



SLIDING BEARINGS

SLIDING BEARINGS

Ceramic sliding bearings are load-bearing components that operate under relative motion between surfaces—either oscillating or continuously sliding—without the use of rolling elements. Unlike traditional ball or roller bearings, sliding bearings handle axial or radial loads through surface contact, and when constructed from advanced ceramics, they deliver outstanding performance in harsh operating conditions. They are ideal for use in applications where lubrication is minimal or intermittent, temperatures are high, and media is corrosive or abrasive.

MATERIAL DIVERSITY

Yttria-Stabilized Zirconia (YSZ) | Zirconia Toughened Alumina (ZTA) | Alumina (Al_2O_3)

Each component is isostatically pressed and sintered, followed by precision grinding and lapping to ensure ultra-low surface roughness and tight dimensional tolerances.

INDUSTRIES SERVED

- Oil & Gas
- Aerospace and Defense
- Semiconductor and Electronics Manufacturing
- Food and Beverage Equipment
- Medical and Pharmaceutical Machinery
- Water Treatment and Desalination
- Pump and Valve Manufacturing
- Energy and Nuclear Sector

APPLICATION

- Shaft sleeves and bushings in centrifugal pumps
- Sliding wear rings in chemical reactors and valves
- Bearings in high-speed motors or drives
- Load-bearing guides in medical and pharmaceutical systems
- Oscillating or reciprocating mechanisms in corrosive environments

KEY ADVANTAGES

- High Wear Resistance: Maintains geometry and functionality over extended periods, even in abrasive environments.
- Low Coefficient of Friction: Enables smooth motion with minimal lubrication.
- Corrosion and Chemical Resistance: Inert to acids, alkalis, solvents, and aggressive media.
- Thermal Stability: Performs under elevated temperatures without loss of strength or dimensional drift.
- Electrically Insulating (Optional): Ideal for electrically sensitive applications or where galvanic corrosion must be avoided.
- Dry-Running Capability: Suitable for applications where lubrication is restricted or impractical.

CONCLUSION

In critical industrial systems where traditional bearing materials fail, CeramForge ceramic sliding bearings offer a powerful alternative—engineered to endure wear, resist corrosion, and maintain performance in the most extreme conditions. Whether you're designing equipment for ultra-clean labs or rugged chemical plants, our precision ceramic bearings provide a long-lasting, low-maintenance solution that meets the highest industrial standards.