

Choosing the Correct Tap

There are several types of taps in general use. It's important to use the style of tap that is appropriate to the job at hand.

Straight Flute "Hand" Taps



Straight flute taps are generally called hand taps because, well, that is the way they are generally used. The straight flutes, while providing room for chips, do not move the chips one way or the other. In materials that produce stringy chips, such as steel, aluminum, and brass, they must be frequently reversed to break the chips, so they do not jam the tap and cause it to break. Straight flute taps may be appropriate when cutting short chipping material such as cast iron. A straight flute tap can be used in through or blind holes. Straight flute taps are not generally used for machine tapping.

Spiral Point Taps



Spiral point taps are generally used for through holes. They have a very short spiral on the cutting face of the first few threads. This “shoots” the chips out the bottom of the hole, thus they are sometimes called “gun taps.” Because spiral point taps do not have to be reversed, and because the shallower flute passages provide a greater cross section to the tap, they are favored for machine tapping of through holes with all materials.

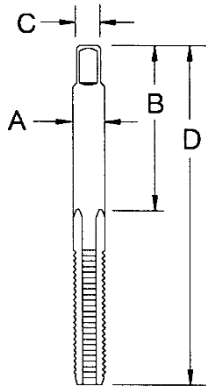
Spiral Flute Taps



The flutes on spiral flute taps are, as you might surmise, formed in a spiral around the tap. The spiral flutes evacuate the chips up and out of the hole. Because they are best for blind holes, they are usually found in “bottom” configuration. Spiral flute taps are used for machine tapping of blind holes. Spiral flute taps are not appropriate for materials with fine or powdery chips, such as free machining brass and cast iron.

Tap Dimensions

ANSI “inch” tap dimensions



Tap Size	Shank Dia. A (in.)	Size of Square C (in.)	Overall Length D (in.)	Metric Tap Size w/ Inch Shank (mm)
#0 (.060)	.141	.110	1.625	
#1 (.073)			1.687	
#2 (.086)			1.750	M2
#3 (.099)			1.812	
#4 (.112)			1.875	
#5 (.125)			1.937	M3
#6 (.138)	.141	.110	2.000	M5
#8 (.164)	.168	.131	2.125	M4
#10 (.190)	.194	.152	2.375	M5
#12 (.216)	.220	.165	2.375	
1/4 (.250)	.255	.191	2.500	M6
5/16 (.312)	.318	.238	2.718	M8
3/8 (.375)	.381	.286	2.937	M10
7/16 (.437)	.323	.242	3.156	M10
1/2 (.500)	.367	.275	3.375	M12

Some metric taps sold in the US have “inch” shanks as shown in this table.

DIN 371 metric tap dimensions

Tap Size	Shank Dia. A (mm)	Size of Square C (mm)	Overall Length D (mm)
M2	2.8	2.1	45
M3	3.5	2.7	56
M4	4.5	3.4	63
M5	6	4.9	70
M6	6	4.9	80
M8	8	6.2	90
M10	10	8.0	90