On Charts 2A and 2B (below), examples of the relationship of Class of Fit to various tap limit sizes is shown for both Imperial and Metric sizes. In chart 2A, using a 1/4"-20NC or UNC thread size, it is obvious that an H5 limit (+.0025" over basic pitch diameter) can be used to cut the tightest class of thread in most machining situations, as can the H1 limit (+.0005" over basic P.D.). However, tool wear would force the discarding of the H1 tap long before the H5 would be worn to an undersize condition. **The rule is obvious: always select the largest "H" limit possible to achieve proper class of fit, and maximum tool life.**

CHART 2A **COMPARISON OF PITCH DIAMETER LIMITS TO CLASS OF FIT**

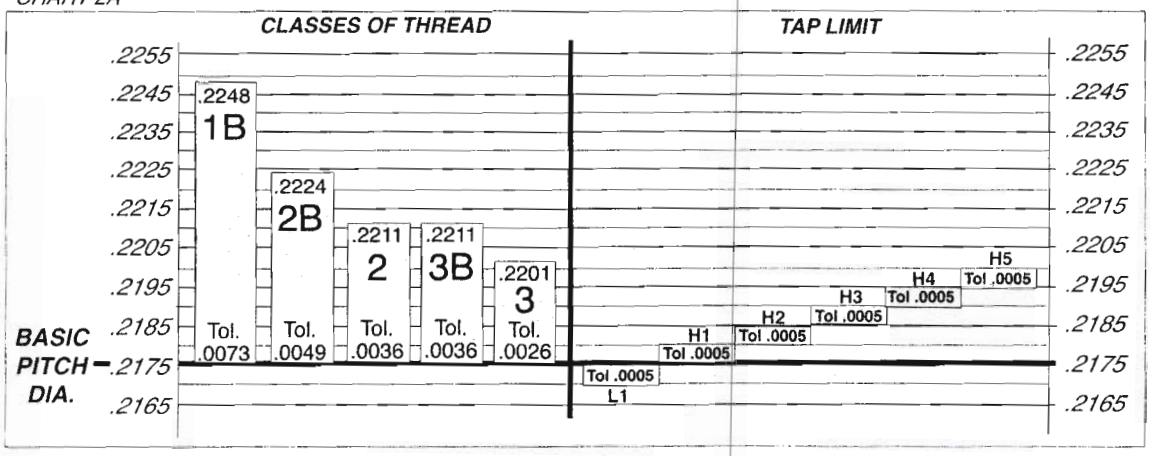
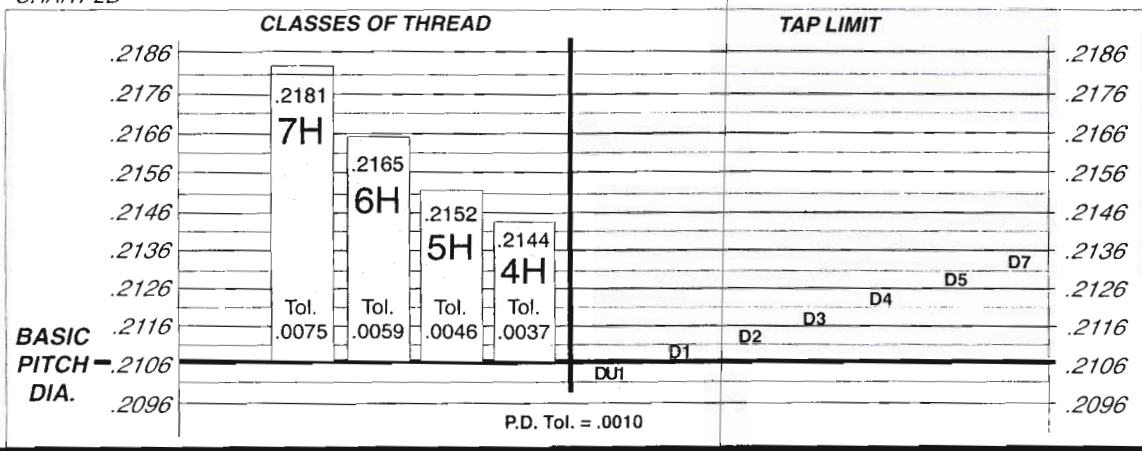


Chart 2B shows the same relationship with a metric thread. Using a M6 X 1.0, it is obvious that a D5 limit (+.0025" over basic pitch diameter) can be used to cut the standard class of thread in most machining situations, as can the D1 limit (+.0005" over basic P.D.). However, tool wear would force the discarding of the D1 tap long before the D5 would be worn to an undersize condition. **The rule is obvious: always select the largest "D" limit possible to achieve proper class of fit, and maximum tool life.**

CHART 2B **COMPARISON OF PITCH DIAMETER LIMITS TO CLASS OF FIT**



SCREW THREAD CLASSES OVERVIEW

Screw thread classes are distinguished from each other by the amount of tolerance and allowance.

Class 1A and Class 1B: The combination of Class 1A for external threads and Class 1B for internal threads is intended to cover the manufacture of threaded parts where quick and easy assembly is necessary or desired, and an allowance is provided to permit ready assembly.

Class 2A and Class 2B: The combination of Class 2A for external threads and Class 2B for internal threads designed for screws, bolts and nuts, is also suitable for a variety of other applications. A similar allowance is provided which minimizes galling and seizure encountered in assembly and use. It also accomodates, to a limited extent, plating, finishes or coatings.

Class 3A and 3B: The combination of Class 3A for external threads and Class 3B for internal threads is provided for those applications where closeness of fit and accuracy of lead and angle of thread are important. These threads are obtained consistently only by use of high quality production equipment supported by a very efficient system of gauging and inspection.

No allowance is provided.