

DESIGN OF A HIGH SPEED WATER JET CUTTING SYSTEM

Project Report submitted by

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SUMMARY

The aim of this project was to design a high speed water-jet cutting system.

Firstly a survey of the different water jet cutting techniques was carried out. Then the background theory and principles on which the explosively/pyrotechnically powered water-jets was studied in order to be able to design such a system.

It was decided to design a pyrotechnically powered water-jet cutting system because the information available on similar cutting systems which are powered by jet pumps was very little.

After studying the theory of the above mentioned cutting technique a similar system was designed. In order to design this system previous designs and experience were considered.

When the high speed water-jet gun was ready to be used, a series of experiments was carried out for the purpose of verifying the theory which was previously studied. Some graphs were plotted and comparison of theoretical results to the experimental ones was made. The differences appeared were then discussed and the reasons which caused these differences were investigated.

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