



## High-performance Ceramic Zirconia CR 101 / CR 105

Components made out of zirconia ceramics have many special features. Our two materials CR 101, magnesia stabilised zirconia, and CR 105, yttria stabilised zirconia, are extremely strong.

Ceramic blades and cutters have an extremely high edge strength. The flexural strength and the fracture toughness are extraordinary.

They also have excellent tribological properties with regard to friction and wear. Sliding bearings and sealing discs made of zirconia minimise downtimes and optimise set-up times.

Added to this is the electrical and thermal insulation capability, which commends zirconia as an increasingly important design material. Insulation rings and protective conduits in thermal processes are made of zirconia.

Thanks to its coefficient of thermal expansion which is similar to that of steel, zirconia turns out to be an ideal material for exhaust flaps and valves. Naturally the high strength and the low modulus of elasticity also play an important role.

### Ceramic Components for Ultimate Quality Criteria

Zirconia ceramics CR 101 and CR 105 offer a unique property profile:

- > outstanding tribological properties
- > minimal tendency to weld with metallic materials
- > extraordinary flexural strength
- > extremely high fracture toughness with excellent resistance to wear and edge strength
- > very high compressive strength
- > low thermal conductivity, ideal for thermal insulation applications



We manufacture finished components that meet the most exacting tolerance and surface quality requirements. We also produce solutions involving metal and zirconia composites.



# CR 101/105

## Zirconia CR 101

### Component Design

- Depending on the design, dimensions of up to Ø 400 mm are possible.

### Profile at a Glance

- Magnesium stabilised zirconia
- High corrosion resistance
- Extreme wear stability
- Extreme edge strength
- Thermally insulating

### Special Characteristics

- Flexural strength 560 MPa
- Compressive strength 2700 MPa
- Fracture toughness  $K_{Ic} = 8,0 \text{ MPa m}^{1/2}$
- Thermal conductivity = 3,0 W/m K

### Delivery Time

Depending on the component design, our production organisation enables us to offer maximum delivery flexibility.

## Zirconia CR 105

### Component Design

- Depending on the design, dimensions of up to Ø 400 mm are possible.

### Profile at a Glance

- Yttrium stabilised zirconia
- High corrosion resistance
- Extreme wear stability
- Extreme edge strength
- Thermally insulating

### Special Characteristics

- Flexural strength 1000 MPa
- Compressive strength 3800 MPa
- Fracture toughness  $K_{Ic} = 10,0 \text{ MPa m}^{1/2}$
- Thermal conductivity = 2,5 W/m K

Specifications are subject to change without notice. 05/2012

### Tradition

As an independent family-owned company, we have been a leading developer and manufacturer of technical ceramic components for 40 years.

### Personality

The proximity and personal relationship to the customer is as important to us as is the highest quality of our products. You have chosen a reliable partner in us.

### Development

We produce customised ceramic components in cooperation with the customer. Take advantage of our know-how to find an appropriate ceramics solution for your application.



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