

## **STUDENT'S DECLARATION**

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I, Punit Grover, hereby certify that the work which is being presented in the Major project entitled **“STUDY OF ALUMINUM OXIDE ABRASIVE ON TEMPERED GLASS IN ABRASIVE JET MACHINING USING TAGUCHI METHOD”**, is submitted, in the partial fulfilment of the requirement for the award of the degree of **“MASTERS OF TECHNOLOGY”** with specialization in **“PRODUCTION ENGINEERING”** at Delhi Technological University is an authentic record of my ownwork carried under the supervision of Mr. Sanjay Kumar , Assistant Professor . I have not submitted the matter embodied in this major project for the award of any other degree or diploma also it has not been directly copied from any source without giving its proper reference.

Punit Grover

Production Engineering

Roll No. 2K11/PIE/14

## **CERTIFICATE BY SUPERVISOR**

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This is certified that the work contained in this major project entitled **“STUDY OF ALUMINUM OXIDE ABRASIVE ON TEMPERED GLASS IN ABRASIVE JET MACHINING USING TAGUCHI METHOD”** by Punit Grover is the requirement for the partial fulfillment of the degree of **“MASTERS OF ENGINEERING”** with specialization in **“PRODUCTION ENGINEERING”** submitted to **Delhi Technological University**. This work was completed under my direct supervision and guidance. The student has completed the work with utmost sincerity and diligence. The work embodied in this project has not been submitted for the award of any other degree/diploma to the best of my knowledge.

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SESSION: 2011-13**

## ACKNOWLEDGEMENT

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At the very first place I thank the Delhi Technological University who funded the entire research work and helped at every turn, whenever the need arose. I make use of the opportunity to acknowledge my obligation to my Guide **Mr. Sanjay Kumar**, Assistant Professor who was like a stick to a blind man. In the new world of AFM I saw many splendid scenes with his help which would otherwise have escaped my vision. At each and every step He provided the necessary wit to identify the potential targets which were camouflaged in confusing matrices of data. When I wandered, He gave accurate directions just like a faithful GPS. At times, when the vast databanks of Google™ failed to answer some questions, He was there to suffice my sincere thanks are due for the extraordinary help I received from on each and every day from the conception to delivery of the project, who devoted many sleepless nights with me religiously monitoring the running equipments. I am also grateful to Mr. Tekchandraji, and Mr. Om prakashji, Lab Assistant during the laboratory work in the mechanical engineering deptt.

I especially thank **Dr. Qasim Murtaza**, Associate Professor for his constant and continuous encouragement during my high and low times, and for his tricky persuasions that led me to rediscover many basic facts related to the project, for his patient handling which helped me work with a cool head. A major pie of the thanks is for the entire team at the Mechanical and production Engineering Deptt. who made their time and resources available for my works. Thanks is due for all my friends who endured my night chats and my incoherent queries during the entire period, and my aging parents who managed themselves to ease my load.

Date: 15-07-2013

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## ABSTRACT

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The abrasive jet machining (AJM) is a non-conventional machining process in which a abrasive particles are made to impinge on the work material at a high velocity. The jet of abrasive particles is carried by carrier gas or air. The high velocity stream of abrasive is generated by converting the pressure energy of the carrier gas or air to its kinetic energy . The high velocity abrasive particles remove the material by micro-cutting action as well as brittle fracture of the work material . Abrasive jet machining is generally good for cutting hard or brittle materials and is usually performed to furnish machining or finishing operation such as cutting, deburring, etching, etc.

This project deals with the fabrication of the Abrasive Jet Machine and machining on tempered glass, calculating the material removal varying various performance parameters like pressure, angle & abrasive grit size so on. Before performing the experiment ,fabrication done on AJM which are also discussed.. The different problem faced while machining on tempered glass are also discussed.

Taguchi method and ANOVA is used for analysis of material removal rate .

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