

Investigate the Lubrication Effects on Cutting Force and Power Consumption in Up and Down End Milling

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Abstract:

Milling is a machining process by which a surface is generated by a progressive chip removal. An experimental investigation has been carried out on the performance of up and down milling under dry and flood conditions when end milling medium carbon steel utilizing titanium coated carbide tools. The performances are evaluated in terms of the cutting force, specific energy and power of cutting tool. The results show that milling in dry condition under up milling mode produce higher cutting force, specific energy and power. However, cutting under down milling mode gives less significant effect either being cut in dry or flood condition.