

PROTOTYPE DESIGN COLLECTION

SERIES 2



Prototype Design Collection

Series 2



AHMAD NAJMIE RUSLI

**UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR
KAMPUS PASIR GUDANG**

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FOREWORD

This digital book on Prototype Design Collection Series 2 (PDC Series 2) is published as a reference design for mechanical engineering students. The designs presented experience a few phases of analysis before fabrication of prototype. Each project summarises the project description, prototype, figures, and design parameter. The design products vary in tools or equipment for household, workshop, entrepreneur, etc. Suggested material and detail of prototype dimension are also mentioned in this book.

It is hoped that this book will assist the students to have more ideas on innovation design products in the future.

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CHAPTER 75

Mini Injection Molding Machine

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PROJECT DESCRIPTION

The mini injection molding machine is a compact molding technology that utilizes a screw mechanism and an intense heating device to melt raw materials, subsequently injecting them into molds for the production of miniature plastic products. This technology is primarily employed for the manufacturing of small-sized plastic components, often referred to as miniature products. Currently, a diverse range of materials can be processed using mini injection molding machines. The versatility of injection molding machines extends across various domains, encompassing everyday consumer products with direct relevance to daily life, as well as critical components used in aerospace applications. The mini injection molding machine's capacity to produce miniature products proves advantageous for molding smaller-scale items efficiently. The operational principle of each injection molding machine involves the transformation of plastic material, initially in pellet form, into a molten state. The molten plastic is then introduced into a mold, where it fills the mold cavities and solidifies, resulting in the formation of the desired plastic components. This technology holds immense potential for precision manufacturing, offering a compact and efficient solution for the production of intricate miniature products.

Keywords: *Injection molding*

PROTOTYPE



DESIGN PARAMETER

