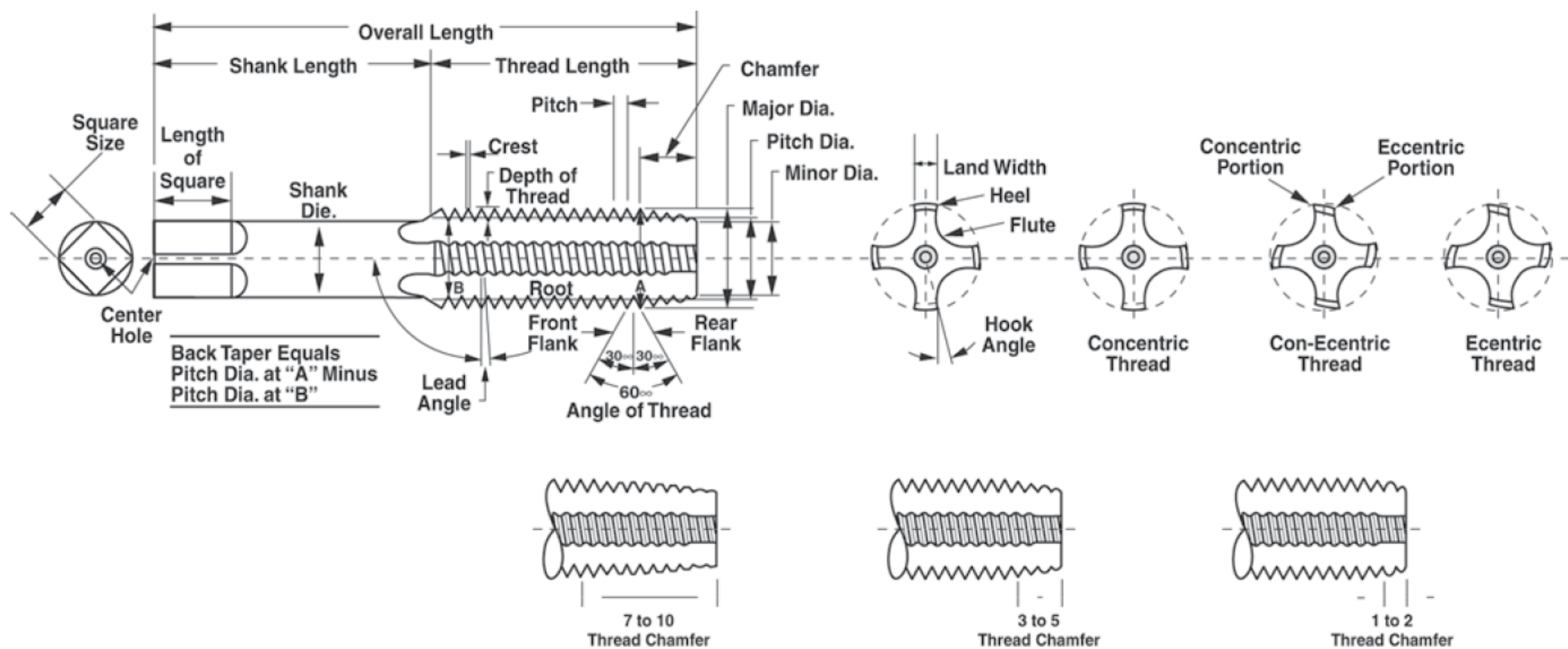


# TAP TERMINOLOGY



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

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

**Basic** – The theoretical or nominal standard size from which all variations are made.

**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. When the tapering amounts to 7 to 10 threads, the tap is called a “taper” tap; 3 to 5 threads, a “plug” tap; and 1 to 2 threads, a “bottoming” tap.

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

**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.

**Dryseal** – A pipe threaded fuel connection for both external and internal application designed for use where the assembled product must withstand high fluid or gas pressures without the use of a sealing compound, or where a sealer is functionally objectionable.

**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.

**Helical Flute** – A flute with uniform axial lead and constant helix in a helical path around the axis of a cylindrical tap.

**Hook Face** – A concave cutting face, usually specified either as chordal hook or tangential hook.

**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.

**Tangential Hook Angle** – The angle between a line tangent to a hook cutting face at the cutting edge and a radial line to the same point.

**Interrupted Thread** – A tap having an odd number of lands, with every other tooth along the thread helix removed.

**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.

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

**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 coaxial 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 coaxial 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.

**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.

**Root** – The bottom surface joining the flanks of two adjacent threads. The root of an external thread is at its minor diameter, while the root of an internal thread is at its major diameter.

**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.

**Thread Relief** – The clearance produced by removal of metal from behind the cutting edge. When the thread angle is relieved from the heel to cutting edge, the tap is said to have “eccentric” relief. If relieved from the heel for only a portion of land width, the tap is said to have “con-eccentric” relief.