

Classes of Unified Threads 2B & 2A

【Question】

I was wondering, what do the letters 2A or 2B mean when I see them on a drawing that shows thread sizes 3/8"-16UNC 2A and 3/8"-16UNC 2B.

【Answer】

Those letters represent the class of fit for inch size internal and external Unified screw threads. The class of a Unified thread is an alphanumerical designation to indicate the standard grade of tolerance and thread allowance of a specific thread.

【Guide】

Inch size Unified screw threads are divided into two categories, external and internal with three classes of threads in each category.

Classes 1A, 2A and 3A apply to external threads only, and Classes 1B, 2B and 3B apply to internal threads only.

Classes 1A and 1B Unified threads are intended for ordnance and other special uses. They are used on threaded components where quick and easy assembly is necessary and where a liberal allowance is required to permit ready assembly, even with slightly bruised or dirty threads.

Classes 2A and 2B Unified threads are the most commonly used for general applications, including production of bolts, screws, nuts and similar fasteners.

Classes 3A and 3B Unified threads are used if closer tolerances are needed than those of a 2A or 2B thread like in the aerospace and aircraft industry or the medical and auto racing industries.

A 3/8"-16UNC 2B is defined as a 3/8" diameter Unified coarse pitch 2B class of fit inch screw thread. If the thread is a 3/8"-16NC2 and the letters U, A and B do not appear in the thread designation, the thread conforms to the outdated American National thread.

The Unified class of fit numbers have the opposite meaning of the Metric Screw Threads. The class of Metric Screw Threads is based on the old JIS standards where level 1 represents a precise screw thread and level 3 represents a thread with the biggest allowance.

Class of fit comparative chart between Unified & Metric threads

Thread type	Internal/ External	Standard	Class			
			3B	2B	1B	
Unified	Internal	JIS(new)	3A	2A	1A	
	External		3B	2B	1B	
Metric(Coarse)	Internal	JIS(old)	Level 1	Level 2	Level 3	
		JIS(new)	4H (M1.4max) 5H (M1.6min)	5H (M1.4max) 6H (M1.6min)	7H	
	External	JIS(old)	Level 1	Level 2	Level 3	
		JIS(new)	4h	6h (M1.4max) 6g (M1.6min)	8g	
	Metric(Fine)	Internal	JIS(old)	Class 1	Class 2	Class 3
			JIS(new)	4H (M1.8×0.2max) 5H (M2×0.25max)	6H	7H
External		JIS(old)	Level 1	Level 2	Level 3	
		JIS(new)	4h	6h (M1.4×0.2max) 6g (M1.6×0.2min)	8g	