

Engineering Data

Tap Style Guide



HAND TAP

These standard style taps have straight flutes of a number specified as either standard or optional. Hand taps are for general purpose applications such as production tapping or hand tapping operations. Taper, plug and bottoming styles provide versatility in tough materials, blind and through holes.



SPIRAL POINT TAP

As to general physical dimensions, spiral point taps are identical with the standard hand tap. However, the spiral point tap has the cutting face of the first few threads cut at a predetermined angle relative to the tap's axis angle to force the evacuation of chips ahead of the cutting action. This feature, plus the excellent shearing action of the flute, make spiral pointed taps ideal for production tapping of through holes. Typically, this type of tap has a shallower flute passage than conventional taps. This gives the spiral point tap more cross-sectional area, which means greater strength, allows higher tapping speeds, and requires less power to drive.



Regular (or Slow) Spiral Tap



Fast Spiral Tap

SPIRAL FLUTED TAP

These taps, as the name implies, are made with spiral flutes instead of straight flutes. This spiral fluting feature aids in drawing chips out of a hole, or serves to bridge a gap inside the hole such as a keyway or cross-hole. Commonly available in *slow spiral* (25-30° helix angle) or *fast spiral* (45-60°).



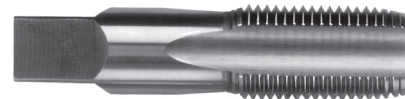
INTERRUPTED THREAD TAP

These taps have an odd number of lands with alternate teeth in the thread helix removed. The removal of every other tooth helps to break the chip and allows a greater supply of lubrication to reach the cutting teeth, reducing the incidence of torn threads. Ideal for tapping non-ferrous metals and low carbon steel; as well as use in titanium and high hardness alloys.



THREAD FORMING (or Roll Form) TAP

These taps are fluteless except as optionally designed with one or more lubrication grooves. The thread form is lobed so there is a finite number of points contacting the work. This tap does not cut, so it is 'chipless', and consequently will not cause a chip problem. The tool forms the thread by extrusion, thus thread size can be closely maintained. The fluteless design allows high quality threads, faster tapping speeds, higher production, and generates no chips which simplifies tapping of blind bottoming holes (threads can be formed the full depth of the hole).



Straight Pipe Tap



Taper Pipe Tap

PIPE TAP

These taps are for producing standard straight or tapered pipe threads in a wide range of pipe connections. Manufactured with the appropriate design variations to cut specified pipe thread forms.



ACME THREAD TAP

Acme screw threads were devised to allow rotary and transversing motion on machines; and are also used in jacks, valves, presses and other mechanisms where heavy loads are encountered. The acme thread is characterized by a 29° included angle. Acme taps typically require specialized engineering and design due to the nature and severity of cut required in producing Acme threads.



EXTENSION TAP

These taps are made to conventional tap dimensions, except that they have an extended shank to reach inaccessible holes. Thread length, shank diameter, and shank square are made to standard specifications listed in Table 302. Extension taps are available in both hand and spiral point styles, and in small shank style.