

# UNIFIED AND AMERICAN SCREW THREADS

The limits and tolerances for external threads for unified screws are designated by the letter "A" which results in class 1A, class 2A, and class 3A screws, while the nut (internal thread) limits and tolerances are designated by the letter "B" resulting in class 1B, class 2B, and class 3B.

**Tolerances:** The tolerance of the tapped hole in the unified series is always 1.3 times the tolerance of the screw for the same class of fit. In the American National Standard, pitch diameter tolerances on both the nut and the screw were equal with the nut above basic and the screw below basic.

**Class 1A and 1B:** This class of fit 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 2B:** This class of fit is intended to cover screws, bolts and nuts, but it is also suitable for a variety of other applications. An allowance is provided to minimize galling and seizure in assembling and use. It will also accommodate limited amount of plating, coating or finish.

**Class 3A and 3B:** This class of fit is provided for those applications where closeness of fit and accuracy of lead and angle of thread is important. No allowance is provided and these threads are obtained consistently only by use of high quality production equipment and checked by a very efficient system of gaging and inspection.

Unified and American standard threads have substantially the same thread form. Threads of both standards are mechanically interchangeable. The main difference between the two standards are: Variation of tolerance with size, differences in amounts of pitch diameter tolerance for external and internal threads, and differences in thread designations.

**Caution:** Select the proper percent of thread for the material to be tapped, refer to page 11 Table 54 for recommendations.

**Remember**—As the drilled hole becomes smaller the amount of chips to be removed becomes so great that the friction generated may require as much power as does the actual cutting.