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ceramotion® Ti

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Handling Tips

DENTAURUM

Dear Customer,

In purchasing Dentaurum products for ceramic processing, you have selected high-quality products which are ideally adapted to one another for efficient and attractive ceramic work.

An essential precondition for working with ceramics is a high degree of precision and close adherence to the processing instructions.

This brochure contains a number of practical tips when working with our products.

Should any problems occur when you are using our products, we are here to assist you in solving them.

Our technical advisors will be pleased to help you with any questions regarding the use of our products **Hotline +49 72 31 / 803 - 410**.

Information and instructions for using Dentaurum ceramic systems can be found on the internet at **www.dentaurum.de**.

Please note!

- The accurate firing temperature of your ceramic furnace is essential for producing good ceramic work. The temperature of your furnace should be checked regularly (see indications on page 4).
- The furnace chamber should be cleaned from time to time in order to avoid contamination of the ceramics (see indications on page 4).
- Keep furnace closed. Always close furnace after use or switch to night mode to prevent absorption of moisture.
- The indications on page 4 are particularly important for the successful fabrication of temporary restorations with ceraMotion® Ti.

Contents

Handling tips for ceraMotion® Ti ceramics

Furnace cleaning

The ceramic furnace must be cleaned regularly to remove contamination from the inner surfaces of the firing chamber.

We recommend:

- Clean furnace with carbon fiber chips (REF 260-317-00)
- Include firing trays in cleaning
- Base temperature: 600 °C/1112 °F
- Drying time: 1 min
- Heat rate: 100–120 °C/min / 212–248 °F/min
- Final temperature: 1050 °C/1922 °F
- Holding time: 10 min

Run firing program without vacuum. Follow the furnace manufacturer's instructions for use!

Tips for ceraMotion® Ti ceramics

No.	Problem	Cause	Solution
1	**Shades too light and not transparent enough.** **Ceramic material porous.**	■ Pre-heating temperature too high. ■ Final temperature too low. ■ Vacuum was turned on too late. ■ No vacuum or insufficient vacuum during program.	In order to adjust the firing temperature of your furnace, we recommend a test firing, as this is the only way to determine the correct firing sequence. For that purpose, use Transpa T material mixed with Modelling Liquid (REF 254-000-10) and run the first dentin firing. Put the test piece on platinum foil, not on firing cotton, as this may cause dulling. The temperature of the furnace is correct, when the test piece is clear, translucent and has sharp edges. If the final temperature is too high, the test piece has a glossy appearance and the edges are not sharply defined. If the final temperature is too low, the test piece appears milky white. According to your result, please raise or lower the final temperature in steps of 10 °C/50 °F. Fire a new test piece, check vacuum.
		■ Unsuitable separating agent and/or separating layer too thick.	Do not use baby oil or similar material as separating agent.
		■ Moisture in the furnace chamber.	Keep furnace closed over night to avoid moisture in the furnace chamber.
		■ Ceramic repeatedly mixed with modelling liquid. ■ Contaminated cleaning water for brush.	■ Use distilled water only to re-mix ceramics. ■ Exchange cleaning water for brush.
2	**Ceramic surfaces too rough.**	■ Final temperature too low.	■ See No. 1.

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No.	Problem	Cause	Solution
3	**Ceramic surfaces too smooth.** **Edges and contours lose shape.**	■ Final temperature too high.	■ See No. 1.
4	**Poor adhesion.**	■ Final temperature too low.	■ See No. 1.
		■ ∂ case layer not completely removed.	■ Completely remove ∂ case layer with cross-toothed carbide burs specially designed for titanium works.
		■ The ceramic furnace is contaminated with oxides.	■ Carry out cleaning firing with firing trays. Remove damaged sockets and contaminated furnace lining.
		■ Bonder application is not optimal.	■ The bonder must cover the complete surface and present a high-gloss appearance.
		■ Contaminated blasting material.	■ Use clean aluminium oxide (single-use blasting material), 125-250µm and with 2-3 bar air pressure.
		■ Pickling.	■ Do not pickle titanium frame-works.
5	**Chipping during dentin firing.**	■ ∂ case layer not completely removed.	■ Completely remove ∂ case layer wit cross-toothed carbide burs specially designed for titanium works.
		■ Standby temperature too high.	■ Reduce standby temperature (depends on furnace).
		■ Pre-drying time too short.	■ Prolong pre-drying times.
		■ Measurement reading does not always reflect actual chamber temperature (dependent on position of thermocouple and heat radiation).	■ Lift position should be at lowest position at start. Do not place workpiece on firing tray too early. Prolong pre-drying times for larger objects.

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No.	Problem	Cause	Solution
6	**Cracks, basal or at shoulder.**	■ Oily separating agent.	■ Use separating agent for low-fusing ceramics.
7	**Length cracks after firing.**	■ Ceramic material had not been separated down to opaque before first dentin firing.	■ To control shrinkage, separate build-up down to opaque before first firing.
8	**Bubbles in ceramic material.**	■ Dirt particles embedded. ■ Separating agent on ceramic surface. ■ Poorly-cleaned surfaces (grinding particles act as separating layer). ■ Use of metal spatulas for mixing. ■ Sandblasted between firings with corundum and with too much pressure.	■ Cover material. ■ Use clean water to clean brush. ■ Make sure to provide a clean work place. ■ Use suitable separating agents. ■ Clean surfaces thoroughly after grinding. ■ Use glass or agate spatulas for mixing to prevent metal abrasion. ■ Avoid sandblasting.
9	**Bubbles when firing temporary restorations.**	■ Worn restorations were not dried properly.	■ Clean the restoration. The surface must be roughened or sandblasted. Place in the pre-heating furnace at room temperature and raise 5 °C/41 °F per minute to 600 °C/1112 °F. Minimum holding time: 2–4 hours. Start correction firing.

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No.	Problem	Cause	Solution
10	**Bubbles originating from framework.**	■ Trapped argon. ■ Incorrect framework conditioning. ■ Speed (revolutions) too high. ■ Too much pressure during finishing. "Smearing" processing causes unfavorable changes on the framework surface. ■ Unsuitable grinding tool. ■ Highly contaminated furnace.	■ Bubble-free casting (x-ray). ■ ∂ case layer must be removed completely. ■ Use only carbide burs. Grind in one direction only. Carefully sandblast the surface of the framework with single-use blasting material using aluminium oxide (125–250 µm) and 2–3 bars air pressure at 45° angle. Then steam-clean and allow to passivate for 10 minutes in the air. ■ Regularly carry out furnace cleaning firing with carbon fiber chips (REF 260-317-00). **Furnace cleaning:** – Include firing trays in cleaning – Base temperature: 600 °C – Drying time: 1 min – Heat rate: 100–120 °C/min /212 – 248 °F / min – Final temperature: 1050 °C/1922 °F – Holding time: 10 min – Run firing program without vacuum – Follow furnace manufacturer's instructions for use!
		■ Bonder and/or opaque not sufficiently pre-dried. ■ Use of diamonds, ceramic bonded grinding tools for finishing.	■ Check pre-drying time and temperature. ■ Only use clean, cross-toothed carbide burs specially designed for titanium, see No. 4 (adhesion).

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No.	Problem	Cause	Solution
11	**Cracks after firing**	■ Incorrect framework design. ■ Framework completely covered with ceramic material. ■ Bonder too thick. ■ Oxide firing.	■ Framework design should be a reduced anatomical tooth form. Follow the minimal thickness indications. ■ Fabricate garlands or escape surfaces on framework to allow heat dispersion. ■ Apply a thin layer of bonder on the framework; cover the complete framework. ■ No oxide firing.
12	**Cracks and chipping in cervical area.**	■ Corrections of framework from interior, grinding too rough when adjusting fit. ■ Unfavorable die preparations. ■ Test-wearing of workpiece without bonding agent (cement). ■ Rough removal after testing framework fit. ■ Margin area is too thin.	■ Try-in framework fit in cases of inaccurate impressions or unfavorable preparations. ■ Defined preparation limits, chamfer preparations if necessary. ■ Avoid provisional wearing of non-cemented workpieces. ■ Use "crown remover" only in interdental area. ■ Metal framework should not be less than 0.3 mm thick.
13	**Late cracking of ceramics.**	■ Heavy polishing, possibly with wrong instruments (do not use rubber polishers suitable for gold, these generate too much heat on titanium). ■ Heavy sandblasting of inner crown, possibly with excessive pressure and wrong grain size. ■ Excessive steam-cleaning at certain points.	■ Use finishing instruments specially designed for surface treating of titanium (e.g. rematitan® finishing kit, REF 135-500-00). Observe correct sequence of finishing operations (from rough to fine). ■ Blasting with 50 µm, pressure below 2 bars, with aluminium oxide or glass beads. ■ Avoid thin areas on framework – minimum 0.3 mm. ■ Steam-clean workpiece carefully. ■ Run dentin firing with vacuum stop at 20°C below final temperature.

Notes

Notes

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