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Axiomatic Design of Laser Beam Machining Process

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Abstract : Laser Beam Machining (LBM) is a non-traditional machining process that has inherent problems like dross, striation, and Heat Affected Zone (HAZ) which reduce the quality of machining. In the present day scenario, these problems are controlled only by iteratively adjusting a large number of process parameters. This paper applies Axiomatic Design principles to design LBM process so as to eliminate the problem of dross and striation and minimize the effect of HAZ. Process parameters and their ranges are proposed to set-up the LBM process, execute the cut and finish the workpiece so as to obtain the best quality cut.

Keywords : laser beam machining, dross, striation, heat affected zone, axiomatic design
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