

Investigation on Grinding characteristics of Hardened Die Steel in Ultra-Smoothness Vertical Grinding Method

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With the increase of the demand of high quality components having high mechanical properties, the high productive and ultra-smoothness grinding technique for the difficult-to-cut materials has been strongly required. From the point of view, in our previous researches, the ultra-smoothness grinding method based on new concept is devised and applied to the vertical

grinder manufactured on trial. In this research, the influence of the dilution degree of grinding fluid, grinding speed and parallel step feed on surface roughness ground by the ultra-smoothness vertical grinding method. From the results, the most suitable dilution exists for obtaining the best smooth surface. The best surface roughness of 40nm(Rz) is obtained at the depth of cut of 5micro-meters, grinding speed of 15m/s and parallel step feed of 10 micro-meters/pass.

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