

Bearing Tolerances

Explained

Tolerance class	General level of accuracy	Typical applications	Need to know
Normal/P0	Standard industrial accuracy	Pumps, fans, conveyors, general motors and gearboxes	Suitable for most general machinery, but normally not classed as super precision
P6	Improved accuracy	Higher-quality motors, precision gearboxes and machine auxiliaries	Useful where better accuracy is required without moving to a full precision class
P5	High precision	Precision motors, printing equipment, compressors and moderately demanding spindle applications	A useful step between standard bearings and P4 super precision bearings
P4	Super precision	Machine tool spindles, grinding machines, milling machines and high-speed machining equipment	One of the most common classes used in super precision applications
P4A, P4S, P3, or P4Y	Manufacturer-specific enhanced precision	High-performance spindle and specialist precision applications	Meaning can vary by manufacturer, so check the full specification
P2	Ultra-high precision	Ultra-precision spindles, measuring equipment, specialist grinding and high-end machine tools	Very tight tolerances, but often unnecessary unless the complete machine requires this level of accuracy
P4S, P3, P4Y and similar	Manufacturer-specific	Specialist precision applications and bearing arrangements	Check the manufacturer's tolerance tables rather than comparing the code alone

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