【Question】

Why are hand taps offered in 3 types: taper taps, plug taps, and bottoming taps? Can you help simplify the difference?

【Answer】

They are distinguished from each other by the length of cutting chamfer.
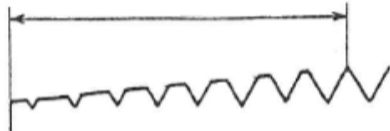
【Comment】

Chamfer

**The chamfer portion of a tap is at the opposite end of the shank where the threaded portion is ground at an incline until the thread of the tap eventually disappears. Screw threads are cut by the cutting chamfer portion of the tap during rotation. The number of threads in the chamfer differs with the type of hand tap offered, taper, plug, or bottoming.
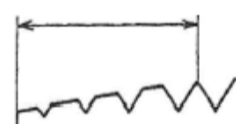(Photo=plug tap)**

【Chamfer length】

9 threads
Taper tap

Taper taps have a **9** thread chamfer.
The smallest diameter of the 9 thread chamfer starts the thread when the tap is rotated by hand into the correct size drilled hole. As the tap continues to rotate, each of the following threads in the 9 thread chamfer remove more material to eventually create a full thread form. Taper taps are the easiest taps to use by hand because the material removed is done with so many partial forms of the taps thread. Taper taps are normally used in through hole applications or as a starter tap for blind holes.
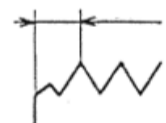
5 threads
Plug tap

Plug taps have a **5** thread chamfer.
A 5 thread chamfer Plug tap performs similar to a Taper chamfer tap by slowly removing the material in the thread starting with the smallest diameter of the threaded protion of the tap. As the rotation of the tap continues, more material is removed from the thread by many partial thread forms of the tap until a full thread is created. There are times when a Plug tap can be used to start a thread without using a taper tap first if the Plug tap is started with a guiding center or fixture.
In blind hole applications, Plug taps are used after a Taper to get closer to the bottom of the hole.

1.5 threads
Bottoming tap

Bottoming tap have a **1.5** thread chamfer.
When rotated by hand, the bottoming taps chamfer is too short to start a thread because all the thread form would be removed with only 1.5 threads of the tap. Bottom chamfer taps are normally used to get close to the the bottom of a blind hole but only after Taper and Plug chamfer taps have removed most of the material.

**When processing threads with machinery,
-Plug taps are commonly used for through hole tapping with metal working machinery without using a starter Taper tap.
-If using metal working machinery, you can start blind hole tapping with a bottoming tap without using a Taper and Plug tap first.
Understanding the difference between the chamfer length and chamfering performance of each Taper, Plug and Bottoming tap will help you make the most of tapping!**