

FINAL YEAR PROJECT REPORT
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DESIGN AND FABRICATION
OF A DRILL JIG

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PREFACE

This report aims at presenting and illustrating the design, fabrication and assembly of the Screw Clamp Swinging Plate Drill Jig. However, simple illustration of some common types is included in the introduction.

The report also outlines the basic principles, as based on the general principles in jig design, which determines the final design of the jig. It also includes estimates of the cost and other economics aspects of producing the jig.

A few comments and suggestions on the project is given in the later part of the report.

The author wishes to stress here that this report is by no way extensive and complete or absent from criticism for that matter, but it can be used by future students as a basis for their projects which are based on similar or related topics.

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1.0 INTRODUCTION

1.1 Background

A jig is a device, usually made of metal, which holds the component firmly, or is held on to the component, locates the component positively and guides the cutting tool into the component or facilitates marking off arrangements. It is particularly used in drilling and boring operations. The jig is not fixed to the machine table by clamping, but it is held by hand.

Jigs are used to enable components to be produced more quickly at a reduced cost and with greater accuracy and interchangeability by unskilled or semi-skilled labour in the quantity required.

The reader may have come across the many types of jigs used especially in the case of production work involving heavy components. This list however, is not exhaustive. In order to give an idea as to the construction of some typical ones, they have been selected, together with some brief illustration in the belief that this will be convenient to the reader than being obliged to refer to the text in each case. Apart from the Screw Clamp Swinging Plate Drill Jig, other examples may include the Plate Drill Jig, Tapered Jig, Pot Jig and the Retractable Drill Bush Jig.