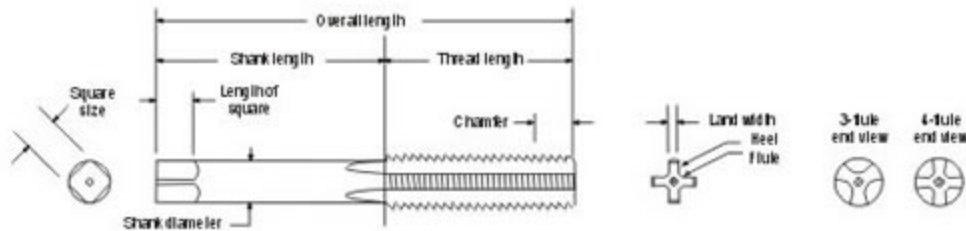
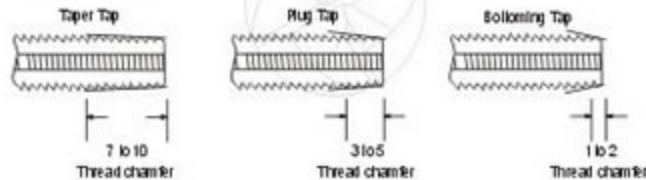


Basic Tap Terminology



Chamfer Styles in Standard Taps



Angle of Thread The angle included between the flanks of the thread measured in an axial plane.

Back Taper A slight axial relief on the thread of the tap which makes the pitch diameter of the thread near the shank somewhat smaller than that of the chamfered end.

Bottoming Chamfer The shortest chamfer (1-2 threads long), for threading close to the bottom of blind holes.

Chamfer The tapering of the threads at the front end of each land of a tap by cutting away and relieving the crest of the first few teeth to distribute the cutting action over several teeth. Also see Taper, Plug and Bottoming Chamfers.

Chamfer Relief The gradual decrease in land height from cutting edge to heel on the chamfered portion, to provide clearance for the cutting action as the tap advances.

Chordal Hook Angle The angle between the chord passing through the root and crest of a thread form at the cutting face, and a radial line through the crest at the cutting edge.

Crest The top surface joining the two flanks of a thread. The crest of an external thread is at its major diameter, while the crest of an internal thread is at its minor diameter.

Cutting Face The leading side of the land in the direction of rotation for cutting on which the chip impinges.

Flutes The longitudinal channels formed in a tap to create cutting edges on the thread profile and to provide chip spaces and cutting fluid passages.

Height of Thread The distance between the crest and the Base of a thread measured normal to the axis.

Lead The distance a screw thread advances axially in one complete turn. On a single lead screw or tap, the lead and pitch are identical. On a double lead screw or tap, the lead is twice the pitch, etc.

Pitch The distance from any point on a screw or tap thread to a corresponding point on the next thread, measured parallel to the axis. The pitch equals one divided by the number of threads per inch.

Pitch Diameter On a straight thread, the diameter of an imaginary co-axial cylinder, the surface of which would pass through the thread profile at such points as to make equal the width of the threads and the width of the spaces cut by the surface of the cylinder.

On a taper thread, the diameter at a given distance from a reference plane perpendicular to the axis of an imaginary co-axial cone, the surface of which would pass through the thread profile at such points as to make equal the width of the threads and the width of the spaces cut by the surface of the cone.

Plug Chamfer The most common chamfer (3-5 threads long), for hand or machine tapping in through or blind holes.

Rake Any deviation of a straight cutting face of the tooth from a radial line. Positive Rake means that the crest of the cutting face is angularly advanced ahead of the balance of the face of the tooth. Negative Rake means that the same point is angularly behind the balance of the cutting face of the tooth. Zero Rake means that the cutting face is directly on the center line.

Spiral Point (Chip Driver) A supplementary angular fluting cut in the cutting face of the land at the chamfer end. It is slightly longer than the chamfer on the tap and of the opposite hand to that of rotation.

Taper Chamfer A long chamfer (7-10 threads long) for easier starting and engagement in the work piece. More working teeth means that less tapping torque is required and the chip load is reduced on each tooth.

Threads Per Inch The number of threads in one inch of length.