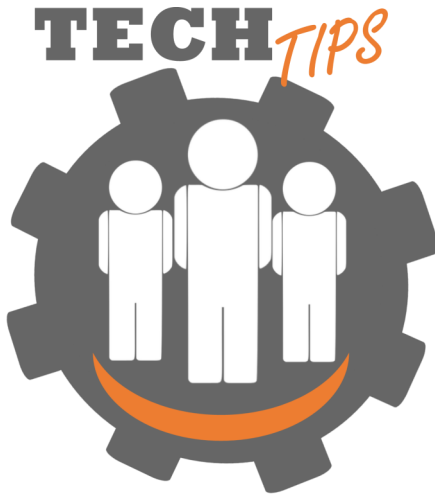


DENTAL CROWN & BRIDGE DEFECT ANALYSIS GUIDE



R&R recommends utilizing the following problems, causes and solutions to guide you through any difficulties you may encounter with dental crown and bridge (C&B) investments.

This information is intended to help you troubleshoot these problems.

Should your issue persist, please contact our technical team at Technical@ransom-randolph.com for additional assistance.

Problem: Miscast (Short Casting / Round Margins / Incomplete Casting)

Cause	Solution
<ul style="list-style-type: none">Ring not hot enough	<ul style="list-style-type: none">Raise temperatureCheck oven calibration
<ul style="list-style-type: none">Alloy not hot enough	<ul style="list-style-type: none">Check torch tip & fuel pressurePre-heat crucible in ovenUse casting flux
<ul style="list-style-type: none">Insufficient alloy	<ul style="list-style-type: none">Increase amount of alloy used
<ul style="list-style-type: none">Machine not wound enough	<ul style="list-style-type: none">Add more winds
<ul style="list-style-type: none">Casting arm stopped	<ul style="list-style-type: none">Allow to stop on its own
<ul style="list-style-type: none">Used solid plastic sprue	<ul style="list-style-type: none">Use hollow sprue or wax
<ul style="list-style-type: none">Glaze not ground off ring top	<ul style="list-style-type: none">Eliminate glaze
<ul style="list-style-type: none">Debris fell into sprue hole	<ul style="list-style-type: none">Keep sprue former face down
<ul style="list-style-type: none">Casting spring weak	<ul style="list-style-type: none">Change spring

Problem: Holes Throughout Casting

Cause	Solution
<ul style="list-style-type: none">Mold heated too high for alloy used	<ul style="list-style-type: none">Check alloy manufacturing temperature



RANSOM & RANDOLPH

3535 Briarfield Boulevard | Maumee, OH 43537 USA
800.800.7496 | 419.865.9497 | 419.865.9997 (FAX)
www.ransom-randolph.com



Ransom & Randolph GmbH
Leipziger Straße 40 | 04571 Rötha Germany
+49 342 06373999

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Problem: Flash (Fins)

Cause	Solution
<ul style="list-style-type: none">• Ring over heated	<ul style="list-style-type: none">• Lower oven temperature
<ul style="list-style-type: none">• Investment over vibrated	<ul style="list-style-type: none">• Vibrate enough to fill ring
<ul style="list-style-type: none">• Too much liquid to powder	<ul style="list-style-type: none">• Reduce liquid amount
<ul style="list-style-type: none">• Invested ring in two parts	<ul style="list-style-type: none">• Invest ring all at one time
<ul style="list-style-type: none">• Mold dropped	<ul style="list-style-type: none">• Locate machine/ring closer
<ul style="list-style-type: none">• Bench set time too short	<ul style="list-style-type: none">• Allow more time
<ul style="list-style-type: none">• Raised temperature too fast	<ul style="list-style-type: none">• Check rate of climb
<ul style="list-style-type: none">• Mold split	<ul style="list-style-type: none">• Make ring liner thicker• No ring liner used

Problem: Rough Casting

Cause	Solution
<ul style="list-style-type: none">• Mold over heated	<ul style="list-style-type: none">• Lower temperature/hold time
<ul style="list-style-type: none">• Wrong powder/liquid ratio	<ul style="list-style-type: none">• Measure both powder/liquid
<ul style="list-style-type: none">• Investment over vibrated	<ul style="list-style-type: none">• Vibrate enough to fill ring
<ul style="list-style-type: none">• Debubbler left on wax	<ul style="list-style-type: none">• Dry debubbler on wax

Problem: Porosity

Cause	Solution
<ul style="list-style-type: none">• Too much old alloy used	<ul style="list-style-type: none">• Use maximum of 40% old
<ul style="list-style-type: none">• Over heated alloy	<ul style="list-style-type: none">• Reduce melt time/cast sooner• Heat crucible with ring in oven• Use casting flux
<ul style="list-style-type: none">• Over heated ring	<ul style="list-style-type: none">• Lower oven temperature

Problem: Loose Fit

Cause	Solution
<ul style="list-style-type: none">• Wrong liquid/water ratio	<ul style="list-style-type: none">• Increase water ratio



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Problem: **Tight Fit**

Cause	Solution
<ul style="list-style-type: none">Wrong liquid/water ratio	<ul style="list-style-type: none">Increase concentrate ratio

Problem: **Warped Casting**

Cause	Solution
<ul style="list-style-type: none">Ring quenched in water	<ul style="list-style-type: none">Bench cool ring
<ul style="list-style-type: none">Tension caused by sprues	<ul style="list-style-type: none">Use horizontal runner bar



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