

No. 011 Torn thread problems in pipe tapping on machining centers with a SP-PT tap

Pipe taps

[Question]



I occasionally have torn threads when I'm tapping on a machining center with a SP-PT (Spiral Fluted Tap for Taper Pipe Threads) Can you recommend a solution?

[Answer]

Chip jamming is one of the reasons for torn threads. This could be avoidable by changing from a SP-PT tap to a SP-S-PT tap.



[Example: Before and After improvement]

[Before]

Tap: SP-PT 1/4 (Long Thread Type)



Workpiece material: SS400 Machine: Machining Center Feed: Fully synchronous

Holder: Tapper

Tapping fluid: Water Soluble Cutting speed:3m/min

Cutting speed:3m/min (Revolution: 159 RPM)



Torn internal threads surface after being tapped by a SP-PT 1/4 tap.

Try SP-S-PT 1/4 to solve the torn thread problem.

(Check the insertion

(Check the insertion length of the external pipe thread as well.)



I'll check the insertion length of the external pipe thread as instructed below to see whether I can solve the torn thread problem while using a SP-S-PT tap.



(After)

Tap: SP-S-PT 1/4 (Short thread type)



Workpiece material: SS400 Machine: Machining Center Feed: Fully synchronous

Holder: Tapper

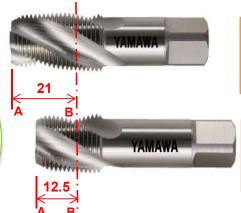
Tapping fluid: Water Soluble Cutting speed:3m/min (Revolution:159RPM)



Smooth internal threads surface after being tapped by a SP-S-PT 1/4 tap.

[Position of the pitch diameter at the hand tight plane gaging notch]

The SP-PT 1/4 tap and the SP-S-PT 1/4 tap are considerably different in length when measuring the length from A to B.



You can finish the PT1/4-19 internal thread with a SP-PT 1/4-19 tap feed to a length of 21mm from the end of the workpiece material.

You can finish the PT1/4-19 internal thread with a SP-S-PT 1/4-19 tap feed to a length of 12.5mm from the end of the workpiece material.



If chip jamming is causing the torn internal pipe threads then tapping with a SP-S-PT tap will produce fewer chips and have better chip ejection than a PT thread tapped with a SP-PT tap. The chip jamming problem will significantly decrease using a SP-S-PT tap. The PT1/4-19 external pipe thread insertion length is usually defined as 4.67mm to 7.35mm. The SP-S-PT1/4-19 meets the standard specifications of a Pressure Tight Joint for JIS B 0203, ISO 7/1 or DIN 2999.