



GAP SUB WASHERS

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A gap sub washer functions as a precise spacer or insulator placed between two components in a mechanical or hydraulic system. It controls the axial clearance or "gap" between parts while also distributing compressive loads evenly. In high-wear environments—such as drilling, fluid handling, and precision tooling—ceramic versions of these washers offer far greater performance and reliability than conventional alternatives.

MATERIAL DIVERSITY

[HIPed Yttria-Stabilized Zirconia \(HIPed YSZ\)](#) | [HIPed AluminaToughened Zirconia \(HIPed ATZ\)](#)

All washers are isostatically pressed, sintered at high temperatures, and ground to precision tolerances, ensuring flatness, parallelism, and consistent thickness across batches.

INDUSTRIES SERVED

- Oil & Gas Drilling
- Mining & Mineral Exploration
- Aerospace and Defense
- Precision Engineering
- Chemical Processing Equipment

APPLICATION

- Gap adjustment in MWD and LWD tool strings
- Spacer washers in mud motor assemblies
- Alignment rings in rotating subassemblies
- Shimming and tolerance compensation in high-precision mechanisms
- Load-distribution in hydraulic or pneumatic actuators
- Sealing stack separation and preload control

KEY ADVANTAGES

- High Wear Resistance: Suitable for long-term use in abrasive environments such as drilling fluid exposure or rotating assemblies.
- Dimensional Stability: Maintains precise gap control even under thermal and mechanical stress.
- Corrosion and Chemical Resistance: Performs reliably in corrosive or high-pH environments.
- Electrical Insulation: Acts as an insulator in applications where electrical isolation is required.
- Minimal Deformation: High compressive strength ensures no collapse or creep under axial loads.

CONCLUSION

Ceramic gap sub washers from CeramForge provide unmatched durability, dimensional precision, and chemical resistance for mission-critical applications. Whether you're working in the depths of a drilling well or the fine tolerances of a high-speed assembly, our ceramic washers are engineered to outperform traditional materials and ensure long-term system integrity.

When every micron and every cycle matters, choose CeramForge ceramic gap sub washers—precision-engineered for performance under pressure.