

## **RAPID PROTOTYPING**

Prototypes from  
high-performance ceramics in series quality

# KYOCERA FINECERAMICS EUROPE GMBH

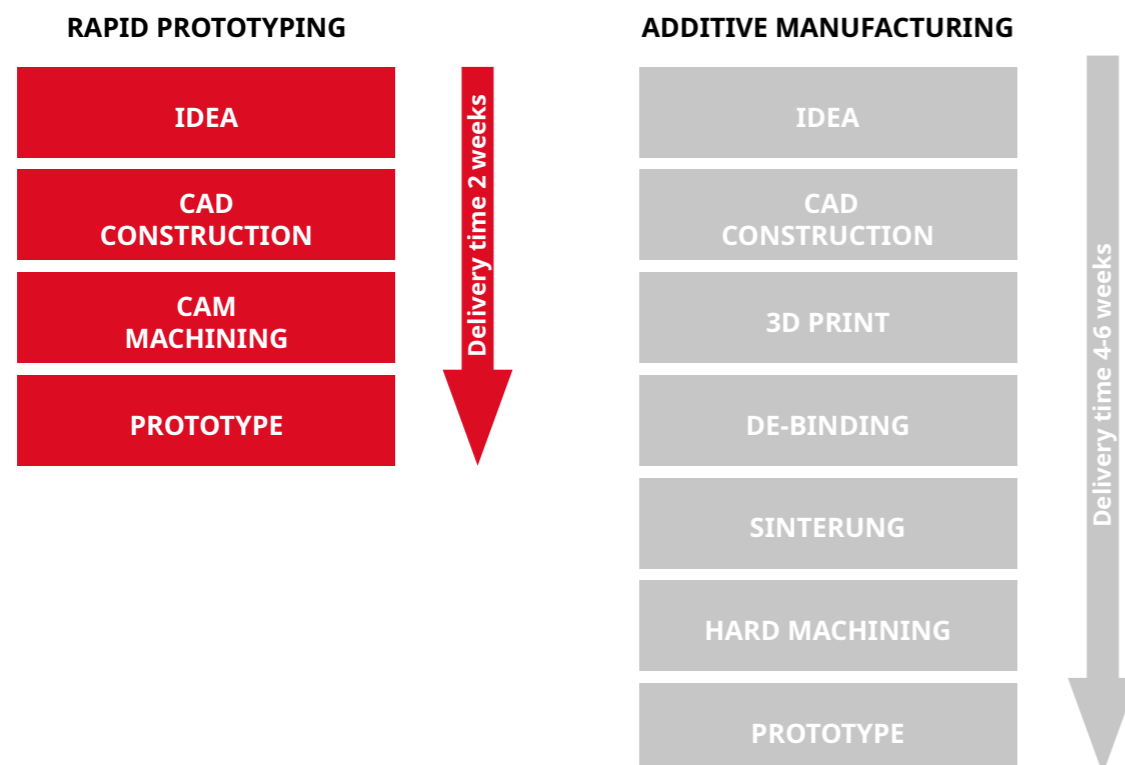
## YOUR PARTNER FOR PROTOTYPE AND SERIES PRODUCTION

The term rapid prototyping is often associated or even equated with additive manufacturing processes such as 3D printing. However, Kyocera uses a much more efficient single-stage manufacturing method for the production of prototypes. The Kyocera method achieves both impressive precision (tolerance classes < 20 µm and surface Ra < 0.4 µm) and material properties in proven series quality.

The CNC 5-axis grinding machine is capable of producing very complex components from a burnt blank. The five axes enable almost

unlimited movement of the raw part in the machine. Rapid prototyping makes it possible to create a prototype, which has exactly the same properties as the series product, as the same materials can be used. This makes it possible to carry out functional and material tests directly on the component.

The quickest way to a prototype is to provide a 3D volume model with additional details of the permissible tolerances and required surface qualities. Alternatively, Kyocera creates the required volume model based on a 2D drawing.



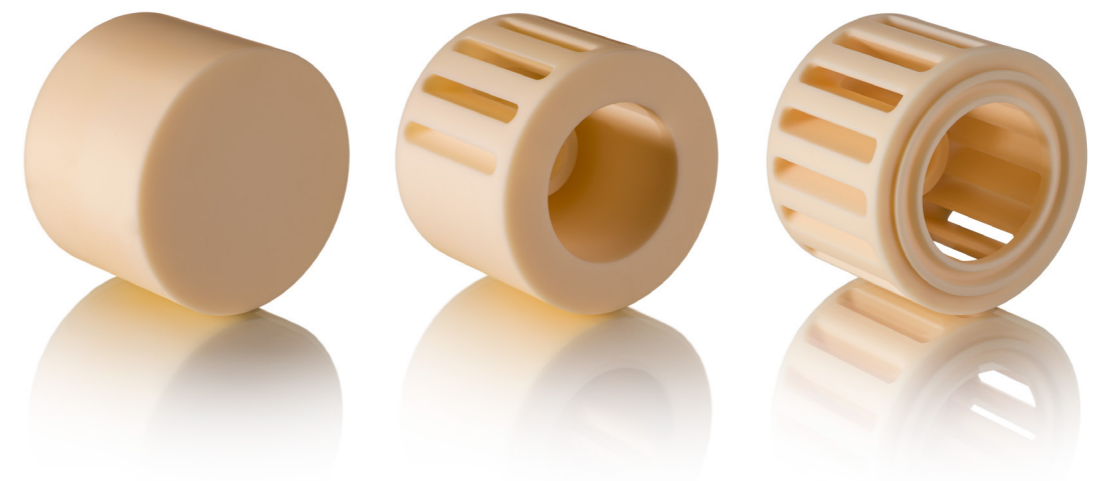
**Prototypes in  
series quality in just  
2 weeks**

### THE ADVANTAGES

- ▶ Fast delivery: 2 weeks for standard dimensions, max. 6 weeks for special dimensions
- ▶ Functional and material tests possible on the component
- ▶ High precision
- ▶ Large selection of materials
- ▶ Reliable CAD/CAM machining, even for 3D and free-form geometries
- ▶ Precision machining using CNC 5-axis grinding machines
- ▶ Prototype and series with identical material properties
- ▶ Ready-to-install components with mechanical engineering tolerances
- ▶ Ideal for one-off production

### THE MATERIALS

- ▶  $Al_2O_3$  : F99.7, DEGUSSIT AL23, DEGUSSIT AL24
- ▶  $ZrO_2$  : FZM, FZM/K, DEGUSSIT FZY
- ▶ ZTA : FZT





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