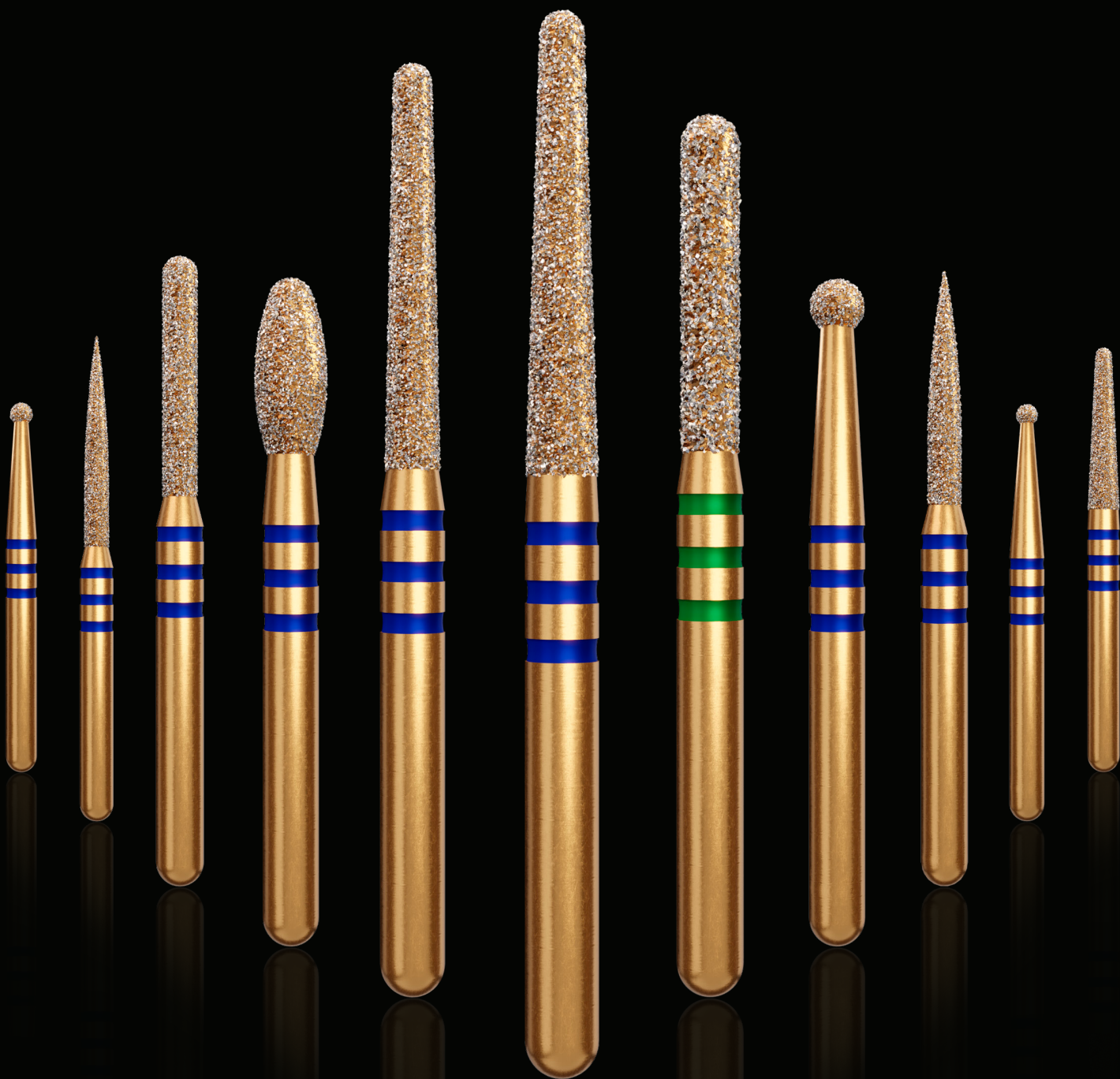


Alpen Z-Rex

Zirconia diamonds



 COLTENE

ALPEN Z-REX

DIAMOND INSTRUMENTS FOR ZIRCONIA AND OTHER HIGH PERFORMANCE CERAMICS

INSTRUMENT SELECTION: KEY TO LONG-TERM SUCCESS

The popularity of zirconia and high-resistant ceramics restorations has been steadily increasing each year. Numerous studies have documented complication rates ranging from 5% to 16% after five years of utilizing zirconia and lithium disilicate restorations.^{1,2,3} The primary issues observed in zirconia oxide restorations are chipping and fractures, as zirconia is particularly prone to microcracks.¹ Consequently, selecting appropriate **instruments for adjusting**

is crucial to ensuring the **longevity** of your restorations. This is critical due to the potential impact on the physical properties of zirconia and the overall clinical success of the prosthesis. The selection of a bur, taking into account the necessary amount of occlusal adjustment, grinding efficiency, and the requirement for polishing, plays a pivotal role.¹²

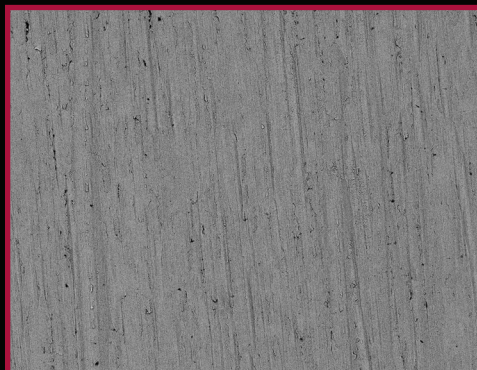
Do you know which instruments are recommended for intraoral adjustments of zirconia?

Multiple studies have indicated that **coarse diamond burs** and **carbides**^{4,8,13,22} can compromise the zirconia structure, **inducing microcracks**⁶ on the surface and **reducing its flexural strength**.⁵ The loading process may further propagate microcracks, leading to the fracture of zirconia restorations.^{14,16} Additionally, coarse instruments leave a **rough surface** that cannot be effectively

polished with polishers.¹⁰ This rough surface not only **increases abrasion** on opposing teeth¹¹ but also **retains bacteria**.¹⁰

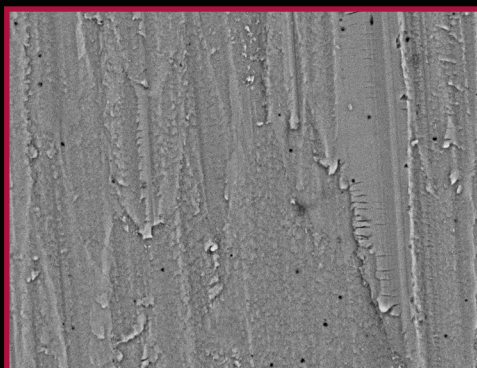
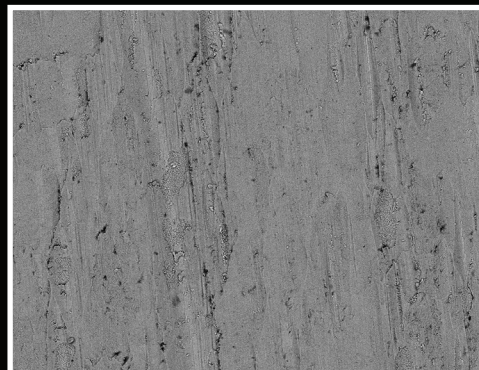
SEM pictures highlight that not all diamond burs for zirconia are suitable for zirconia adjusting, emphasizing the importance of choosing the right tools for optimal results.

Alpen Z-Rex Blue Grit

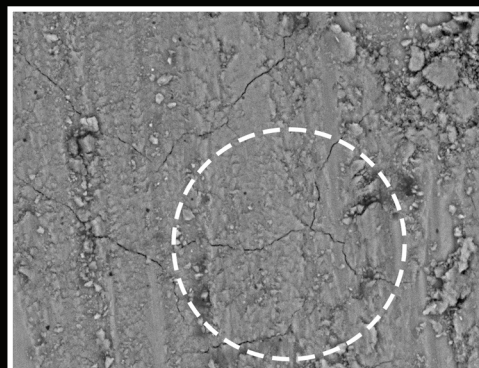


x 120

Competitor Zirconia burs



x 1500



1 U.S. Patent No. 10,716,644 B2

2 Internal Tests

3 Test results King's College London on file

Z-REX APPLICATION

Intraoral and Extraoral Adjustment

Our recommendation is to use **Z-Rex with blue grit (M, 64 - 126 µm) for zirconia adjusting**. These instruments have a less aggressive grit, resulting in a **smooth zirconia surface** without microcracks.¹⁷ Following the adjustment, it is **essential to polish** the surface using polishers^{9,12} specifically designed for zirconia to **increase flexural strength**¹⁵ and **reduce antagonistic enamel wear**.^{7,11} Polished monolithic zirconia crowns induce less wear on the opposing enamel compared to glazed monolithic zirconia crowns.²¹



Z-Rex



379Z

862Z

863Z

Zirconia Plus - Smoothing



RP230379RA

RP230381RA

60022205

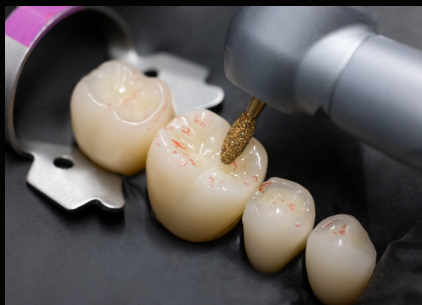
Zirconia Plus - High Luster Polishers



RP230391RA

RP230393RA

60022206



Endo Access and Crown Cutting

- Use the **green** and **blue Z-Rex** for **zirconia crown cutting** and round burs for creating **endo access**. Coarse (green) instruments might show **improved efficiency** over longer cutting periods (>5 min) than medium (blue) instruments because of larger abrasive particles and a higher grit load on the substrate.²³
- Ensure adequate water cooling is consistently applied (at least 50ml/min).
- Use low contact pressure (1.5N).
- Do not surpass the recommended rotation speed (see following page for details).
- We recommend using the Red Contra Angle due to its higher torque, which is required for crown cutting procedures.



801Z-012

801Z-014

801Z-018



850Z-016

850Z-018

856Z-018

881Z-014

881Z-016C



ALPEN Z-REX ORDER INFORMATION

Endodontic Access

Round



Shape No.	801Z	801Z	801Z
Head Dia. 1/10 mm	012	014	018
Head L in mm	-	-	-

FG/ 314 - 5 pack

M	REF	60031899	60031901	60031903
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Crown Adjustment

Football



Shape No.	379Z
Head Dia. 1/10 mm	023
Head L in mm	5

FG/ 314 - 5 pack

M	REF	60031813
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Flame



Shape No.	862Z	863Z
Head Dia. 1/10 mm	014	014
Head L in mm	8	10

FG/ 314 - 5 pack

M	REF	60032467	60032481
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Crown Cutting

Round End Taper



Shape No.	850Z	850Z	856Z
Head Dia. 1/10 mm	016	018	018
Head L in mm	10	10	8

FG/ 314 - 5 pack

M	REF	60032241	60032243	60032379
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Round End Cylinder



Shape No.	881Z	881Z
Head Dia. 1/10 mm	014	016
Head L in mm	8	8

FG/ 314 - 5 pack

C	REF	60032621
M	REF	60032619



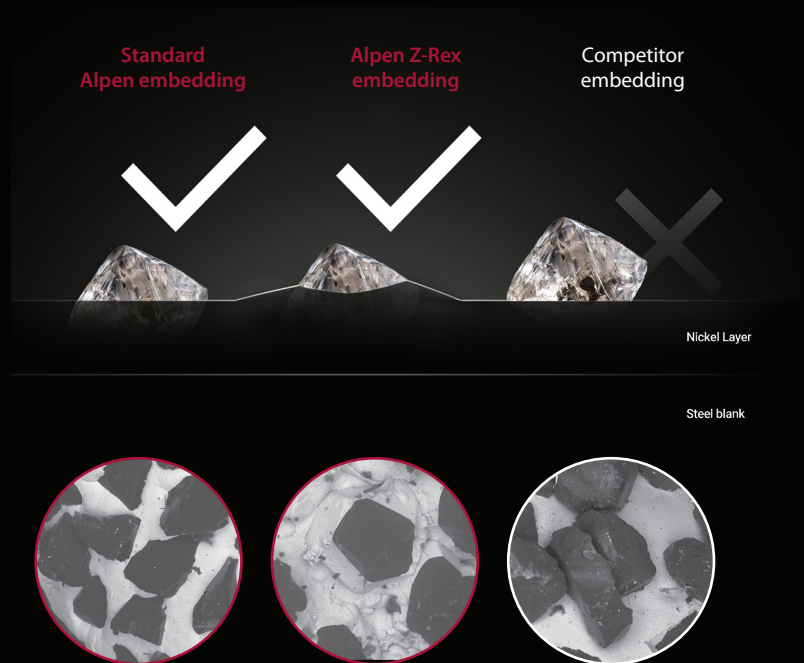
Head Dia. in 1/10 mm	Speed range (RPM)
012	60,000 – 110,000
014	60,000 – 110,000
016	45,000 – 88,000
018	45,000 – 88,000
023	40,000 – 75,000

Z-REX ADVANTAGES AT A GLANCE

ERA patented bonding²⁰

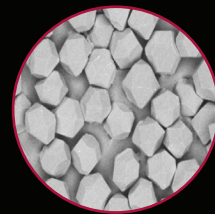
ENHANCED RESILIENT ALLOY BONDING

COLTENE's revolutionary Enhanced Resilient Alloy (ERA²⁰) bonding has exceptional properties: The **ERA matrix** allows for **improved embedding of diamonds**. Additionally, the hardness (Vickers hardness) of the Enhanced Resilient Alloy is augmented by 70% compared to conventional bondings.¹⁹ At the same time the **toughness is increased** significantly. All of these features lead to a **reduced delamination of diamonds** which results in higher **durability and efficiency**.¹⁸

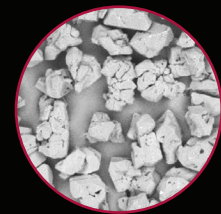


Unique synthetic diamond mixture

Z-Rex burs feature two different synthetic grits, **monocrystalline** with regular shapes for **increased durability**, and **polycrystalline** with irregular, self-sharpening shapes to **enhance grinding efficiency**.



Monocrystalline
Increased Service Life



Polycrystalline
Increased Efficiency

Experience the Advantages

- Uncover an outstanding combination of durability and effectiveness, minimizing the quantity of burs required for cutting zirconia
- Protect your restoration from microcracks during crown adjustments
- Shorten procedure time
- Enjoy the convenience of easily opening blister packaging



ALPEN Z-REX ORDER INFORMATION

Part number	Description	Pack size
60031901	G801Z-314-014-01.4-M, Alpen Diamonds	5 pcs
60031903	G801Z-314-018-01.8-M, Alpen Diamonds	5 pcs
60032241	G850Z-314-016-10.0-M, Alpen Diamonds	5 pcs
60032621	G881Z-314-016-08.0-C, Alpen Diamonds	5 pcs
60031813	G379Z-314-023-05.0-M, Alpen Diamonds	5 pcs
60031899	G801Z-314-012-01.2-M, Alpen Diamonds	5 pcs
60032467	G862Z-314-014-08.0-M, Alpen Diamonds	5 pcs
60032481	G863Z-314-014-10.0-M, Alpen Diamonds	5 pcs
60032243	G850Z-314-018-10.0-M, Alpen Diamonds	5 pcs
60032379	G856Z-314-018-08.0-M, Alpen Diamonds	5 pcs
60032619	G881Z-314-014-08.0-M, Alpen Diamonds	5 pcs

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