

GLOSSARY

Number	Terms	Description	First Page Appears
1	Trochoidal Milling	A machining technique that involves circular tool paths to reduce cutting forces and improve tool life.	1
2	Polytetrafluoroethylene (PTFE)	A high-performance polymer known for its low friction, thermal stability, and chemical resistance.	3
3	CNC Machining	Computer Numerical Control machining, a manufacturing process that uses pre-programmed software to control machine tools.	3
4	Full Factorial Design	A statistical method used in experiments to analyze all possible combinations of factors and levels.	2
5	High-Speed Steel (HSS)	A type of tool steel known for its hardness and resistance to high temperatures, commonly used in cutting tools.	12
6	Toolpath Optimization	The process of improving the path taken by a cutting tool to enhance machining efficiency and accuracy.	13
7	Machining Parameters	Variables such as feed rate, spindle speed, depth of cut, and tool diameter that influence the machining process.	5
8	Experiment Design (DOE)	A structured approach to planning and conducting experiments to analyze the effects of multiple variables systematically.	29
9	FLIR Thermal Camera	An infrared imaging device used to monitor temperature distribution during the machining process.	19
10	Region of Interest (ROI)	A defined rectangular area in thermal imaging where maximum tool temperature is tracked and analyzed.	21