Automatic Table Top Injection Molding Machines

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Abstract*: This project focuses on the design and development of an "Automatic Tabletop Injection Molding Machine," a compact and user-friendly system for rapid prototyping and small-scale production of plastic parts. The machine incorporates automated functions, including material feeding, injection, cooling, and part ejection, minimizing manual intervention and enhancing efficiency. The system utilizes a microcontroller-based control system to regulate the injection process, ensuring precise control over parameters such as temperature, pressure, and injection time. The machine is designed to be compact and easily adaptable to various Mould configurations, making it suitable for educational, research, and small-scale manufacturing applications. The project aims to provide students with valuable hands-on experience in areas such as mechanical design, electrical engineering, control systems, and manufacturing processes, while also contributing to advancements in rapid prototyping and low-volume manufacturing technologies*

Keywords: Design and development of an automated tabletop injection molding machine