RESEARCH REGARDING THE USE OF CO2 AT THE SINTERED STEELS QUENCHING

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Abstract

The largest share of sintered steel parts is used for the vehicles construction industry (cars). Of these more than 60% are subject to wear solicitation by friction and for this reason surface hardening of these pieces plays an utmost importance to ensure their proper functioning.

For this purpose, research was undertaken by carburizing the surface layer and enrichment with C% followed by quenching them.

The innovations of research whose results are presented in the paper are that on one side was performed a carburization in gas after sintering in the same thermal cycle, on the other hand quenching was performed by direct cooling the carburizing temperature using the CO2 as cooling medium.

Flexural strength characteristics and shock respectively hardness and wear behavior of the thermo chemically treated samples and hardened by new methods were analyzed comparatively with classic treated samples by carburizing in separate sintering thermal cycle for which was used nitrogen as a cooling medium for quenching.

Keywords: powder metallurgy, sinter hardening, sintered steel, carburizing, CO2 quenching

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