FACULTY OF MECHANICAL ENGINEERING
MARA INSTITUTE OF TECHNOLOGY
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A FINAL YEAR PROJECT REPORT
DIPLOMA IN MECHANICAL ENGINEERING
(MANUFACTURING)

STUDY OF SUBMERGED ARC WELDING USING INVERTER POWER SOURCE

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CHAPTERS

1.0 INTRODUCTION

Welding is defined as the intimate joining of metals where in coalescence is produced by heating to suitable temperatures, with or without the use of either pressure or filler metal. Welding is important in the light of :

i- Replacing casting.

ii- Replacing riveting.

iii- Only technique of fabrication.

iv- Specially developed processes for new materials.

v- Its sales value.

Welding is not just a matter of adding enough heat to a melt it and then letting its solidify. The strength and the integrity of a weld depend on the material properties of the metal being welded, as weld as on a great many others factors. These factors include the shape of the weld, the temperature of the heat source and even the type of power source on the weld. Many of these factors are the same for all welding and cutting process.

The most universally successful solution to automatic flux-shielded welding is the submerged arc processes, a method developed independently in the United States of America and United States of Soviet Russia in the middle and the late 1930s. Submerged arc welding is a process in which coalescence is produced by hating with an arc or arcs between a bare metal electrode or electrodes and the work. The arc is shield by a blanket of granular fusible material on the work. Pressure is not used and filler metals are obtained from the electrode and sometimes from a supplementary welding rod.