



UNIVERSITI TEKNOLOGI MARA
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MEC300
FINAL YEAR PROJECT II

**DESIGN OF PUNCH AND DIE FOR TRIMMING
OPERATION**

EM110(5B)
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ABSTRACT

The versatility of the manufacturing sector necessitates the development of Special Purpose Machines in order to improve efficiency, lowering machining time and human workforce. After product been remove from the casting mould there are fins occurred at the product. To remove fins from castings, a specific function trimming machine can be used instead of traditional manual grinding in order to reduce machining time. This needs of punches and dies that are specialized to the workpiece.Using Solidwork 2021,the cad modelling of punch and die was created based on the selected design. The method of morphological table and pugh chart been using to select the best design. To make sure the design can be functioning, simulation of the design been conducted.

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CHAPTER 1: INTRODUCTION

1.1 Background of Study

In the factory, a die is a component of a press which is used to bend or cut the metal. A die can be customized to the components that are included in the crate. A die block is a plate or block that encloses the die's hollow. A die set assembly consists of a bottom and top shoe, two or maybe more guideposts, and guidepost bushing. The beef up plate is used to support the lower shoe of a die set. [1]The beef up plate is a large plate affixed to the press bed that serves to position and hold the die assembly. The bolster plate is normally between 5 and 12.5 cm thick. The die block is supported by the bottom shoe. The guiding posts are also installed here. The upper shoe is included with the die set, which also contains the guidepost bushings. A punch (moving element) is used to force an item against a die in a pressing process (fixed component).

Punching is a forming technique in which a punch press is used to press a tool called a punch through a workpiece to shear a hole.[2] Punching can be used on a wide range of sheet materials, including sheet metal, paper, vulcanized fiber, and some types of plastic sheet. Frequently, the punch goes through the work and towards a die. During the procedure, a scrap slug from the hole is placed into the die. This slug may be recycled and reused or dumped, depending on the material pierced.[3]

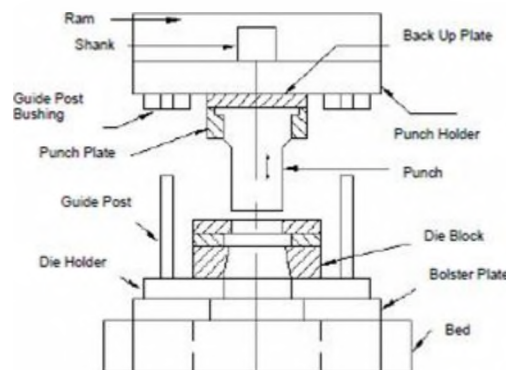


Figure 1 Punch and Die