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Thread Gage Terminology

A **thread plug** gage is a complete internal thread gage of either single or double end type, comprised of a handle and threaded gaging member or members, with suitable locking means.

A **thread ring** gage is an external thread gage employed for the size control of threaded work; the means of adjustment is integral with the gage body.

External and Internal Threads - An external thread is a thread on the external surface of a cylinder or cone. An internal thread is a thread on the internal surface of a hollow cylinder or cone.

Classes of Threads - Classes of threads are distinguished from each other by the amount of tolerance or allowance specified.

Unified Screw Thread Classes

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

Classes 2A and 2B - Class 2A for external threads and 2B for internal threads are the most commonly used thread standards for general applications, including production of bolts, screws, nuts, and similar threaded fasteners.

Classes 3A and 3B - Class 3A for external threads and 3B for internal threads provide for applications where closeness of fit, accuracy of lead, and angle of thread are important. They are obtainable consistently only with high-quality production equipment supported by a very efficient system of gaging and inspection.

Metric Screw Thread Classes

ISO specifies three Tolerance Grades, Grades 4, 6, and 8, which reflect the size of the tolerance. Grade 6, the most common, is recommended for "medium" quality and normal lengths or general purpose threads. Grade 6 is the closest to the Unified Class 2A and 2B. Tolerances smaller than Grade 6 are recommended for "fine" quality or short lengths of engagement. Tolerances above Grade 6 are larger and recommended for "coarse" quality or long lengths of engagement.

Tolerance Positions

External threads (bolts): small "e" = large allowance, small "h" = no allowance, small "g" = small allowance.

Internal Threads (nuts): Large "G" = small allowance, Large "H" = no allowance.