g	2 x 2g	200g
From 1.4 to 1.7g	1 x 5g	300g
From 1.7 to 2.2g	3 x 2g	300g
Up to 2.8g	2 x 5g	300g

Investing

Spray the wax pattern using Matchmaker PRESS Surface Tension Relief Liquid and gently blow off any excess.

Choose the size of Matchmaker PRESS Pressing Ring for the case concerned and use Matchmaker PRESS Investment for pressable ceramics. Units should be at least 6mm from the sides of the ring and where possible a 200g ring or larger should be used. Fill with investment to just below the top of the ring. Place the top on to the ring, turning it gently until seated so that investment extrudes easily through the opening.

Hint: Apply a thin film of vaseline on the internal surface of the ring before investing.

After the investment has set (30 minutes) rotate the base of the former and remove. Gently press the investment from the Matchmaker PRESS pressing ring. Smooth the underside of the ring with a plaster knife. Place in a pre-heated burn-out furnace at 900°C – see investment directions for use.

Pressing

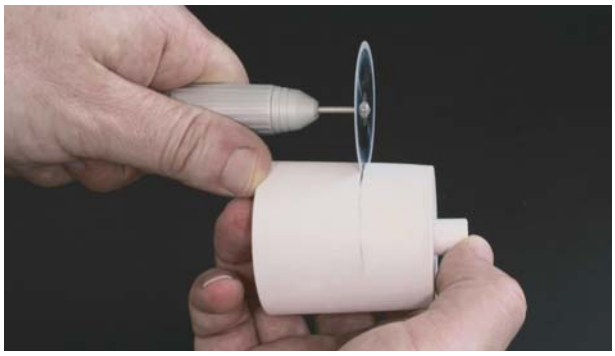
After pre-heating - see instructions for times and ring sizes. Select one or more pellets in the chosen shade.

Care: Pre-heat aluminium oxide reusable pressing rods. **Never** pre-heat Matchmaker PRESS to Zr Pellets or disposable pressing rods.

Devesting

Allow the investment to bench cool to room temperature.
Mark the length of a spare pressing rod on the mould and separate along the length of the mark. Carefully break apart the sections of the mould. Roughly blast with glass beads (50 microns) at four bars with a pen blaster, then gently again with the glass beads at 2 bar pressure.

Care: Never use aluminium oxide for blasting.



Finishing

Carefully cut off the sprues with a Schottlander Super Flexible Diamond disc at low speed and pressure. To reduce heat the material may be cut under a water jet or through a wet sponge.

Note: Use a steam cleaner to finish cleaning, after trimming.

DO NOT USE ULTRASONIC BATHS.

Full Layering Technique

Ensure that there is sufficient space for full layering to take place. The use of Matchmaker Zr Layering Porcelain is recommended since the two products have been specifically designed for use together. Matchmaker CTE Fluorescent Stains can be used both for internal and external staining. Follow firing temperatures in instruction manual for both products.

A second build-up and firing may be carried out when required. Small accentuating highlights can be added using stains.

Firing should be carried out on Simplifire pins, taking care that the shoulder does not touch the firing pin. The final restoration can be glazed using Matchmaker Zr Glaze Powder followed by polishing as required.

Hint: For best results when firing use Simplifire Trays and Matchmaker PRESS Refractory Die Syringe material.

Press & Stain Technique

Using the Matchmaker PRESS to Zr Translucent Pellets the pressing will have been carried out either to full anatomical contour or allowing for enamel build-up on the incisal edge followed by staining and glazing as required.

Build-up the enamel edge if required using the Matchmaker Zr Layering Porcelain as per table on page 2 and fire as instructions on page 7.

Matchmaker CTE Fluorescent Stains may be laid internally and fired with the enamel or else fired together when glaze firing. Finish with a thin wash of Matchmaker Zr Glaze Powder mixed with Glaze & Stain Liquid. See instruction table on page 7 for temperatures.

Firing Instructions for PRESS to Zr - Press & Stain Technique

Firing Temperatures

	Start temp °C	Min dry time	Temp rise °C /min	Vacuum	High temp °C	Hold time without vacuum	Appearance
1st CTE Stain firing	450	4 min	45	-	810	1 min	-
2nd CTE Stain firing	450	4 min	45	-	800	1 min	-
Glaze firing without glaze powder	450	4 min	45	-	800	1 min	Glaze

Firing Instructions for PRESS to Zr - Full Layering Technique

Firing Temperatures

	Start temp °C	Min dry time	Temp rise °C /min	Vacuum	High temp °C	Hold time without vacuum	Appearance
Zr Interface	450	2 min	55	Yes	900	1 min	Slight sheen
1st Dentine	450	6 min	45	Yes	810	1 min	Slight sheen
2nd Dentine	450	6 min	45	Yes	800	1 min	Slight sheen
Glaze with glaze powder	480	2 min	45	-	790	1 min	Glaze

All temperatures given are based on an accurately calibrated vertical muffle furnace. Individual furnaces and operating conditions vary.
If furnace has previously been used with metal alloys, decontaminate before use. Shake all powder bottles before use.

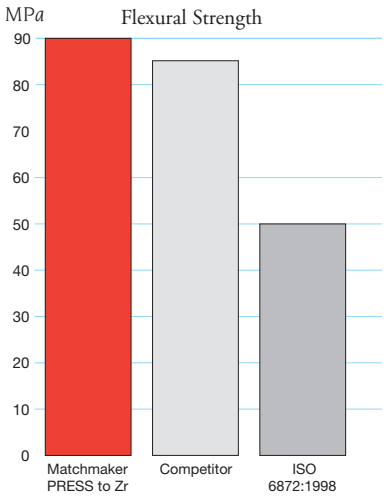
Press Furnace Temperatures

	100g Ring	200g Ring	300g Ring
Stand by temperature	800°C	800°C	800°C
Sealing time	0 mins	0 mins	0 mins
Heat rate	60°C/min	60°C/min	60°C/min
Vacuum start tempearture	800°C	800°C	800°C
Vacuum hold	30 mins	32 mins	37 mins
Vacuum 100%/730mm	730mm	730mm	730mm
Firing temperature	950°C	980°C	1010°C
Holding time	20 mins	20 mins	20 mins
Final temperature	950°C	980°C	1010°C
Pressing time	10 mins	12 mins	12 mins

Physical Properties

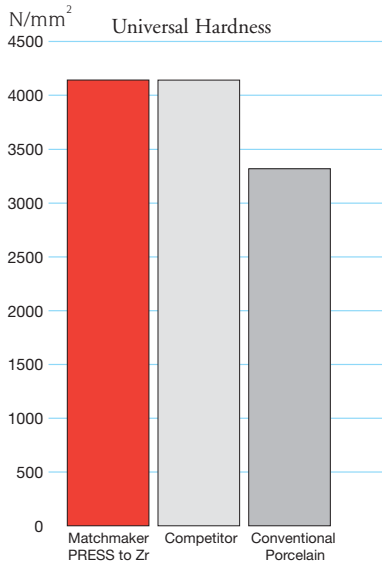
Flexural Strength

Flexural strength is measured in accordance with EN ISO 6872:1998 and is carried out by subjecting the specimen to 3 - point bending. This test gives a measure of the ceramic material's resistance to fracture as well as its elastic and plastic properties. The results obtained are dependent on chemical composition, particle size analysis and firing cycle used.



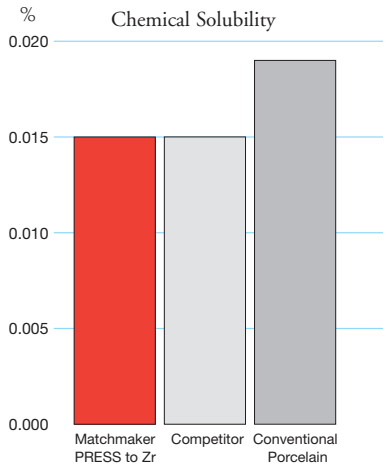
Universal Hardness

The surface hardness of a ceramic is a measure of it's resistance to deformation. Universal Hardness HU is measured using an instrument with a diamond tip. It is a function of applied force and indentation depth under effective load and allows the hardness of a wide variety of materials to be compared.



Chemical Solubility

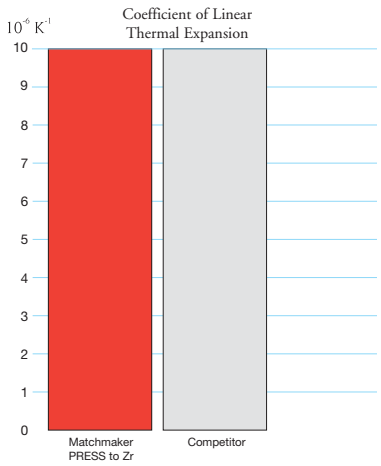
Chemical solubility is a measure of the durability of the ceramic and whether the surface of the restoration will degrade under the hostile conditions of the mouth. Matchmaker PRESS to Zr was tested in accordance with EN ISO 6872:1998 together with a competitor product and a conventional bonding porcelain and was shown to have excellent properties.



Physical Properties 2

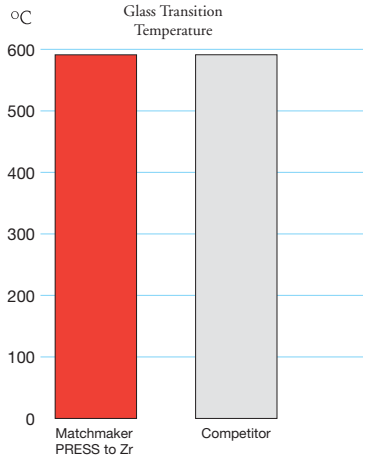
Coefficient of Linear Thermal Expansion

Although it is always thermal expansion which is quoted, it is in fact primarily the contraction on cooling that this measure predicts. Ideally the pressable material should have a contraction slightly greater than that of the underlying zirconia coping which puts it under compression and thus giving greater stability to the composite structure. The coefficient of expansion is measured between 25 and 500°C in accordance with EN ISO 9693:2000.



Glass Transition Temperature

The transition of a glass from an elastic to a viscoelastic phase is defined by T_G the glass transition temperature. Above T_G stresses are relaxed as the material flows but beneath it considerable stresses can be built up within the material. Hence thermal expansion is always measured below T_G. The glass transition temperature is measured in accordance with EN ISO 9693:2000.



Other Physical Properties

Porosity of fired ceramic complies with EN ISO 9693:2000

Matchmaker PRESS to Zr has been tested and conforms to EN ISO 6872:1998

matchMaker MC
Metal Ceramic

Matchmaker MC is a complete bonded crown system, offering levels of quality and consistency that are greatly superior to those of any previous system. Matchmaker MC allows you to create beautiful, highly individual crowns that sparkle with vitality and natural fluorescence. Thanks to the systems components, a perfect match is guaranteed time after time.

matchMaker PRESS
Pressable Ceramic System

Matchmaker Press is designed for "all-ceramic" crowns as well as inlays, onlays and veneers. Its special leucite and glass matrix imparts strength in excess of the requirements of EN ISO 6872 together with optical properties which blend seamlessly with the natural tooth. Within the Matchmaker Press system are many ancillary products that help both dentists and technicians to obtain superb results time after time.

matchMaker LF
Low Fusing Ceramic

Matchmaker LF has been developed both for metal ceramic crowns and bridges and also as a veneering ceramic on top of Matchmaker Press ceramic cores, inlays, onlays and veneers.

Matchmaker LF is compatible with all standard coefficient alloys and with a special leucite and glass matrix imparts strength in excess of the requirements of EN ISO 9693. This special matrix is also less abrasive to the opposing dentition than traditional feldspathic porcelains.

matchMaker ALX
Ceramic for Aluminium Oxide

Matchmaker ALX is a leucite free veneering ceramic that has been specially formulated for bonding to aluminium oxide copings. The dentine fires at 980ºC and shows remarkable vitality and colour veracity in the whole of the shade range A1 to D4 and the latest bleach shades HA0, HB0 and HB00.

matchMaker Zr
Ceramic for Zirconia Frameworks

Matchmaker Zr has been specially developed for layering on top of zirconia bridges and copings. Coefficient of expansion, shades and light handling properties have been carefully developed to give superb results over the whole range of such frameworks. The dentine fires at 810ºC and shows remarkable vitality and colour veracity in the whole of the shade range A1 to D4 and the latest bleach shades HA0, HB0 and HB00.

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