EXPERIMENTAL STUDY OF EFFECT OF VARIATION OF STAND OFF DISTANCE AND PRESSURE ON HOLE OF DIAMETER, RATE OF MATERIAL REMOVAL AND DEPTH OF CUT IN WATER JET MACHINING

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Abstract

WJM (Water Jet Machining) is a non-conventional cutting methods which growing, especially in manufacturing. Various research about WJM (Water Jet Machining) was did. In this research is expand a WJM (Water Jet Machining) which expect can used for pratical work subject Theory dan Pratice Non Konvensional Machine at D3 Mechanical Engineering FTI-ITS. Although expand and use WJM (Water Jet Machining) expect still can studying the characteristic of WJM (Water Jet Machining) in this research.

The process of this research was began from founded and studied literatures which can used as a manual for finishing this research. SOD (Stand Off Distance) and pressure were parameter which did in this research with nozzle diameter 1,5 mm and material for research was red brick with dimensions (190 x 90 x 65) mm. The obtained data were served in table, after that analyze and criticism (discussion) than get the conclusions.

From this research obtained from the variation of SOD (Stand Off Distance) which produces the hole diameter and MRR (Rate of Material Removal) the maximum is at 8 mm SOD and for pressure variations resulting the depth of cut, the minimum pressure is 180 bar and resulting the depth of cut the maximum pressure is 225 bar.
Key words: Water Jet Machining, Stand Off Distance, hole of diameter, Rate of Material Removal, depth of cut.