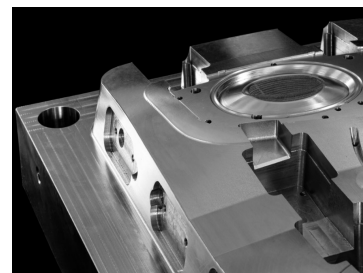


### 【Consultation】



We are manufacturing some M10X1.5 press dies made from SKD11 material. We normally do the heat treatment process to the dies after tapping and re-tap the internal threads as a finishing process. But this time by mistake, we heat treated the dies before tapping several of the holes and now the hardness of the dies is "60 HRC". Is there a way to cut this hard material with a tap?



Mold: Image

### 【Answer】



YAMAWA carbide hand taps UH-CT for ultra-high hardness steels.

In these type of cases where the hardness is up to "60 HRC", you can tap this material with a YAMAWA carbide hand taps "UH-CT P4 M10X1.5" which is designed for extremely-high hardness steels.



### 【Advice】

#### ① Make the bored hole size as large as possible within the thread tolerance.

· YAMAWA UH-CT carbide hand taps can cut hardened materials up to 60 HRC. The torque load will be reduced by drilling the bored holes larger which leads to easier tapping.

· If the internal thread requirement is specified as "6H or class 2", please open the bored holes as close to the maximum minor diameter of the thread tolerance as possible.

\*The tip diameter of UH-CT taps is designed to be as close as possible to the maximum minor diameter of the 6H internal threads and is larger than standard taps.

#### ② Make the bored hole as deep as possible.

· If UH-CT taps bind on the chips accumulated in the bottom of the hole, chipping problems may occur.

\*The chamfer length of UH-CT taps is 5 threads, please set the depth of the bored holes deeper than the chamfer length.

· If it is not possible to make the bored holes deep enough, we recommend you to clear the chips after tapping half of the total tapping length and continue to tap again to the bottom.

#### ③ Please pay attention to run-out, bent holes, or cutting speed.

· Please make sure that there is no run-out in the machine spindle, or misalignment between the center of the holes and the machine spindle which lead to chipping the UH-CT taps which are made from carbide.

· We recommend cutting speeds from 1 to 1.5 m/min.

