Think threads with YAMAWA

No. 017

How to use Cemented Carbide Tap ?

Cutting Taps

【Question】

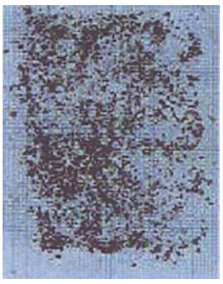
Do I need to be carefull in tapping with Cemented Carbide Taps?

【Answer】

For effective use of the Cemented Carbide Taps, you need to be careful in selecting the workpiece material. Cemented carbide taps are most frequently used for tapping cast iron and aluminum die castings. In contrast, they are unsuitable for tapping steels and stainless steels. Be careful when you are tapping with cemented carbide on any type of machine as an unstable machine operation will cause torn threads problem.

【Guide】

Form of ejected chips



【Ideal workpiece materials】

Cemented carbide taps are limited to tapping materials such as cast irons and aluminam die castings **beause the chips are ejected in tiny shattered shapes.**
(See a picture on the left)
In recent tapping developments, cemented carbide taps are now used for cutting hardened or heat treated materials with hardness of HRC60 or more.

Compared to the HSS Taps, cemented carbide taps are inferior in toughness and may cause a torn thread problem.

You need to select the workpiece materials carefully when you use the cemented carbide taps.

【Example of the Cemented Carbide Tap Series】

- N-CT FC: for Cast Iron
- N-CT LA : for Light Alloys
- EH-CT: for Hard Materials (45HRC～55HRC)
- UH-CT: for Ultra Hard Materials (55HRC～63HRC)
- HFACT HFICT: for Ultra Fast Tapping

Let me try using a cemented carbide taps for tapping ADC12 aluminum die casting.
I will continue to use a H.S.S. Taps for tapping Steels and Stainless Steels.

【Advice】

-Compared to the HSS Taps, you can expect a higher durability when applied properly. This will help with your processing performance and time estimations as a frequent tap change will be unnecessary.
-Cemented carbide taps are suitable for fully automatic processing and mass production as their tool life at higher cutting speed is much better than tapping with HSS Taps.
-Cemented carbide taps offer improvements of the internal threads surface.

<Cautions>
(1) Large vibration in machining process will cause cutting edge chipping problems.
(2) Be careful with a misalignment between cutting holes and taps upon installment.
(3) Cutting edge chipping problems can be caused by deflection and misalignment of the pretapped hole.
(4) Workpiece Material: You should select the workpiece materials with short chipping properties because of the inferior threading toughness of cemented carbide taps compared to that of HSS Taps.