

【Consultation】



We have tapped a small amount of FC 250 cast iron material in the past. Now we have received a much larger order for tapping the same size thread in the same material. The M8 × 1.25 thread has a length of 15mm. Currently, we are tapping with a HT P3 M8X1.25 tap in these castings. The GP-6H GO gauge is wearing early into a NG condition and the frequency of tap changes is increasing and causing a problem. Can you recommend a better tap for this material and job?

【Answer】

The cast iron FC casting material contains a lot of carbon, so the tap is more prone to wear at an early stage. To perform tapping in mass production in cast iron parts, Yamawa recommends you use a FC-HT hand tap that is designed specifically for cast iron. The FC-HT tap was developed for improving the tool life by utilizing the optimum cutting edge shape. The FC-HT taps have a unique surface treatment for cast iron material. For details, please see the explanation below.



【Description】

Features of the FC-HT tap.

- The FC-HT tap adopts a unique cutting edge angle that is the most suitable for tapping cast iron material.
- The FC-HT taps are slightly oversize compared to the standard HT.
- To improve wear resistance, the FC-HT taps have a Nitriding surface treatment.

Grade accuracy and oversize condition of the FC-HT taps compared to the standard HT taps.

Size	FC-HT	Standard HT	Oversize
M3X0.5	P3	P2	+ 15 μ m
M4X0.7	P3	P2	+ 20 μ m
M5X0.8	P3	P3	-
M6X1	P3	P2	+ 20 μ m
M8X1.25	P3	P3	-
M10X1.5	P4	P3	+ 20 μ m
M12X1.75	P4	P3	+ 20 μ m

Please see the comparison below of tool life for a FC-HT tap and a standard HT tap.

The figure on the right is an example of a tool life comparison test when tapping in FC-250 cast iron with a M8X1.25 FC-HT tap and standard HT of the same size. The chart represents the number of tapped holes until the GO thread gauge GP-6H measured a tight thread.

Test tap: M8 X 1.25 5P (Plug)
 Workpiece material: FC 250
 Material thickness: 12 mm
 Minor diameter hole: φ 6.8
 Condition: through hole
 Tapping speed: 6.5 m/min.
 Lubrication used: exclusive machine water-soluble cutting fluid.

