

No. 011

Pipe taps

Torn thread problems in pipe tapping on machining centers with a SP-PT

【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



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 length of the external pipe thread as well.)



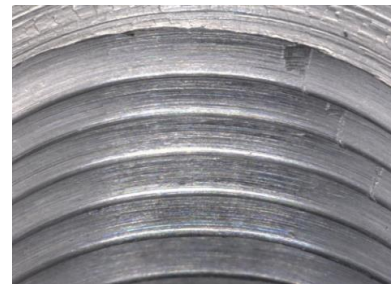
I'll check the insertion length of the external pipe thread as instructed below to see whether I can solve the torn thread problem while using a SP-S-PT

【After】

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



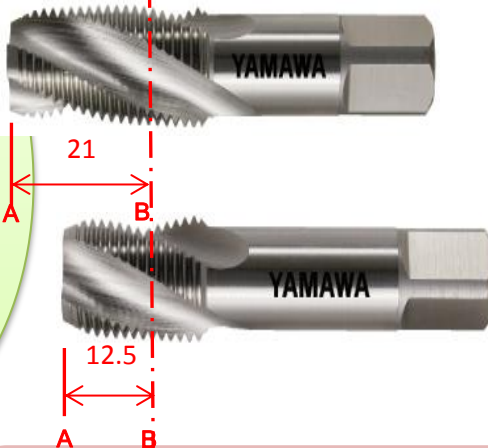
Workpiece material: SS400
Machine: Machining Center
Feed: Fully synchronous
Holder: Tapper
Tapping fluid: Water Soluble
Cutting speed: 3m/min (Revolution: 159RPM)



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

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.

Position of the pitch diameter at the hand tight plane again notch.



In other words;

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.