

【Question】



I need to create a M7 X 1 and a M10 X 0.75 internal screw threads in stainless steel. Normally, I use a SU-SP spiral flute tap or a SU-PO spiral point tap with a non soluble tapping fluid for stainless steel. The only taps I have today are SP taps in these sizes, is it ok to use these taps for stainless steel?

【Answer】

To create internal screw threads in stainless steel, I recommend you have the taps you have on hand oxidized by an authorized coating company that has the correct equipment for producing an oxidizing surface treatment. Oxidizing is a standard surface treatment offered on Yamawa SU-SP and SU-PO taps for tapping stainless steel. The benefits of this surface treatment are explained below.



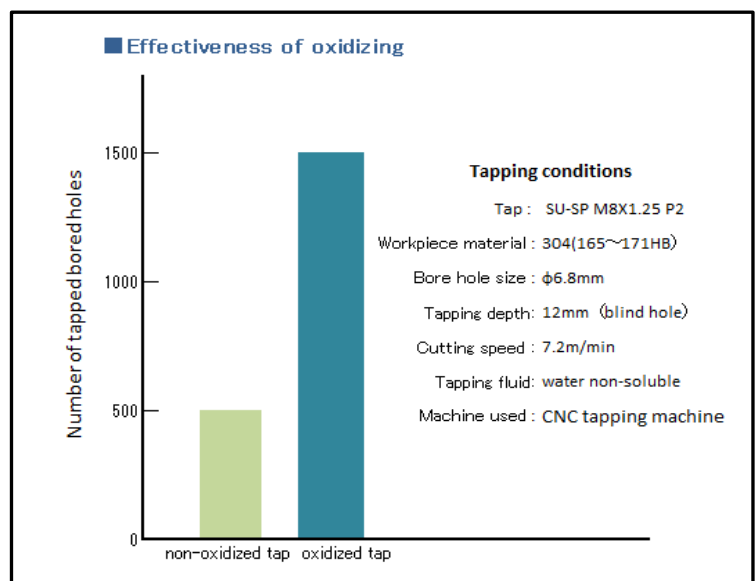
【Guide】

An oxidation treatment is generally referred to as an "OX treatment" or "Steam HOMO treatment". Applying a steam oxide treatment creates small pits or porosity on the surface of the tool. Droplets and molecules of the cutting fluid accumulate in these pits and help with the lubrication of the tool. The added lubrication on the tool decreases frictional resistance and helps prevent chip welding. This extra lubrication at the cutting edge also helps improve the surface finish of the internal thread. Steam Oxidation does not add to the tools hardness or rigidity but you can expect extended tool life in ferrous materials from the added lubrication.



【Advice】

The graph to the right shows the amount of tool life increase when tapping SUS 304 with a SU-SP non-oxidized tap and a SU-SP oxidized tap. Please note the 300% increase in tool life using an oxidized tap. Your tool is a SP tap so the effect of an oxidization treatment may not be as significant as an oxidized SU-SP tap. I think having your SP taps oxidized by an authorized coating company you will extend the tool life and reduce your tapping problems.



Oxidized tap is recommendable for processing ductile and easy welding workpiece material such as the low carbon steels.

