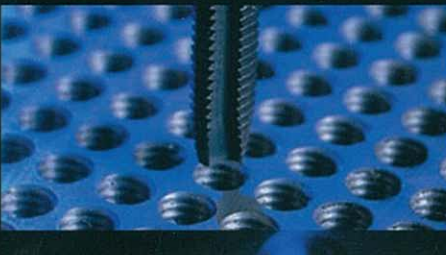
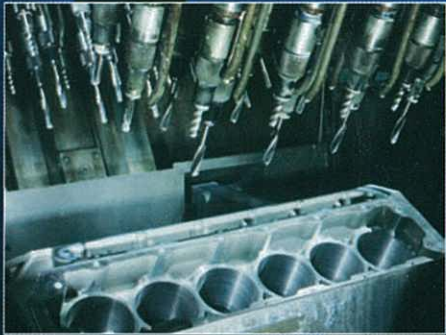
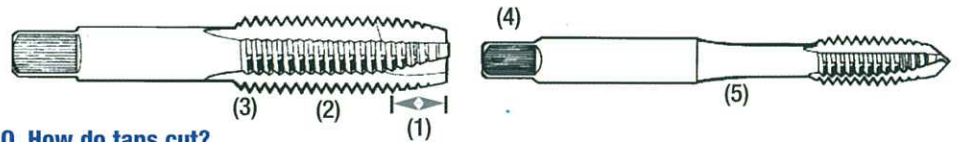


TAP TALK



Q. What is a tap?

A. A tap produces a thread in an existing hole. It is a rotary cutting tool having cutting teeth and either helical or straight flutes for the passage of chips and the admission of cutting fluid.



Q. How do taps cut?

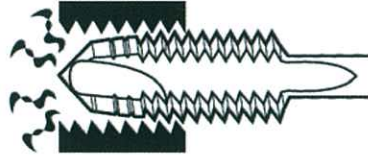
A. (1) The chamfer and first full thread do all the cutting.
 (2) The cut chips are stored in the grooves known as flutes until they are forced out (3).
 (4) The shank of a tap fits into the tap holder. The square at the end of the shank drives and rotates the tap (5). Spiral point taps are often "Necked" which provide better lubrication and makes tapping easier.

Q: Carbon steel or High-speed steel taps?

A: Champion offers both. Carbon steel is softer, less durable, and less expensive than high-speed steel, and is generally used for "cleaning-up" and re-dressing damaged, bruised or rusty threads. High-speed steel taps are significantly harder (62-64 Rockwell C) and are used to create new threads. High-speed taps last longer and produce close tolerance threads.

Q: What is the difference between spiral point taps and hand taps?

A: Spiral point taps are mainly used for "through-holes", meaning the hole produced has been drilled completely through the work-piece. The advantage is that the spiral point directs the chips forward, away from the newly cut threads. Higher tapping speeds result, which increases productivity, as well as higher quality threads.



Spiral point quickly shears and ejects chips ahead of tap. They are commonly referred to as gun taps.

Hand taps are commonly used in hand-held tap wrenches. Hand taps come in taper, plug and bottom chamfers.

Q: What is the difference between taper, plug and bottom taps?

A: Taper taps are often called "starting" taps because they have more chamfered threads. Chamfer is the angled portion at the front of the tap which helps it start threading.



Taper Taps

Distribute the cutting load across 7-10 threads. Used for starting a threaded hole. They are most often used when tapping by hand, for through holes, and offer long tap life in abrasive materials.



Plug Taps

Most commonly used, distribute the load across 3-5 threads of chamfer. They are used in blind holes and for through holes.



Bottom Taps

Have only 1 to 1-1/2 threads of chamfer and are the only choice when threading near the bottom of a blind hole. They have the poorest tap life and should be avoided if tapping through holes.

Q: What are pipe taps and how do they work differently from hand taps?

A: Pipe taps are most often used to create threads inside of pipes, pipe fittings and tubes. The thread form of the American Standard Pipe Thread (NPT) is tapered 3/4" per foot. Taper pipe taps are used to mate parts which will wedge against one another. Taper pipe taps generate threads where the mated parts are not required to withstand high fluid or gas pressure. Straight thread pipe taps (NPS) are used for tapping holes or couplings for low-pressure work with taper threaded pipe or fittings. NPS taps secure a joint when a sealer is used.

Q: What does a tap designation mean?

A: Taps are designated as per the Unified National Screw Thread Designation.

Example: 1/4-20 UNC 2 A or B

1/4 = 1/4" nominal diameter
 20 = 20 threads per inch (TPI)

UN = Unified National thread form

C = the thread series

2 = Thread class A = Internal fit B = External fit

For more information please contact our Customer Services Department at 516-536-8200 or visit our website at www.championcuttingtool.com