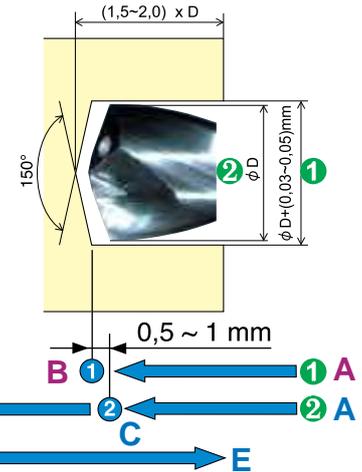


Extra Long SUPER MULTI-DRILLS MDW ... XHT/PHT Type

Recommended Tooling Strategy



1 A ⇒ B: Preparation of pilot hole with MDW ...PHT type

$v_c = 50-80\text{m/min}$, $f = 0,15-0,25\text{mm/rev}$, $d_{oc}: 1-2xD$

2 A ⇒ C: Entering into pilot hole with long Multi-Drill (MDWXHT type)

$N = 500\text{ rpm}$, $v_f = 2000\text{mm/min}$

At C the drill should stay (about. 3 sec.) and increase speed to set recommended cutting conditions.

3 C ⇒ D: Deep hole drilling

After reaching required number of revolution operation can be started taking into consideration mentioned recommendation for the feed rates. At cross holes and irregular or angled surfaces feed should be reduced.

4 D ⇒ E: After hole drilling

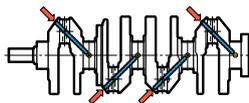
Decrease spindle rotation to $N = 500-700\text{rpm}$ and pull back with high feed rate $F = 2000\text{ mm/min}$.

Application Examples

Work piece: Crank shaft (C45E, 1.1191)

Machine

Machine: Horizontal M/C
Coolant: MQL (Synthesized ester)
Air pressure 0,9MPa
Supplying rate 20cc/h



Tool life 200pcs



Cutting edge after 66,4m drilling

Process and cutting condition

- 1) Pilot hole ($\phi 5,75 \times 12\text{mm}$, Top angle of drill: 150°)
 $v_c = 80\text{m/min}$, $f = 0,2\text{mm/rev}$.
- 2) Deep hole ($\phi 5,70 \times 83\text{mm} \times 4\text{ holes}$, XHT type)
 $v_c = 100\text{m/min}$, $f = 0,15\text{mm/rev}$. $F = 873\text{mm/min}$

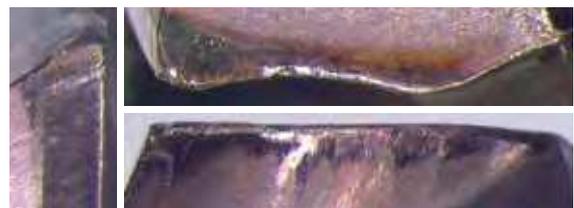
Work piece: Connecting rod (C53,1.1213)

Machine

Machine: Vertical M/C (BT40)
Coolant: Internal cooling (Emulsion)
Pump pressure 2,0MPa



Tool life 300pcs



Cutting edge after 39,0m drilling

Process and cutting condition

- 1) Pilot hole ($\phi 5,85 \times 10\text{mm}$, Top angle of drill: 175°)
 $v_c = 80\text{m/min}$, $f = 0,05 \rightarrow 0,15\text{mm/rev}$.
- 2) Deep hole ($\phi 5,80 \times 130\text{mm}$, XHT type)
 $v_c = 90\text{m/min}$, $f = 0,20\text{mm/rev}$. $F = 988\text{mm/min}$

* Current tooling (with $\phi 5,8 \times 130\text{mm}$ gun drill)
 $v_c = 100\text{m/min}$, $f = 0,03\text{mm/rev}$. $F = 164\text{mm/min}$.
(Tool life 120pcs)