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### **THE METHOD OF SWARF REMOVAL WHEN DRILLING DEEP HOLES**

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Low rigidity of a tool when drilling, instability of the process because of the heterogeneity the quality of the material, difficulty of supply the lubricating - cooling liquids in the cutting area, difficult conditions of output of the swarf, rise in temperature in the cutting zone with the increasing depth of drilling, contribute to rising many numerous defects in processing, tool breakage, lack percent growth, reduced productivity reliability of operation [1]. Finishing of the holes is one of the most labor-intensive processes, moreover, drilling takes a special place among the methods of getting openings.

When drilling deep holes ( $l > 5d$  where  $l$  - the depth of the hole, mm;  $d$  - diameter of the hole mm) the supply - cooling liquids with pressure contribute to removing the swarf from the cutting area, avoiding its packaging or re-cutting. If in this case, it is impossible to organize the supply - cooling liquids, we have to carry out drilling with a periodic withdrawal of the drill for removing the swarf. This greatly decreases the likelihood of the premature failure of drills. This method is counterproductive leading to deterioration of the precision when performing this operation.

The proposed equipment "The dampener of torque oscillations" improves swarf removal when drilling deep holes, using vibration oscillations for destroying swarf and withdraw swarf on the outside preventing from deterioration of accuracy during the process. This device improves the operational performance of the drills, reducing the probability of the failure and helps to decrease the amount of shortage in the production. The proposed method has significant advantages over the others, increasing the efficiency and reliability of the operations.

#### **References**

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