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Equilibrium surface texture of valve stems and burnishing method to obtain it

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Abstract

The work was carried out to examine the possibility of using slide diamond burnishing to obtain the equilibrium surface layer of valve stems. Surface texture of stems removed from the valves during exploitation (having equilibrium surface texture) was tested. Dozens of parameters were compared with the parameters of the new stems standard treated by belt grinding and, the stems treated by slide diamond burnishing. It was found that the surface texture after burnishing is more similar to equilibrium surface texture and recommended the use slide diamond burnishing for valve stem finishing.

Keywords: Surface texture; Sliding contact; Running-in; Surface modification

1. Introduction

The surface layer of machine and mechanism parts obtained in the production process which have not been used yet is called the technological surface layer and its properties depend, to a large extent, on the finishing method. In the initial service phase (called running-

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