HIGHER TECHNICAL INSTITUTE

MECHANICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

INSTALLATION AND TESTING OF A FOUNDRY MOULDING MACHINE

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INSTALLATION AND TESTING OF A FOUNDRY MOULDING MACHINE

by

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CONTENTS

ABSTRACT

In this project the field of green Sand and it's properties is studied with particular reference on greensand tests.

At the second stage the design and construction of a draw pattern and also the installation, tested and adjusted of the moulding machine, in order to be able to be used in the HTI's Foundry Laboratory.

In preparing this, work, a number of published and internationally acceptable editions referring to this subject were studied.

Tables, references and manufacturing drawings of the Draw Pattern and moulding machine are attached at the end.

INTRODUCTION

Sand casting : The most universally used casting method is called sand casting, a process utilizing silica (SiO_2) as the basic ingredient of the mould into which the metal is poured, with a clay binder used to hold the individual grains of silica together so that the sand can be moulded to shape. When sand is found in nature already mixed with a proper amount of clay so that it may be used for moulding, it is called natural moulding sand. If, however, bentonite or some other type of clay is mixed with sharp silica sand to form a mouldable mixture the material is called synthetic sand.

Packing moulding sand around the pattern or patterns in a box called flask makes a simple sand mould. A flask is made of wood or metal and build in two sections, the drag and the cope.

This need to produce parts with sand casting process, leads the foundrymen to try many methods mostly hand-methods. During the latest years with the automization that arised, new automatic moulding machines were manufactured in order to increase mass production.

Some types of automatic moulding machines are: Squeeze machines, Jolt machines, Jolt squeeze moulding machines and Jolt-squeeze Pattern-draw moulding machine.

The BMM WESTON model V2619 moulding machine that installed and tested according to the objectives of this project, belongs to the latest category of "Jolt-Squeeze Pattern-Draw Moulding machines"