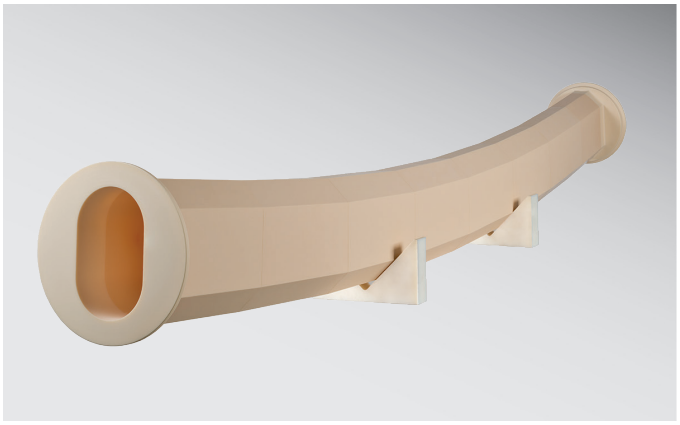
HIGH-PERFORMANCE CERAMICS

VACUUM CHAMBER FOR DIPOLE MAGNET



Application:
Ceramic vacuum chamber for dipole magnet

Material:
Alumina F99.7

KYOCERA manufactures insulators made of Alumina F99.7 in customised dimensions. The ceramic-to-ceramic and ceramic-to-metal assemblies made of F99.7 display only minimal leakage and outgassing rates, which allows for ultimate pressures < 8 x 10^{-10} mbar. They are thus ideal for the use in ultra-high vacuum (UHV) conditions.

Products made of high-performance ceramics are used throughout the world in particle accelerators in research and development as well as in the medical field. The accelerator component shown above is used in the Institute of High Energy Physics (IHEP) in Beijing as vaccum chamber in the dipole magnet.

Special features:
- Ceramic polished sealing surface (leakage rate < 1,0 x 10-9 mbar l x s^{-1})
- Glass-brazed segments

Dimensions:
- Ceramic clamping flange: outer dimension = 301 mm
- Total length of the tube: 2800 mm at an angle of 15° ± 0,8°
- Tube (inside): race track = 218 x 135 mm
- Tube (outside): octagon

With the construction and production of this vacuum chamber we were able to meet new challenges. It is currently the biggest joined ceramic assembly in the long history of Kyocera.

Are you looking for a similar solution?
We will be happy to take on the challenge.

- **Chemical resistance**
- **High form stability**
- **Thermal shock resistance**

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