Face Grinding of Titanium Alloy Ti-6Al-4V

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Abstract

Aside from the particular role of titanium in aircraft industry, a number of titanium applications have developed in the automotive industry. Titanium is common in racing and high performance cars, for parts such as valves, springs and connecting rods. The objective of this study is to look at the parameters which influence the grinding performance when grinding with a diamond cup-wheel, with the emphasis on machining conditions such as wheel speed, table speed and depth of cut. The results show that the surface roughness obtained is more dependent on table speed and depth of cut rather than wheel speed. Another important indication of grinding damage is the grinding burn on the surface. An estimation of the onset of grinding burn is also discussed.

Keyword：Grinding, Titanium alloy