

VISOKA ŠOLA ZA PROIZVODNO INŽENIRSTVO

DIPLOMSKO DELO

**RAZVOJ IN UVEDBA TEHNOLOŠKEGA POSTOPKA
STRUŽENJA OHIŠJA VENTILA S-TCV**

**DEVELOPMENT AND IMPLEMENTATION OF THE
TECHNOLOGICAL PROCESS FOR TURNING THE VALUE
HOUSING S-TCV**

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RAZVOJ IN UVEDBA TEHNOLOŠKEGA POSTOPKA STRUŽENJA OHIŠJA VENTILA S-TCV

POVZETEK

Namen diplomskega dela sta razvoj in uvedba tehnološkega postopka struženja ohišja ventila S-TCV iz materiala AlSi_1MgMn (EN AW6080). Iz tehnološkega parka podjetja je bil izbran najbolj primeren stroj. Optimiziran je bil tudi vpenjalni sistem. Izdelane so bile namenske vpenjalne čeljusti. Določeni so bili tehnološki parametri in optimalna rezalna orodja. Izkazalo se je, da so s stališča doseganja predpisane hrapavosti in oblike odrezkov, ki omogočajo njihovo enostavno odvajanje, najprimernejše stružne ploščice iz PKD z lomilcem za odrezke. Izvedena je bila poskusna proizvodnja, ki so ji sledile meritve hrapavosti in lastnosti odrezkov. Z uspešno potrditvijo ustreznosti ventila S-TCV po PPAP postopku smo potrdili pravilno izbiro in izvedbo tehnološkega procesa struženja ohišja ventila S-TCV.

Ključne besede: struženje, AlSi_1MgMn , stružna ploščica iz PKD

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ABSTRACT

The aim of the diploma thesis is the development and implementation of the technological process for turning the valve housings S-TCV, which are made from AlSi_1MgMn (EN AW6080). The most suitable machine was selected from the company's technological park and the clamping system was optimised. Dedicated clamping jaws were designed and manufactured. Optimal technological parameters and optimal cutting tools were selected. From the required roughness and required chip shapes that are easily removable viewpoints it was concluded that PKD turning inserts with chip breaker are the most suitable. An experimental production was carried out which has been followed by measurements of roughness and shapes of the chips. By validating the adequacy of the valve S-TCV by PPAP procedure, the proper selection and implementation of the technological parameters was confirmed.

Key words: turning, AlSi_1MgMn , PKD turning insert