FEASIBILITY STUDY ON THE INTRODUCTION OF ROBOTICS IN A METAL INDUSTRY

Project Report submitted by

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ABSTRACT

This project is concerned with the feasibility study of a flexible automation (robot system) established in Metalco industry for the production of solar water heaters.

The duty of the robot system is to perform welding and assembling by screwing. The welding is performed for the building of the tower, where the different parts of the solar water heater are placed, (cold water tanks, hot water storage tanks, absorber plate) and also for the welding the cold water tanks made by galvanized steel sheet (square edged configuration).

The assembling by screwing is made for the fixing the copper pipes with the clip-fins which are placed inside the absorber plate.

The project also deals with the introduction of the subject of Robotics as far technical aspects of Robotic systems, applicable to the metal industry. It carries out a feasibility study on one particular area of the Metalco industry, it includes technical details, it examines the economic impact during the operation of this system and further it is referred to its tangible and intangible benefits.

In Chapter 1, it describes the different parts involved for the operation of the robotic system.

The classification of the different robotic systems as for coordinate system, path control are described in Chapter 2.

In Chapter 3, a number of applications made by robots are described.

In Chapter 4, are explained operations made by robots, included in workcells or productive lines.

In Chapter 5, the situation in an industry is described for the installation of a robot system, its advantages and dissadvantages, and some reccommendations for the specific industry, for shortening the payback period.

In Chapter 6, a feasibility study is performed, and also a cost analysis is shown with theoretical costs.

CONTENTS

CHAPTER 3

CHAPTER 4

CHAPTER 5

CHAPTER 6