



**DEVELOPMENT OF DRIVE SYSTEM FOR ORBITAL PIPE WELDING AND
CUTTING**

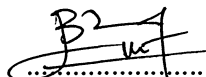
**MOHAMAD BAZLI BIN KASIM
(2006689165)**

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Universiti Teknologi MARA (UiTM)**

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“I declared that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree”

Signed : 
Date : 24/5/10

Mohamad Bazli Bin Kasim

UiTM No : 2006689165

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ABSTRACT

Orbital pipe welding is widely used for oil and gas piping. The system has higher arc on duty cycle and hence has the benefit of high productivity for the manufacturer. In the context of welding industry, most pipes are welded done by highly skilled welders. Due to limitation of manual skill, many welding flaws can be discovered by Non Destructive Test (NTD) inspection. The quality of the welding is not consistent and can cause waste in materials and time. Orbital pipe welding machine was developed to overcome the limitations of manual pipe welding. Commercialized pipe welding machine has many features relevant for producing consistent welding quality. For this project, the primary consideration is to build the basic prototype orbital pipe welding system for a selected size of pipe. The welding torch orbits around the pipe at regular speed. The construction is based on basic performance and requirement of the orbital system. This project will be enhanced with practical operation features that will fulfill the requirement of pipe welding. To that the machine can be upgraded for the commercial market in the future.

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