

## **EXPERIMENTAL INVESTIGATION OF MACHINING PARAMETERS OF VERTICAL CNC MILLING MACHINE ON HOT DIE STEEL (H-13)**

**UMESH KUMAR<sup>1</sup>, ROHIT RAMPAL<sup>2</sup>,  
MANDEEP CHAHAL<sup>3</sup> AND VIKAS JINDAL<sup>4</sup>**

<sup>1</sup> Research Scholar, SUSCET, Tangori (Mohali) Punjab, India

<sup>2</sup> Lecturer in Deptt. of Mechanical Engineering, HCTM, Kaithal (Haryana), India

<sup>3</sup> Asstt. Prof., Deptt. of Mechanical Engineering, SUSCET, Tangori (Mohali) Punjab, India

<sup>4</sup> Asstt. Prof., Deptt. of Mechanical Engineering, HCTM, Kaithal (Haryana), India

<sup>4</sup> Lecturer, Deptt. of Mechanical Engineering, HCTM, Kaithal (Haryana), India

### **Abstract**

Hardened materials like H13 tool steel are generally regarded as a difficult to cut materials because of their high hardness due to intense carbon content, which however allows them to be used extensively in the hot working tools, dies and moulds. The challenges in machining steels at their hardened state led the way to many research works in amelioration its machinability. The study includes identification of relationship between tool life and surface roughness on one hand and the variable parameters, mentioned above on the other. The machining experiments were conducted in two phases, namely, room temperature and preheated machining condition.

-----  
**Keywords :** CNC Milling Machine, Hot Die Steel

**Sub Area :** Production Technology

**Broad area :** Mechanical Engineering