



# Ketron® GF 30 PEEK

## Helicopter Bearing Cage – AS9100 rev D Compliant Plastic Shapes

### Challenge

#### Improve quality of an injection moulded PEEK part for helicopter blade adjustment

Helicopters are extremely weight sensitive as every gram of material has a direct impact on the limited payload and the fuel consumption. For this reason plastic parts are playing an important role in helicopter design.

In the application at hand, injection moulded bearing cages were used in the blade adjustment system. Due to the variations in injection moulding processes, however, voids were caused in the plastic parts.



The customer was looking for a higher quality semi-finished product that provides homogeneous, void free material quality and avoids extensive and expensive quality control mechanisms.

### Key Requirements

- Continue to use Glass Filled PEEK with existing design
- Quality controlled manufacturing process which eliminates voids
- Constant quality that can be easily monitored
- Resistant against jet engine oils
- Performance in a wide temperature range from -60 up to 80 °C (-76 to 176 °F)

## Customer Benefits

- Significant cost and time savings as a result of the machined, void-free parts
- Elimination of demanding testing process
- Increased safety - no field failures
- Faster and more flexible production/machining capacities; variety of machine shops available to provide quality machining services based on our material shape

## Mitsubishi Chemical Advanced Materials Added Value

Mitsubishi Chemical Advanced Materials offers AS9100 rev.D compliant engineering plastic stock shapes and components.

- Constant material performance through high quality production process
- Global development, production and machining capabilities

## Why Ketron® GF30 PEEK?

Ketron® GF30 PEEK has a high structural integrity and a light weight versus stainless steel bearing caches. Although Ketron® GF30 PEEK has not been designed for wear application, the failure mode of the parts required a stiff high performance thermoplastic.



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