

No. 099

Recommendation of N-CT FC Taps

Cutting tap

【Consultation】



We are tapping FC-250 castings in mass production on a machining center. Currently, the tap we use for cast iron is a FC-HT M5 X 0.8 with a 5 thread chamfer. We have no problems with cutting edge chipping and tap breakage but the GP-6H GO gauge measure tight around 3,000 holes. I would like to reduce the frequency of tap replacement and further improve processing time. Can you recommend better taps for this work?

【Answer】

I think the FC-HT is the best high speed steel HSS tap material for processing FC cast iron casting. You have said, "currently, we have no problems with cutting edge chipping or tap breaking," so I assume the tool life is simply because the tap wears out. It seems the processing environment and processing conditions are also in a good position. YAMAWA believes, a N-CT FC carbide hand tap for cast iron would be the best recommended tap for improvement. The basic specification of the N-CT FC carbide tap is the same as the FC-HT hand tap for cast iron, but since it is a cemented carbide tap, the processing tool life will be greatly increased. Please try processing the FC-250 cast iron with N-CT FC.



【Description】

The figure on the right shows the number of tapped holes and the number of taps consumed using a M5 X 0.8 N-CT FC carbide tap with a 3 thread chamfer, and a HT M5 X 0.8 standard HSS tap with a 5 thread chamfer in FC-250 cast iron. In this example, we are comparing the abrasion amount of wear on each tap. The N-CT FC carbide tap has about 50 times longer lifespan than a standard hand tap.

Comparison of number of tapped holes using a carbide tap and a HSS tap and a measurement of the abrasion wear amount on the cutting chamfer.

Carbide tap: Example using a N-CT FC and tool

Size	M6X1	M8X1.25	M10X1.25
Material	FC250	FC250	FC250
Pilot Hole Dia	φ5.0	φ6.7	φ8.7
Cutting Length	10mm	16mm	18mm
Machine	4-Axis	Multi-Axis	Special
Speed	8m/min	6m/min	5.7m/min
Tapping Oil	Water Soluble	Water Soluble	Water Soluble
Holes Tapped	53,000	18,860	38,500

Tapping Conditions

Size : M5×0.8
Workpiece material: FC 250
Bored Hole Dia : Φ 4.2
Tapping Length : 10 mm
M/C : Special
Tapping Speed: 8 m/min
Tapping Fluid: Water

