



Tap Tolerances and Approximate Limits

UNC/UNF Taps

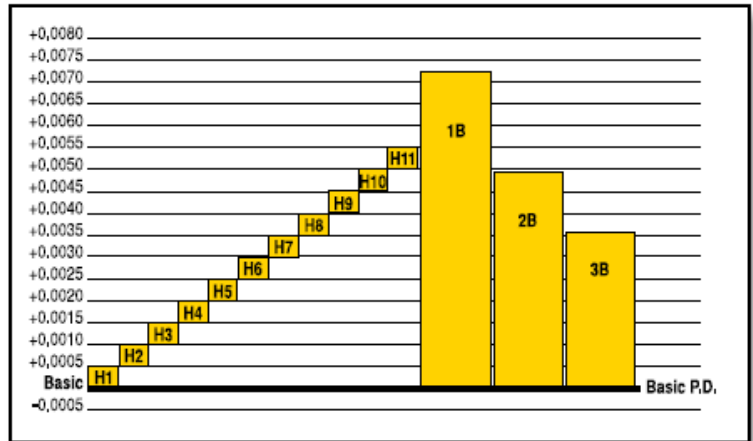
Screw size and fractional threads are typically specified as one of three classes of fit, Class 1B – for low precision, or threads that are typically used in areas where dirt and grime are a constant factor; Class 2B for general threading applications (by far the most common); and Class 3B for precision threads generally found in medical, aerospace and applicable automotive applications.

- As seen in the chart – these classes of fit do overlap even though they are progressive in accuracy. To further break down the accuracy of these threads we have “H” limits in increments of 0.0005”.

- Every size/pitch tap has a specific or given basic pitch diameter that is the basis for the “H” limits and the class of fit for that size.

- As you can see in the chart – the class of fit will give you minimum and maximum pitch diameter limits that need to be maintained during manufacturing (typically these are your thread gauge limits). By seeing the “H” limits illustrated you are better able to understand what area of the class of fit you are actually working within.

(This chart does not show a specific size tap – its purpose is to give a visual understanding of how the “H” limits work within the different classes of fit).



Metric Taps

Metric threads have their own classifications for class of fit and the thread limits within them. When discussing UNC/UNF threads we worked with 3B, 2B and 1B Classes of fit and had “H” limits which helped define the accuracy within each class. To help understand Metric tolerancing it may be easiest to look at the similarities between both Metric and Fractional tolerancing.



- A metric 6H class of fit is quite similar to the fractional 2B class of fit – as is the metric 4H to the fractional 3B. We will focus on the 6H class of fit as this is our standard offering in metric sizes. (Please note that special classes of fit can be produced for any given application upon request).

- Again – the class of fit will give you minimum and maximum pitch diameter limits that need to be maintained during manufacturing. Within the class of fit – metric thread limits are further broken down into “D” limits. Each “D” limit equals 0.013mm (0.013mm = 0.00051” – extremely similar to that of fractional “H” limit tolerancing).

- As you look at this chart you can see how the “D” limits help control what area of the class of fit you are working within.

(This chart does not show a specific size tap – its purpose is to give a visual understanding of how the “D” limits work within a class of fit).

