

【Consultaion】

I received an order for camera components.
In the drawing there was an internal thread statement "Tripod mounting screw 1/4"-20".
Is this a special internal screw? What kind of tap should I use?

【Answer】

A 1/4"-20 Tripod mounting screw is a Camera tripod installation screw as stipulated in the JIS B 7103 standard. This thread is considered to be a special internal thread with standard specifications so you will need a special tripod tap to process the component. YAMAWA has a tripod hand tap,



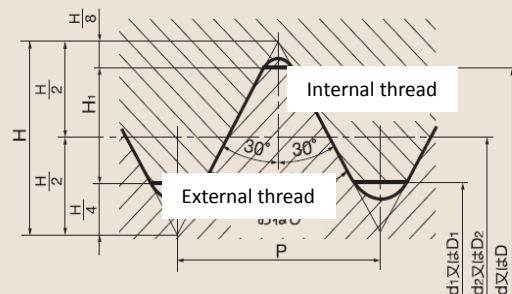
HT TRI 1/4-20



SP TRI 1/4-20

【Description】

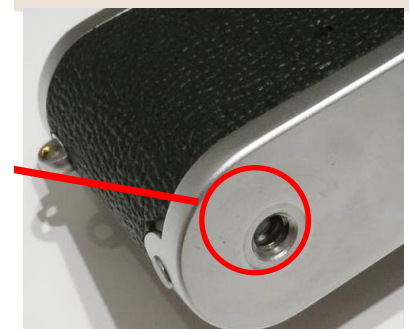
The thread form of a JIS B 7103 1/4"-20 camera tripod mounting screw is the same as a Unified screw, but the internal thread is about 0.14 mm larger on the pitch diameter compared with the 1/4"-20 UNC 2B Unified screw.



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

Comparison of internal thread specification of tripod mounting screw and Unified screw.

Size	Pitch (P)	Unit: mm			
		Major Diameter (D)	Pitch Diameter (D2)	Minor Diameter (D1)	
Tripod mounting screw 1/4"-20	1.270	REFERENCE DIMENSION	6.350	5.525	4.975
		Max. allowable size	~	5.820	5.267
		Min. allowable size	6.460	5.635	4.975
Unified 2B screw 1/4"-20 UNC	1.270	REFERENCE DIMENSION	6.350	5.524	4.976
		Max. allowable size	~	5.648	5.257
		Min. allowable size	~	5.525	4.979



【Advice】

A 5.19mm diameter drill is recommended for the bored hole diameter when tapping the internal screw for a camera tripod mounting which is the same as a Unified screw. Although used less frequently, there is also a 3/8"-16 standard thread used in the tripod mounting screw in addition to the 1/4"-20 thread.