

【Consultation】



I found a hand tap that was marked with "TRI 1/4-20". Can you tell me what type of threads this tap is used for? Can I use this tap to produce a 1/4-20UNC Unified thread?

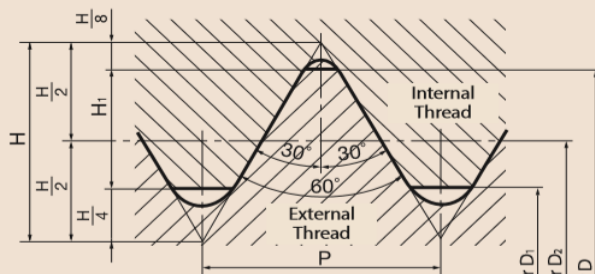
【Answer】

The taps marked with "TRI 1/4-20" are a special tap for "internal threads for camera tripod mounts". It is not the same as a standard Unified thread and will not produce the correct thread.  
For details, please refer to the explanation below.



【Description】

The "Hand Taps for Tripod threads HT TRI 1/4-20" have the same thread form as the Unified threads, but the pitch diameter is approximately 0.2mm larger than that of the Unified threads.



$$\begin{aligned} H &= 0.866025P \\ H_1 &= 0.541266P \\ d_2 &= d - 0.649519P \\ d_1 &= d - 1.082532P \\ D &= d \\ D_2 &= d_2 \\ D_1 &= d_1 \\ P &= 25.4/n \\ n &= \text{Threads per inch} \end{aligned}$$

There is a saying "alike but not exactly the same" and that's exactly what it means. It's a good thing you asked beforehand, or this would have resulted in a defective product by using a standard 1/4-20 UNC tap.



The difference between the outside diameter and the pitch diameter for Tripod Threads and unified thread taps

Unit:mm

Size	Class	Outside diameter			Pitch diameter			Tolerance
		Basic dimension	Upper (+μm)	Lower (+μm)	Basic dimension	Upper (+μm)	Lower (+μm)	
TRI 1/4-20	-	6.350	~	260	5.525	230	210	20
1/4-20UNC	P2	6.350	~	57	5.524	40	20	20

【Advice】



In addition to "1/4-20", there is also a "3/8-16" for Tripod threads. Since "3/8-16" is not used as often as "1/4-20" in Tripod threads, the same problem is unlikely to occur, but please confirm you have the correct tap before proceeding to avoid any mistakes in the future. For external threads, please refer to "Bag Full of Wisdom when you are in trouble No.087 External Thread for Camera's Tripod".