# UNIVERSITI TEKNOLOGI MARA

# DESIGN OF MINI CONVEYOR USING A MECHANICAL (GENEVA) MECHANISM

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# ABSTRACT

Geneva mechanism is a system to convert continuous circular motion into fixed step circular motion. This simple Geneva mechanism consists of a drive wheel and a driven wheel. This Geneva mechanism converts continuous rotation of the drive wheel into intermittent rotation of the gear. This mechanism using belt conveyor which is made up of rubber have basic function of transporting material in process of manufacturing. In addition, there are several types of Geneva rotator which is external Geneva rotator, internal Geneva rotator and spherical Geneva rotator. For this project that used conveyer belt is an external Geneva rotator. This mechanism produces jerks or instantaneous in acceleration. This mechanism has been used in many applications. For example, film projectors used this mechanism to power a motor which is used for fast forward. It is one of the most simple and inexpensive mechanisms.

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# CHAPTER ONE
# INTRODUCTION

## 1.1 Background of Study

The Conveyor Belts are usually used in many industries to carry heavy objects or material from one place to another place and all fields utilize this conveyor heavily. For example, this conveyor are commonly used in both manufacturing and distribution factory. This belt conveyor system are one of the most simple and versatile material handling system. But this conveyor belts must required a lot of energy to work. Another that, geneva drive is a gear mechanism that change continuous rotation into intermittent rotation. A little rod extends into a slot in the revolving drive wheel, advancing it one step or round. Nowadays, the conveyor belt that made with Geneva mechanism holds a very important place in factories as the Geneva mechanism has many advantages. Because of its simple form, reliability, and accuracy, the Geneva mechanism is one of the most widely used stepping mechanisms. Geneva have many sizes and used in many industry such as automobile, electronic, building sites, film projectors and more.

## 1.2 Problem Statement

This mini project must have detailed about theoretical of this design using a mechanical (Geneva) mechanism. This makes sure that belt conveyor can runs perfectly. Therefore, small products can move from point A to point B on the belt. Many types of conveyors which are roller conveyor and chain conveyor. Next, the main problem involved in this project is that the design of Geneva mechanism. This need requires more concentration and fabrication of Geneva mechanism is also a one of the major problem. This design includes Geneva drive and driven the centre distance, drive radius, driven radius, driving pin diameter, driven slot length and width.