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Results of Comparative Experimental Studies to Identify the Effectiveness of the New Design of the End Grinding Wheel

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Abstract

The article presents the results of comparative experimental studies to identify the effectiveness of the new design of the end grinding wheel. The analysis of the obtained empirical models shows that the roughness of surfaces ground with a new design wheel is much lower than that of a standard grinding wheel.This is due to the fact that the creation of discontinuity on the frontal zone of the working end with the profiling of the protrusions along the Archimedean spiral eliminates periodic impacts, increases the number of cutting grains, creates conditions for a relatively uniform distribution of the allowance between them and increases the meticulous capacity of the continuous part of the working end of the wheel.

Index terms— grinding wheel, roughness, surface quality, empirical model, archimedean spiral, efficiency, cutting conditions.

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X +0,062 3 X ,**(9)**

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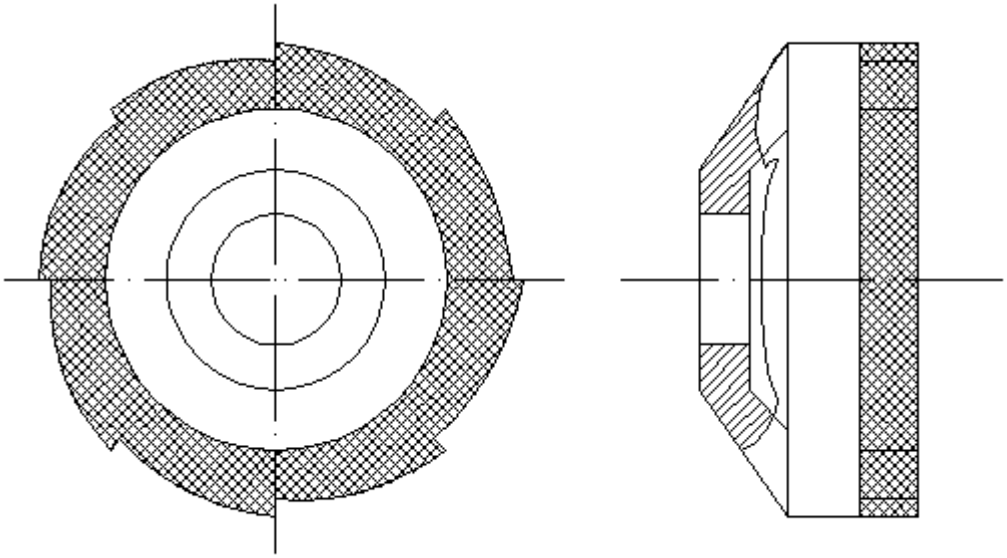

Figure 1:

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[2]Results of Comparative Experimental Studies to Identify the Effectiveness of the New Design of the EndGrinding Wheel

Figure 4: S

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Figure 5: ???. 2 :

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Figure 6: ???????-? ?????? ???????? ?????????? ????????????? ????????????????? ???????????? ?? ????????? ????????????? ????? ??????????? ????????? ????????????? ?????. ?????? ?????????? ???????????? ??????? ??????????, ??? ????????????? ???????????, ??????????? ?????? ????? ??????????? ??????????? ????, ??? ??????????? ??????????? ??????. ??? ??????????? ???, ??? ????????? ????????????? ?? ??????????? ???? ???????? ????? ? ????????????????? ???????? ?? ??????????? ??????? ??????????? ????????????? ?????, ????????????? ????? ??????? ?????, ????????? ??????? ??? ??????????? ???????????? ????????????? ???????? ????? ???? ? ?????????? ???????????? ??????????? ???????? ????? ????????? ????? ?????.

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t 12 =0,016/0,0237=0,675; t 13 =0,00125/0,0237=0,05; t 23 =0,01125/0,47 t 11 =0,062/0,0237=2,6; t 22 =0,058/0,0237=2,44; t 33 =0,065/0,0237=2,74 ??????????? ????????t ?? ????????? ?? ??????? ?????? [4] ??? n(r-1)=30 ???????? ??????? ? ???????? ?????? ?????????? ?=5% t ?? =1,697.???? t>t ??, ???????? ???????????, ? ??????????? b i ?????????? ????????. ????? ???????, ????????????? ?????? ??????????? ????????????? ??????????? ??????????? ?? ????????? ?????? ?????????? ? ???? ????????? ????? ????????? ????????? Y? ?????????? ? i , ??????????? ?????? ???????? ???????????? ??????????: ??? ???????????? ????? Y ?=0,456-0,085 1

.1 ???????? ????????????? ???????? ??????

X +0,06

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