

MARA INSTITUTE OF TECHNOLOGY
SHAH ALAM
(FINAL YEAR PROJECT REPORT)

DESIGN AND FABRICATION OF AN
UNIVERSAL BALANCED POSITIONER

MECHANICAL ENGINEERING DEPARTMENT
SCHOOL OF ENGINEERING
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One of the most pleasant part of completing a project is the opportunity to thank those who have contributed on it. Unfortunately, the expression of thanks no matter how extensive is always incomplete and inadequate. These acknowledgements are no exception.

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PREFACE

I feel very much elevated in presenting a final project report entitled "Design And Fabrication Of An Universal Balanced Positioner", which is compulsory for engineering students at Diploma level in MIT.

School of Engineering, especially Mechanical Engineering Department not only gives theoretical teaching but also exposes the student to the practical aspects about courses. The final project is one of the practical exposure to students encouraging them to improve their creativity.

I take an opportunity to present this project report in a most concise, compact, to-the-point as far as I can. In the study of model analysis, I have derived some new relations of my own; to compare the performance of the model to its prototype.

Although every care has been taken to check mistakes and misprints, yet it is difficult to claim perfection. Any errors, omissions and suggestions, for the improvement of this project report brought to Mechanical Engineering Department, will be thankfully acknowledged and incorporated in the other project session.

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1.0 - INTRODUCTION

Welding table are a necessity in doing welding jobs. They come in all kinds of shapes and sizes. The use of particular welding table depends on the welding job to be performed. Common types of welding tables are:-

1. Tilt table positioners
2. Turning rolls
3. Head and tail stock positioners
4. Balanced positioner

Here, I am designing a welding table that incorporates most of the flexibilities of the above-mentioned welding tables. It is called the Universal Balanced Positioner and it can be adjusted to any welding position without effecting the stability of the system. The greatest advantage of using the universal balanced positioner is that the workpiece can be tilted at an angle where downhand welding can be performed. This is especially important when a workpiece requires awkward angles for welding. So, by using the universal balanced positioner, welding jobs can be done more easily, more quickly and produce better welds. However, its use is limited to gas and arc weldings only.